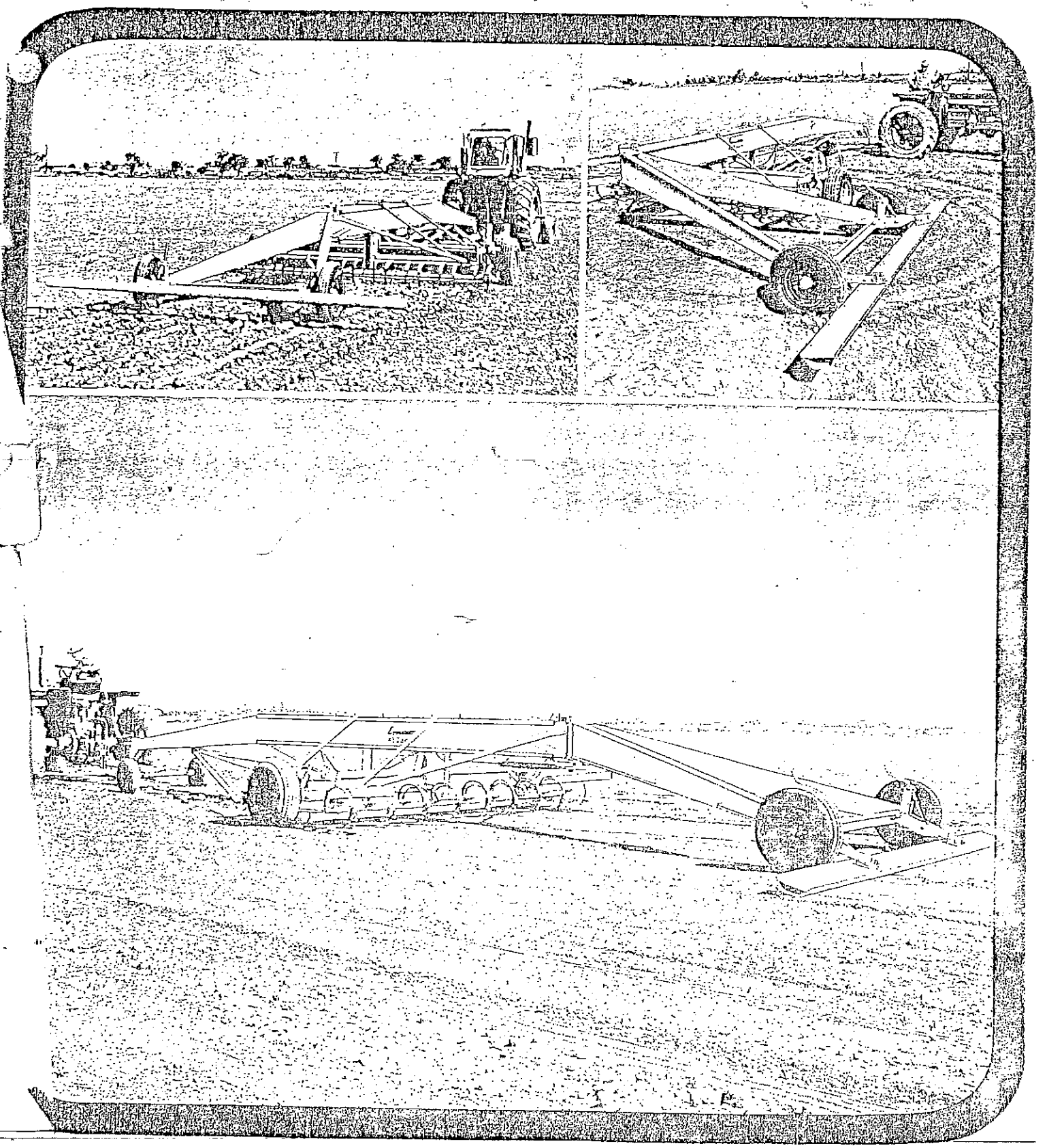
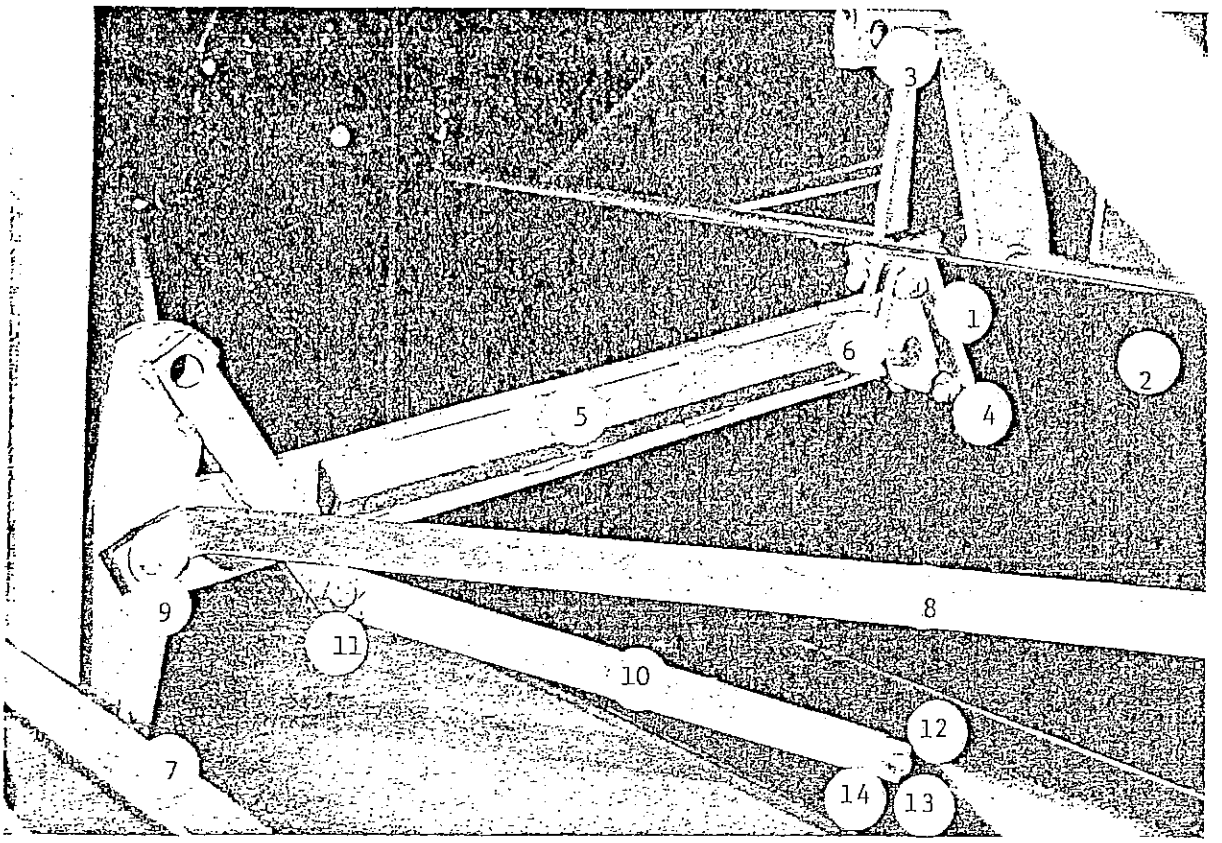
Eversman

QUALITY FARM MACHINERY
SINCE 1928

Model 4512 Eversman Automatic Land Leveler and Hydraulic Scraper

Assembly and Operation Manual and Parts List





Ref. – Part No.	Description	No. Req.
1 – 404630	Drawbar Fitting	1
2 – 440513	Moldboard	1
3 – 440904	Lift Pipe	1
4 – 055318	5/8 X 2" Bolt	4
5 – 404634	Drawbar	1
6 – 057420	3/4 X 2-1/4" High Strength Bolt	1
7 – 440401	Front Channel	1
055318	5/8 X 2" Bolt	1
8 – 440504	Blade Brace	2
9 – 055322	5/8 X 2-1/2" Bolt	1
10 – 440514	Bar	2
11 – 055216	1/2 X 1-3/4" Bolt	1
12 – 306210	Bit	1
13 – 055218	1/2 X 2" Bolt	1
14 – 301410	Eyebolt	1

The current drawbar & brace are different than the parts shown in Fig. B. Assemble as follows:

1 – First attach the drawbar fitting (1) to the moldboard (2) & lift pipe (3) with 4 – 5/8 X 2" hex bolts, nuts & lockwashers (4).

2 – Assemble the front of the drawbar to the main frame front channel (7) with a 5/8 X " hex bolt, nut & lockwasher. Then attach the two blade braces (8) to the drawbar with a 5/8 X 2-1/2" hex bolt (9), lockwasher, nut & flat washer.

3 – The two drawbar brace bars (10) are secured to the drawbar with a 1/2 X 1-3/4" bolt (11), nut and lockwasher.

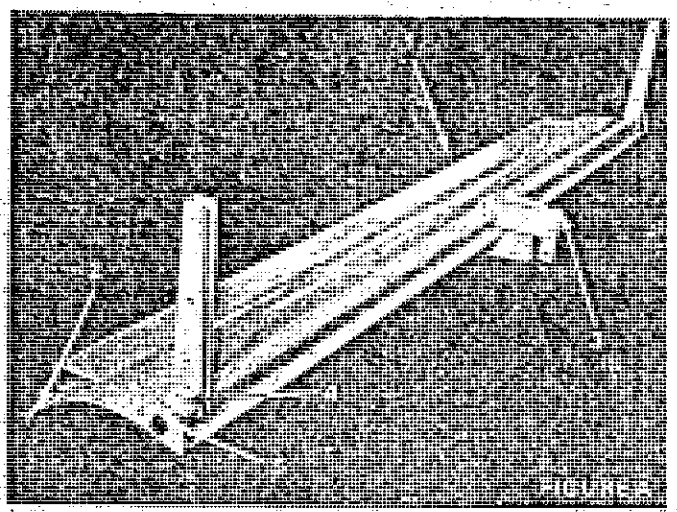
4 – The eyebolt (14) is connected to the brace bars with a 1/2 X 2" bolt (13), nut & lockwasher, & is inserted through the bit (12) & moldboard at the center hole.

5 – Caution – It is difficult to assemble and thoroughly tighten the nut, with lock- sher, on the eyebolt at the rear of the moldboard. Consequently, the brace and draw- bar may fail when the leveler is put in service. Hence, be certain to thoroughly tighten this nut after the leveler is assembled and the moldboard can be lifted clear of the ground.

MODEL 4512 ASSEMBLY INSTRUCTIONS

Note: Use ⅝ x 1½ machine bolts, lockwashers and hex nuts unless otherwise specified. Do not tighten bolts until all parts of an assembly are in place, then tighten them progressively moving around the assembly to avoid misalignment.

Figure A – Moldboard – Assemble lift pipe (3) to moldboard (1) by bolting end bearings (4) into place using ⅝ x 1½ machine bolt at bottom of bearing and ⅝ x 2 bolt at top – with hex nuts on backside. The cutting bit (2) is shipped assembled to the moldboard with ½ x 1¾ plow bolts, lock and flat washers on the outboard ends; and eight ½ x 1½ plow bolts and lockwashers.



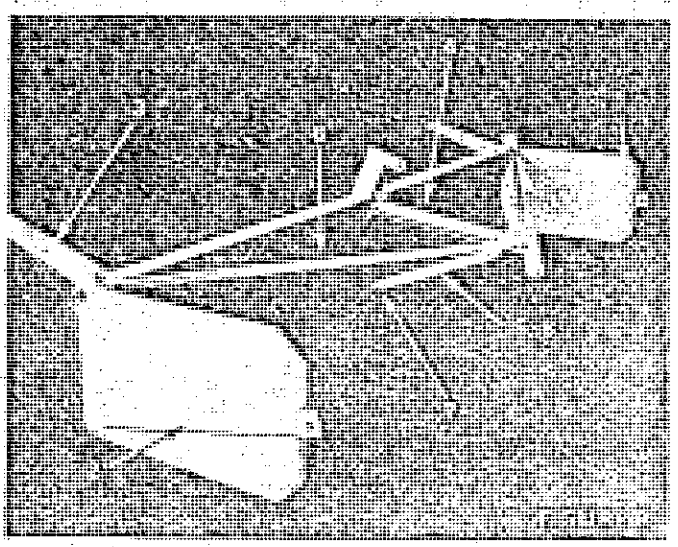
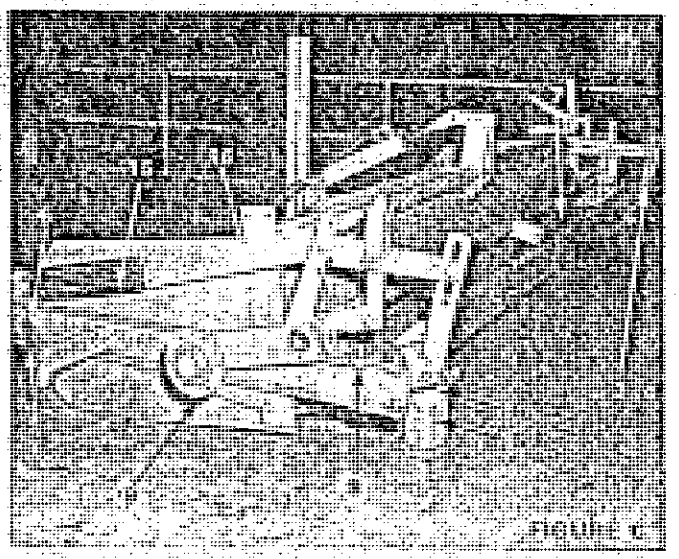


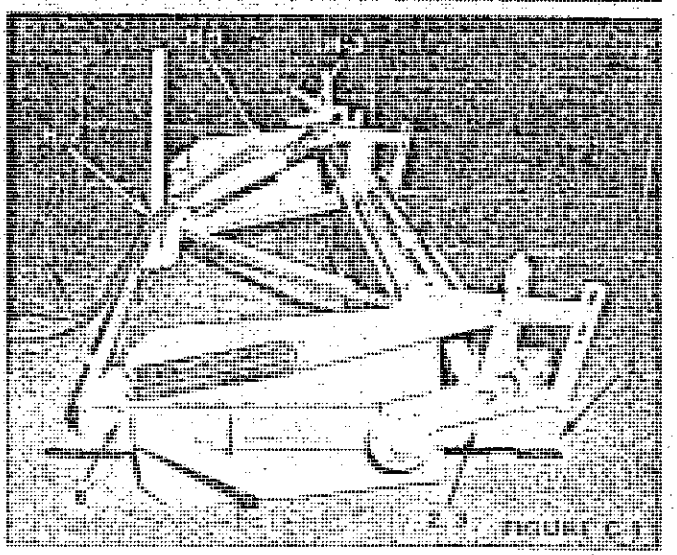
Figure B – Bucket Section – Attach sideboards (1 and 2) to moldboard; at bottom, to cutting bit with ½ x 1¾ plow bolts, and at top to lift pipe end bearings with ⅝ x 1½ machine bolts and ⅝ SAE flat and lockwashers (Fig. A, 5).

The drawbar (4) is attached to moldboard and lift pipe center fitting with 4 – ⅝ x 2 machine bolts.

Attach drawbar braces (5) to drawbar with ½ x 1¾ hex bolt, and to eyebolt with ½ x 2 hex bolt. The eyebolt is inserted through center hole in bit and attached at rear of moldboard with ¾ hex nut and lockwasher. Tighten this nut securely.

The blade braces (6) are connected to drawbar with ⅝ x 2½ machine bolt and to the moldboards with ⅝ x 2 machine bolts which also connect the top of the lift pipe end bearings. *Important* – To maintain level cutting bit, be certain the top of the lift pipe end bearings are *exactly flush* with the top edge of the moldboard.



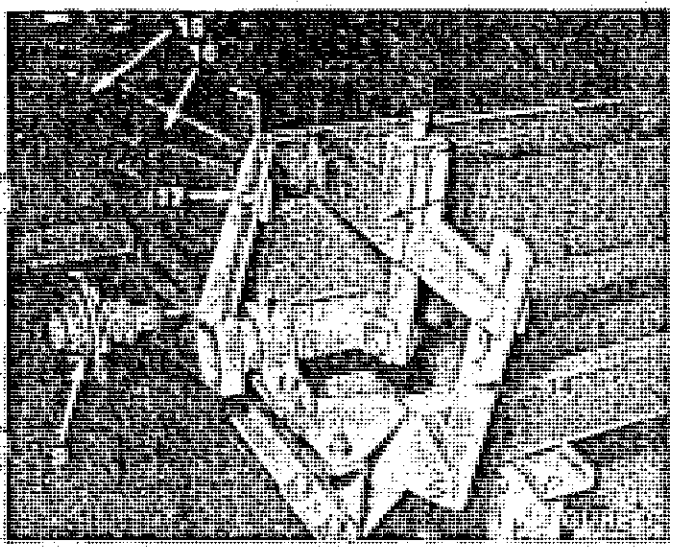


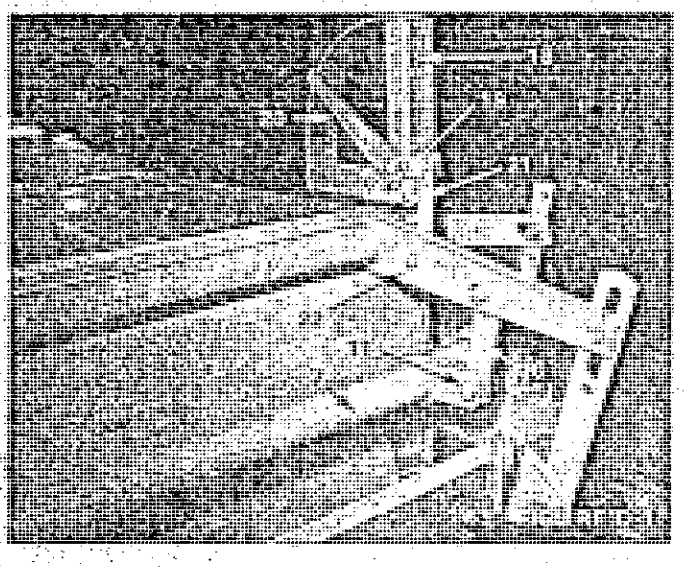
Figures C and C-1 – Main Frame – (Also refer to common reference numbers on Figs. D & D-1).

Note: Assembly of the main frame is important since it must be square to permit proper field operation. It is recommended that the frame be pre-assembled, carefully checked to be certain it is square, and then lifted into place over the moldboard section.

Attach main frame end channels (2, 3) to sideboards with hardened bushings (6), ¾ flat washers, on inside of sideboards, and ¾ x 2½ machine bolts and lockwashers.

The front channel (1) and rear channel (4) are connected to the sideboards with ⅝ x 2 machine bolts and *beveled washers* (5) inside the channel flanges. Note that the top bolts at ends of rear cross frame member also hold bumpers (5, 6 Fig. M).





Figures D and D-1 – Linkage – (Also refer to common members on Figs. C and C-1).

The main axle (7) is secured to side channels with axle clip (8) and ⅝ x 2½ machine bolts. The hubs (9) are factory installed and greased before shipping.

Connect lift pipe arms to axle stubs with fixed link (10) on one side and adjustable link (12) on the other, using hardened bushings (11), three – ¾ x 2½ bolts and ¾ x 3 drilled pin (13).

Caution: Do not change setting of adjustable link at this time – see field adjustment section.

Install slotted links (14) to lift pipe arms and rear channel brackets with ¾ x 1¾ pins and $^{5}/_{32}$ x 1½ cotters.

Hook the side springs (15) into welded brackets on front channel and connect to axle vertical arm with side spring link (16), $^{5}/_{16}$ x ½" bushing (17) and ⅜ x 1¼" machine bolt.

The indicator gauge may be installed on either side of the leveler according to operator's wishes. Attach gauge body (18) to sideboard with ⅜ x 1¼ bolts.

Connect gauge arm (19) to gauge hand (20) with ¼ x 1½ cap screw, flat and lockwashers; and to body with $^{5}/_{32}$ x 1½ cotter. The gauge link (21) attaches to the arm with a $^{5}/_{32}$ x 1½ cotter, and to the lift pipe arm with a $^{5}/_{16}$ x 2 pin (22).

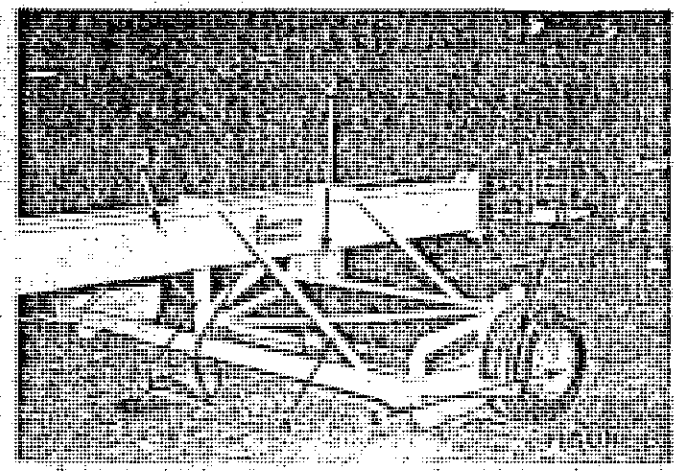


Figure E – Center Truss – (Leave all bolts snugged up, but not thoroughly tightened until all components of the center truss are assembled.)

Attach front leg (1), and rear leg (2) to the center truss (3) with ⅝ x 1½ carriage bolts *before* attaching the legs to the bucket section.

Then lower center truss into place over bucket section and connect front and rear legs to main frame channels with ⅝ x 1½ machine bolts.

The lugs on the front leg channel are attached to the drawbar brace with a ¾ x 1¾ clevis pin and $^{5}/_{32}$ x 1½ cotter (Ref. Fig. C-1).

Bolt the four side braces (4) to main frame channels and center truss fittings with ⅝ x 1½ machine bolts.

Assemble the two rear braces (Fig. M(1)) to rear of center truss with ⅝ x 1½ machine bolts, and to rear, outboard ends of main frame rear channels with clevis studs (Fig. M(2)) and 1 x 3" clevis pins and ¼ x 2 cotters. Adjust length as required to keep rear hinge straight.

Attention: At this time, two necessary and important points should be checked:

(a) Level up the center truss and *thoroughly* tighten all brace and leg bolts. Tighten gradually, and progressively, as you move around the machine, so a built-in misalignment is not created.

(b) Now *thoroughly* tighten the tapered nut on drawbar brace (Fig. B, 7) and the ¾ nut, with lockwasher, which attaches the brace at the rear of the cutting bit. It is difficult to reach this nut, however; it *must be tight* or a broken drawbar will result. Do it *now*, otherwise it will be forgotten.

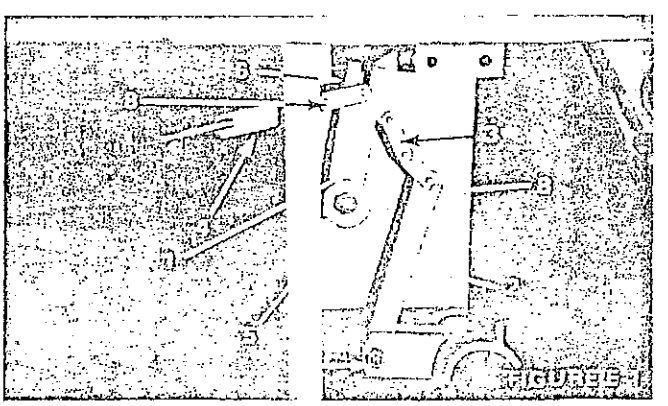
Mount center wheels and tires (5, 6) to main axle hubs with ½ x 1½ wheel bolts. Be certain the valve stem is on the outside.

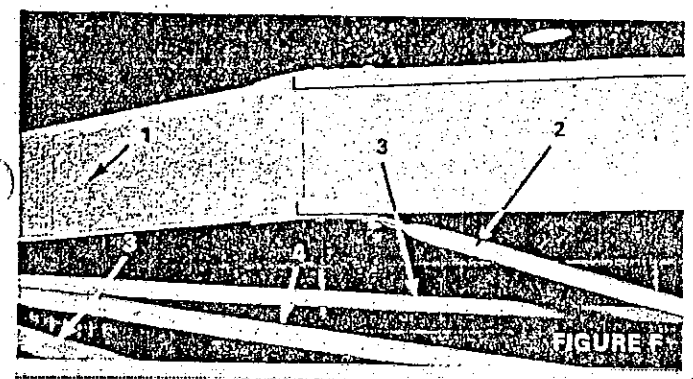
Figure E-1 – Rocker Arm – This cutaway detail is included here since successful operation of the leveler depends on *proper assembly* of the rocker arm and chain. These parts are factory assembled in the center truss rear leg (Fig. E, 2). However, the assembly should be carefully checked *prior* to field operation.

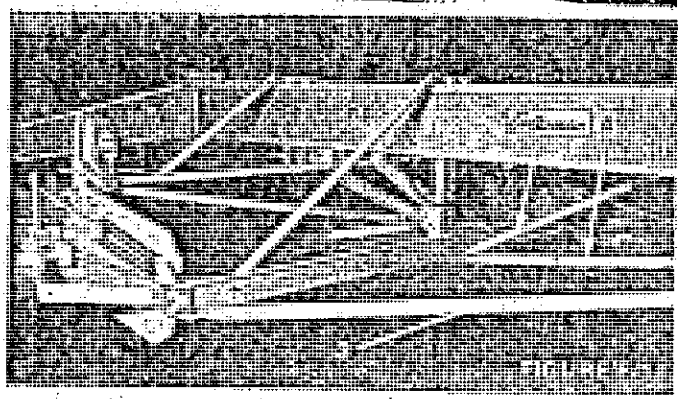
The rocker arm to axle link (2) is attached to the axle lugs with a ⅜ x 1½ hardened bushing and ⅜ x 3 machine bolt.

Note that the rocker arm (1) *must* be in the 4th link pin of the chain (3). See section on "Field Adjustments" for proper positioning of the rocker limit bolt (6).

The front spring plate (4) (also refer to Fig. M) is attached to the chain assembly with a $^{7}/_{16}$ x $1\,^{15}/_{64}$ clevis pin and $^{3}/_{32}$ x ¾ cotter.







Figures F & F-1 – Front Truss – (Two braces are tack welded to the top and bottom plates of the front truss to prevent shipping damage. Knock these braces off before assembling.)

Leave all bolts loose until all parts are assembled.

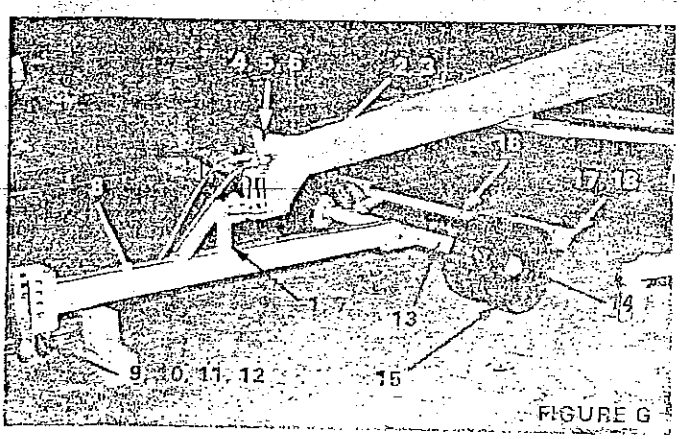
Assemble front truss (1) to center section using ⅝ x 1½ machine bolts on top, and for the two front bolt connections on bottom.

The center brace pipe (2) is assembled to the bottom of the front truss plate with ⅝ x 2 machine bolts; and to the *top* of the lug on the main frame front channel (Fig. F-1) with a ¾ x 2½ machine bolt; with the rear of the center pull pipe (4) attached by the same bolt on the bottom of the lug.

The outer pull pipes (3) are assembled on top of the outer lugs of the main frame front channel with ¾ x 2 machine bolts (see Fig. F-1).

Note from Figure G-1 that the center pull pipe is inserted in the slot of the welded plate on the front truss and attached with a ¾ x 2" machine bolt; and that the outer pull pipes assemble on the bottom of this plate with ¾ x 2" machine bolts.

Now be certain front truss is correctly aligned, and thoroughly tighten all bolts.



Figures G & G-1 – Dolly Assembly – Install adjusting screw (3), the two slide pins (2) and the ball hitch (1) on the front truss, attaching the slide pins with 5/16 x 1¾ cotters. A ⅞ flat washer (4) is used between the screw and the crank (5) on the top lip of the front truss fitting. The crank is secured with a 5/16 x 1 roll pin (6).

Assemble dolly tongue (8) to ball hitch with a 1 x 4½" machine bolt. Attach wheel tractor clevis (9) to dolly tongue with clevis spacer (10), hitch pin (11) and hair pin (12).

An optional clevis is available for use with crawler tractor, part number 706800.

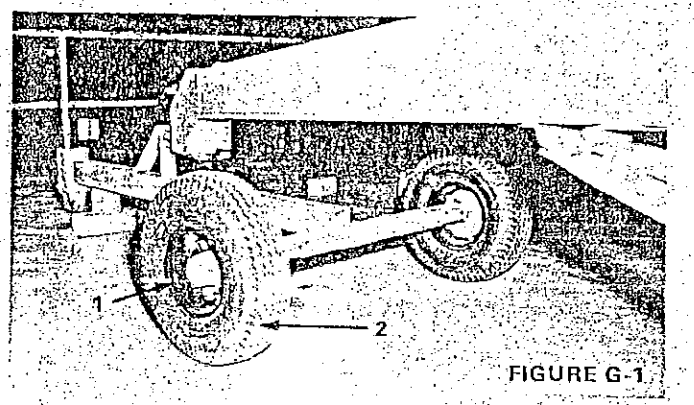
See page 4 for cast clevis effective on serial #11363.

When levelor is used in short form as a dirt mover, drop the dolly tongue and connect the ball hitch directly to the tractor drawbar with hitch adaptor number 409604.

At rear of tongue, attach dolly axle (13) with 4 – ⅝ x 1½ machine bolts. Note in Figure G that the axle saddle rests *under* the dolly tongue channels.

The hubs (14) are factory installed and greased. For the steel-wheel dolly assembly, the wheels (15) are attached to the hubs with ½ x 1½ wheel bolts, and L.H. and R.H. wheel scrapers (17 and 18) are assembled on the scraper frame (16) with ½ x 1¼ carriage bolts.

Referring to Figure G-1, the wheels (1) with 6:00 x 9 tires, for the rubber tire dolly assembly, are attached to the hubs with ½ x 1¼ high-strength machine bolts. The scraper frame and scraper blades are not used on this assembly.



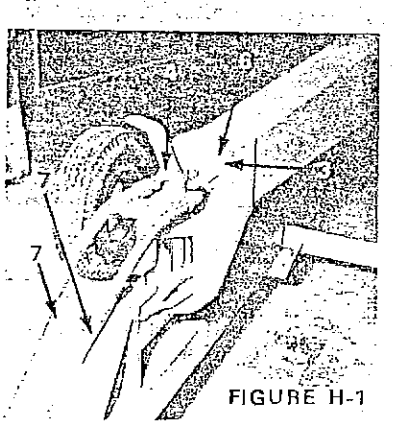
Figures H & H-1 – Hydraulics – Referring to Figure C-1, attach cylinder assembly (H-3) to lift pipe and drawbar with 1 x 3" clevis pins and ¼ x 2 cotters. Note that the piston rod end of cylinder is connected to the lift pipe.

Attach 72" hose (H-1) to the top port of the cylinder, and 57" hose (H-2) to the side port.

Figure H is a view looking down from the top of the center section.

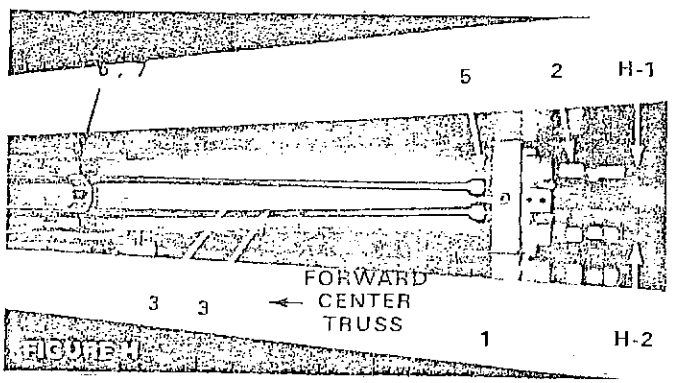
Attach the check valve (1) to the welded bar on the center truss with a 5/16 x 2½ machine bolt, lock and flat washers. The hoses (H-1 and H-2) from the cylinders (Ref. Fig. C-1) are then assembled to the check valve with ½" swivel fittings (2).

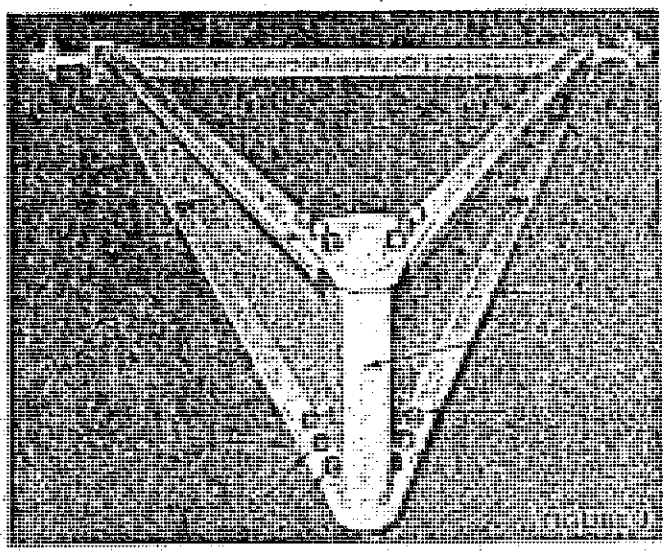
The two hydraulic tubes (3) are inserted inside the front truss and are held in place by the welded bar and pipe clip (6), and ½ x 1½" carriage bolt. This same pipe clip (6) is used to secure the tubes at the front truss attachment (Fig. H-1).

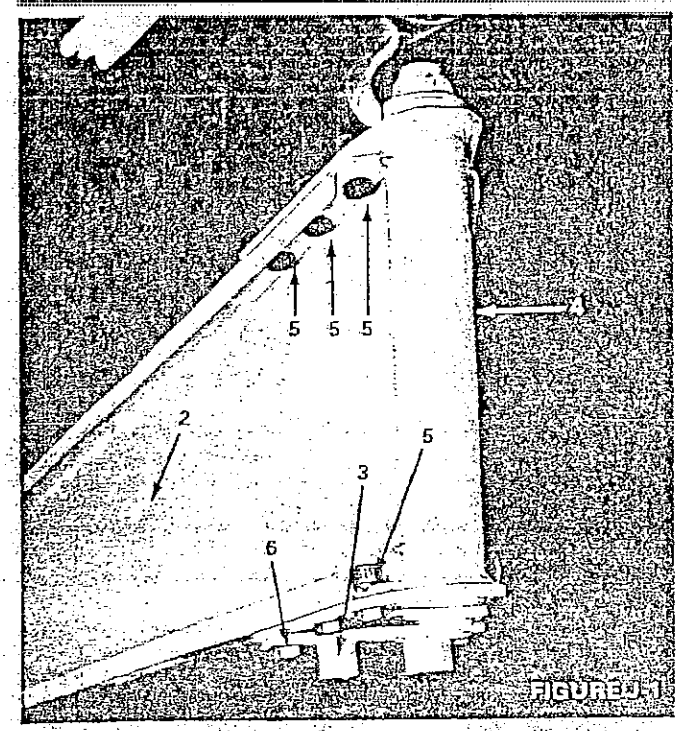


Installation of the tube fittings (4 and 5), to attach the hydraulic tubing to the check valve and the front hoses, requires careful attention. To assemble these fittings, be certain that the tube is inserted *past* the "O" ring in the fitting, before the locking nuts are tightened. Oil the "O" ring and smooth the tube ends if rough, to eliminate future leaks around these connections.

Attach 88" hoses (7, Fig. H-1) to tube fittings.







Figures J & J-1 – Rear Truss – Although some adjustment of bolts attaching the rear truss components may be required later, it is recommended that this section be pre-assembled before attaching to the center truss. Select a flat surface to make this assembly.

Attach the hinge assembly (4) to the two rear trusses (1 & 2) with special, high-strength, ¾" bolts. All 6 bolts at the top are 1¾" (5); and the 4 front bolts at the bottom are also 1¾". Assemble with the nuts on the top, since it will be necessary to thoroughly tighten them later in the assembly procedure.

The pivot arm actuator (3) is attached at the bottom of the rear truss and hinge with the special ¾ x 2" bolts (6). Figure J-1 shows the pivot arm actuator in detail since levelers have been operated in the past with this part omitted from the assembly, and the rear stabilizer springs (Fig. L) are *completely ineffective* if the actuator is not installed.

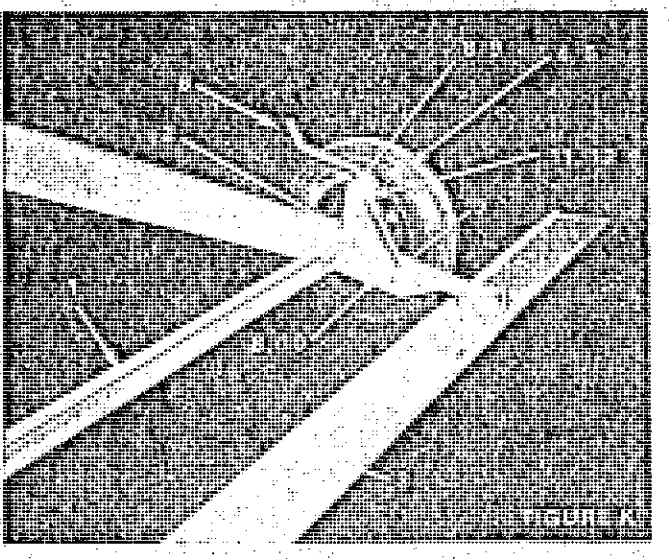
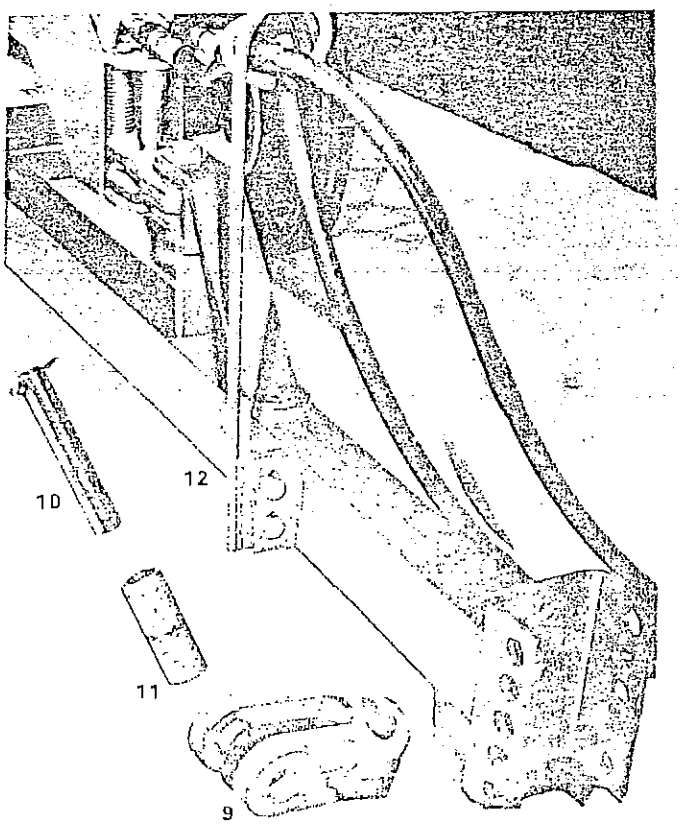


Figure K – Rear Smoother – The rear axle assembly (1) is attached to the rear truss legs with the rear axle attachment arms (2) using ¾ x 2½ machine bolts.

Connect rear smoother assembly (3) to the rear axle support arms with ⅝ x 1½ bolts and ⅝ flat washers at the slotted hole. This connection permits tilting the rear smoother assembly to adjust to various soil and moisture conditions. Note that the rear smoother assembly is reversible, and after one leading edge wears, the entire assembly can be reversed. The wear plate can be replaced separately after both edges are worn.

Install 14" rear wheels (5) on preassembled hubs (4) with ½ x 1½ wheel bolts, and mount used automotive tires (7:50 x 14 size). Be sure both rear tires are the *same* diameter.

The adjusting screws have been designed to permit lifting and varying pressure on the rear smoother blade. The adjusting crank (6) is attached to the rear axle vertical arms (2) with the pivot trunnion (9) and $^{7}/_{16}$ x 1 bushings (8) and ⅝ bolts; and to the horizontal arms with the anchor trunnion (10), a $^{7}/_{16}$ x 1 bushing (8) and a $^{5}/_{8}$ x 1" bushing (7) and ⅝ bolts. The spacer (11) on the screw permits locking the adjusting crank into place with the 2 – 1" jam nuts (12); or lowering it to various positions of float.



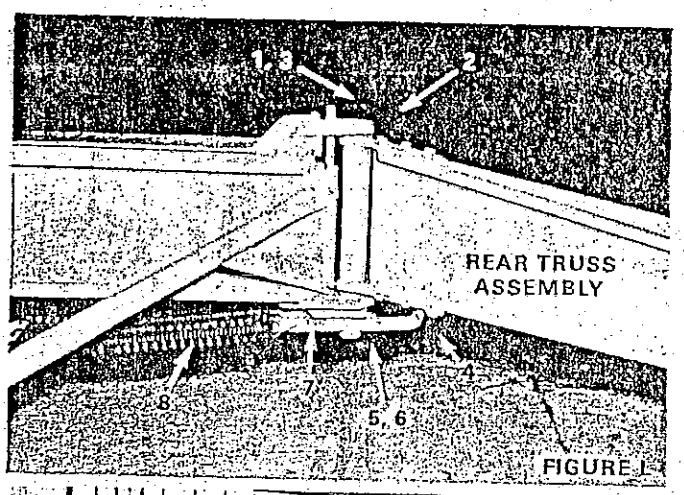


FIGURE L

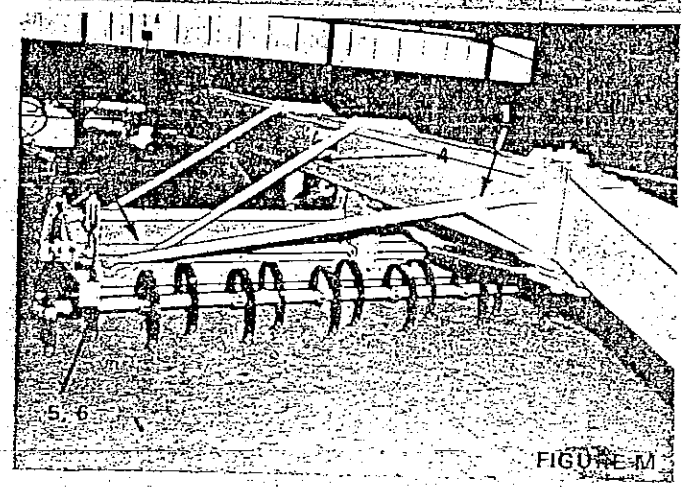


FIGURE M

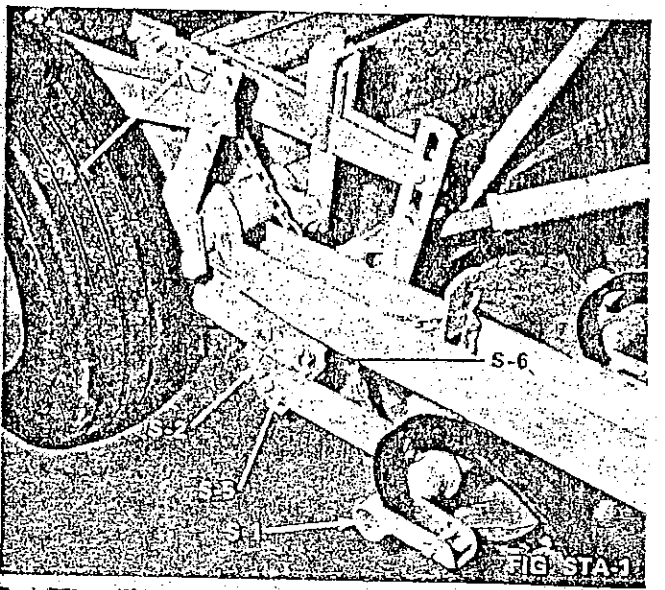


FIG. STA-1

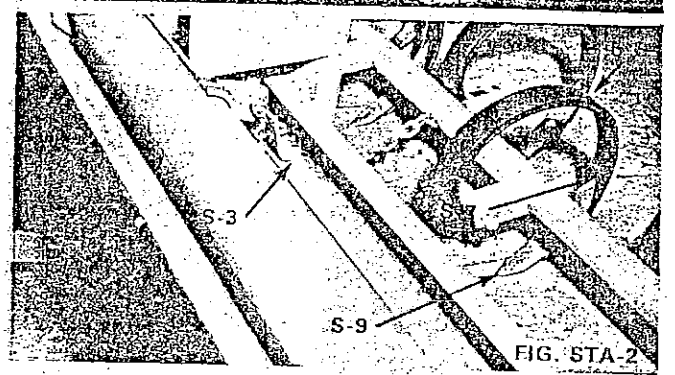


FIG. STA-2

Figures L & M – Hinge Joint Assembly – Insert the ⅞ x 22" hinge clamp bolt (1) up from bottom of center truss and set rear truss assembly with hinge cone firmly resting into center truss lower cone plate.

The flapper casting (2) can be rotated so it will fit snugly over the upper hex cone of the hinge assembly by loosening the 2 – ½ x 3½" bolts in the casting support bracket.

Then *thoroughly* tighten the ⅞" tapered nut (3) on the hinge clamp bolt. Use a long wrench and be sure this nut is secure so that excessive wear does not occur between the flapper casting and the upper hex cone. Then tighten the ½ x 3½" bolts holding the flapper casting.

Assemble pivot arm (4) on center truss pin bracket with collar (5) and ⅜ x 2¼" roll pin (6) – being certain that the rear lip of the pivot arm is between the ears of the pivot arm actuator (3, Fig. J-1). The rear springs will be inoperative unless this is done.

Hook the 3 – center springs (8) into rear spring anchor plate (7) and to front spring plate (Fig. E-1, 4). The rear spring anchor plate (7) is attached to the pivot arm with a 1¼" flat washer and ¼ x 2 cotter. The center springs are shipped with spacers inserted between the coils to pre-stretch them and facilitate installation. Remove prior to field operation by lifting leveler on center wheels, swinging rear end to one side and prying the spacers out.

Mount L.H. and R.H. bumpers, Fig. M (5, 6) on rear of main frame side channels with same bolts used at rear corners of main frame.

MODEL 4512—OPTIONAL SPRINGTOOTH ATTACHMENT ASSEMBLY INSTRUCTIONS

Assemble end brackets (S-2) to rear corners of main frame side channels with ⅝ x 1¾ machine bolts. Note use of beveled washers (S-6) on channel flange.

Referring to Fig. STA-2, the center bracket, (S-3) is assembled on the forward face of the main frame rear channel with ½ x 1¼ bolts, and with the bracket resting on lower leg of channel. Be certain that the lugs welded to the axle clear the S-3 bracket.

Attach the springtooth pipe (S-1) to end brackets with ⅝ x ⅞" bushings (S-5), ⅝ flat and lockwashers, and ⅝ x 1¾ machine bolts. Since it is possible to assemble the pipe upside down, which would result in bent or broken parts, observe carefully from Figure STA-1 that the *outboard saddle bracket* is pointed upward and that the springtooth is on top of the pipe. Note: Make the initial installation in the center holes of the end brackets and then adjust in the field, as required, to adjust front and rear sets of teeth to dig equally at various depth settings.

Mount lift hooks (S-4) to side boards with ½ x 1½ machine bolts. The long chain (35 links) is welded to the pipe and is also secured to the lift hook. There must be considerable slack in this chain since its sole purpose is to lift the entire springtooth attachment clear of the ground when the leveler is fully raised on the main wheels. It *cannot* be used as a depth control chain without bending the lift hook.

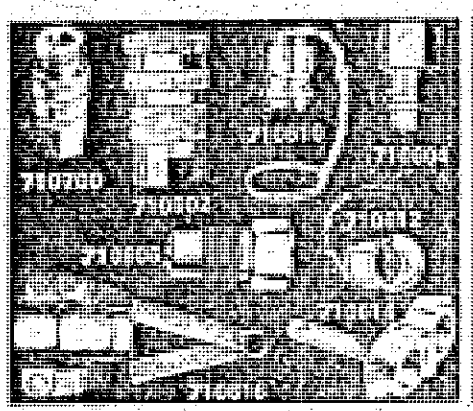
Hook the center pull chain through keyhole in center bracket, leaving approximately one inch of slack (Fig. STA-2).

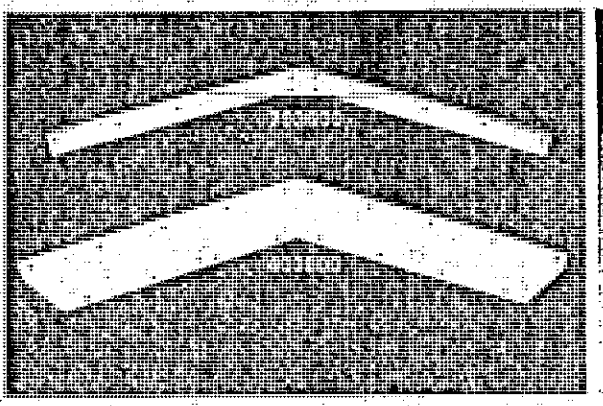
Place the ends of the outer chains (20 links) in the keyholes of the bumper brackets (Fig. STA-1). This is the *depth control* adjustment and will limit the penetration of the spring teeth to whatever depth it is set. Before changing the setting of these depth control chains, raise the blade so that the teeth are out of the ground. Be certain that the chain on both sides are set at the same link. When transporting the leveler, snug the depth control chains up tight and they will thus serve as a safety device in case a lift chain should break.

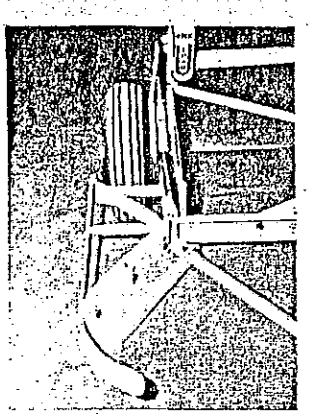
The shovel (S-9) is attached to the spring teeth with ⅜ x 1¼ and ⅜ x 1½" plow bolts with lockwashers and flat washers on the slotted holes.

Mount spring teeth assemblies in saddle brackets on the pipe with ½ x 2¾ carriage bolts. Do not use lockwashers. Tighten bolts until saddle brackets are deformed to lock the teeth securely in place.

OPTIONAL EQUIPMENT





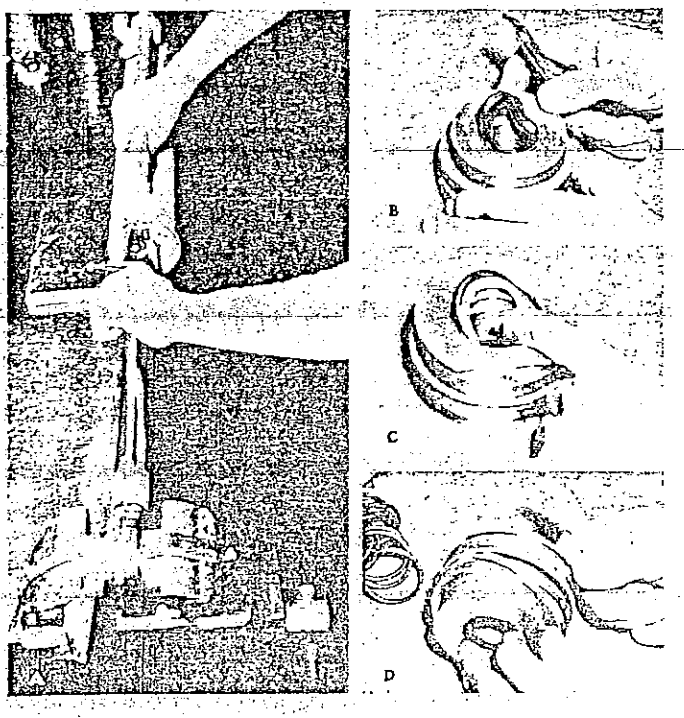


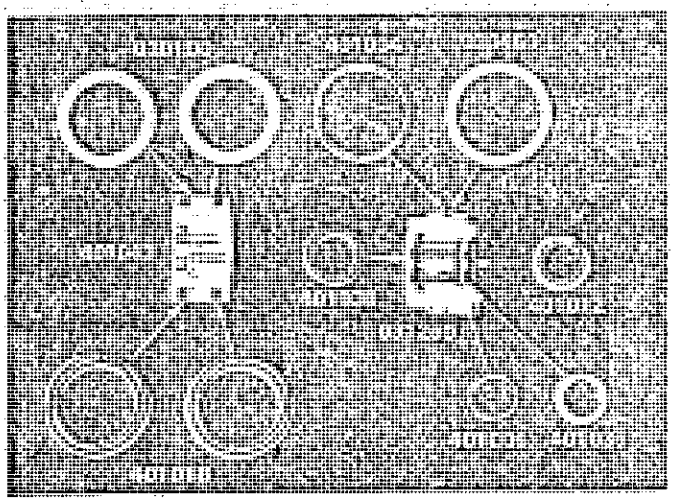
This attachment will pull dirt from trees or edge of border and distribute it into the moldboard. The blade can be installed on either left or right hand side of leveler.

IMPORTANT— CYLINDER REPAIR INSTRUCTIONS

PHOTO A—Disassembly of the cylinder is a simple operation if done correctly, however, considerable damage to parts is possible if caution is not exercised.

a. Support cylinder in vise by clamping the ball fitting at end of piston rod.





b. Remove the allen set screw which holds the 401018 snap ring in place.

c. Use a pair of number 5 snap-ring pliers to remove the snap ring from groove in cylinder barrel and pull barrel away from rod guide and piston. This normally requires a jerky motion since the piston "O" ring expands into the barrel groove and adds considerable friction.

NEVER (1) Use a hammer to beat on rod guide or barrel. This has been unsuccessfully tried many times; or **(2)** clamp the piston rod in vise while disassembling cylinder. If the chrome plating on the piston rod is nicked or scratched the rod is ruined and must be scrapped.

To reassemble cylinder, follow same procedure of clamping ball fitting end of piston rod in vise. Slip rod guide to forward end of rod (against ball fitting end). Push barrel over piston, and completely collapse barrel. Then collapse snap ring with snap-ring pliers and force barrel over guide rod until ring is in position to expand into barrel groove, and lock rod guide in place.

Whenever the cylinder is disassembled, it is recommended that *all* seals, washers, and "O" rings be replaced. It is very easy to cut or nick one of the parts so exercise extreme caution. For complete seal kit, order part No. 401052.

PHOTO B—To install inner U-cup seal (401038) in rod guide groove, start seal into groove and then use blunt tool such as pictured to force it into place around circumference. Note detail cutaway of rod guide and piston showing correct position and direction of seals and other parts.

PHOTO C—To install inner "O" ring (401006) and back-up washer (401036) in rod guide, start as shown in photo. These parts can normally be pushed into the groove with finger and the blunt tool is not required.

PHOTO D—To install outer "O" ring (401004) and back-up washer (030460) on rod guide, first push washer in place, and then force "O" ring into groove. The same blunt tool is helpful for this installation, and oiling washer and "O" ring will also assist. Follow this same procedure to install "O" rings (401010) and back-up washers (030100) on 401043 piston.

To install the piston rod wiper seal (401012) in rod guide note that metal backing rests against shoulder of rod guide. This seal may be forced into place by laying a small flat piece of bar stock over seal and tapping with hammer.

HYDRAULIC CYLINDER SEAL REPAIR KIT.

Part No.	Description	No. Req.	Serial No.
401052	Kit-Consisting of:	1	ALL
030100	Back-up Washer (Piston-outer)	2	ALL
030460	Back-up Washer (Guide-outer)	1	ALL
401004	O-Ring (Guide-outer)	1	ALL
401006	O-Ring (Guide-inner)	1	ALL
401012	Seal (Piston Rod Wiper)	1	ALL
401018	U-Cup (Piston-outer)	2	ALL
401036	Back-up Washer (Guide-inner)	1	ALL
401038	U-Cup (Guide-inner)	1	ALL

OPERATING INSTRUCTIONS

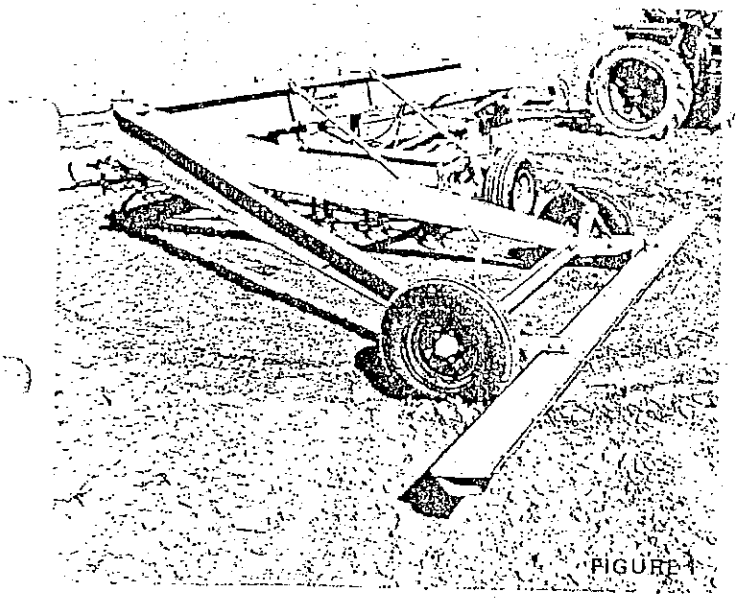


FIGURE 1

HOW TO GET BEST RESULTS FROM YOUR EVERSMAN AUTOMATIC LEVELER

Your EVERSMAN LEVELER will operate under a wide variety of soil and moisture conditions. However, best performance is obtained when soil is fairly dry and relatively free of trash. Your EVERSMAN will do the maximum amount of work with a minimum of power. Built into it is a flexibility of operation found in no other type of field leveling tool.

The exclusive hinged tail section of the Eversman reduces power required for turning, increases maneuverability, makes it possible to work most any size or shape plot of ground, gets into corners and field edges where other bulkier and harder to handle levelers can't go. Figure 1 illustrates the maneuverability and shows how the hinged tail section and pivoting of the tongue shortens turning radius.

Automatic control of the cutting blade actually feels out high and low places in your fields. The cutting blade is automatically lowered to over-cut from high places, automatically raised to over-fill in low places. The over-filling allows for settling in the depressions. Three times over with your Eversman accomplishes more than longer, heavier, fixed-blade machines requiring much more power for operation.

The carefully curved shape of the cutting blade gives the load a rolling motion so that a live load is carried, reducing power required and helping to keep the cutting blade scoured clean.

Two-way hydraulic power from your tractor is required. This hydraulic control at your finger tips allows easy cutting blade adjustment while in motion; spreads out accumulated trash or lightens the load on your tractor in crossing soft or sandy spots.

BE SURE THAT HYDRAULIC CONNECTIONS ARE WIPED CLEAN OF DIRT BEFORE HOOKING UP. Work your control valve several times allowing full travel both ways on the cylinder to expel air in the system.

Note: It is not necessary for the operator to continually reset the blade with the tractor hydraulic control lever. If the machine is properly adjusted as outlined in "adjustments," the crank axle will do the leveling and the hydraulic control will only need to be used on occasions as described below. (Be sure to read section on adjustments before trying to operate your Eversman Leveler.)

ALWAYS USE THE SWINGING DRAW BAR on your tractor for easier turning. A fixed draw bar requires heavier braking on turns and increases drag on the tractor engine. Always use a front dolly when operating the machine as an automatic leveler. (Except for roughing operations.)

FRONT END SELECTION. Eversman levelers may be operated with two different front ends. Use the Rubber-Tire Dolly Assembly, "RT" Models, if your operation is such that considerable moving is required from field to field, and if you normally work on dry, firm soil. Use the Steel-Wheel Dolly Assembly, "D" Models, if moving is not a problem and if a precise smoothing job is required for more efficient irrigation or drainage. The larger ground contact obtained with the steel dolly wheels provides better front-end stability and an improved leveling operation. The steel wheels definitely should be used on loose, soft soils where "flotation" (keeping the leveler on top of the field surface) is a problem.

ALWAYS LEAVE MACHINE FULLY LIFTED on its wheels when unhooking from tractor. Left this way it can be moved or readied for transport without reconnecting the hydraulic system.

FIRM, DRY, CLODDY GROUND. Operate on this type of ground with the rear smoother in its lowest position, and at low side spring tension (see adjustments). This puts the greater part of the weight of the leveler on the front and rear end and on the cutting blade so that it can break up the clods and accomplish the maximum toward producing a fine, firm seedbed. (Generally it is not necessary to disc or harrow plowed ground before leveling. Clods brought to the surface dry out and are harder to work down.)

LOOSE, DRY, SANDY GROUND. Operate with higher spring tension (see adjustments) so as to carry the greater part of the leveler weight on its main wheels. If the rear smoother blade tends to push an excessive amount of dirt, allow it to float free by releasing the two spacers on the cranks on the rear axle.

DAMP, STICKY SOIL. When soil moisture is high the rear smoother may not scour properly. With the adjusting screws, lift the rear smoother blade up and use maximum side spring tension. Set the cutting blade to carry a light load of dirt for the first time over a field. Second time over the surface will be drier and a larger load may be carried.

TRASHY GROUND. If trash is dry, not much trouble will be encountered. If damp, operate with rear smoother up. Hydraulic control at your finger tip allows occasional lifting of the cutting blade to remove accumulated trash.

BEST OPERATING SPEED. Too fast an operating speed will not give the dirt enough time to fall out of the cutting blade and fill low places. If soil is damp, lower speeds are advisable to allow time for dirt to fall. The speed must be governed by the field conditions.

BEST DIRT LOAD. Setting the cutting blade too deep wastes power and prevents your leveler from doing its best job. Too deep a setting carries the blade so low that it cannot raise high enough to unload in low spots. It should run full only on high places. It should run empty part of the time when crossing low areas. (This is especially true on the first time over.) Adjust the depth in the field by raising or lowering with hitch screw (Figure 6) on front truss so that the blade will average about half full and note setting on the gauge. Watch its operation for a round or two and lower the hitch setting only if it runs empty half of the time or better. The second and third times over will finish filling the low places and a more even load will be carried.

INDICATOR GAUGE. The gauge is merely a cylinder "setting" or position indicator. It aids in returning the cylinder to your "operating position" after raising the machine to change the spring tension or hitch setting.

The gauge pointer moves only when the cylinder is extended or retracted. It does not move during operation with the automatic axle control of the cutting blade or with the hitch adjustment. The gauge also permits the operator to make the same depth cut on each pass while moving dirt with the leveler in short form.

FIELD ADJUSTMENTS

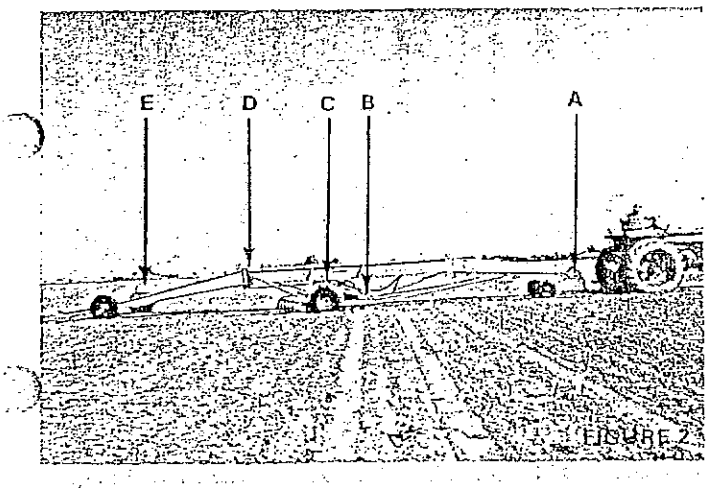


FIGURE 2

IMPORTANT – READ CAREFULLY

There are only three primary adjustments to be considered for successful operation of the Model 4512 Leveler and five other points to be checked before operating.

The three primary adjustments are:

The front end hitch, Figure 6

The side spring setting, Figure 5.

The rear spring operation, Figure 7

The five points to be carefully observed to insure proper operation are from Figure 2:

Front truss hitch bushing, Point A

Side board setting, Point B

Axle and lift pipe, Point C

Rear truss attachment bolts, Point D

Rear smoother blade setting, Point E

All adjustments and settings are designed to produce only *one end result* – balancing out the leveler so that the *lift pipe arms* are approximately *horizontal* – and near the *center* of the *slots* in the *slotted* links – Figure 5.

A brief explanation of the operation of Eversman levelers will help you in visualizing the proper adjustments to be made for most efficient land smoothing.

The Eversman leveler is designed to: (a) carry most of the weight on the front and rear wheels; (b) provide a rigid backbone (overhead truss, Fig. 2) between the front and rear wheels; and (c) permit the center wheels to act as *gauge* wheels to automatically *regulate* the height of the cutting blade to cut, or fill, irregularities, and thus, to *maintain a level grade between* the *front* and *rear* wheels.

If the overhead truss is rigid, the center wheels will automatically adjust the cutting blade to the correct height *without* any *regulation* of the *hydraulic controls* by the tractor operator. This rigidity can only be obtained if: (1) The front truss hitch bushing, point A, Fig. 2, is not worn, resulting in "play" or "slop" at this connection. Check this bushing, part number *400228* (Ref. 7, Fig. G), frequently, and replace if it shows *any wear;* and, (2) The rear truss attachment bolts, point D, Fig. 2, are *thoroughly tight* so there is no "slop" at this joint. Frequently check the 12 – ¾" rear truss bolts (Ref. Fig. L), and tighten with a long-handled wrench. Also keep the *hinge bolt*, part number *400454*, thoroughly tight at all times.

The entire bucket section, and the dirt load carried by the cutting blade, is spring counterbalanced. As noted above, and as shown in Figures 3 and 4, the center wheels serve as gauge wheels, to follow the ground contour, and to activate the blade accordingly. When the center wheels encounter a ridge in the field, *they* will *raise* to the top of the ridge and automatically push the blade *down* to cut off the ridge. Then, when the center wheels encounter a depression in the field, they will *lower* into the depression and automatically *lift* the cutting blade to fill the *low* spot. The *only* conditions under which the center wheels can perform this function are if the overhead truss remains rigid as noted above, *and* if the counter-balancing *springs* are *correctly* adjusted. (See sections on side spring and rear spring settings.) An important point to keep in mind is that the interaction between the center wheels and the cutting blade takes time and that driving too fast will not permit the blade to cut, or fill, until it is past the irregularity. The proper operating speed will depend on the soil moisture and the condition of the individual field. The best operating speed is that which will permit the blade to empty out in depressions. Too fast forward travel will not permit the soil to be deposited in the correct place, and this can only be determined by observing the action in each field being smoothed.

Another important operational factor is the amount of dirt carried in the blade. Just because the *blade* is running *full does not* mean you are re-distributing soil and leveling the field. Rather, the leveler must be set so that the blade load *varies* from *full* to *empty* as you cross the field. The *normal* load should be about one-half full, with the blade completely full when cutting, and completely empty when it dumps the load in a depression.

The lower front corners of the sideboards (Point B, Fig. 2) should run approximately ¼ inch off the ground and parallel to it. If the sideboards are digging, they will produce unnecessary draft. To correct, lower the ball hitch (Fig. 6) one or two turns with the hand crank, and retract the hydraulic cylinder slightly to maintain the same dirt load in the blade.

The axle and lift pipe (Point C, Fig. 2) must be parallel to the main frame channel. See Section 5 under TROUBLESHOOTING for this adjustment.

The rear smoother blade (Point E, Fig. 2) may be set in various positions. When transporting, if the soil is damp and sticky, or when using the optional springtooth attachment, lift it off the ground with the adjusting cranks provided.

All of the weight of the rear end can be carried on the smoother blade which will wipe out wheel tracks, break up clods and firm the surface to produce an ideal seedbed for planting. Any intermediate setting is possible to vary the rear end weight between the smoother blade and the rear tires as desired.

The rear smoother can also be tilted to obtain the most favorable scouring position under the soil and moisture conditions encountered on each field.

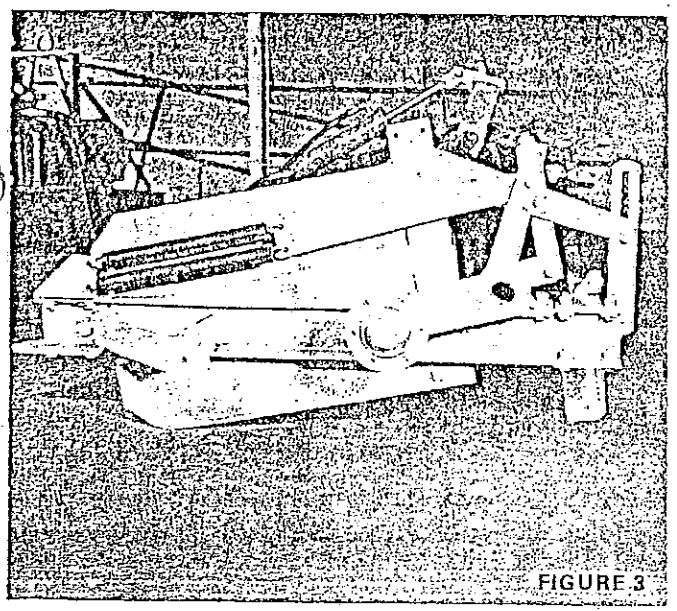


FIGURE 3

This picture shows the position of the lift pipe arm when the main wheels are in a low spot or depression in the field. At this time, the cutting blade is lifted to dump soil to fill the depression. However, the arm should not run in this position constantly, since it locks out the automatic action.

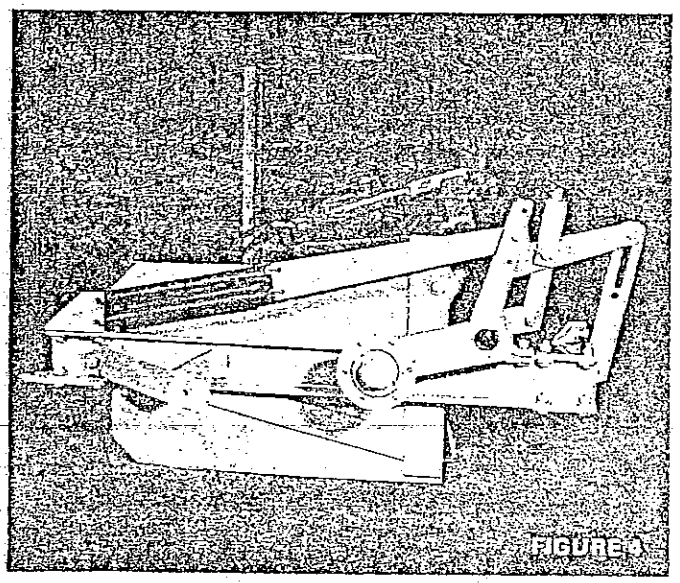


FIGURE 4

This is the position of the lift pipe arm when the main wheels encounter a high spot or ridge in the field. The blade is automatically lowered to cut off the ridge. However, the arm should not run in this position constantly, since it locks out the automatic action.

All adjustments are made to balance out the leveler to permit carrying the lift pipe arms in the center of the slotted links while automatically land smoothing with the Eversman. The hitch must be understood and set correctly since this adjustment controls the amount of dirt carried in the cutting blade.

Proceed as follows – referring to Figures 5 and 6:

1. Hitch to the tractor drawbar with the tongue level, or slightly high at the front end. (Figure 6). There are five holes in the drawbar hitch to permit this setting, depending on the tractor drawbar height, tire size, softness of field, etc.

2. With the hand crank, set the ball hitch at the center of the screw (Figure 6). (Always raise the leveler with the hydraulic cylinder high enough to take the weight off the front end. You will find the machine balances around the center wheels which permits easier cranking of the screw to raise or lower the ball hitch.)

3. With the tractor hydraulic control valve, set the cylinder so the lift pipe arms are in the *center* of the slotted links (Figure 5). This will set the gauge pointer within the automatic range on the gauge decal. The lift pipe arms are now free to work up and down equally, and to

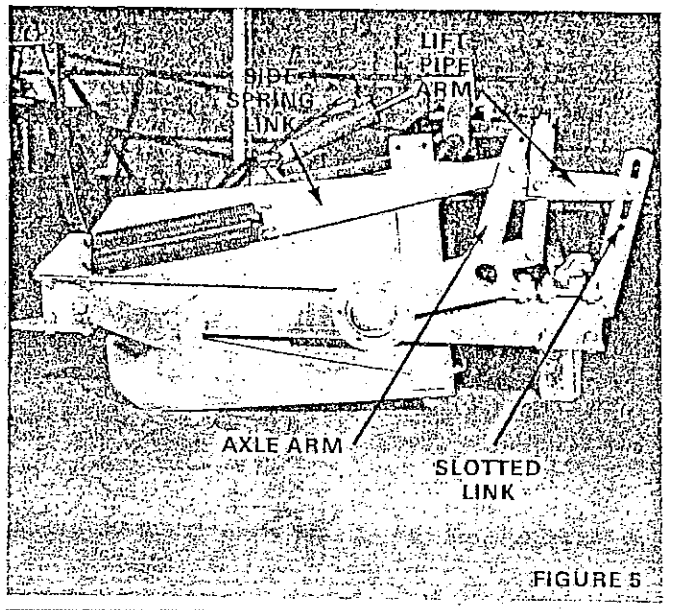
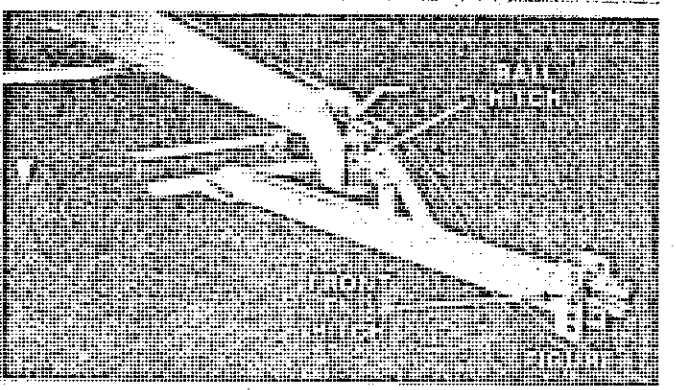


FIGURE 5



permit the blade to move down to cut, or raise to dump. (Note from Figures 3 and 4 how the automatic action can be completely locked out.)

4. Pull the leveler far enough into the field to observe the *average* dirt load being carried in the bucket. *If* the blade is running empty most of the time, the leveler must be *lowered. Lower* it by changing the setting of the ball hitch on the front truss screw with the hand crank – *not* with the hydraulic cylinder. If you run the ball hitch higher up on the screw, it will lower the front truss, and therefore, the entire leveler frame and moldboard section. This then results in a larger dirt load, but the lift pipe arm can still be carried in the *middle* of the slotted link. A few turns with the crank will make considerable change in the amount of dirt carried.

If the blade is averaging more than one-half full most of the time, the leveler must be *raised. Raise* it by *raising* the *front truss,* which is done by *lowering* the ball hitch on the screw with the hand crank – *not* with the hydraulic cylinder. Then make another round or two in the field to observe the average dirt load in the blade and make any further corrections necessary.

REMEMBER THESE IMPORTANT FACTS:

a. The center wheels can move the blade up or down, to cut or fill, only if the lift pipe arms are *normally* in the center of the slots. If they *normally* run at the *top* or *bottom* of the slots, then the automatic action is locked out. (Refer to Figures 3 and 4.)

b. To carry more dirt in the blade, *lower* the leveler by *raising* the ball hitch on the front truss screw.

c. To carry *less* dirt in the blade, lift the leveler *higher* by *lowering* the ball hitch on the front truss screw.

d. The *first trip* over a *rough field* will require the leveler to be set *slightly high*, since the irregularities are more pronounced and you might occasionally stick the tractor by completely filling the blade. (This is especially true if operating with marginal tractor power.) By the same token, the low places will be more pronounced and the blade will completely empty into them.

e. The second or third time over a field will require the leveler to be lowered, by cranking the hitch ball a few turns higher on the screw. Furthermore, the second or third trips will result in a more uniform dirt load in the bucket and more precision cutting or filling action.

f. Since each field will vary as to initial roughness, density of soil, moisture content, etc., you will probably have to re-adjust the leveler in accordance with the procedure above.

g. The average, normal dirt load should be about one-half blade full.

The Side Spring Adjustment

The side springs (and the rear springs) serve as the counterbalancing effect to overcome the machine and blade load weights and thus, permit the center wheels to automatically regulate the height of the cutting blade. Three holes are provided on the axle arms to vary the side spring tension adjustment (Figure 5). Average soil and moisture conditions will require the side spring link to be set in the *middle hole*, so always start in this position and adjust according to field conditions.

Operation in damp, loose or lighter soil conditions may require increased side spring tension to assist the center wheels in activating the blade, so a setting to the top hole will be necessary.

If field conditions are heavy soils, dry and cloddy ground, less side spring assistance will be required, and the link should be set in the bottom hole.

Be certain that the same holes are used on both sides of the leveler.

Before changing the side spring setting, the spring tension can be relieved by lifting the leveler, with the hydraulic cylinder, full up on the center sheets.

The Rear Spring Adjustment

The stabilizer springs, located under the rear of the center truss, are part of the spring counter-balance system; and their purpose is to keep the leveler from digging, or dumping, during turns at the field ends. Refer to Fig. E-1 for a cutaway view of the stabilizer spring and rocker arm design which also shows the *adjustable limit bolt.* It is factory installed and protrudes about 1¾" ahead of the plate. The purpose of this bolt is to limit the travel of the rocker arm, and the spring stretch, so that the cutting blade will not dump its load when turning.

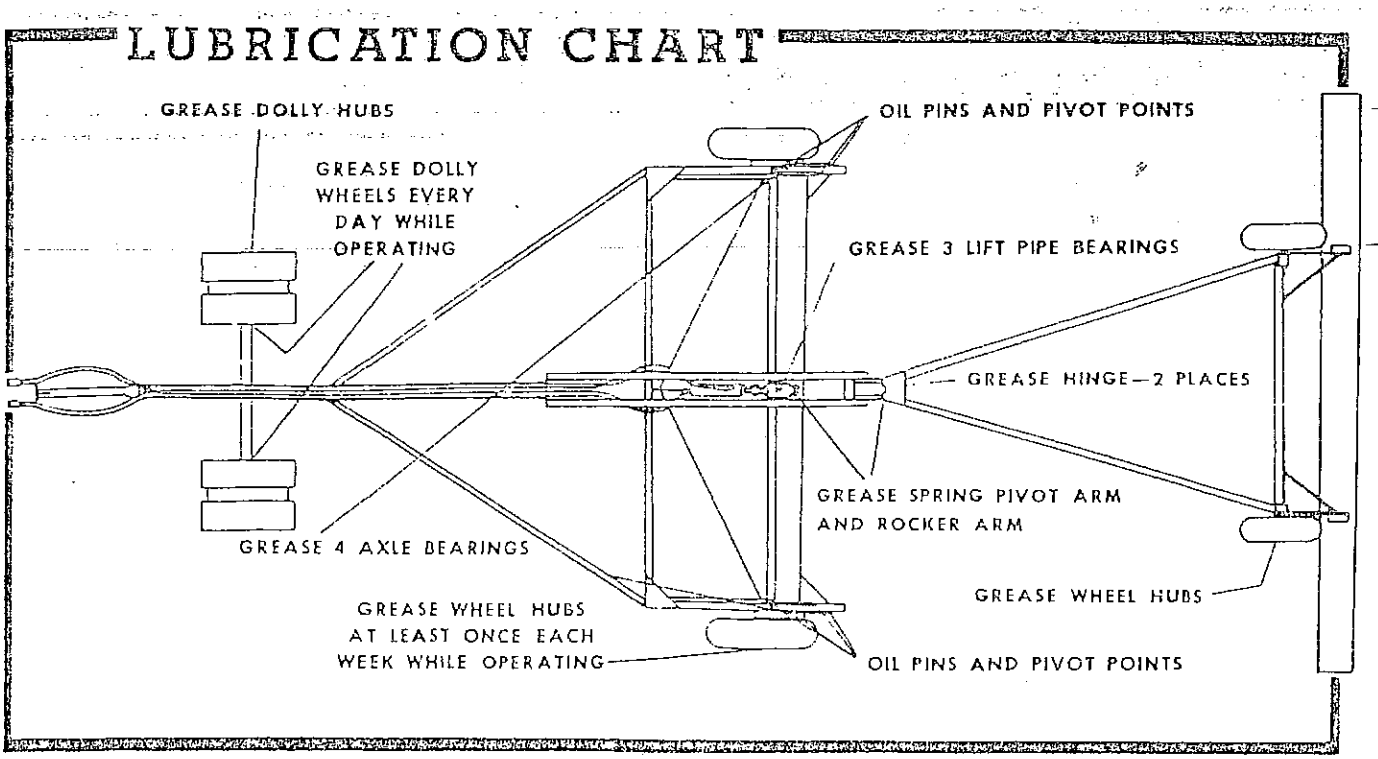
If, in a tight turn at the field end, the cutting blade *lowers* and takes a cut, *shorten* (screw in) the limit bolt.

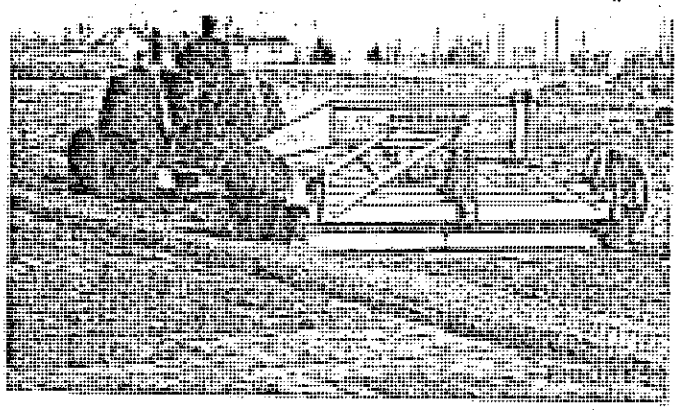
If the cutting blade lifts, and dumps, during a tight turn, run the limit bolt out.

The limit bolt adjustment, either in or out, should be made at approximately ¼" intervals, until short-radius turns can be made without cutting or dumping.

During straight-away field operation, the rocker arm will run slightly forward of the limit bolt ahead.

It is recommended, and possible difficulty in turning will be eliminated, that you first make several passes entirely around the edges of the field to be smoothed. If the field ends are thus firmed down, you will find turning much easier as you cover the field.





HYDRAULIC SCRAPER

Figure 7 shows an Eversman Leveler in action as a large capacity hydraulic scraper. A wheel tractor of 40 drawbar H.P. or larger is required. Hydraulic hoses should be elastically supported to the tractor seat or other convenient point so as to clear the drawbar. Always remove front tongue and rear section for dirt moving.

Note: An adaptor (No. 409600) for standard swinging drawbars is available to connect ball hitch to wheel tractors.

The picture shows a favored method of working over the area to be cut. For cuts up to five or six inches deep work in strips leaving about three to five feet between cuts. This permits even cutting all the way across and leaves strips of the original surface in place so that the amount cut off can be more easily seen. Clean out strips to finish the job.

Where cuts must be greater than five or six inches in depth, repeat the process described above as many times as necessary and add the depth between levels to determine the total removed.

TROUBLESHOOTING

1. HYDRAULIC SYSTEM "DRIFTS." This is indicated by movement in the gauge pointer and a lowering of the cutting blade without a corresponding movement in the control valve. It may be caused by:

a. Air in system – Run cylinder through its complete travel both ways several times to expel air.

b. Low oil level in pump reservoir – Low oil may permit your pump to draw air. Check oil level and fill if low.

c. No check valve – A dual check valve (or cylinder lock valve) is furnished with every model 4512 leveler (see Fig. H for installation).

d. Faulty check valve – To test, disconnect leveler at quick couplers. If drifting stops, leakage in check valve is indicated.

e. Internal leakage in cylinder – Oil may be passing by piston packings from one side of piston to the other. Check as for leaky check valve. If drifting continues a leaking piston packing is indicated.

2. LEAKAGE AROUND QUICK DISCONNECTS. Clean disconnects carefully. Be sure that all dirt is flushed out of "O" ring groove. If leakage continues replace "O" ring.

3. MACHINE WILL NOT LIFT FULLY.

a. Check travel on cylinder. It should travel a full 13 inches. Shorter travel indicates low oil pressure. Check oil level in pump and fill if low. Change oil if it is "thinned out" and watery.

b. If cylinder has full travel, check bolts at center of blade holding the lift pipe and drawbar to the moldboard. Loose bolts here will prevent full lifting.

4. MOLDBOARD CARRIES MORE DIRT AT ONE END THAN THE OTHER. Consistently heavier load at one end of moldboard is probably due to uneven pressure in main wheel tires – Check pressure and inflate to 40 pounds each. Operating with same side of Leveler always on soft ground causes dirt build up. See instructions for Figure B regarding assembly of lift pipe end bearings to maintain level cutting bit. Put adjustable link (441220) on the side carrying excess load and lengthen it to level the cutting blade.

5. REAR TRUSS SECTION RUNS TO ONE SIDE.
This will occur only when rear smoother is in full down position.

a. Check pressure in main wheel tires. One low tire will permit main frame to ride low on one side and throw the rear smoother out of line.

b. With the leveler lifted on its wheels and the rear section trailing straight behind, sight over the rear axle forward to the main frame. Rear axle should be parallel to the main frame. If not, loosen all bolts in forward part of rear truss assembly and retighten with a jack or blocking under the low side.

6. AUTOMATIC ACTION SEEMS "STIFF."

a. Be sure that all joints and pin points in the cutting blade assembly are lubricated and free. Check especially the axle clips and half bearings at center of axle to be sure they are greased. Also grease rocker bearing under the roller chain.

b. Hitch may be improperly set so that lift pipe arms are working too close to the top or bottom of slot in slotted links. See section on proper hitch adjustment.

c. Too low a spring tension. In damp soil with some tendency to stick to blade, spring tension should be increased to lift blade faster in low spots.

7. FRONT "V" AND REAR SMOOTHER DO NOT SCOUR. This condition may be recognized when the front and rear members drag an excessive load of dirt.

a. Try a higher spring tension adjustment (See paragraphs on operation under different soil conditions.)

b. Replace front "V" with dolly. Place rear smoother in its elevated position or tilt it to obtain best scouring position.

8. FIELD SURFACE LEFT "WAVY."

a. Too low a blade setting. If cutting blade is carried too far below the level of the main wheels they cannot raise it far enough to dump its load. If the cutting blade carries a constant full load of dirt, it is set too deep and poor results will follow. Adjust hitch screw to raise front truss. This will raise cutting blade so as to carry smaller and fluctuating load.

b. "Stiff" automatic action (See correction on this above).

c. Too low a tension spring setting – Low tension spring setting on damp ground may cause Automatic Action to be stiff. Increase spring tension.

d. Wrong direction of travel. Short, corrugations should not be crossed at right angles. Change direction to cross them first time at about 45° angle.

e. The hinge bolt, (Fig. L) may not be tight – permitting "play" between the center and rear sections. Tighten bolt to obtain satisfactory automatic action. Also check bushing in ball hitch to tongue connection.

9. HARD TO TURN AT FIELD ENDS.

a. Allow tractor draw bar to swing. Use of a stiff drawbar requires excessive braking in turns and increases power required by a large percentage.

b. To prevent the blade from loading in turns, the center stubs on the axle must be connected through the roller chain over the rocker and the heavy springs to the pivot arm under the hinge joint. See Figures E-1 and L.

10. BLADE DIGS WHEN TURNING.

a. If blade digs approximately same whether turning to the right or left:

1. Check to see if the rear springs are being stretched during a turn, see 9B above.

2. See instructions under new spring adjustment page 11.

3. Move side springs to middle or top hole position and be sure axle bearings, rocker, pivot arm etc. are lubricated.

4. With the hydraulics raise the rear wheels off the ground, loosen the 12 bolts holding rear trusses to the hinge allowing rear end to drop to its lowest position, (be sure rear axle is level or parallel to the cutting edge) and retighten the 12 bolts securely. See 5-B above.

b. If blade only digs when turning one direction:

1. Check if rear tires are actually the same diameter and see if the rear axle is level as per 5-B above.

2. Due to the tolerance in the bolt holes the machine may be assembled with the hinge shaft not vertically plumb when the main frame is level. To correct this: raise the rear wheels off the ground with the hydraulics and swing the rear section to the side on which the blade has been digging. Then loosen the 8 bolts which hold the rear upright channel leg (Fig. E) to the center truss, and allow the rear wheels to drop (approx. 1"), and retighten the bolts. Relevel the rear axle as per 5-B above.

Note: It is easy to over correct. One inch may be too much or it may not be enough, so a field performance check will be necessary to tell. If it has been over corrected repeat the above procedure with the rear section swing around on the opposite side.

MODEL 4512 PARTS LIST

Fig. No.	Ref. No.	Code No.	Description	No. Req.
A	1	440513	Moldboard	1
"	2	306210	Cutting Bit	1
"	—	440501	Moldboard & Bit Assembly	1
"	3	440904	Lift Pipe	1
"	4	404422	Lift Pipe End Bearing	2
"	—	059778	1/2 x 1-3/4 Plow Bolt	2
"	—	059777	1/2 x 1-1/2 Plow Bolt	8
"	5	055314	5/8 x 1-1/2 Machine Bolt	4
B	1	402000	L.H. Sideboard	1
"	2	402100	R.H. Sideboard	1
"	3	440904	Lift Pipe	1
"	4	404600	Drawbar	1
"	5	440515 (a)	Drawbar Brace Assembly	1
"	—	440514	Bar	1
"	—	301410	Eyebolt	1
"	6	440504	Blade Brace	2
"	—	055318	5/8 x 2 Machine Bolt	4
"	7	061941	3/4" Nut	1
"	8	055216	1/2 x 1-3/4 Hex Bolt	1
"	—	055218	1/2 x 2 Hex Bolt	
C	1	440401	Front Channel — Main Frame	1
"	2	403234	L.H. End Channel	1
"	3	403235	R.H. End Channel	1
"	4	440403	Rear Channel — Main Frame	1
"	—	055318	5/8 x 2 Machine Bolt	16
"	5	403236	Bevel Washer	16
"	6	406000	1-1/8 x 5/8 Hardened Bushing	2
"	—	055422	3/4 x 2-1/2 Machine Bolt	2
"	—	063541	3/4 Flat Washer	2
"	7	440819	Main Axle	1
"	8	402200	Axle Clip	2
"	9	440844 (b)	Hub Assembly (Q-888)	2
"	—	440836	Hub Casting, with Cups	—
"	—	030620	7/8 Flat Washer	—
"	—	062567	7/8 Slotted Nut	—
"	—	063734	5/32 x 1-1/2 Cotter	—
"	—	007000	1/2 x 1-1/2 Wheel Bolt	—
"		440845	Hub Repair Kit, Consisting of:	
"	—	440839	Inner Cup (JL 69310)	—
"	—	440842	Inner Cone (JL 69349)	—
"	—	040805	Seal (CR 256H0124)	—
"	—	523501	Outer Cup (LM 67010)	—
"	—	030801	Outer Cone (LM 67048)	—
"	—	031010	Hub Cap	—
C-1	H-1	441020	72" Hose	1
C-1	H-2	041007	57" Hose	1
C-1	H-3	401060	3-1/2 x 13" Cylinder Assembly	1

(a) Effective Serial No. 11202
(b) Effective Serial No. 10991

Fig. No.	Ref. No.	Code No.	Description	No. Req.
C-1	—	701026	1 x 3" Clevis Pin	2
"	—	041034	Cylinder Seal Kit, Consisting of: (Ser. #11363)	1
"	—	030460	Backup Washer	1
"	—	401004	O-Ring	2
"	—	701006	O-Ring	1
"	—	041095	Rod Wiper	1
"	—	041033	Piston Seal	2
"	—	041059	Rod Seal	1
"	—	401028	Barrel	1
"	—	401061	Piston Rod	1
"	—	701026	1 x 3" Clevis Pin	2
"	—	041063	Piston (Serial #11363)	1
"	—	041077	Rod Guide (Serial #11363)	1
"	—	064668	1" Elastic Stop Nut	1
"	—	060403	1/4 x 3/8 Allen Set Screw	1
"	—	064329	3/16 x 1/2 Roll Pin	1
"	—	531725	Snap Ring	1
D	10	441201	Fixed Link	1
"	11	406000	1-1/8 x 5/8 Hardened Bushing	3
"	12	441220	Adjustable Link	1
"	—	441221	Clevis	—
"	—	441224	Link Bar	—
"	13	065524	3/4 x 3 Drilled Pin	1
"	—	063761	1/4 x 1-1/4 Cotter	—
"	—	062142	7/8" Jam Nut	—
"	—	061942	7/8" Hex Nut	—
"	14	401400	Slotted Link	2
"	—	006460	3/4 x 1-3/4 Pin	4
"	15	854502	Side Spring	4
"	16	441217	Side Spring Link	2
"	17	441218	5/16 x .84 Bushing	2
"	18	407200	Indicator Gauge Body	1
"	19	407220	Gauge Arm	1
"	20	707222	Gauge Hand	1
"	21	407224	Link	2
"	22	065316	9/16 x 2 Pin	2
E	1	403400	Front Leg	1
"	2	404800	Rear Leg	1
"	3	440215	Center Truss	1
"	4	302980	Side Brace	4
"	5	590410	15" Wheel	2
"	6	590715	9:50 x 15 Tire & Tube	2
"	—	006460	3/4 x 1-3/4 Clevis Pin	1

Fig. No.	Ref. No.	Code No.	Description	No. Req.
E-1	—	441228	Rocker Arm Assembly, Consisting of:	1
"	1	406220	Rocker Arm	1
"	2	441207	Axle Link	1
"	3	406218	Roller Chain Assembly	1
"	4	441230	Front Spring Plate	1
"	5	061452	Rocker Arm Bolt	1
"	6	061700	Rocker Limit Bolt	1
"	7	406216	7/8 x 1-1/2 Hardened Bushing	1
"	8	006490	7/16 x 1-15/64 Clevis Pin	2
F	1	400201	Front Truss	1
"	2	441715	Center Brace Pipe	1
"	3	441718	Outer Pull Pipe	2
"	4	441720	Center Pull Pipe	1
G	1	400244	Ball Hitch	1
"	—	400238	Square Nut	—
"	2	400220	Slide Pin	2
"	3	400258	Adjusting Screw	1
"	4	063592	7/8 Flat Washer	2
"	5	400226	Crank	1
"	6	064458	7/16 x 1 Rollpin	1
"	—	055638	1 x 4-1/2 Machine Bolt (Serial #11206 & up)	1
"	8	404100	Dolly Tongue	1
"	9	040629 (a)	Clevis Casting	1
"	10	040642	1 x 6-1/4" Pin	1
"	11	040619	Spacer Sleeve	1
"	—	063764	1/4 x 2" Cotter Key	2
"	12	281010	Hose Support	1
"	—	409604	Hitch Adaptor	1
"	13	422203	Dolly Axle	1
"	14	023470	Hub Assembly (S-3100A)	2
"	—	007000	1/2 x 1-1/2 Wheel Bolt	10
"	—	031000	Hub Casting with Sleeves	2
"	—	030620	7/8 Flat Spindle Washer	1
"	—	062567	7/8 Slotted Hex Nut	1
"	—	063734	5/32 x 1-1/2 Cotter	1
"	—	023520	Hub Repair Kit, Consisting of:	1
"	—	501337	Inner Cup (LM 48510)	—
"	—	501336	Inner Cone (LM 48548)	—
"	—	023490	Seal (200861 M)	—
"	—	023510	Wear Sleeve	—
"	—	030801	Outer Cone (LM 67048)	—
"	—	523501	Outer Cup (LM 67010)	—
"	—	031010	Hub Cap (FS 12016)	—
"	15	591000	Steel Wheel	2
"	16	422211	Scraper Frame	1
"	17	421700	L.H. Scraper Blade	1
"	18	421800	R.H. Scraper Blade	1

(a) Effective Serial No. 11363, the 040627 swivel clevis is no longer available. Substitute items 9, 10, 11 and 12 for older 410, 4012 and 4512 levelers.

Fig. No.	Ref. No.	Code No.	Description	No. Req.
G-1	1	708000	Rubber Tire Dolly Wheel	2
"	—	059112	1/2 x 1-1/4 H.S. Machine Bolt	10
"	2	711200	6:00 x 9, 6-Ply Tire & Tube [* 708000 and 711200 replaced by 440847]	2
"	—	711201	Tire Only	—
"	—	711202	Tube Only	—
H	1	308250	Check Valve Assembly	1
"	2	710402	1/2" Swivel Fitting	2
"	3	441003	170-1/2" Hydraulic Tubing	2
"	4	441024	Female Fitting	2
"	5	441025	Male Fitting	2
"	6	441001	Pipe Clip	2
"	7	405800	88" Hose	2
J	1	400600	L.H. Rear Truss	1
"	2	400700	R.H. Rear Truss	1
"	3	409000	Pivot Arm Actuator	1
"	4	400900	Hinge Assembly	1
"	—	400822	Bearing	2
"	—	400820	Shaft	1
"	—	063596	1-1/2 Flat Washer	1
"	—	400810	Upper Cone Nut	1
"	—	400901	Lower Cone	1
"	5	055422	3/4 x 2-1/2 Special Bolt	10
"	6	055418	3/4 x 2 Special Bolt	2
K	1	440811	Rear Axle	1
"	2	441311	Rear Axle Attachment Arm	2
"	3	441301	Rear Smoother Assembly	1
"	—	303910	Reversible Wear Plate	1
"	—	441305	Top Section	1
"	4	023470	Hub Assembly (see Fig. G, Ref. 14)	2
"	5	590350	14" Wheel	2
"	—	590400	15" Wheel (Optional)	2
"	6	441307	Adjusting Crank	2
"	7	441306	9/16 x 1" Bushing	2
"	8	531424	7/16 x 1" Bushing	6
"	9	441313	Pivot Trunnion	2
"	10	441314	Anchor Trunnion	2
"	11	440826	Spacer	2
"	12	062143	1" Jam Nut	4
"	—	600254	Slow Moving Vehicle Socket	
L	1	400454	7/8 x 22" Hinge Clamp Bolt	1
"	2	402300	Flapper Casting	1
"	3	400444	7/8 Cone Nut	1
"	4	408901	Pivot Arm	1
"	5	302090*	Collar	1
"	6	064443*	3/8 x 2-1/4 Rollpin	1
"	7	441203	Rear Spring Anchor Plate	1
"	8	441233	Center Spring	3
"	—	400466	Pivot Arm Replacement Bracket	1

*Effective Serial No. 11600. The collar and roll pin was replaced with 063596, 1½ ID flat washer and 400511, 1½' snap ring.

Fig. No.	Ref. No.	Code No.	Description	No. Req.
M	1	441721	Rear Brace	2
"	2	441724	Clevis Stud	2
"	3	701026	Clevis Pin	2
"	4	441230	Front Spring Plate	1
"	5&6	440416	L.H. & R.H. Bumpers	1
STA 1	S-1	443101	Springtooth Pipe	1
"	S-2	433012	End Bracket	2
"	S-3	433014	Center Bracket	1
"	S-4	433024	Lift Hook and Chain	2
"	S-5	307640	5/8 x 7/8 Bushing	2
"	S-6	403236	Beveled Washer	4
"	S-7	732000	Spring Tooth	17
"	S-8	732200	Helper Spring	17
"	S-9	732400	Replaceable Shovel	17
"	—	059726	3/8 x 1-1/4 Plow Bolt	17
"	—	059727	3/8 x 1-1/2 Plow Bolt	17
"	—	051224	1/2 x 2-3/4 Carriage Bolt	17
Optional — Quick Disconnect Coupler				
		710700	1/2" Coupler (Pioneer #7000)	2
		710602	Body	—
		710604	Male Tip	—
		710606	Male Screw Tip	—
		710608	O-Ring	—
		710610	Dust Plug	—
		710612	Dust Cap	—
		710614	Double Breakaway Clamp	—
		710616	Single Breakaway Clamp	—
Front V Assembly				
		703600	V-Weldment	1
		403800	Front Smoother Blade	1
		059775	1/2 x 1 Plow Bolt	10
Orchard Attachment				
		410100	Assembly	1
		410101	Bumper	—
		410108	Moldboard	—
		410109	Bit	—
		059776	1/2 x 1-1/4 Plow Bolt	—
Slow Moving Vehicle Sign				
		600253	Steel Backed Decal	1
		600256	Pole Mounting Assembly	1

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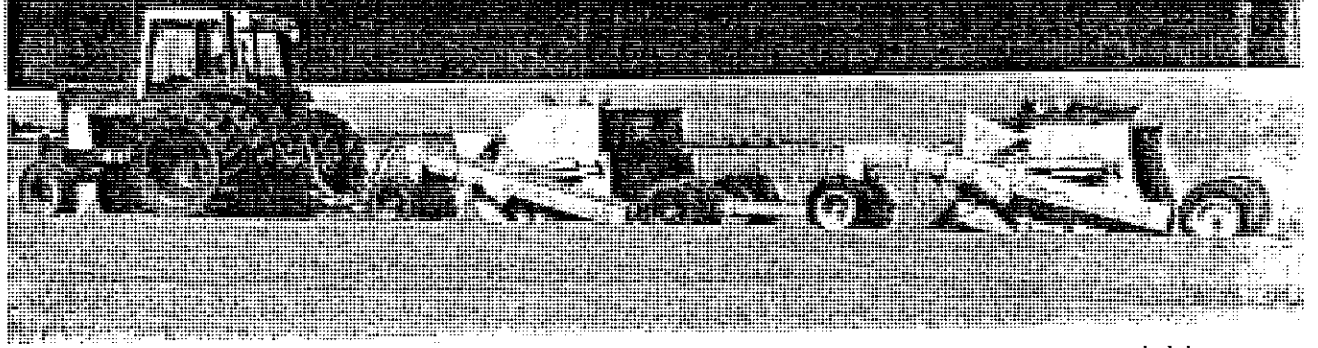

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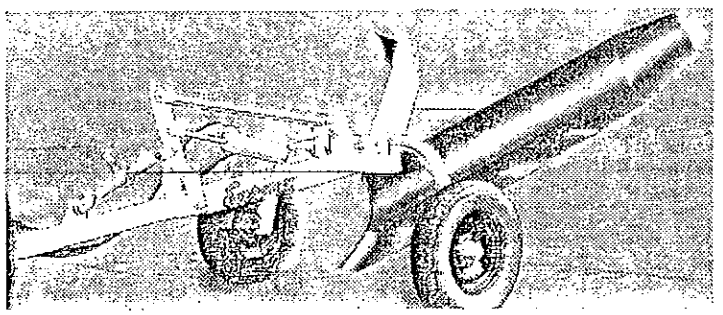

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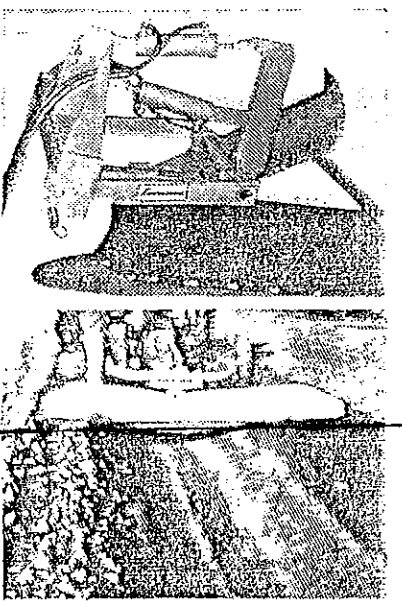

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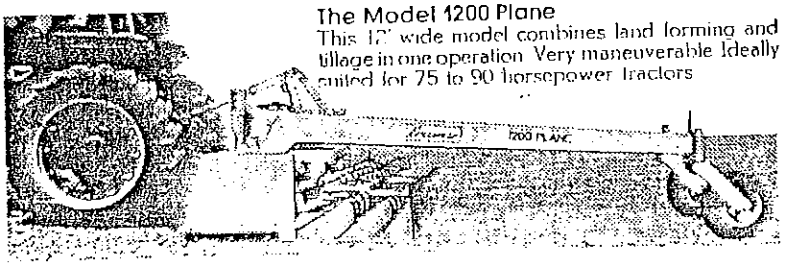

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