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U.S. WAR DEPARTMENT TECHNICAL MANUAL

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16 TON
CARRYALL TAILER
CPT 16 SPECIAL

MAINTENANCE MANUAL
AND PARTS CATALOG

WAR DEPARTMENT • 2 NOVEMBER 1942
UNIVERSITY OF CALIFORNIA

WAR DEPARTMENT
WASHINGTON 25, D. C., 2 Nov. 1942

TM 5-9026 is published for the information and guidance of all concerned.

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BY ORDER OF THE SECRETARY OF WAR:

OFFICIAL:

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16 TON
CARRYALL TRAILER
CPT 16 SPECIAL

MAINTENANCE MANUAL
AND PARTS CATALOG



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INDEX
PART I—Operator's Manual

Section	Paragraph		Page Nos.
I		INTRODUCTION	
	1	Purpose and Scope	1
II		DESCRIPTION AND CHARACTERISTICS	3-4
	1	General Description	3
	2	Axle, Front	3
	3	Brakes, Front	3
	4	Axle, Rear	3
	5	Brakes, Rear	4
	6	Drawbar	4
	7	Electrical System	4
	8	Springs	4
	9	Tire Carrier	4
	10	Wheels and Tires, Front	4
	11	Wheels and Tires, Rear	4
III		OPERATING INSTRUCTIONS AND CONTROLS	5-6
	1	Controls	5
	2	Coupling Trailer to Truck	5
	3	Driving Truck and Trailer	5
	4	Braking Truck and Trailer	6
	5	Uncoupling Trailer from Truck	6
IV		INSPECTION, LUBRICATION, ADJUSTMENT	7-9
	1	Daily Inspection When in Operation	7
	2	Monthly Lubrications	8
	3	Mechanical Inspection and Adjustment	8
	4	Every Four Months	9
V		TOOLS AND EQUIPMENT	12-13
	1	Introduction	12
	2	Tools	12
	3	Equipment	13

PART II—Maintenance Manual

I		SAFETY INSTRUCTIONS	15
	1	Safety Instructions	15
II		AXLE, FRONT	16-19
	1	Axle Alignment	16
	2	Disassembly to Check Axle Camber or Bent Axle	16
	3	Checking for Bend	16
	4	Checking for Camber	17
	5	Axle Replacement	17
	6	Drilling Dowel Pin Holes in Replacement Axles	19
	7	Axle, Service Diagnosis and Remedy	19
III		AXLES, REAR	20-21
	1	Disassembly	20
	2	Reassembly	21
IV		BRAKES	23-45
	1	Minor Brake Adjustment	23
	2	Brake Relining, Front	23
	3	Brake Relining, Rear	23
	4	Brake Shoes, Front	24
	5	Cams, Front	25

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I N D E X—(Continued)

Section	Paragraph	Page Nos.
	6 Brake Shoes, Rear	27
	7 Cams, Rear	27
	8 Servicing Slack Adjuster	29
	9 Brake Drum Replacement	30
	10 Major Brake Adjustment	30
	11 Hand Parking Brake Replacement	33
	12 Adjusting Hand Parking Brake	34
	13 Cross Shaft, Front	34
	14 Service Brake Cross Shaft	34
	15 Brake Chambers	36
	16 Brake Chamber Diaphragm	36
	17 Relay Emergency Valve	37
	18 Tubing	43
	19 Hose Coupling	44
	20 Air Filter	44
	21 Quick Release Valve	44
	22 Brakes, Service Diagnosis and Remedy	45
V	DRAWBAR	47-48
	1 Rebushing Drawbar	47
	2 Replacing Eye	47
	3 Replacing and Repairing Safety Chains	48
	4 Installing Drawbar Frame Bracket	48
	5 Riveting and Installing Hinge Brackets	48
	6 Gear Lock	48
VI	ELECTRICAL SYSTEM, LIGHTS	50-53
	1 Wiring	50
	2 Lights	50
	3 Clearance Lamp	50
	4 Lights, Service Diagnosis and Remedy	53
VII	FRAME AND PLATFORM	54-56
	1 General	54
	2 Straightening Bent Frame Members	54
	3 Replacing Frame Members	54
	4 Repairing Section of a Member	54
	5 Spring Hangers	55
	6 Replacing Bolster Plates	55
	7 Rebushing Upper Bolster Plate	56
	8 Replacing Platform Flooring	56
VIII	SPRINGS	57-58
	1 Removing Spring	57
	2 Spring Repair	57
	3 Replacing Both Springs	58
	4 Radius Rods	58
	5 Replacement of Radius Rods	58
	6 Springs, Service Diagnosis and Remedy	58
IX	WHEELS, HUBS, AND BEARINGS	59-66
	1 Introduction	59
	2 Replacement of Worn or Broken Studs	59
	3 Tire Repairs	59
	4 Tire, Wheel, and Rim Service	61
	5 Care and Inspection of Tires and Tubes	61
	6 Tire Carrier	62
	7 Removing Hub Assembly, Front Axle	62

I N D E X—(Continued)

<i>Section</i>	<i>Paragraph</i>	<i>Page Nos.</i>
	8	Installing Hub Assembly, Front
	9	Removing Outer Wheel Assembly, Rear Axle
	10	Installing Outer Wheel Assembly, Rear Axle
	11	Removing Inner Wheel Assembly, Rear Axle
	12	Replacing Inner Wheel Assembly, Rear Axle
	13	Removing Bearing Cups
	14	Installing Bearing Cups
	15	Loose Cups
	16	Bearing and Cup Inspection

PART III—Spare Parts List

I	AXLE	67
II	BRAKES	69-86
	Hand Parking Brake	69-70
	Internal Brakes and Slack Adjuster (Front)	73-75
	Internal Brakes, Slack Adjuster and Underconstruc- tion (Rear)	77
	Operating Parts	79-81
	Relay Emergency Valve	82-83
	Brake Chamber	85
	Strainer	86
III	ELECTRICAL—EQUIPMENT	88-93
	Lights	88-89
	Wiring and Lights	91-93
IV	FRAME	94-104
	Gear	94-95
	Drawbar	97
	Main	99-103
	Miscellaneous	104
V	TIRE CARRIER	107
VI	UNDERCONSTRUCTION—Gear Frame	109
VII	WHEELS, HUBS AND DRUMS	111-113
	Wheels and Drums (Rear)	111
	Wheels, Hubs and Drums (Front)	113
VIII	NUMERICAL PARTS PRICE LIST	114-120

Index of Illustrations

Figure No.		Page Nos.
1	16-Ton, Low Bed, Platform Trailer	2
2	Air Filter—Assembled	9
3	Air Filter—Disassembled	9
4	Lubrication Chart	10
5	Tools and Tool Kit	12
6	Equipment	13
7	Checking Axle for Bend	16
8	Checking Axle for Camber	17
9	Replacing Axle	18
10	Removing Brake Assemblies	18
11	Rear Underconstruction	20
12	Removing Trunnion Bracket	21
13	Removing Trunnion Shaft	22
14	Removing Brake Shoe—Front	24
15	Cam—Front	25
16	Removing Brake Shoe—Rear	26
17	Removing Cam—Rear—Step 1	27
18	Removing Cam—Rear—Step 2	28
19	Slack Adjuster Assembly	29
20	Removing Brake Drum—Front	30
21	Installing Brake Drum—Rear	31
22	Hand Parking Brake	32
23	Front Cross Shaft and Adjustable Lever	33
24	Service Brake Cross Shaft	35
25	Service Brakes—Air Chamber	35
26	Brake Chamber—Disassembly	37
27	Brake Chamber—Push Rod Replacement	37
28	Relay—Emergency Valve	38
29	Relay—Emergency Valve—Removing Top Cover	40
30	Removing Diaphragm in Guide Ring	40
31	Relay—Emergency Valve—Replacing Intake Valve	40
32	Relay—Emergency Valve—Removing Cap, Spring and Diaphragm	40
33	Relay—Emergency Valve—Removing Diaphragm Cover Body	42
34	Relay—Emergency Valve—Removing Spring & Strainer	42
35	Relay—Emergency Valve—Removing Valve Stem & Diaphragm	42
36	Relay—Emergency Valve—Removing Valve Stem & Diaphragm	42
37	Service Brakes—Quick Release Valve	45
38	Rebushing Drawbar	47
39	Gear Lock Assembly	49
40	Wiring Diagram	51
41	Service Stop & Tail Light, Blackout Tail Light	52
42	Blackout Stop & Tail Light	52
43	Clearance Lights—Blackout and Amber Clearance Lights	53
44	Spring Removal	54
45	Trailer and Gear Disassembled	55
46	Removing Bolster Plate Cap Screws	55
46a	Cutaway View—Bolster	56
47	Radius Rod Assembly	57
48	Rear Tire Removal	60
49	Tire Carrier Removal	62
50	Removing Front and Rear Outer Wheel Assembly	63
51	Axle—Cutaway View	64
52	Removing Inner Wheel Assembly—Rear	65
53	Axle Assembly	67
54	Hand Parking Brake	68
55	Internal Brakes and Slack Adjuster—Front	72
56	Internal Brakes, Slack Adjuster and Underconstruction—Rear	76

List of Illustrations—(Continued)

Figure No.		Page Nos.
57	Brake Operating Parts	78
58	Relay—Emergency Valve	82
59	Brake Chamber	84
60	Strainer	86
61	Lights	88
62	Wiring and Lights	90
63	Frame—Gear	94
63a	Frame—Drawbar	96
64	Frame—Main	98
65	Tire Carrier	106
66	Underconstruction—Gear Frame	108
67	Wheels and Drums—Rear	110
68	Wheels, Hubs and Drums—Front	112

PART I

OPERATOR'S MANUAL

SECTION I**Introduction**

1. PURPOSE AND SCOPE.—These instructions are published for the information and guidance of the using arms charged with the operation, maintenance, and repair of this materiel. They contain descriptions of the major units and their function in relation to the other components of the trailer, as well as instructions for operation, inspection, and maintenance.

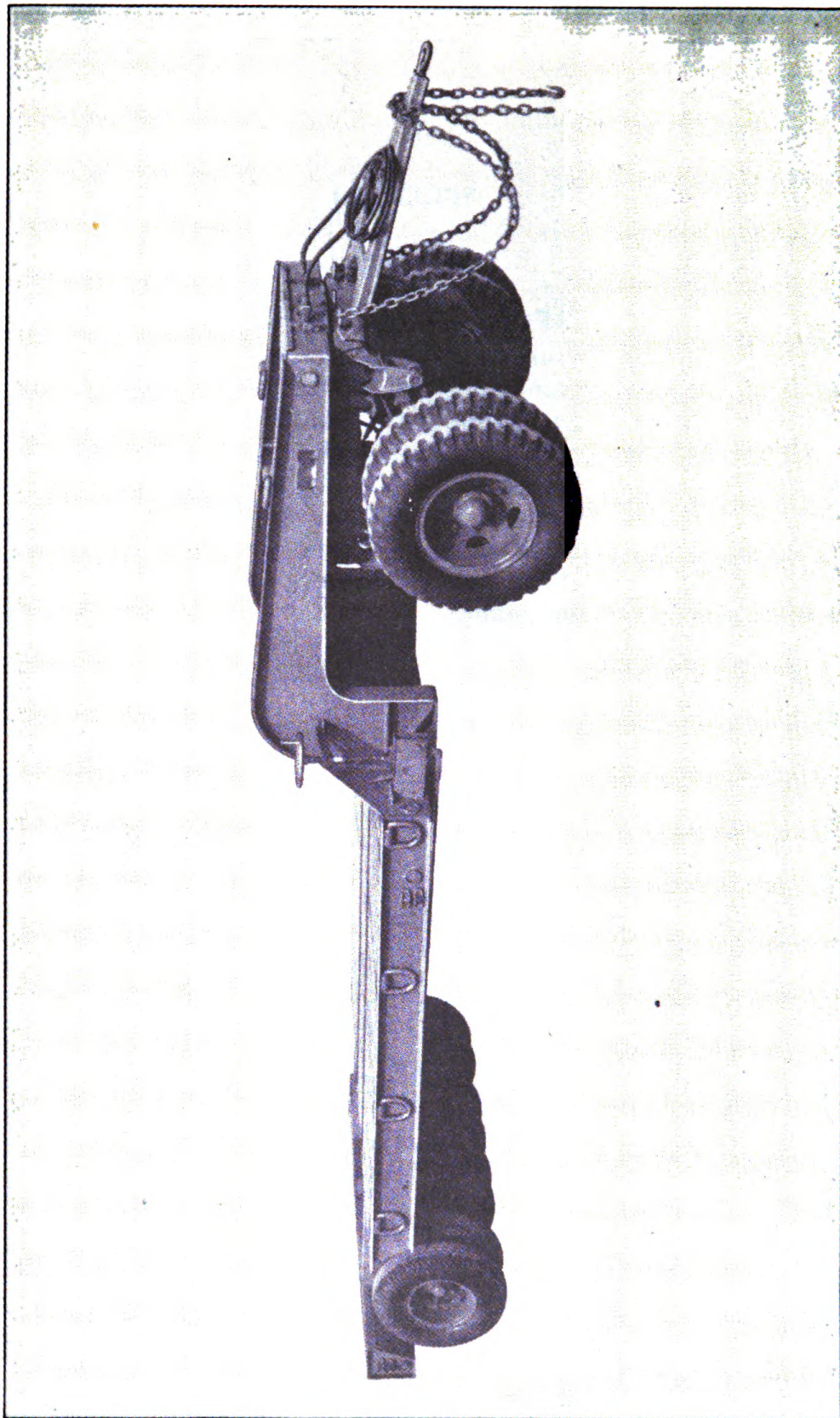


FIGURE 1. 16-TON, LOW BED, PLATFORM TRAILER

2

SECTION II

Description and Characteristics

1. GENERAL DESCRIPTION.—This 16-ton, low bed platform trailer is designed so that it may be pulled behind almost every type of heavy duty towing vehicle.

a. *Identification.*—(1) This vehicle is illustrated in Figure 1 and it is distinguished by the low drop-frame, and low bed type of platform. The frame is an all-welded unit of pressed and structural steel. A drop forged eye is riveted to a drawbar of pressed steel. Safety chains are attached to the front of the frame. The trailer is mounted on disc type dual wheels at the front and demountable type wheels at rear.

(2) *Designation.*—The trailer serial and model numbers are on a plate located at the front of the right, main frame side rail. This serial number is also stamped on the main frame side rail just below the serial plate.

b. *Mobility.*—This trailer is designed for travel on highways. Its ability to travel cross country depends upon the tractive ability of the towing unit.

c. *Body.*—(1) *Loading ramps.*—The trailer is equipped with two loading ramps.

2. AXLE—FRONT.—The front axle is of the one-piece I-beam type, cambered, drop forged, heat treated, chrome molybdenum steel. It is made of S.A.E. 4140 steel with a 3" x 4 $\frac{1}{4}$ " I-beam section. The spindle diameter is 2 $\frac{7}{8}$ " ground to accurate limits. The axle and wheels are equipped with heavy duty tapered roller bearings. Simple adjustments of the bearings are made through large castellated nuts and a hardened D-washer.

3. BRAKES—FRONT.—The brakes are of a double anchor, two shoe, heavy duty internal expanding type. They have a 16" diameter and a 5" width. The brake lining is $\frac{3}{4}$ " thick with a braking area of 420 square inches. The brake shoes are provided with eccentric adjustment in addition to slack adjuster on the cam shaft. This slack adjuster provides for 360° adjustment on the cam shaft. The cam shaft bearings are of the self-aligning ball bearing type. Actuation of the brakes is by air chambers mounted on the axle. The braking system includes an air tank reservoir for full emergency feature; hand parking brake taken off the cam shaft through the slack adjuster is also provided. Trailer hose connections are provided at the front with dummy couplings fastened to the trailer with chains.

4. AXLES—REAR.—Rear axles are of the oscillating type, trunnion mounted. They are of S.A.E. 4140 steel and are equipped with heavy

duty tapered roller bearings. Simple adjustments of the bearings are made through large, castellated nuts and hardened D-washer.

5. **BRAKES—REAR.**—The brakes are of a double anchor, two shoe, heavy duty internal expanding type. They have a $12\frac{5}{8}$ " diameter and a $4\frac{1}{2}$ " width. The braking area is of 57 square inches per shoe. The brake shoes are provided with eccentric adjustments in addition to slack adjusters on the cam shaft. This slack adjuster provides for 360° adjustment on the cam. Brakes are actuated by air chambers mounted to main frame member.

6. **DRAWBAR.**—The drawbar is constructed of pressed steel, a drop forged eye is riveted to it. The drawbar is hinged at the front of the gear frame by means of hinge brackets secured with rivets.

7. **ELECTRICAL SYSTEM.**—The wiring system is the 6-8 volt type. The fuse box is located at the drop in the frame on the road side. Fuses are $1\frac{1}{2}$ amperes capacity. The lighting equipment includes four commercial clearance lights, four clearance blackout lights, one combination blackout stop and tail light at the right hand rear and one combination service stop and tail light and blackout tail light; located at the left hand rear of the trailer. The blackout switch is located on the side rail, curb side, at the front. A jumper cable supplies current to the trailer through a socket on the front side of the front frame member.

8. **SPRINGS.**—The trailer is equipped with two springs at the front. They are constructed of silico-manganese steel. The springs are 47" long and 3" wide. All leaves are nested and cupped in the center to protect a nickel steel center bolt. The springs are held in alignment to each other by six clips riveted to the leaves. The springs are secured to the axle by heat treated U-bolts. The main springs are of the shackless or progressive design, with helper spring attached to main spring by spring center bolt.

9. **TIRE CARRIER.**—The tire carrier is of a cable type. The tire is pulled up to the frame, where it is fixed into position by means of stud and stud nuts. By placing socket end of the rear wheel wrench through hole at underside of crossmember, the tire is raised up to tire carrier. A ratchet catch holds the tire while the stud nuts are being fastened to the studs.

10. **FRONT WHEELS AND TIRES.**—The wheels are of 20" x 8" demountable, ventilated steel disc type. There are ten mounting studs, $11\frac{1}{4}$ " bolt circle, and a $6\frac{1}{8}$ " dish. Tires are 9.00-20, 10-ply dual pneumatics, mud and snow type grip.

11. **REAR WHEELS AND TIRES.**—The wheels are of six stud, spoke type. Tires are of 8.25 x 15, 12-ply conventional tread, mounted on 15 x 7 rims.

SECTION III

Operating Instructions and Controls

1. **CONTROLS.**—The controls are employed according to the usual trailer-truck combination practice. The driver must become thoroughly familiar with the location and use of all control devices before attempting to operate the vehicles.

a. Hand brake.—The hand brake is located on the right side of the trailer at the drop in the frame. Turning the wheel down, in a clockwise direction, applies the brakes. The hand brake can be used as a parking brake or as a supplement to the truck brakes, when descending extremely steep grades with a heavy load.

b. Light connection.—This vehicle is equipped with a light socket at the front crossmember of the main frame.

c. Blackout switch.—The blackout switch is located on the left side of trailer, just ahead of drop in main frame. There is no “off” position on the switch. It is either at a blackout position or at a standard light position. The switch is operated by means of a coin or screwdriver. The flow of current is controlled at the towing vehicle.

d. Tire carrier.—(1)—Tire carrier is located between first and second crossmember at drop in frame. By removing the two lug nuts and lugs with rear wheel wrench, and pulling down on release handle, tire will fall to ground.

(2) To install tire, place it under tire carrier with lock ring of rim up. Place lifting saddle in rim so both ends of saddle will catch bead on rim. Now with the rear tire wrench, turn ratchet until stop is reached. Place lugs on studs and tighten down using stud nuts. (Fig. 49)

2. **COUPLING TRAILER TO TRUCK.**—*a.* When pulling the trailer behind a truck or another semi-trailer, the draw eye at the end of the drawbar is placed in a pintle hook and locked by means of a pin provided for that purpose.

b. Safety chains.—Attach the hook end of the trailer safety chains to the two eyes provided on the rear end of the towing vehicle.

c. Jumper cable.—Connect the jumper cable between the trailer and towing vehicle.

d. Air hoses.—Connect the air hoses to the trailer. Care should be taken to be sure that the service air hose connection is hooked up with the service trailer air line and the emergency air hose with the emergency trailer air line. Both hoses and trailer connections are tagged.

e. Open air valves on towing vehicle.—Release the parking brake on the trailer.

3. **DRIVING TRUCK AND TRAILER.**—*a. General instructions.*—

The truck and trailer combination is driven in much the same manner as the straight truck. The following hints, however, should prove helpful:

(1) It is good driving practice to test the operation of the trailer brakes before stepping up to full operating speed. Check the air supply on the dash gauge. It should not be less than 60 lbs. for proper application.

(2) The operation of the lights should also be tested.

(3) When turning corners, care should be taken to allow for the fact that the trailer rear wheels turn "inside" the turning radius of the truck.

(4) When backing, the truck should be steered in the opposite direction to which it is desired that the trailer be turned. Secure gear to trailer with gear lock. This will make gear back in straight line with the trailer.

4. BRAKING TRUCK AND TRAILER.—a. General instructions.
—The trailer brakes should be applied in coordination with the truck brakes. The trailer brakes should not be expected to carry the entire braking load. Such abuse will result in rapid lining wear and greatly reduce the life of the trailer brakes. The following braking procedure is recommended:

(1) Trailer brakes should be applied easily and released when they grab, as a grabbing brake is not operating with maximum efficiency. For maximum braking efficiency, keep tires just short of the skidding point.

(2) When parking the trailer for an extended period, set the hand brake.

5. UNCOUPLING TRAILER FROM TRUCK.—a. Set the hand or parking brake on trailer.

b. Disconnect safety chains, and place the chains at front of side rail of the main frame of trailer.

c. Disconnect jumper cable.

d. Shut off both air valves on the tractor truck.

e. Uncouple the two air lines at the front of the trailer. Use care not to permit hose coupling to drag in the dirt.

f. Couple the dummy hose couplers to emergency and service lines on trailer. Dummy couplers should be connected at all times when the trailer is not in use to prevent the entrance of foreign matter into the braking system.

g. Disconnect the drawbar eye from the pintle hook on the tractor.

h. Pull the towing vehicle ahead until the two units are separated.

SECTION IV

*Inspection—Lubrication—Adjustment*1. DAILY INSPECTIONS, WHEN IN OPERATION.—*a. Purpose.*

—(1) To insure mechanical efficiency, it is necessary that vehicles be systematically inspected at intervals in order that defects may be discovered and corrected before they result in serious damage.

(2) Cracks that develop in castings or other metal parts may often be detected upon the completion of a run, through the medium of dust and oil deposits.

(3) Suggestions toward changes in design prompted by chronic failure or malfunction of a unit or group of units; pertinent changes in inspection or maintenance methods; and changes involving safety, efficiency, economy and comfort should be forwarded through technical channels at the time they develop. Such action is encouraged in order that other organizations may profit thereby.

b. Prestarting inspection.—(1) Check brakes.

(2) Inspect tires for inflation and casing injuries.

(3) Check lights.

(4) Check tools and equipment.

(5) Check to see that draw eye on trailer is properly hooked and locked.

(6) Check pintle hook on towing vehicle.

(7) Check safety chains.

c. Inspection during operation.—(1) During operation, the driver should be alert to detect unusual sounds, noises or driving characteristics which indicate abnormal functioning of the unit.

(2) Only under exceptional circumstances should a trailer be operated after indications of trouble have been observed. When in doubt, the vehicle should be stopped and assistance obtained. Inspection during operation applies to the entire vehicle and should be made so that unnecessary delay may be avoided and major failure prevented.

d. Inspection after operation.—At the conclusion of the day's operation, an inspection should be made similar to that made at halts, but more thorough and detailed. The inspection should be followed by preventive maintenance. If defects cannot be corrected, they should be reported promptly to the Chief of Section or other designated individual. The following points should be covered:

(1) Check springs and spring hangers.

(2) Check axle and axle U-bolts.

(3) Check wheel studs, tighten loose stud nuts.

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- (4) Inspect frame for cracked welds.
- (5) Check spare wheel and tire; secure replacement if necessary.
- (6) Drain moisture from the reserve air tank, by means of the petcock at the bottom of the tank.

2. MONTHLY LUBRICATIONS.—*a. Lubrication.* (See lubrication chart for the type of lubricant, when to lubricate, and the method to follow in lubricating the assemblies and sub-assemblies listed below.)

- (1) Fifth wheel circle plate.
- (2) Fifth wheel bolster plate.
- (3) Drawbar hinge.
- (4) Underconstruction, includes lubrication of:
 - Trunnion shaft
 - Brake shoe cam
 - Brake anchor pin bushings
 - Cam shaft bracket
 - Slack adjuster
 - Anchor plate bearings
- (5) Wheel bearings.
- (6) Parking brake, includes lubrication of:
 - Cross shaft journal
 - Parking brake hand screw
 - Parking brake rod clevis pins

3. MECHANICAL INSPECTION AND ADJUSTMENT.—*a. Bolster plate.* Examine for sheared bolts. Replace.

b. Drawbar hinge.—Wobbly drawbar—Check for excess play. Re-bush.

c. Lights.—Check all lights and wiring for operation.

d. Underconstruction.—(1) *Axle:* Check alignment.

(2) *Springs and shackles:* Check for broken spring leaves, worn shackle bolts or bushings. Replace springs, replace shackle bolts or bushings.

(3) *Brakes:* Check linkage and operation. Tighten loose hose line connections. Check front end couplings. Adjust brake for equalization at slack adjusters if required.

Drain the moisture from the air filter about every 2000 miles. (Fig. 3).

Remove the air cleaner every 10,000 miles and wash in cleaning fluid. (Fig. 2).

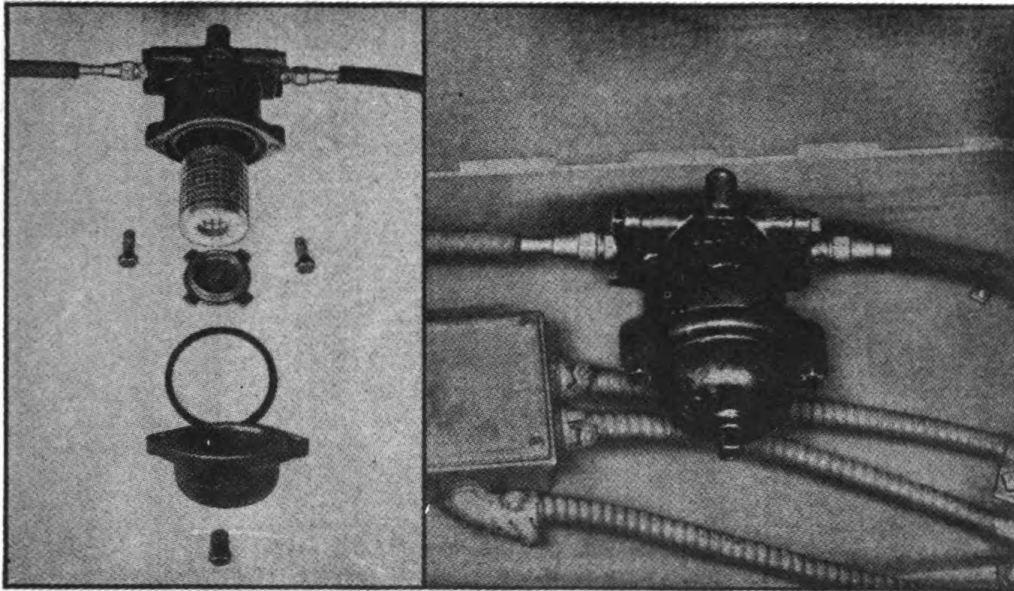


FIGURE 3. AIR FILTER—
DISASSEMBLED

FIGURE 2. AIR FILTER—
ASSEMBLED

(4) *Radius rods*: Check for worn rubbers. Check adjustable radius rod and tighten pinch bolts.

e. Wheels.—Tighten wheel nuts. Check bearing adjustment by removing hub cap. Adjust if necessary.

4. EVERY FOUR MONTHS.—or every 5,000 miles (oftener under hard service conditions).

a. Wheels and bearings.—Remove, wash and repack and adjust bearings.

b. Brakes.—Check lining and drums; adjust brakes for equalization. Lubricate brake cams and rollers with lubriplate.

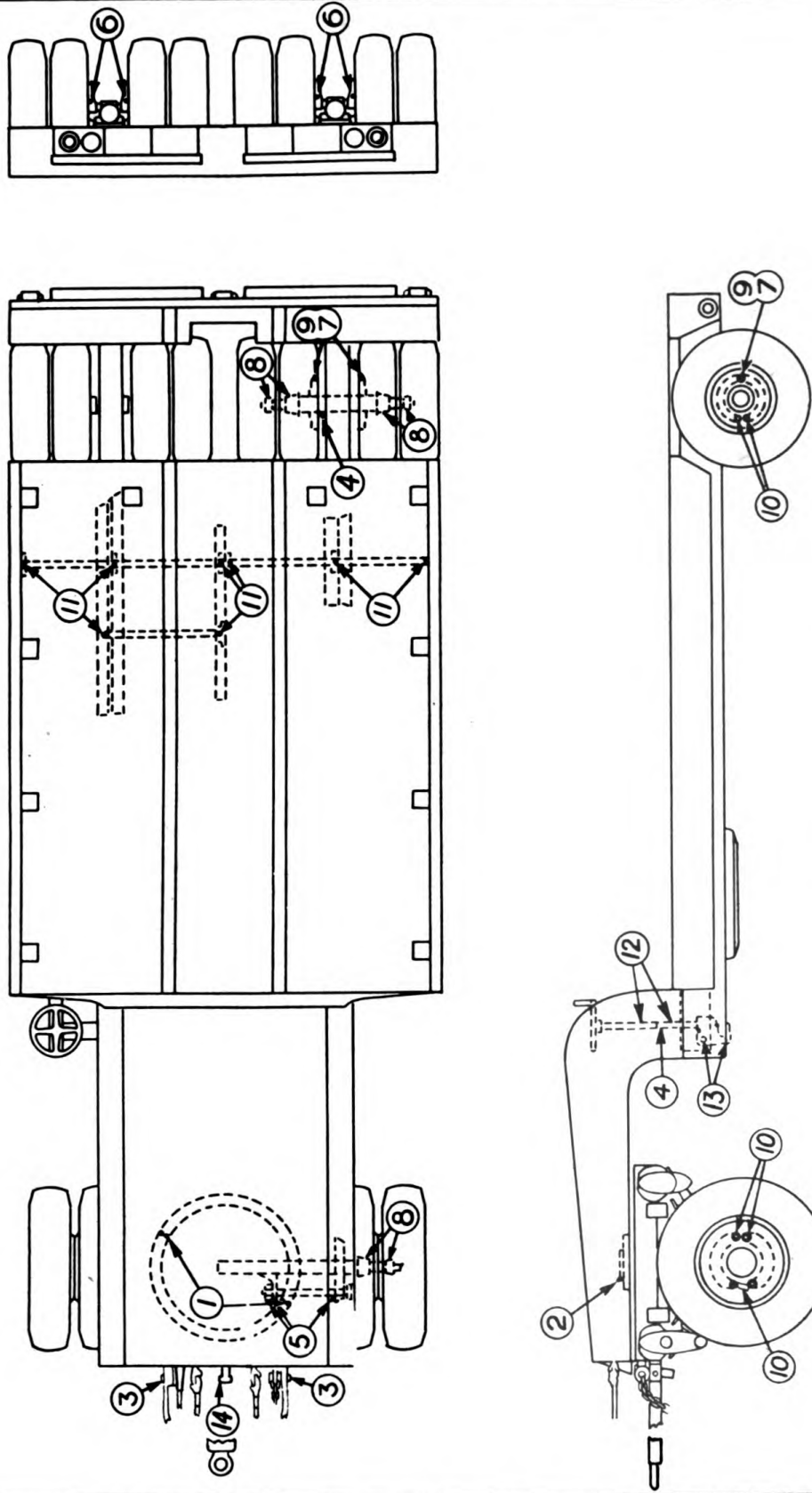


FIGURE 4. LUBRICATION CHART

<i>Location</i>	<i>Type of Lubricant (Engineer Corps U. S. A.)</i>	<i>Method of Application</i>	<i>When to Lubricate</i>
1. FIFTH WHEEL CIRCLE PLATE	C. G. No. 1 above 32° F. C. G. No. 2 below 32° F.	Hand or Power Grease Gun	Every 2,000 Miles
2. FIFTH WHEEL BOLSTER PLATE	C. G. No. 1 above 32° F. C. G. No. 2 below 32° F.	Hand or Power Grease Gun	Every 2,000 Miles
3. DRAWBAR HINGE	C. G. No. 1 above 32° F. C. G. No. 2 below 32° F.	Hand or Power Grease Gun	Every 2,000 Miles
4. TRUNNION SHAFT	C. G. No. 1 above 32° F. C. G. No. 2 below 32° F.	Hand or Power Grease Gun	Every 2,000 Miles
5. CAM SHAFT BRACKET	C. G. No. 1 above 32° F. C. G. No. 2 below 32° F.	Hand or Power Grease Gun	Every 2,000 Miles
6. SLACK ADJUSTER	C. G. No. 1 above 32° F. C. G. No. 2 below 32° F.	Hand or Power Grease Gun	Every 2,000 Miles
7. ANCHOR PLATE BEARINGS	C. G. No. 1 above 32° F. C. G. No. 2 below 32° F.	Hand or Power Grease Gun	Every 2,000 Miles
8. WHEEL BEARINGS	W. B. No. 2	Hand Paddle	Every 2,000 Miles
9. BRAKE SHOE CAM	C. G. No. 1 above 32° F.	Brush or Hand Paddle	Every 5,000 Miles
10. BRAKE ANCHOR PIN BUSHINGS	O. E. Crankcase grade	Oil Can	Every 2,000 Miles
11. CROSS SHAFT JOURNAL	C. G. No. 1 above 32° F. C. G. No. 2 below 32° F.	Hand or Power Grease Gun	Every 6 months
12. PARKING BRAKE HAND SCREW	O. E. Crankcase grade	Brush or Hand Paddle	Every 2,000 Miles
13. PARKING BRAKE ROD CLEVIS PINS	O. E. Crankcase grade	Oil Can	Every 6 months
14. GEAR LOCK ASSEMBLY	C. G. No. 1 above 32° F. C. G. No. 2 below 32° F.	Hand or Power Grease Gun	Every 2,000 Miles

SECTION V

Tools and Equipment

1. INTRODUCTION.—Because the trailer has very few wearing parts, the tools have been kept to a minimum. Moreover, the trailer is operated with trucks carrying tools suitable for general care, maintenance and preservation. Accessories should not be used for purposes other than as prescribed and when not in use should be stored in the places or receptacles provided.

2. TOOLS.—Tools issued with the vehicle are illustrated in Figure 5.

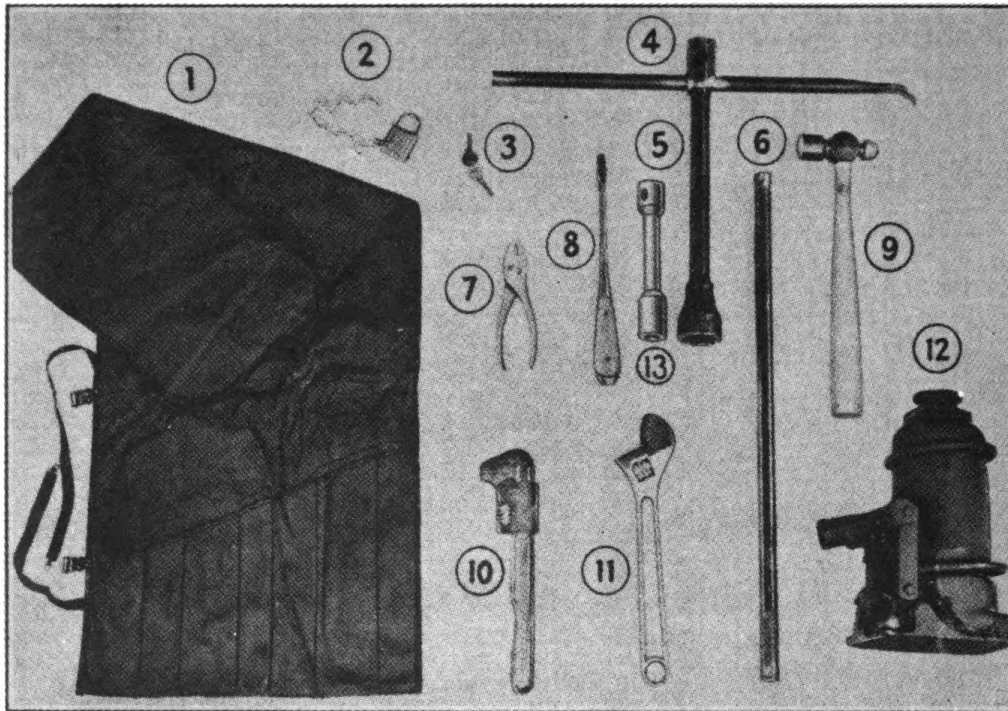


FIGURE 5. TOOLS AND TOOL KIT

a. *Kit.*—Included in the tool kit assembly are the following:

	<i>Quantity</i>	<i>Remarks</i>
(1) Kit, olive drab roll	1	
(2) Lock for tool box	1	
(3) Keys for lock	3	
(4) Wrench handle, wheel nut	1	
(5) Wrench, wheel nut front	1	
(6) Handle, hydraulic jack	1	
(7) Pliers, combination	1	6"
(8) Screwdriver	1	5/16" x 6"
(9) Hammer, ball peen	1	1 lb.
(10) Wrench, monkey	1	
(11) Wrench, adjustable	1	3/4" box end
(12) Jack, hydraulic	1	
(13) Wrench, wheel nut rear	1	

3. **EQUIPMENT:**—The equipment issued with this vehicle is illustrated in Figure 6 and contains the items listed below:

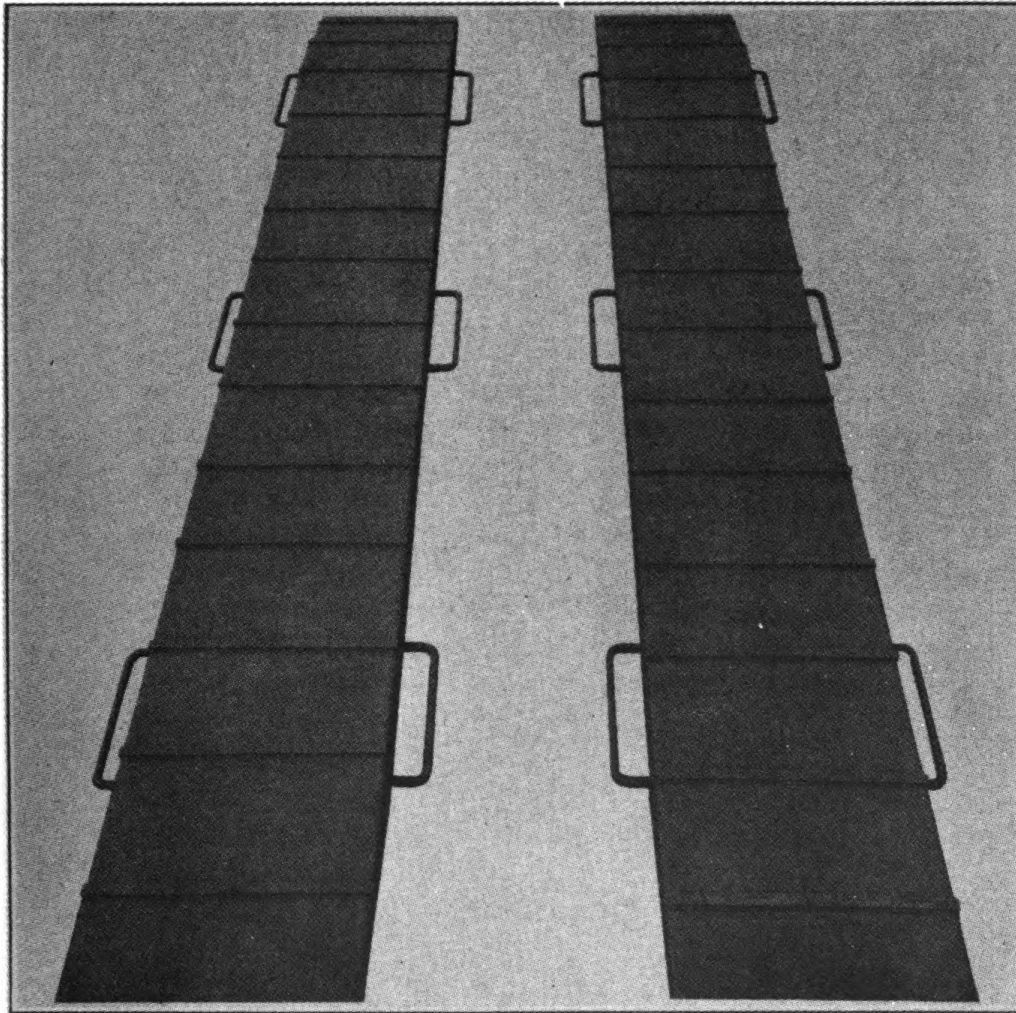


FIGURE 6. EQUIPMENT

<i>Item</i>	<i>Quantity</i>	<i>Remarks</i>
(1) Loading ramps	1 pair	8-ton each
(2) Spare tire—8.25x15	1 each	(Not Illus.)
(3) Spare tube—8.25x15	1 each	(Not Illus.)
(4) Spare rim—15x7	1 each	(Not Illus.)

PART II

MAINTENANCE MANUAL

SECTION 1

Safety Instructions

1. SAFETY INSTRUCTIONS.—*a.* Because the trailer is a relatively unstable unit, greater than ordinary precaution must be followed if accidents are to be avoided. Therefore, before working on the wheel assembly, springs and axles of this unit, it is strongly recommended that the following procedure be followed at all times.

b. In changing the axle on the front gear, put the jacks on solid wood or other material that will make a sound footing. Use four jacks, one on each corner; do not attempt to crawl under the job when jacked up unless blocking is placed under the frame to catch it in case it should drop. Follow the same procedure in changing the rear axle, but it is only necessary to use two jacks.

c. When raising the front end of the unit, NEVER connect the chains to the main unit frame. Rather, connect them around the gear frame and lift the two units together.

(1) However, when attempting to separate the main frame from the gear, an exception will be made—the chains should then be fastened to the lashing rings on the front of the main frame.

SECTION II

Axle, Front

1. **AXLE ALIGNMENT.**—*a.* Disconnect the drawbar from pintle hook and place a wood horse under drawbar about 24" from end of eye.

b. Remove both hub assemblies. (See section on wheels, hubs and bearings.)

c. Place a center punch mark in the center of drawbar, 1" back from the eye.

d. Using a steel tape, measure the distance from center punch mark on drawbar eye to outer end of axle spindle on both sides. The measurement should be identical.

e. If an adjustment is required, use the adjustable radius rod. Loosen the two pinch bolts on the rod and turn the hex adjusting nut to move the spindle on that side forward or backward as required.

f. Once the required adjustment has been secured, tighten down the pinch bolts on the adjustable radius rod to fix the axle in position.

2. **DISASSEMBLY TO CHECK AXLE CAMBER OR BENT AXLE.**—*a.* Couple hoist to gear frame, raise front of trailer, and remove wheel assemblies. (See section on wheels, hubs and bearings.)

b. Place a wood horse under axle as a safety device. Do not use a jack under axle because it would interfere when checking for camber.

NOTE: It is not necessary to remove axle to check for bend or camber.

3. **CHECKING FOR BEND (Fig. 7)**—*a.* Place the axle gauge in position on the front side of the axle.

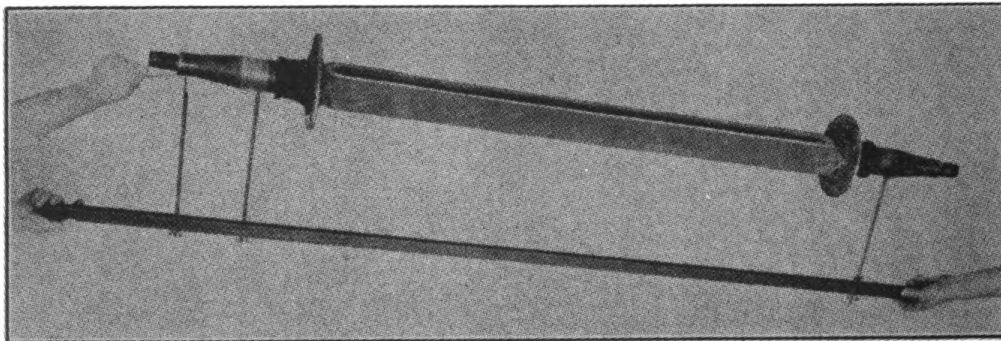


FIGURE 7 CHECKING AXLE FOR BEND

b. With the single pronged end of the gauge held firmly against the inner bearing surface, adjust the double prongs on the other end of the gauge until they contact the inner and outer bearing surface.

c. Now move the gauge over to the rear side of the axle. If either

of the two prongs fails to make contact, a bent spindle is indicated. Use a feeler gauge to determine the amount of the bend. If it is in excess of .002 replace the axle.

d. If checking both sides of one spindle reveals no bend in the axle, turn the gauge end for end and check the other spindle without disturbing the setting of the prongs.

e. If there is clearance at either bearing surface, check with a feeler gauge. If the prongs are in contact at both points, the axle is not bent.

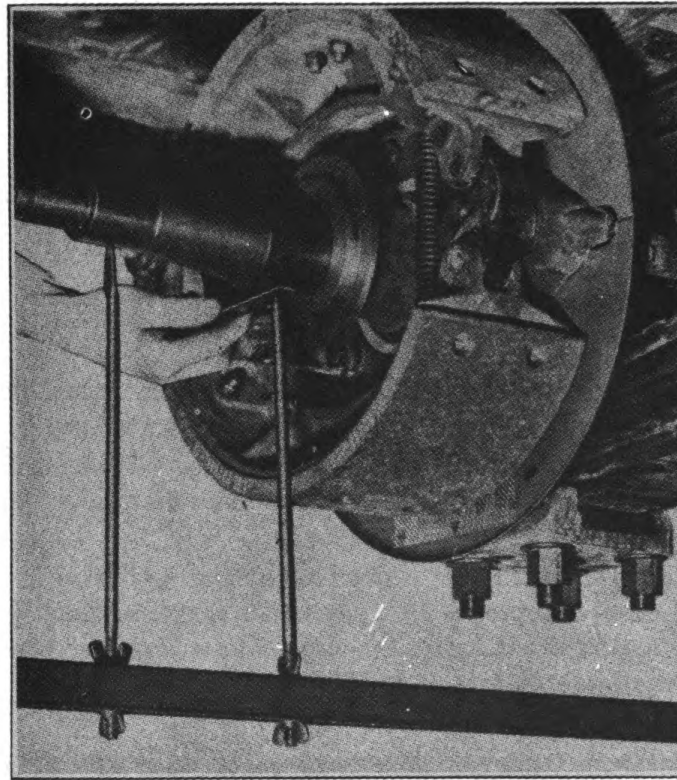


FIGURE 8. CHECKING AXLE FOR CAMBER

4. CHECKING FOR CAMBER (Fig. 8).—*a.* Set the points of the axle gauge in exactly the same position on the axle and in the same manner as outlined in points *a* and *b* of Checking for Bend.

b. Place the gauge directly under the axle.

c. Clearance will exist between the inner prong and the bearing surface. Clearance should not exceed .080 or be less than .060. If camber is not within the proper limits, replace the axle.

5. AXLE REPLACEMENT (Fig. 9).—*a.* Hoist up the trailer at the front of the gear frame and remove wheel and hub assemblies.

b. Place a mobile jack at center of axle or a wood horse as a safety device and as a means to move axle out.

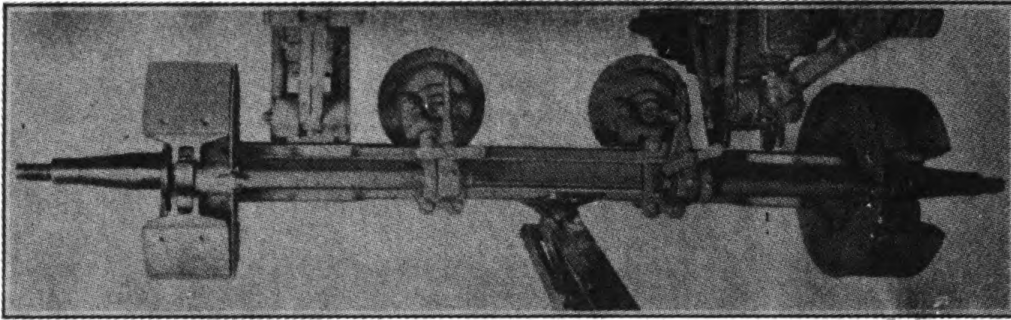


FIGURE 9. REPLACING AXLE

c. Remove the spring U-bolt nuts. Remove the spring spacer block.

d. Disconnect the air hoses leading from emergency relay valve to quick release valve which is mounted on axle.

e. Drive U-bolts up, using a copper hammer.

f. Hoist gear frame up a few inches. Slide or pull the axle out, using the mobile jack or wood horse.

g. Strip the axle of all brake operating parts by removing the bolts holding the brake chambers and cam brackets to the axle.

h. Remove the bracket holding quick release valve to axle. Remove the two copper lines which run between chamber and quick release valve.

i. Mark an "L" on the left hand brake assembly and an "R" on the right hand assembly for identification when reassembling. Remove the brake assemblies by taking out the eight bolts holding brake adapter mounting plate to axle flange on both sides (Fig. 10). Lift the complete assembly off axle.

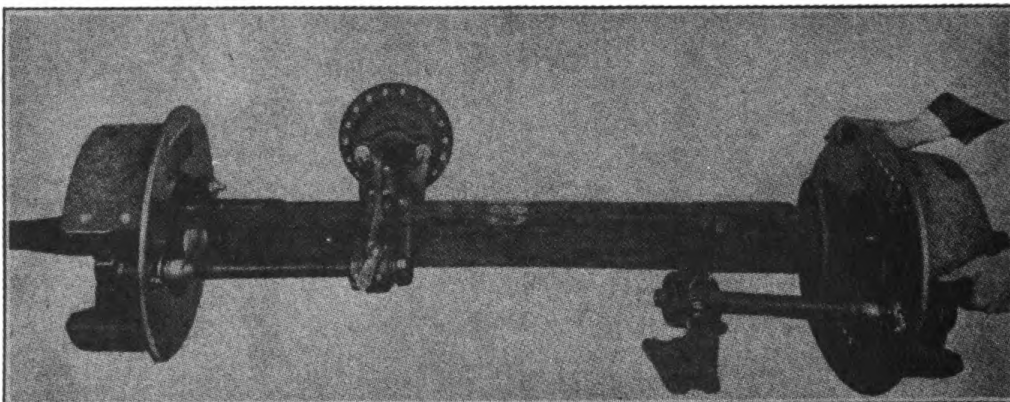


FIGURE 10. REMOVING BRAKE ASSEMBLIES

j. When installing a new axle make sure the 1/2" dowel pins are in the axle dowel pin holes, and then reverse the above procedure.

k. CAUTION: MATCH THE DOWEL PINS IN BOTH THE RIGHT AND LEFT SIDES OF AXLE.

6. DRILLING DOWEL PIN HOLES IN REPLACEMENT AXLES.

—*a.* Place axle on two wood horses and follow layout procedure in the reference figure.

7. AXLE—Service Diagnosis and Remedy.

<i>SYMPTOM AND PROBABLE CAUSE</i>	<i>PROBABLE REMEDY</i>
<i>a. Hard pulling—"Wandering."</i>	
(1) Out of line.	(1) Re-align axle by means of adjustable radius rod.
(2) Bent axle.	(2) Replace.
(3) Out of camber.	(3) Replace.
<i>b. Inside tire wear.</i>	
(1) Out of camber.	(1) Replace.
<i>c. Scuffed Tires (Both Sides)</i>	
(1) Out of line.	(1) Re-align axle.
(2) Bent axle.	(2) Replace.
<i>d. Scuffed Tires (One Side)</i>	
(1) Bent axle.	(1) Replace.
(2) Loose wheel.	(2) Tighten wheels and adjust bearings.

SECTION III

Axles, Rear

1. **DISASSEMBLY.**—a. Place jack under rear crossmember. Remove the tires and wheel assemblies. (For wheel removal see *Wheels, Hubs and Bearing* section.)

(1) Disconnect the two brake rods at the slack adjuster (Fig. 11).

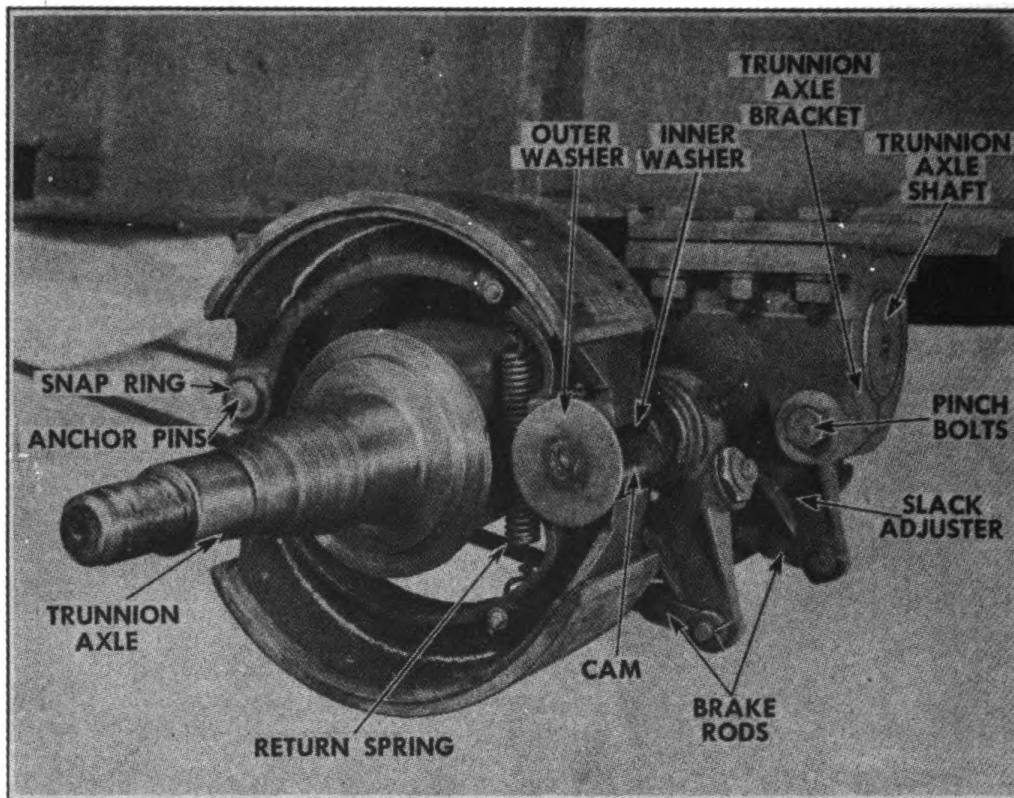


FIGURE 11. REAR UNDERCONSTRUCTION

b. Place a jack under center of axle. Remove the twelve bolts holding trunnion axle bracket to main frame members. Lower jack under axle about one quarter of an inch. With two men holding firmly to each axle spindle, have the third man pull jack out from under axle. Now lower assembly to floor.

c. Remove the pinch bolts from both trunnion axle brackets. Drive a chisel into slot to release bind of trunnion axle bracket against trunnion shaft, and slide or tap bracket off (Fig. 12).

d. Pull the trunnion axle shaft out of trunnion axle as illustrated in Figure 13. Remove the trunnion bracket as instructed in subparagraph c.

e. Remove the slack adjuster, brake shoes, cams, and anchor pins (see Brake section) from trunnion axle.

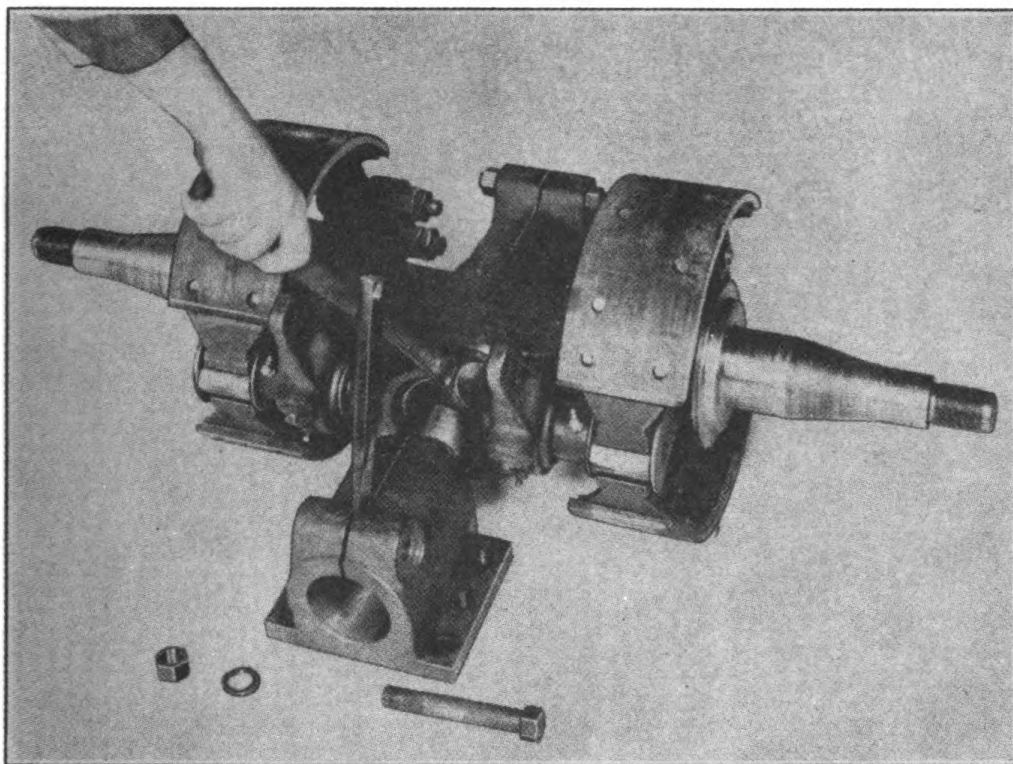


FIGURE 12. REMOVING TRUNNION BRACKET

2. REASSEMBLY.—*a.* Reverse disassembly procedure. Before sliding trunnion shaft into trunnion axle, place a light film of grease around the surface of trunnion axle bushing.

NOTE: Do not tighten pinch bolts in trunnion shaft mounting brackets until brackets have been bolted to frame. This method will aid in aligning holes in frame with holes in mounting brackets.

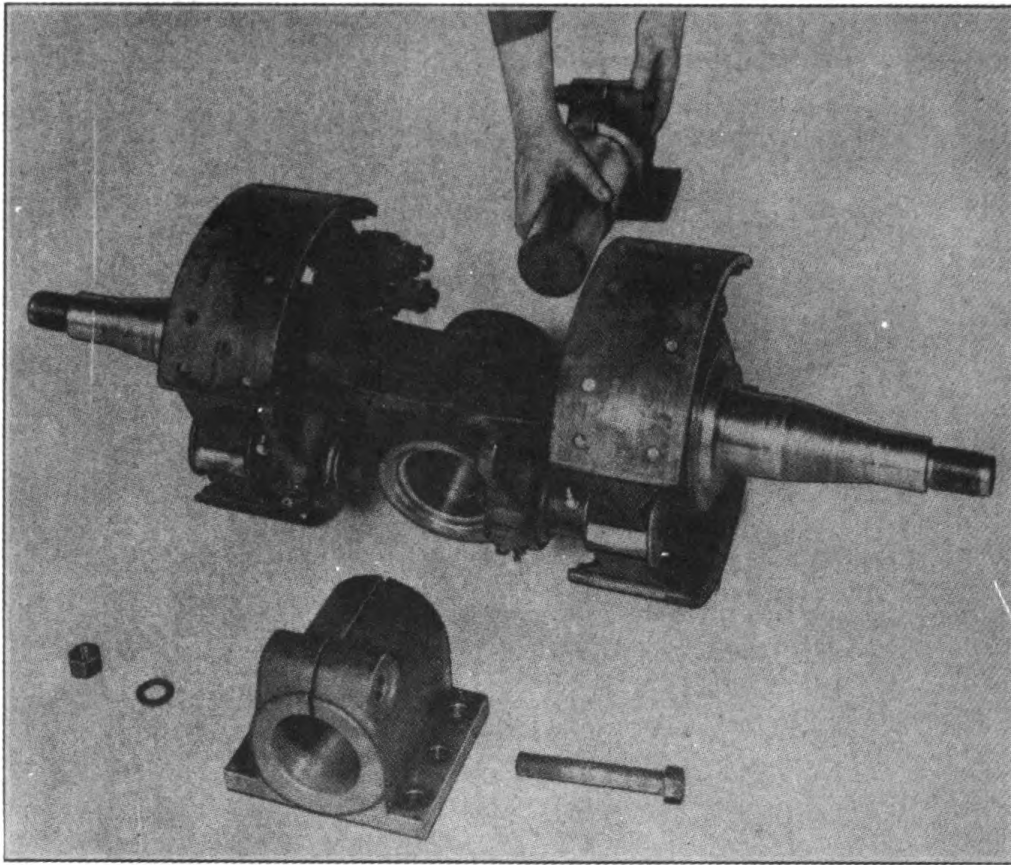


FIGURE 13. REMOVING TRUNNION SHAFT

SECTION IV

Brakes

1. **MINOR BRAKE ADJUSTMENT.**—*a.* The adjustment of front and rear brakes are identical.

b. Jack up wheels. Turn slack adjuster wing wrench or adjusting nut at each wheel clockwise, until the wheel cannot be turned.

c. Back the adjusting wing wrench off two notches or more so that no drag is felt on the brake drum.

2. **BRAKE RELINING, FRONT.**—*a.* Visual inspection of front brake shoes and linings can be made without removing wheels from the axle. Simply remove the two dust shields, which are bolted to brake adapter with six $\frac{1}{4}$ " cap screws. This exposes the assembly to check for lining thickness and grease on the lining.

b. It is essential that upper and lower brake blocks be replaced when relining.

c. If inspection reveals the necessity for new lining proceed as follows:

(1) Remove wheel, hub and drum as an assembly. (See instructions for removing hub assembly in Wheels, Hubs and Bearings Section.)

(2) Remove shoes. (See instructions for removing front shoes in this section.)

(3) Place shoe across an open vice. Using a $\frac{3}{16}$ " long tapered punch, drive out the rivets holding lining to shoe. Drive out from peened side of rivets.

(4) Wash shoes in cleaning fluid and clean the surface of shoes, using a wire brush or wire buffing wheel.

(5) Install lining on shoes, making sure that lining is properly placed so holes in lining will line up with holes in shoes. Clamp lining and shoe together at each end using a C-clamp. Clamps will assure lining fitting contour of shoes, and result in a tight fit.

(6) Install five rivets, remove clamps and install remaining rivets.

NOTE: If a brake relining machine is not available, place a $\frac{7}{16}$ " bolt firmly in vice with threads up. Place rivet in hole using bolt as a bucking tool and peen rivets using a small ball peen hammer.

3. **BRAKE RELINING, REAR.**—*a.* Remove the wheel and tire assembly. (See instructions for rear wheel removal in Wheels, Hubs and Bearings Section.)

b. Remove the brake shoes. (See rear brake shoe removal in this section.)

c. Follow the same procedure outlined in Brake Relining, Front.

4. BRAKE SHOES, FRONT.—*a. Removal* (Fig. 14).—(1) Remove

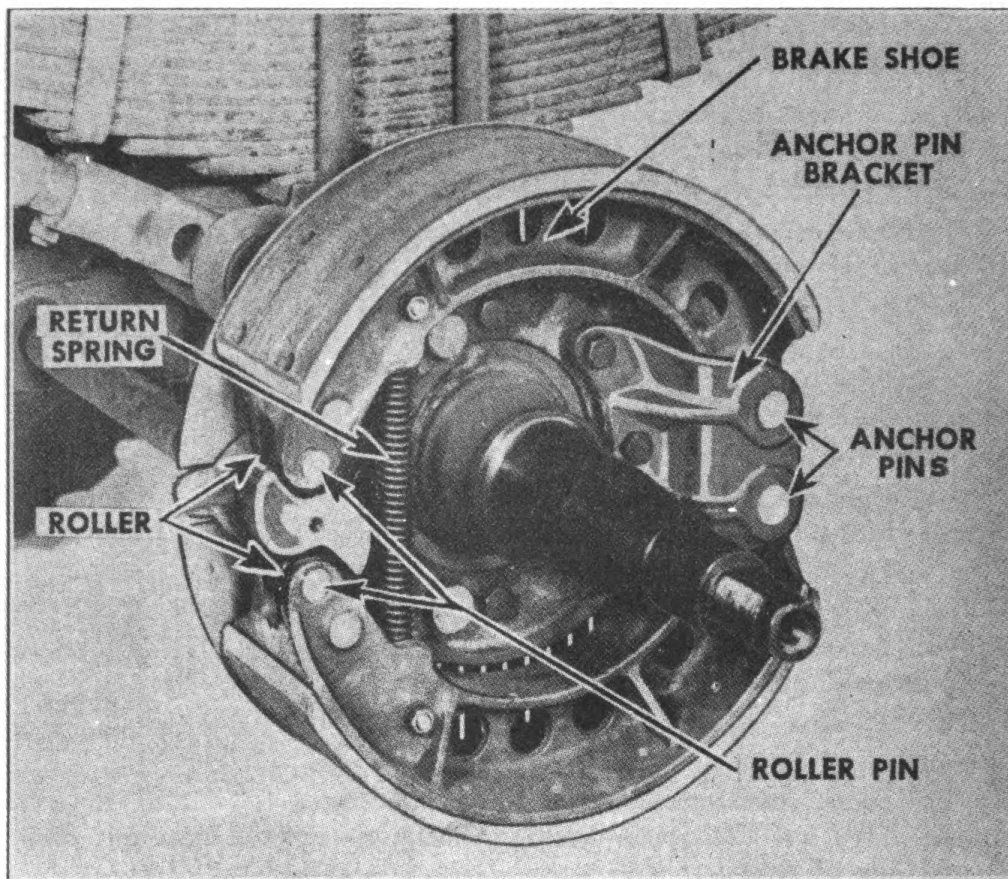


FIGURE 14. REMOVING BRAKE SHOE—FRONT

the three bolts holding the anchor pin bracket to the brake mounting plate.

(2) Tap the anchor pin bracket free of the anchor pins and pull both shoes free of the assembly.

(3) Remove the brake shoe return spring by removing the bolt holding it to each shoe.

(4) To install, reverse the procedure outlined above after cleaning the S-cam and anchor pins; spreading a thin coat of grease over both.

b. Rebushing brake shoes.—Each shoe has two Oilite bushings at the anchor pin end. To replace worn bushings:

(1) Drive out the old bushing.

(2) Press or drive in new. Drive new bushings in with care as a mushroomed or burred bushing will retard free movement of brake shoes, both in application and release. These bushings come reamed to proper dimensions.

c. *Replacing brake shoe rollers.*—The brake shoe roller on each shoe is held in place by a shaft fastened by three heavy prick punch marks on each side. Roller shafts may be driven out and rollers replaced without removing the shoes from the assembly.

5. CAMS, FRONT (Fig. 15).—a. *Replacing cam.*—Cams come in

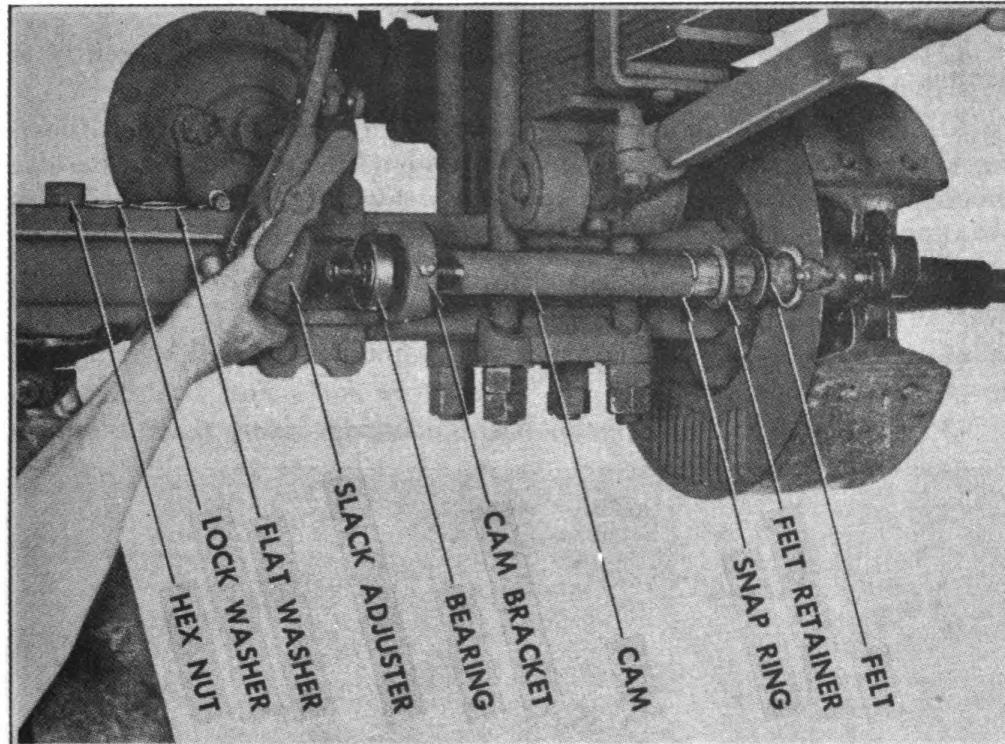


FIGURE 15. CAM—FRONT

rights and lefts. When replacing them, care should be taken to place the proper cam on the proper side. Cams are stamped on inner end with a number, even number is right, odd number is left.

- (1) Remove wheel and hub assembly.
- (2) Remove nut and lock washer at the slack adjuster end of the cam.
- (3) Remove brake rods from slack adjuster arm and tap slack adjuster off cam spline.
- (4) Pry the snap ring free and drive out the cam.
- (5) To replace cam, pack needle bearings with a medium light chassis grease, working grease into bearings with finger. Hold the brake shoes apart and insert cam in position. Care should be taken not to harm the needle bearings in the mounting plate brake adapter. Reverse the procedure outlined above.

b. Replacing cam needle bearings.—Cam needle bearings will usually last indefinitely if properly lubricated. However, if they are damaged through accident, or in removing and replacing cam, proceed as follows to replace them:

(1) Remove the two bearings in each mounting plate adapter either individually or both at one time by driving them out with a hammer.

(2) Place the new needle bearings into position and tap gently to start them evenly.

(3) Place pieces of flat wood against both brake adapter and bearing and squeeze the bearing into position with a C-clamp. Bearings should be flush with the outer edges of the adapter.

(4) Inspect to make sure bearings do not cover lubricating hole.

c. Replacing Nice ball bearing in cam bracket.—(1) Remove the slack adjuster. (See Cam Replacement instructions.) (Fig. 15.)

(2) Tap the outer side of the cam bracket and the ball bearing will usually work out.

(3) If this fails, remove the Alemite fitting, insert a small screw-

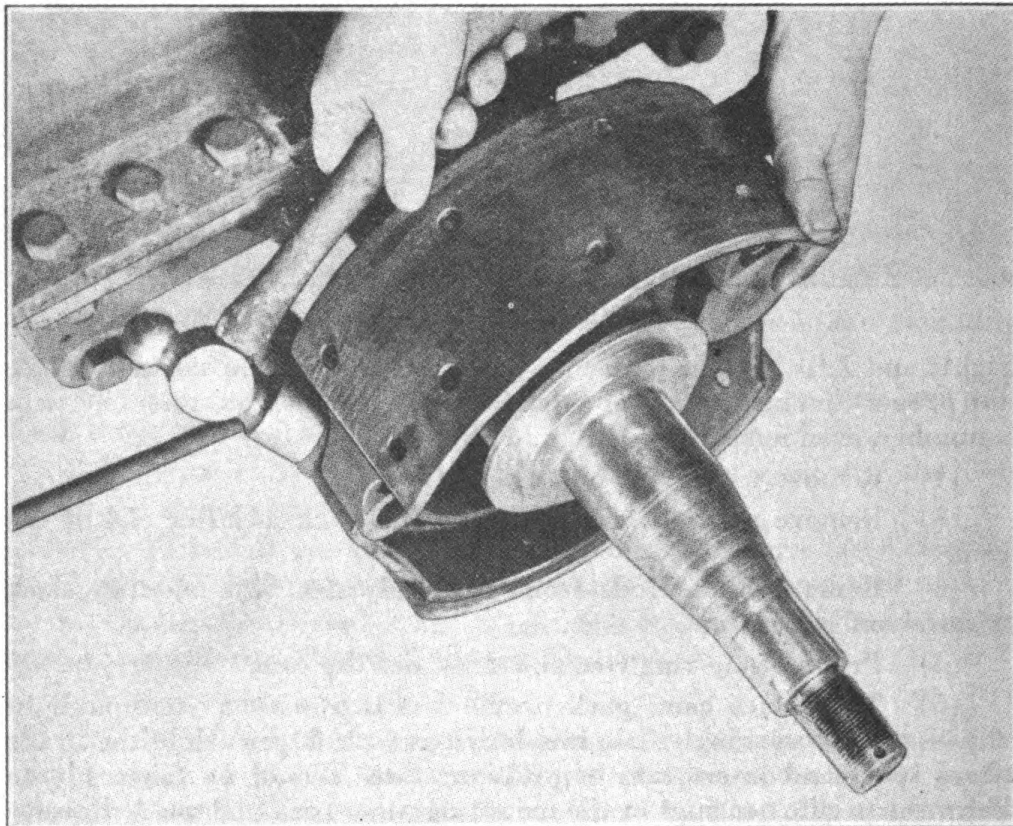


FIGURE 16. REMOVING BRAKE SHOE—REAR

driver in the Alemite fitting hole and pry outward against the bearing. Continue tapping the slack adjuster bracket with a small hammer.

6. BRAKE SHOES, REAR.—*a.* Removal. (Fig. 16.)—(1) Pry the snap rings off the two anchor pins using two screwdrivers.

(2) Raise the cam end of the top shoe and rest it on outer cam washer. (Fig. 11.)

(3) Tap the anchor pin end of shoe off anchor pin.

(4) Now pull the lower shoe off anchor pin.

(5) Remove the two bolts holding return spring to brake shoes.

b. Replacing rear brake shoes.—To replace the shoes, reverse the instructions for removal in sub-paragraph *a.* Before replacing shoes, place a light film of grease on anchor pins and cams. If snap rings have been damaged in removal, replace snap ring with new one, or bend ring back into proper shape.

7. CAMS, REAR.—*a.* Removal. (Figs. 17 and 18.)—(1) Remove the brake rod from slack adjuster.

(2) Using a wrench, pull up on cam nut and set cam on edge.

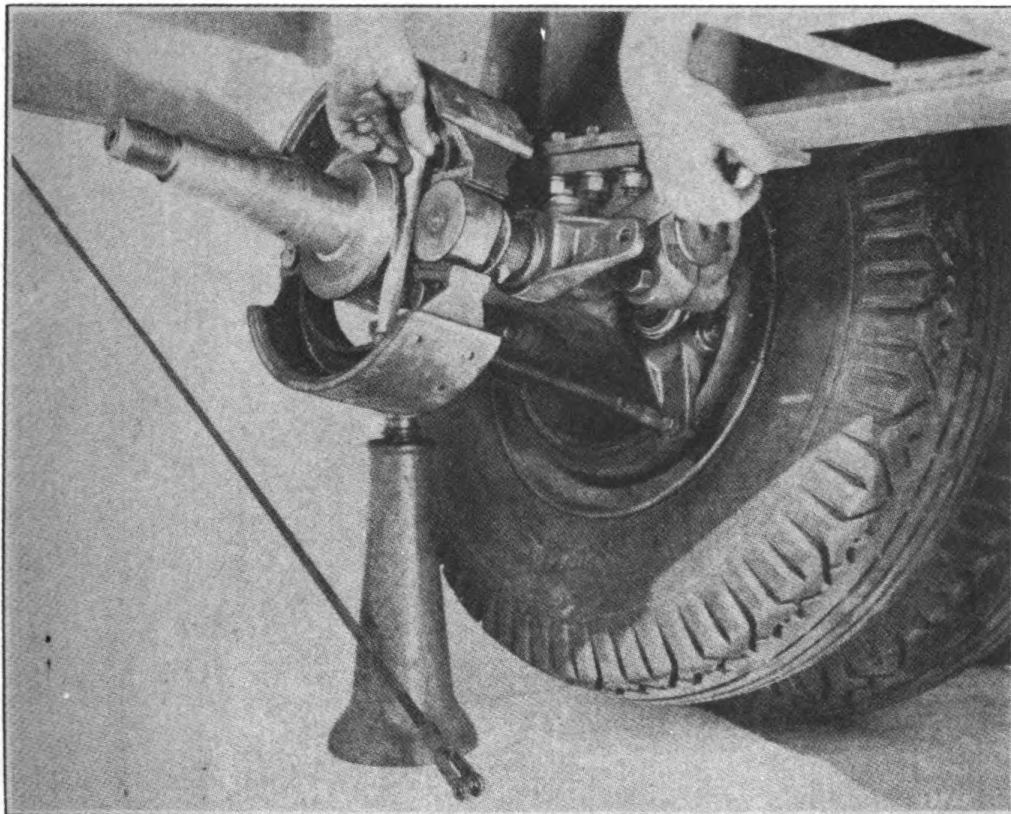


FIGURE 17. REMOVING CAM—REAR—STEP 1

- (3) Place an 8½" piece of wood between the two spring return bolts. Now lower cam. (Fig. 17.)
- (4) Remove the nut holding slack adjuster to cam shaft.
- (5) Remove the lockwasher and flat washer from cam shaft.

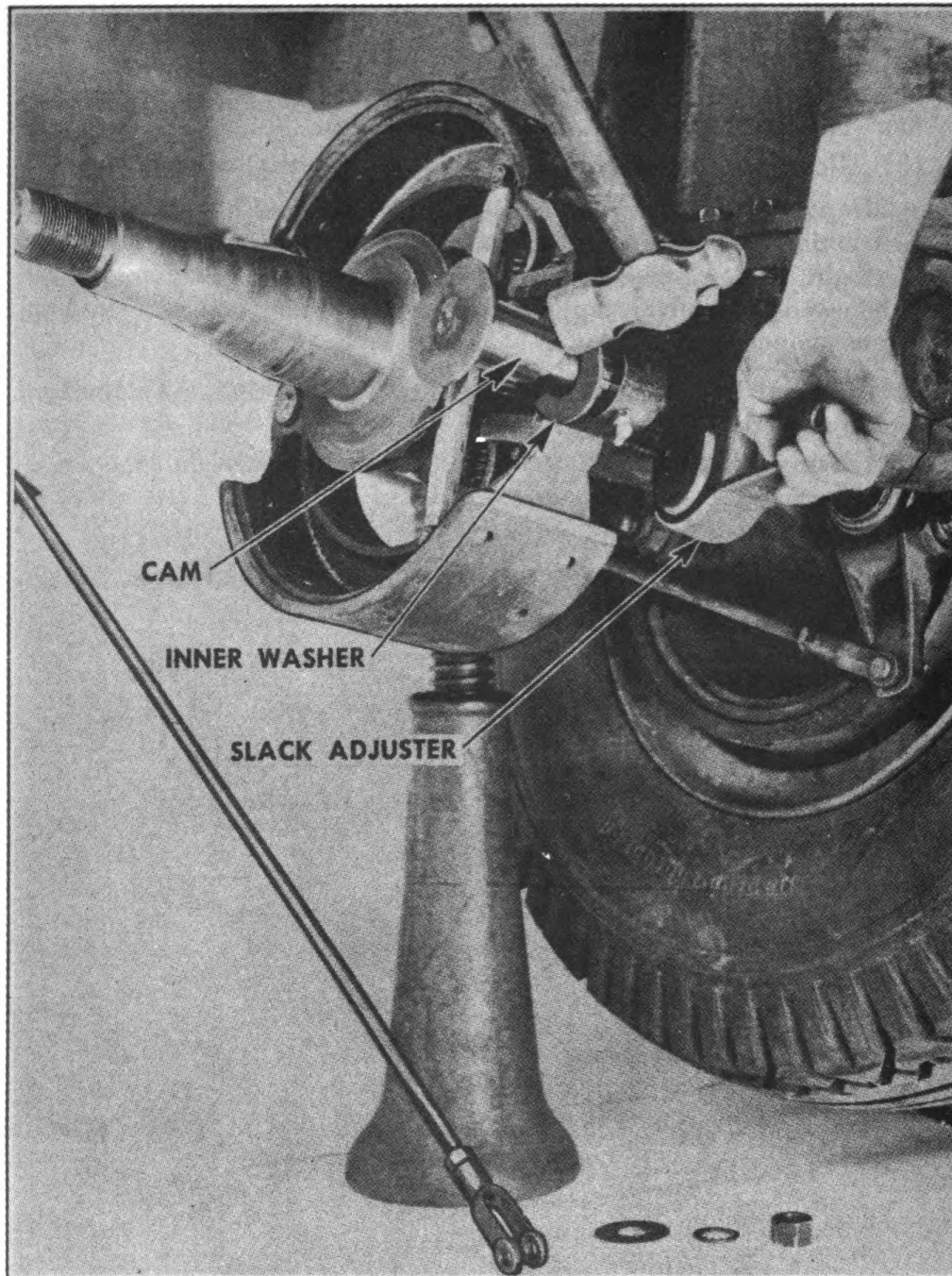


FIGURE 18. REMOVING CAM—REAR—STEP 2

(6) Pull slack adjuster off cam shaft and tap the cam out of trunnion axle assembly.

b. Replacing rear cams.—To replace cams, reverse the instructions for removal in sub-paragraph *a*.

NOTE: Be sure to insert inner washer between trunnion axle assembly and cam as illustrated in Figure 18.

8. SERVICING SLACK ADJUSTER.—*a.* This trailer is equipped with six slack adjusters; two at the front and four at the rear. These are identical except that those at the rear are not equipped with wing adjusting wrenches. It is necessary to use an adjustable wrench to adjust the rear slack adjusters.

b. If turning up on the slack adjuster winch wrench fails to bring the brake shoes up against the drum, the worm or worm gear is usually worn or stripped. To replace these parts, proceed as follows:

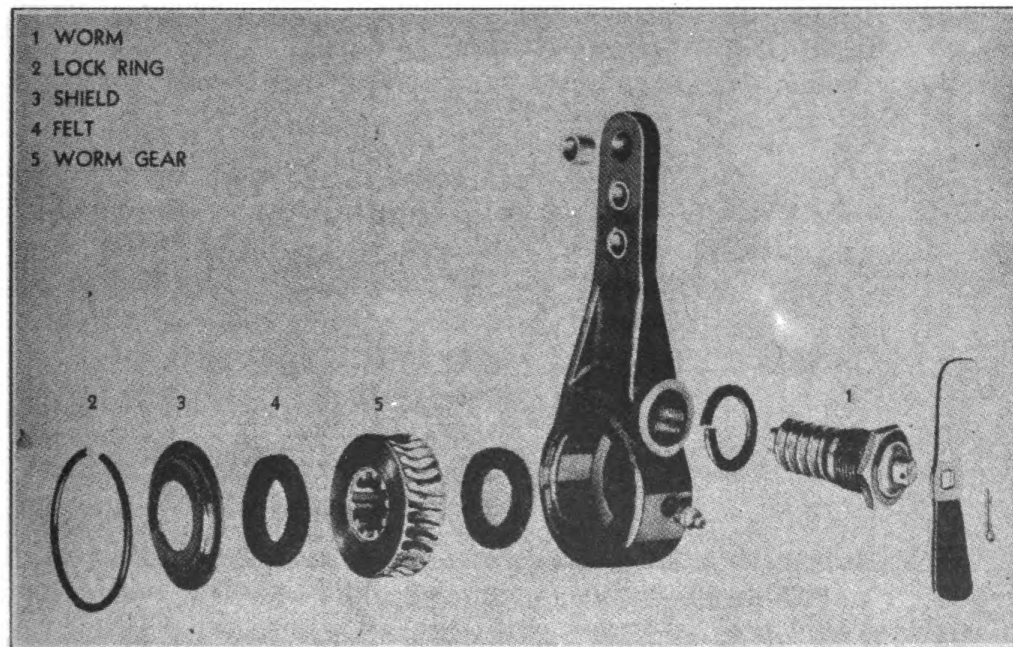


FIGURE 19. SLACK ADJUSTER ASSEMBLY

(1) *Replacing worm and worm gear.* (Fig. 19.)

(a) Remove the worm (1) at the wing wrench adjuster by turning out on the hex nut holding it in position.

(b) Inspect the worm. If it is stripped, replace it as an assembly.

(c) If the worm is in good condition, pry the lock ring (2) free on the slack adjuster end, remove the shield (3), felt (4) and worm gear (5). If the worm gear is stripped, replace.

- (2) *Rebushing slack adjuster.*
- (a) Drive out the old bushing. Insert the new bushing.
- (b) Ream to $\frac{1}{2}$ " diameter.

9. **BRAKE DRUM REPLACEMENT.**—*a.* Brake drums should be replaced when cracked or badly scored. Heat checking, unless severe, does not call for brake drum replacement.

- (1) Remove wheel and hub assembly.
- (2) If changing drum on the front wheel, block the wheel at both sides and remove the drum by removing the ten nuts holding it to the hub assembly. (Fig. 20.)

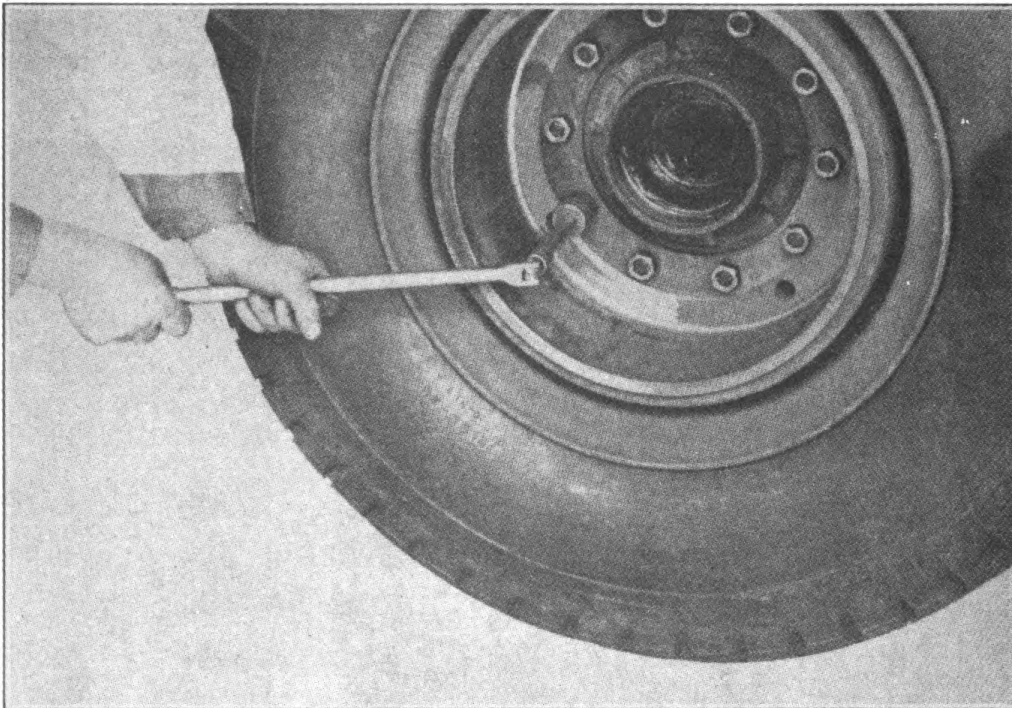


FIGURE 20. REMOVING BRAKE DRUM—FRONT

- (3) If changing a drum on the rear hub, place wheel wrench handle in hub vents, and remove the six bolts holding drum to hub.
- (4) Remove any rust or dirt in the drum pilot and install the new drum.
- (5) Successively tighten opposite nuts to bring the drum down evenly to prevent its cocking on the pilot.

NOTE: When installing drum on rear wheel, make sure groove in drum lines up with valve slot on hub. If this is not done, the valve will be damaged. (Fig. 21.)

10. **MAJOR BRAKE ADJUSTMENT.**—*a.* The procedure which

follows applies to both front and rear brakes only when new linings or drums have been installed.



FIGURE 21. INSTALLING BRAKE DRUM—REAR

- (1) Loosen both nuts on both anchor pins so that the anchor pins can be moved freely.
- (2) Replace the wheel and drum assembly. If it fails to move on freely, slack off on the slack adjusters through counter-clockwise movement of the slack adjuster wing wrench and centralize anchor pin eccentrics.
- (3) With the wheel in place, turn the slack adjuster wing wrench clockwise until the shoes are tight in the drum.
- (4) Turn the eccentric anchor pin either to right or left as you tighten up on the slack adjuster until the brake shoes are centralized in the drum.
- (5) Using a feeler gauge, set the clearance at .010 at the eccentric end and .015 at the cam end of the brake shoes.

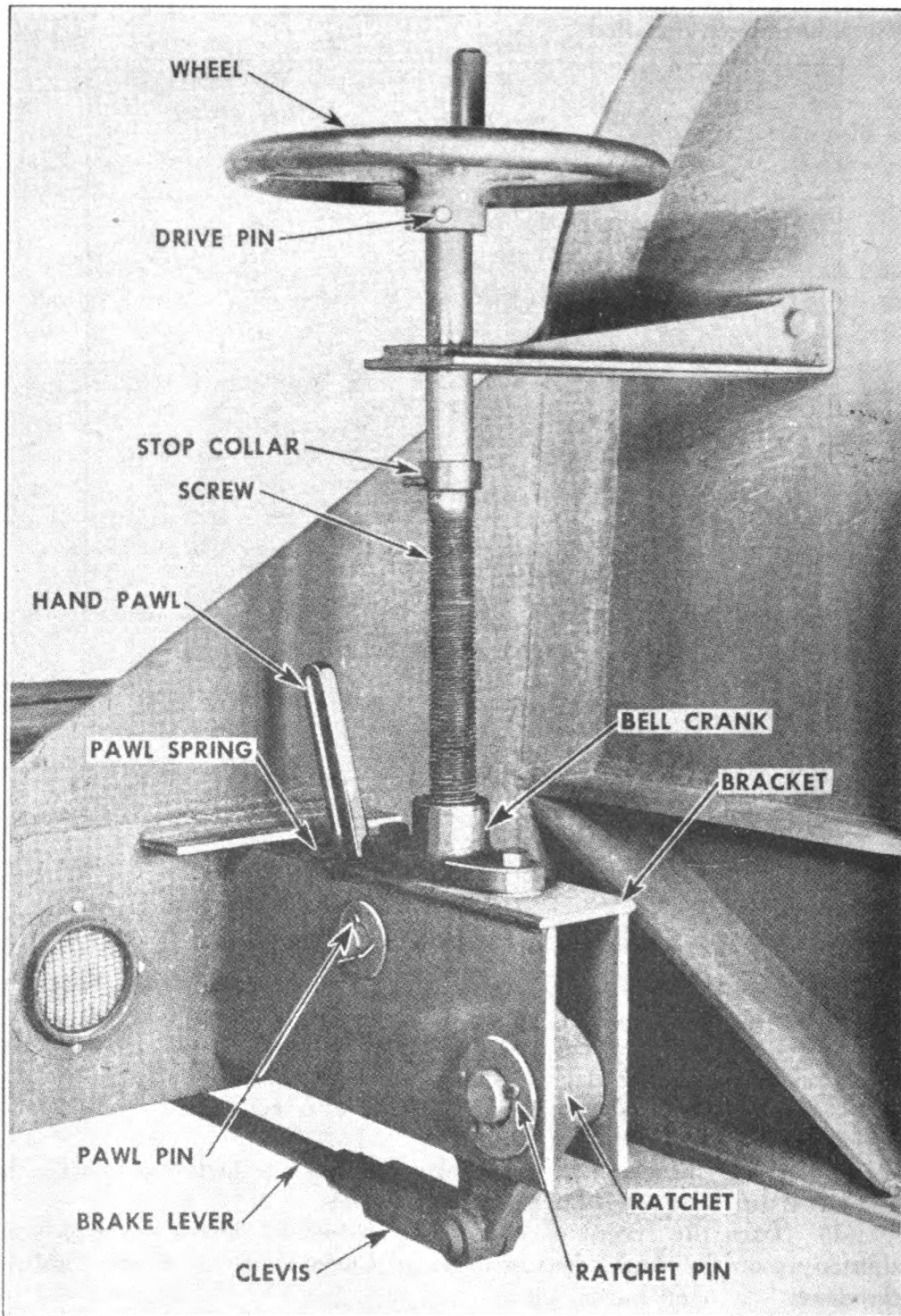


FIGURE 22. HAND PARKING BRAKE

(6) Tighten lock nuts on the anchor pins while holding anchor pins firmly in position with a wrench.

11. HAND PARKING BRAKE REPLACEMENT (Fig. 22).—*a.* The hand parking brake is located on the right side, at the drop in frame. Turning the wheel in a clockwise direction applies the brakes.

b. Replacing the wheel.—(1) Drive out the drive pin and tap handle off screw.

c. Replacing screw.—(1) Loosen set screw in stop collar and turn wheel in a counter-clockwise direction until screw is turned out of bell crank.

(2) NOTE: No attempt should be made to straighten bent screws.

d. Replacing ratchet.—(1) Remove the clevis pin from ratchet. Remove cotter key and flat washer from ratchet pin, and drive out pin.

e. Replacing hand pawl.—(1) Unhook pawl spring from eye bolt which is located on inside of hand brake support bracket.

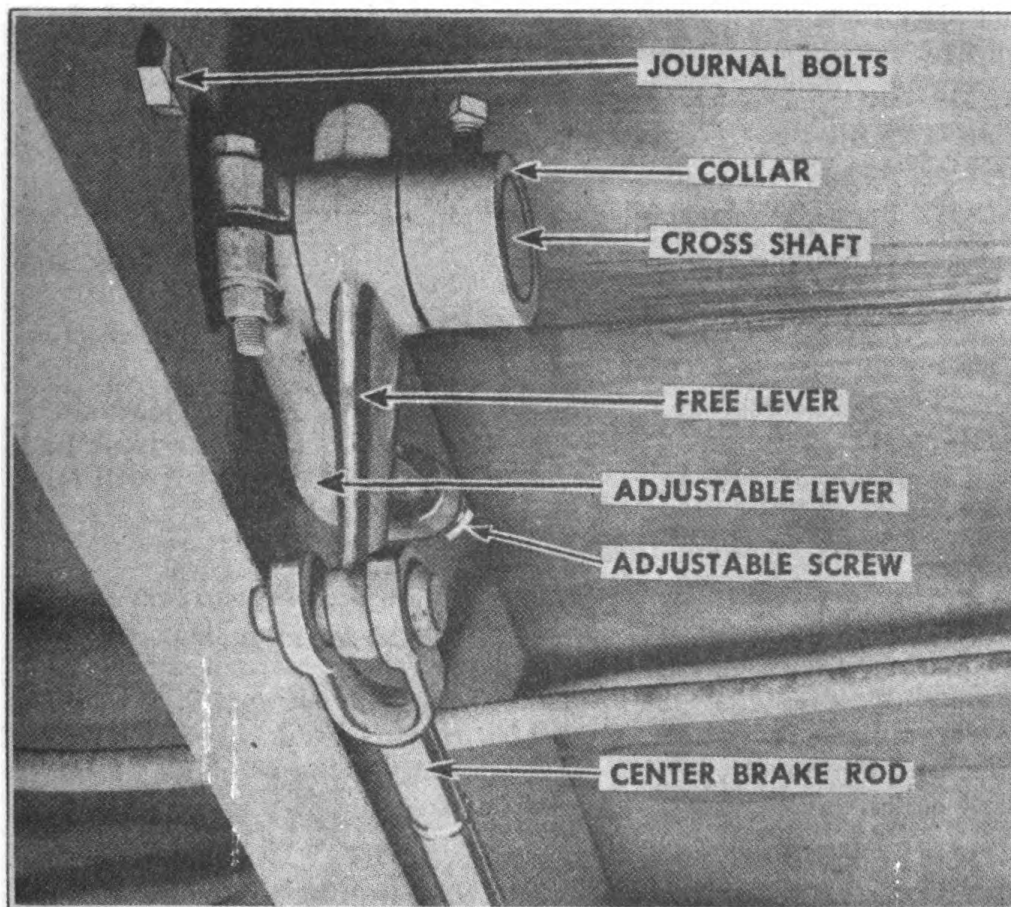


FIGURE 23. FRONT CROSS SHAFT AND ADJUSTABLE LEVER

(2) Remove cotter key and flat washer and drive out pawl pin. Reverse this procedure to replace pawl.

12. **ADJUSTING HAND PARKING BRAKE.**—*a.* Usually the hand parking brake requires little attention, the minor brake adjustment taking care of parking brake adjustments. However, when an adjustment is required, there are two points of adjustment.

(1) Shorten brake rod at hand brake ratchet as shown in Figure 22.

(2) Turn in on set screw in adjustable lever which is located in center of trailer just ahead of brake chambers. See Figure 23.

b. Place a jack under each trunnion axle and jack until wheels clear ground.

c. Place a block of wood under each outer wheel. This will prevent trunnion axle from oscillating while adjustment is being made. After adjustment has been made, remove the block from under outer wheels and place them under inner wheels and then check adjustment of outer wheels.

13. **CROSS SHAFT, FRONT.**—*a. Removal* (Fig. 23).—(1) The front cross shaft operates the parking brakes.

(2) Remove the center brake rod at free lever.

(3) Loosen set screw in collar and tap collar off shaft.

(4) Pull off free lever. Loosen pinch bolt in adjustable lever and tap lever off shaft.

(5) Remove the brake rod from lever on opposite end of cross shaft, tap lever and spacer off; and remove Woodruff key.

(6) Loosen the four bolts holding the two cross shaft journals to frame. Loosening the cross shaft journals eliminates all the bind, and cross shaft can be pulled out by hand. Driving on cross shaft will burr end of shaft and will make it difficult to reassemble.

(7) Pull cross shaft out through hole in side rail.

b. Replacing front cross shaft.—To replace cross shaft, reverse removal procedure in sub-paragraph *a.* Before coupling long rod and center rod to cross shaft levers, check shaft for free movement. If it binds, check levers. They are probably driven too far onto shaft and are binding against frame members. Also check movement of free lever. This lever should swing freely. If it binds, the collar is too far on shaft. Back collar off shaft until lever moves freely.

14. **SERVICE BRAKE CROSS SHAFT** (Fig. 24).—Service brake cross shafts come in rights and lefts. The servicing procedure of both is identical.

a. Removal.—(1) Pull the cotter keys and clevis pins from the five levers.

(2) Loosen the pinch bolts in the levers, drive chisel in ground in lever to eliminate bind, and drive levers to center of trailer.

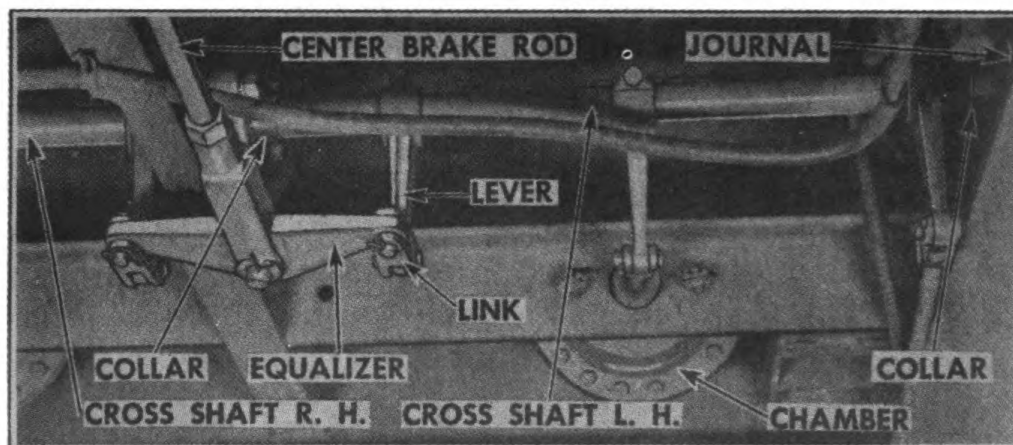


FIGURE 24. SERVICE BRAKE CROSS SHAFT

b. Removal.—Remove the Woodruff keys and slide shaft out about six inches. Remove the levers and continue pulling out on cross shaft.

c. Replacement.—When replacing, reverse the removal procedure.

NOTE: Levers on right hand cross shaft are interchangeable with levers on left cross shaft and can be positioned on any point where Woodruff key is located.

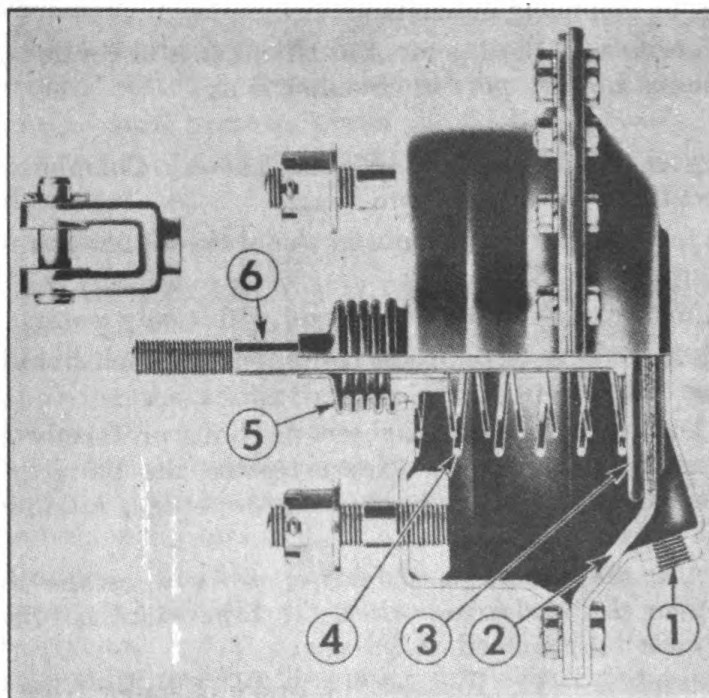


FIGURE 25. SERVICE BRAKES—AIR CHAMBER

15. BRAKE CHAMBERS (Fig. 25).—*a.* This trailer is equipped with six brake chambers. They are all interchangeable.

b. Function.—The function of the brake chamber is to convert the energy of compressed air into the mechanical force necessary to expand the brake shoes against the brake drum and apply the brakes. Air pressure from relay emergency valve enters port (1) behind the flexible diaphragm (2). The force developed moves the flexible diaphragm, moves the push plate (3) and attached push rod (6), so as to rotate the brake cam and apply the brakes.

c. Adjustment.—(1) The stroke of the brake chamber push rod is limited, therefore, the brake must be adjusted (see Brake Minor Adjustment) to keep the push rod stroke within the correct limits. The stroke should never be permitted to exceed $1\frac{3}{4}$ " and when the brakes are adjusted, the stroke should be as short as possible without the brakes dragging. This minimum stroke is usually about $\frac{3}{4}$ ".

(2) When installing new chamber, slack adjuster should be so adjusted to permit push rod (6) to line up with brake lever. Do not attempt to pull out or push in on rod (6) to align with brake arm—adjust slack adjuster by turning slack adjuster adjusting nut.

d. Removal.—(1) Uncouple tubing from chamber.

(2) Remove the two cotter keys and nuts from chamber studs.

(3) Remove the cotter key and clevis pin from push rod, and lift chamber out of mounting brackets.

e. Replacement.—Replacement of chamber is in reverse of removal. When replacing, be sure port in chamber is up.

16. BRAKE CHAMBER DIAPHRAGM.—*a.* Chamber diaphragm should be replaced once every two years.

b. Test for and correcting leaks in the brake diaphragm.—(1) Apply the brakes.

(2) Paint the edge of the diaphragm with soapy water.

(3) When making test with soapy water, a 3-inch bubble in three seconds is permissible.

(4) If leakage is detected, tighten the bolts uniformly around the diaphragm until it disappears. Never tighten the bolts to the point where the edge of the diaphragm starts to bulge, inasmuch as this greatly weakens the diaphragm.

(5) If the diaphragm is defective, air will escape around the rubber boot on the brake rod when the brakes are applied and the diaphragm must be replaced as follows:

c. Disassembly.—(1) Remove the brake chamber from the trailer by removing the two chamber nuts which hold it to the mounting

bracket, disconnect the tubing assembly and pull the clevis pin at the brake lever.

(2) Place the chamber in a vise and draw a nail or other sharp object across the chamber edge to mark it for reassembly.

(3) Remove the bolts, replace the diaphragm and tighten bolts (Fig. 26).

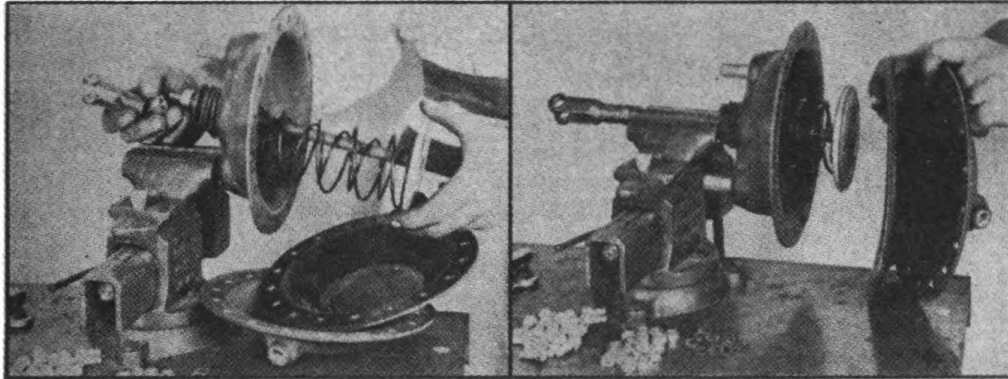


FIGURE 27. BRAKE CHAMBER—
PUSH ROD REPLACEMENT

FIGURE 26. BRAKE CHAMBER—
DISASSEMBLY

d. Replacing brake chamber springs, pressure plate, rods, boots.

(1) Follow the procedure outlined above for the disassembly of the brake chamber.

(2) Remove the brake push rod and install the new spring. Make sure the spring is seated properly on push rod plate (Fig. 27).

(3) Bent or worn pressure plates should be replaced.

(4) Slightly bent brake push rods may be straightened; if severely bent should be replaced.

(5) Worn boots should be replaced.

17. RELAY-EMERGENCY VALVE (Fig. 28).—*a. Function.*—The relay-emergency valve serves as a relay station to speed up the application or release of the trailer brakes and also provides a means of automatically applying the trailer brakes in case the trailer breaks away from the tractor.

Fundamentally, its function is to operate so as to deliver and maintain the same air pressure in the trailer brake chambers as the brake valve on the tractor delivers to it.

b. Operation (Fig. 28).—The operation of the relay-emergency valve is dependent upon the air pressure delivered to it by the brake valve on the tractor.

This brake valve pressure is delivered to the relay-emergency valve through the service line and enters the cavity above the rubber dia-

phragm through port (1). Because this cavity is small and, therefore, subject to quick changes in air pressure, the action of the valve in changing its delivered pressure is also very rapid.

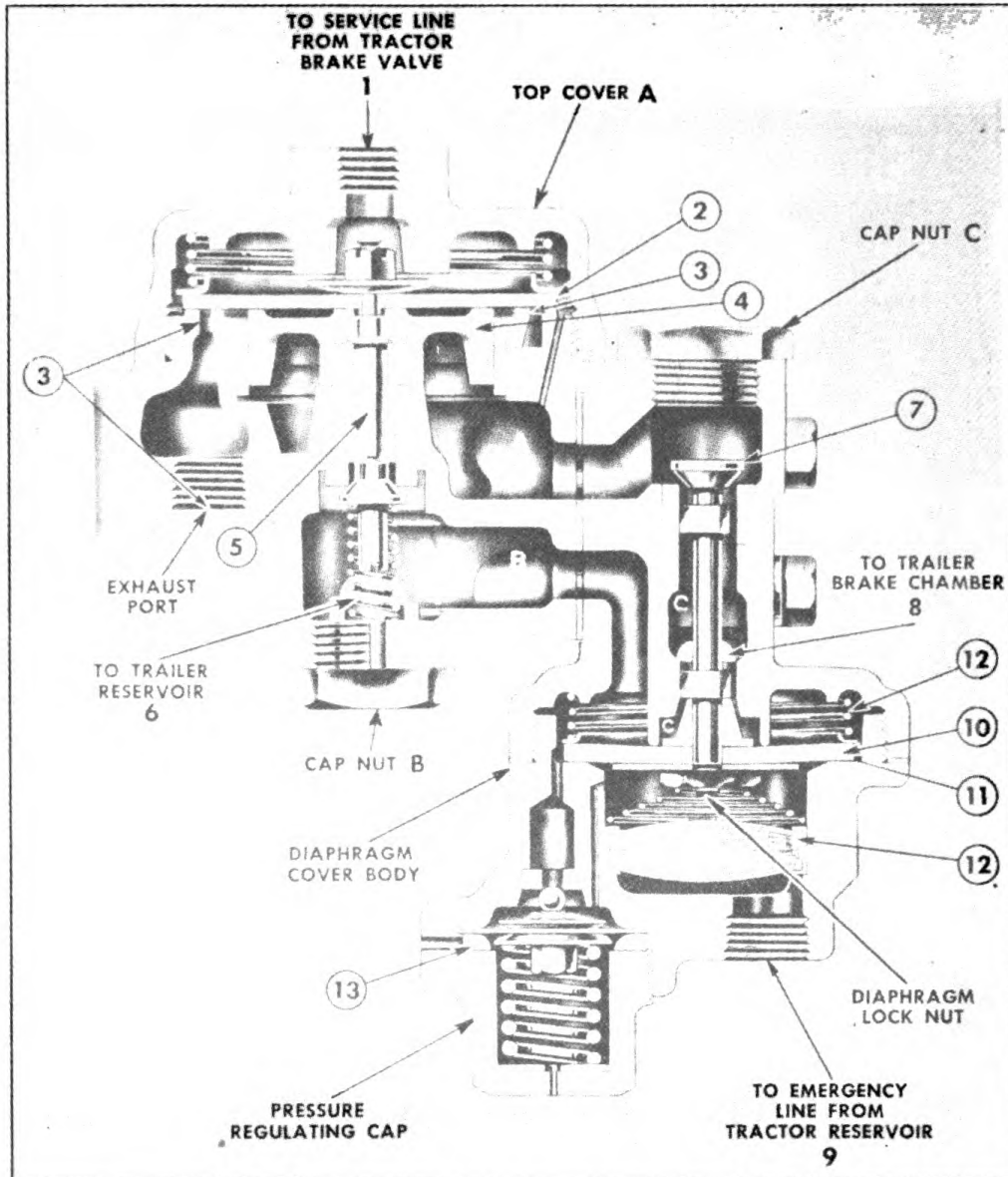


FIGURE 28. RELAY—EMERGENCY VALVE

The mechanism inside the relay-emergency valve assumes three positions during normal operation. These three positions are the:

(1) Applying Position—When the valve is actually delivering air pressure to the brake chambers.

(2) **Holding Position**—When the valve is maintaining or holding a constant pressure in the brake chambers.

(3) **Releasing Position**—When the valve is reducing or releasing air pressure in the trailer brake chambers.

The mechanism inside the valve is so arranged that it can assume another position called the **Emergency Position**. The mechanism only assumes this position when some abnormal condition, such as a trailer break-away, causes a drop in the air pressure in the trailer emergency line. Under these conditions, the valve permits full trailer reservoir pressure to pass into the trailer brake chambers, applying the trailer brakes; and at the same time, prevents loss of trailer reservoir pressure through the broken trailer emergency line.

Operation of the valve in each of these positions is as follows:

c. Applying position.—As air pressure from the brake valve on the tractor passes through the service line on the trailer and enters port (1) to the cavity above diaphragm (2), the pressure developed depresses the diaphragm. The diaphragm thus seals the exhaust port (3) underneath its outer edge and its center is deflected, forcing the diaphragm guide (4) down against the top of supply valve (5). Continued movement forces this supply valve off its seat and permits air pressure from the trailer reservoir, entering port (6), to flow through cavity A, past emergency valve (7) and out port (8) to the trailer brake chambers.

d. Holding position.—As soon as the air pressure being delivered to the brake chambers equals the pressure being delivered to the relay-emergency valve by the brake valve, the pressure above and below diaphragm (2) is equalized and the center of the diaphragm lifts and resumes its normal position. This permits the supply valve spring to close supply valve (5) limiting the air pressure being delivered to the trailer brake chambers to the same pressure being delivered to the relay-emergency valve by the tractor brake valve. In this position, action of the spring on top of diaphragm (2) makes the outer edge of the diaphragm seal the exhaust port (3). Thus the valve is in its **Holding Position** maintaining the same air pressure in the trailer brake chambers as the brake valve on the tractor is delivering to it. A rise in brake valve pressure causes the same action until the higher pressure in the trailer brake chambers is similarly established.

e. Releasing position.—If the brake valve pressure above diaphragm (2) is reduced, the trailer brake chamber pressure below the diaphragm overcomes the pressure above the diaphragm and the diaphragm lifts still further. This opens exhaust port (3) permitting the pressure in the trailer brake chambers to exhaust until a lower balanced pressure is reached. If the brake valve pressure on top of the diaphragm is released entirely, the relay-emergency valve also releases all pressure from the trailer brake chambers thus fully releasing the brakes.

f. Emergency position.—The trailer emergency line, connected to port (9) of the relay-emergency valve is directly connected through the trailer emergency line to the tractor reservoir. Any sudden drop in

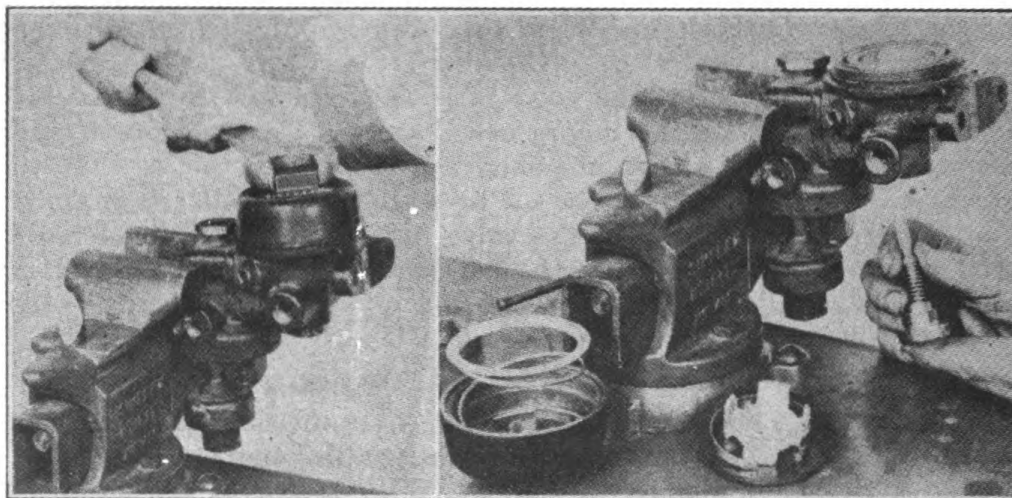


FIGURE 29. RELAY—EMERGENCY VALVE—REMOVING TOP COVER

FIGURE 31. RELAY—EMERGENCY VALVE—REPLACING INTAKE VALVE

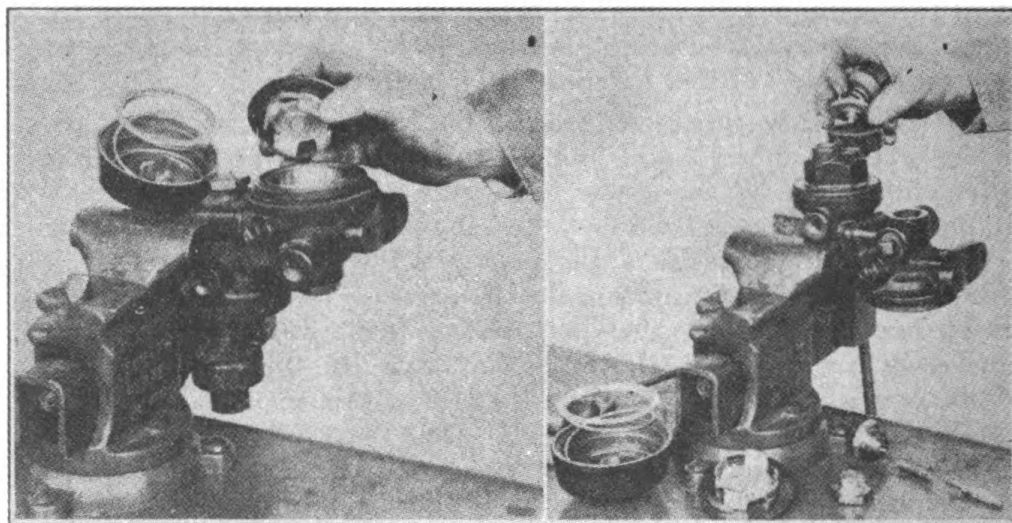


FIGURE 30. REMOVING DIAPHRAGM IN GUIDE RING

FIGURE 32. RELAY—EMERGENCY VALVE—REMOVING CAP, SPRING AND DIAPHRAGM

pressure in this trailer emergency line will cause the relay-emergency valve to go to emergency position and apply the trailer brakes. Normally, the same air pressure is present above and below the emergency diaphragm (10). If a sudden drop in pressure in the trailer emergency line occurs, the pressure trapped above diaphragm (10) forces its outer

edge to seal at (11) preventing the further loss of air through port (9) and the trailer emergency line. This pressure also depresses the center of the diaphragm, breaking the seal at (12) and closing the emergency valve (7).

When this occurs, air flows from the trailer reservoir through cavities B and C and out port (8) to the trailer brake chambers, applying the trailer brakes. The trailer brakes are thus applied automatically, due to an abnormal drop in emergency line pressure.

During normal operating conditions, it sometimes happens that the air pressure in the tractor reservoir will fall below the air pressure in the trailer reservoir. If this difference in pressure develops to a sufficient degree, it can be seen how an undesired emergency application might result. In order to guard against this, a pressure regulating cap is included in the assembly. The valve in this cap normally remains open as long as the pressure is above 70 to 80 pounds. This permits pressure above diaphragm (10) to equalize with pressure below the diaphragm as long as the pressure is above 70 to 80 pounds. However, should the pressure drop below this point, the valve in the pressure regulator cap will close, preventing any further equalization of pressure and a continued gradual drop in pressure below diaphragm (11) will also cause an emergency trailer brake application. Thus if leakage develops in the tractor brake system or the trailer emergency line beyond the capacity of the compressor and such leakage causes the air pressure in the tractor brake system to drop below a safe limit, the trailer brakes will be automatically applied to stop both vehicles.

g. Disassembly.—Diaphragms (2) and (10) should be replaced once a year.

(1) To clean or replace diaphragm (2). (Fig. 28):

(a) With the valve held firmly in a vise, remove top cover (A). (Fig. 29.)

(b) Lift out the diaphragm guide ring (Fig. 30), remove cotter key, nut and washer holding the diaphragm to the guide. Lift out the diaphragm and replace.

(c) Reassemble by reversing the procedure outlined above.

(2) Cleaning or replacing intake valve (5). (Fig. 28.)

(a) Remove the cap nut (B).

(b) Extract the intake valve with a pair of long nose pliers.

(c) Clean. Replace. (Fig. 31.)

(3) Cleaning or replacing diaphragm (13). (Fig. 28.)

(a) Remove pressure regulating cap, spring and diaphragm. (Fig. 32.)

(b) Remove stem lock nut. Lift diaphragm and diaphragm follower from stem. Clean and replace.

- (c) Reassemble by reversing the procedure outlined above.
- (4) Cleaning or replacing diaphragm (10). Washing strainer (12). (Fig. 28.)
 - (a) Remove diaphragm cover body (Fig. 33).
 - (b) Lift out spring and strainer (Fig. 34).
 - (c) Remove cap nut (C). (Fig. 28.) Insert screw driver into slotted

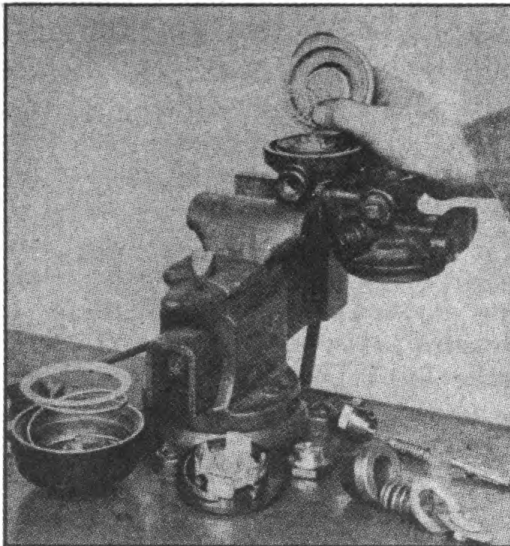


FIGURE 34. RELAY—EMERGENCY VALVE—REMOVING SPRING AND STRAINER

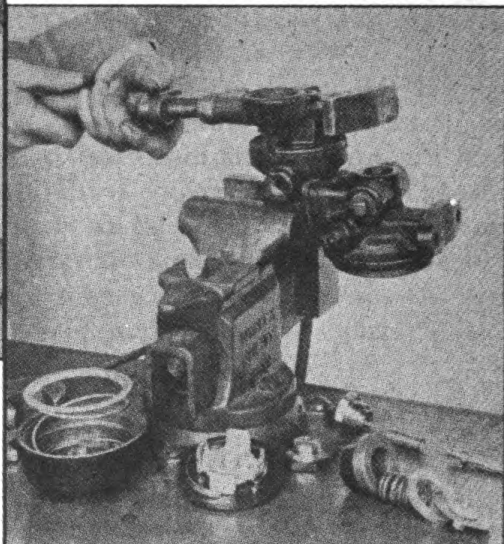


FIGURE 35. RELAY—EMERGENCY VALVE—REMOVING VALVE STEM AND DIAPHRAGM

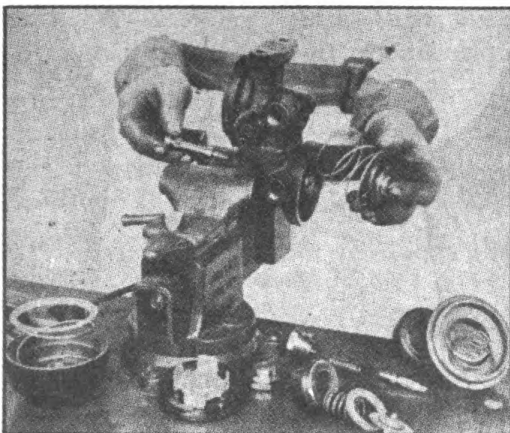


FIGURE 36. RELAY—EMERGENCY VALVE—REMOVING VALVE STEM AND DIAPHRAGM

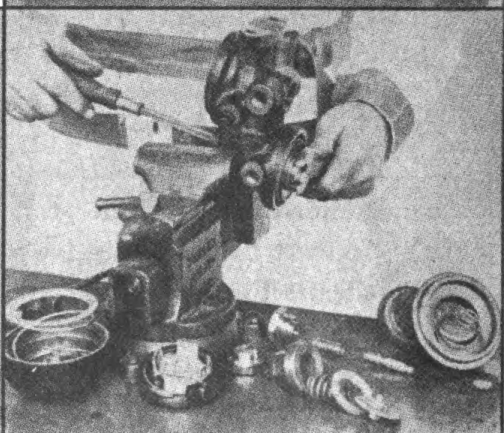


FIGURE 33. RELAY—EMERGENCY VALVE—REMOVING DIAPHRAGM COVER BODY

top of valve and remove diaphragm lock nut (Fig. 35). Pull out the valve stem and diaphragm (Fig. 36).

(d) Clean the strainer and diaphragm in cleaning fluid. Install a new diaphragm if necessary.

(e) Reassemble by reversing the procedure outlined above.

h. Maintenance (Fig. 28).—The complete valve should be removed from the trailer, dismantled, thoroughly cleaned, and diaphragms (2) and (10) should be replaced at least once a year.

Strainer (12) should be removed and cleaned in cleaning fluid about every six months.

i. Leakage tests (Fig. 28).—(1) With brakes released, cover exhaust port with soap suds. Leakage is caused by supply valve (5) not seating properly.

(2) With brakes applied, cover exhaust port with soap suds. Leakage is caused by diaphragm (2) not seating properly.

j. Emergency feature tests (Fig. 28).—(1) With full pressure in the trailer reservoir, disconnect emergency line between tractor and trailer. Trailer brakes should apply automatically. This feature should be checked daily.

(2) Cover emergency line hose coupling at front of trailer with soap suds to check for leakage. Leakage is caused by diaphragm (10) not seating properly at (11).

(3) With valve still in emergency position, cover exhaust port with soap suds. Leakage in excess of that evident in test one is caused by valve (7) not seating properly.

When making leakage tests with soap suds, a 3-inch bubble in three seconds is permissible. Leakage may be caused by dirt on the valves, valve seats, diaphragms, or diaphragm seats and may be corrected by cleaning. It may also be caused by worn diaphragms, valves, or seats. Worn diaphragms should be replaced. Worn valves or valve seats may be reclaimed by grinding with Bendix-Westinghouse (Grade 1000) Grinding Compound unless the wear is excessive. If such procedure fails to correct the leakage, the valves and valve seats should be replaced or the complete assembly replaced with a repair exchange unit.

18. TUBING.—*a. Repair*.—When air line tubing becomes kinked or bent, cut out the damaged section and splice in a new one, using standard brass Westinghouse sleeve type $\frac{3}{8}$ " tube union.

19. **HOSE COUPLING.**—*a. Replacement of packing rings.*—Hose couplings are provided with rubber packing rings which act as gaskets to seal coupled hoses. In time, usually about a year, these become worn or distorted and should be replaced. Simply pry out the old packing rings and push in new ones.

Use of dummy hose couplers prevents the entrance of foreign matter into the braking system. They should be used whenever the hoses are not coupled.

20. **AIR FILTER.**—*a. Function.*—Air filters are mounted on inside of main frame side rails, just ahead of drop in frame, one filter in service line and one in emergency line. Filter is designed to remove dirt, water, and oil from air, thereby increasing the life of the functional parts of the emergency relay valve.

b. Maintenance.—No adjustments are necessary. However, filter should be drained every 2,000 miles. Draining of filter is accomplished by simply removing plug in bottom of filter. The filter should be disassembled and air cleaner washed in cleaning fluid every 5,000 miles.

c. Disassembly.—(1) Disconnect the lines leading into the filters. Remove the two bolts holding filter to bracket.

(2) Remove the two cap screws (1) holding cup (2) to upper section of filter. Tap down on cup, separating cup from upper section.

(3) Remove rubber gasket (3); remove cleaner seat (4) and pull out cleaner (5). (Fig. 2.)

d. Reassembly.—Reassembly is in reverse of disassembly. When replacing rubber gasket be sure to insert it in the groove provided for, in upper section.

21. **QUICK RELEASE VALVE.**—*a. Operation.*—(1) Quick release valve is mounted on front axle between the brake chambers.

(2) The quick release valve is operated by air pressure from the brake valve entering into the cavity above the diaphragm. As the air pressure enters this cavity it forces the exhaust seat of the diaphragm against the edges of the exhaust port, sealing the exhaust and permitting the air pressure from the brake valve to pass to the brake chambers. As the brake valve is released the air pressure and the force of the spring lift the diaphragm, removing the exhaust seat from the exhaust port and releasing the air pressure accumulated in the brake chambers to atmosphere.

b. Test for leakage.—Apply brakes, cover exhaust port (open only port on valve) with soap suds to detect leakage. A three-inch bubble every three seconds is permissible. Leakage is caused either by dirt on the diaphragm exhaust valve seat or by a worn exhaust valve seat. Dirt leakage may be remedied by cleaning the exhaust valve seat.

However, if leakage is caused by a worn exhaust valve seat, replace entire valve assembly.

c. *Disassembly.*—This valve can be disassembled without removing unit from trailer. Screw off cover, remove spring and lift valve assembly out (Fig. 37).

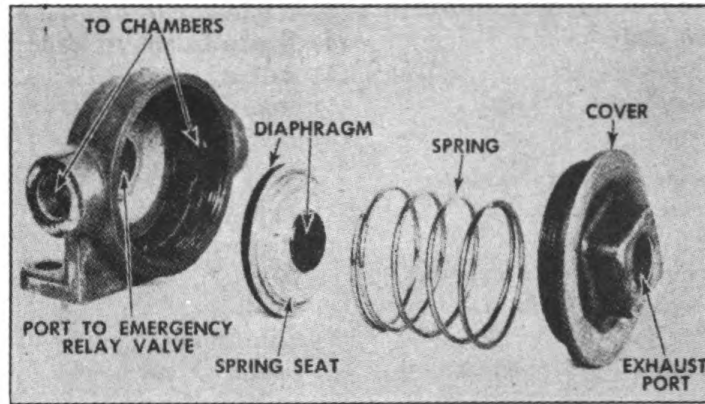


FIGURE 37. SERVICE BRAKES—QUICK RELEASE VALVE

22. BRAKES—Service Diagnosis and Remedy.

SYMPTOM AND PROBABLE CAUSE

PROBABLE REMEDY

a.—*Slow brake application*

- | | |
|--|---|
| <ul style="list-style-type: none"> (1) Low brake line pressure. (2) Bent rod in chamber or cylinder. (3) Excessive travel in chamber or cylinder push rod. (4) Restriction in line. (5) Leaking diaphragm in brake application chamber, or leaking cylinder. (6) Binding levers and slack adjuster. (7) Dirt under relay exhaust valve or diaphragm. (8) Dirty air filter. | <ul style="list-style-type: none"> (1) Check air pressure at tractor coupling ends. Air supply should not be less than 70 lbs. for proper application. (See tractor manual on maintenance for service procedure.) (2) Straighten or replace. (3) Give brakes minor adjustment. (4) Clean or replace tubing or hose. (5) Tighten chamber bolts or replace diaphragm. (6) Oil—loosen. (7) Clean relay valve diaphragm. (8) Clean. |
|--|---|

b.—*Slow brake release*

- | | |
|---|---|
| <ul style="list-style-type: none"> (1) Low brake line pressure also results from slow brake application. (2) Dirty air filter. (3) Brake valve lever on tractor not returning fully to stop. (4) Binding cam or binding slack adjuster or brake arm. (5) Brake chamber rod travel is excessive. (6) Restriction in tubing or hose. (7) Improper seating of valves and relay emergency valve. | <ul style="list-style-type: none"> (1) See tractor maintenance manual. (2) Clean. (3) Adjust operating rod. See tractor maintenance manual. (4) Lubricate and align properly. (5) Give brake adjustment. (6) Clean or replace. (7) Clean or replace valve with reconditioned unit. |
|---|---|

(Continued on Page 46)

c.—Emergency brake failing to hold

- | | |
|---|---|
| (1) Dirt under emergency valve, diaphragm and emergency valve stem. | (1) Clean or replace emergency valve diaphragm or valve stem. |
|---|---|

d.—No brakes on one or more wheels

- | | |
|--|------------------------|
| (1) Sheared key in brake lever on cross shaft. | (1) Replace. |
| (2) Clevis pin out of levers or rods. | (2) Replace. |
| (3) Broken cam shaft. | (3) Replace. |
| (4) Out of adjustment. | (4) Adjust. |
| (5) Chamber diaphragm leaking. | (5) Replace diaphragm. |
| (6) Lining worn. | (6) Reline. |

e.—One or more brakes running hot

- | | |
|---|---|
| (1) Return spring broken in hub. | (1) Replace. |
| (2) Key sheared in brake lever. | (2) Replace. |
| (3) Return spring missing on levers. | (3) Replace. |
| (4) Rust on clevis and clevis pins. | (4) Lubricate. |
| (5) Rusty anchor pin. | (5) Lubricate. |
| (6) Hand brake not in complete off position. | (6) Release. |
| (7) Binding brake lever or rods. | (7) Lubricate. |
| (8) Brake return spring worn. | (8) Replace. |
| (9) Lever return springs loose, not enough tension. | (9) Replace spring, or lengthen the distance between the two coupling points. |

SECTION V

Drawbar

1. **REBUSHING DRAWBAR** (Fig. 38).—*a.* New drawbar bushings (3) come from factory reamed to the proper diameter and care should be used when replacing the new bushing not to burr or mushroom their ends in installation.

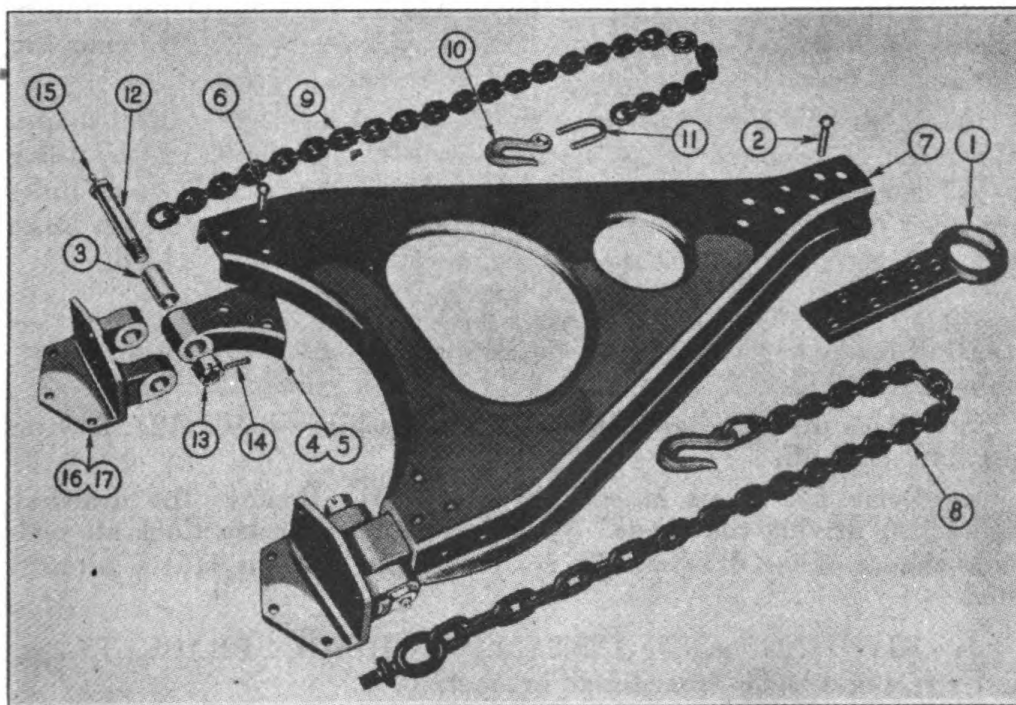


FIGURE 38. REBUSHING DRAWBAR

(1) Remove the drawbar (7) from the gear at the frame brackets (16) by removing the cotter pins and castle nuts (13) from the hinge bolts (12) and driving out hinge bolts (12) with a heavy hammer and bar.

(2) Remove the old bushing (3) by skimming down one side of the steel bushing (3) with an acetylene cutting torch, using care not to cut the casting (4). Bushing can then be driven out with $1\frac{3}{4}$ " diameter steel bar, or pressed out on arbor press.

(3) Using an arbor press, put the new bushing into position.

(4) Try bolt (12) in the bushing (3). If the bolt will not go in, ream to $1\frac{1}{2}$ " diameter.

2. **REPLACING EYE** (Fig. 38).—*a.* This operation can be performed with the drawbar attached to the gear frame.

(1) Cut off the top heads of the seven $\frac{5}{8}$ " rivets (2), using a torch or a cold cut.

(2) Hit the eye (1) with a sledge hammer to free the eye (1) from the draw bar (7). Do not attempt to drive the old rivets out with a punch.

(3) Bolt the new eye (1) into position with two bolts.

(4) Drive five rivets, remove the two bolts and drive the remainder. Do all bucking from under side of drawbar (7).

3. REPLACING AND REPAIRING SAFETY CHAINS.—*a.* Safety chains are held to the front crossmember with eye bolts. By removing nut and lockwasher, a complete safety chain can be replaced.

b.—Bent hooks can be heated and bent back to their natural shape. Hooks can be replaced by cutting the link next to the hook and by using a $\frac{1}{2}$ " cold shut link. Any part of the chain can be spliced, or links replaced through the use of cold shut links. Whenever cold shut links are used, the open ends should be clamped together and welded.

4. INSTALLING DRAWBAR FRAME BRACKETS (Fig. 38).—*a.* Bolt frame brackets (16) to the frame crossmember using three $\frac{1}{2}$ " bolts in each bracket.

b. Place the drawbar in place and insert hinge bolts (12), leaving the nuts (13) off.

c. Drive five rivets in each bracket (16). Remove the drawbar and finish driving the rivets. By following these instructions all possible chance of the drawbar (7) not fitting the brackets (16) is eliminated.

5. RIVETING AND INSTALLING HINGE BRACKETS.—*a.* Cut rivets and welds from hinge brackets (4).

b. Bolt replacement hinge bracket (4-5 Right and Left) to draw bar (7), using three $\frac{7}{16}$ " bolts.

c. Install drawbar (7) to frame brackets (16).

d. Drive three rivets, remove bolts and finish driving.

e. Remove drawbar from frame brackets (16) and weld. By following the above instructions you eliminate all possible chance of the draw bar (7) not fitting frame brackets (16).

6. GEAR LOCK—*a. Removal* (Fig. 39).—(1) Remove the four bolts that hold gear lock to gear frame.

b. Handle replacement.—(1) Remove gear lock from trailer.

(2) Cut off head of pin holding handle to plunger pin. Drive pin out of handle.

(3) Before placing pin through handle and plunger pin, note that pin hole is countersunk on one side of handle. Insert rivet from opposite side and peen pin on countersunk side of handle.

c. *Plunger pin and spring replacement.*—(1) Remove handle from plunger pin and pull plunger pin and spring out from top end of gear lock.

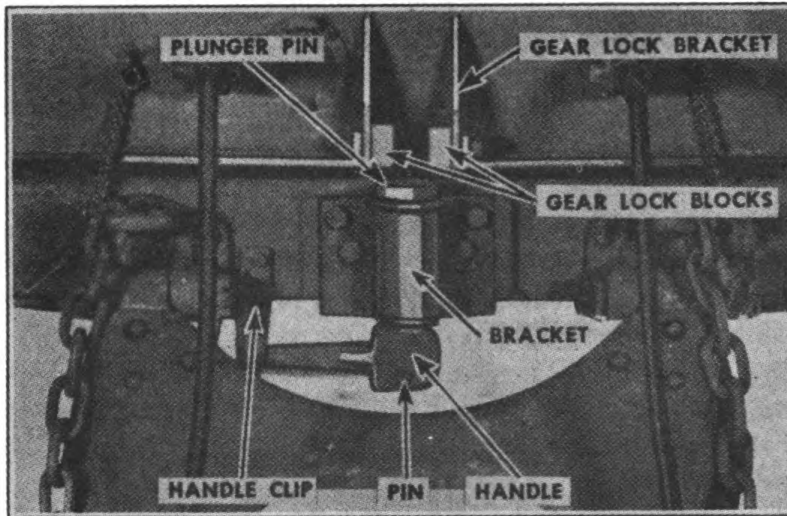


FIGURE 39. GEAR LOCK ASSEMBLY

SECTION VI

Electrical System, Lights

1. **WIRING.**—The general electrical circuit diagram shown in Figure 40 illustrates all of the electrical circuits used on this vehicle. With this diagram, the various circuits can be traced and wiring replacement made. All electrical units are shown in their relative position. Each wire in the electrical system is of a distinctive color. A key to these colors will be found on the circuit diagram. (Fig. 40.)

2. **LIGHTS.**—The lighting equipment on this trailer includes two commercial clearance lights, two clearance blackout lights, one combination blackout stop and blackout tail light, one combination service stop and tail light and blackout tail light.

a. The combination service stop and tail light and blackout tail light is mounted at the left hand rear of the trailer. The combination blackout stop and blackout tail light is mounted at the right hand rear of the trailer.

b. The lens on each blackout tail lamp is designed to produce two beams. This design is such that when one truck is following a preceding truck at a specified safe distance, these two beams will merge into a single highly visible beam.

c. To insure the accuracy of construction necessary to produce this effect, the bulb is soldered to the lens retainer and the lens and filter are crimped to the retainer to form a complete unit. When the bulb is burned out it is necessary to replace the complete bulb unit. (Fig. 41-42.)

d. *Blackout switch.*—The blackout switch is located on the left or road side, at drop in side rail. The switch is operated with a coin or screw driver. It is either at a service or blackout light position. There is no "off" position. Flow of current is controlled by the light switch on the truck.

e. The fuse panel is located on the left hand side rail at the drop in the frame. The panel is protected by a steel box cover, held to the panel by two wing nuts. Fuses are of 1½ amperes capacity.

3. **CLEARANCE LAMP.**—Servicing procedure on both standard clearance lamps and blackout clearance lamps is identical. (Fig. 43.)

a. *Replacing lens.*—(1) Turn the two screws holding lens housing to lamp about three-quarters of the way out and lift housing off.

(2) Push either of the two clips from lens and lift lens out of housing.

NOTE: Correct position of blackout lens can be verified by the marking, "Bottom," and the arrow pointing down.

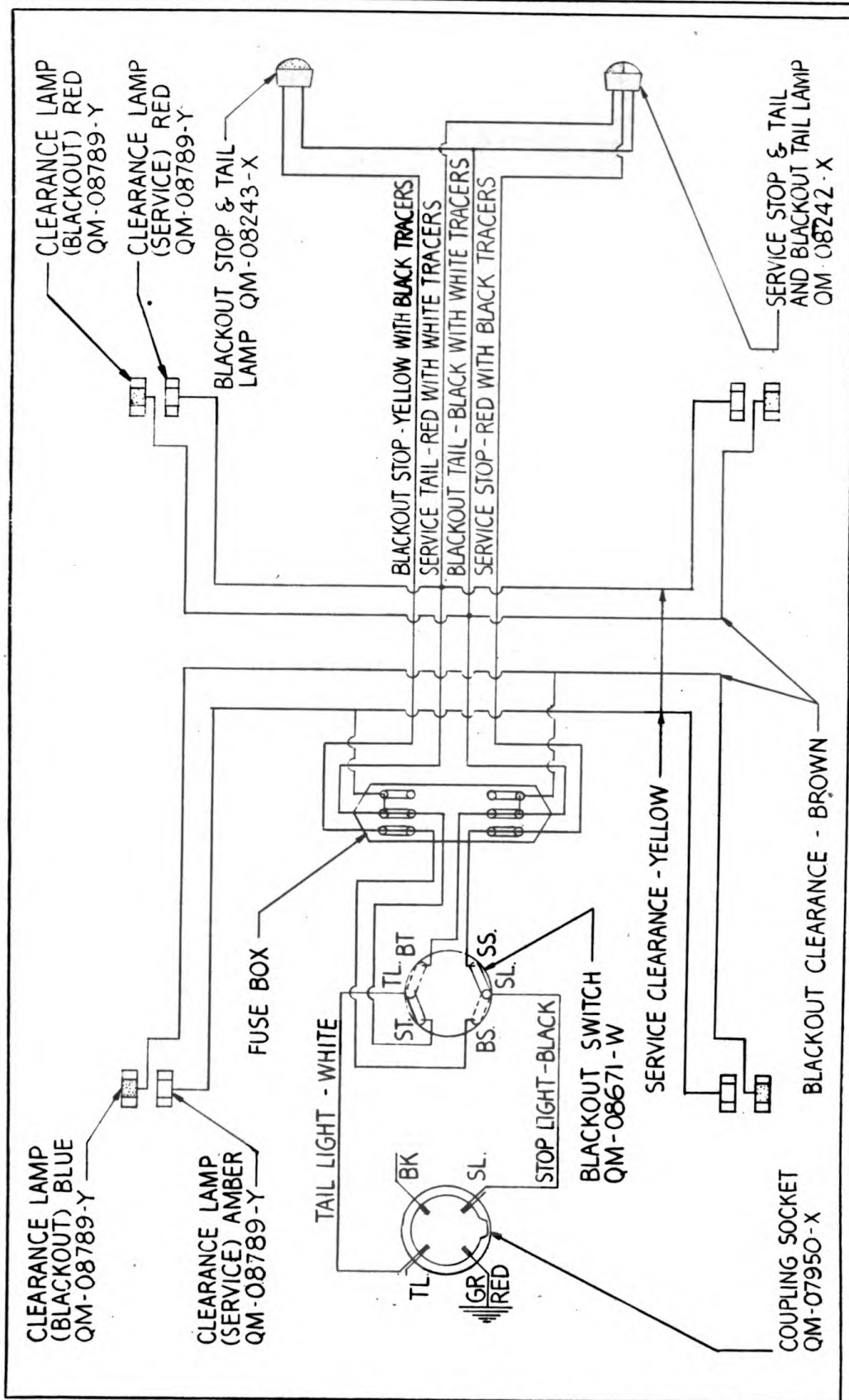


FIGURE 40. WIRING DIAGRAM

b. Replacing bulb.—(1) Turn the two screws holding lens housing to lamp about three-quarters of the way out.

FIGURE 41. SERVICE STOP AND TAIL LIGHT, BLACKOUT TAIL LIGHT
FIGURE 42. BLACKOUT STOP AND TAIL LIGHT

(2) Lift off housing and remove bulb.

(3) When reinstalling housing, be sure felt gasket is put back in position on lamp assembly.

c. Replacing lamp assembly.—(1) Remove lens housing.

(2) Remove felt gasket.

(3) Remove the four bolts holding lamp to frame.

(4) Pull out on lamp.

(5) Remove tape from spliced wire and cut wire so as to leave it as long as possible.

NOTE: These wires are soldered. If, when replacing lamp, solder is not available, splice the two wires by twisting them together and tape thoroughly.

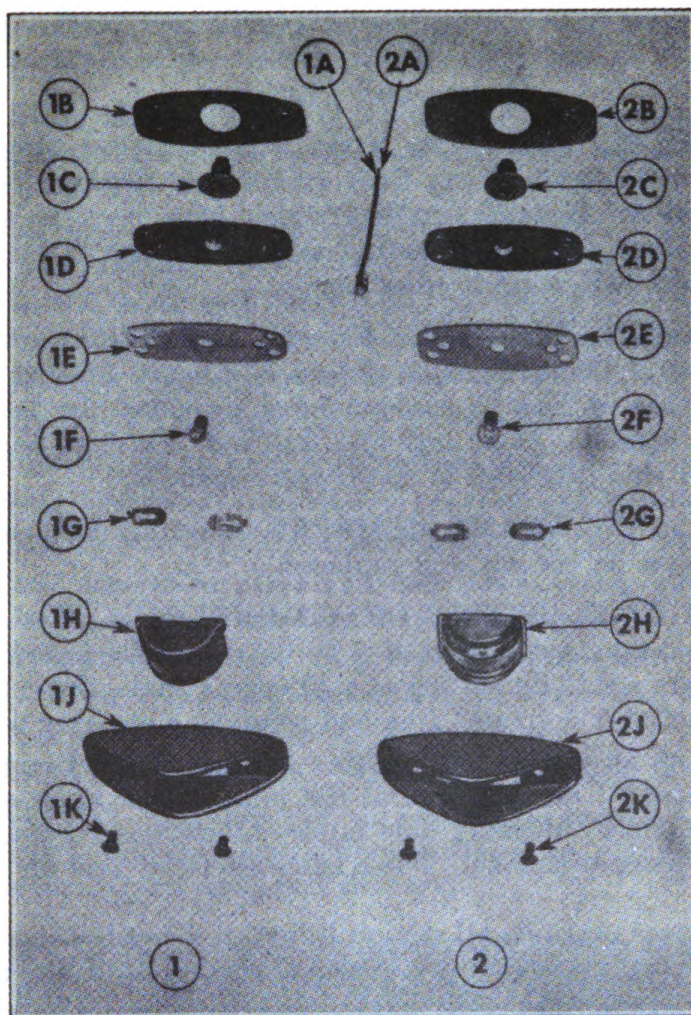


FIGURE 43. CLEARANCE LIGHTS—BLACKOUT AND AMBER CLEARANCE LIGHTS

4. LIGHTS.—Service Diagnosis and Remedy.

SYMPTOM AND PROBABLE CAUSE

PROBABLE REMEDY

a.—Failure to light when other lamps light

- (1) Burned out bulb.
- (2) Grounded or broken circuit.
- (3) Stop light switch impaired.
- (4) Bulb loose or improperly mounted.

- (1) Replace.
- (2) Check connections back to switch.
- (3) Check and replace if necessary.
- (4) Make sure lamp terminals engage socket terminals firmly.

b.—Lights dim

- (1) Bulb loose or incorrectly mounted.
- (2) Dirty lens.
- (3) Poor connection at socket or ground leak.

- (1) Push bulb fully into socket.
- (2) Clean.
- (3) Check socket, circuit and insulation; repair or replace.

c.—Lights flicker

- (1) Loose wire connection or intermittent ground.

- (1) Check wires and insulation; repair or replace.

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SECTION VII

Frame and Platform

1. **GENERAL.** Due to the exceptionally rugged design of the frame used in this trailer, very little attention is required to maintain its dependability. However, trailers which have been in a collision, upset or accident of a major nature may have bent or twisted cross-members which will require attention.

2. **STRAIGHTENING BENT FRAME MEMBERS.**—Frame members may be straightened through the use of a heavy I-Beam, jacks, and chains. The use of heat is recommended provided the metal is not heated to an extreme. Heat only to a dull red. Extreme heat weakens the structural characteristics of the frame members.

3. **REPLACING FRAME MEMBERS.**—Severely bent and twisted members should be cut out and replaced.

4. **REPAIRING SECTION OF A MEMBER.**—*a.* Cut across the outside of the damaged section at a 30 degree angle, insert the splice section, and arc weld. By cutting at a 30 degree angle, the cut and weld are distributed over a greater area and result in a stronger weld.

b. Back up all spliced joints with a plate or channel reinforcement extending about 6" on each side of the joint on the inner side of the channel. Put one 1" diameter hole in every four square inches of space on the splice plate or channel. These holes are to be used for plug welding.

c. Whenever possible, all section splices and reinforcements should be arc welded. This method is recommended for all frame repairs.

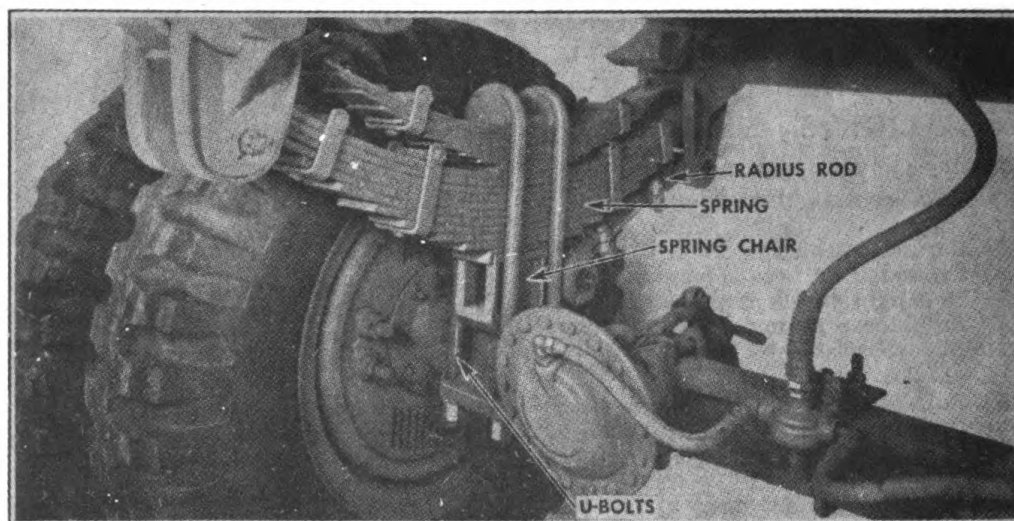


FIGURE 44. SPRING REMOVAL

A 1" plug welding hole should be welded solid with bare welding rod. For the remainder of the welding use a coated rod.

5. SPRING HANGERS. (Fig. 44.)—*a.* Spring hangers and auxiliary spring brackets can be replaced without removing gear frame from main frame.

b. Front spring hanger removal.—(1) Remove the front end of radius rod from hanger. (See Radius Rods, paragraph 9, this section.)

(2) Cut the inner and outer heads off all rivets in hanger. (Use acetylene torch with a No. 2 tip and blow through remainder of rivet.)

(3) Clean all slag from rivet holes.

(4) Cut all weld holding hanger to cross tube.

(5) Hoist trailer up until spring clears hanger.

(6) Drive hanger off tube with a heavy sledge hammer.

c. Replacement.—(1) Clean all excess weld from cross tube.

(2) Place hanger in place and bolt down, using one $\frac{5}{8}$ " bolt in the vertical hole, and two bolts in the horizontal position.

(3) Drive all the vertical rivets first. Drive rivets in all remaining open holes. Remove the two horizontal bolts and install rivets.

(4) Reweld hanger to cross tubing.

d. Rear spring hanger.—(1) Remove spring bolt.

(2) With the exception that no welding is required, remove and replace hanger following instructions outlined in paragraph covering "Front Hanger Replacement and Removal."

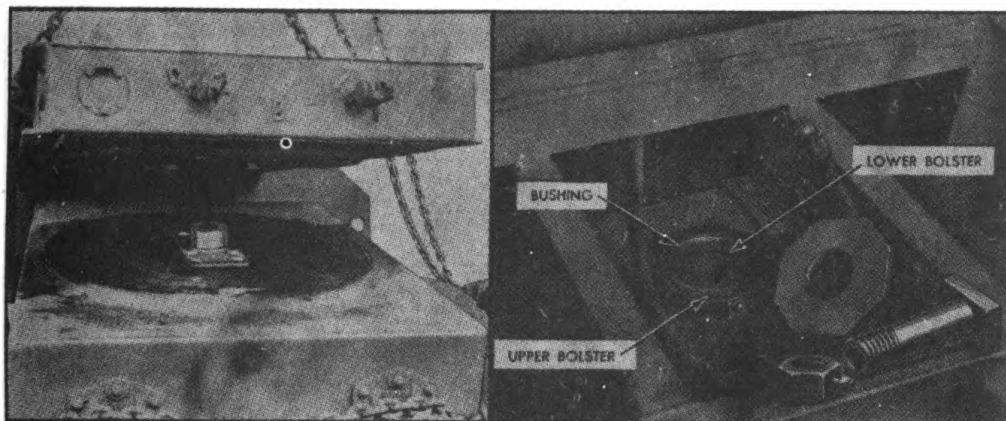


FIGURE 45. TRAILER AND GEAR DISASSEMBLED
 FIGURE 46. REMOVING BOLSTER PLATE CAP SCREWS

6. REPLACING BOLSTER PLATES.—*a.* Remove the rubber air line at the quick release valve, and pull line out of hollow bolt.

b. Loosen set screw in bolster bolt nut and remove nut.

c. Place a wood horse under front crossmember of gear frame. (This will prevent gear frame from falling at the front.)

d. Connect the hoist chain to the lashing rings and raise frame away from the gear.

e. Burn out the old rivets.

f. Bolt the new bolster plate in place, using four $\frac{5}{8}$ " bolts. Drive four rivets, then remove the four bolts and continue driving rivets. Grind top of rivets flush with the bolster plate. (Fig. 46a.)

7. **REBUSHING UPPER BOLSTER PLATE** (Fig. 46a).—a. Uncouple gear frame from main frame as instructed in paragraph 6.

b. Cut down one side of bushing using a cape chisel and drive out bushing.

c. When replacing the bushing, wrap a long chain around frame at the bolster. Place a hydraulic jack between the new bushing and the chain. Use the jack to press the bushing into place. This bushing comes from the factory reamed to the proper dimensions.

CAUTION: WHEN PRESSING THE NEW BUSHING IN, BE CAREFUL TO PLACE THE BUSHING IN THE BOLSTER SO THAT THE OIL HOLE IN THE BUSHING WILL LINE UP WITH THE OIL HOLE IN THE BOLSTER.

8. **REPLACING PLATFORM FLOORING.**—a. Remove the worn flooring by removing the bolts holding boards to floor.

b. Lay the new boards in position and mark bolt holes from underneath. Remove boards and drill the holes. Paint boards with creosote and bolt into position on platform.

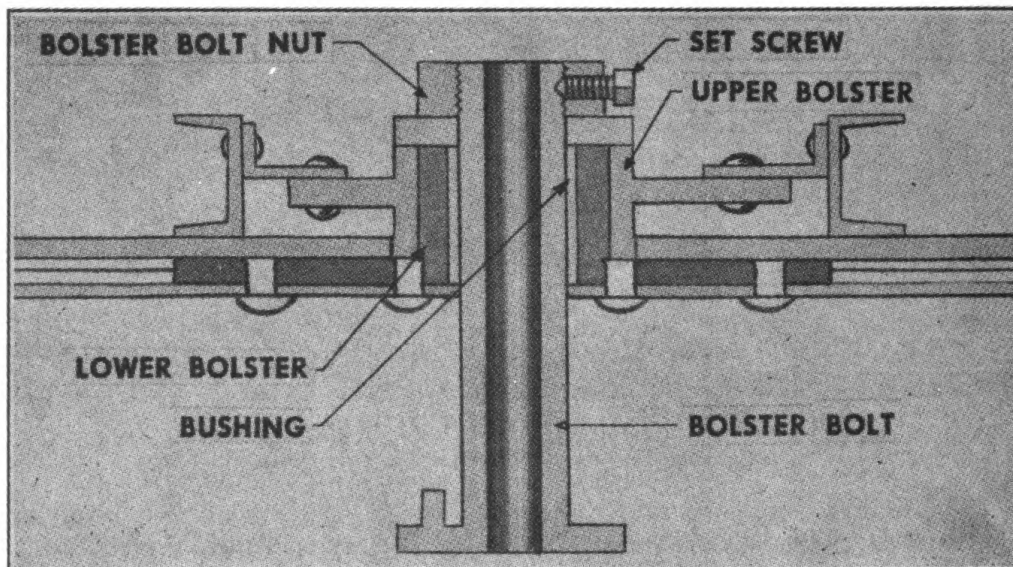


FIGURE 46A. CUTAWAY VIEW—BOLSTER

SECTION VIII

Springs

1. **REMOVING SPRING** (Fig. 44).—*a.* This can be accomplished without removing the wheel or hub assembly from axle.
b. Remove the four U-bolt nuts. Tap U-bolt plate free of axle.
c. Pull the U-bolts from spring.
d. Remove the spring bolts at rear hanger and hoist trailer up about three inches.
e. Lift spring off spring chair.
2. **SPRING REPAIR**.—*a.* With the spring between two wooden horses, place a C-clamp in the center of the spring and tighten down.
b. Remove the center bolt.
c. Remove the clip bolts and clip spacers. Remove C-clamp.
d. Heat all loose spring slip rivets with a torch and use a ball peen hammer to tighten from the counter sunk side of the spring leaves.
e. Replace all broken spring leaves.

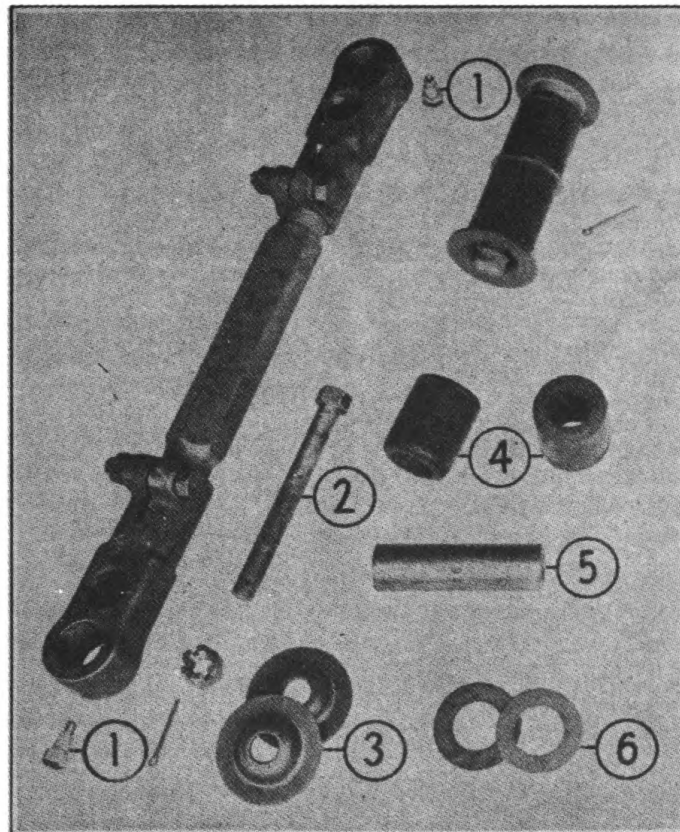


FIGURE 47. RADIUS ROD ASSEMBLY

3. REPLACING BOTH SPRINGS.—*a.* When replacing both springs, check the arch of the springs prior to installation—it can vary as much as $\frac{1}{4}$ "—and install the spring with the greatest amount of arch on the curb side. Always keep the spring clip bolts to the inside and nuts to the outside when springs are mounted. This eliminates possible tire damage.

b. Using a piece of straight board as a level, place it next to main leaf from end to end. Measure the distance at the center bolt from board to bottom of spring to determine the arch.

c. Spring clips which hold leaves in alignment should be tight, but not so tight as to restrict free movement of leaves. Frequent inspection of clips should be made and they should be tightened up when necessary. Loose clips permit leaves to shift, which will cause shearing of spring center bolt.

4. RADIUS RODS.—*a.* Only in very rare instances do radius rods require replacement. Failure is usually due to accident, or bending under extreme shock. And, though one radius rod is adjustable, the other fixed, replacement procedure is the same for both.

5. REPLACEMENT OF RADIUS RODS (Fig. 47).—*a.* Remove the set screws (1) and bolts (2) at each end of the rods.

b. Remove the inner and outer washers (3).

6. SPRINGS.—Service Diagnosis and Remedy.

SYMPTOM AND PROBABLE CAUSE	PROBABLE REMEDY
<i>a. Hard riding.</i>	
(1) Overloaded.	(1) Load vehicle only to rated capacity.
(2) Uneven load distribution.	(2) Distribute load evenly.
(3) Loose U-bolt nuts.	(3) Tighten.
<i>b. Over flexible.</i>	
(1) Spring leaf clips broken.	(1) Replace.
(2) Broken spring leaf or leaves.	(2) Replace.
(3) Loose spring shackles.	(3) Tighten.
<i>c. Uneven riding.</i>	
(1) Broken Spring leaf or leaves.	(1) Replace.
(2) Uneven load distribution.	(2) Distribute load evenly.

SECTION IX

Wheels, Hubs and Bearings

1. INTRODUCTION. The wheels used on this unit require no service—barring damage due to collision. Replacement rather than any attempt at repair is recommended.

2. REPLACEMENT OF WORN OR BROKEN STUDS.—*a. Front.*

—(1) Remove inner and outer wheels.

(2) Remove hub from the axle and place on the floor with the inside of the drum up.

(3) Remove nut from the stud (or studs) which you wish to replace.

(4) Using a $\frac{5}{8}$ " punch, drive out the broken or worn stud.

(5) Turn the hub and drum over and place the new stud in position. Make sure that the shoulder on the stud is placed so that it will fit into the groove in the hub after stud is driven into position.

(6) Drive the stud into position using a copper hammer.

(7) Turn the wheel over with drum up and tighten nut.

(8) Clean all foreign matter from drum and replace the wheel.

b. Rear.—(1) If the broken or worn studs are on the outside wheel, it will not be necessary to remove wheel from trailer.

(2) Remove the outside tire.

(3) Place a center punch mark in the center of broken stud and drill a $\frac{7}{16}$ " hole through stud. Drive extractor in hole and turn broken stud out.

(4) Start new stud in hole. Run two stud nuts three-quarters of the way down on stud and lock the two stud nuts together. Tighten stud into wheel. Remove the two nuts.

(5) When replacing worn stud, turn stud out using a pipe wrench.

3. TIRE REPAIRS.—*a. Front.*—(1) When removing wheels for tire repairs, it will be seen that all studs and nuts are marked with the letters "L" or "R" which indicate left and right. And, while nuts are not interchangeable, the wheels themselves are. They may be used as inner or outer, right or left.

(2) Since the entire load is carried out to the wheels through the studs, care should be taken to draw up wheel nuts tight and with equal pressure at all studs.

(3) To insure a tight wheel fit, follow this simple procedure:

(a) Make sure all countersunk holes in wheels are clean, free from dirt or "piled up" paint.

(b) Draw up the sleeve shaped nuts which hold the inner wheel in place. Apply pressure evenly on all nuts by progressively tightening opposite nuts until all are down very tight.

(c) Slide on the outer wheel and draw up the outer stud nuts in the same manner as outlined above.

(4) It is good practice when mounting wheels to place the valve stems opposite each other for easy tire inflation.

b. Rear.—(1) When removing tire and rim assembly, place a jack under center of trunnion axle. Jack trailer until wheels clear ground.

(2) Using special wrench supplied with this trailer, remove stud nuts and lugs on outer wheel.



FIGURE 48. REAR TIRE REMOVAL

- (3) Lift tire out as shown in Figure 48.
- (4) Tap off spacer band and work inner tire off wheel.
- (5) To replace, reverse the removal procedure.

NOTE: After placing lugs and lug nuts on studs, draw all nuts up evenly, but not tight. Place a block of wood next to tire and turn wheel. At point where the tire comes closest to the block, tighten the lugs. Continue this operation until wheel runs true, and stud nuts are tight.

4. TIRE, WHEEL AND RIM SERVICE.—NOTE: Tires at front are mounted on wheels, and wheels are mounted on hub. Tires at rear are mounted on rims and rims are mounted on the wheels.

a. Removing tire from wheel.—(1) Permit the air to escape from the tire by removing the core from the valve stem. Then insert a tire tool in the slot provided for the purpose on the rim and pry down while tapping the opposite side of the rim with a hammer.

(2) When reinstalling the tire, inflate before installing the tire and wheel on hub. Before inflation make sure that the lock rim is properly seated in the groove.

b. Replacing tire on wheel.—(1) Place wheel on floor with valve slot up.

(2) Place tire over wheel with valve stem pointing up.

(3) Place lock ring half way into bead. Drive half of lock ring into position on wheel. Pry the remainder of lock ring over wheel, tapping securely into position.

c. Removing tire from rim.—(1) Permit air to escape from the tire by removing the core from the valve stem. Then insert a tire tool in lock ring next to split in rim. Pry lock ring off rim. (Pry lock ring at split to shorten the diameter of the rim.)

d. Replacing tire on rim.—(1) Place rim on floor with valve slot up.

(2) Place tire over rim with valve up. Place a small block of wood under rim at slot to hold split in rim open. Start the lock ring on rim in clockwise direction and pry lock ring down on rim.

NOTE: Before inflating tire, check rim to make sure split is properly closed and that lock ring is properly coupled into rim.

CAUTION: ALWAYS WRAP TWO SAFETY CHAINS LOOSELY AROUND TWO DIFFERENT POINTS OF THE TIRE PRIOR TO INFLATION. THIS SAFEGUARDS AGAINST POSSIBLE SERIOUS INJURY SHOULD THE OUTER LOCK RING LET GO DURING INFLATION.

5. CARE AND INSPECTION OF TIRES AND TUBES.—a. All

tires on this trailer are built to sustain the weight of the loaded trailer.

b. However, unless the recommended pressure is maintained, the tires will not function as they should and in consequence safe, economical operation of the trailer will be affected.

c. Tires should be checked every 500 miles or 6 days. Correct air pressure is 80 pounds in front tires and 60 pounds in rear tires.

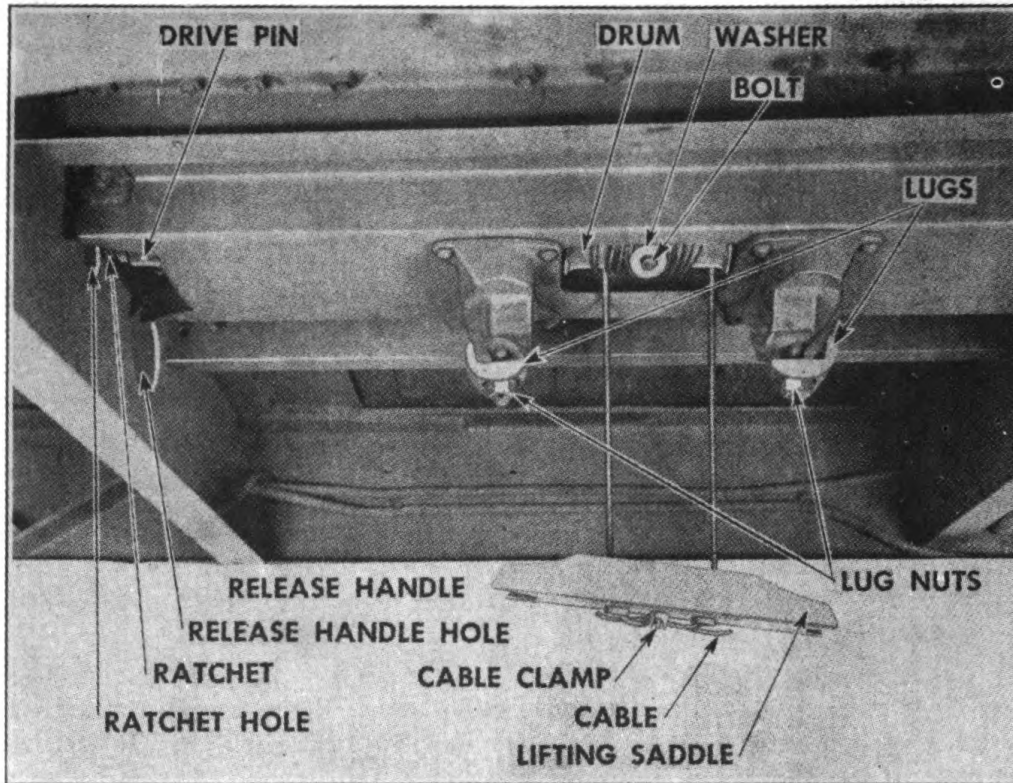


FIGURE 49. TIRE CARRIER REMOVAL

6. TIRE CARRIER.—*a. Removal.* (Fig. 49).—(1) Remove tire from tire carrier. Remove the four bolts holding tire carrier to frame and lift assembly out.

b. Cable replacement.—(1) Remove the bolt that runs through drum.

(2) Remove cable clamp and pull cable out of saddle.

NOTE: When replacing cable, place center of cable under washer on drum and tighten bolt making sure both ends of cable are the same length. Should one end of cable be longer than the other, the tire will not wind up level; extra stress, apt to cause failure, will be placed on short end of cable.

7. REMOVING HUB ASSEMBLY, FRONT AXLE.—*a.* To remove the axle hub assembly from the axle, proceed as follows:

- (1) Hoist the front end by connecting the chain to the front crossmember of the gear frame.
- (2) Place a greased steel plate or wood plank under both dual tires to utilize as a skid for the removal of hub and wheel assembly in one unit. The hub assembly with wheel intact is too heavy and cannot easily be removed otherwise.
- (3) Take out the four cap screws in hub cap, pull the cotter key from the axle nut and remove the axle nut by turning the nut in a counter-clockwise direction.
- (4) Now place a screw driver under the outer bearing, pry gently



FIGURE 50. REMOVING FRONT AND REAR OUTER WHEEL ASSEMBLY and tap D-washer with a hammer. (Fig. 50). The D-washer and bearing may also be removed as the wheel assembly is pulled off.

- (5) Pull the wheel off, using the greased skid plate to facilitate its removal.

8. INSTALLING HUB ASSEMBLY, FRONT.—a. Before installing the hub on the axle, all bearings should be washed in cleaning fluid,

a stiff brush employed to remove all foreign matter, and bearings thoroughly inspected for pits, chips and signs of wear. All dirt apt to get into hubs should also be removed.

b. To install the hub, proceed as follows: (Fig. 51.)

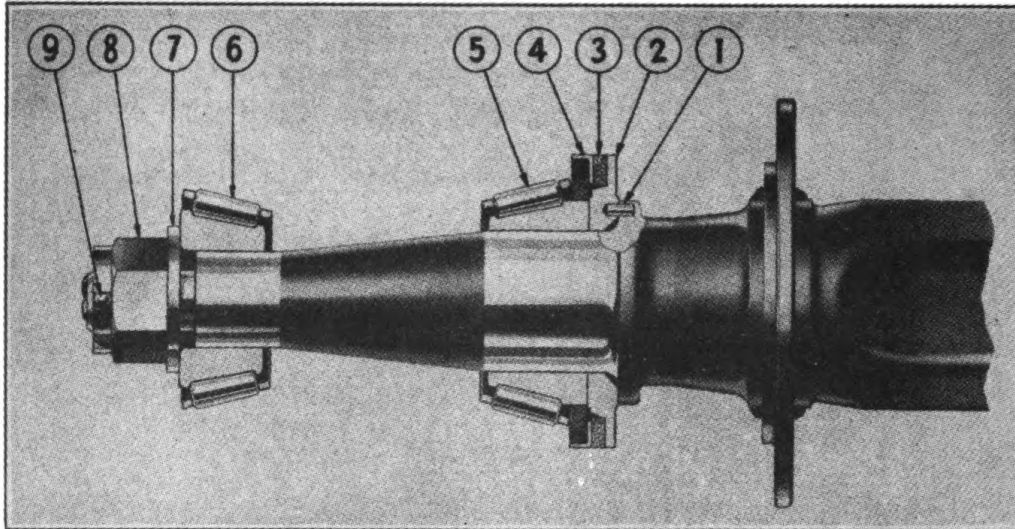


FIGURE 51. AXLE—CUTAWAY VIEW

(1) Repack the space in the hub between the two cups with new grease. Put about $\frac{1}{8}$ " layer of grease on the inner and outer bearing cups and repack both inner and outer bearings.

(2) Now place the inner bearing (5) in the hub.

(3) Insert the compression ring (4) with its flanged side toward the inside of the hub. Place the felt grease retainer (3) next to the compression ring.

(4) Place the dust collar (2) on the axle spindle and lock it into place by means of the metal dowel (1) which fits into a slot on the spindle and a hole in the dust collar. The wheel is now ready to slip on.

(5) Using a greased skid plate, slide the wheel on the spindle. Place the outer bearing (6) in the hub and install the D-washer (7).

(6) Turn the axle nut (8) up tight, then slacken off about $\frac{1}{3}$ turn. Test for excessive end play. Use a bar. Rest one end on the floor and lift up on outside tire. By working the bar up and down while holding one finger on the cage of the outer bearing, excessive play is quickly detected.

(7) With the bearings properly adjusted, fit cotter key (9) into wheel nut, fill the hub cap $\frac{1}{3}$ full of grease and reinstall with cap screws. Turn the wheel. If the wheel fails to turn freely, check for brake drag by means of the slack adjusters. If this fails to correct the trouble, the

felt grease retainer probably slipped out of place during assembly. To correct this difficulty, remove hub assembly and reinstall.

9. REMOVING OUTER WHEEL ASSEMBLY, REAR AXLE (Fig. 50).—*a.* To remove the axle hub assembly from the axle, proceed as follows:

(1) Place a jack under center on trunnion axle, and jack up until wheel clears ground.

(2) Place a greased steel plate or wood plank under both dual tires to utilize as a skid for the removal of hub and wheel assembly in one unit. The hub assembly with wheel intact is too heavy and cannot easily be removed otherwise.

(3) Take out the four cap screws in hub cap, pull the cotter key from the axle nut and remove the axle nut by turning the nut in a counter-clockwise direction.

(4) Now place a screw driver under the outer bearing, pry gently and tap D-washer with a hammer. The D-washer and bearing may also be removed as the wheel assembly is pulled off.

(5) Pull the wheel off, using the greased skid plate to facilitate its removal.

10. INSTALLING OUTER WHEEL ASSEMBLY, REAR AXLE.—*a.* Follow the same procedure outlined in "Installing Hub Assembly, Front," except that rear axle has no dowel pin and dust collar is stationary to axle assembly.

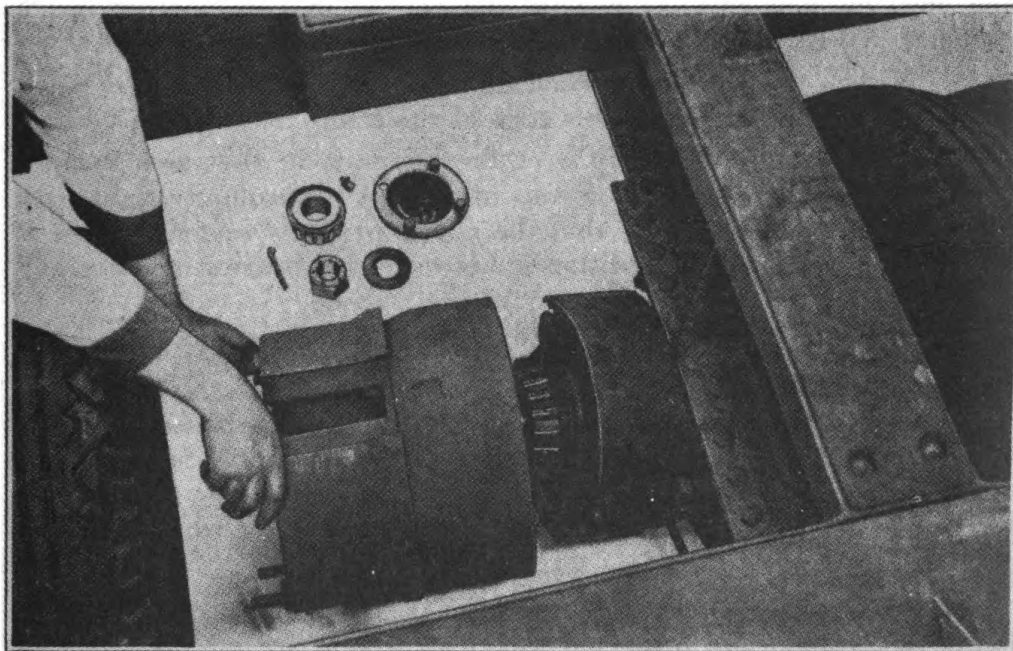


FIGURE 52. REMOVING INNER WHEEL ASSEMBLY—REAR

11. REMOVING INNER WHEEL ASSEMBLY, REAR AXLE.—*a.* Place jack under trunnion axle. Jack up until wheel clears ground. (Fig. 52.)

b. Remove the outer and inner tires. (See Tire Removal, paragraph 4, *a*, this section.)

c. Remove the four cap screws holding hub cap to wheel.

d. Remove the cotter key, axle nut and D-washer. Lift wheel assembly off axle.

12. REPLACING INNER WHEEL ASSEMBLY, REAR AXLE.—*a.* Follow the same procedure outlined in “Installing Hub Assembly, Front,” except that rear axle has no dowel pin and dust collar is stationary to axle assembly.

b. Install the tires. (See “Tire Replacement, Rear,” paragraph 4, subparagraph *b*, this section.)

NOTE: The following instructions apply to both front hubs and rear wheels.

13. REMOVING BEARING CUPS.—*a.* Place a soft steel bar on the inside shoulder or edge of the cup to be removed. Using a heavy hammer, hit first one side of the cup and then the other. By alternating in this manner, the cup will come out straight with the cup bore. Danger of wedging of the cup in the bore is minimized.

14. INSTALLING BEARING CUPS.—*a.* With the wheel on its side, start the new cup square with the bore so that its smallest inside diameter will be on the inside when it is in place.

b. With a piece of hard wood or soft steel over the cup, drive it in until it is flush with the outer edge of the hub.

c. Now place the old cup over the new one in the same manner as in step *a.* and drive the new cup in until it is absolutely tight with the cup bore flange. Be sure that the cup is properly seated because if it is not it will alter the distance between the bearing centers and make impossible proper reassembly of the wheel.

15. LOOSE CUPS.—*a.* When the bearing cup becomes loose in the hub, replace the hub.

b. Emergency repair of loose cups can be accomplished by using a heavy center punch to reduce the diameter of the bore. Simply use a heavy center punch and put about 12 punch marks per square inch about the diameter of the side wall of the cup bore where the cup normally fits.

16. BEARING AND CUP INSPECTION.—*a.* Bearings and cups should be cleaned and inspected whenever wheels are removed. Pitted or chipped bearings or cups should be replaced.

PART III

SPARE PARTS LIST

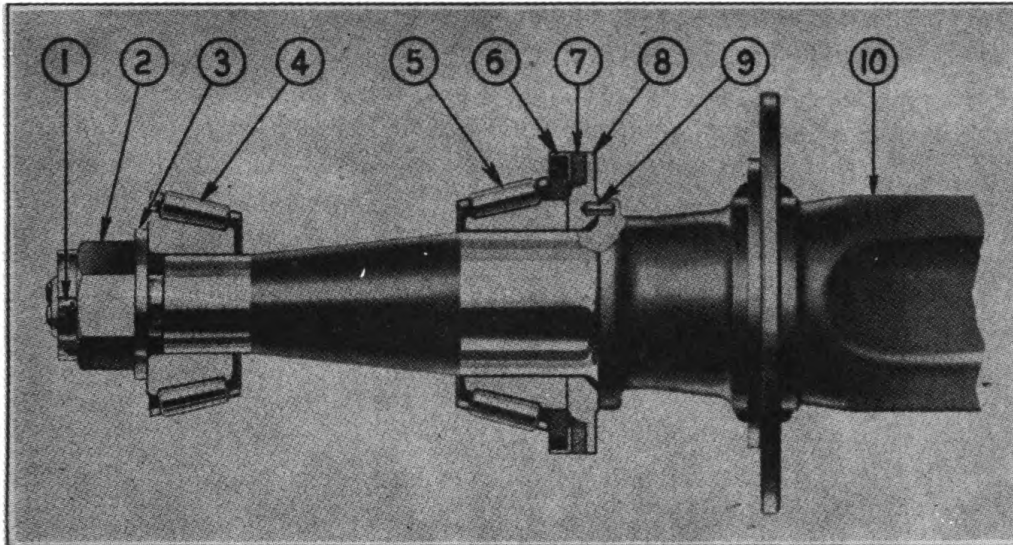


FIGURE 53. AXLE ASSEMBLY

SECTION: *Axle—Front*

(FIGURE 53)

<i>Fig. and Ref. No.</i>	<i>Part No.</i>	<i>Name</i>	<i>Quantity</i>
53- 1	103425	Pin-Cotter, 1/4" x 2 3/4"	2
53- 2	530088	Nut-Castle, 1 1/2"	2
53- 3	530085	Washer-Axle-Dee	2
53- 4	534746	Bearing-Cone-Outer No. 5565	2
53- 5	534747	Bearing-Cone-Inner No. 5752	2
53- 6	530368	Ring-Compression	2
53- 7	530370	Washer-Felt	2
53- 8	534996	Collar-Dust	2
53- 9	534591	Pin-Dust Collar Dowel	2
53-10	534501	Axle-Beam 3" x 4 1/4"	1

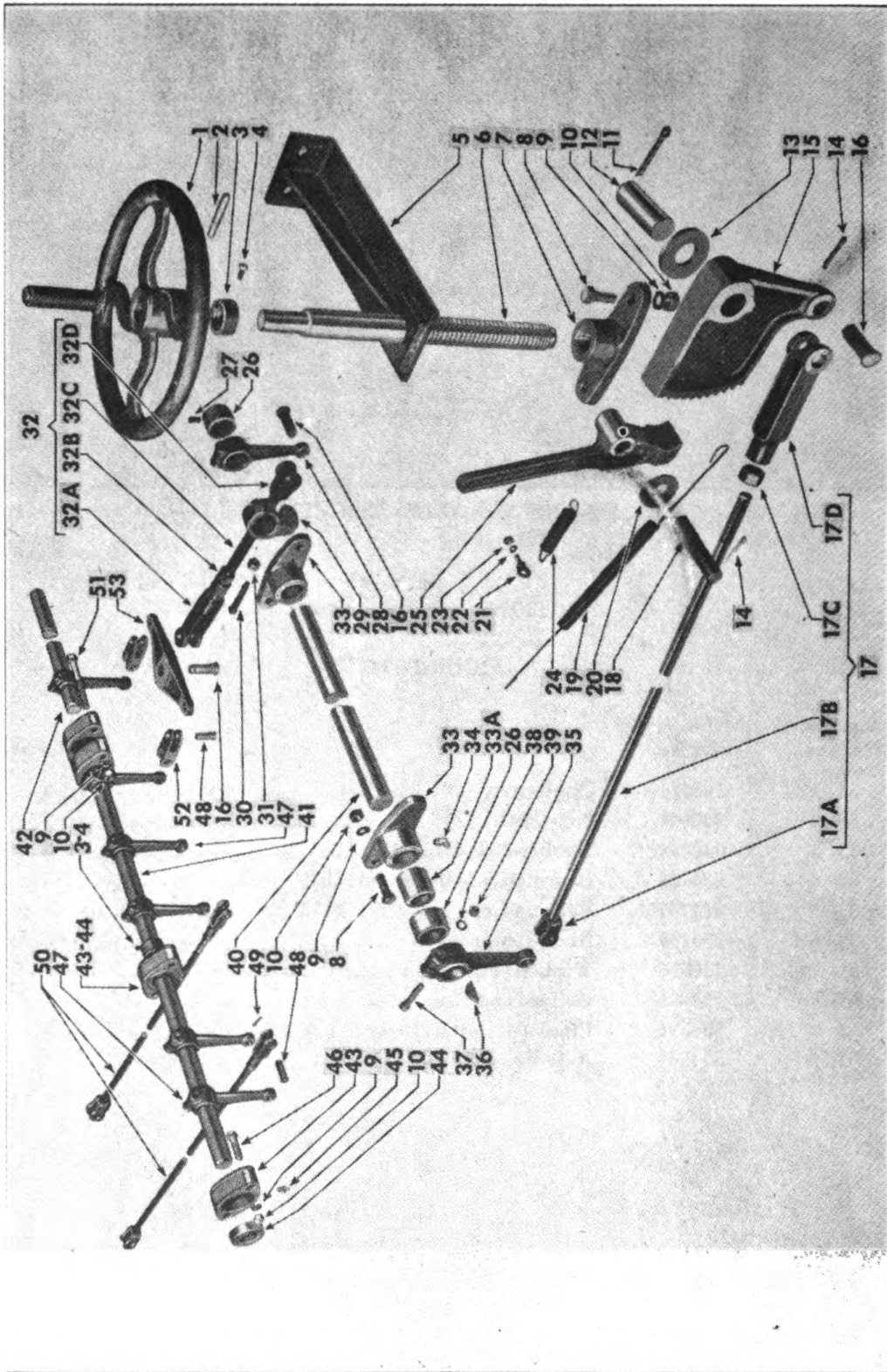


FIGURE 54. HAND PARKING BRAKE

SECTION: *Hand Parking Brake*

(FIGURE 54)

<i>Fig. and Ref. No.</i>	<i>Part No.</i>	<i>Name</i>	<i>Quantity</i>
54-1	51485	WHEEL, brake, assembly	1
	630027	HANDLE	1
	630028	PIN	1
	631936	WHEEL, brake	1
54-2	630298	PIN	1
54-3	533677	COLLAR, cross shaft	4
54-4	102870	SCREW, set, sq-hd., 1/4"-20 x 1/2"	4
54-5	51475	BRACKET, brake operating shaft support, ass'y..	1
54-6	536427	SHAFT, brake operating	1
54-7	536232	BRACKET, brake screw	1
54-8	100053	BOLT, hex-hd., 1/2"-20 x 1 3/4"	2
54-9	103323	WASHER, lock, split, 1/2"	12
54-10	103028	NUT, hex., 1/2"-20	12
54-11	103411	PIN, cotter, 3/16" x 2"	4
54-12	536332	PIN, hand brake ratchet	1
54-13	534800	WASHER, plain, 1 1/4"	2
54-14	103397	PIN, cotter, 5/32" x 1 1/4"	6
54-15	536325	RATCHET, hand brake	1
54-16	138142	PIN, clevis, 3/4" x 2 3/64"	4
54-17	51486	ROD, brake, assembly	1
54-17A	144260	CLEVIS, rod end, 3/4"	1
54-17B	536271	ROD, brake	1
54-17C	103031	NUT, jam, hex., 3/4"-16	1
54-17D	144247	CLEVIS, adjustable rod end, 3/4"-16	1
		17B serviceable with 17A only.	
54-18	536331	PIN, pawl	1
54-19	532146	SPRING, brake return	1
54-20	103346	WASHER, flat, small, 3/4"	2
54-21	532147	EYE, bolt, return spring	2
54-22	103319	WASHER, lock, split, No. 14 or 1/4"	3
54-23	103024	NUT, hex., 1/4"-28	3
54-24	536111	SPRING	1
54-25	536326	PAWL, hand brake ratchet	1
54-26	536267	COLLAR, brake cross shaft	2
54-27	102892	SCREW, set, cup point, sq-hd., 3/8"-16 x 1/2"	2
54-28	536249	LEVER, brake cross shaft	1
54-29	530424	LEVER, adjustable brake	1
54-30	110097	SCREW, set, round point, sq-hd., 1/2"-13 x 2 1/2"	1
54-31	114505	NUT, thin, hex., 1/2"-13	1
54-32	51487	ROD, brake, assembly	1
54-32A	144247	CLEVIS, adjustable rod end, 3/4"-16	1
54-32B	103031	NUT, jam, hex., 3/4"-16	1
54-32C	536272	ROD, brake	1
54-32D	144260	CLEVIS, rod end, 3/4"	1
		32C serviceable with 32D only.	
54-33	57010	JOURNAL, cross shaft with bushing, assembly (536263)	2
54-33A	536262	BUSHING, cross shaft journal	2

Hand Parking Brake—(Continued)

<i>Fig. and Ref. No.</i>	<i>Part No.</i>	<i>Name</i>	<i>Quantity</i>
54-34	109462	FITTING, alemite, $\frac{1}{8}$ "-90°	2
54-35	536273	LEVER, brake cross shaft	1
54-36	117983	KEY, Woodruff, $\frac{1}{4}$ " x $1\frac{3}{8}$ "	12
54-37	106288	BOLT, hex-hd., $\frac{3}{8}$ "-24 x $2\frac{1}{4}$ "	12
54-38	103321	WASHER, lock, split, $\frac{3}{8}$ "	12
54-39	103026	NUT, hex., $\frac{3}{8}$ "-24	12
54-40	536270	SHAFT, brake cross	1
54-41	536269	SHAFT, brake cross, right side	1
54-42	536268	SHAFT, brake cross, left side	1
54-43	532545	JOURNAL, front cross shaft	6
54-44	533368	BEARING, ball	8
54-45	109461	FITTING, alemite, straight, $\frac{1}{8}$ "	6
54-46	106298	BOLT, hex-hd., $\frac{1}{2}$ "-20 x $2\frac{1}{4}$ "	8
54-47	530521	LEVER-FOOT, cross shaft, 5"	10
54-48	114787	PIN, clevis, $\frac{1}{2}$ " x $1\frac{27}{64}$ "	12
54-49	103385	PIN, cotter, $\frac{1}{8}$ " x 1"	12
54-50	51488	ROD, brake, assembly	4
	536288	ROD, brake	4
	104039	YOKE, adjusting, $\frac{1}{2}$ "	4
	103028	NUT, hex., $\frac{1}{2}$ "-20	4
	104044	CLEVIS, rod end, $\frac{1}{2}$ "	4
54-51	113848	BOLT, hex-hd., $\frac{1}{2}$ "-20 x $3\frac{3}{4}$ "	1
54-52	535730	LINK, trunnion rocker beam equalizing	2
54-53	536266	EQUALIZER, brake	1
	100051	BOLT, hex-hd., $\frac{1}{2}$ "-20 x $1\frac{1}{4}$ "	2
	103028	NUT, hex., $\frac{1}{2}$ "-20	2
	103323	WASHER, lock, medium, $\frac{1}{2}$ "	2

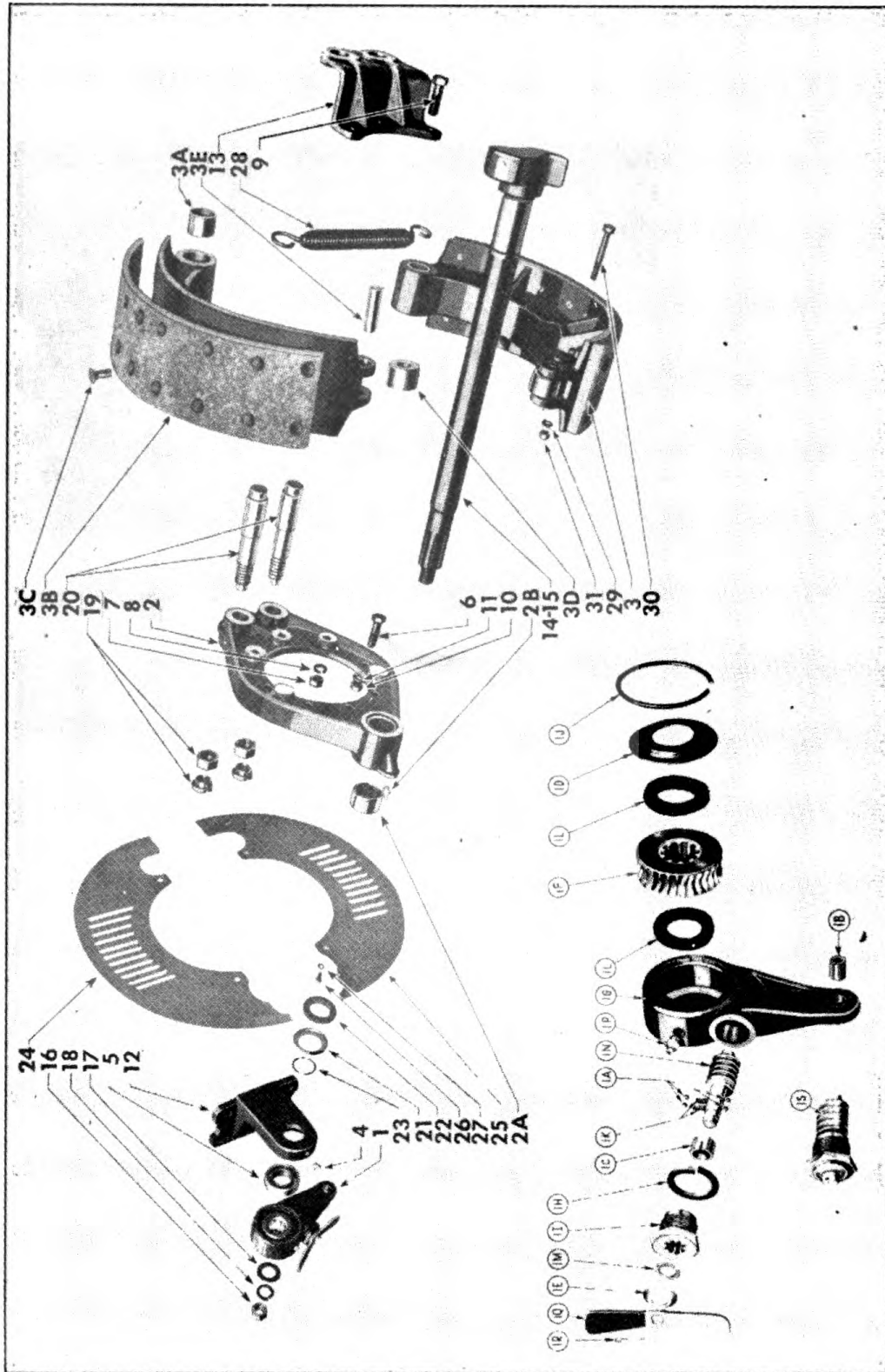


FIGURE 55.

SECTION: *Internal Brakes and Slack Adjuster—Front*

(FIGURE 55)

<i>Fig. and Ref. No.</i>	<i>Part No.</i>	<i>Name</i>	<i>Quantity</i>
55- 1	57002	ADJUSTER, slack, assembly	2
55- 1A	534739	BALL, retainer, slack adjuster	8
55- 1B	533066	BUSHING, slack adjuster	2
55- 1C	534740	BUSHING, worm retainer	2
55- 1D	534731	RETAINER, slack adjuster felt	2
55- 1E	534919	RETAINER, worm, felt	2
55- 1F	534725	GEAR, slack adjuster worm	2
55- 1G	57004	HOUSING, slack adjusting, assembly	2
55- 1H	534014	WASHER, lock, slack adjuster	2
55- 1I	534727	RETAINER, worm	2
55- 1J	534732	RING, felt retainer, snap	2
55- 1K	534729	SPRING, worm retainer ball	4
55- 1L	534730	WASHER, slack adjuster felt	4
55- 1M	534918	WASHER, dust (slack adjuster worm)	2
55- 1N	534726	WORM, slack adjuster	2
55- 1P	536393	FITTING, lubrication, 1/8"	2
55- 1Q	535927	LEVER, adjusting	2
55- 1R	103385	PIN, cotter, 1/8" x 1"	2
55- 1S	51240	WORM, slack adjuster, assembly	2
55- 2	51219	ADAPTER, mounting plate brake, assembly	2
55- 2A	535017	BEARING, needle	4
55- 2B	536393	FITTING, lubrication, 1/8"	2
55- 3	51329	SHOE, brake, assembly (533971)	4
55- 3A	532866	BUSHING, oilite	8
55- 3B	535606	LINING, brake	4
55- 3C	533704	RIVET, brake lining	56
55- 3D	533979	ROLLER	4
55- 3E	533980	SHAFT, roller	4
55- 4	109461	FITTING, alemite, straight, 1/8"	2
55- 5	533368	BEARING, ball	2
55- 6	535027	BOLT, brake adapter mounting	10
55- 7	103028	NUT, hex., 1/2"-20	10
55- 8	103323	WASHER, lock, medium, 1/2"	10
55- 9	535029	BOLT, brake adapter mounting	6
55-10	103028	NUT, hex., 1/2"-20	6
55-11	103323	WASHER, lock, medium, 1/2"	6
55-12	533967	BRACKET, cam	2
55-13	533974	BRACKET, eccentric anchor pin	2
55-14	535105	CAM, medium, LH	1
55-15	535106	CAM, medium, RH	1
55-16	103031	NUT, jam, hex., 3/4"—16	2
55-17	106268	WASHER, large, flat, 3/4"	2
55-18	103326	WASHER, lock, medium, 3/4"	2
55-19	534079	NUT, lock, 3/4"	4
55-20	533975	PIN, eccentric anchor	4
55-21	535018	RETAINER, felt	2
55-22	534730	WASHER, slack adjuster felt	2
55-23	535019	RING, snap, cam shaft	2
55-24	535772	SHIELD, brake dust, LH	2

Internal Brakes and Slack Adjuster—Front (Cont'd)

<i>Fig. and Ref. No.</i>	<i>Part No.</i>	<i>Name</i>	<i>Quantity</i>
55-25	535773	SHIELD, brake dust, RH	2
55-26	106972	BOLT, hex-hd., 1/4"-20 x 1/2"	6
55-27	103319	WASHER, lock, medium, #14 or 1/4"	6
55-28	530135	SPRING, brake shoe	2
55-29	103321	WASHER, lock, medium, 3/8"	4
55-30	100031	BOLT, hex-hd., 3/8"-24 x 2 1/2"	4
55-31	103026	NUT, hex., 3/8"-24	4

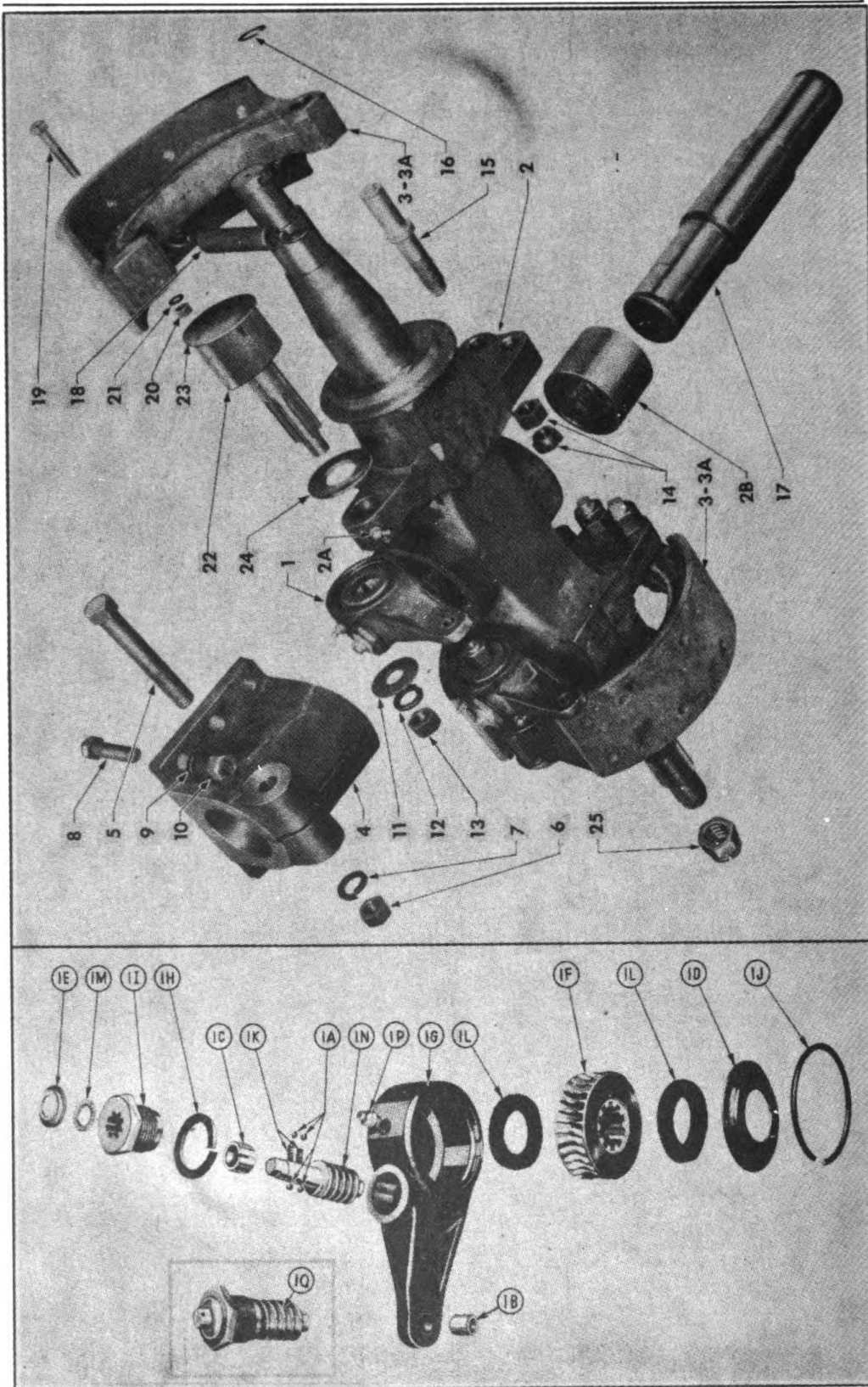


FIGURE 56. INTERNAL BRAKES, SLACK ADJUSTER AND UNDERCONSTRUCTION—REAR.

SECTION: *Internal Brakes, Slack Adjuster and Underconstruction*
—Rear
(FIGURE 56)

<i>Fig. and Ref. No.</i>	<i>Part No.</i>	<i>Name</i>	<i>Quantity</i>
56-1	51477	ADJUSTER, slack, assembly	4
56-1B	533066	BUSHING, slack adjuster	4
56-1C	534740	BUSHING, worm retainer	4
56-1D	534731	RETAINER, slack adjuster felt	4
56-1E	534919	RETAINER, felt, worm	4
56-1F	534725	GEAR, slack adjuster worm	4
56-1G	57004	HOUSING, slack adjuster, assembly	4
56-1H	534014	WASHER, lock, slack adjuster	4
56-1I	534727	RETAINER, worm	4
56-1J	534732	RING, felt, retainer, snap	4
56-1K	534729	SPRING, worm retainer ball	8
56-1L	534730	WASHER, slack adjuster felt	8
56-1M	534918	WASHER, dust	4
56-1N	534726	WORM, slack adjuster	4
56-1P	109461	FITTING, alemite, straight, 1/8"	4
56-1Q	51240	ADJUSTER, slack, worm, assembly	4
56-2	53047	AXLE, trunnion, assembly	2
56-2A	109461	FITTING, alemite, straight, 1/8"	2
56-2B	564636	BUSHING, trunnion axle	4
	534591	PIN, dowel	8
56-3	57057	BRAKE, shoe, assembly	8
56-3A	536312	LINING, brake, 12 5/8" x 4 1/2" (Raybestos-Manhattan #DV-4237-C)	8
	534212	BUSHING, oilite	16
	533704	RIVET, brake lining	72
	533576	SCREW, cam seat	16
	533559	SEAT, cam	8
	536210	WIRE, brake cam seat screw anchor	8
56-4	534076	BRACKET, axle trunnion	4
56-5	116203	BOLT, hex-hd., 3/4"-16 x 4 3/4"	4
56-6	103031	NUT, hex., jam, 3/4"-16	4
56-7	103326	WASHER, lock medium, 3/4"	4
56-8	100079	BOLT, hex-hd., SAE, 5/8" x 2 1/2"	24
56-9	103325	WASHER, lock medium, 5/8"	24
56-10	103030	NUT, hex., 5/8"	24
56-11	106268	WASHER, large, flat, 3/4"	4
56-12	103326	WASHER, lock, medium, 3/4"	4
56-13	103031	NUT, hex., jam, 3/4"-16	4
56-14	534079	NUT, lock, male with female	8
56-15	533560	PIN, eccentric anchor	8
56-16	630838	RING, lock	8
56-17	536254	SHAFT, trunnion axle	2
56-18	533561	SPRING, brake shoe	4
56-19	100030	BOLT, hex-hd., SAE, 3/8"-24 x 2"	8
56-20	103026	NUT, hex., 3/8"-24	8
56-21	103321	WASHER, lock, medium, 3/8"	8
56-22	533908	CAM, brake	4
56-23	530564	WASHER, outer	4
56-24	534077	WASHER, brake cam, inner	4
56-25	530088	NUT, trunnion axle, 1 1/2" SAE	4

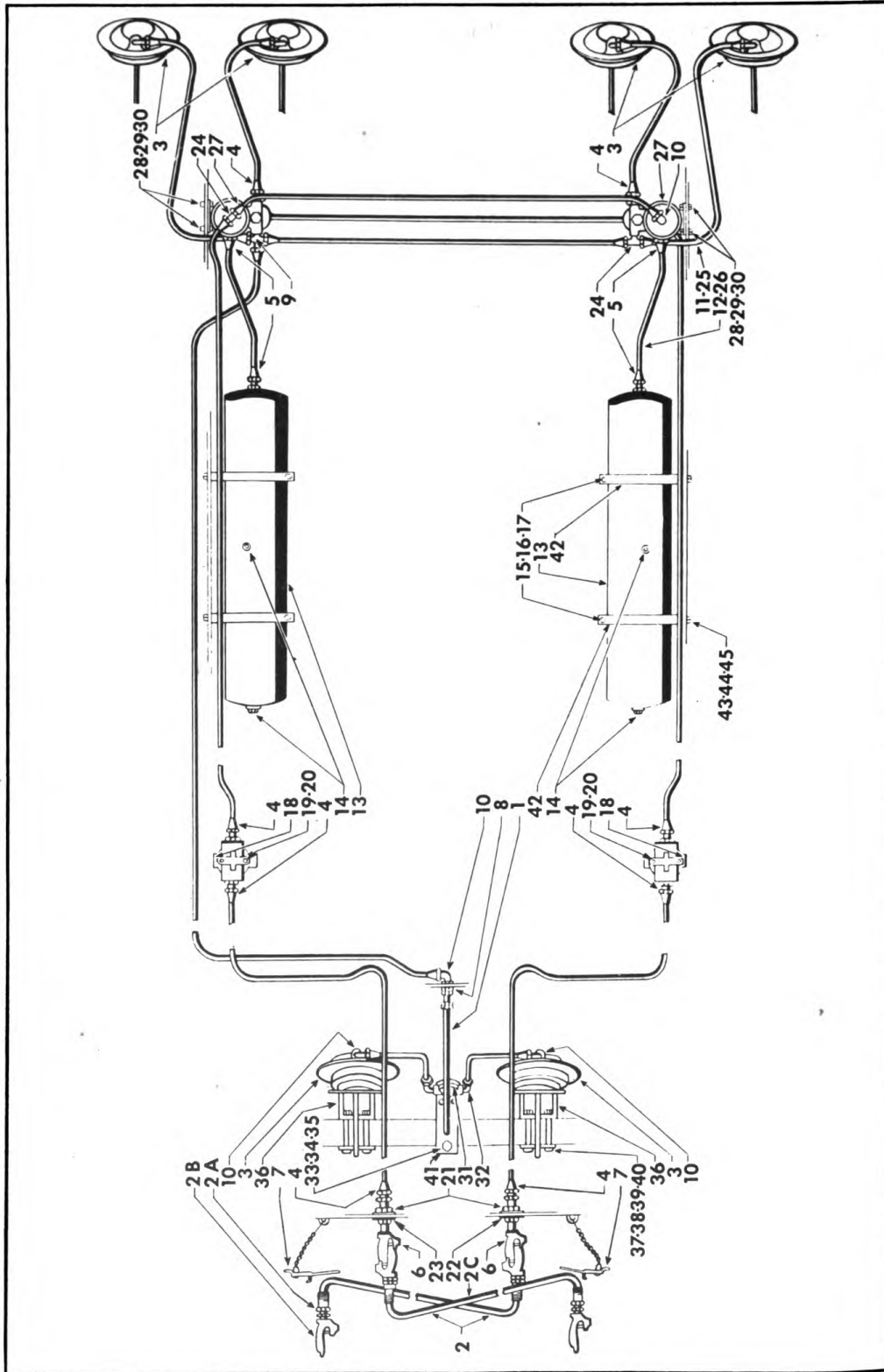


FIGURE 57. BRAKE OPERATING PARTS

SECTION: *Brake Operating Parts*

(FIGURE 57)

<i>Fig. and Ref. No.</i>	<i>Part No.</i>	<i>Name</i>	<i>Quantity</i>
	57025	KIT, (WAB #218963)	1
57- 1	51492	HOSE, flexible, assembly (WAB #221268)	1
	119931	BUSHING, reducing, 3/8" to 1/4"	1
	535309	CONNECTION, 1/4" I.D. Hose with wire, 1/4" pipe thread (WAB #215536)	2
57- 2	51491	HOSE, jumper, assembly	2
57- 2A	535308	CONNECTION, 1/4" hose with wire, 1/2" pipe thread (WAB #215535)	4
57- 2B	534533	COUPLING, air hose	4
57- 2C	536284	HOSE	2
*57- 3	534374	CHAMBER, brake (9") (WAB #215092)	6
	103385	PIN, cotter, 1/8" x 1"	6
	104039	YOKE, adjusting, 1/2"	6
	103028	NUT, hex., 7/16"-20	6
	103498	PIN, clevis, 1/2"	6
57- 4	535300	CONNECTOR, 3/8" tubing, 1/4" pipe thread (WAB #205053)	8
57- 5	535306	CONNECTOR, 1/2" tubing, 3/8" pipe thread, (WAB #217525)	4
57- 6	534533	COUPLING, air hose (WAB #220165)	2
57- 7	535910	COUPLING, dummy (WAB #220636)	2
57- 8	536214	COUPLING, tubing (WAB #205465)	1
57- 9	536251	TUBING, cross (WAB #216060)	1
	534434	COCK, drain, 1/4" (WAB #215310)	2
57-10	535304	ELBOW, 3/8" tubing, 1/4" pipe thread (WAB #205102)	11
	536110	FITTING, exhaust (WAB #221087)	2
57-11	Stk #1043	LOOM, 7/16" I.D., tubing	69'
57-12	Stk #1044	LOOM, 9/16" I.D., tubing	2'-8"
57-13	535736	RESERVOIR, 7" x 36" (WAB #215689)	2
57-14	103867	PLUG, pipe, 3/8"-18	6
57-15	116399	BOLT, hex-hd., 3/8"-16 x 6 1/4"	4
57-16	102635	NUT, hex., medium, 3/8"-16	4
57-17	103321	WASHER, medium, 3/8"	4
*57-18	536108	STRAINER (WAB #221022)	2
57-19	100134	BOLT, hex-hd., 3/8"-16 x 1"	4
57-20	103321	WASHER, lock, medium, 3/8"	4
57-21	536213	STUD, clamping (WAB #205730)	2
57-22	535302	TAG, emergency (WAB #201499)	1
57-23	535301	TAG, service (WAB #201500)	1
57-24	535312	TEE, tubing (WAB #205103)	3
57-25	Stk #1041	TUBING, 3/8" (copper)	71'
57-26	Stk #1042	TUBING, 1/2" (copper)	3'
*57-27	535303	VALVE, emergency relay (WAB #220353)	2
	119931	BUSHING, reducing, 3/8" to 1/4"	2
57-28	103321	WASHER, lock, medium, 3/8"	4
57-29	100027	BOLT, hex-hd., 3/8"-24 x 1 1/4"	4
57-30	103026	NUT, hex., 3/8"-24	4

*For breakdown refer to Cutaway View

Brake Operating Parts—(Continued)

<i>Fig. and Ref. No.</i>	<i>Part No.</i>	<i>Name</i>	<i>Quantity</i>
57-31	535310	VALVE, quick release (WAB #205000)	1
	WAB-202588	SPRING, for quick release valve	1
	WAB-202587	SPRING SEAT, for quick release valve	1
	WAB-211379	DIAPHRAGM, for quick release valve	1
57-32	120063	ELBOW, street, $\frac{3}{8}$ " x 90°	2
	100014	BOLT, hex-hd., $\frac{5}{16}$ "-24 x 1"	2
	103025	NUT, hex., thin, $\frac{5}{16}$ "-24	2
	103320	WASHER, plain lock, $\frac{5}{16}$ "	2
	536283	HOSE	1
57-33	533030	BOLT, U-tee, bracket	1
57-34	103028	NUT, hex., $\frac{1}{2}$ "-20	2
57-35	103323	WASHER, lock, medium, $\frac{1}{2}$ "	2
57-36	532977	BRACKET, brake chamber mounting	2
57-37	120911	BOLT, $\frac{1}{2}$ "-20 x 4 $\frac{3}{4}$ "	8
57-38	103028	WASHER, lock heavy type, $\frac{7}{16}$ "	8
57-39	103323	WASHER, lock, medium, $\frac{1}{2}$ "	8
57-40	103343	WASHER, flat, small, $\frac{1}{2}$ "	8
57-41	536282	BRACKET, quick release valve mounting	1
57-42	532827	BRACKET, reservoir	8
57-43	100027	BOLT, hex-hd., $\frac{3}{8}$ "-24 x 1 $\frac{1}{4}$ "	8
57-44	103026	NUT, hex., $\frac{3}{8}$ "-24	8
57-45	103321	WASHER, lock, medium, $\frac{3}{8}$ "	8
	532894	CLIP, tubing, Prestol Device Co. #120.....	25
	144754	SCREW, rnd-hd., self tappg. "A" #10 x 1"	25

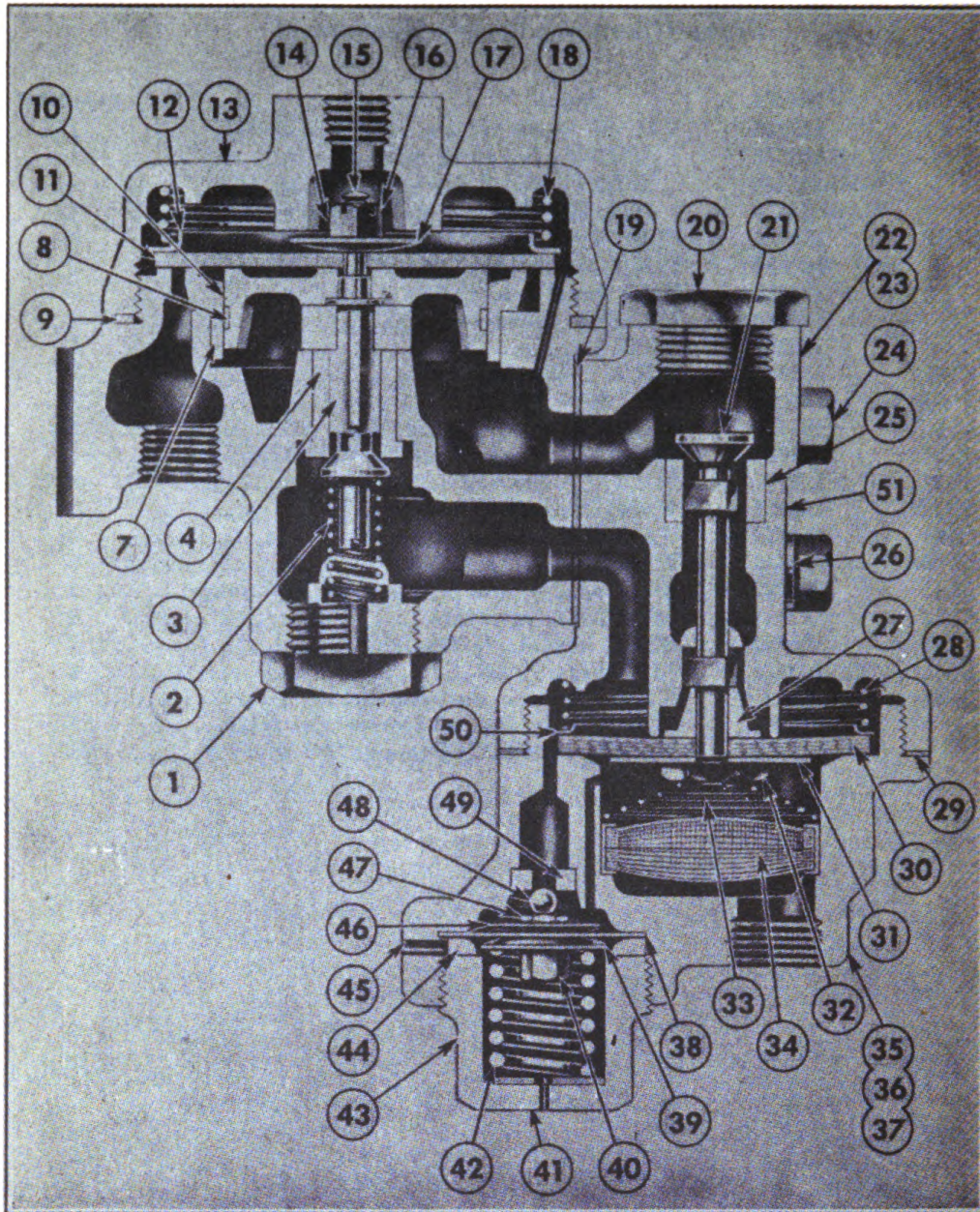


FIGURE 58. RELAY-EMERGENCY VALVE

SECTION: *Brake Operating Parts—Relay Emergency Valve*
(FIGURE 58)

<i>Fig. and Ref. No.</i>	<i>Part No.</i>	<i>Name</i>	<i>Quantity</i>
58- 1	WAB 202692	NUT, cap	2
58- 2	WAB 202699	SPRING	2
58- 3	WAB 202693	VALVE, intake	2
58- 4	WAB 202690	SEAT, valve	2

SPARE PARTS LIST

Brake Operating Parts—
Relay Emergency Valve

Brake Operating Parts--Relay Emergency Valve—(Continued)

<i>Fig. and Ref. No.</i>	<i>Part No.</i>	<i>Name</i>	<i>Quantity</i>
58- 5†	WAB 216071	BODY, complete	2
58- 6	WAB 204568	BODY	2
58- 7	WAB 212135	BUSHING, diaphragm guide	2
58- 8	WAB 202869	RING, diaphragm guide	2
58- 9	WAB 211367	GASKET, cover	2
58-10	WAB 204650	GUIDE, diaphragm	2
58-11	WAB 202695	DIAPHRAGM	2
58-12	WAB 202697	SEAT, spring	2
58-13	WAB 202691	COVER	2
58-14	WAB 203016	PIN, cotter	2
58-15	WAB 204651	SCREW, diaphragm	2
58-16	WAB 203227	NUT, diaphragm	2
58-17	WAB 202696	WASHER, diaphragm	2
58-18	WAB 202698	SPRING	2
58-19	WAB 202735	GASKET	2
58-20	WAB 202741	NUT, cap	2
58-21	WAB 203379	STEM, valve	2
58-22*	WAB 215204	EMERGENCY, assembly	2
58-23	WAB 202746	BODY, emergency valve	2
58-24	WAB 203388	BOLT, hex. head	2
58-25	WAB 202736	SEAT, valve	2
58-26	WAB 202982	WASHER, lock	2
58-27	WAB 202743	SUPPORT, diaphragm	2
58-28	WAB 202738	SPRING	2
58-29	WAB 202747	GASKET, cover	2
58-30	WAB 202744	DIAPHRAGM	2
58-31	WAB 213387	WASHER	2
58-32	WAB 200029	NUT, lock	2
58-33	WAB 204056	SPRING	2
58-34	WAB 204055	STRAINER	2
58-35-	WAB 220305	DIAPHRAGM, cover assembly	2
58-36†	WAB 220304	DIAPHRAGM, cover complete	2
58-37	WAB 213225	DIAPHRAGM, cover body	2
58-38	WAB 213227	DIAPHRAGM	2
58-39	WAB 211541	FOLLOWER, lower diaphragm	2
58-40	WAB 211542	NUT, stem lock	2
58-41	WAB 213229	SHIM	2
58-42	WAB 213228	SPRING	2
58-43	WAB 213230	CAP	2
58-44	WAB 213226	RING	2
58-45	WAB 213224	PIN	2
58-46	WAB 211595	FOLLOWER, upper diaphragm	2
58-47	WAB 211538	STEM	2
58-48	WAB 211539	BALL	2
58-49	WAB 211537	SEAT, valve	2
58-50	WAB 202737	SEAT, upper spring	2
58-51:	WAB 220829	VALVE, emergency	2

† Includes Items No. 4, 6 and 7.

Item No. 7 cannot be replaced in the field.

* Includes Items No. 23 and 25.

- Includes Items No. 36 to 49, inclusive.

‡ Includes Items No. 37, 45 and 49.

: Includes Items No. 20 to 50, inclusive.

WAB Westinghouse Automotive Air Brake Company Parts.

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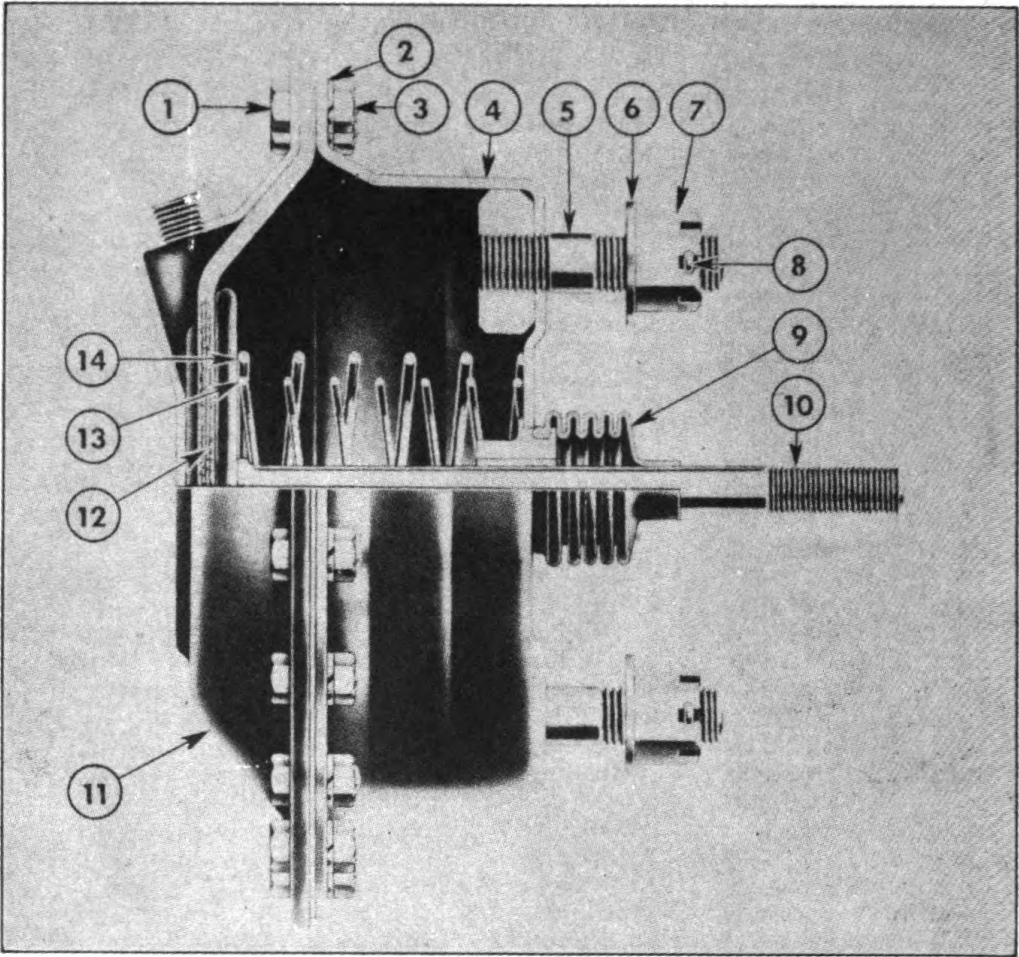


FIGURE 59. BRAKE CHAMBER

SECTION: *Brake Operating Parts—Brake Chamber*

(FIGURE 59)

<i>Fig. and Ref. No.</i>	<i>Part No.</i>	<i>Name</i>	<i>Quantity</i>
59	WAB 215092	CHAMBER, brake, assembly	6
59- 1	WAB 203151	BOLT, hex. head	108
59- 2	WAB 201318	WASHER, lock	108
59- 3	WAB 203145	NUT, hex.	108
59- 4	WAB 217269	PLATE, non-pressure	6
59- 5	WAB 202941	STUD	12
59- 6	WAB 203173	WASHER, lock	12
59- 7	WAB 203172	NUT, hex.	12
59- 8	WAB 203156	PIN, cotter	12
59- 9	WAB 201687	BOOT	6
59-10	WAB 205129	ROD, push	6
59-11	WAB 202880	PLATE, pressure	6
59-12	WAB 200001	DIAPHRAGM	6
59-13	WAB 212294	SPRING, inner	6
59-14	WAB 212295	SPRING, outer	6
	WAB 205433	YOKE, adjustable	6
	WAB 203575	NUT, yoke	6
	WAB 203019	PIN, cotter	6

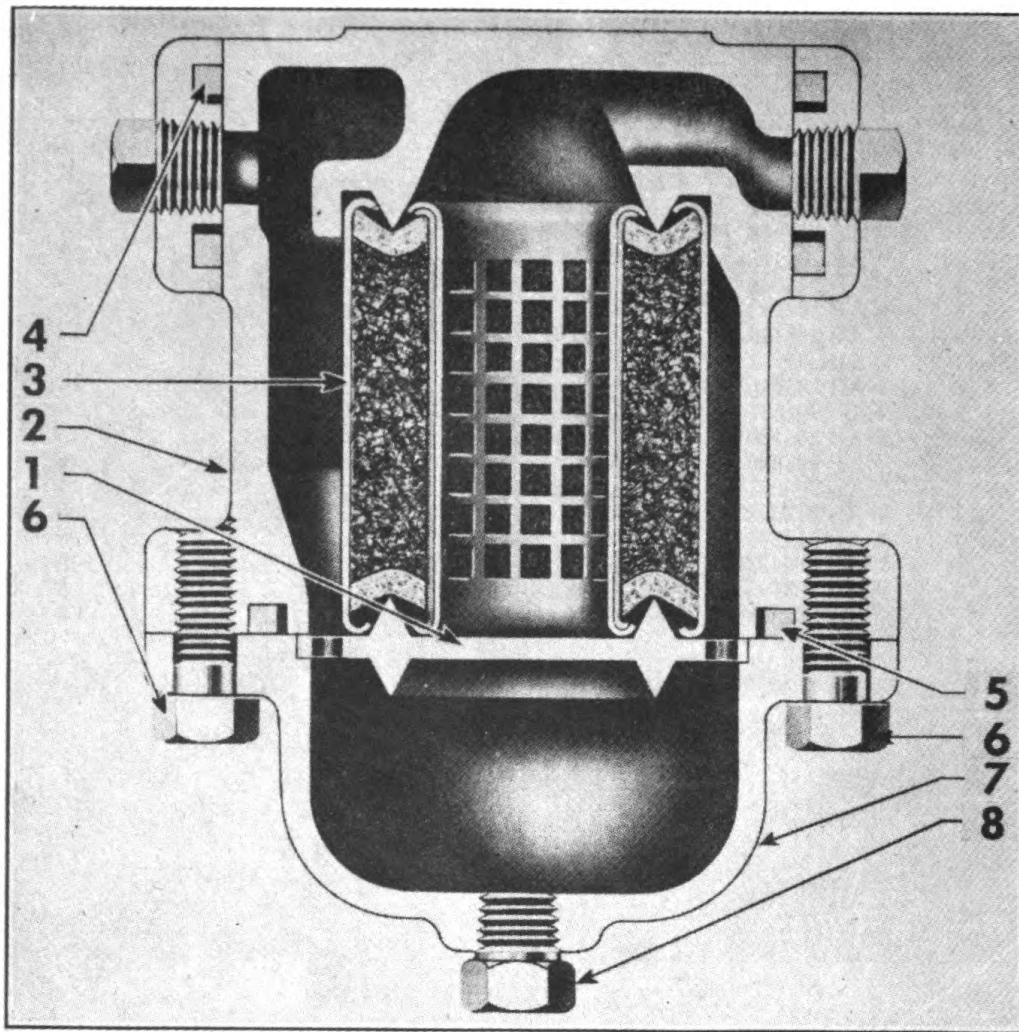


FIGURE 60. STRAINER

SECTION: *Strainer*

(FIGURE 60)

<i>Ref. No.</i>	<i>Part No.</i>	<i>Name</i>	<i>Quantity</i>
60- 1	WAB-214171	SUPPORT, strainer	2
60- 2	WAB-214169	BODY	2
60- 3	WAB-221053	STRAINER	2
60- 4	WAB-214174	GASKET, flange	4
60- 5	WAB-214173	GASKET, body	2
60- 6	WAB-210897	BOLT, hex.-hd.	4
60- 7	WAB-214172	CHAMBER, dirt	2
60- 8	WAB-213530	PLUG, pipe	2

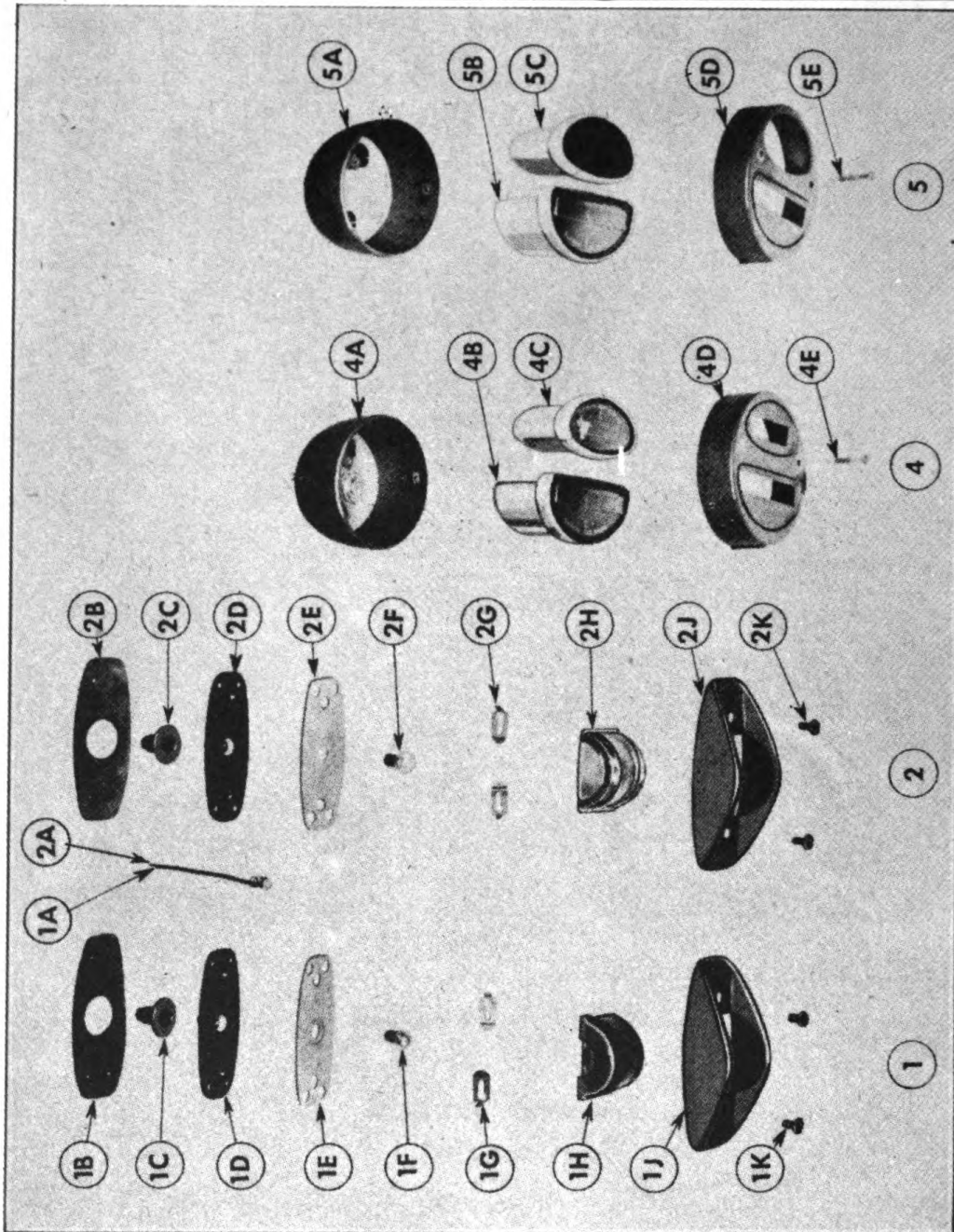


FIGURE 61. LIGHTS

SECTION: *Lights*
(FIGURE 61)

Fig. and Ref. No.	Part No.	Name	Quantity
61- 1	320488	LIGHT, clearance, blackout, blue lens, assembly—complete (KD-541)	2
61- 1A	KD-7136	WIRE, pig-tail	2
61- 1B	KD-9526	GASKET, rubber—only	2
61- 1C	KD-4684	NIPPLE, rubber	2
61- 1D	KD-9526	PLATE, backing	2

Lights—(Continued)

<i>Fig. and Ref. No.</i>	<i>Part No.</i>	<i>Name</i>	<i>Quantity</i>
61- 1E	KD-2878	GASKET, lexide	2
61- 1F	No. 55	BULB, 1½ C. P., 6-8 Volt	2
61- 1G	KD-1996	CLIP, retaining, lens	4
61- 1H	KD-4446	LENS, and KD-8014 blue FILTER with CAS- ING, assembly	2
61- 1J	KD-1135	HOUSING, clearance light	2
61- 1K	KD-6777	SCREW, brass, ¼" SAE	4
61- 1	320625	LIGHT, clearance, blackout, red lens, assembly —complete (KD-541)	2
		NOTE: Same components as 320488 with the exception of Ref. No. 1H. (Omit KD-8014 blue filter and use KD-8013 red filter.)	
61- 2	320487	LIGHT, clearance, amber, assembly—complete (KD-541)	2
61- 2A	KD-7136	WIRE, pig-tail	2
61- 2B	KD-9526	GASKET, rubber—only	2
61- 2C	KD-4684	NIPPLE, rubber	2
61- 2D	KD-9526	PLATE, backing	2
61- 2E	KD-2878	GASKET, lexide	2
61- 2F	No. 55	BULB, 1½ C. P., 6-8 Volt	2
61- 2G	KD-1996	CLIP, retaining, lens	4
61- 2H	KD-4393	LENS, amber, clearance light	2
61- 2J	KD-1135	HOUSING, clearance light	2
61- 2K	KD-6777	SCREW, brass, ¼" SAE	4
61- 2	320624	LIGHT, clearance, red lens, assembly—complete (KD-541)	2
		NOTE: Same components as 320487 with the exception of Ref. No. 2H. (Omit KD-4393 amber lens and use KD-4392 red lens.)	
61- 4	320593	LIGHT, blackout tail and blackout stop, assem- bly—complete (CB-9210)	2
61- 4A	CB-9212	HOUSING, blackout tail and blackout stop light	2
61- 4B	CB-9225	UNIT, blackout tail light, assembly, lower, 6 Volt (320678)	2
61- 4C	CB-9234	UNIT, blackout stop light, assembly, upper, 6 Volt (320677)	2
61- 4D	CB-9232	DOOR, blackout tail and blackout stop light ..	2
61- 4E	CB-9233	SCREW, machine, rd-hd., No. 8 x 1¼" SAE.....	4
61- 5	320592	LIGHT, blackout tail and service stop, assem- bly (CB-9207)	1
61- 5A	CB-9231	HOUSING, blackout tail and service stop light	1
61- 5B	CB-9225	UNIT, blackout tail light, assembly, lower, 6 Volt (320678)	1
61- 5C	CB-9218	UNIT, service stop light, upper, 6 Volt (320676)	1
61- 5D	CB-9231	DOOR, blackout tail and service stop light.....	1
61- 5E	CB-9233	SCREW, machine, rd-hd., No. 8 x 1¼" SAE.....	2

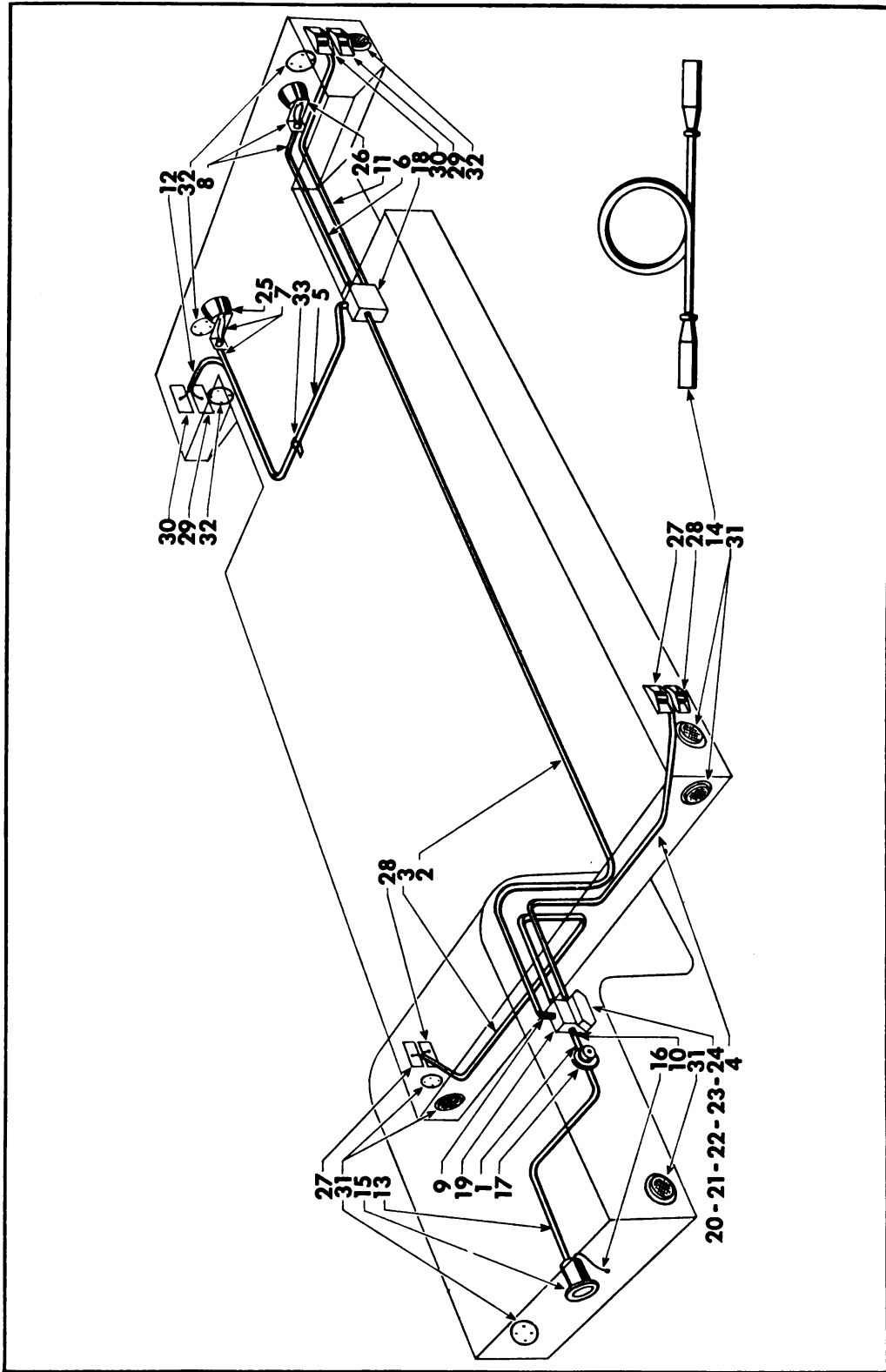


FIGURE 62. WIRING AND LIGHTS

SECTION: *Wiring and Lights*

(FIGURE 62)

<i>Fig. and Ref. No.</i>	<i>Part No.</i>	<i>Name</i>	<i>Quantity</i>
62- 1	56109	CONDUIT with WIRE, assembly—blackout switch to fuse panel	1
62- 2	56112	CONDUIT with WIRE, assembly—front junc- tion to rear junction	1
62- 3	56110	CONDUIT with WIRE, assembly—fuse panel to clearance light, RH	1
62- 4	56111	CONDUIT with WIRE, assembly—fuse panel to clearance light, LH	1
62- 5	56114	CONDUIT with WIRE, assembly—junction to tail light, RH—complete	1
62- 6	56113	CONDUIT with WIRE, assembly—junction to tail light, LH—complete	1
	676224	ANCHOR, cable	2
	675480	FERRULE, light (Cole Hersee #1456-F).....	4
	675497	LOOM	4
	675477	PLUG, double contact (Cole Hersee #1456-P)	1
	675478	PLUG, single contact (Cole Hersee #1455-P)	3
	675479	SHELL, light (Cole Hersee #1456-S)	4
62- 7	56118	CONDUIT with WIRE, assembly—junction to RH tail light	1
62- 8	56117	CONDUIT with WIRE, assembly—junction to LH tail light	1
	54778	CONTACT, assembly (Cole Hersee #3070).....	5
62- 9	675060	CONNECTOR, 90° angle	3
62-10	675059	CONNECTOR, straight (tite-bite)	13
62-11	56116	CONDUIT with WIRE, assembly—rear junction to clearance lights, left	1
62-12	56115	CONDUIT and WIRE, assembly—rear junction to clearance lights, right	1
62-13	56108	CONDUIT with WIRE, assembly—socket to blackout switch	1
62-14	54887	CORD, jumper, 9', assembly	1
62-15	51310	SOCKET, coupling, with cover, assembly	1
62-16	54850	WIRE, ground, assembly	1
	032801	TERMINAL, type "B"	2
	675559	WIRE, ground	1
62-17	320518	SWITCH, blackout (Conform to Government Specification #08671-W)	1
62-18	675530	BOX, junction	1
62-19	675532	BOX, junction	1
62-20	690085	COVER, fuse panel	1
62-21	106653	FUSE, 20 amperes, 1¼"	6
62-22	690007	GASKET, fuse panel	2
62-23	690006	PANEL, fuse	1
62-24	690008	STUD, fuse panel	2
62-25	320593	LIGHT, blackout stop and tail (Conform to QMC Drawing #08243-X)	1
62-26	320592	LIGHT, service stop, tail and blackout tail (Conform to QMC Drawing #08242-X)....	1

Wiring and Lights—(Continued)

<i>Fig. and Ref. No.</i>	<i>Part No.</i>	<i>Name</i>	<i>Quantity</i>
62-27	320487	LIGHT, clearance, amber lens (KD-541) (Conform to QMC Drawing #08789-Y)	2
62-28	320488	LIGHT, clearance, blackout, blue lens (KD-541—blue filter) (Conform to QMC Drawing #08789-Y)	2
62-29	320625	LIGHT, clearance, blackout, red lens (KD-541) (Conform to QMC Drawing #08789-Y)	2
62-30	320624	LIGHT, clearance, red lens (KD-541) (Conform to QMC Drawing #08789-Y)	2
62-31	320657	REFLECTOR, amber (Eng. Board Dwg. #A-2042-1B)	6
62-32	320758	REFLECTOR, red (Eng. Board Dwg. #A-2042-1B)	4
62-33	320493	STRAP, pipe, to fit .632 conduit (T & B #65)..	24
	320559	BUSHING, anti-short—used on ends of conduit	6
	320588	BUSHING, anti-short—used on ends of conduit	10
		Used for attaching Ref. No. 15	
	123461	BOLT, hex-hd., 1/4"-28 x 1"	4
	121902	NUT, hex., 1/4"-28	4
	120380	WASHER, lock, medium, 1/4"	4
		Used for attaching Ref. No. 16	
	100755	SCREW, rnd-hd., #8-32 x 1"	1
	103092	NUT, common hex., #8-32	1
	106496	WASHER, lock, medium, #8.....	1
		Used for attaching Ref. No. 18	
	133043	SCREW, rnd-hd., 1/4"-20 x 3/4"	4
	134551	NUT, common hex., 1/4"-20	4
		Used for attaching Ref. Nos. 20 and 24	
	102634	NUT, hex., 5/16"-18	2
	103320	WASHER, lock, plain, 5/16"	4
	103128	NUT, wing type "A," 5/16"-18	2
	103363	PIN, cotter, 1/16" x 3/4"	2
		Used for attaching Ref. Nos. 25 and 26	
	120375	NUT, hex., 1/4"-20	4
	120380	WASHER, lock, medium type "A," 1/4"	4
		Used for attaching Ref. Nos. 27, 28, 29, 30, 31, 32	
	132768	SCREW, rnd-hd., #8-32 x 3/4"	72
	120622	NUT, common hex., #8-32	72
	121841	WASHER, lock, medium, #8	72
		Used for attaching Ref. No. 34	
	121900	BOLT, hex-hd., 1/4"-20 x 1"	24
	120375	NUT, hex., 1/4"-20	24
	120380	WASHER, lock, medium, 1/4".....	24

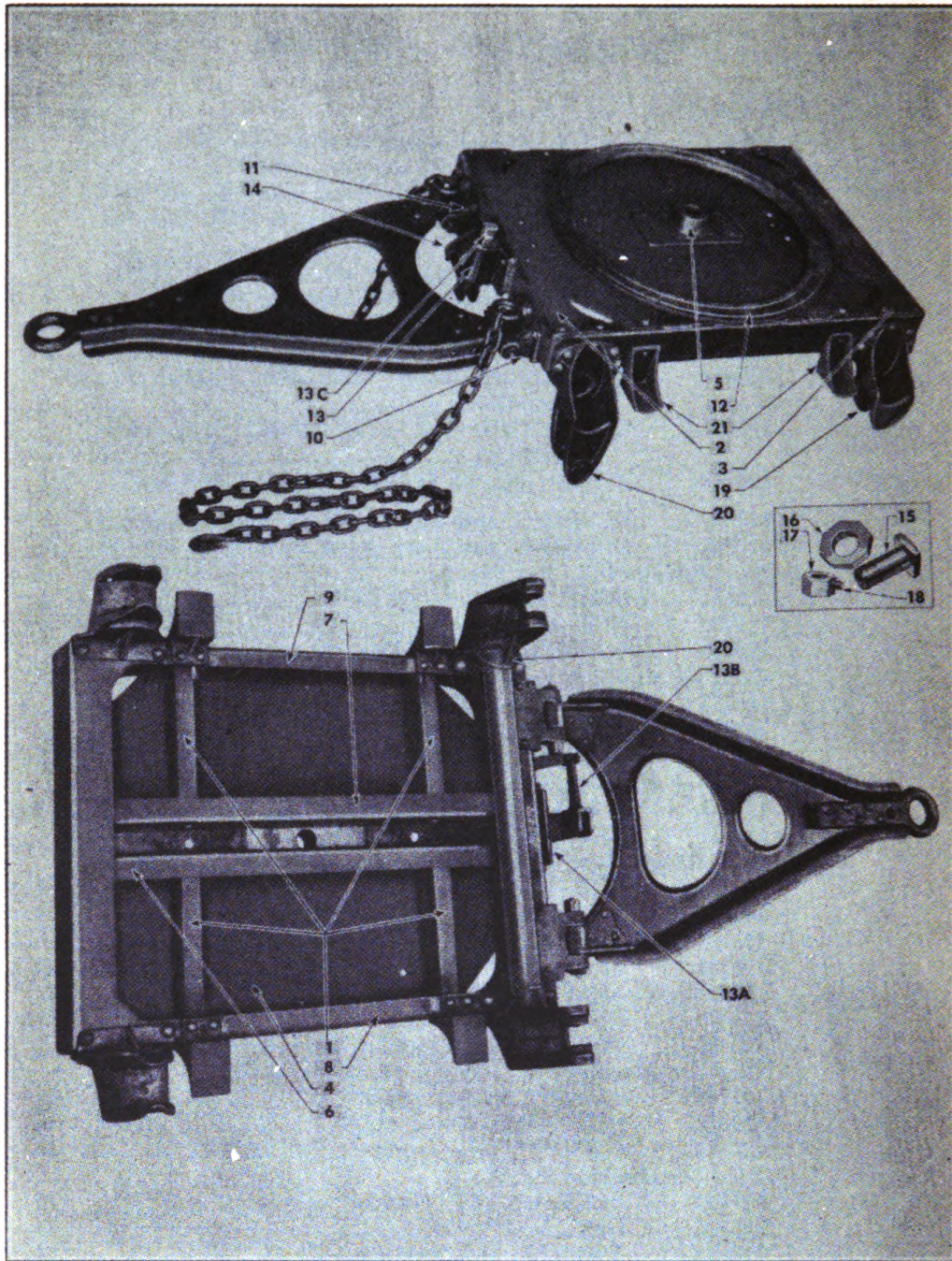


FIGURE 63. FRAME—GEAR

Frame—Gear
(FIGURE 63)

<i>Fig. and Ref. No.</i>	<i>Part No.</i>	<i>Name</i>	<i>Quantity</i>
63- 1	55058	FRAME, gear, assembly	1
	590254	BRACE, gear lock bracket	2
	601148	BRACE, side rail	4
	108685	RIVET, rnd.-hd., 1/2" x 1 1/8"	8

94

SPARE PARTS LIST

Frame—Gear

<i>Frame—Gear—(Continued)</i>			
<i>Fig. and Ref. No.</i>	<i>Part No.</i>	<i>Name</i>	<i>Quantity</i>
63- 2	601144	CROSSMEMBER, front	1
	104132	RIVET, rnd-hd., 1/2" x 1 5/8"	4
63- 3	601145	CROSSMEMBER, rear	1
	104132	RIVET, rnd-hd., 1/2" x 1 5/8"	4
	599849	GUSSET	4
	599851	GUSSET	4
63- 4	600980	PLATE, deck	1
63- 5	600581	PLATE, bolster, male	1
	138063	RIVET, rnd-hd., 5/8" x 1 1/2"	8
	600875	PLATE, gusset	2
63- 6	601149	RAIL, inner, LH	1
63- 7	601150	RAIL, inner, RH	1
	104132	RIVET, rnd-hd., 1/2" x 1 5/8"	8
63- 8	601146	RAIL, side, LH	1
63- 9	601147	RAIL, side, RH	1
	601151	SPACER, hanger	4
63-10	52066	BRACKET, drawbar frame, LH, assembly	1
63-11	52067	BRACKET, drawbar frame, RH, assembly	1
63-12	55014	CIRCLE, steering, assembly	1
63-13	55083	LOCK, gear, assembly—complete	1
	100077	BOLT, hex-hd., SAE, 5/8" x 1 3/4"	4
	103030	NUT, hexagon, 5/8"	4
	103325	WASHER, lock, medium, 5/8"	4
63-13A	600991	BRACKET, gear lock (only)	1
	109461	FITTING, alemite, straight, 1/8"	1
	590095	BUSHING, gear lock bracket	1
63-13B	596967	HANDLE, gear lock	1
63-13C	596968	PIN, gear lock	1
	595275	PIN, gear lock handle	1
	590044	SPRING, gear lock	1
63-14	601001	CLIP, gear lock handle	1
	103321	WASHER, lock, medium, 3/8"	2
	100027	BOLT, hex-hd., 3/8"-24 x 1 1/4"	2
	103026	WASHER, lock, med., 3/4"	2
63-15	50808	PIN, king, hollow, assembly	1
63-16	600580	PLATE, bolster flange	1
	100027	BOLT, hex-hd., 3/8"-24 x 1 1/4"	4
	103321	WASHER, lock, medium, 3/8"	4
63-17	242209	NUT, king pin, 2"	1
63-18	102949	SCREW, sq-hd. set, cone point, 3/8"-16 x 3/4"	1
63-19	601118	HANGER, spring progressive	2
	119286	RIVET, rnd-hd., 5/8" x 2"	10
	119229	RIVET, rnd-hd., 5/8" x 2 1/4"	4
63-20	53119	HANGER, spring & TUBE, cross, assembly	1
	119286	RIVET, rnd-hd., 5/8" x 2"	10
	119229	RIVET, rnd-hd., 5/8" x 2 1/4"	4
	598500	HANGER, spring	2
	598497	TUBE, cross, spring hanger	1
63-21	565162	BRACKET, spring	4
	104133	RIVET, rnd-hd., 1/2" x 1 3/4"	8
	104134	RIVET, rnd-hd., 1/2" x 2"	4

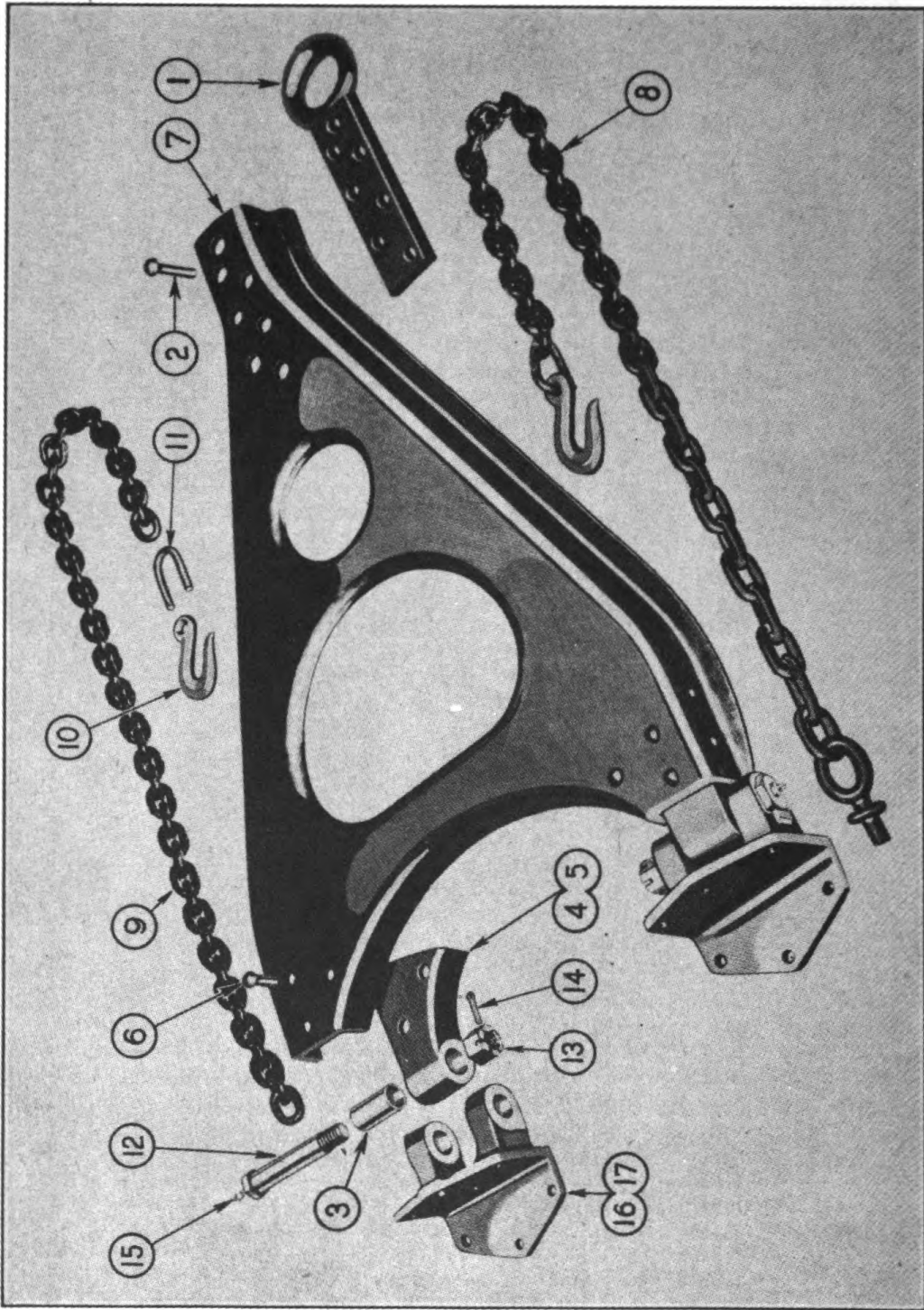


FIGURE 63A—FRAME—DRAWBAR

Frame—Drawbar

(FIGURE 63A)

<i>Fig. and Ref. No.</i>	<i>Part No.</i>	<i>Name</i>	<i>Quantity</i>
	52111	DRAWBAR, assembly—complete (less chains, bolts, and frame brackets)	1
63A- 1	601071	EYE, drawbar	1
63A- 2	138070	RIVET, rnd-hd, $\frac{5}{8}$ " x $4\frac{1}{4}$ "	7
63A- 3	595255	BUSHING, drawbar hinge bracket	2
63A- 4	600001	BRACKET, hinge, drawbar w/BUSHING, LH	1
63A- 5	600002	BRACKET, hinge, drawbar w/BUSHING, RH	1
63A- 6	110438	RIVET, rnd-hd, $\frac{7}{16}$ " x $1\frac{5}{8}$ "	10
63A- 7	52097	DRAWBAR, assembly w/hinge brackets	1
63A- 8	52110	CHAIN, assembly	2
63A- 9	600730	CHAIN, drawbar	2
63A-10	675503	HOOK, chain	2
63A-11	599809	LINK, chain, 8"	4
	600874	EYE, bolt	2
63A-12	560503	BOLT, drawbar hinge bracket	2
63A-13	119260	NUT, hex., slotted, $1\frac{1}{8}$ "-12	2
63A-14	103411	PIN, cotter, $\frac{3}{16}$ " x 2"	2
63A-15	109461	FITTING, alemite, straight $\frac{1}{8}$ "	2
63A-16	52066	BRACKET, drawbar, frame, LH	1
63A-17	52067	BRACKET, drawbar, frame, RH	1

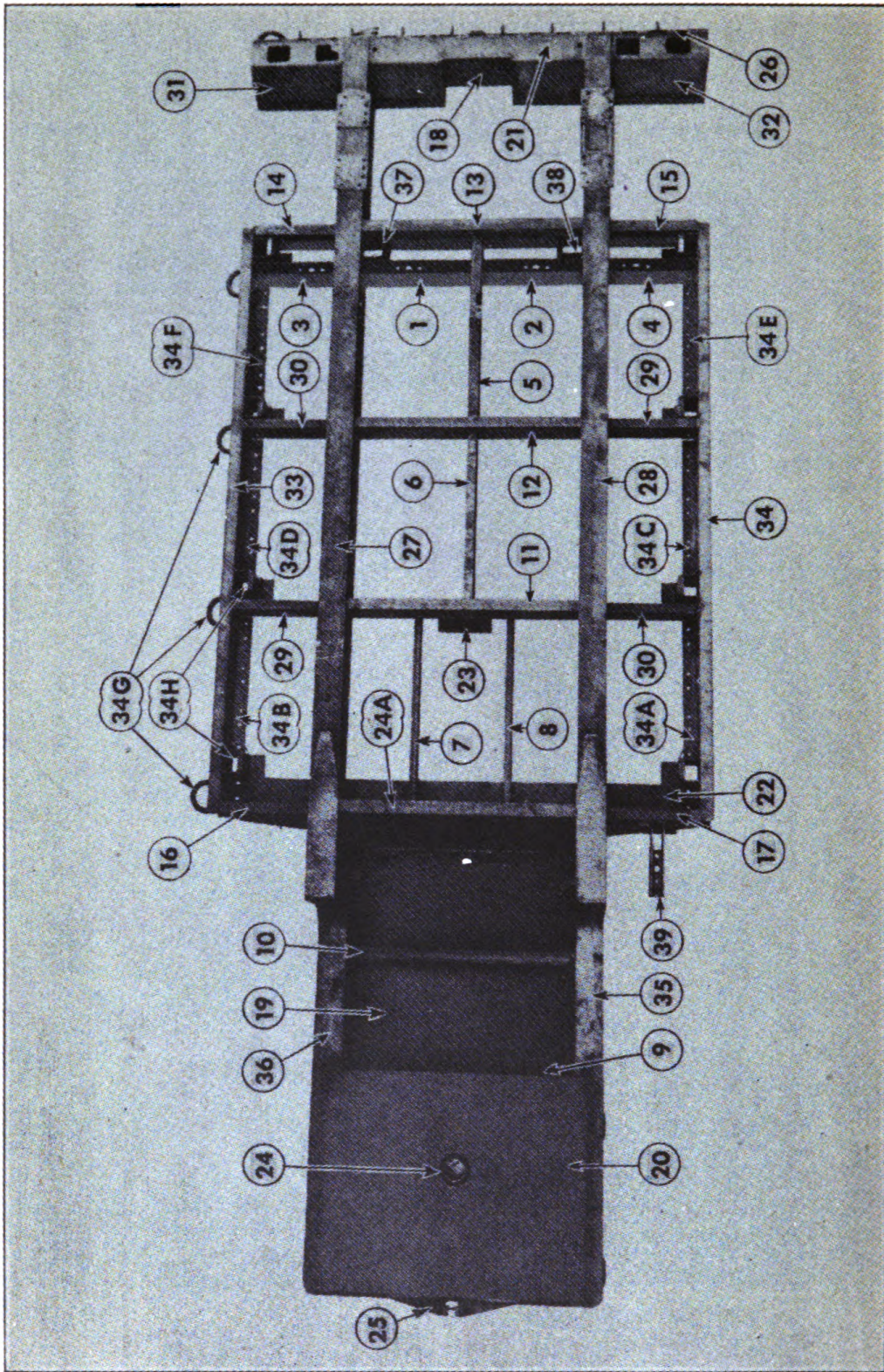


FIGURE 64. FRAME-MAIN

SECTION: *Frame—Main Complete*

(FIGURE 64)

<i>Fig. and Ref. No.</i>	<i>Part No.</i>	<i>Name</i>	<i>Quantity</i>
	55054	FRAME, complete, assembly	1
64- 1	601181	ANGLE, brake chamber mounting, LH	1
64- 2	601182	ANGLE, brake chamber mounting, RH	1
64- 3	601183	ANGLE, brake chamber mounting, LH	1
64- 4	601184	ANGLE, brake chamber mounting, RH	1
	601133	ANGLE, clip	6
	601122	ANGLE, floor support	1
	601131	BAR, staple lock	1
	601110	CHANNEL, circle plate reinforcement, RH ...	1
	601109	CHANNEL, circle plate reinforcement, LH ...	1
64- 5	601123	CHANNEL, floor support	1
64- 6	601124	CHANNEL, floor support	1
64- 7	601234	CHANNEL, floor support, LH	1
64- 8	601235	CHANNEL, floor support, RH	1
	601076	CROSSMEMBER	1
64- 9	601107	CROSSMEMBER	1
64-10	601108	CROSSMEMBER	1
64-11	601172	CROSSMEMBER	1
64-12	601178	CROSSMEMBER	1
64-13	601179	CROSSMEMBER	1
	601072	MEMBER, longitudinal, LH	1
	601073	MEMBER, longitudinal, RH	1
	601126	GUSSET	4
	601722	GUSSET	2
	601132	GUSSET	2
	601180	GUSSET	2
	601255	GUSSET	1
64-14	601111	OUTRIGGER, LH	1
64-15	601112	OUTRIGGER, RH	1
64-16	601168	OUTRIGGER, LH	1
64-17	601169	OUTRIGGER, RH	1
64-18	601125	PLATE	1
	601254	PLATE, cover	2
64-19	601134	PLATE, deck	1
	601135	PLATE, deck	2
	601136	PLATE, deck	2
64-20	601143	PLATE, frame circle	1
64-21	600986	PLATE, frame, rear end	1
64-22	600999	PLATE, goose neck reinforcement	1
	601127	STIFFENER, web	4
64-23	56125	ANGLE, tire carrier mounting, assembly	1
	675893	ANGLE, tire carrier mounting	1
	675892	STUD	2
	102647	NUT, hex., slotted 1/2"-20	2
	108636	PIN, cotter, 3/32" x 1 1/8"	2
64-24	55010	BOLSTER, female, assembly	1
	100076	BOLT, hex-hd., 5/8"-18 x 1 1/2"	8
	103030	NUT, hex., 5/8"	8
	103323	WASHER, lock, medium, 5/8"	8

Frame—Main Complete—(Continued)

<i>Fig. and Ref. No.</i>	<i>Part No.</i>	<i>Name</i>	<i>Quantity</i>
	600579	ANGLE	2
	119229	RIVET, rnd-hd., 5/8" x 2 1/4"	16
	590015	BUSHING, upper bolster	1
	590017	PLATE, mounting, female, heavy duty	1
	109461	FITTING, alemite, straight, 1/8"	1
	55077	COVER, tool box, assembly	1
	601114	COVER, tool box	1
	601116	HANDLE, tool box cover	1
	601115	HINGE, tool box cover	1
64-24A	57001	CROSSMEMBER, assembly	1
	601106	CROSSMEMBER	1
	675892	STUD	2
	102647	NUT, hex., slotted, 1/2"-20	2
	108636	PIN, cotter, 3/32" x 1 1/8"	2
64-25	55063	CROSSMEMBER, front, assembly	1
	676223	ANCHOR, cable	1
	675159	EYE, balk spacer	2
	590117	BLOCK, draw head	2
	590118	BOLT, draw head block	2
	119254	NUT, hex., slotted, thick, 1/2"-20	4
	108641	PIN, cotter, 1/8" x 1 3/8"	4
	601002	CROSSMEMBER, front	1
	676173	HOOK, dummy coupling	2
	601253	PLATE	2
	601003	PLATE, gear lock	2
	601004	PLATE, gear lock	2
	601252	SPACER	2
64-26	55059	FRAME, rear, assembly	1
	600259	BRACKET, bull ring mounting	3
	675063	BRACKET, cable	2
	590284	RING, bull	3
	598924	CLIP, bull ring	3
	145193	SCREW, slotted BH self tappg. B, #10 x 1/2"....	6
	600981	PLATE, rear end frame	1
	600982	PLATE, rear end frame	1
	102637	NUT, hex., thick, 1/2"-13	13
	102635	NUT, hex., medium, 3/8"-16	8
	600987	PLATE, rear end frame	2
	600988	RAIL, skid	2
	600989	RIB, skid rail support	8
64-27	55060	FRAME, main, member, LH, assembly	1
64-28	55061	FRAME, main, member, RH, assembly	1
	600996	BAR, stop, underconstruction	4
	600992	BEAM, main, LH	1
	600993	BEAM, main, RH	1
	675882	BRACKET, tail light	2
	600995	PLATE, floor retaining	4
	600997	PLATE, gusset	4
	600994	PLATE, trunnion mounting	4
	601152	STIFFENER, beam, LH	2

Frame—Main Complete—(Continued)

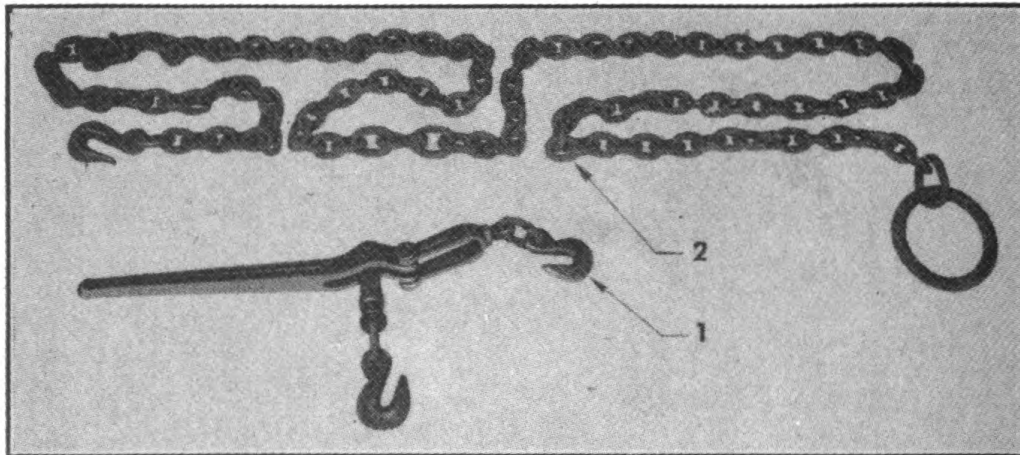
Fig. and Ref. No.	Part No.	Name	Quantity	
	601153	STIFFENER, beam, RH	2	
64-29	55093	OUTRIGGER, LH, assembly	2	
64-30	55094	OUTRIGGER, RH, assembly	2	
	601250	CHANNEL, outrigger, LH	2	
	601251	CHANNEL, outrigger, RH	2	
	601277	FILL	4	
64-31	55085	PLATE, rear, end, frame, LH, assembly	1	
64-32	55086	PLATE, rear, end, frame, RH, assembly	1	
	600984	PLATE, rear, end, frame, LH	1	
	600985	PLATE, rear, end, frame, RH	1	
	109084	NUT, hex., 1/4"-20	8	
			RH	LH
64-33	55079	RAIL, outside, LH, assembly		1
64-34	55080	RAIL, outside, RH, assembly	1	
	600459	ANGLE, bull ring mounting	4	4
64-34A	601138	ANGLE, floor, RH	1	
64-34B	601137	ANGLE, floor, LH		1
64-34C	601140	ANGLE, floor, RH	1	
64-34D	601139	ANGLE, floor, LH		1
64-34E	601142	ANGLE, floor, RH	1	
64-34F	601141	ANGLE, floor, LH		1
	675063	BRACKET, cable	1	1
	600259	BRACKET, bull ring mounting	4	4
64-34G	590284	RING, bull	4	4
	598924	CLIP, bull ring	4	4
	145193	SCREW, slotted, BH, Self Tappg. B #10 x 1/2"	8	8
	601156	RAIL, outside, RH	1	
	601155	RAIL, outside, LH		1
64-34H	55078	POCKET, stake, assembly	4	4
	601119	POCKET, stake	4	4
	601120	ANGLE, stake pocket	4	4
	601121	PLATE, stake pocket	4	4
64-35	55056	RAIL, side, goose neck, RH, assembly	1	
64-36	55055	RAIL, side, goose neck, LH, assembly		1
	675063	BRACKET, cable		1
	600259	BRACKET, bull ring mounting	2	2
	601457	BRACKET, blackout switch		1
	590284	RING, bull	2	2
	598924	RING, bull, clip	2	2
	145193	SCREW, slotted, BH, Self Tappg. B, #10 x 1/2"	4	4
	536304	PLATE, filter mounting	1	1
	600972	PLATE, goose neck, flange	1	1
	600973	PLATE, goose neck, flange	1	1
	600971	PLATE, goose neck, web	1	
	600970	PLATE, goose neck, web		1
64-37	55081	POCKET, stake, LH, assembly		1
64-38	55082	POCKET, stake, RH, assembly	1	
	601130	ANGLE, stake pocket	1	1

Frame—Main Complete—(Continued)

<i>Fig. and Ref. No.</i>	<i>Part No.</i>	<i>Name</i>	<i>Quantity</i>	
			<i>R.H.</i>	<i>L.H.</i>
	601154	PLATE, stake pocket	1	1
	601000	PLATE, stake pocket, balk	1	1
	601128	POCKET, stake, LH		1
	601129	POCKET, stake, RH	1	
64-39	57003	BRACKET, brake operating shaft, assy.		1
	536319	PLATE, bracket		2
	536320	PLATE, bracket		1
	536321	PLATE, tie		1

SECTION: *Miscellaneous Parts*

<i>Fig. and Ref. No.</i>	<i>Part No.</i>	<i>Name</i>	<i>Quantity</i>
	54929	JACK, Walker, hydraulic, #945, assembly	1
	56102	KIT, tool, complete, assembly	1
	675165	HANDLE, wheel wrench, (Budd #17899)	1
	675164	WRENCH, wheel (Budd #10806)	1
	536292	WRENCH, for 5/8" nut, 1 1/16" hexagon	1
	56103	KIT, tool	1
	56367	RAMP, loading, LH, assembly	1
	56368	RAMP, loading, RH, assembly	1
	675837	CLEAT	18
	600133	HANDLE, ramp	12
	675833	PLATE, bottom and side	2
	675834	PLATE, center	2
	675838	PLATE, hook	2
	676157	PLATE, ramp, reinforcing	4
	676152	PLATE, ramp, skid	2
	675832	PLATE, top	2
	675981	PLATE, top	2
	675835	RIB	12
	675982	RIB	12
	676180	RIB	2
	676181	RIB	2



LOAD BINDER AND CHAIN ASSEMBLY

1	50931	BINDER, load	3
2	50849	CHAIN, load binder	3

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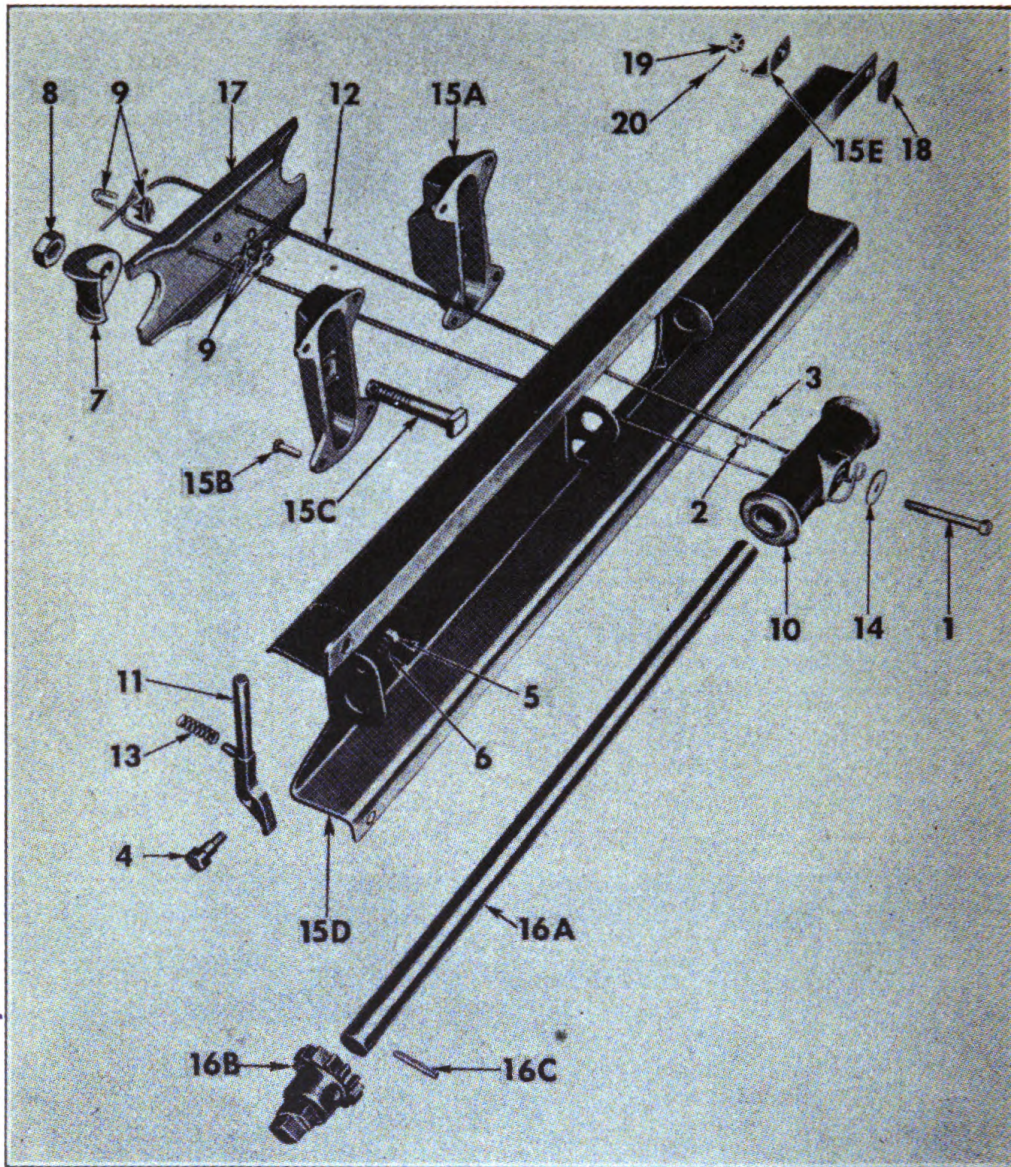


FIGURE 65. TIRE CARRIER

SECTION: *Tire Carrier*

(FIGURE 65)

<i>Fig. and Ref. No.</i>	<i>Part No.</i>	<i>Name</i>	<i>Quantity</i>
	56071	CARRIER, tire, assembly	1
65- 1	630605	BOLT, hex-hd., $\frac{3}{8}$ "-24 x 3"	1
65- 2	119252	NUT, hex. slotted thick, $\frac{3}{8}$ "-24	1
65- 3	103374	PIN, cotter, $\frac{3}{32}$ " x 1"	1
65- 4	674758	BOLT, tire carrier crank shaft	1
65- 5	103026	NUT, hex., $\frac{3}{8}$ "-24	1
65- 6	103321	WASHER, lock, med., $\frac{3}{8}$ "	1
65- 7	534797	CLAMP, Fruehauf dual wheel	2
65- 8	174823	NUT, heavy hex., $\frac{5}{8}$ "-11	2
65- 9	674772	CLIP, wire rope	1
65-10	675170	DRUM, tire carrier rope	1
65-11	674756	HANDLE, tire carrier crank shaft release	1
	675221	PADLOCK	2
65-12	675181	WIRE ROPE, tire carrier	1
65-13	674759	SPRING, tire carrier crank shaft release handle	1
65-14	675180	WASHER, tire carrier rope retainer	1
65-15	56072	CROSSMEMBER, tire carrier, assembly	1
65-15A	674754	BASE, tire carrier clamping	2
65-15B	104113	RIVET, rnd-hd., $\frac{3}{8}$ " x 1"	8
65-15C	674766	BOLT, tire carrier clamp	2
65-15D	675829	CROSSMEMBER, tire carrier	1
65-15E	674753	REINFORCEMENT, C. M. Corner, tire carrier	4
65-16	52985	SHAFT AND RATCHET, tire carrier crank, assembly	1
65-16A	675179	SHAFT, crank, tire carrier	1
65-16B	674757	RATCHET, tire carrier crank shaft	1
65-16C	142358	PIN, taper groove, $\frac{1}{4}$ " x $1\frac{1}{2}$ "	1
65-17	56066	PLATE, tire carrier, assembly	1
65-18	590112	WASHER, $\frac{1}{2}$ " bevel	2
65-19	102647	NUT, hex. slotted, $\frac{1}{2}$ "-20	4
65-20	108636	PIN, cotter, $\frac{3}{32}$ " x $1\frac{1}{8}$ "	2

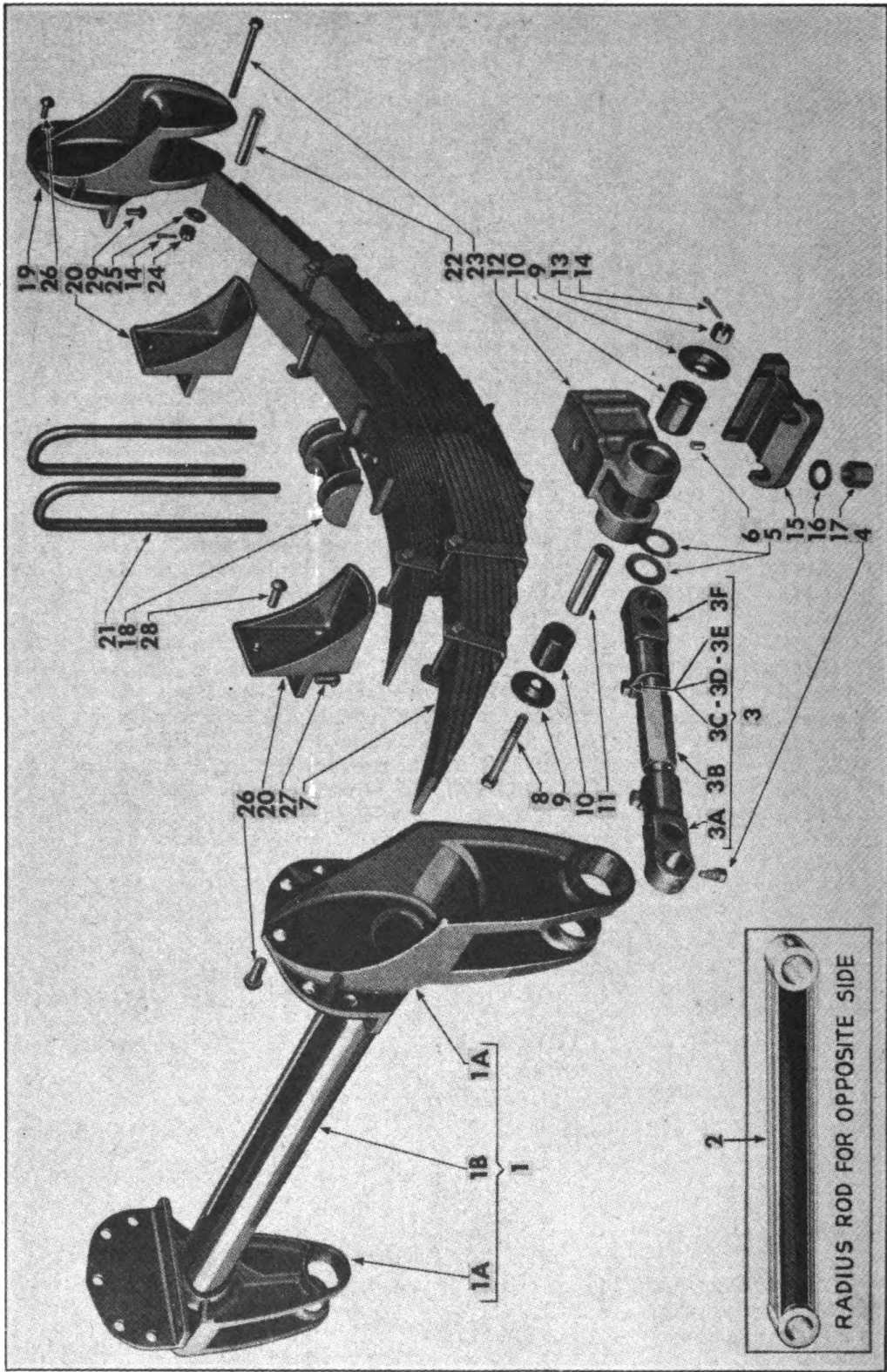


FIGURE 66. UNDERCONSTRUCTION—GEAR FRAME

SECTION: *Underconstruction—Gear Frame*

(FIGURE 66)

<i>Fig. and Ref. No.</i>	<i>Part No.</i>	<i>Name</i>	<i>Quantity</i>
66- 1	53119	HANGER & CROSS TUBE, spring, assembly	1
66- 1A	598500	HANGER, spring	2
66- 1B	598497	TUBE, cross, spring hanger	1
66- 2	53312	ROD, radius, assembly	1
66- 3	53311	ROD, adjustable radius, assembly	1
66- 3A	564650	END, adjustable radius rod, RH thread	1
66- 3B	565154	SPACER, adjustable radius rod	1
66- 3C	181436	BOLT, hex-hd., 1/2"-20 x 2 1/4"	2
66- 3D	103323	WASHER, lock, medium, 1/2"	2
66- 3E	240826	NUT, hex., 1/2"-20	2
66- 3F	564651	END, adjustable radius rod, LH thread	1
66- 4	563497	SCREW, spindle lock	4
66- 5	564270	RETAINER, rubber bushing, inner	8
66- 6	560836	PIN, dowel, 1/2" x 1"	2
66- 7	565151	SPRING, main & helper, progressive	2
66- 8	563825	BOLT, radius rod spindle	4
66- 9	563823	RETAINER, rubber bushing, outer	8
66-10	563400	BUSHING, radius rod spindle, rubber	8
66-11	563824	SPINDLE, radius rod	4
66-12	564295	CHAIR, spring	2
66-13	119256	NUT, slotted, hex., 5/8"-18	4
66-14	103387	PIN, cotter, 1/8" x 1 1/2"	6
66-15	563691	PLATE, U-bolt	2
66-16	103347	WASHER, flat, small, 7/8"	8
66-17	560244	NUT, double, 7/8"	8
66-18	561012	SEAT, U-bolt	2
66-19	601118	HANGER, spring, progressive	2
66-20	565162	BRACKET, spring	4
66-21	564743	U-BOLT, spring	4
66-22	564603	SPACER, spring rebound	2
66-23	564189	BOLT, spring retainer	2
66-24	102649	NUT, slotted, hex., 5/8"-18	2
66-25	103345	WASHER, flat, small, 5/8"	2
66-26	119286	RIVET, rnd-hd., 5/8" x 2"	20
66-27	104133	RIVET, rnd-hd., 1/2" x 1 3/4"	8
66-28	104134	RIVET, rnd-hd., 1/2" x 2"	4
66-29	119229	RIVET, rnd-hd., 5/8" x 2 1/4"	4

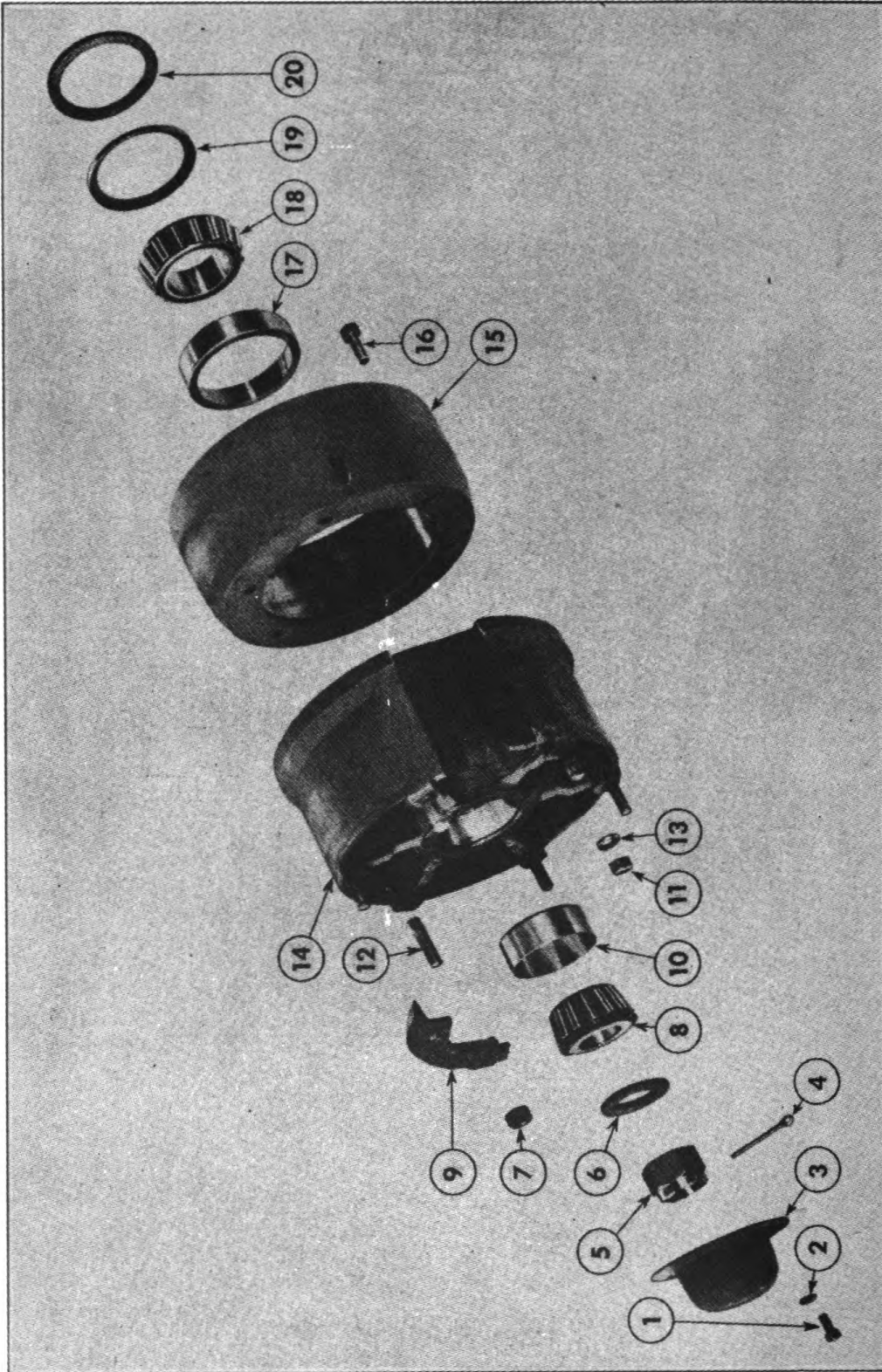


FIGURE 67. WHEELS AND DRUMS (REAR)

SECTION: *Wheels and Drums—Rear*

(FIGURE 67)

<i>Fig. and Ref. No.</i>	<i>Part No.</i>	<i>Name</i>	<i>Quantity</i>
67- 1	100145	BOLT, hex-hd., $\frac{7}{16}$ "-14 x $\frac{3}{4}$ "	16
67- 2	103322	WASHER, lock, medium, $\frac{7}{16}$ "	16
67- 3	530056	CAP, hub	4
67- 4	103425	PIN, cotter, $\frac{1}{4}$ " x $2\frac{3}{4}$ "	4
67- 5	530088	NUT, castle, $1\frac{1}{2}$ "	4
67- 6	530085	WASHER, dee	4
67- 7	535781	NUT, wheel stud (Goodyear #65)	24
67- 8	534743	BEARING, cone, outer (#5358)	4
67- 9	536221	WEDGE (Goodyear #37)	12
67-10	534754	BEARING, cup, outer (#5320)	4
67-11	103030	NUT, hex, $\frac{5}{8}$ "	24
67-12	536219	STUD, wheel (Goodyear #69)	24
67-13	103325	WASHER, lock, medium, $\frac{5}{8}$ "	24
67-14	534457	WHEEL, 15"	4
67-15	536311	DRUM, brake, $12\frac{5}{8}$ " x $4\frac{1}{2}$ "	4
67-16	100076	BOLT, hex-hd., $\frac{5}{8}$ "-18 x $1\frac{1}{2}$ "	24
67-17	534759	BEARING, cup, inner (#742)	4
67-18	536218	BEARING, cone, inner (#744)	4
67-19	530368	RING, compression	4
67-20	530370	WASHER, felt	4
	535784	RIM, 15" x 7" (Goodyear #28415)	8
	535960	SPACER, band, 15" x $3\frac{3}{8}$ " (Goodyear #1315)	4
	675879	TIRE, 12 ply, regular tread, 8.25 x 15	9
	675880	TUBE, inner, 8.25 x 15	9
	675980	EXTENSION, tire tube valve	4
	675881	FLAP, tire tube, 8.25 x 15	9
	530669	GASKET, hub cap	4

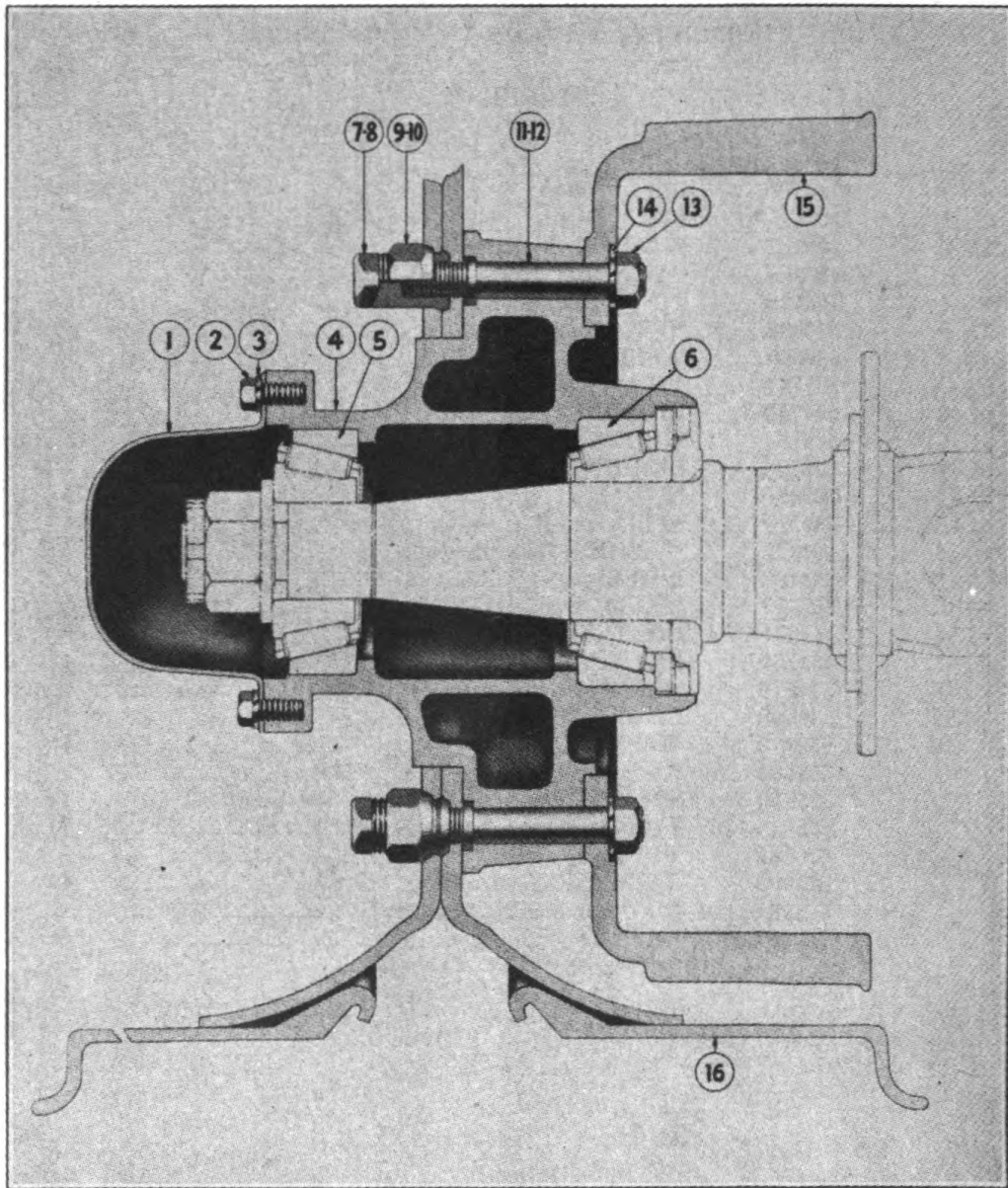


FIGURE 68: WHEELS, HUBS AND DRUMS—FRONT

SECTION: *Wheels, Hubs & Drums—Front*

(FIGURE 68)

<i>Fig. and Ref. No.</i>	<i>Part No.</i>	<i>Name</i>	<i>Quantity</i>
68- 1	530057	CAP, hub	2
68- 2	100146	BOLT, hex-hd., $\frac{7}{16}$ "-14 x 1"	8
68- 3	103322	WASHER, lock, medium, $\frac{7}{16}$ "	8
68- 4	532939	HUB	2
68- 5	534757	CUP, bearing, outer	2
68- 6	534758	CUP, bearing, inner	2
67- 7	536078	NUT, double cap, inner, LH (Budd #43809)	10
68- 8	536079	NUT, double cap, inner, RH (Budd #43808)	10
68- 9	536080	NUT, double cap, outer, LH (Budd #43812)	10
68-10	536081	NUT, double cap, outer, RH (Budd #43811)	10
67-11	536076	STUD, LH (Budd #16857-LH)	10
68-12	536077	STUD, RH (Budd #16856-RH)	10
68-13	103031	NUT, hex., jam, $\frac{3}{4}$ "-16	10
68-14	103326	WASHER, lock, medium, $\frac{3}{4}$ "	10
68-15	535827	DRUM, brake (16" x 5")	2
68-16	536158	WHEEL (Budd #44460)	4
	675224	TIRE, heavy duty, 9.00/20-10 ply	4
	675225	TUBE (For 9.00/20 Tires)	4
	675226	FLAP (For 9.00/20 Tires)	4

NUMERICAL PARTS LIST

Part No.	List Price	Page No.	Part No.	List Price	Page No.
50808	\$ 9.60	95	56118	1.45	91
51219	8.70	73	56125	4.30	99
51240	2.95	73, 77	56367	216.30	104
51310	4.50	91	56368	216.30	104
51329	14.20	73	57001	18.00	100
51475	5.25	69	57002	11.65	73
51477	12.55	77	57003	6.15	103
51485	11.60	69	57004	4.85	73, 77
51486	1.80	69	57010	9.30	69
51487	1.80	69	57025	400.95	79
51488	2.05	70	57057	13.40	77
51491	17.60	79	032801	.01	91
51492	5.85	79	100014	.02	81
52066	10.50	95, 97	100027	.02	79, 81, 95
52067	10.50	95, 97	100030	.03	77
52097	27.45	97	100031	.03	75
52110	9.85	97	100051	.05	70
52111	60.50	97	100053	.05	69
52985	2.25	107	100076	.07	99, 111
53047	141.05	77	100077	.72	95
53119	35.00	95, 109	100079	.10	77
53311	9.05	109	100134	.02	79
53312	26.05	109	100145	.03	111
54778	.015	91	100146	.05	113
54850	7.10	91	100755	.005	93
54887	17.55	91	102634	.01	93
54929	26.35	104	102635	.01	79, 100
55010	21.35	99	102637	.02	100
55014	39.90	95	102647	.03	99, 100, 107
55054	2,340.00	99	102649	.035	109
55055	180.00	101	102870	.03	69
55056	180.00	101	102892	.03	69
55058	337.95	94	102949	.045	95
55059	144.00	100	103024	.01	69
55060	144.00	100	103025	.01	81
55061	144.00	100	103026	.01	70, 75, 77, 79, 81, 95, 107
55063	57.60	100	103028	.02	69, 70, 73, 79, 81
55077	32.40	100	103030	.03	77, 95, 99, 111
55078	3.80	101	103031	.05	69, 73, 77, 113
55079	75.60	101	103092	.01	93
55080	75.60	101	103128	.03	93
55081	5.65	101	103319	.005	69, 75
55082	5.65	101	103320	.005	81, 93
55083	17.25	95	103321	.005	70, 75, 77, 79, 81, 95, 107
55085	14.40	101	103322	.055	111, 113
55086	14.40	101	103323	.005	69, 70, 73, 81, 99, 109
55093	8.10	101	103325	.01	77, 95, 111
55094	8.10	101	103326	.015	73, 77, 113
56066	2.10	107	103343	.01	81
56071	30.15	107	103345	.01	109
56072	9.45	107	103346	.025	69
56102	26.65	104	103347	.02	109
56103	14.05	104	103363	.035	93
56108	1.35	91	103374	.01	107
56109	2.10	91	103385	.005	70, 73, 79
56110	1.65	91	103387	.005	109
56111	1.15	91	103397	.005	69
56112	3.05	91	103411	.01	69, 97
56113	5.25	91	103425	.01	67, 111
56114	3.40	91	103498	.04	79
56115	1.55	91			
56116	1.00	91			
56117	1.00	91			

Prices subject to change in event of variation in manufacturing and service costs.

NUMERICAL PARTS LIST

Part No.	List Price	Page No.	Part No.	List Price	Page No.
103867	.045	79	320559	.02	93
104039	.40	70, 79	320588	.02	93
104044	.25	70	320592	4.70	89, 91
104113	.07	107	320593	4.70	89, 91
104132	.03	94, 95	320624	1.65	89, 93
104133	.03	95, 109	320625	2.65	89, 93
104134	.03	95, 109	320657	.79	93
106268	.035	73, 77	320758	.79	93
106288	.03	70	530056	.31	111
106298	.06	70	530057	.44	113
106496	.01	93	530085	.24	67, 111
106653	.025	91	530088	.55	67, 77, 111
106972	.01	75	530135	.35	75
108636	.005	99, 100, 107	530368	.22	67, 111
108641	.005	100	530370	.50	67, 111
108685	.03	94	530424	5.10	69
109084	.01	101	530521	3.90	70
109461	.03	70, 73, 77, 95, 97, 100	530564	.10	77
109462	.05	70	530669	.025	111
110097	.09	69	532146	.25	69
110438	.02	97	532147	.20	69
113848	.08	70	532545	2.30	70
114505	.015	69	532827	.95	81
114787	.05	70	532866	.20	73
116203	.21	77	532894	.02	81
116399	.08	79	532939	36.10	113
117983	.08	70	532977	1.50	81
119229	.04	95, 100, 109	533030	.25	81
119252	.015	107	533066	.10	70, 77
119254	.025	100	533368	.60	70, 73
119256	.04	109	533559	.78	77
119260	.28	97	533560	1.70	77
119286	.035	95, 109	533561	.22	77
119931	.09	79	533576	.12	77
120063	.19	81	533677	.50	69
120375	.01	93	533704	.01	73, 77
120380	.01	93	533908	13.70	77
120622	.003	93	533967	2.45	73
120911	.09	81	533974	2.55	73
121841	.001	93	533975	.65	73
121900	.01	93	533979	.33	73
121902	.01	93	533980	.20	73
123461	.01	93	534014	.04	73, 77
132768	.01	93	534076	48.15	77
133043	.01	93	534077	.33	77
134551	.02	93	534079	.35	73, 77
138063	.03	95	534212	.10	77
138070	.035	97	534374	24.95	79
138142	.09	69	534434	1.15	79
142358	.05	107	534457	61.60	111
144247	.97	69	534501	103.75	67
144260	.62	69	534533	4.20	79
144754	.005	81	534591	.02	67, 77
145193	.01	100, 101	534725	2.50	73, 77
174823	.06	107	534726	2.25	73, 77
181436	.06	109	534727	.60	73, 77
240826	.10	109	534729	.02	73, 77
242209	2.55	95	534730	.02	73, 77
320487	1.65	89, 93	534731	.05	73, 77
320488	2.65	88, 93	534732	.02	73, 77
320493	.05	93	534739	.02	73
320518	1.75	91	534740	.25	73, 77
			534743	5.15	111

Prices subject to change in event of variation in manufacturing and service costs.

NUMERICAL PARTS LIST

<i>Part No.</i>	<i>List Price</i>	<i>Page No.</i>	<i>Part No.</i>	<i>List Price</i>	<i>Page No.</i>
534746	5.70	67	536268	9.70	70
534747	7.95	67	536269	6.40	70
534754	2.90	111	536270	5.75	70
534757	4.15	113	536271	2.30	69
534758	5.35	113	536272	.44	69
534759	5.45	111	536273	.64	70
534797	.15	107	536282	.98	81
534800	.10	69	536283	2.60	81
534918	.01	73, 77	536284	4.45	79
534919	.10	73, 77	536288	.68	70
534996	2.35	67	536292	1.45	104
535017	.75	73	536304	.54	101
535018	.04	73	536311	23.45	111
535019	.02	73	536312	2.20	77
535027	.05	73	536319	1.30	103
535029	.07	73	536320	.21	103
535105	9.60	73	536321	1.20	103
535106	9.60	73	536325	3.45	69
535300	.25	79	536326	2.40	69
535301	.18	79	536331	.79	69
535302	.18	79	536332	1.20	69
535303	70.20	79	536393	.58	73
535304	.40	79	560244	.12	109
535306	.54	79	560503	1.60	97
535308	.50	79	560836	.25	109
535309	1.05	79	561012	.75	109
535310	8.30	81	563400	.29	109
535312	.50	79	563497	.06	109
535606	4.90	73	563691	2.10	109
535730	1.85	70	563823	.10	109
535736	18.70	79	563824	.57	109
535772	.85	73	563825	.19	109
535773	.85	75	564189	.29	109
535781	.09	111	564270	.025	109
535784	9.00	111	564295	3.90	109
535827	24.65	113	564603	.40	109
535910	.90	79	564636	3.65	77
535927	.10	73	564650	2.25	109
535960	1.75	111	564651	2.25	109
536076	.80	113	564743	2.95	109
536077	.79	113	565151	30.90	109
536078	.45	113	565154	2.90	109
536079	.45	113	565162	3.30	95, 109
536080	.20	113	590015	3.45	100
536081	.20	113	590017	9.25	100
536108	25.55	79	590044	.43	95
536110	4.30	79	590095	2.15	95
536111	.54	69	590112	.04	107
536158	30.15	113	590117	1.40	100
536210	.18	77	590118	.63	100
536213	2.35	79	590254	.51	94
536214	1.45	79	590284	1.55	100, 101
536218	9.00	111	595255	1.40	97
536219	.13	111	595275	.08	95
536221	.97	111	596967	2.00	95
536227	.79	69	596968	7.65	95
536232	3.10	69	598497	4.65	95, 109
536249	.64	69	598500	15.55	95, 109
536251	1.20	79	599809	.44	97
536254	44.15	77	599849	.21	95
536262	1.05	69	599851	.19	95
536266	3.30	70	598924	.59	100, 101
536267	4.80	69	600001	7.60	97

Prices subject to change in event of variation in manufacturing and service costs.

NUMERICAL PARTS LIST

Part No.	List Price	Page No.	Part No.	List Price	Page No.
600002	7.60	97	601131	.90	99
600133	1.55	104	601132	.43	99
600259	2.05	100, 101	601133	.25	99
600459	.25	101	601134	18.00	99
600579	1.05	100	601135	1.80	99
600580	2.55	95	601136	.72	99
600581	17.05	95	601137	2.50	101
600730	8.05	97	601138	2.50	101
600874	.72	97	601139	2.50	101
600875	.22	95	601140	2.50	101
600970	50.40	101	601141	2.50	101
600971	50.40	101	601142	2.50	101
600972	21.60	101	601143	36.00	99
600973	25.20	101	601144	9.30	94
600980	16.15	95	601145	9.50	95
600981	21.60	100	601146	6.60	95
600982	28.80	100	601147	6.60	95
600984	14.40	101	601148	2.35	94
600985	14.40	101	601149	6.60	95
600986	21.60	99	601150	6.60	95
600987	6.30	100	601151	.31	95
600988	3.15	100	601152	1.80	100
600989	.90	100	601153	1.80	101
600991	3.20	95	601154	.83	103
600992	93.60	100	601155	27.00	101
600993	93.60	100	601156	27.00	101
600994	3.25	100	601168	8.10	99
600995	.90	100	601169	8.10	99
600996	.36	100	601172	7.20	99
600997	.90	100	601178	9.35	99
600999	50.40	99	601179	12.60	99
601000	.81	103	601180	.36	99
601001	.36	95	601181	5.15	99
601002	13.50	100	601182	5.15	99
601003	.72	100	601183	4.10	99
601004	1.10	100	601184	4.10	99
601071	38.90	97	601234	6.10	99
601072	7.20	99	601235	6.10	99
601073	7.20	99	601250	5.05	101
601076	9.90	99	601251	5.05	101
601106	14.40	100	601252	.36	100
601107	9.90	99	601253	.29	100
601108	9.90	99	601254	.72	99
601109	4.70	99	601255	.50	99
601110	4.70	99	601277	.72	101
601111	6.30	99	601457	.25	101
601112	6.30	99	601722	.36	99
601114	18.00	100	630027	.30	69
601115	3.80	100	630028	.30	69
601116	.80	100	630298	.06	69
601118	10.20	95, 109	630605	.05	107
601119	1.90	101	630838	.02	77
601120	.31	101	631036	7.85	69
601121	.11	101	674753	.05	107
601122	9.00	99	674754	1.05	107
601123	10.80	99	674756	.30	107
601124	9.00	99	674757	.70	107
601125	3.95	99	674758	.18	107
601126	.36	99	674759	.02	107
601127	.40	99	674766	.13	107
601128	1.40	103	674772	.10	107
601129	1.40	103	675059	.15	91
601130	.16	101	675060	.30	91

Prices subject to change in event of variation in manufacturing and service costs.

NUMERICAL PARTS LIST

<i>Part No.</i>	<i>List Price</i>	<i>Page No.</i>	<i>Part No.</i>	<i>List Price</i>	<i>Page No.</i>
675063	.06	100, 101	KD-7136	.08	88, 89
675159	.12	100	KD-9526	.20	88, 89
675164	1.15	104	Stk. No. 1041	.25 per ft.	79
675165	.35	104	Stk. No. 1042	.25 per ft.	79
675170	1.10	107	Stk. No. 1043	.04 per ft.	79
675179	1.30	107	Stk. No. 1044	.05 per ft.	79
675180	.03	107	WAB 200001	2.50	85
675181	1.95	107	WAB 200029	.11	83
675221	2.00	107	WAB 201318	.005	85
675224	58.35	113	WAB 201687	.40	85
675225	6.70	113	WAB 202587	.15	81
675226	.93	113	WAB 202588	.45	81
675477	.045	91	WAB 202690	.45	82
675478	.035	91	WAB 202691	1.75	83
675479	.06	91	WAB 202692	.70	82
675480	.02	91	WAB 202693	2.15	82
675497	.035	91	WAB 202695	.35	83
675503	.90	97	WAB 202696	.30	83
675530	3.55	91	WAB 202697	.30	83
675532	4.20	91	WAB 202698	.65	83
675559	.015	91	WAB 202699	.15	82
675829	3.25	107	WAB 202735	.15	83
675832	9.40	104	WAB 202736	.25	83
675833	53.50	104	WAB 202737	.15	83
675834	10.10	104	WAB 202738	.30	83
675835	.45	104	WAB 202741	.55	83
675837	.24	104	WAB 202743	.25	83
675838	10.80	104	WAB 202744	.15	83
675879	53.55	111	WAB 202746	6.95	83
675880	5.15	111	WAB 202747	.15	83
675881	.73	111	WAB 202869	.25	83
675882	.37	100	WAB 202880	1.75	85
675892	2.60	99, 100	WAB 202941	.25	85
675893	1.45	99	WAB 202978	.03	85
675980	.74	111	WAB 202932	.005	83
675981	15.95	104	WAB 203016	.01	83
675982	.37	104	WAB 203019	.005	85
676152	4.45	104	WAB 203145	.02	85
676157	.90	104	WAB 203148	.03	85
676173	.43	100	WAB 203156	.03	85
676180	.30	104	WAB 203172	.07	85
676181	.33	104	WAB 203173	.02	85
676223	.72	100	WAB 203227	.03	83
676224	.63	91	WAB 203379	1.45	83
690006	.75	91	WAB 203388	.10	83
690007	.02	91	WAB 203587	.40	85
690008	.31	91	WAB 203589	.20	85
690085	1.35	91	WAB 204055	1.00	83
No. 55	.15	89	WAB 204056	.20	83
CB-9212	.50	89	WAB 204568	8.75	83
CB-9218		89	WAB 204650	1.30	83
CB-9225		89	WAB 204651	.25	83
CB-9231		89	WAB 205129	2.45	85
CB-9232	.20	89	WAB 210897	.05	86
CB-9233	.02	89	WAB 211367	.15	81
CB-9234		89	WAB 211379	.65	81
KD-1135		89	WAB 211537	.30	83
KD-1996	.05	89	WAB 211538	.30	83
KD-2878	.05	89	WAB 211539	.35	83
KD-4393	.25	89	WAB 211541	.40	83
KD-4446		89	WAB 211542	.20	83
KD-4684	.08	88, 89	WAB 211595	.40	83
KD-6777	.05	89	WAB 212135	.90	83

Prices subject to change in event of variation in manufacturing and service costs.

NUMERICAL PARTS LIST

	<i>Part No.</i>	<i>List Price</i>	<i>Page No.</i>
WAB 213225	..... 83	2.10	..... 83
WAB 213224	..... 83	.03	..... 83
WAB 213226	..... 83	.15	..... 83
WAB 213227	..... 83	.15	..... 83
WAB 213228	..... 83	.15	..... 83
WAB 213229	..... 83	.05	..... 83
WAB 213230	..... 83	.40	..... 83
WAB 213387	..... 83	.11	..... 83
WAB 213530	..... 86	.25	..... 86
WAB 214169	..... 86	9.90	..... 86
WAB 214171	..... 86	1.25	..... 86
WAB 214172	..... 86	3.60	..... 86
WAB 214173	..... 86	2.85	..... 86
WAB 214174	..... 86	.35	..... 86
WAB 215092	..... 85	18.50	..... 85
WAB 215204	..... 83	7.90	..... 83
WAB 216071	..... 83	13.20	..... 83
WAB 217269	..... 85	8.00	..... 85
WAB 220304	..... 83	3.50	..... 83
WAB 220305	..... 83	5.00	..... 83
WAB 220829 83	26.95 83
WAB 221053 86	2.50 86

WAB—Westinghouse Automatic Air Brake Company

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