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TM 5-1272

WAR DEPARTMENT TECHNICAL MANUAL

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4 JAN. 1956

L. d. J. J. P. V.

ANGLED ODOZER

TRACTOR-MOUNTING

CABLE-OPERATED

LaPLANT-CHOATE

MODEL R76R

FOR CATERPILLAR TRACTOR

MODEL D7

SGV TD

ANGLEDOZER

TRACTOR-MOUNTING

CABLE-OPERATED

LaPLANT-CHOATE

MODEL R76R

FOR CATERPILLAR TRACTOR

MODEL D7



WAR DEPARTMENT

• 15 MAY 1944

WAR DEPARTMENT
WASHINGTON 25, D. C., 15 May 1944

TM 5-1272 Angledozer, Tractor-Mounting, Cable-Operated, LaPlant-Choate Model R76R, for Caterpillar Tractor, Model D7, is published for the information and guidance of all concerned.

[AG 300.7 (17 May 44)]

BY ORDER OF THE SECRETARY OF WAR:

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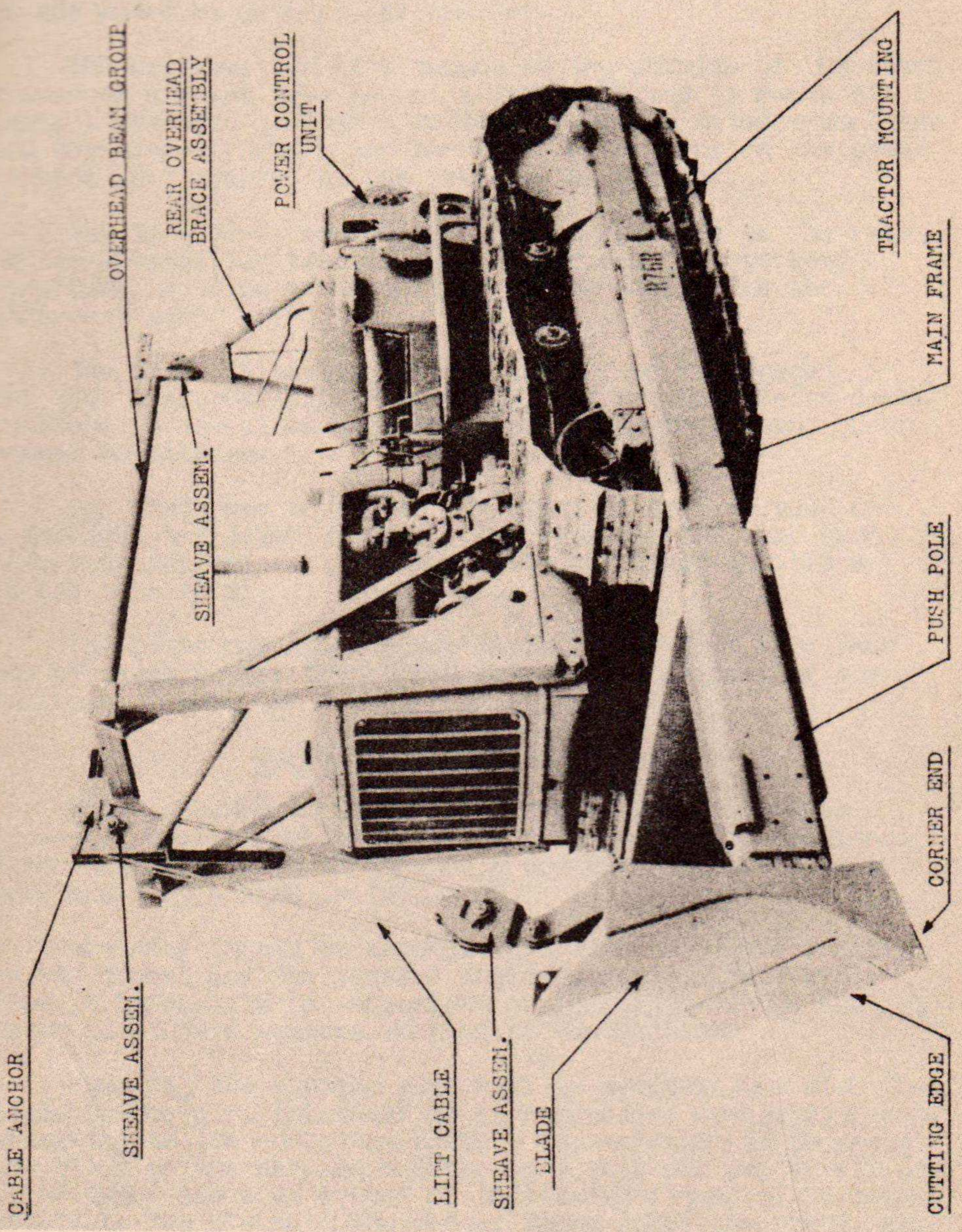
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SECTION I
MAINTENANCE AND
OPERATOR'S INSTRUCTION MANUAL
FOR
LdPLANT-CHOATE TRAILBUILDERS
ON "CATERPILLAR" TRACTORS



R76R GENERAL ARRANGEMENT

DESCRIPTION OF TRAILBUILDER

The R76R Trailbuilder is cable operated and is mounted on the model D7 Caterpillar tractor.

The trailbuilder is attached to the outside of the track frames on a pivot type mounting and is lifted by means of cable - threaded through a series of sheaves between the blade and overhead structure and threaded to the drum on the power control unit mounted on the rear of the tractor.

Any type power control unit which operates on the rear of the Caterpillar tractor may be used, as the overhead structure is so designed that it may be adapted to the different power units.

The blade is twelve feet in length, of reinforced, box type construction for strength, and designed so no down pressure is needed to make the blade enter the ground under normal conditions.

The blade may be angled 63° right or left or used as a straight bulldozer by simply removing the two rear push pole pins and relocating them in the different positions in the main frame.

The blade may also be oscillated up or down at either end by removing the front push pole pins and changing the position of the push pole in the blade locks.

SAFETY PRECAUTIONS

Never attempt to perform any greasing, maintenance, or repair operations on the tractor or trailbuilder without first making sure it is in such a position that it cannot move and trap a hand or foot.

Greasing should be accomplished with the blade resting on the ground and the tractor engine stopped. This will make it impossible for anyone to accidentally move the control lever and injure someone working on the machine.

Changing the cutting edge must be accomplished with the blade in the air, but under no circumstances should anyone be permitted to lie under the blade. The safe way is to raise the blade to the desired height, then shut the engine off and block under the side frames of the trailbuilder, so it cannot settle to the ground. Instead of lying under the blade, take a position to the front so that it will be unnecessary to have more than the hands or arms under the blade.

ABNORMAL OPERATING CONDITIONS

When operating on steep inclines, keep the tractor in gear at all times as the machine cannot roll faster than the gear in which it is being operated, whereas, if the master clutch is disengaged or the tractor shifted to neutral, serious consequences may result because of the tractor rolling too fast without the compression of the engine to hold it back.

On extremely steep inclines, it will be necessary to use the opposite steering clutch from that used in normal operation to steer the tractor if the weight of the tractor is pushing the engine while traveling down grade.

Where the weight of the trailbuilder frame and blade is insufficient to penetrate frozen ground, it may be found to be more economical to rip the ground with a ripper.

Do not wear the cutting edge down until it starts wearing on the bottom of the blade proper as the front and back sheets of the blade are welded together and if this weld is worn off, material will immediately lodge between the front and back sheets of the blade and damage it.

OPERATING INSTRUCTIONS

When the operator first gets on the tractor, with the engine running, he should practice lifting and lowering the blade, to get the feel of the controls and to find out which movement of the lever lifts the blade and which lowers it.

One of the most important things in operating a trailbuilder is to be able to lift the blade slowly each time and to lower it the same way. This will prevent digging holes and will make a smooth even cut.

It is much easier to make a smooth cut if the blade is kept full so the material can be seen above the blade.

When this amount of material is being moved, it will fill all the uneven spots ahead of the blade and leave level ground over which the tractor can travel.

When cutting hard material and the engine becomes overloaded, the blade should be lifted slightly. The most satisfactory way to prevent the Engine stalling is to release one steering clutch, which cuts the load of the engine in half. The control lever should be placed on hoist or lift simultaneously lifting the blade slightly and as the engine picks up, the steering clutch should be released, placing the full load on the engine.

NOTE:

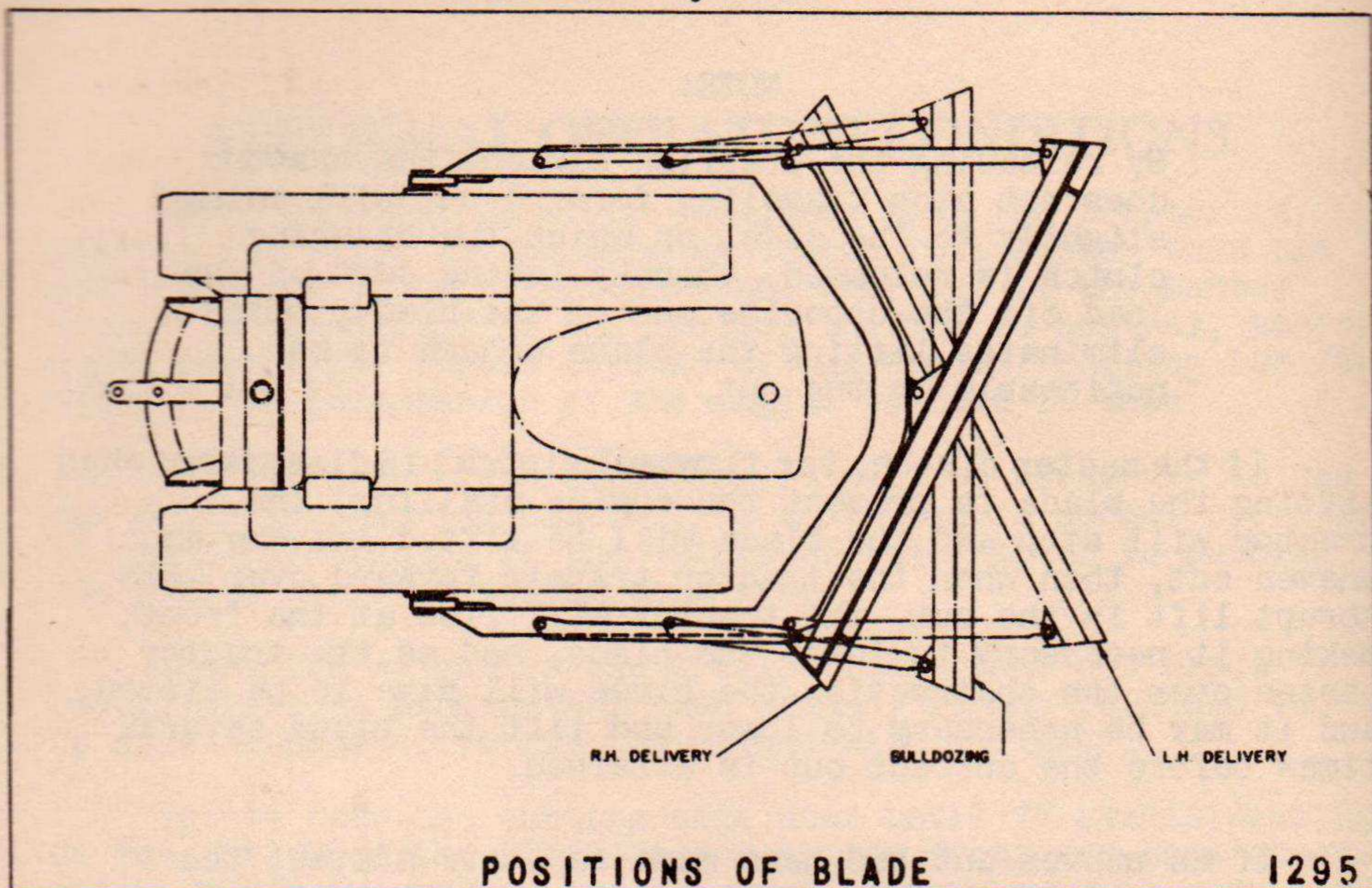
By releasing the steering clutch, the tractor does not stop traveling forward but will swing slightly to the side, on which the steering clutch is released, thereby losing part of the load off the opposite end of the blade, which eliminates lifting the blade enough to be noticeable in the cut.

If the master clutch, (or flywheel clutch) is disengaged when lifting the blade to prevent the engine stalling, the tractor will stop and the blade will be lifted leaving an uneven cut, then when the tractor travels forward over this abrupt lift in the cut, the tractor will rise at the front, making it necessary to lower the blade, and as the tractor passes over the obstruction the blade will have to be lifted, and it may be necessary to lower and lift the blade several times before the correct cut is attained.

If an uneven cut has been made as above stated, the easiest way to level the cut again, is to lift the blade and drive forward, drop the blade and reverse the tractor and drag the material back into the low spots, thus leveling up the grade or cut. In some instances it is necessary to lift the blade slightly to allow the material to pass under the blade at the desired places.

Different trailbuilder jobs require different adjustments of the blade. For example, it may be desirable to deliver the material to one side or the other. It may be necessary to dig deeper with the point of the blade one time than it is another. There are a number of adjustments, all of which can be made without any tools whatever, so that either end of the blade can be tilted up or down, and either end of the blade can be angled. And, of course, any number of combinations of these adjustments are available.

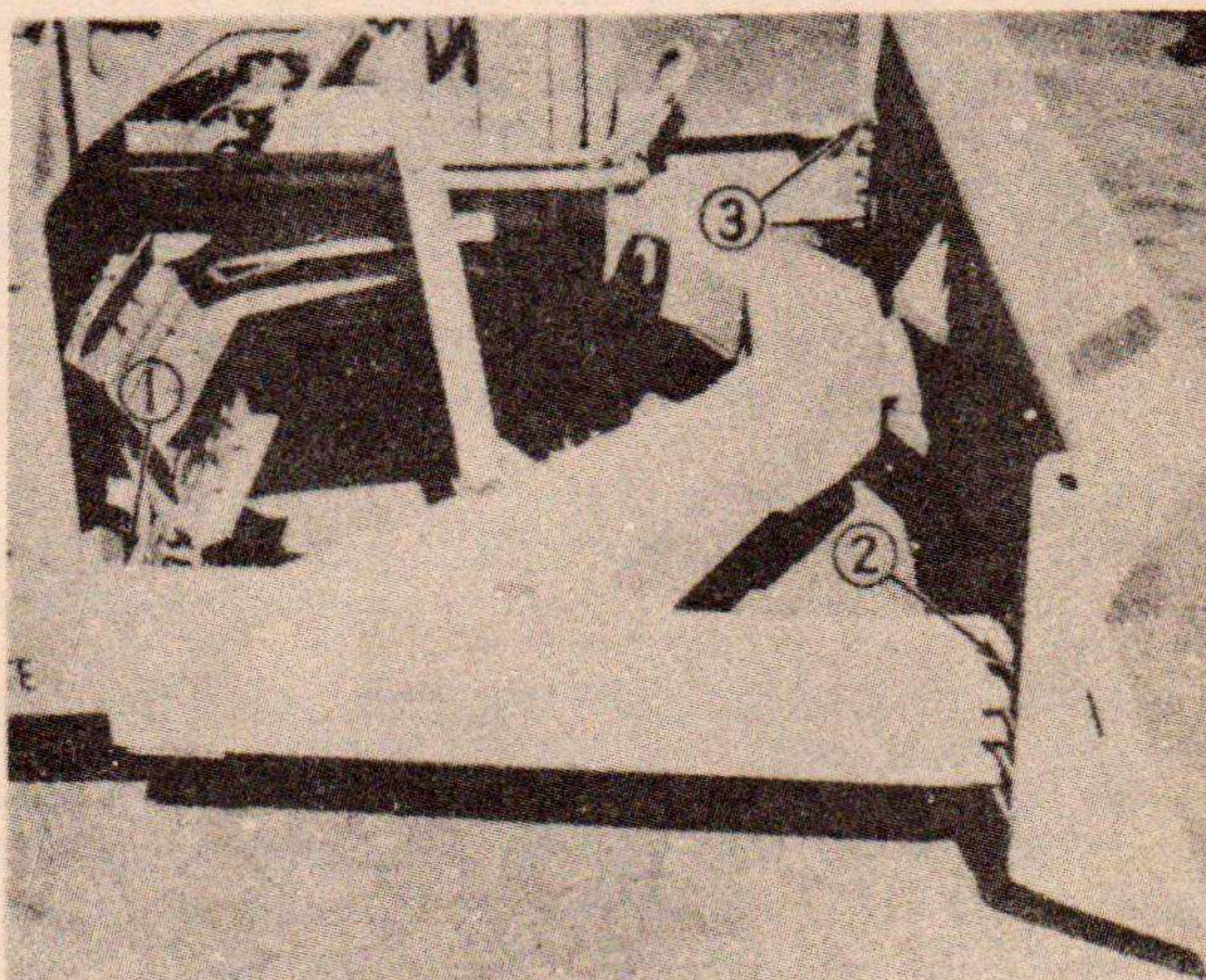
BLADE ADJUSTMENT



BLADE IN BULLDOZING POSITION

To adjust blade for bulldozing. Remove pin 1 from rear end of pushpoles on right and left hand side of tractor. Swing blade until right angle with frame and tractor, insert pins.

NOTE: Jaw 2 on end of pushpoles mesh with jaws on back of blade, pin 3 locks blade in position.



BLADE ANGLED

Receiving end of blade angled for left hand delivery. To angle blade remove pin 1 from rear end of pushpole and corner of main frame on R.H. and L.H. side of tractor, push end of blade forward for R.H. or L.H. side delivery as desired and replace pins.

BLADE ANGLED

Receiving end of blade for right hand casting.

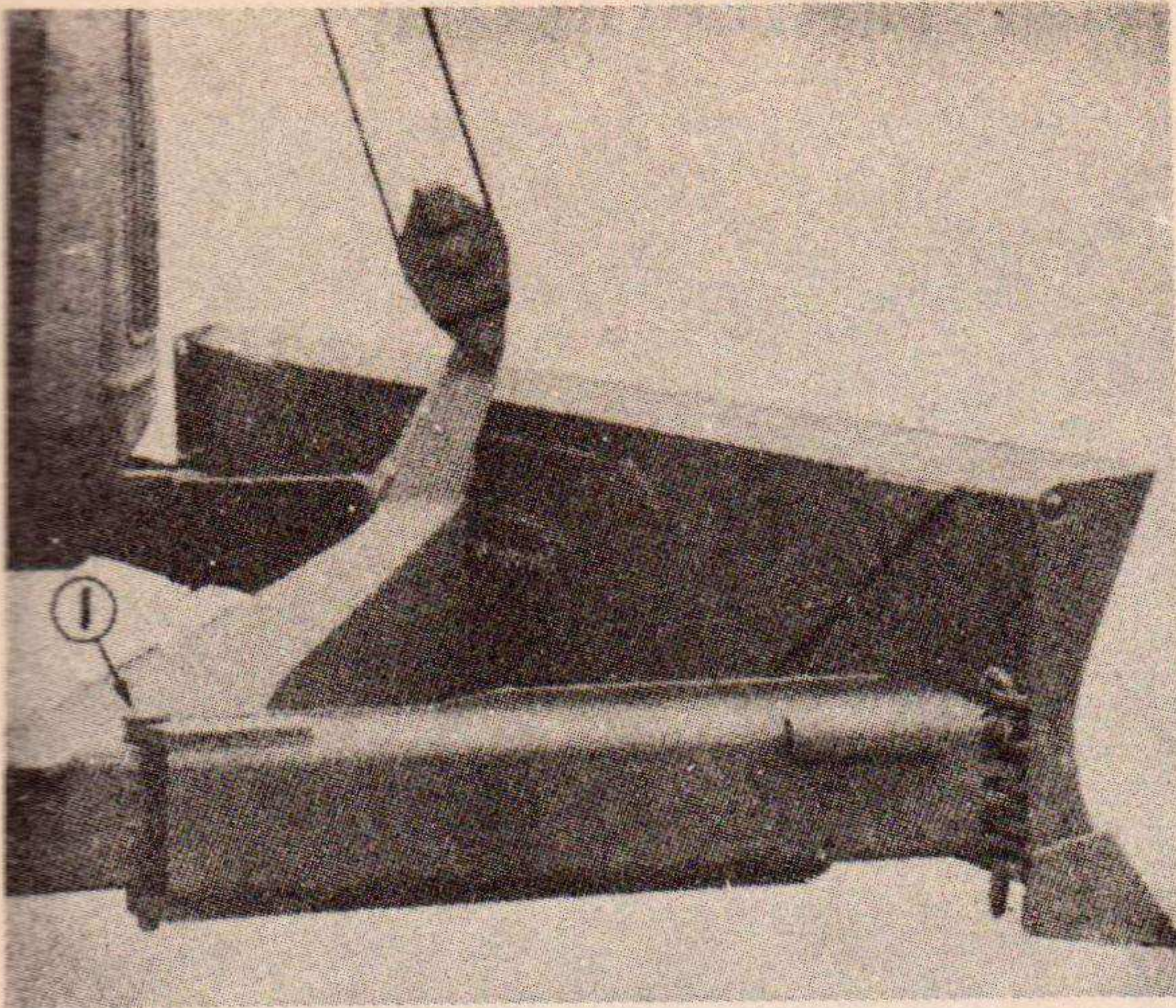


Plate No. 2-A

NOTE: Position of blade pushpole and main frame 1 and pin 2 in contrast to the same parts shown in plate No. 2-A

BLADE TILT

L.H. end of blade, showing blade tilted down.

NOTE: Interlocking Jaws 1 on end of pushpole and back of blade.

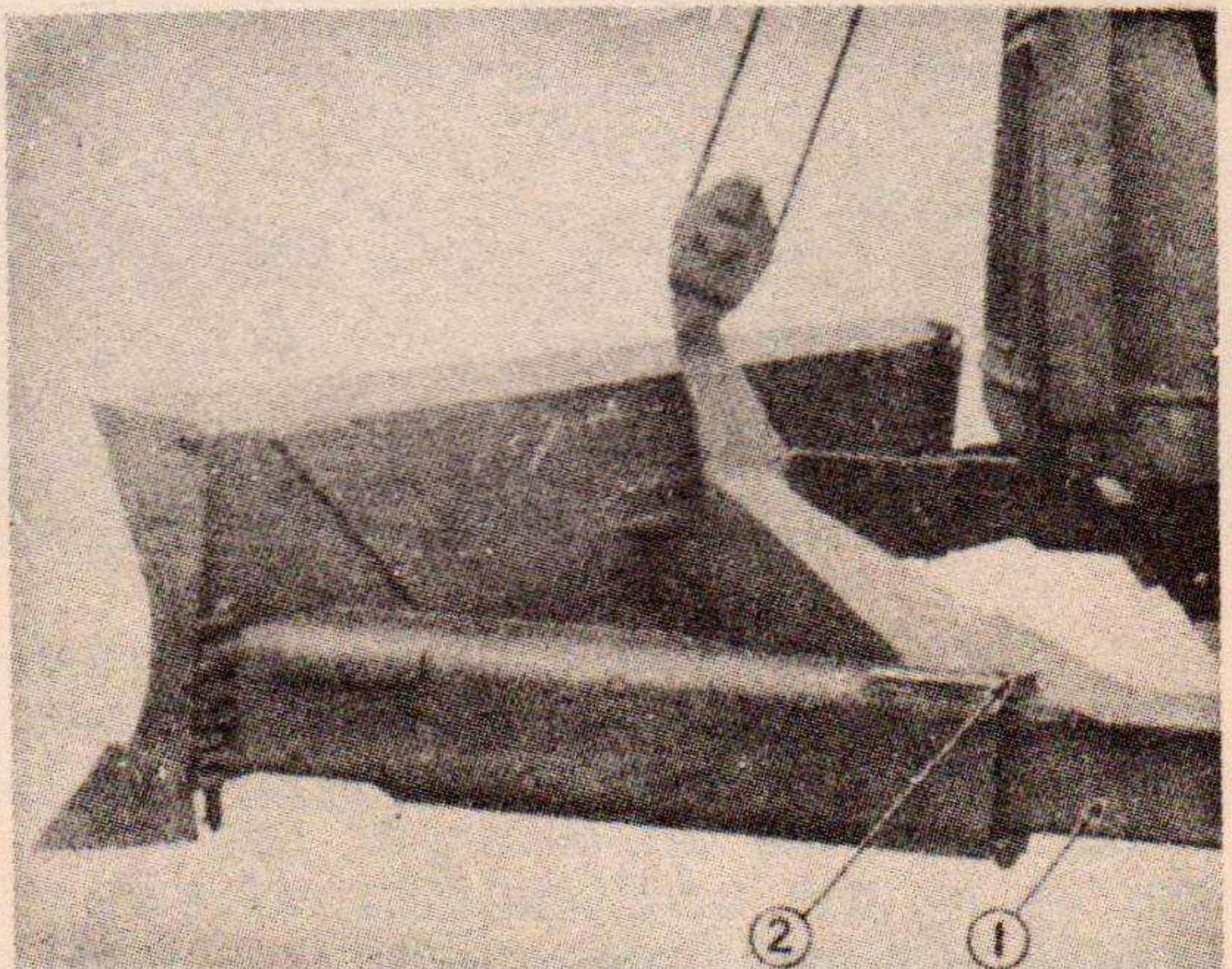


Plate No. 3-A

To tilt the blade remove pins from Jaws 1 at back of blade, and end of pushpoles on R.H. and L.H. end of blade.

Disengage the jaws at back of blade and pushpole, tilt blade up or down as desired, engage the jaws with the pushpoles and replace pins.

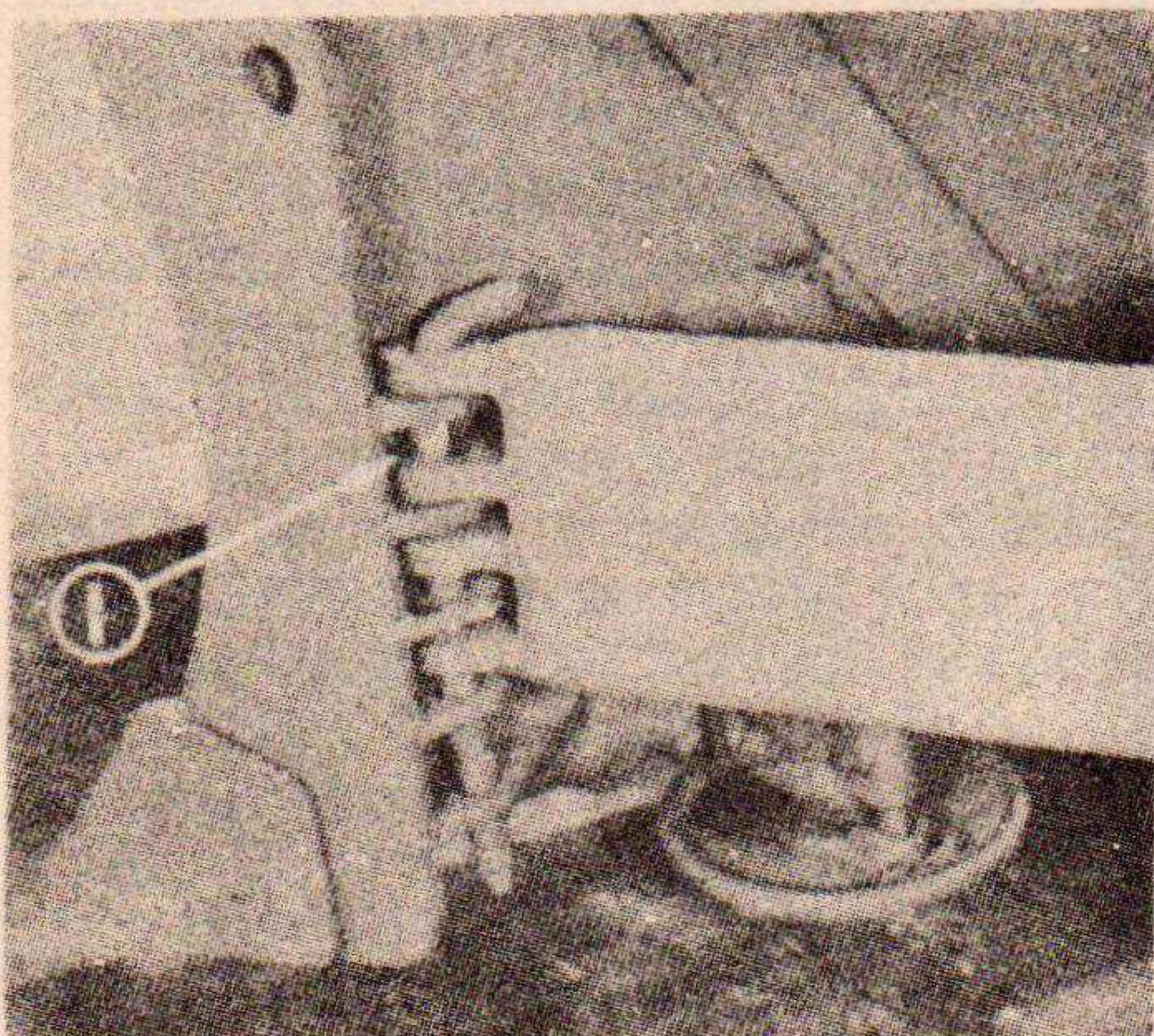


Plate No. 4

THE JOB FOR TRAILBUILDER

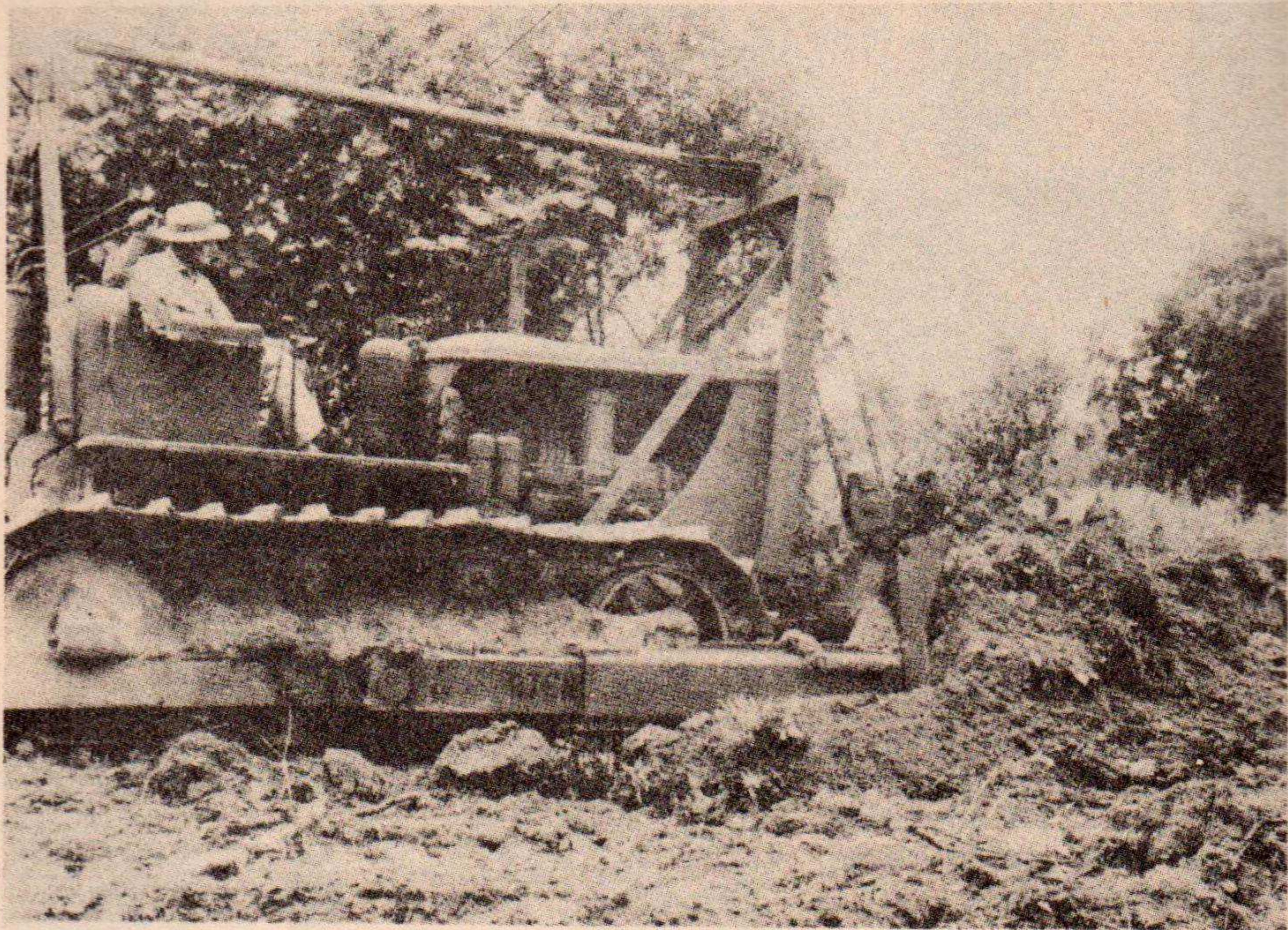


Plate No. 1

Trailbuilders are primarily designed for pioneering trails through hilly or mountainous country, for clearing right-of-way for roads, airports, camp-sites, reservoirs, training bases and similar projects. They are especially useful in the construction of ramps and in the building of trails through dense jungle. Handling rocks, logs, stumps and debris is easy and practical with these efficient units.

Another useful field for the Trailbuilder is in trenching and backfilling work, such as oil field pipeline, tiling, sewer and other similar work. Open pit mines find them invaluable in stripping and haul road construction. Road builders fill in around culverts, bridge abutments and use them for traffic by-passes during road construction. Most contractors on industrial plant expansion jobs do much of their excavation work with Trailbuilders and backfilling around basement walls is economically and efficiently done with the same tool.

PIONEER TRAILBUILDING

The Trailbuilder is such a versatile tool that it may be used successfully and economically in any or all phases of

pioneer roadbuilding, such as clearing, ditching, bank-sloping and finishing.

The first step in any pioneer trailbuilding must necessarily be to clear the trees from the proposed right of way, if in timbered country.



Plate No. 2

CLEARING

In removing large trees and stumps, it is necessary to push some of the earth and roots away from the base of the tree or stump. With the blade angled and tilted, cutting close to the tree is easy, thus loosening it so that removal is simple. When pushing the tree or stump, the center of the blade should be placed against it as high as possible for maximum leverage. To get the greatest lifting power, use the



Plate No. 3



Plate No. 4

drive over the stump while the tree is falling as it is possible for roots to come up under and behind the blade.

In clearing, if trees are to be removed, the tractor should start at the lowest point to be cleared, unless it is possible to push all the material in one pass with the machine. With the blade angled, drive up to the tree in low gear and make contact easy. Do not strike the tree at high speed as the top of the tree may break out, damaging the machine or injuring the operator. Nothing is gained by this type of work, Place the blade high on the tree in making contact and try to have the tractor on good footing, so the thrust will fall the tree out of the right-of-way and not on trees to be cleared later. The trees when felled will push into the nearby forest easier lengthwise than crosswise.

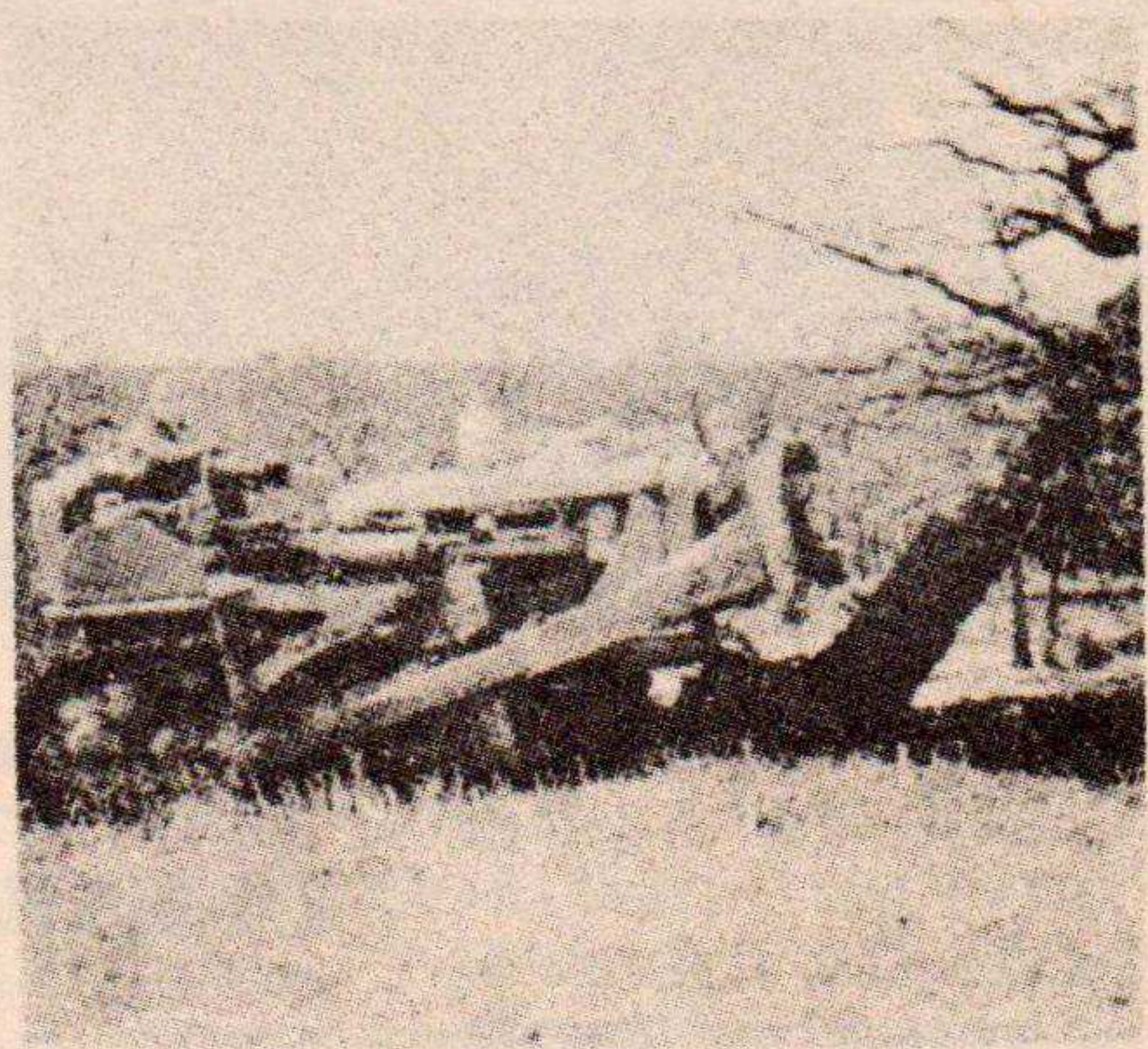


Plate No. 5

Next, rough-cut the trail, as shown in plates 1, 2, and 6 with the blade angled to either side to suit the conditions

If side casting on a hillside, keep the outside of the fill high and the ditchline on the inside low, as the fill will pack and settle from the weight of the machine. (See plates 6 and 8.)



Plate No. 6

Do as much of the side casting as possible while operating downhill, as the material will move much faster and with much less horsepower.

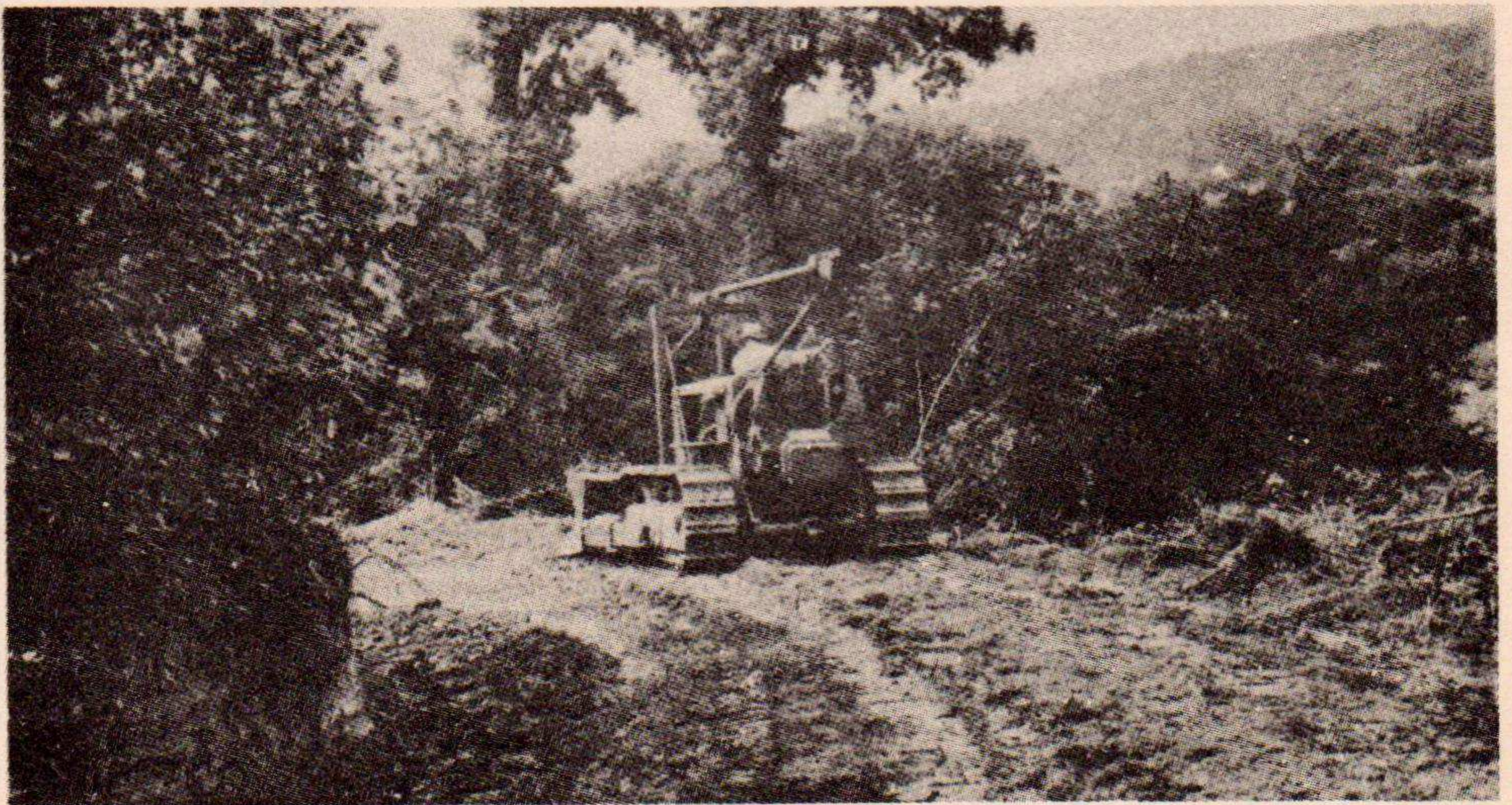


Plate No. 7

HILLSIDE

To clear sidehills it is necessary to bench in and move some earth with the trees and stumps. To bench in the blade should be angled with the leading or receiving end on the uphill side. This end of the blade should be tilted or lowered to the first adjustment below horizontal position. This adjustment is made at the back of the blade at the end of the pushpoles by first removing the two pins. One end of the blade must be lowered when the other is raised in tilting the blade. The jaws on the back of the blade are engaged with similar jaws on the end of the pushpoles, and the pins are replaced to lock the blade in place. The machine is then ready to operate.

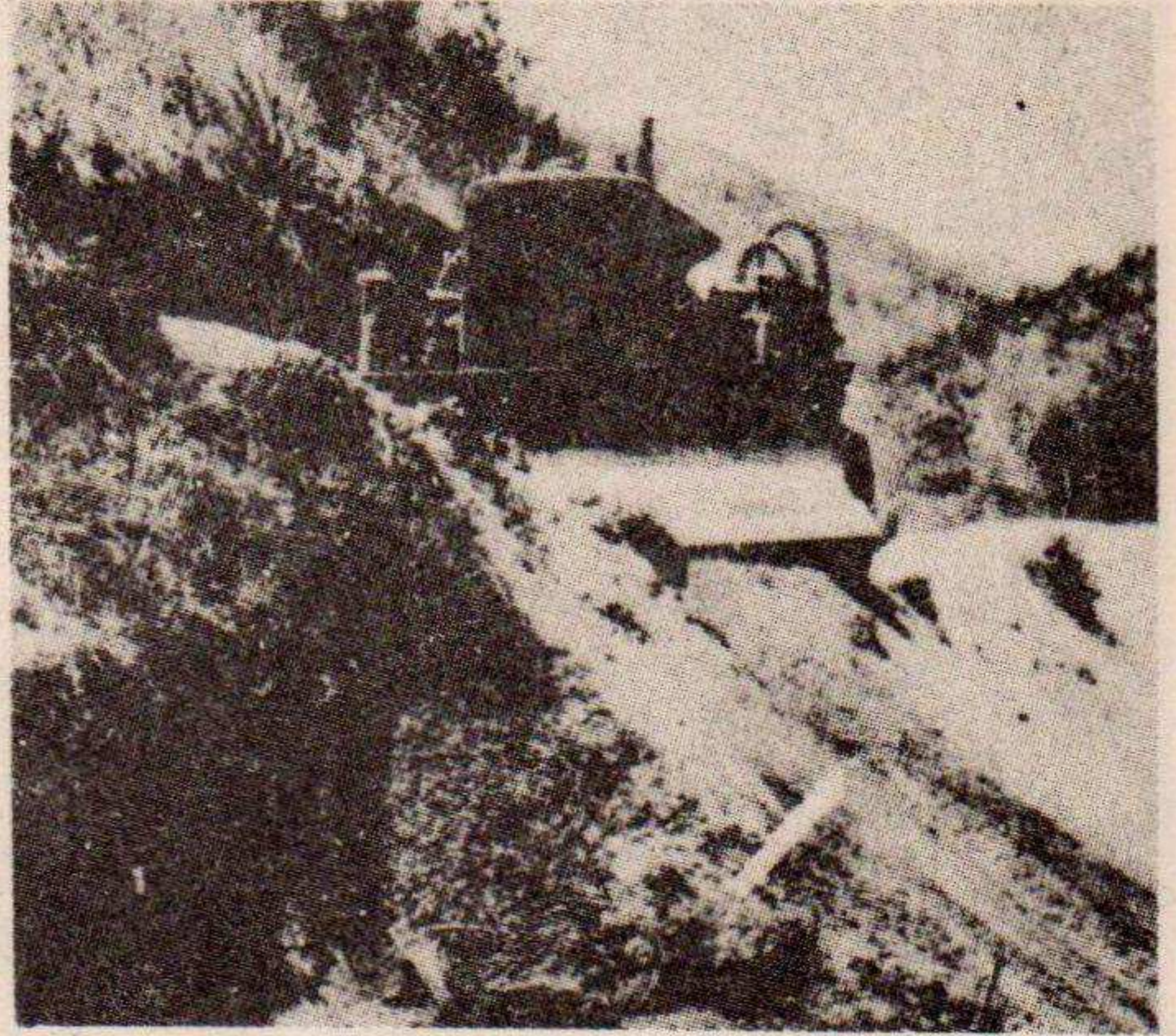
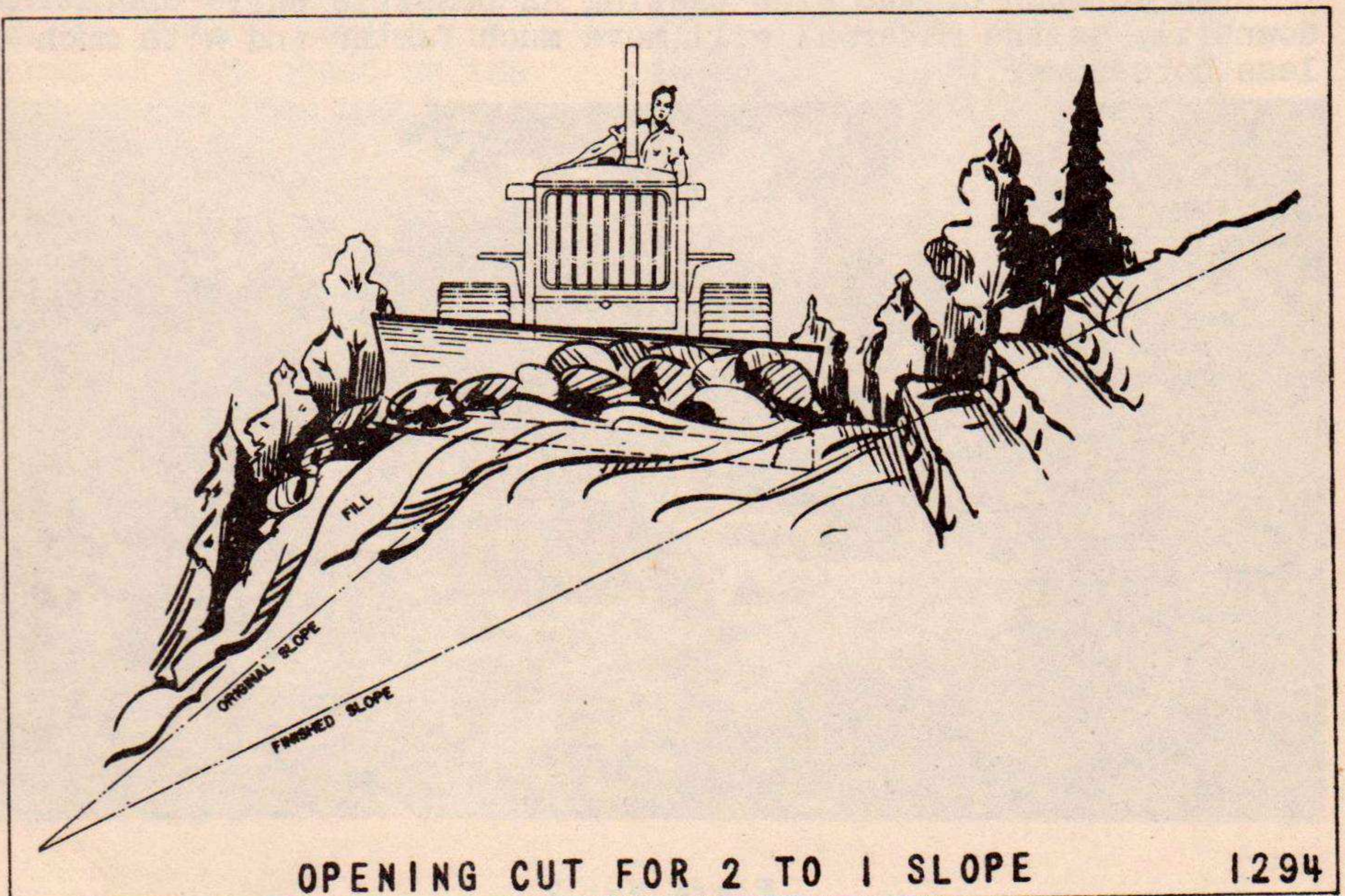


Plate No. 8

To get full efficiency from the tractor it should be kept as nearly level as possible and worked downhill as much as the job will permit.



OPENING CUT FOR 2 TO 1 SLOPE

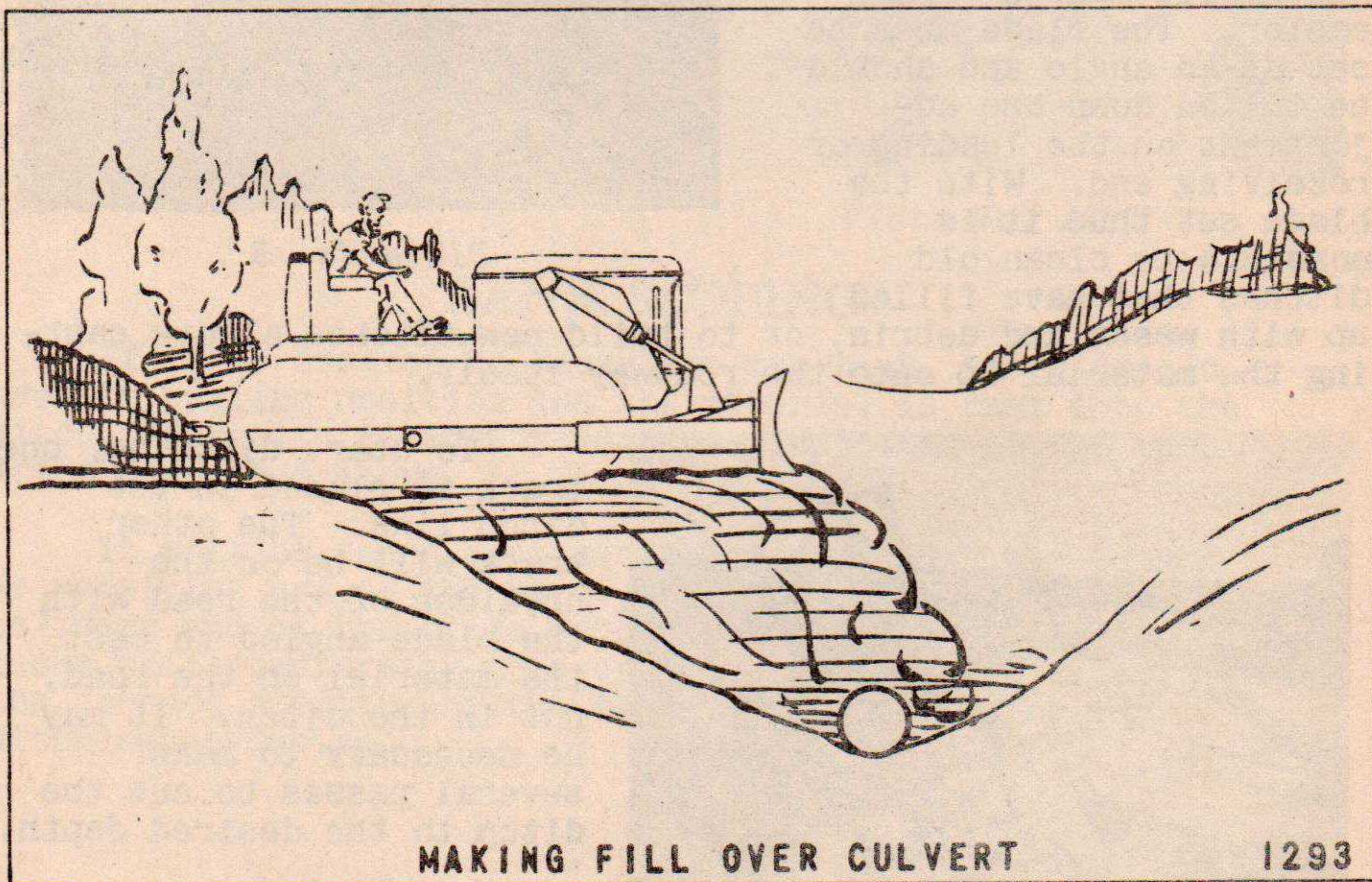
1294

To start, make a couple of passes about twice the length of the tractor with the receiving end of the blade doing the cutting. This provides a small bench from which the machine can start actual operations. The track on the high side will be following the cut and the track on the low side will be travelling on the loose material thrown out by the blade. As soon as enough material has been cast out to support the track and to hold it about six inches higher than the track in the cut, it is advisable to travel farther forward on each pass as long as the tractor doesn't tilt too much.

If a slope of two to one is desired for the upper bank, a first cut should be made only one foot deep. Then the tractor should be moved so the next cut will start two feet from the ledge left by the first cut. The slope will be cut thus in a series of steps. The steps can be trimmed off later by running the tractor along the slope, with the blade lowered just enough to cut off the steps. This will provide a two to one slope for the bank and the material removed is available for the fill for the road itself which should be kept slightly higher on the outside.

FILLING

The blade must now be adjusted to bulldozing position. This is done where a deep cut is to be made and where it is necessary to move material some distance. In making the fill, the blade should be picked up slowly as the edge of the fill is reached, leaving it a little higher. This is done because there is apt to be more settling at the edge of the fill than in toward the cut.



MAKING FILL OVER CULVERT

1293

When making a fill over a culvert, it would be possible to push the culvert out of line or crush it with the weight of the tractor if the material used to fill in over the culvert were not properly placed. To do this job correctly, the fill should be kept up to grade, and the tractor should be kept as near level as possible, pushing and spilling the material over the edge of the fill. In this way, by the time the tractor reaches the culvert it will have two or three feet of fill between it and the culvert.

If an uneven cut is made or a hole is gouged out at the beginning of a grade, the blade should be raised, the load dumped and the tractor driven far enough ahead to let the blade drop on the far side of the load. Then the tractor is reversed and down pressure is applied lightly, moving control lever from down pressure to "Hold" and alternating while backing up. The control lever should be placed on "Float" while passing over the low spot. In some cases where the hole is particularly deep, it may be necessary to raise the blade a little, then placing the control lever on "Hold" so the load will spill under the blade.

DITCHING

For cleaning existing ditches or for constructing drainage ditches along new roads, the same general principles of operation are applied. Of course, certain blade adjustments must be made and there are a few suggested operations which will make ditching easier. The blade must be set at an angle and should be tilted down one adjustment on the leading or receiving end. With the blade set thus it is possible to clean old ditches that have filled up with weeds and debris, or to build new ditches always casting the material up onto the roadway itself.

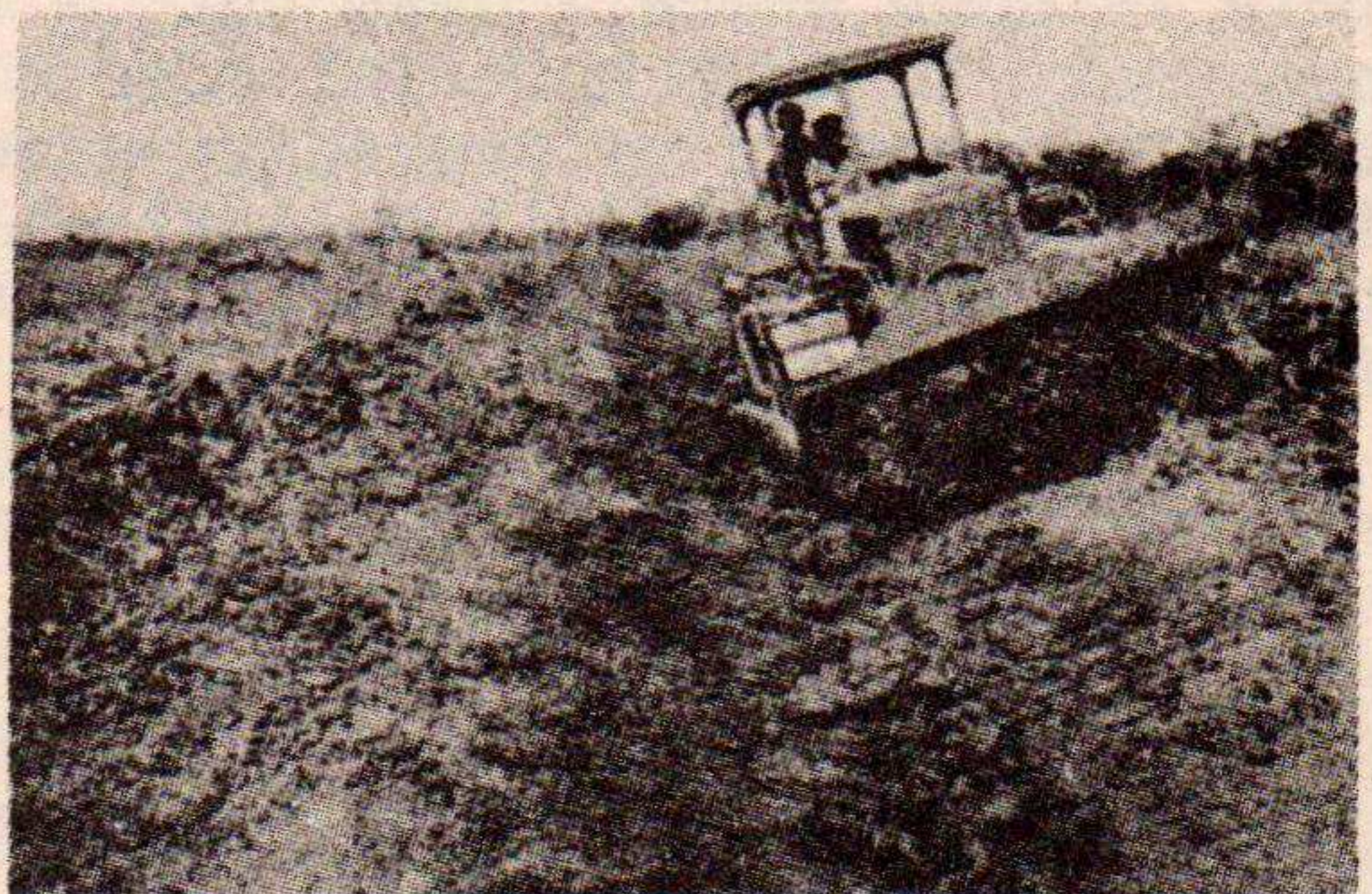


Plate No. 9

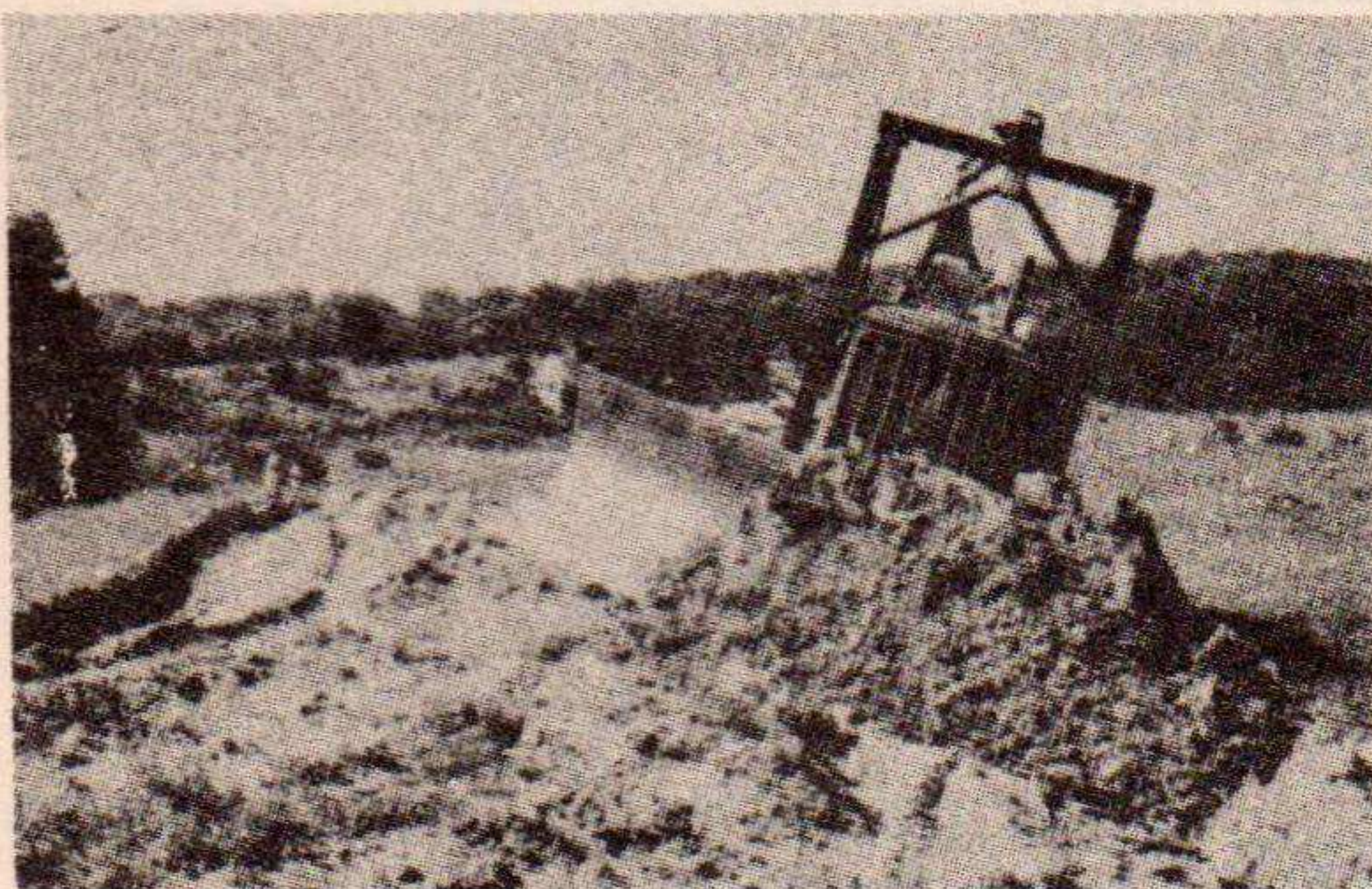


Plate No. 10

To start ditching, one track is placed in the ditch line. The other track will be on the shoulder of the road with the blade angled to cast the material on the road, not in the ditch. It may be necessary to make several passes to cut the ditch to the desired depth.

If too much material is cast up on the roadway before the ditch is finished, it may be necessary to make a pass or two on the road to pull the earth back away from the ditch. To do this the blade should be levelled up but kept angled.

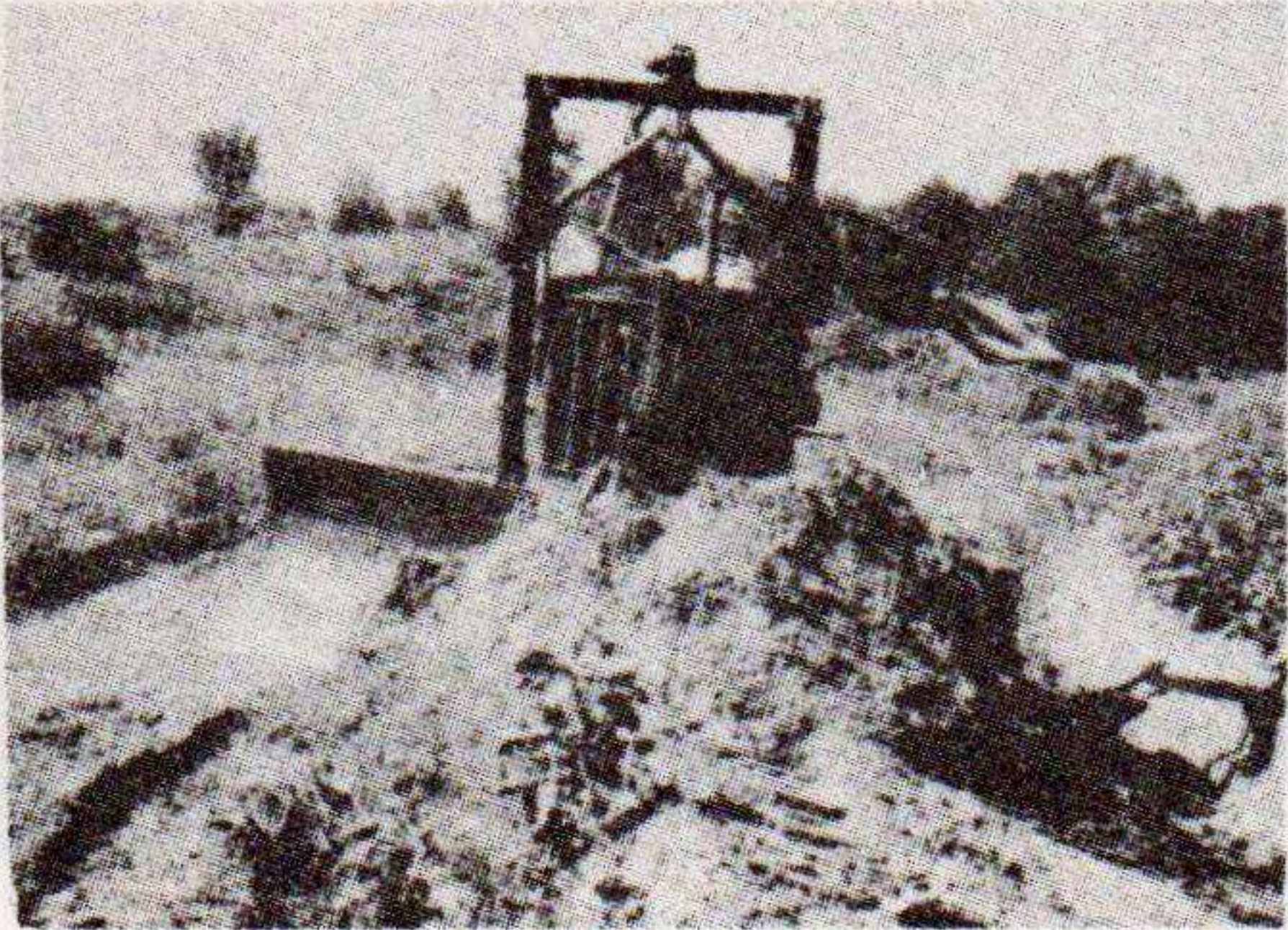


Plate No. 11

If a ditch is desired on each side of the roadway, it may be cut as illustrated on Plate 10, with the blade angled and the point down one or two positions in the blade lock as desired. Any depth ditch may be cut by making successive trips and cutting deeper. Each time a pass is made in the ditch, it will be necessary to pull the material over to the center as shown on Plate 11 and 12.

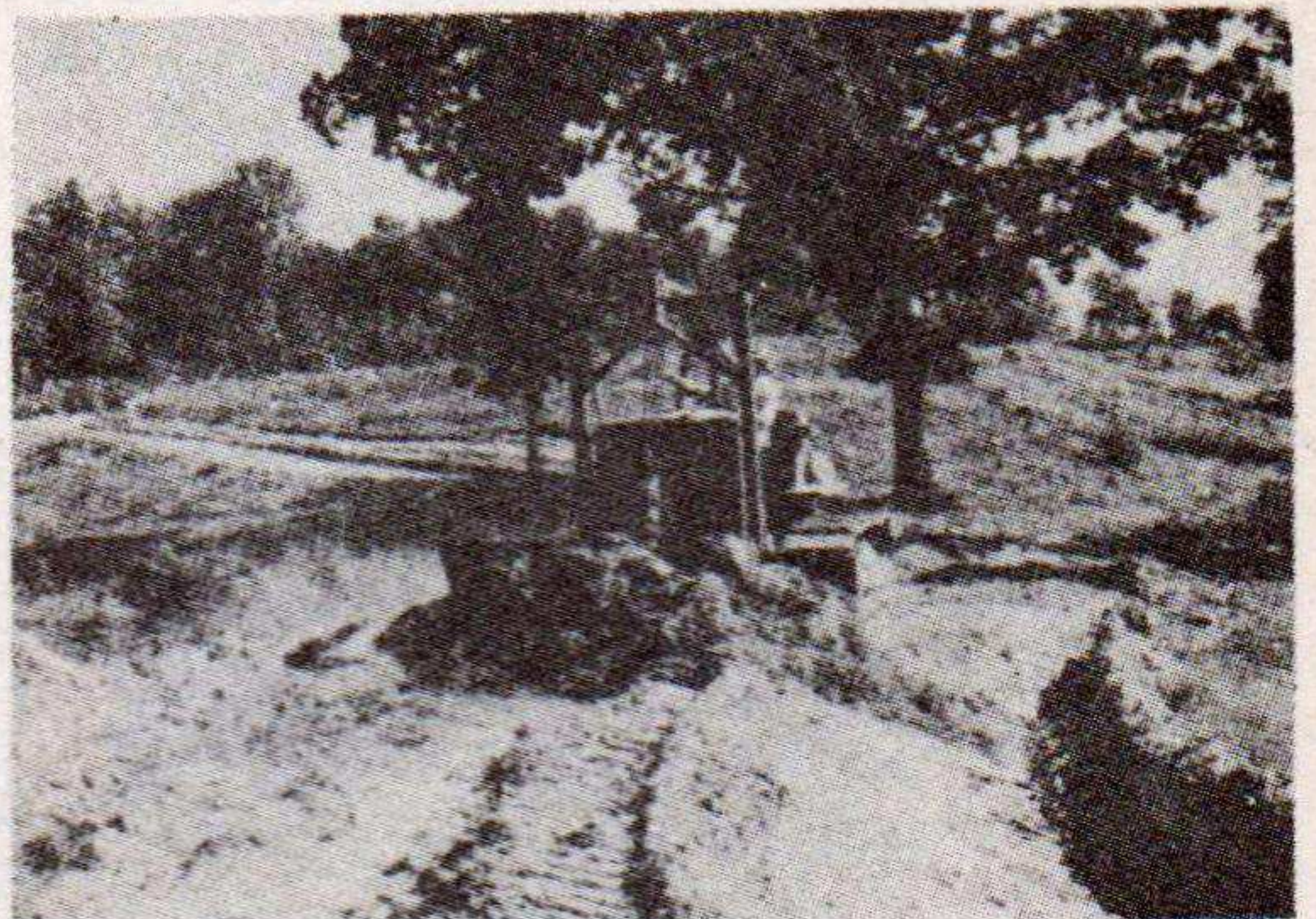


Plate No. 12

BANK SLOPING

If it is desired to backslope the bank, the blade is used in angling position and the material is cast into the ditch, where it is later removed as indicated in the operation described above.

It will be found most satisfactory to set the point, or receiving end of the blade, down one position, and the delivery end of the blade up one position in the blade locks while performing this operation; also that will be the correct position of the blade while performing any ditching operation.

Clean the ditch out immediately after the bank sloping operation. (See plate 13.)

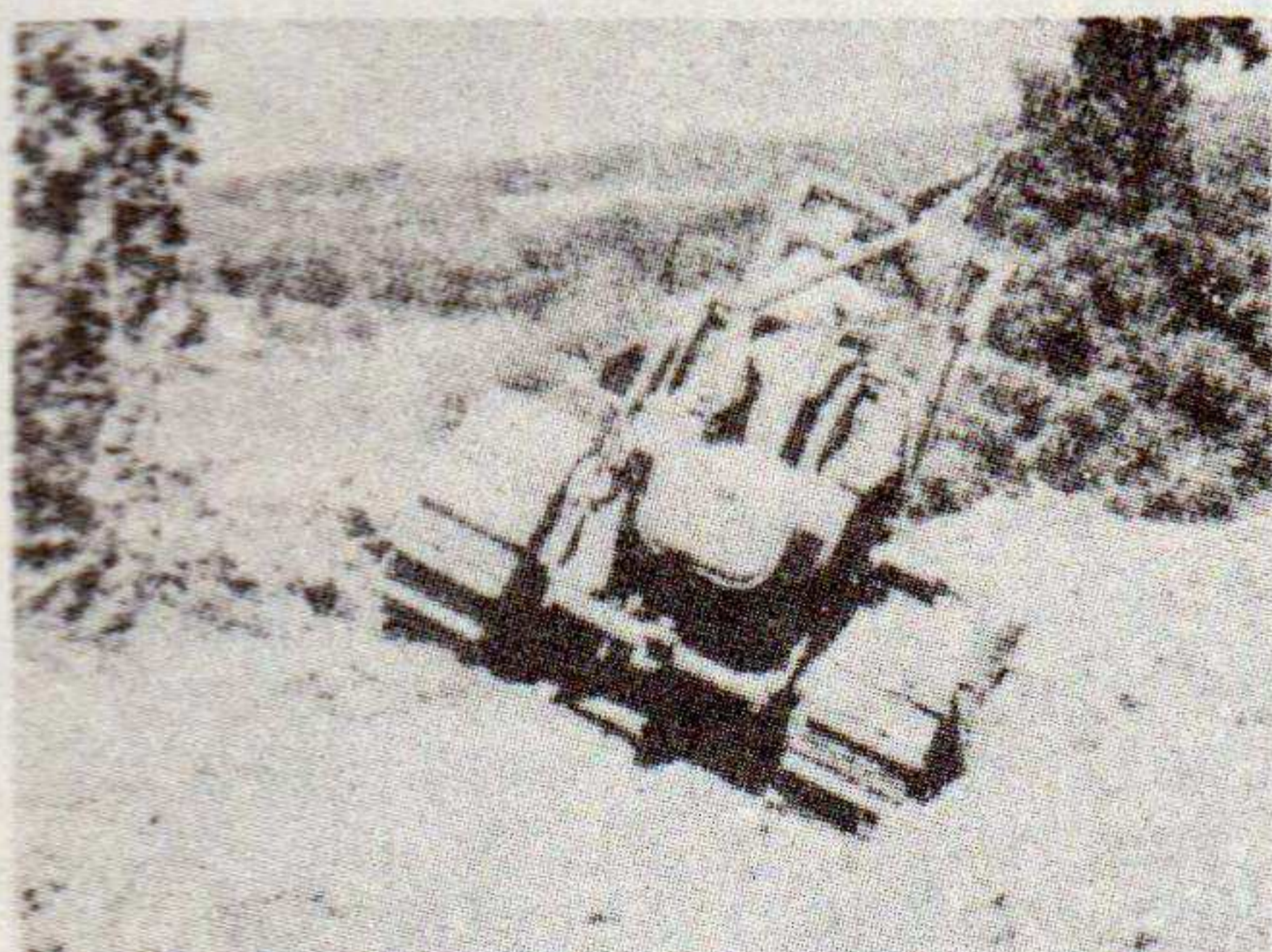


Plate No. 13

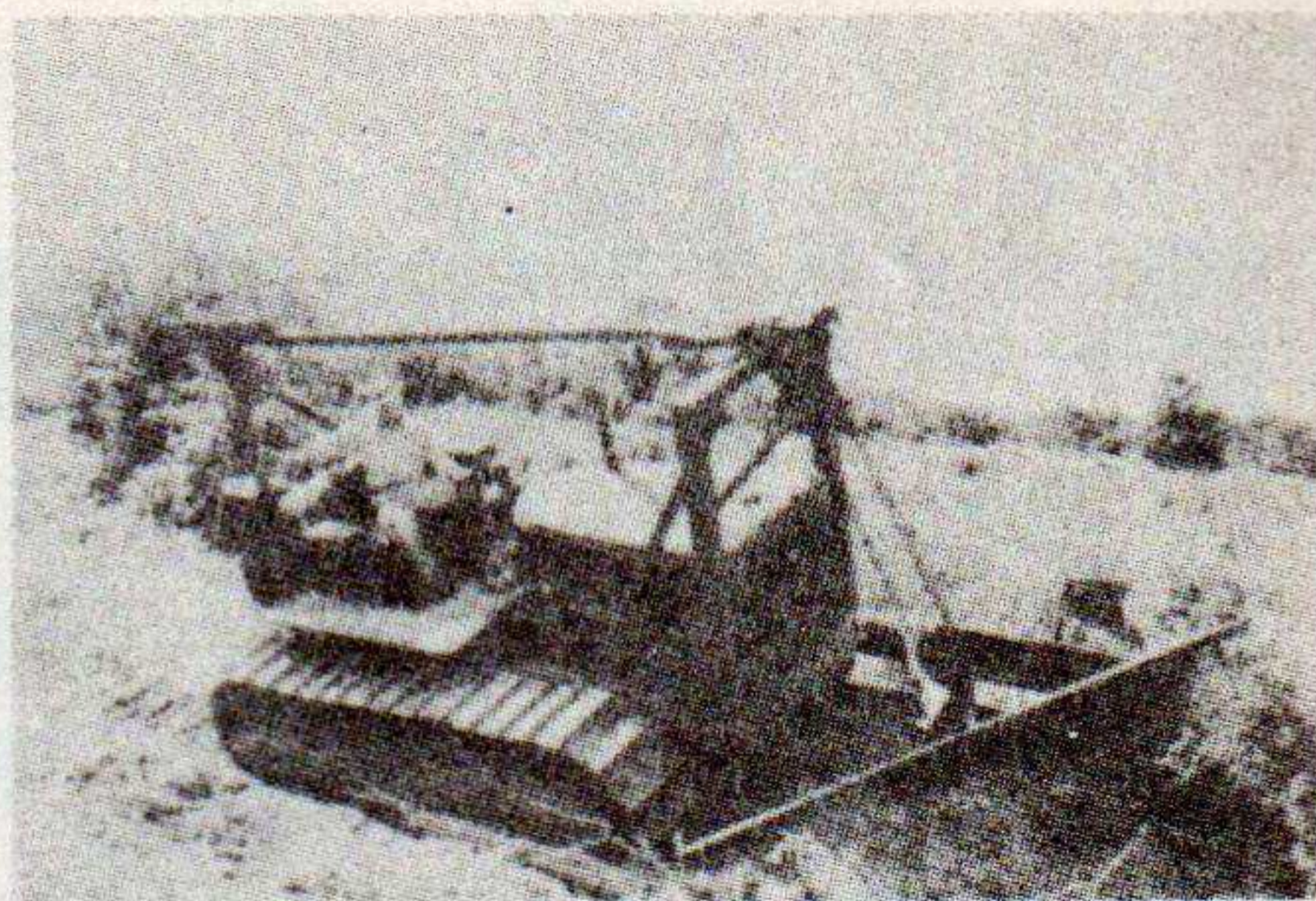


Plate No. 14

As the cut is worked down, slope the bank, leaving the blade angled and the point or receiving end down one position in the blade lock. (See plates 13 and 14.)

OIL FIELD SLUSH PITS AND TRENCHES

To open a slush pit or ensilage trench the blade is best used in bulldozing position, straight across the front of the tractor. This is done to push the material out of the trench, which usually has vertical banks on the sides and the ends of which slope upward from the center. A number of passes will be required to bring the trench to the proper depth.



Plate No. 15

At the end of each pass the tractor is reversed and backed through the trench rather than turned around unless it is desirable to push material from each end of the trench.

When the slush pit has served its purpose and is to be filled the material which was pushed out originally is used. Naturally it is impossible to drive out into the soft slush. Therefore, when the material

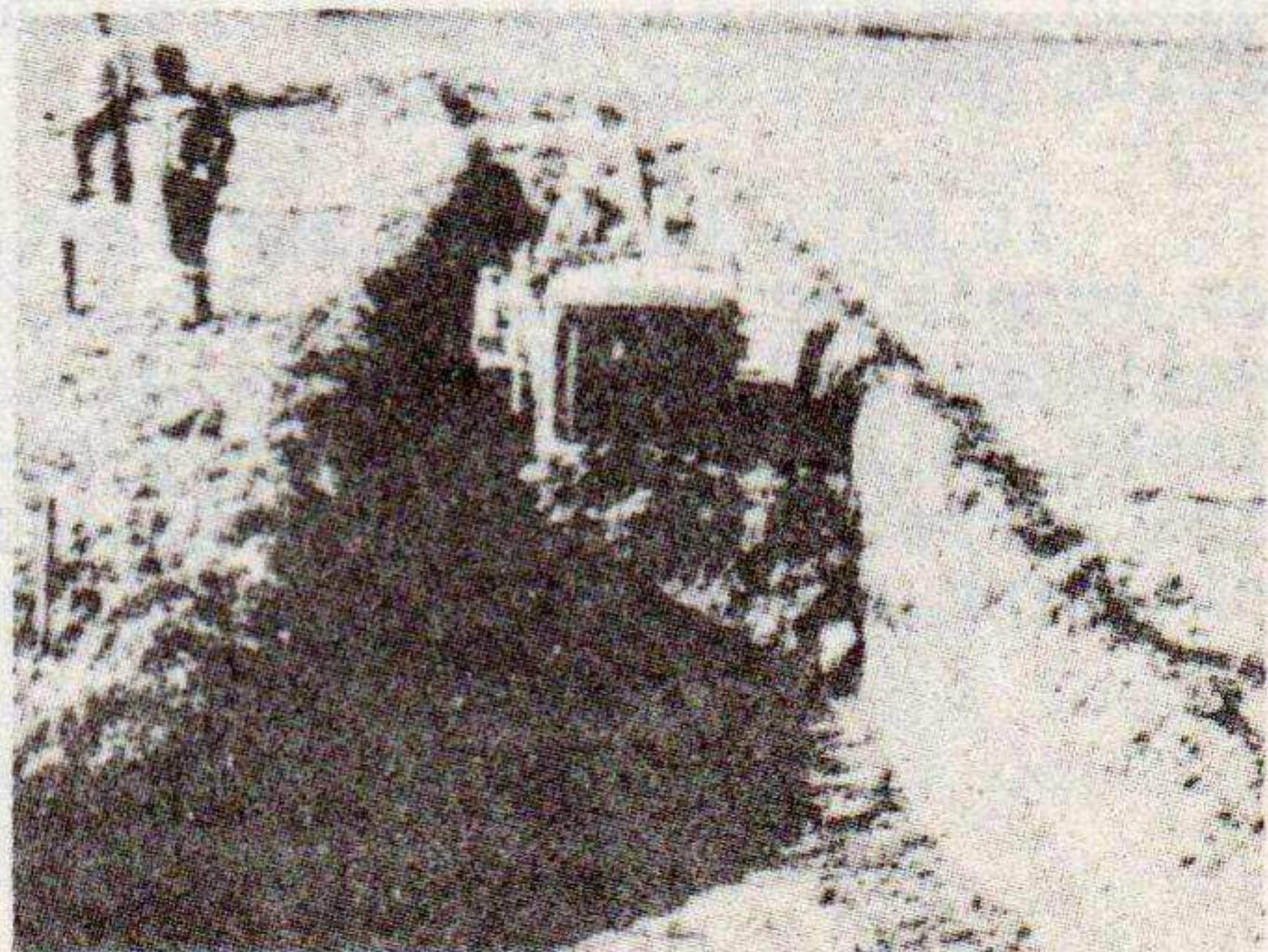


Plate No. 20

is pushed ahead of the blade and as it approaches the pit, the blade should be raised and the material is spilled under the blade so that there is always dry earth under the tractor. Repeated passes until the pit is filled with dry material will eliminate the danger of the tractor bogging down in the slush.

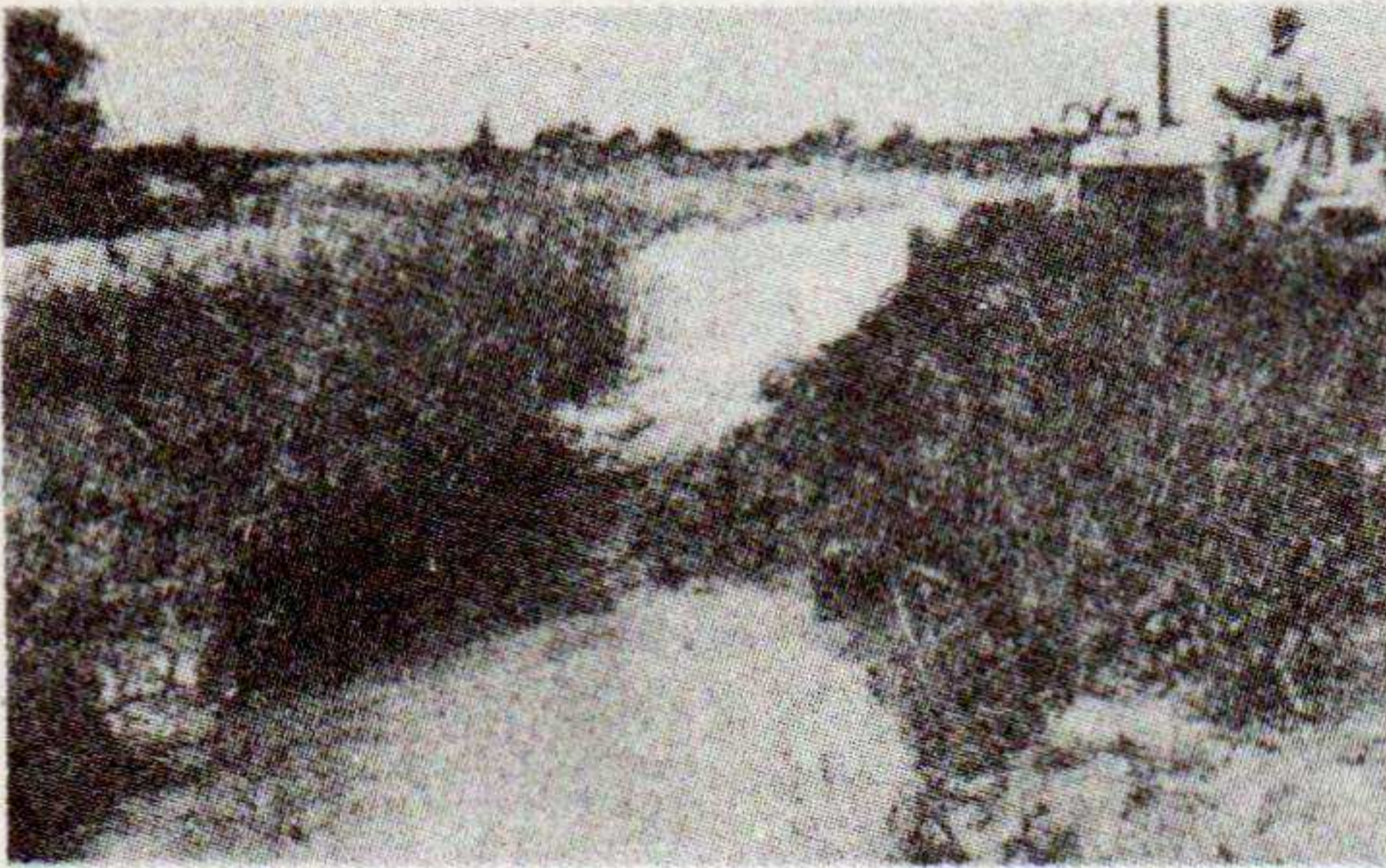


Plate No. 21

After an ensilage pit has been filled with feed, in most cases it is desired to cover this feed with the original earth. The same procedure is followed for this as is used with slush pit filling except that even more care must be exercised in keeping the fill material to the proper depth, and in avoiding damage to the trench walls.

BACKFILLING SEWERS AND PIPE LINE TRENCHES

One of the most economical and efficient methods of backfilling sewers, pipe line and tile trenches is by the use of the Trail-builder. This is done with the blade angled but not tilted. The tractor is driven alongside and parallel with the ditch or trench, casting the material into the trench. Where material has been cast on both sides of a ditch, it will usually be possible to backfill it by making a pass on one side, returning down the other side for one pass and completing the filling with a final pass on the first side. This avoids changing the blade angle. Any length ditch may be filled in this manner.

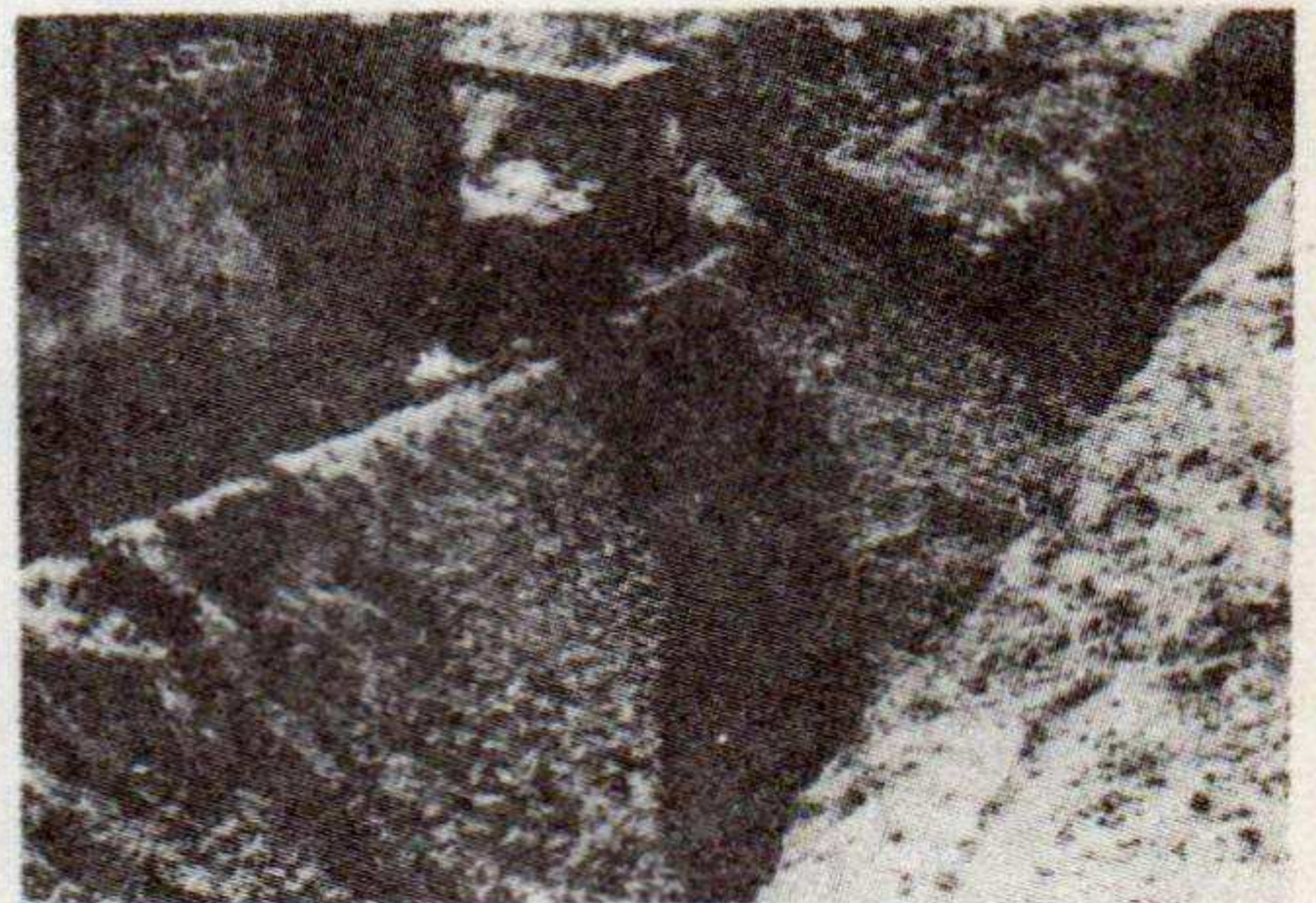


Plate No. 22

FINISHING

For finishing grade and bringing it to correct specifications, certain adjustments of the blade are necessary. The blade should be levelled up horizontally, but may be angled to cast the material to the right or left, or placed straight across the front of the tractor in bulldozing position, for drifting the material forward.



Plate No. 23

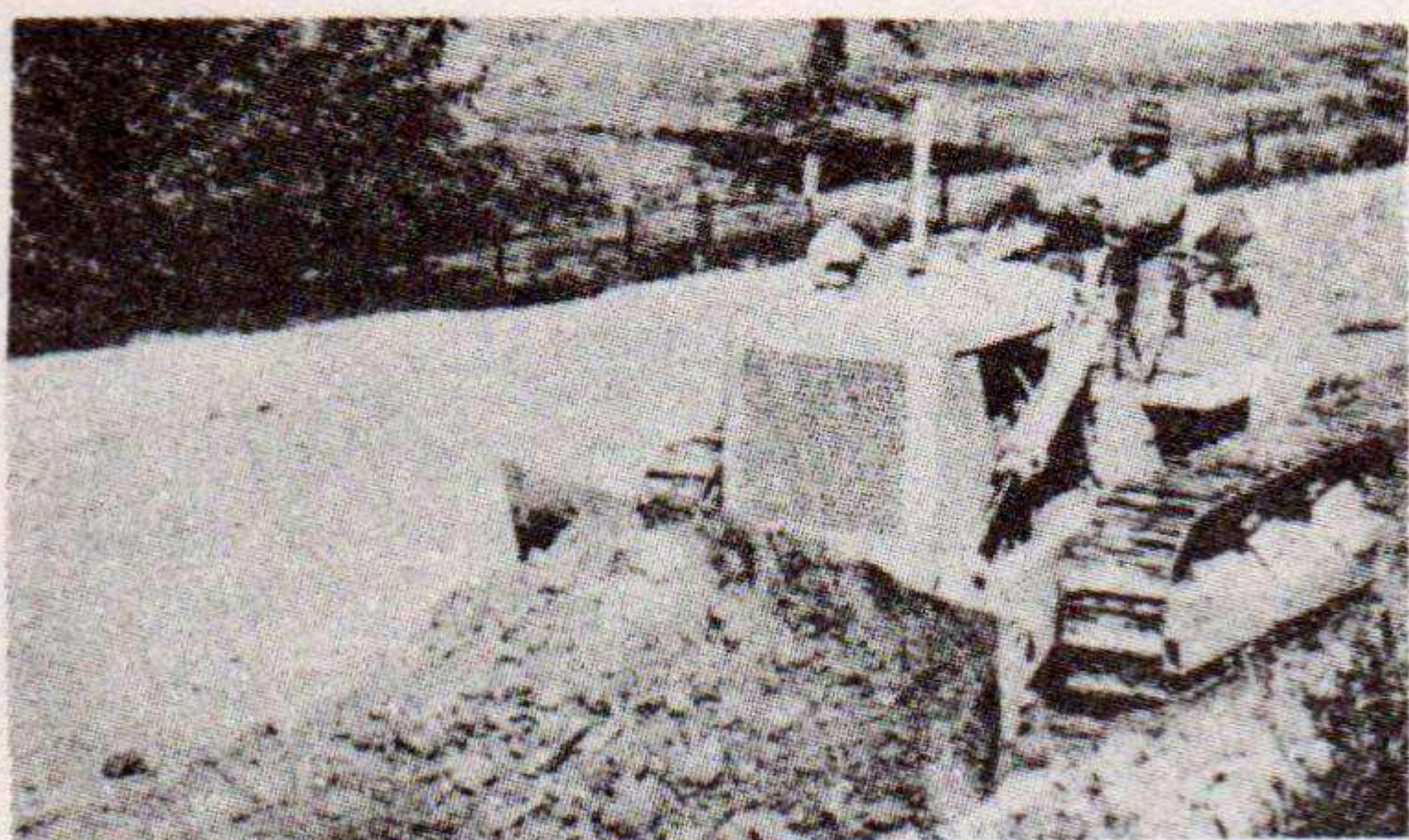


Plate No. 24

dig in on the lower end of the blade. After part of the work is levelled it is advisable to let the blade overlap the finished work far enough so that one track will always travel on the finished work. By watching this end of the blade now and then, the cutting edge can be kept at the ground line, but not cutting on the finished side. The rest of the job will be easy.

If the ground is very uneven, it will be necessary for the operator to first level a small place from which to start operations. Always start cutting when the tractor is level or from this initial starting point. Do not start cutting when the tractor is tilted to either side because the farther the tractor travels ahead the more it will tilt and the more it will



Plate No. 25

get in back of the material to push, the blade may be lifted up and over the material, dropped on the opposite side, the tractor reversed and the material dragged away. The material may then be spread in the usual manner.

Some material can be levelled off by dragging the blade while backing up. It is much easier for the beginner to finish in this manner. Anything which speeds up any operation makes it just that much easier and more efficient.

Where material has been cast out by shovel or other means and it is desired to remove it from the edge of the cut, as in the case of industrial building basements, quarries or other projects where it is impossible to

REMOVING SNOW FROM TRAILS, ROADS, HIGHWAYS AND DRIVEWAYS

Light snows and even heavy drifts can be moved with the Trailbuilder.

If the snow is to be cast off the road, angle the blade so the snow will be cast to the side desired. The snow will cast better when the tractor is traveling in the higher speeds.

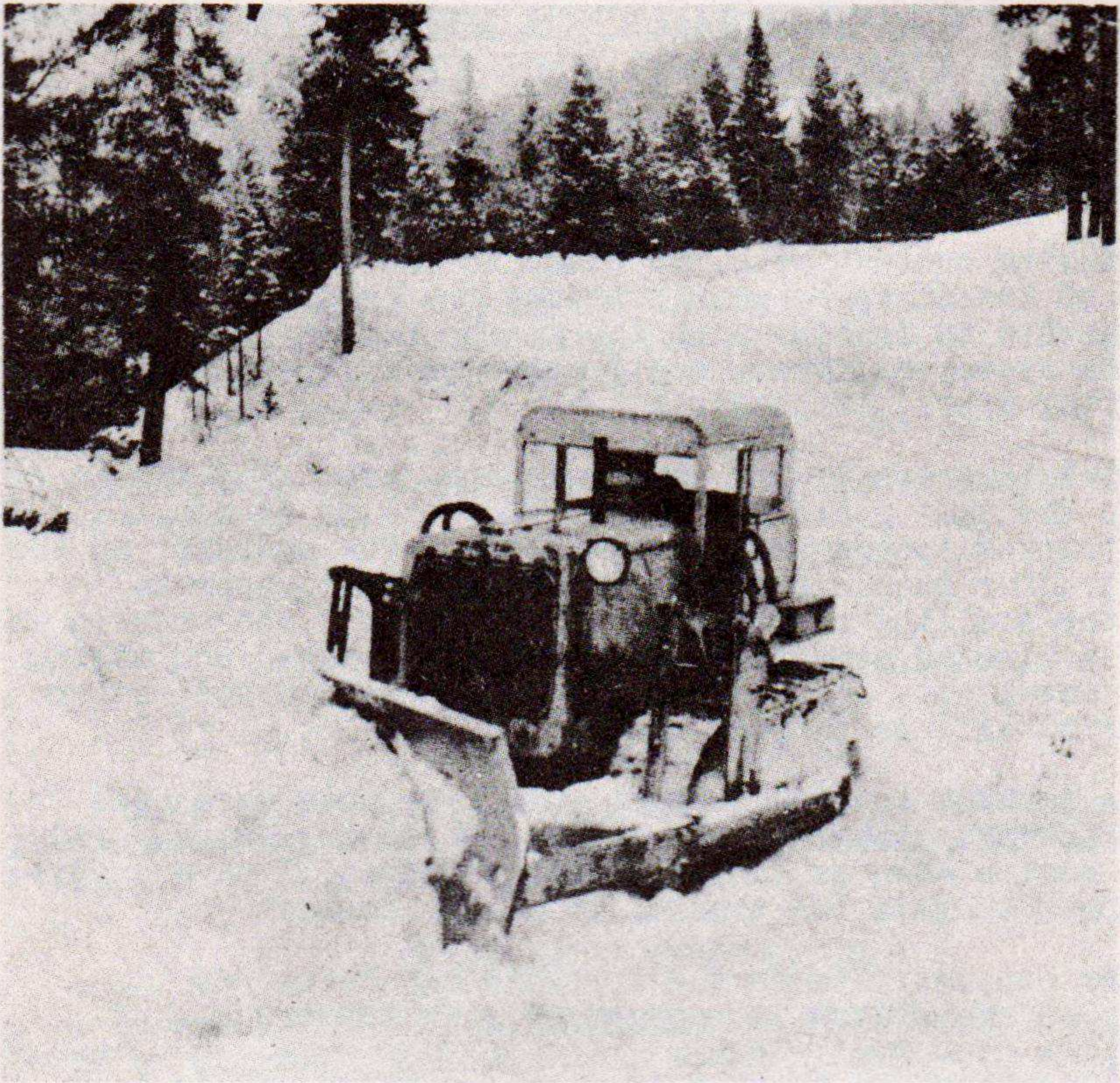


Plate No. 26

After making a pass or two and trying the different speeds, it can be determined which speed will be the most efficient. In most cases the higher speeds can be used; and with the higher speed several miles of road may be kept open.

Sometimes it is necessary to push the snow out of a cut on the road or out of a drive way where it can't be cast to the side. The blade should be adjusted to Bulldozing position for this job. First, open up a channel near the center of the road by pushing through.

In most cases it is advisable to return in reverse gear unless the distance is too great. Always eliminate turning when possible as the snow will pack in the tracks, sprockets and other parts of the machine and may cause damage--gather up the snow and push through the channel made at the beginning. The channel will keep the snow in front of the blade making it possible to push much more snow each trip. Keep the channel intact as long as possible for maximum loads.

PUSHING SCRAPERS, TRUCKS, ETC. AND LOADING OR UNLOADING THE TRACTOR

Often the Trailbuilder is used to push scrapers, enabling the operator to pick up capacity loads in shorter distances.

In making contact with the blade to the push block on the rear of the scraper, when possible the lead tractor and scraper should be in line with the pusher before contact. Make contact easy and when lead tractor on scraper has stopped for shifting gears, if possible.

If tractors are of the same make and size, they should be worked in the same gears and at the same engine speeds to prevent track slippage on either tractor. The operator on the scraper tractor should control the cut of the scraper to prevent the stalling or slipping of the tracks, and keep in as straight a line as possible, moving steadily ahead and making a smooth level cut. The higher the forward speed the easier the material will be to pick up.

When pushing trucks, contact should be made more carefully to prevent damage to the truck. Shift to low gear and idle the engine down as low as possible and still have just enough power to move the tractor in making contact.

After contact is made the throttle may be opened gradually as the clutch is engaged to push the truck.

When working the tractor in close quarters, or in loading or unloading it, shift to low gear and idle the engine down as stated above, so the tractor can be moved more slowly and without slipping the clutch. Do not hold the clutch part way in or out, either engage the clutch or place it in neutral.

Always idle the engine if it is desired to move the tractor more slowly than low gear provides at normal throttle speed.

LIMITED STORAGE

If the trailbuilder is to be stored for a limited time, the following steps should be taken to protect the parts:

Clean all parts thoroughly with SD - SOLVENT, dry cleaning P-S - 661A.

Paint the cutting edge, corner ends, all bolts, and the entire front of the blade with a heavy grease or oil to prevent rusting. CT - COMPOUND, rust preventative, AXS-673 - Ordnance Department.

Lubricate the trailbuilder as outlined on Lubrication Chart, page 31.

NOTE:

Store in a dry place to prevent rusting.

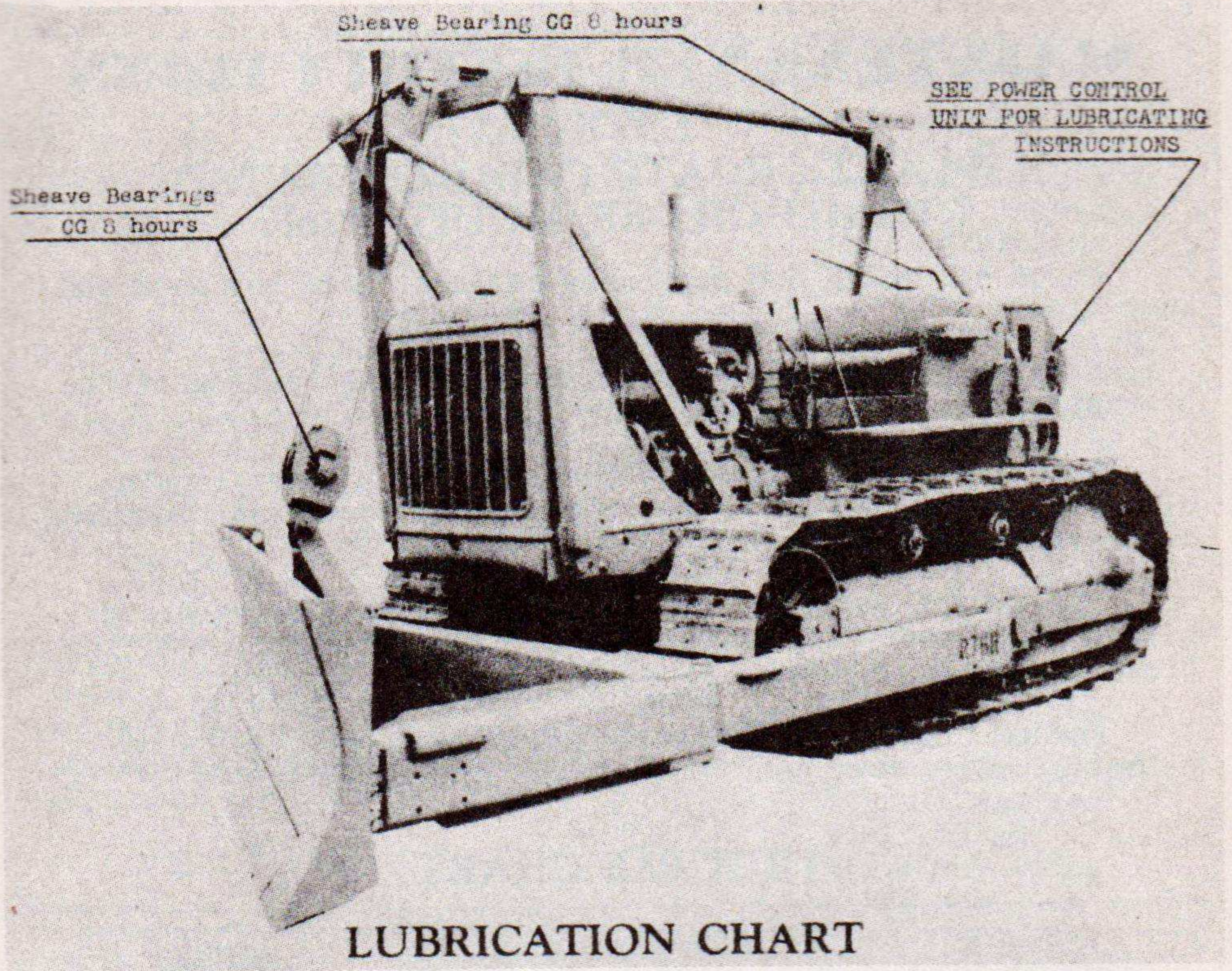
DEAD STORAGE

Refer to TM5-9715. Preparation of Corps of Engineers Equipment for STORAGE, issued by Engineer Field Maintenance Office, P. O. Box 1679, Columbus, Ohio.

EXPORT SHIPMENT

Refer to TB5-9711-1, Instructions for Preparation of Corps of Engineers Equipment for Export, issued by Engineer Field Maintenance Office, P. O. Box 1679, Columbus, Ohio.

SECTION II
MAINTENANCE MANUAL
FOR
MODEL R76R
LdPLANT-CHOATE TRAILBUILDER



KEY TO LUBRICANT

CG-GREASE, general purpose
No. 1 (above $+32^{\circ}$ F.)
No. 0 ($+32^{\circ}$ F. to 0° F.)
OE-OIL, engine
Crankcase grade

Note: Keep cables well lubricated with OE except those coming into constant contact with dirt.

MAINTENANCE INSTRUCTIONS

FOR

LaPLANT-CHOATE CABLE-OPERATED TRAILBUILDER MODEL R76R

Check all bolts and capscrews at least once per week and keep tight.

Keep the cable lubricated with engine lubricating oil to prevent rust and corrosion.

When operating, the cable should be kept under tension with part of the weight of the blade on it to prevent tangling and damage to the cable.

The cutting edge is reversible, and should be reversed before it is worn down far enough to damage the bottom of the blade.

Change blade corner ends or reface with hard welding material before they wear through and damage the blade.

TROUBLE CHART

TROUBLE	POSSIBLE CAUSE	REMEDY
Failure of blade to lift.	Clutch on power unit not adjusted properly.	Adjust clutch.
	Worn clutch linings.	Reline clutch if necessary.
	Grease or oil on linings.	Follow instructions issued covering power unit.
Failure of blade to hold up.	Brake not adjusted properly.	Adjust brake.
	Oil or grease on lining.	Clean lining.
	Lining worn.	Reline if necessary.
Blade wearing off at bottom.	Failure to reverse or replace cutting edge in time.	Reverse or replace cutting edge before blade bottom starts to wear.

TROUBLE	POSSIBLE CAUSE	REMEDY
Failure to hold level grade.	Operating speed too high.	Operate in first gear with not over one-half throttle while finishing grade.
	Leaving control on lift or lower position too long when changing position of blade.	Move control quickly from hold to hoist and back to hold so blade will be lifted slightly.
	Trying to start grade on very uneven ground.	Always level area to start grading from.
Having continual trouble keeping steering clutches and master clutch adjusted.	Failure to fully engage clutches after disengaging.	Never engage master clutch only part way in. Return steering clutches to full engaged position immediately after using.
Unable to steer tractor when pushing load.	Blade too full of material to push when one steering clutch is released.	Lift blade slightly before trying to turn.
Unable to keep blade loaded when moving material considerable distance.	Failure to provide channel for blade to operate in.	Follow same pathway each time so material will windrow on each end of blade and hold blade full.
Unable to control tractor on steep inclines.	Failure to keep tractor in first or second gear and master clutch engaged.	Use compression of tractor engine to hold down speed and use opposite steering clutch from that used in normal operation if tractor is pushing engine.

MOUNTING INSTRUCTIONS

R76R Trailbuilder

For use with Caterpillar D7 Track Type Tractor and rear power unit.

To Mount Tractor Mounting Group

Place RH tractor mounting group #47398 over holes provided in outside of track roller frame and secure in place with 8 #4976 USS capscrews 7/8" x 2-1/2" and 8 #588 lockwashers 7/8". Refer to parts plate #1311, page 46.

Place LH tractor mounting group #47399 over holes provided in outside of track roller frame and secure in place with 8 #4976 USS capscrews 7/8" x 2-1/2" and 8 #588 lockwashers 7/8". Refer to parts plate #1311, page 46.

To mount overhead group, refer to parts plate #1309, page 48, or plate #1510, page 49. It is necessary to remove Caterpillar radiator guard as this guard cannot be used with LaPlant-Choate equipment.

Remove #47437 RH and #47438 LH overhead brace assemblies. **IMPORTANT:** Do not remove #47411 RH and #47412 LH overhead mounting plate assemblies. Lay #47446 overhead assembly forward in horizontal position and bolt #47411 RH and #47412 LH overhead mounting plates to holes provided in front of tractor motor frame with 10 #22315 USS capscrews 7/8" x 3", 10 #3880 USS Hex. nuts, and 10 #558 lockwashers 7/8". Bolt #47437 RH and #47438 LH overhead braces in place on bottom of motor frame using 4 #5134 SAE capscrews 3/4" x 2-3/4", 4 #2750 SAE Hex nuts 3/4", and 4 #556 lockwashers. Do not draw bolts tight. Swing #47446 to vertical position and fasten top to #47437 and #47438 braces using 2 #5288 SAE capscrews 1-1/4" x 3-1/4", 2 #2761 SAE Hex Nuts 1-1/4" and 2 #564 lockwashers 1-1/4". Tighten all bolts.

Install #47471 LaPlant-Choate radiator guard to #47447 overhead group, using 6 #5092 SAE capscrews 1/2" x 4-3/4", 6 #2741 SAE Hex Nuts 1/2" and 6 #552 lockwashers 1/2".

Install #50657 RH rear bracket and #50658 LH rear bracket on rear of tractor transmission case using the 4 #50652 studs provided. Refer to parts plate #1421, page 51.

IMPORTANT: If a Caterpillar power control unit is used, these parts #50657-58 must be installed with the upper, or curved part to the front.

On other makes of power control units, where the cable is threaded from the fairlead sheave on the rear, these brackets may be reversed, using the left one on the right side, with the offset to the rear. If this is done the Rear

SGV TD

Overhead Brace group must be bolted to the rear position on the Overhead Beam Group.

Install #50633 rear overhead brace group using the 2 #5190 capscrews provided. Refer to Parts Plate #1421, page 51.

Install #50649 Overhead Beam Group using the 5 #5188 capscrews provided. Note: Bolt the rear overhead brace group to the overhead beam group in the farthest forward position possible if it is to be used with a Caterpillar power control unit. Other positions are for the purpose of using with other type power control units.

To install main frame, refer to parts plate #1313, page 44.

Remove #46597 Jaw Caps and drive tractor into frame. Reinstall caps over #46579 Pivot Bearing.

Install #29859 cable 1/2" - 6 x 19 wire rope in overhead and main frame sheave blocks as illustrated on parts plate #1422 on page 52. Be sure to dead-end the wire rope on left side of overhead beam group and after threading through the sheaves attach the other end to the power control unit drum.

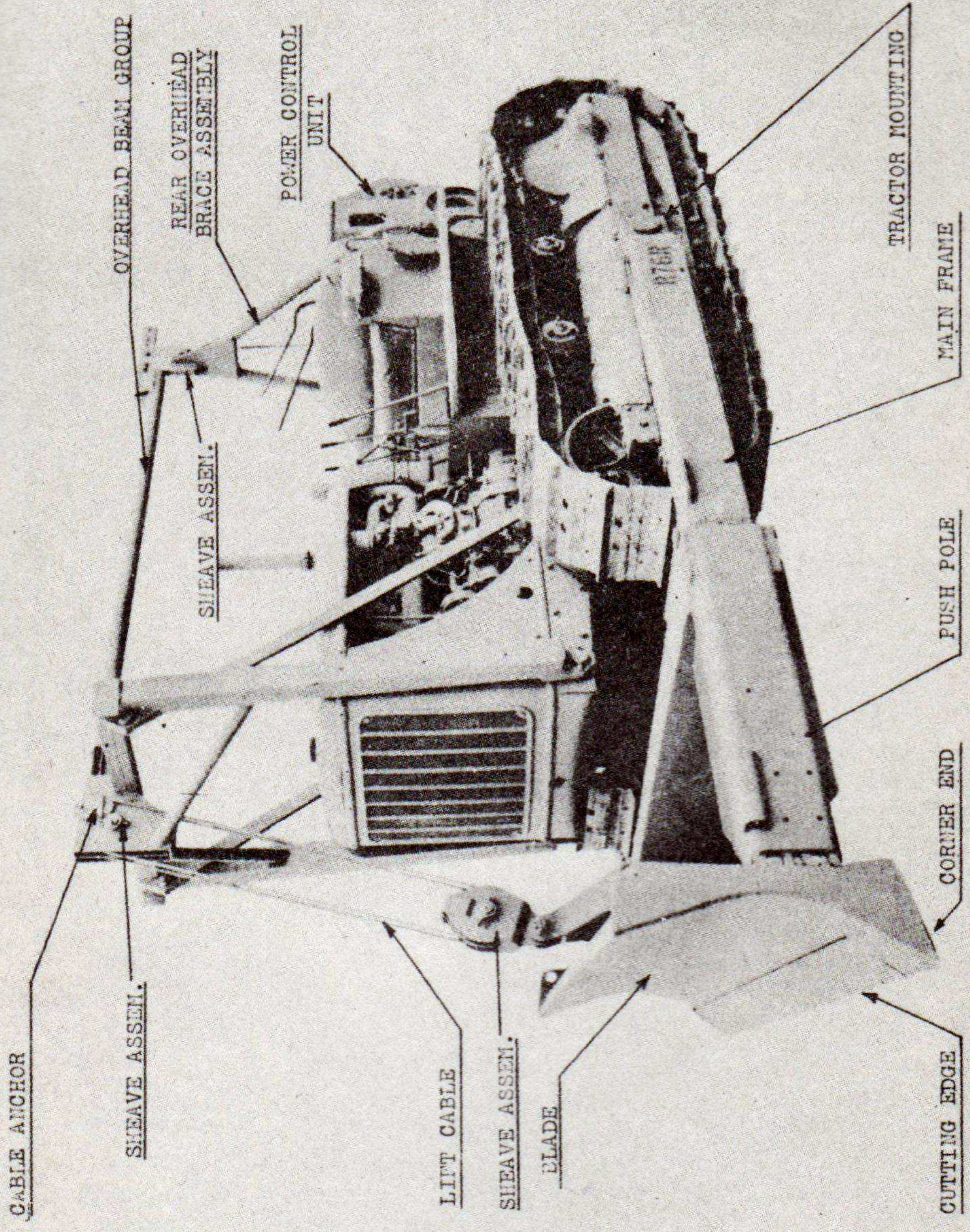
Install #38162 push pole with blade angled to either side or in the straight bulldozing position as desired.

SECTION III
PARTS MANUAL
FOR
MODEL R76R
L_aPLANT-CHOATE TRAILBUILDER

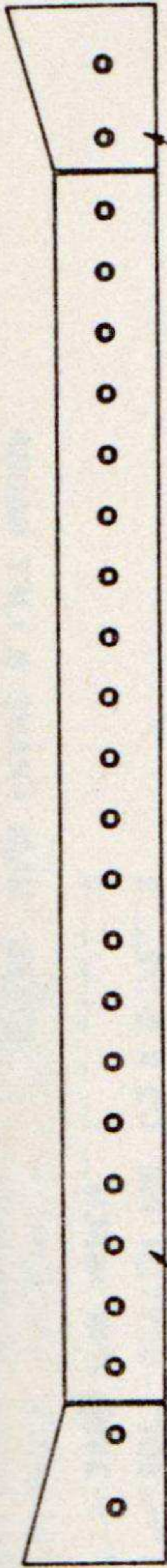
WARNING

SPARE PARTS can be supplied promptly and accurately only if positively identified by correct part number and correct part name.

FURNISH THIS INFORMATION ON ALL REQUISITIONS WITHOUT FAIL: On all requisitions, give name of machine, name of manufacturer, model or size, manufacturer's serial number of each machine and subassemblies attached to machine, and components and accessories for which spare parts are required. List spare parts for only one make or kind of machine on each requisition. Requisitions must be double spaced to provide room for office notations when necessary.



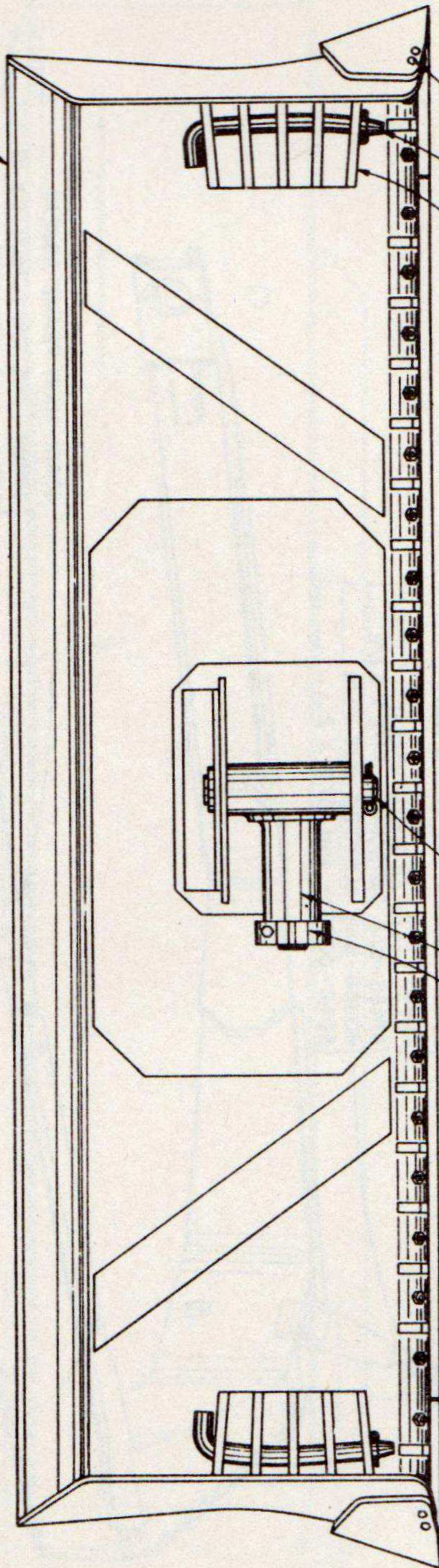
R76R GENERAL ARRANGEMENT



1-CUTTING EDGE-----19070
 20-PIWBOLT 5/8 X 2-----2888

1-RH CORNER END-----20729
 1-LH CORNER END-----20730
 4-PIWBOLT 5/8 X 2-1/4-----2888

1-BLADE ASSY-----46675



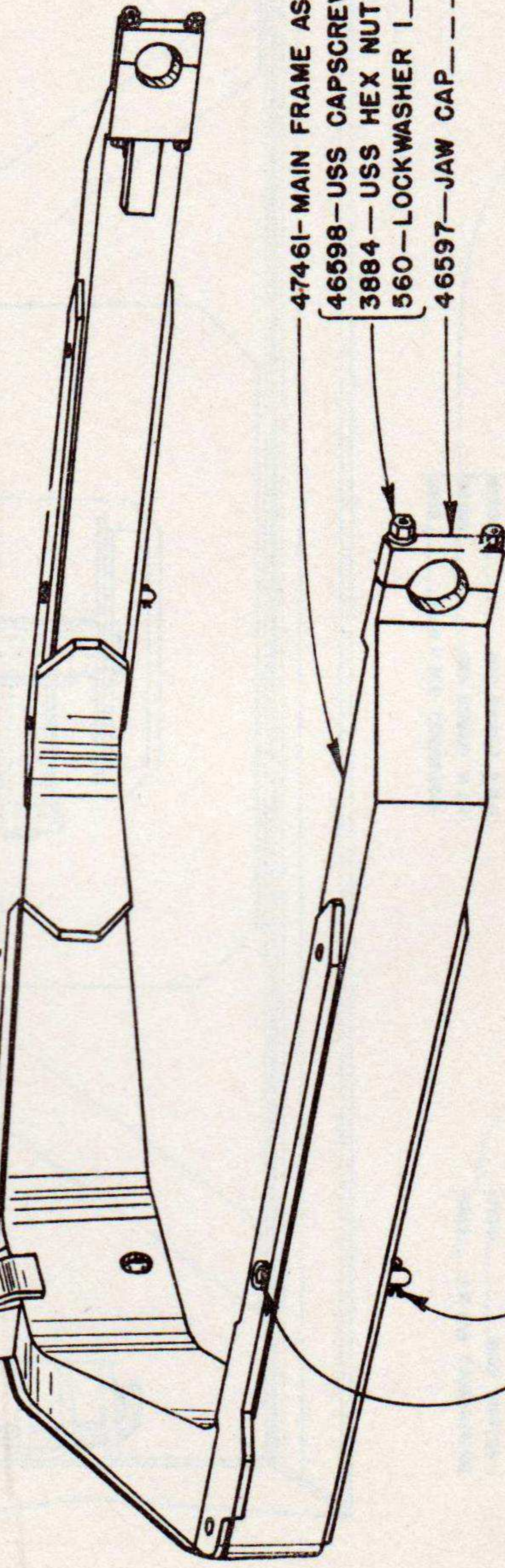
1-SAE BOLT 5/8 X 3-1/2-----5817
 1-SAE HEX NUT 5/8-----2748
 1-CLAMP NUT-----48180
 1-BLADE PIVOT-----45935
 1-PW ASSEM-----29789
 1-COTTER PIN 1/2 X 3-----3074

2-BLADE LOCK-----33785
 2-BLADE LOCK PIN-----20753
 2-COTTER PIN 3/8 X 2-----3082
 4-PIWBOLT 5/8 X 1-3/4-----2884

- 47454 - LIFT SHEAVE GROUP ----- 1
- 47435 - LIFT SHEAVE SUPPORT ASSEM ----- 1
(PART OF GROUP 47454)
- 35268 - SHEAVE ASSEM ----- 2
EACH INCLUDES:
- 34202 - SHEAVE ----- 1
- 35269 - BEARING ----- 1
- 31966 - FELT ----- 2
(PART OF GROUP 47454)
- 36278 - AXLE ----- 1
- 2708 - COTTER PIN 5/8 X 4-1/2 ----- 2
- 2987 - ZERK 1/4
(PART OF GROUP 47454) ----- 1
- 47465 - SAE CAPSCREW 1-1/2 X 4-1/2 ----- 1
- 40288 - SAE SLOTTED NUT 1-1/2 ----- 1
- 3040 - COTTER PIN 3/16 X 3 ----- 1

- 47461 - MAIN FRAME ASSEM ----- 1
- 46598 - USS CAPSCREW 1 X 12 ----- 4
- 3884 - USS HEX NUT 1 ----- 4
- 560 - LOCKWASHER 1 ----- 4
- 46597 - JAW CAP ----- 2

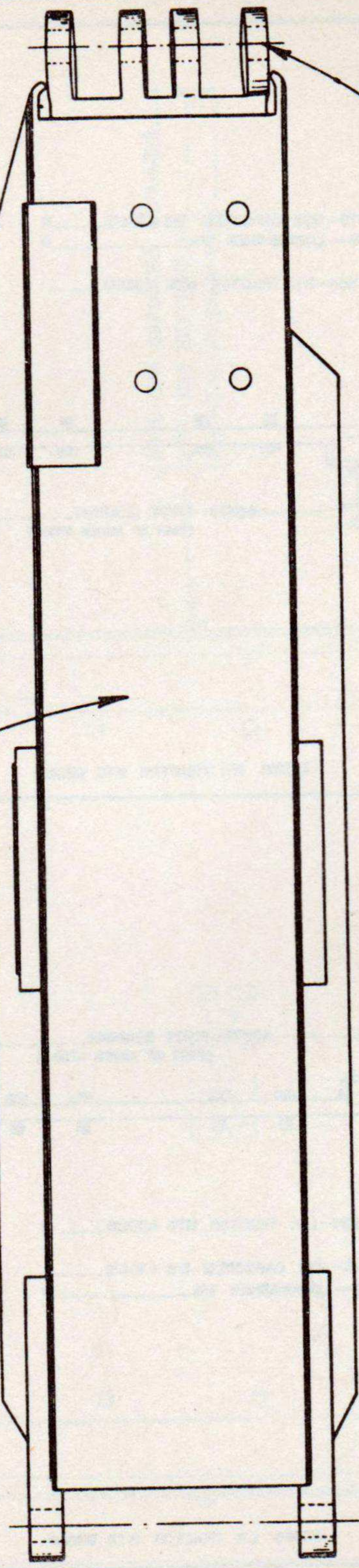
- 3073 - COTTER PIN 1/2 X 2-1/2 ----- 2
- 34915 - PIN ASSEM ----- 2

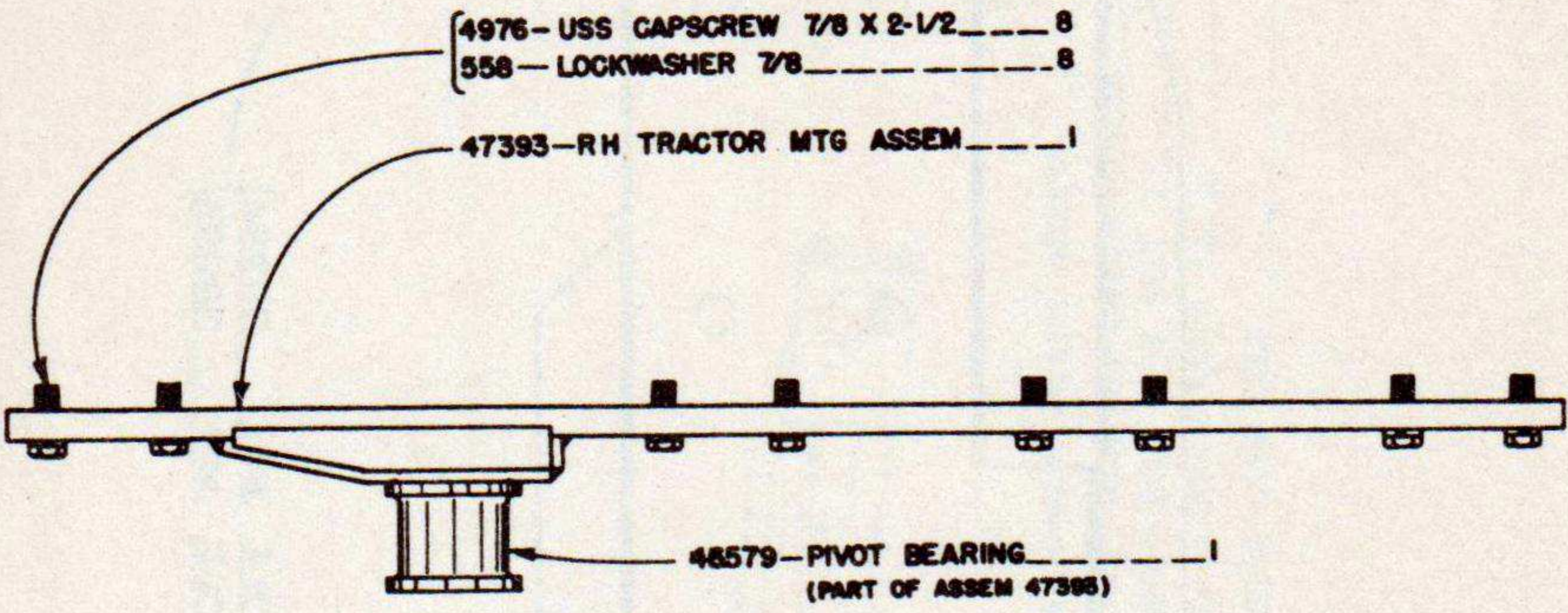


47460 MAIN FRAME & LIFT GROUP

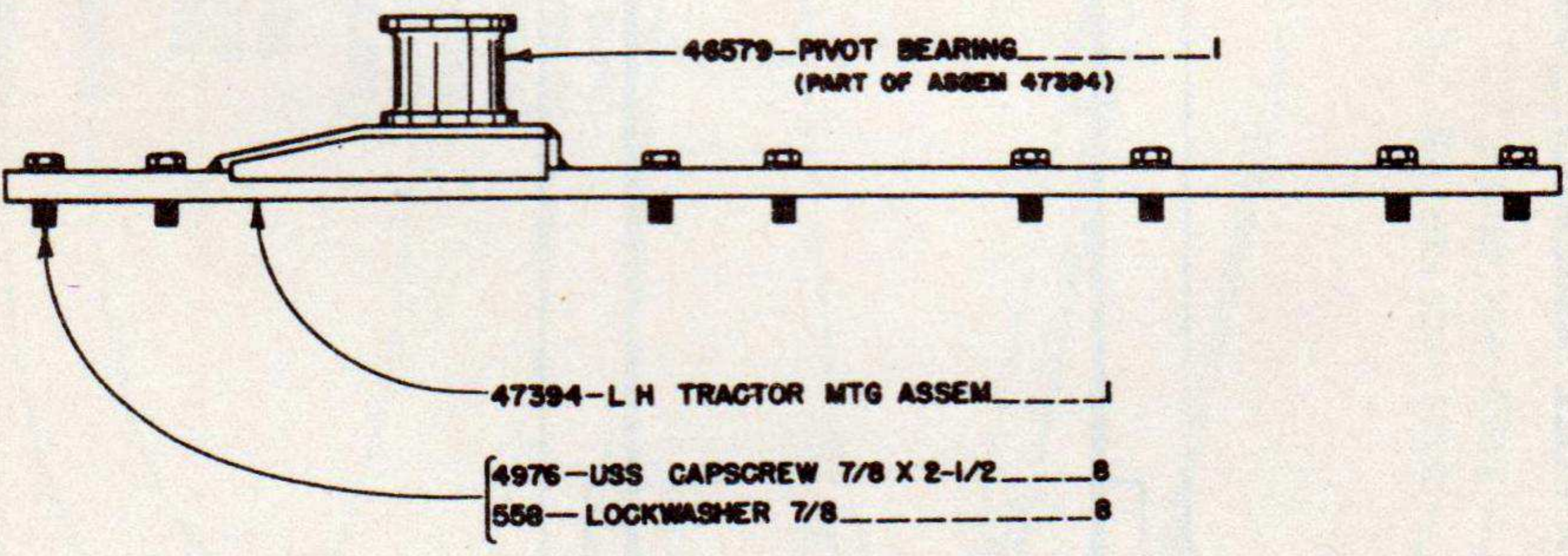
I-R.H. PUSH POLE ASSEMBLY--- 38238
I-L.H. PUSH POLE ASSEMBLY--- 38239

I-R.H. PUSH POLE JAW--- 38254
I-L.H. PUSH POLE JAW--- 38255





47398 RH TRACTOR MTG GROUP



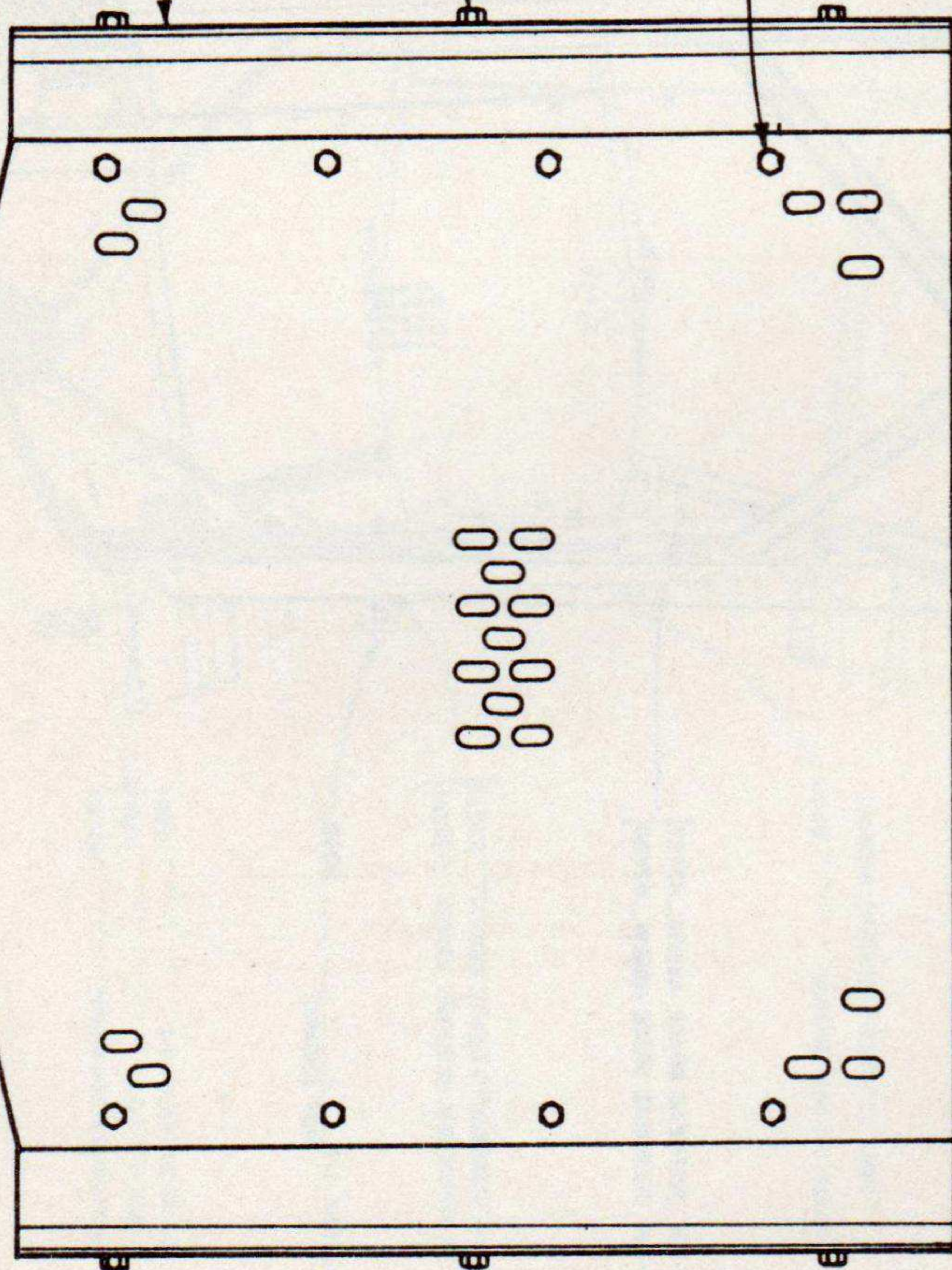
47399 LH TRACTOR MTG GROUP

47472--RADIATOR GUARD PLATE-----1

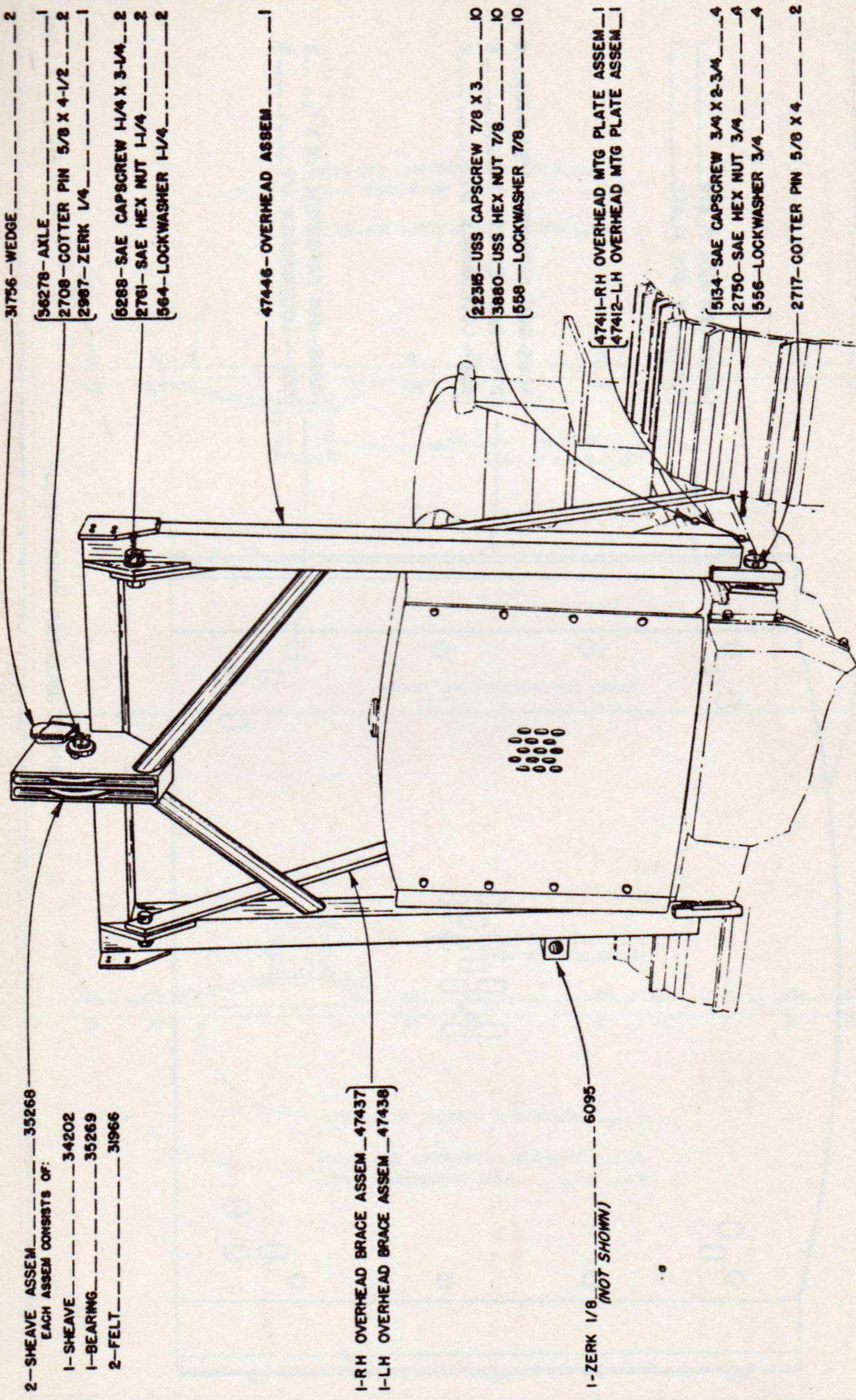
{ 47473--RH SIDE PLATE-----1
47474--LH SIDE PLATE-----1

{ 5092--SAE CAPSCREW 1/2 X 4-3/4---6
2741--SAE HEX NUT 1/2-----6
552--LOCKWASHER 1/2-----6

{ 4908--USS CAPSCREW 1/2 X 1-----8
552--LOCKWASHER 1/2-----8



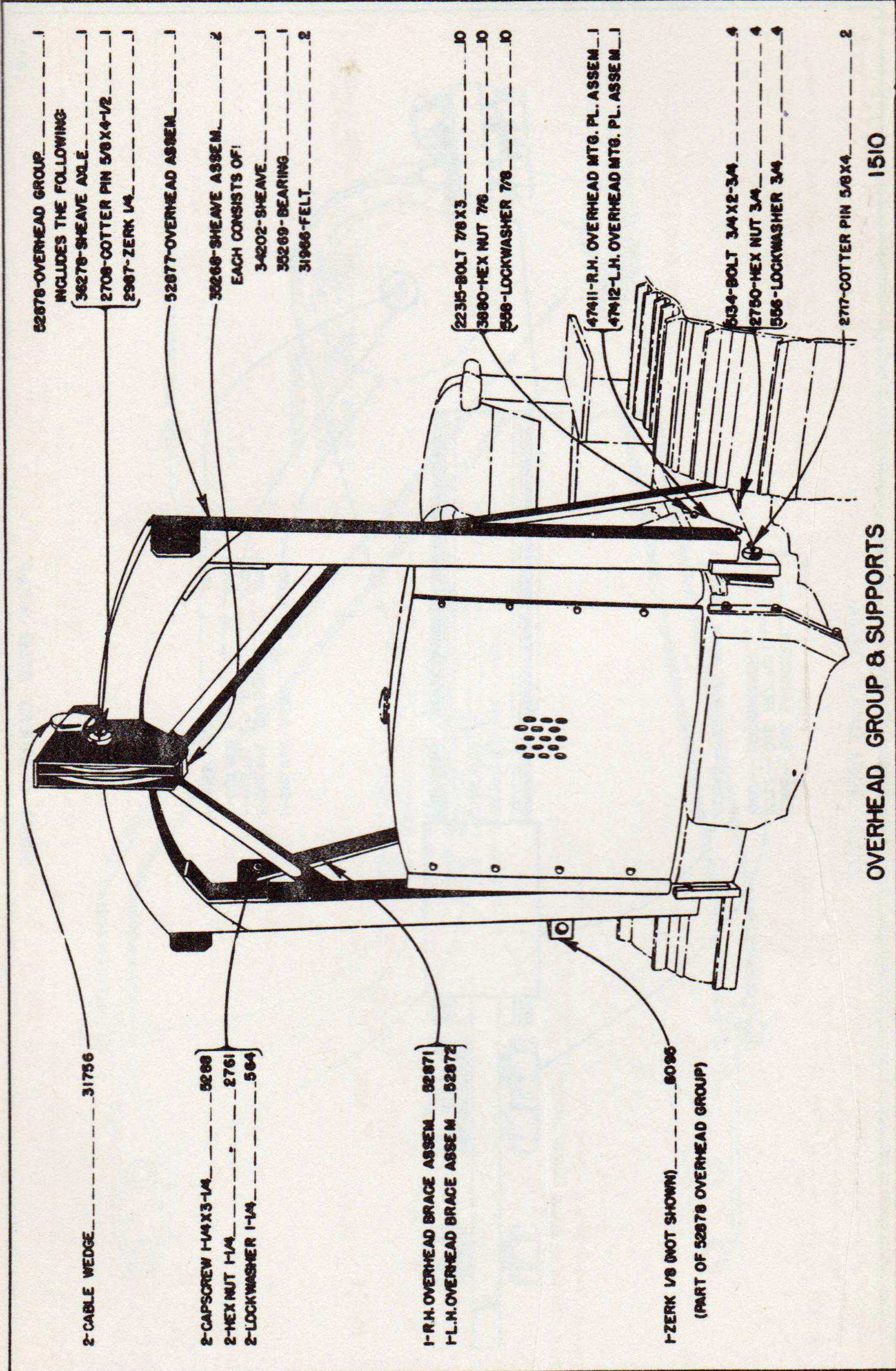
47471 RADIATOR GUARD GROUP



47447 OVERHEAD GROUP

1309

EFFECTIVE ON R76R, SERIAL Nos. 20 TO 1199, INCLUSIVE



- 52878-OVERHEAD GROUP _____
- INCLUDES THE FOLLOWING
- 36278-SHEAVE AXLE _____
- 2708-COTTER PIN 5/8 X 4-1/2 _____
- 2967-ZERK 1/4 _____
- 52877-OVERHEAD ASSEM _____
- 36268-SHEAVE ASSEM _____ 2
- EACH CONSISTS OF:
- 3-4202-SHEAVE _____
- 35269-BEARING _____
- 31966-FELT _____ 2

2-CABLE WEDGE _____ 31756

- 2-CAPSCREW 1-1/4 X 3-1/4 _____ 5299
- 2-HEX NUT 1-1/4 _____ 2761
- 2-LOCKWASHER 1-1/4 _____ 564

- 1-R.H. OVERHEAD BRACE ASSEM _____ 52871
- 1-L.H. OVERHEAD BRACE ASSEM _____ 52872

1-ZERK 1/8 (NOT SHOWN) _____ 8096
 (PART OF 52878 OVERHEAD GROUP)

- 22315-BOLT 7/8 X 3 _____ 10
- 3880-HEX NUT 7/8 _____ 10
- 558-LOCKWASHER 7/8 _____ 10

- 47411-R.H. OVERHEAD MTO. PL. ASSEM _____ 1
- 47412-L.H. OVERHEAD MTO. PL. ASSEM _____ 1

- 6134-BOLT 3/4 X 2-3/4 _____ 4
- 2750-HEX NUT 3/4 _____ 4
- 556-LOCKWASHER 3/4 _____ 4

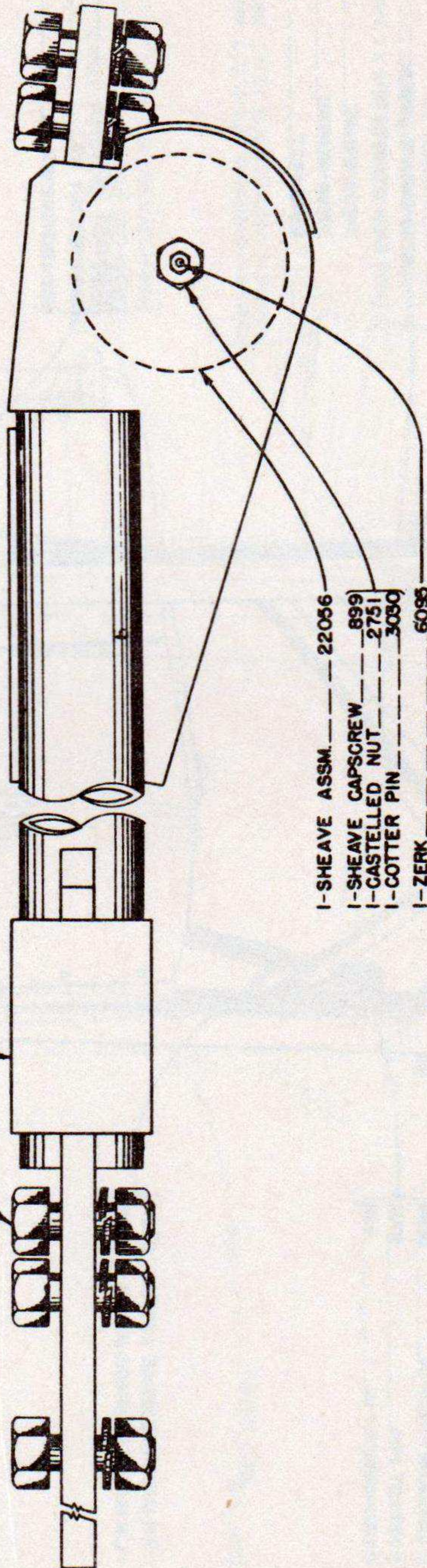
2777-COTTER PIN 5/8 X 4 _____ 2

OVERHEAD GROUP & SUPPORTS

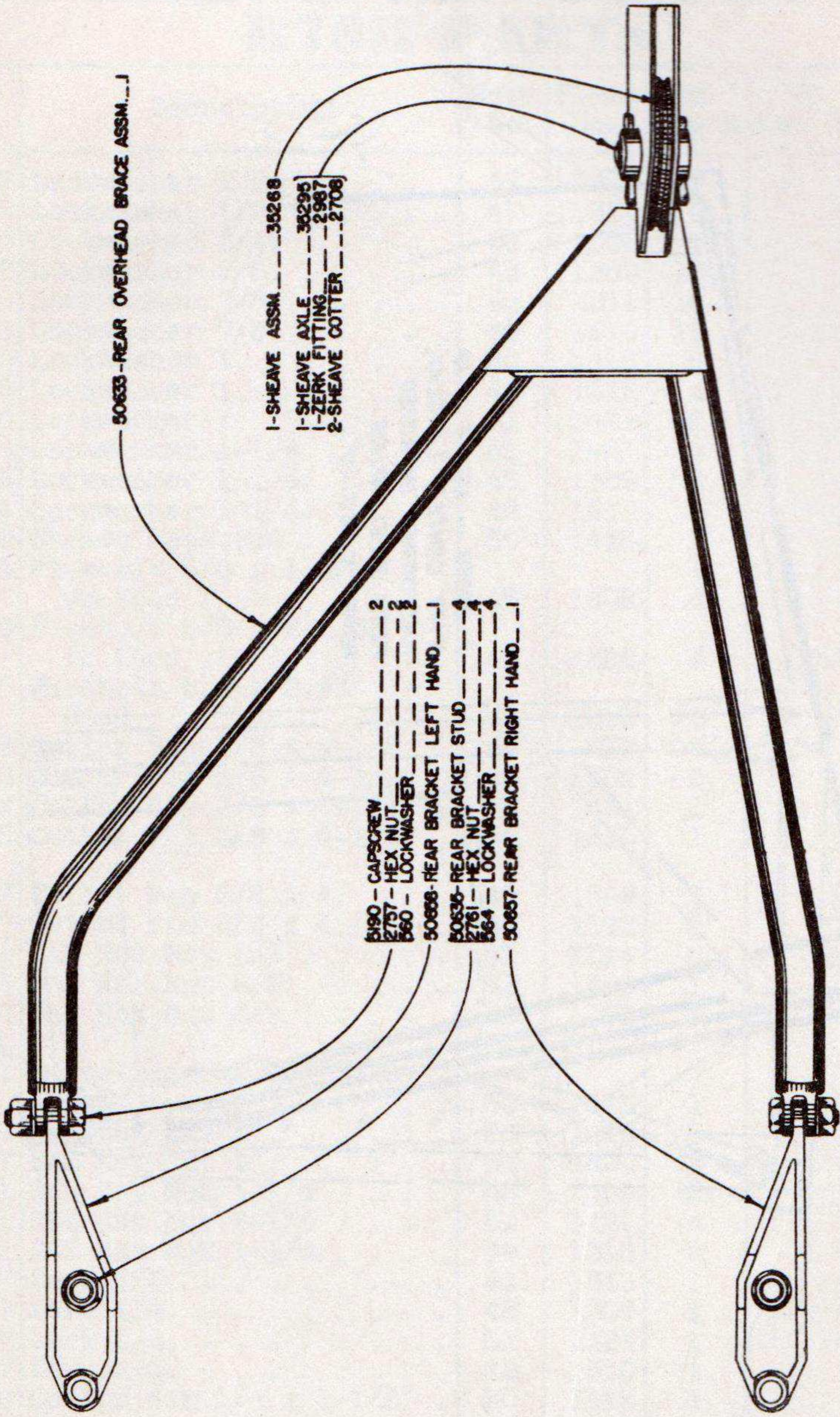
1510

EFFECTIVE ON R76R, SERIAL Nos. 1200 AND UP

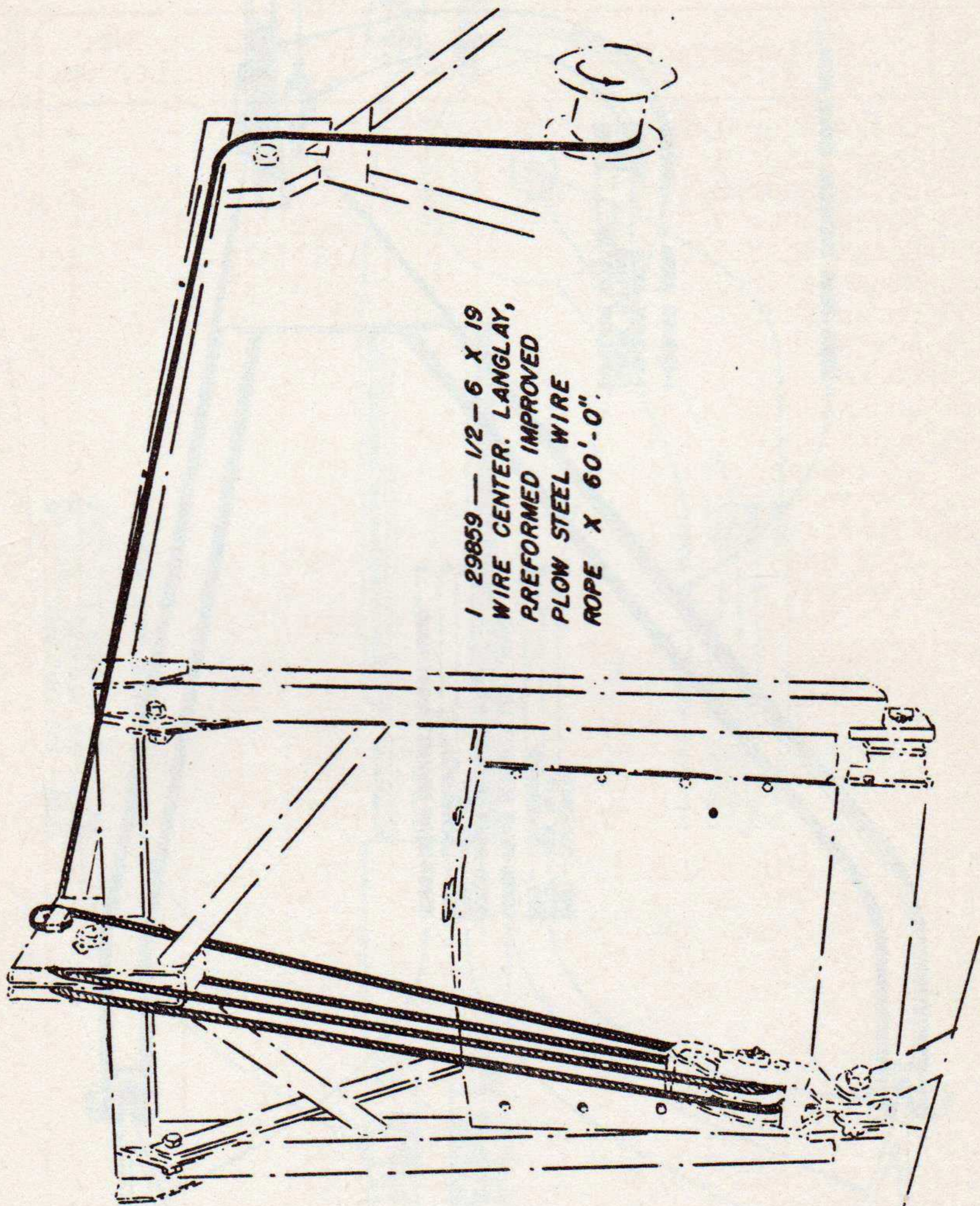
- 5189 — SAE CAPSCREW — 5
- 2757 — SAE HEX NUT — 5
- 560 — LOCKWASHER — 5
- 50648 — OVERHEAD BEAM ASSM. — 1



- 1 — SHEAVE ASSM. — 22056
- 1 — SHEAVE CAPSCREW — 899
- 1 — CASTELLED NUT — 2751
- 1 — COTTER PIN — 3080
- 1 — ZERK — 6098



50655 REAR BRACE GROUP



1 29859 — 1/2 - 6 X 19
WIRE CENTER. LANGLAY,
REFORMED IMPROVED
PLOW STEEL WIRE
ROPE X 60'-0".

CABLE ARRANGEMENT

1422

NUMERICAL RECORD LIST OF R76R PARTS

Part No.	Description	Page No.	Plate No.	No. Req'd	Wt. Lb. Oz.	Price
552	Lockwasher 1/2.	47	1314	6	* .01	\$.01
552	Lockwasher 1/2.	47	1314	8	* .01	.01
556	Lockwasher 3/4.	48	1309	4	1 .02	.02
558	Lockwasher 7/8.	48	1309	10	1 .03	.03
558	Lockwasher 7/8.	46	1311	16	1 .03	.03
558	Lockwasher 7/8.	49	1510	10	1 .03	.03
560	Lockwasher 1.	50	1413	5	1 .05	.05
560	Lockwasher 1.	44	1313	4	1 .05	.05
560	Lockwasher 1.	51	1421	2	1 .05	.05
564	Lockwasher 1-1/4.	51	1421	4	2 .09	.09
564	Lockwasher 1-1/4.	48	1309	2	2 .09	.09
564	Lockwasher 1-1/4.	49	1510	2	2 .09	.09
899	Sheave Capscrew	50	1413	1	6 .60	.60
2624	Plowbolt 5/8 x 1-3/4 #3 Head	43	1308	4	4 .10	.10
2658	Plowbolt 5/8 x 2-1/4 #3 Head	43	1308	4	5 .10	.10
2668	Plowbolt 5/8 x 2 #3 Head.	43	1308	20	5 .10	.10
2708	Cotter Pin 5/8 x 4-1/2.	44	1313	2	7 .08	.08
2708	Cotter Pin 5/8 x 4-1/2.	48	1309	2	7 .08	.08
2708	Cotter Pin 5/8 x 4-1/2.	51	1421	2	7 .08	.08
2708	Cotter Pin 5/8 x 4-1/2.	49	1510	1	7 .08	.08
2717	Cotter Pin 5/8 x 4.	48	1309	2	2 .09	.09
2717	Cotter Pin 5/8 x 4.	49	1510	2	2 .09	.09
4741	SAE Hex Nut 1/2	41	1314	6	* .01	.01
2746	SAE Hex Nut 5/8	43	1308	1	1 .03	.03
2750	SAE Hex Nut 3/4	48	1309	4	2 .05	.05
2751	Castelled Nut 3/4" SAE Hex	50	1413	1	1 .08	.08
2757	SAE Hex Nut 1"	50	1413	5	3 .12	.12
2757	SAE Hex Nut 1"	51	1421	2	3 .12	.12
2761	SAE Hex Nut 1-1/4	48	1309	2	7 .25	.25
2761	SAE Hex Nut 1-1/4	51	1421	4	7 .25	.25
2761	SAE Hex Nut 1-1/4	49	1510	2	7 .25	.25
2987	Zerk 1/4.	44	1313	1	* .15	.15
2987	Zerk 1/4.	48	1309	1	* .15	.15
2987	Zerk 1/4.	51	1421	1	* .15	.15
2987	Zerk 1/4.	49	1510	1	* .15	.15
3030	Cotter Pin 1/8 x 1-1/2"	50	1413	1	* .01	.01
3040	Cotter Pin 3/16 x 3	44	1313	1	* .02	.02
3062	Cotter Pin 3/8 x 2.	43	1308	2	2 .02	.02
3073	Cotter Pin 1/2 x 2-1/2.	44	1313	2	2 .03	.03
3074	Cotter Pin 1/2 x 3.	43	1308	1	2 .03	.03
3880	USS Hex Nut 7/8	48	1309	10	3 .06	.06
3880	USS Hex Nut 7/8	49	1510	10	3 .06	.06

Part No.	Description	Page No.	Plate No.	No. Req'd	Wt. Lb. Oz.	Price
3884	USS Hex Nut 1	44	1313	4	4	\$.11
4908	USS Capscrew 1/2 x 1	47	1314	8	2	.05
4976	USS Capscrew 7/8 x 2-1/2	46	1311	16	10	.30
5092	SAE Capscrew 1/2 x 4-3/4	47	1314	6		.35
5117	SAE Capscrew 5/8 x 3-1/2	43	1308	1	6	.15
5134	SAE Capscrew 3/4 x 2-3/4	48	1309	4	7	.18
5188	SAE Capscrew 1 x 3"	50	1413	5	14	.45
5190	Capscrew 1 x 3-1/4" SAE	51	1421	2	15	.50
5288	SAE Capscrew 1-1/4 x 3-1/4	48	1309	2	1	1.00
5288	SAE Capscrew 1-1/4 x 3-1/4	49	1510	2	1	1.00
6095	Zerk 1/8	48	1309	1	*	.05
6095	Zerk 1/8	50	1413	1	*	.05
6095	Zerk 1/8	49	1510	1	*	.05
19070	Cutting Edge	43	1308	1	146	21.40
20729	R. H. Corner End	43	1308	1	33	11.25
20730	L. H. Corner End	43	1308	1	33	11.25
20753	Blade Lock Pin	43	1308	2	6 10	2.20
22056	Sheave Assembly	50	1413	1	3 6	2.35
22315	USS Capscrew 7/8 x 3	48	1309	10	10	.35
22315	USS Capscrew 7/8 x 3	49	1510	10	10	.35
29769	Pin Assembly	43	1308	1	19	11.30
29859	Cable	52	1422	1	25	15.75
31756	Wedge	48	1309	2	2	1.45
31966	Felt	44	1313	4	*	.30
31966	Felt	48	1309	4	*	.30
31966	Felt	49	1510	4	*	.30
33785	Blade Lock	43	1308	2	27	8.55
34202	Sheave	44	1313	2	9	4.25
34202	Sheave	48	1309	2	9	4.25
34202	Sheave	49	1510	2	9	4.25
34915	Pin Assembly	44	1313	2	8 4	3.85
35268	Sheave Assembly	44	1313	2	12	12.60
35268	Sheave Assembly	48	1309	2	12	12.60
35268	Sheave Assembly	51	1421	1	12	12.60
35268	Sheave Assembly	49	1510	2	12	12.60
35269	Bearing	44	1313	2	2 12	6.80
35269	Bearing	48	1309	2	2 12	6.80
35269	Bearing	49	1510	2	2 12	6.80
35295	Axle	51	1421	1	4	4.10
36278	Axle	44	1313	1	6	4.45
36278	Axle	48	1309	1	6	4.45
36278	Axle	49	1510	1	6	4.45
38238	R. H. Push Pole Assembly	45	870	1	173	50.20
38239	L. H. Push Pole Assembly	45	870	1	173	50.20
38254	R. H. Push Pole Jaw	45	870	1	30	11.15
38255	L. H. Push Pole Jaw	45	870	1	30	11.15

Part No.	Description	Page No.	Plate No.	No. Req'd	Wt. Lb. Oz.	Price
40288	SAE Slotted Nut 1-1/2	44	1313	1	1	\$.55
45935	Blade Pivot	43	1308	1	75	46.00
46150	Clamp Nut	43	1308	1		7.25
46579	Pivot Bearing	46	1311	2	14	8.00
46597	Jaw Cap	44	1313	2	15	12.15
46598	USS Capscrew	44	1313	4	6	2.60
46676	Blade Assembly	43	1308	1		345.00
47393	R. H. Tractor Mt'g. Assem	46	1311	1		39.50
47394	L. H. Tractor Mt'g. Assem	46	1311	1		39.50
47411	R. H. Overhead Mt'g. Plate Assem	48	1309	1		15.40
47411	R. H. Overhead Mt'g. Plate Assem	49	1510	1		
47412	L. H. Overhead Mt'g. Plate Assem	48	1309	1		15.40
47412	L. H. Overhead Mt'g. Plate Assem	49	1510	1		
47435	Lift Sheave Support Assem.	44	1313	1		23.40
47437	R. H. Overhead Brace Assem	48	1309	1		10.35
47438	L. H. Overhead Brace Assem	48	1309	1		10.35
47446	Overhead Assem.	48	1309	1		193.00
47454	Lift Sheave Group	44	1313	1	48	55.50
47461	Main Frame Assem.	44	1313	1		575.00
47465	SAE Capscrew 1-1/2 x 4-1/2	44	1313	1	6	7.10
47472	Radiator Guard Plate.	47	1314	1		30.00
47473	R. H. Side Plate.	47	1314	1		7.20
47474	L. H. Side Plate.	47	1314	1		7.20
50633	Rear Overhead Brace Assem	51	1421	1		77.75
50635	Rear Bracket Stud	51	1421	4		1.55
50648	Overhead Beam Assem	50	1413	1		84.00
50657	R. H. Rear Bracket.	51	1421	1		13.40
50658	L. H. Rear Bracket.	51	1421	1		13.40
52871	R. H. Overhead Brace Asse Assem	49	1510	1		
52872	L. H. Overhead Brace Assem	49	1510	1		
52877	Overhead Assem.	49	1510	1		
52878	Overhead Group.	49	1510	1		

7145-1079