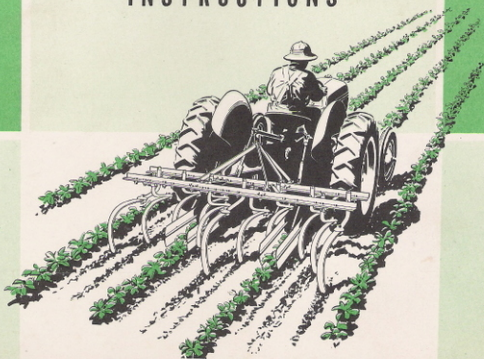




**SPRING TINE  
CULTIVATOR  
S-KO-20**



**OPERATING  
and ASSEMBLY  
INSTRUCTIONS**



# **A C C I D E N T P R E V E N T I O N**

Turn off tractor ignition switch and disengage power take-off before making repairs, service adjustments or lubricating the machine.

Operate tractor and implements at normal speeds, consistent with field conditions.

Observe all warning and precaution signs.

# FOREWORD

The Ferguson S-KO-20 Spring Tine Cultivator is designed to utilize the exclusive Ferguson System. It is quickly and easily attached, or detached. The Ferguson Finger-Tip Control System provides positive and easy control of the cultivator during all operations.

This manual contains illustrations and information concerning the operation, adjustments, service and maintenance of the Ferguson S-KO-20 Spring Tine Cultivator.

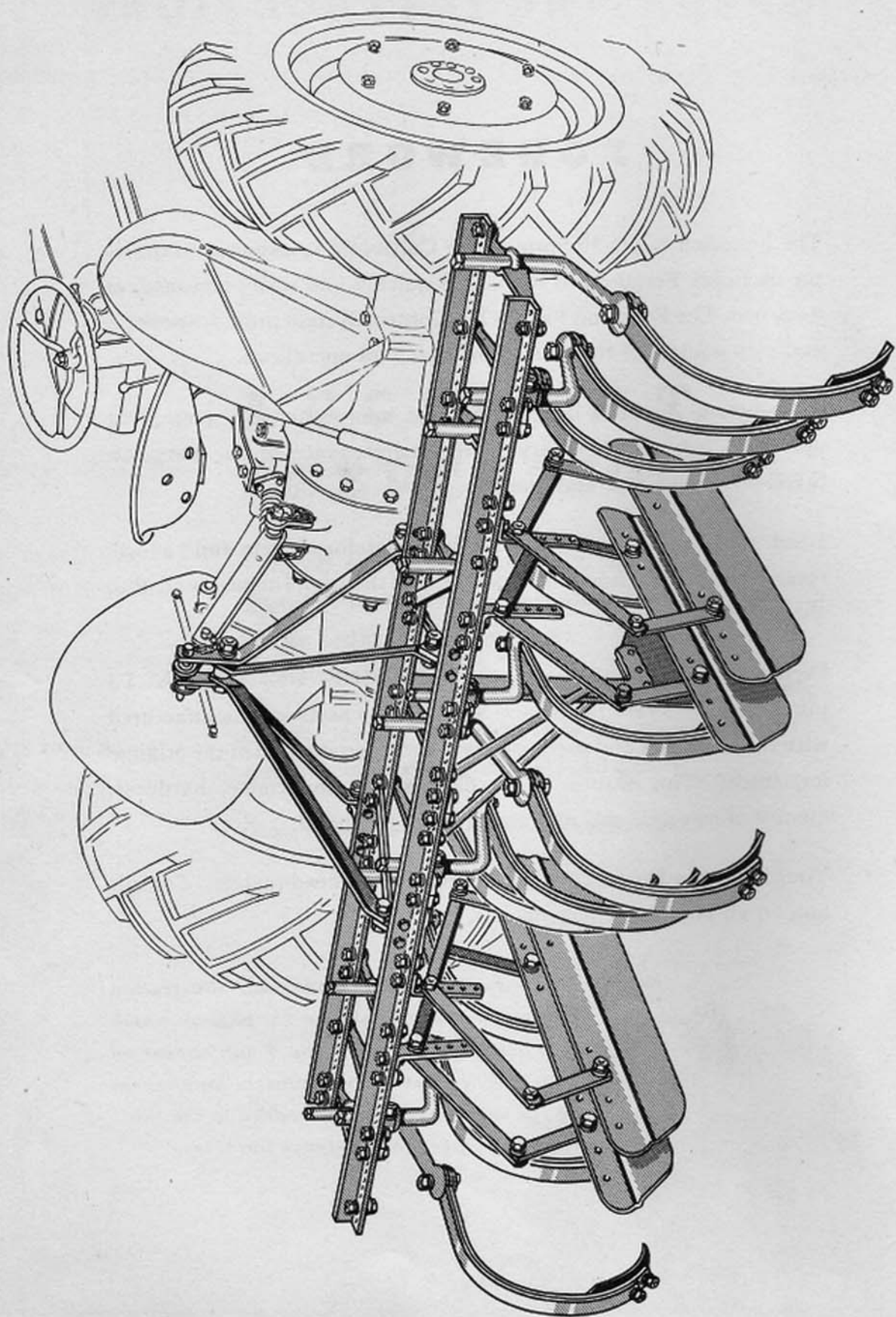
Read, study and follow the instructions contained herein and you will receive the satisfaction, the long life and the performance built into this cultivator.

Permit the installation of only **GENUINE REPAIR PARTS** purchased from your Ferguson Dealer. These parts are manufactured with the same care and precision exercised in production of the original implement. This assures exact dimensions, uniformity, hardness, quality of material and interchangeability of parts.

Your Ferguson Dealer is your farm equipment headquarters. Consult him on all your farming problems.

*NOTE: For convenience of the reader, each illustration carries the same number as the page on which it appears. For example, Fig. 9 will appear on Page 9. Where two or more illustrations appear on the same page, a suffix is added to the illustration number for reference purposes.*

FIG. 1



## OPERATING INSTRUCTIONS

### Preparing the Tractor

Adjust the front and rear tractor wheels to correspond to the width of rows being cultivated. Refer to the tractor manual for procedure in adjusting the wheels.

### Preparing Cultivator

The SKO-20 spring tine cultivator, Fig. 1, with 2½" reversible shovels, is used primarily for light cultivation. However, it is sometimes used for quack grass eradication in light soils.

Sweeps are available in 6" for the four front tines, 8" for the four intermediate tines, and 10" for the three rear tines, but must be used exclusively for light surface cultivation.

Adjust all shanks until each of the shovels will cultivate at the same depth.

Remove the paint from the shovels with a paint remover or lye water.

Adjust all shovels and tines to conform to the row spacing. They may be adjusted for two rows spaced from 36" to 42", four rows spaced from 16" to 20", two rows and three middles spaced 24" to 30", and for seven feet general field cultivation. Figs. 9 through 13 will illustrate the tine and shovel arrangement.

### Depth Control

The depth of cultivation is adjusted and controlled by the fingertip control lever.

Individual shovel adjustment may be obtained by moving the shank (stem) Fig. 2, in the shank holder (stem seat). It may be preferable to cultivate with the shank adjusted to the lower positions to obtain maximum clearance.

All shovels of corresponding position on each side of cultivator *must* work at the same depth. Uneven depth adjustment may

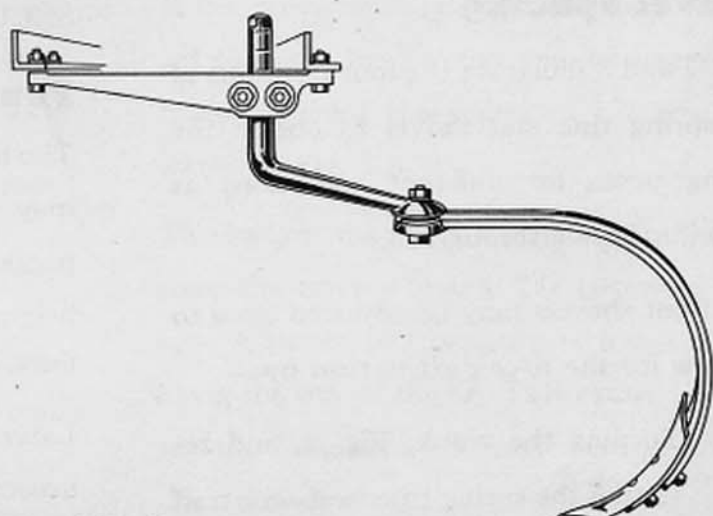
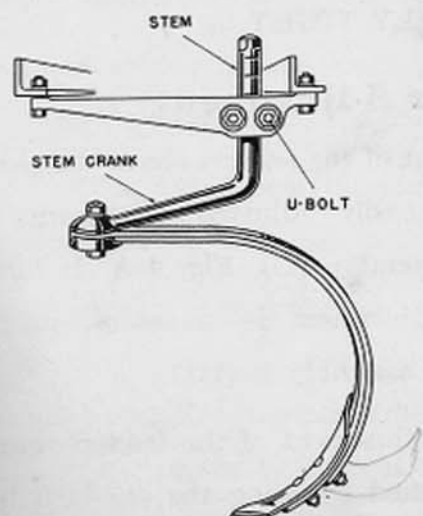


FIG. 2

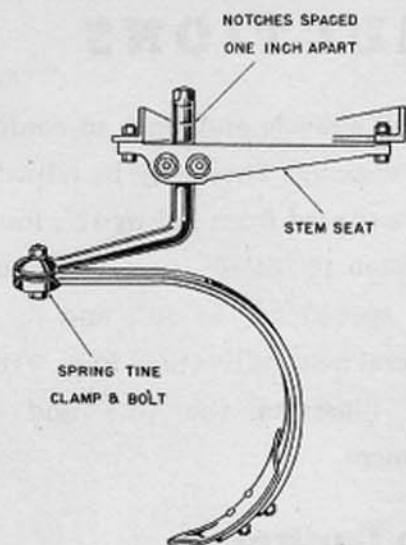
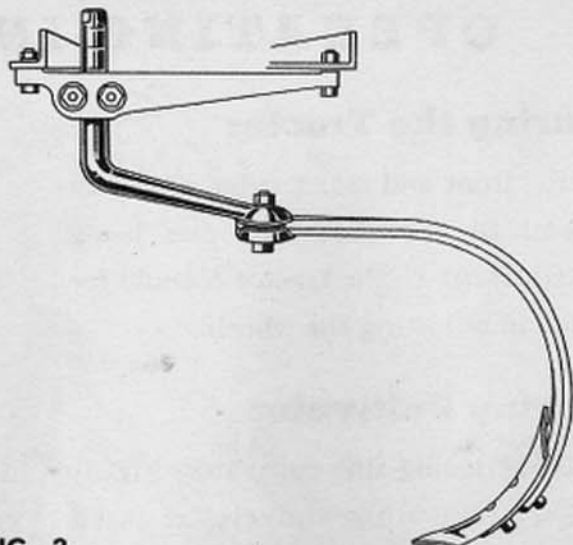


FIG. 3



cause uneven cultivation, side draft and poor control of the cultivator.

Notches on the shank, Fig. 3, aid in setting all the shovels alike.

The shovels may be adjusted easily by lowering the cultivator to a level surface, Fig. 1. Loosen the U-bolts, Fig. 2, and permit the shovels to set on the surface. Tighten the U-bolts securely.

## Shovel Spacing

Figs. 2 and 3 illustrate the four positions of the spring tine and shovel to obtain the arrangements for different conditions as shown in Figs. 9 through 13.

The front shovels may be adjusted close to the row for the *first cultivation* by:

- (1) Turning the crank, Fig. 2, and re-setting the spring tine so it will trail parallel with the row and

- (2) Adjusting the shank holders (stem seats) on the frame.

The balance of the shovels may be spaced uniformly for good, clean cultivation and trash clearance.

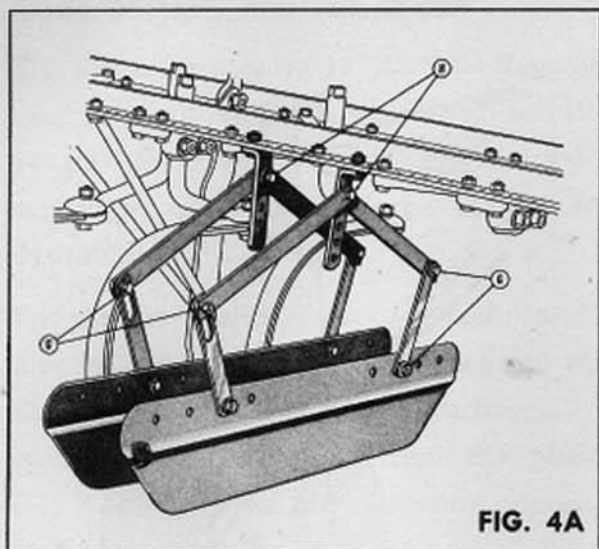
*For the second and following cultivations*, the front shovels may be set farther away from the row, to prevent damage to the plant roots.

**ALL CLAMP BOLTS, FIG. 3, MUST BE SECURELY TIGHT.**

## Fender Adjustment

The height of the fenders above the ground may be easily adjusted by moving the toggle assembly (G), Fig. 4-A. If further height adjustment is necessary, raise or lower the assembly at (H).

Lateral adjustment of the fenders may be accomplished by using the one-inch holes in the cultivator frame.



**FIG. 4A**

The fenders are used while the plant is small and should be adjusted so that the plant will not be covered by the dirt from the shovels, but at the same time permitting sufficient dirt to roll to the plant and cover all grass and weeds. Normally, the fenders are removed after the second cultivation.

## Steering Fin

The fin setting is important in obtaining good operation. It steers the cultivator and prevents interference with the row crop.

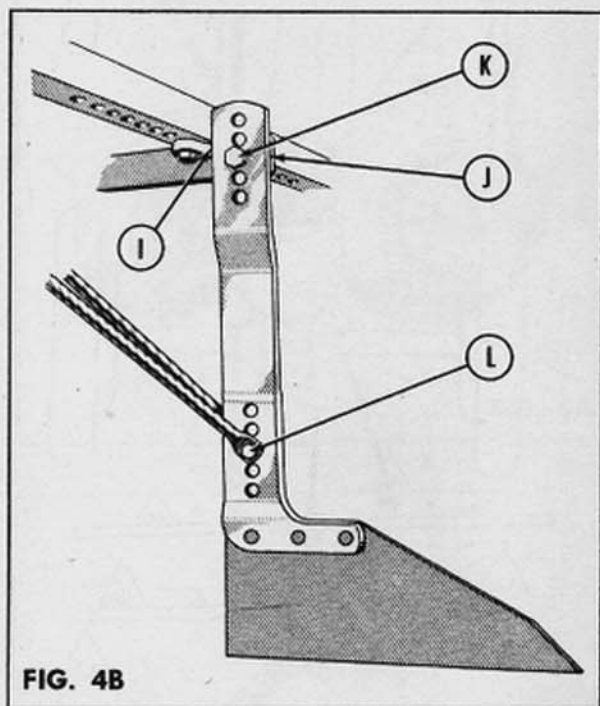
The normal setting for the depth of the fin is 3" below the shovel or sweep points.

In sandy or loose soils, or on hillsides, it may have to be set 1" to 2" deeper.

It is very important that the bolts "K" and "L", Fig. 4-B, be fitted properly and securely tightened. For example, if the top bolt is fitted in the center hole, as shown, the bottom bolt should also be in the center hole.

**IMPORTANT**—It is important that the

fin should be free to deflect at (L). Make sure that the spacer, through which this bolt passes, is always fitted and the bolt kept securely tight.



**FIG. 4B**

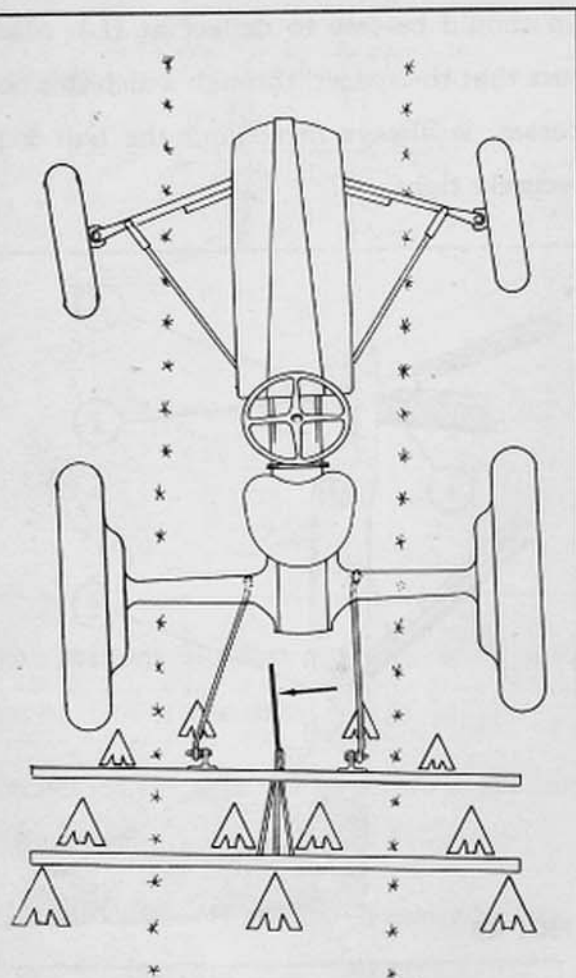
All bolts should be kept extremely tight to make the fin steer the implement correctly.

## HOW THE FIN STEERS

If the operator should allow the tractor to get too close to the crop row, he steers the tractor toward the center of the row, as shown in Fig. 5-A.

The instant the front wheels are turned to steer the tractor toward the center of the row, a heavy soil pressure is imposed all along the side of the fin. This causes the fin to deflect and steer the implement to follow the front wheels.

On hillsides the tendency of the implement



Diagram, representing the soil pressure against the fin when steering the tractor toward the left. The action is the same for the SKO and NKO Cultivators.

FIG. 5A

to fall away puts a soil pressure along the downhill side of the fin. This steers the implement up the hill and keeps it in the correct position.

## ROLLING FIN

The rolling fin, Fig. 5-B, is available and is recommended for trashy land. It is not recommended for rocky land. The adjustments described under the regular steering fin also apply to this type fin.

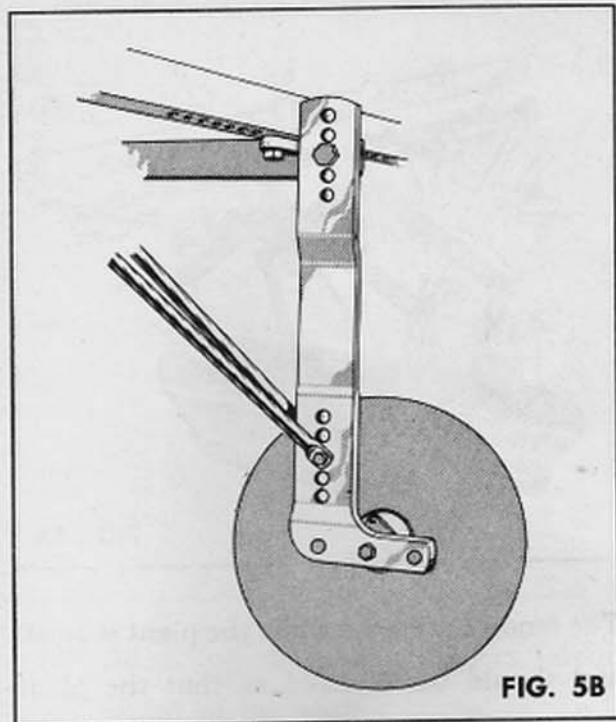


FIG. 5B

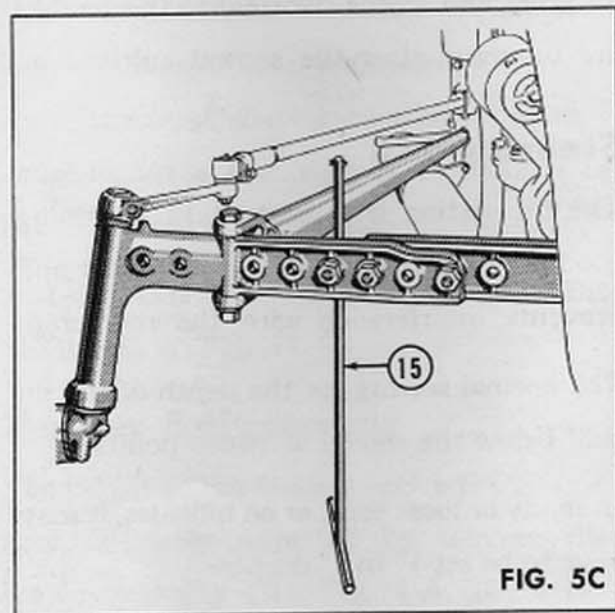


FIG. 5C

## Steering Pointer

The steering pointer (15), Fig. 5-C, should be set just above the row crop, and exactly centered between the two front shovels.



**Disc Hiller Attachment**

Fig. 6-A illustrates the 12" SKO-80 Regular, used normally for light cultivation, and the 15" SKO-84 Heavy Duty, as used for trashy conditions and where large ridges are desirable.

For the *first cultivation of small plants*, disc hillers aid in cultivating close to the plant, with the least root disturbance, by throwing the soil away from the plant. Fig. 6-B shows the hillers setting opposite each other and throwing out.

For the *second and subsequent cultivation*, the soil may be thrown toward the

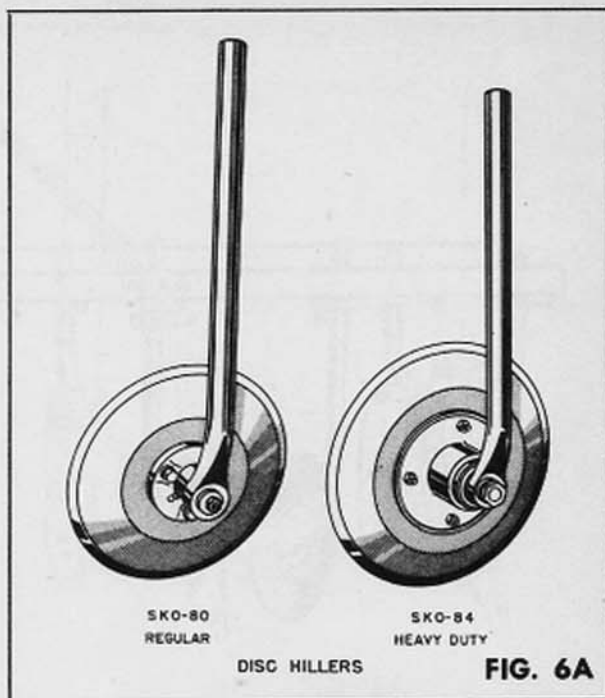


FIG. 6A

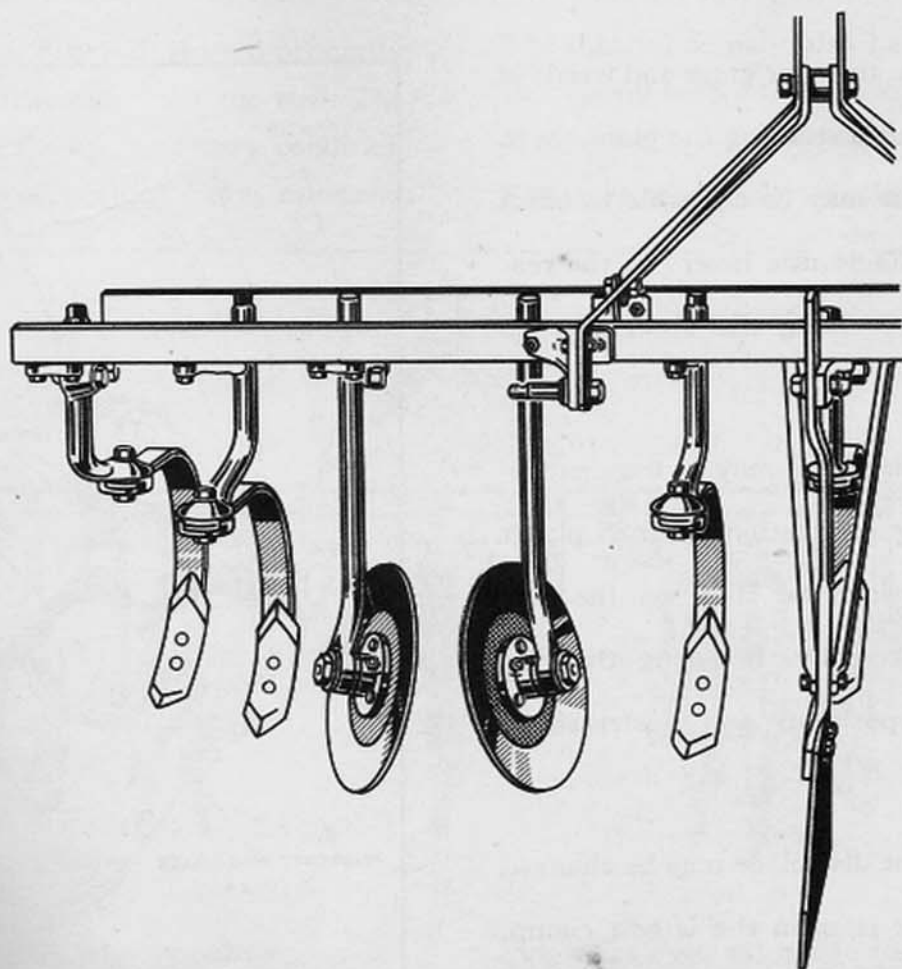


FIG. 6B

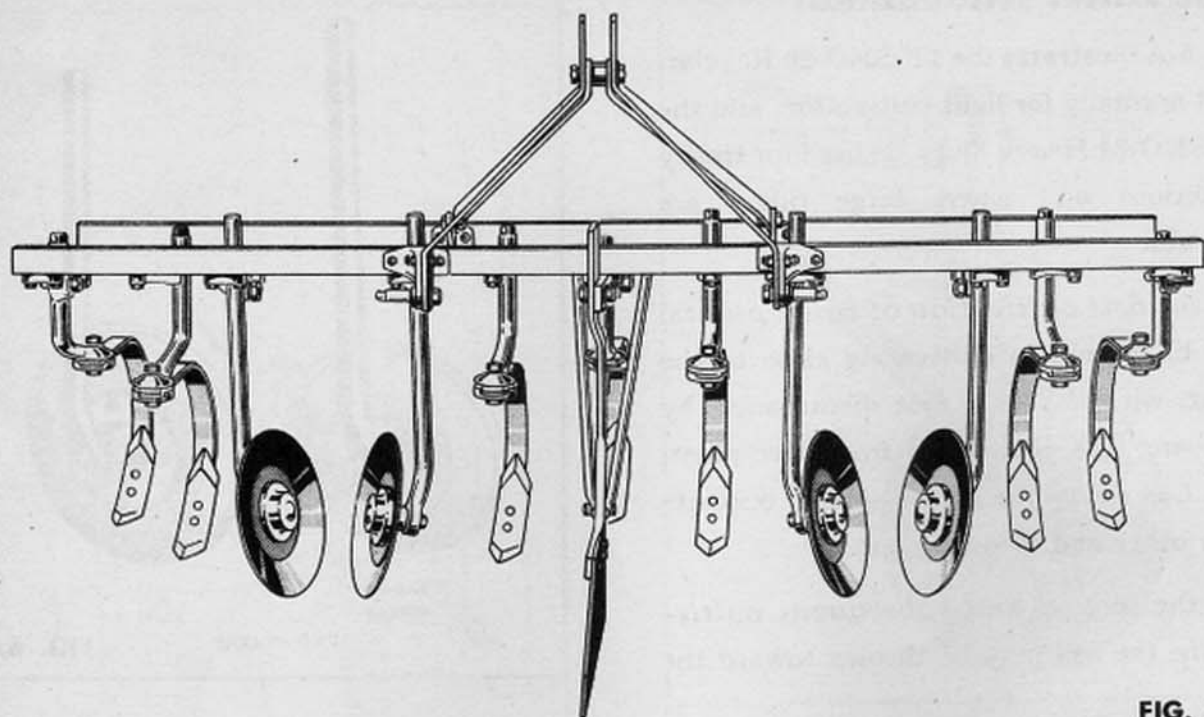


FIG. 7A

plant, Fig. 7-A, to cover grass and weeds in the row without disturbing the plant roots. For clearance it may be desirable to offset one of the SKO-84 disc hillers to the rear Fig. 14, by reversing the stem seat on the frame.

The SKO-80 disc hiller may be used particularly for close cultivation of small plants by first reversing the stem on the disc spindle and secondly, reversing the disc blade. These positions are illustrated in Fig. 8-A.

The angle of the disc blade may be changed by turning the stem in the U-bolt clamp, Fig. 2.

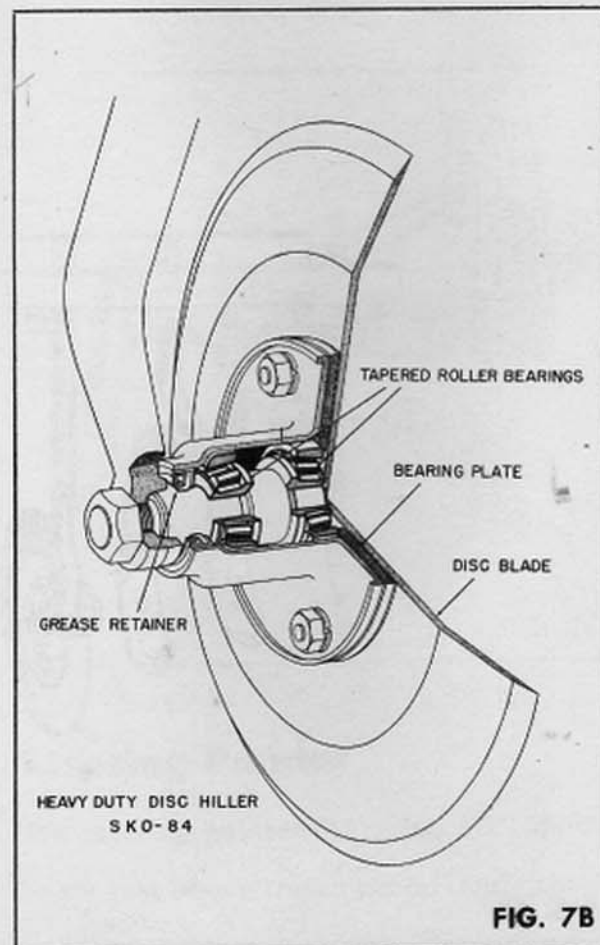


FIG. 7B

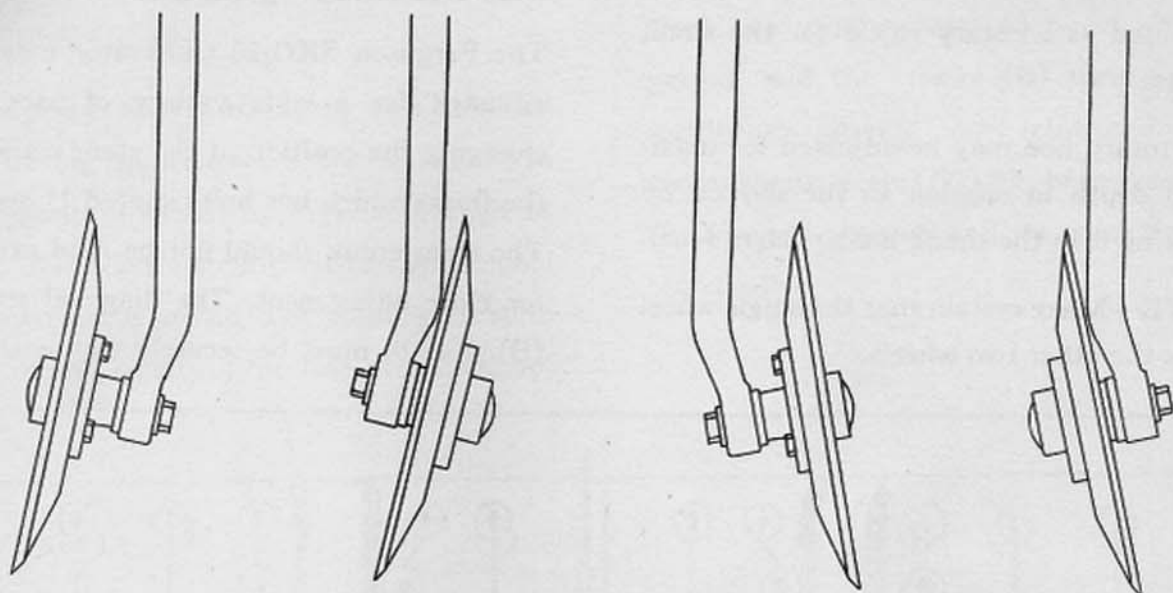


FIG. 8A

### Rotary Hoe Attachment

The rotary hoe, Fig. 8-B, is used primarily for the first cultivation over the row. The rotary hoe breaks up the crusty condition that sometimes occurs after heavy rains and

hot sunshine, which tends to bake the soil. The rotary hoe may also be used for blind cultivation before the plants come through the ground.

For extremely trashy conditions the rotary

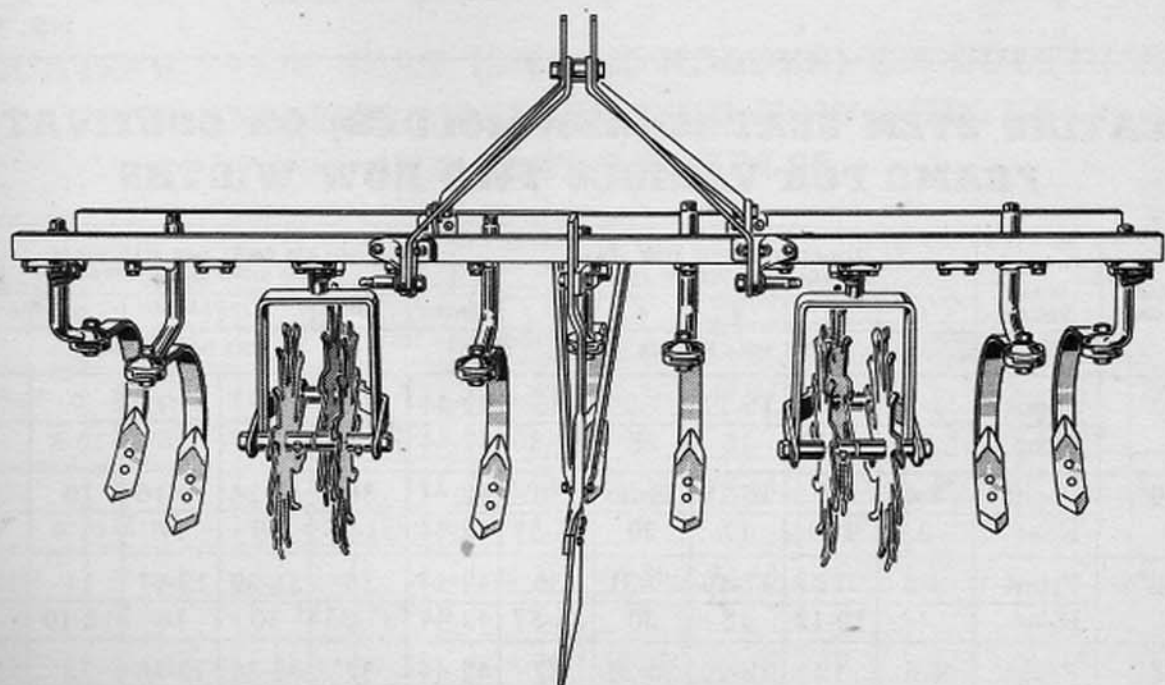


FIG. 8B

hoe wheels may be reversed on the spindle and used as a rotary shield for the small plants.

The rotary hoe may be adjusted for maximum depth in relation to the shovels by lowering it in the shank holder (stem seat).

**NOTE**—Make certain that the single wheel trails the other two wheels.

## Shovel Arrangement

The Ferguson SKO-20 Cultivator may be adjusted for a wide variety of uses by changing the position of the stem seats on the frame which has holes spaced 1" apart. The stem crank should not be used except for close adjustment. The diagonal struts (B), Fig. 9, must be securely tightened to

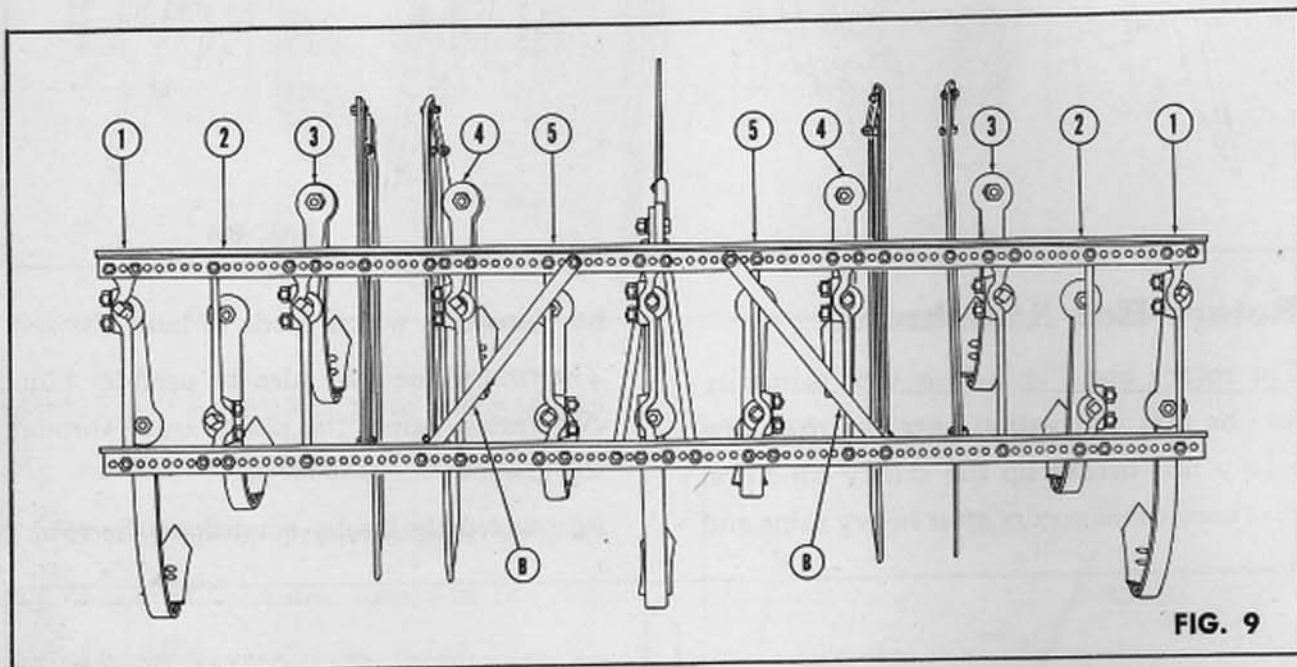


FIG. 9

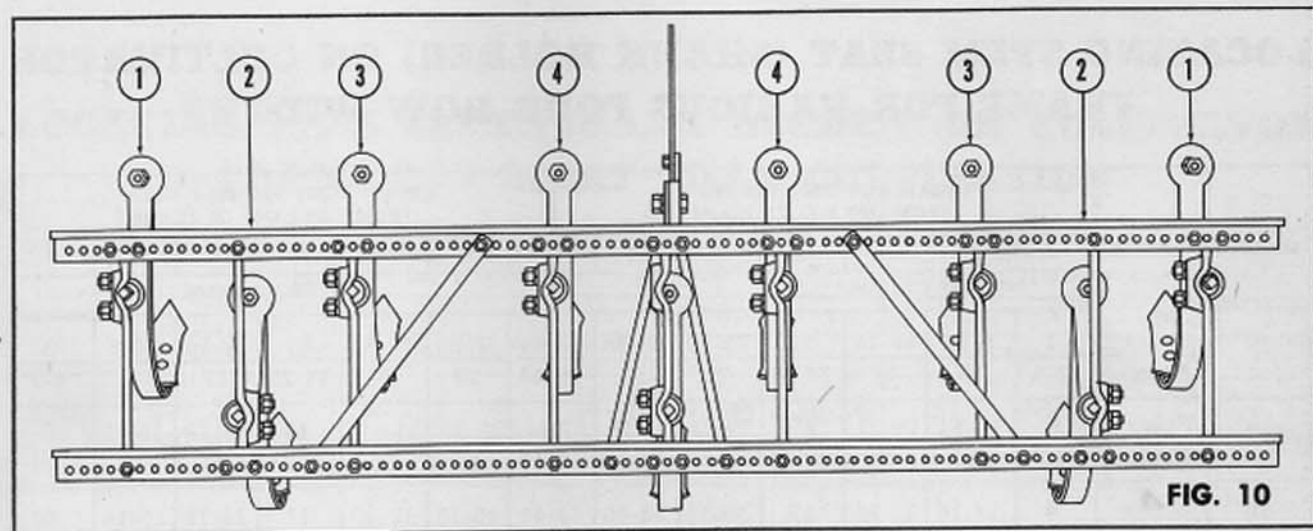
## LOCATING STEM SEAT (SHANK HOLDER) ON CULTIVATOR FRAME FOR VARIOUS TWO ROW WIDTHS

ROW SPACING	FRAME MEMBER	LOCATE LEFT SIDE STEM SEATS FROM LEFT END OF FRAME					LOCATE RIGHT SIDE STEM SEATS FROM RIGHT END OF FRAME					
		1	2	3	4	5	CENTER	5	4	3	2	1
		BOLT HOLE NUMBER					BOLT HOLE NUMBER					
42"	Front	1-3	9	15-17	27-29	35	42-44	35	29-27	17-15	9	3-1
	Rear	2	8-10	16	28	34-36	42-44	36-34	28	16	10-8	2
40"	Front	2-4	10	16-18	28-30	36	42-44	36	30-28	18-16	10	4-2
	Rear	3	9-11	17	29	35-37	42-44	37-35	29	17	11-9	3
38"	Front	3-5	11	17-19	29-31	36	42-44	36	31-29	19-17	11	5-3
	Rear	4	10-12	18	30	35-37	42-44	37-35	30	18	12-10	4
36"	Front	4-6	12	18-20	30-32	37	42-44	37	32-30	20-18	12	6-4
	Rear	5	11-13	19	31	36-38	42-44	38-36	31	19	13-11	5

help keep the cultivator and fin in correct alignment.

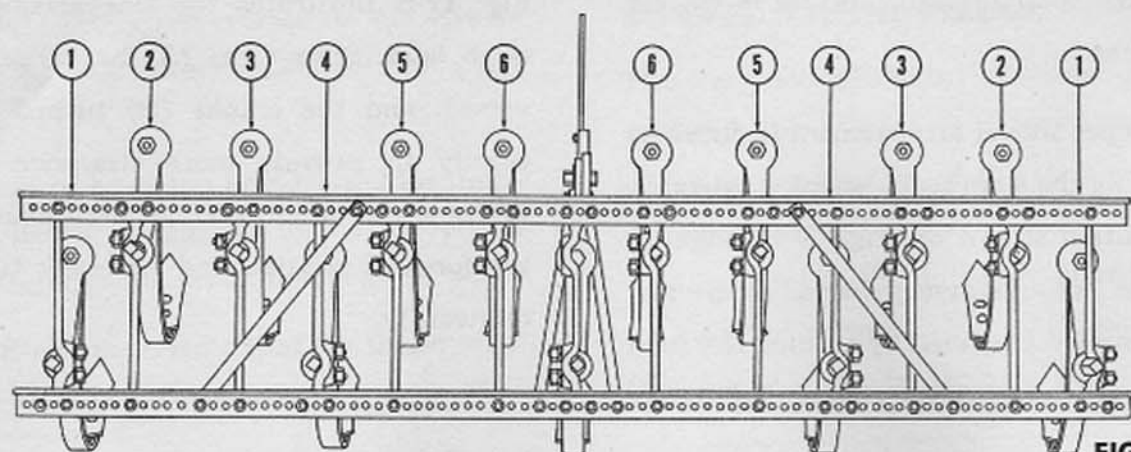
The proper shovel arrangement is obtained by setting the stem seats (shank holders) in the position shown by Figs. 9 through 13 and the accompanying charts. Additional adjustment is provided by turning the stem crank and resetting the tine at the clamp, Fig. 3.

Fig. 12-B illustrates the tine setting for trash land. Stem seats (A) have been reversed, and the cranks (B) turned rearwardly to provide more clearance. The center shank (stem) (D) has been placed in the forward position and its crank turned rearwardly.



## LOCATING STEM SEAT (SHANK HOLDER) ON CULTIVATOR FRAME FOR VARIOUS TWO ROW WIDTHS AND THREE MIDDLES

ROW SPACING	FRAME MEMBER	LOCATE LEFT SIDE STEM SEATS FROM LEFT END OF FRAME					LOCATE RIGHT SIDE STEM SEATS FROM RIGHT END OF FRAME				
		1	2	3	4	CENTER	4	3	2	1	
		BOLT HOLE NUMBER					BOLT HOLE NUMBER				
30"	Front	4-6	13	20-22	34-36	42-44	36-34	22-20	13	6-4	
	Rear	5	12-14	21	35		35	21	14-12	5	
28"	Front	7-9	15	22-24	35-37	42-44	37-35	24-22	15	9-7	
	Rear	8	14-16	23	36		36	23	16-14	8	
26"	Front	10-12	17	23-25	36-38	42-44	38-36	25-23	17	12-10	
	Rear	11	16-18	24	37		37	24	18-16	11	
24"	Front	13-15	19	24-26	37-39	42-44	39-37	26-24	19	15-13	
	Rear	14	18-20	25	38		38	25	20-18	14	

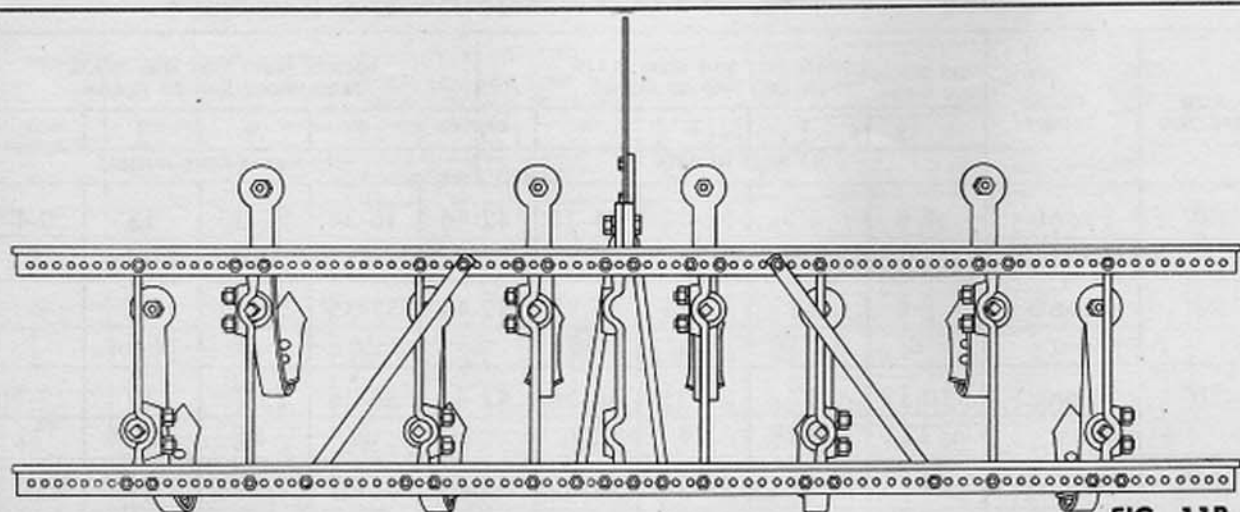


**FIG. 11A**

## LOCATING STEM SEAT (SHANK HOLDER) ON CULTIVATOR FRAME FOR VARIOUS FOUR ROW WIDTHS

ROW SPACING	FRAME MEMBER	LOCATE LEFT SIDE STEM SEATS FROM LEFT END OF FRAME						LOCATE RIGHT SIDE STEM SEATS FROM RIGHT END OF FRAME						
		1	2	3	4	5	6	CENTER	6	5	4	3	2	1
		BOLT HOLE NUMBER						BOLT HOLE NUMBER						
20"	Front	3	8-10	16-18	23	28-30	36-38	42-44	38-36	30-28	23	18-16	10-8	3
	Rear	2-4	9	17	22-24	29	37	42-44	37	29	24-22	17	9	4-2
18"	Front	6	11-13	19-21	25	29-31	37-39	42-44	39-37	31-29	25	21-19	13-11	6
	Rear	5-7	12	20	24-26	30	38	42-44	38	30	26-24	20	12	7-5
16"	Front	9	14-16	22-24	27	30-32	38-40	42-44	40-38	32-30	27	24-22	16-14	9
	Rear	8-10	15	23	26-28	31	39	42-44	39	31	28-26	23	15	10-8

**NOTE:** Refer to Fig. 11-B for alternate method of tine arrangement. The center tine, No. 1 and No. 4 tines have been removed, while No. 2 and 5 have the stem seats reversed.



**FIG. 11B**

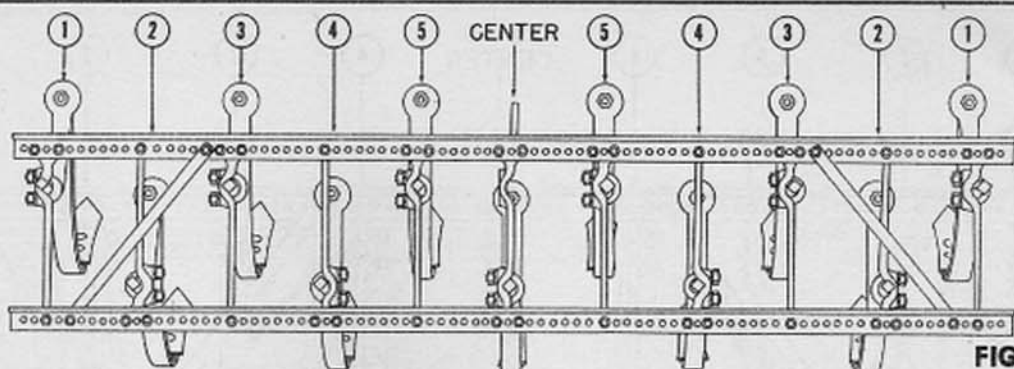


FIG. 12A

## LOCATING STEM SEAT (SHANK HOLDER) ON CULTIVATOR FRAME FOR LIGHT FIELD CULTIVATION

FRAME MEMBER	LOCATE LEFT SIDE STEM SEATS FROM LEFT END OF FRAME					LOCATE RIGHT SIDE STEM SEATS FROM RIGHT END OF FRAME					
	1	2	3	4	5	CENTER	5	4	3	2	1
	BOLT HOLE NUMBER					BOLT HOLE NUMBER					
Front	2-4	11	18-20	27	34-36	42-44	36-34	27	20-18	11	4-2
Rear	3	10-12	19	26-28	35	42-44	35	28-26	19	12-10	3

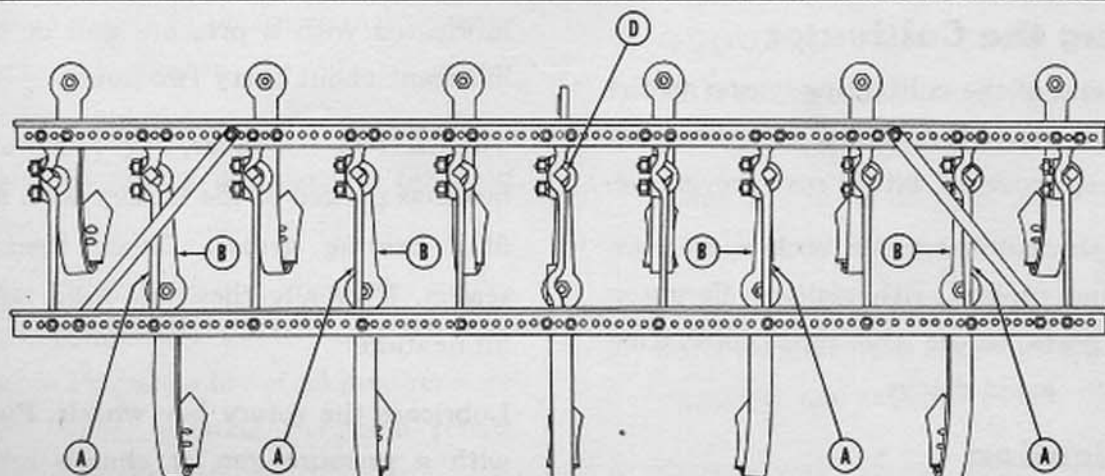
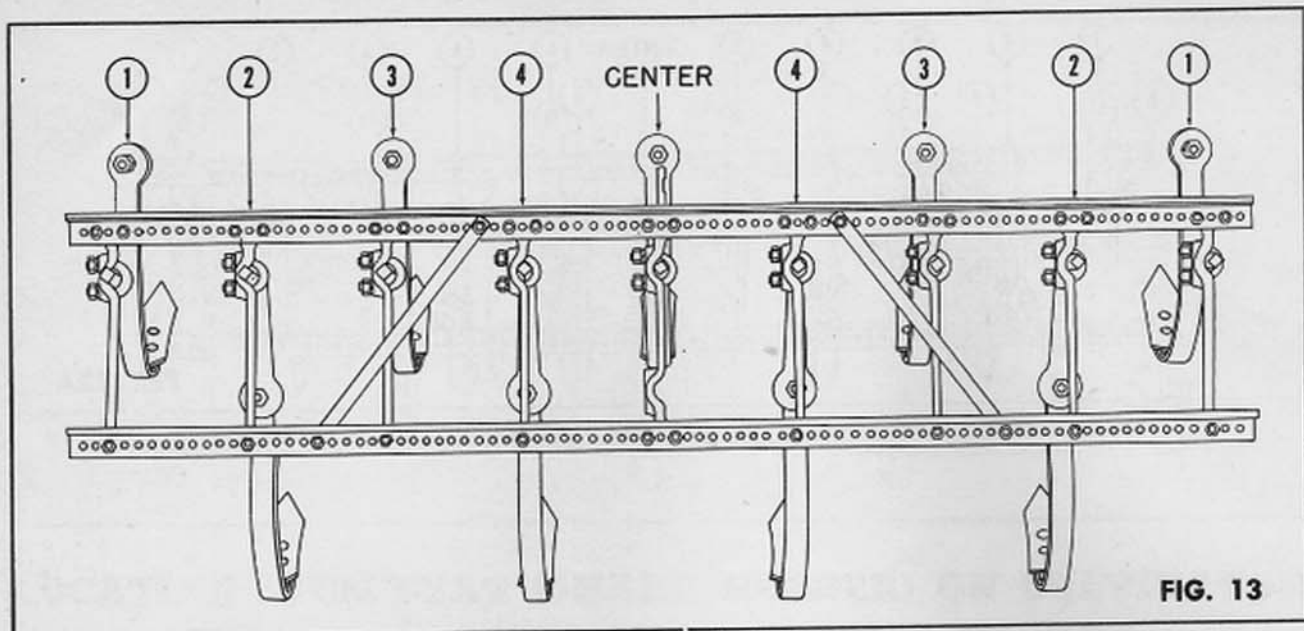


FIG. 12B



**FIG. 13**

## LOCATING STEM SEAT (SHANK HOLDER) ON CULTIVATOR FRAME FOR EXTREMELY TRASHY FIELD CULTIVATION

FRAME MEMBER	LOCATE LEFT SIDE STEM SEATS FROM LEFT END OF FRAME					LOCATE RIGHT SIDE STEM SEATS FROM RIGHT END OF FRAME				
	1	2	3	4	CENTER	4	3	2	1	
	BOLT HOLE NUMBER					BOLT HOLE NUMBER				
Front	2-4	12-14	22-24	31-33	42-44	33-31	24-22	14-12	4-2	
Rear	3	13	23	32		32	23	13	3	

### Storing the Cultivator

At the end of the cultivating season all dirt should be removed from the cultivator and the sweeps covered with a rust preventive.

Check the cultivator for broken or worn parts and replace with genuine Ferguson repair parts before the next cultivating season to avoid delays.

### Lubrication

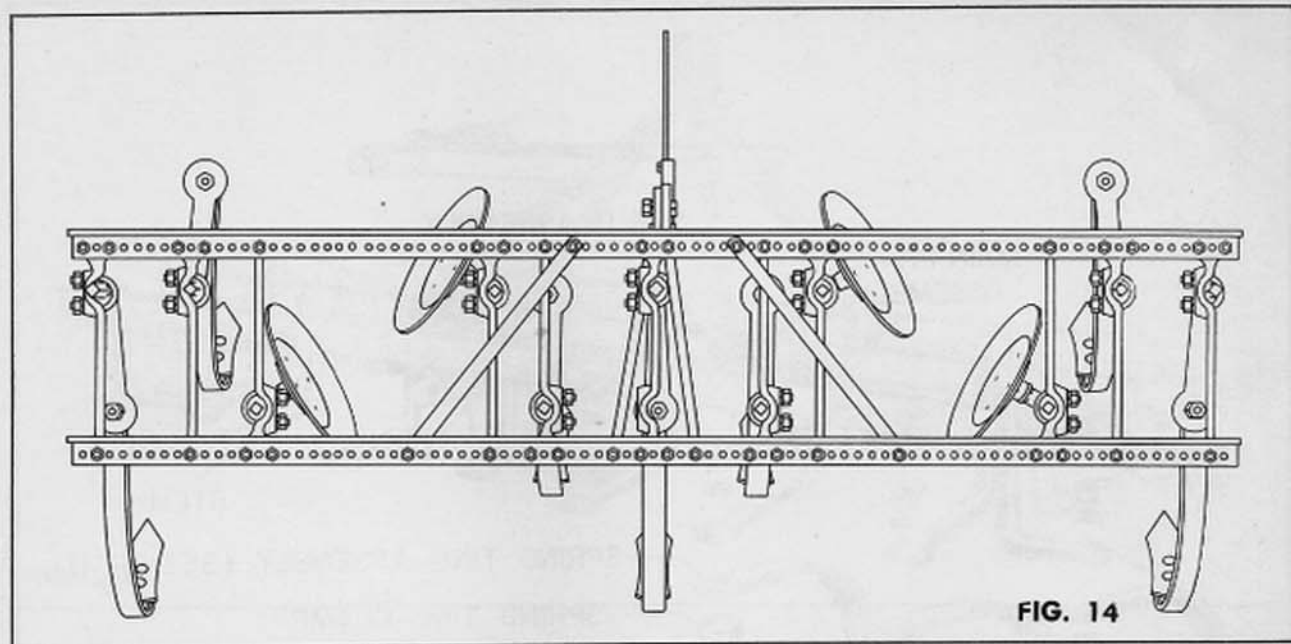
The SKO-80 disc hiller, Fig. 6-A, should be

lubricated with a pressure gun or chassis lubricant about every two hours.

The SKO-84 disc hiller, Fig. 7-B, have the bearings packed at the factory with a short fibre bearing grease. Check them each season. Normally they will need no other lubrication.

Lubricate the rotary hoe wheels, Fig. 8-B, with a pressure gun or chassis lubricant every two hours.





**GENERAL ARRANGEMENT FOR OFFSETTING THE HEAVY DUTY SKO-84 DISC HILLER.**

Fig. 14 illustrates how the disc hillers may be offset to provide more clearance. Vari-

ations from this general setting may be made to meet various conditions and usage.

**FOR GREATER SATISFACTION**

1. Read and study these instructions carefully.
2. Operate at normal working speeds. Excessive speeds will increase maintenance costs and shorten the life of power operated equipment.
3. Maintain proper adjustments for good cultivation.
4. Clean thoroughly and check the implement completely at the end of each season. Prepare a list of all maintenance items, order genuine Ferguson repair parts immediately and apply a rust preventive to all soil working parts be-

- fore storing the implement during the out of use period.
5. Replace broken or worn parts with **GENUINE FERGUSON REPAIR PARTS** purchased from your Ferguson Dealer, Do this immediately while these items are fresh in your mind and not wait until the beginning of a new season. A delay in replacing broken or worn parts may result in excessive wear, work stoppages and reduced yields.
6. Consult your nearest authorized Ferguson Dealer with your special problems.

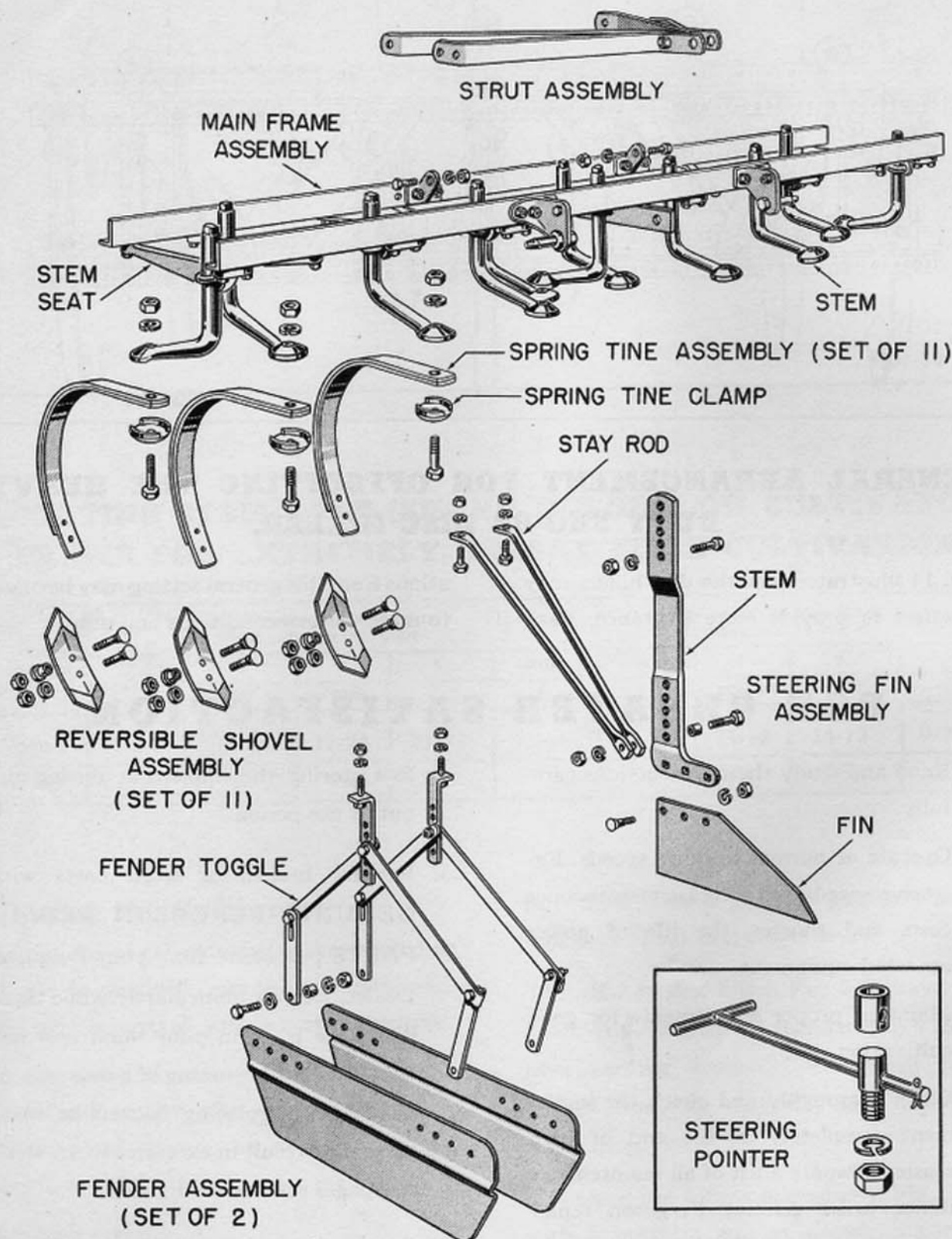


FIG. 15

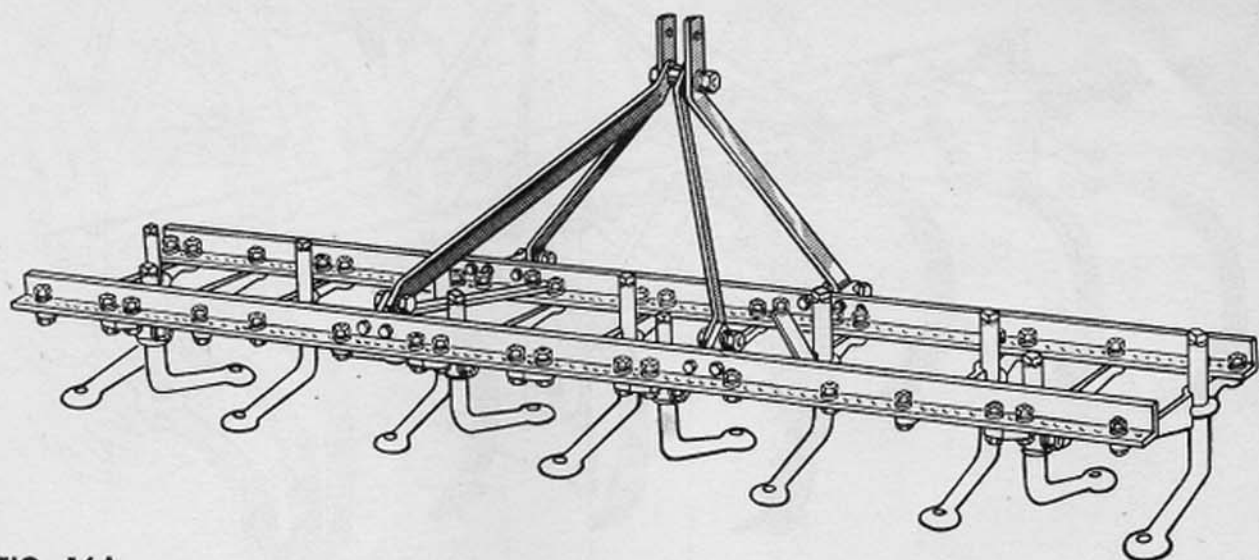


FIG. 16A

## ASSEMBLY INSTRUCTIONS

Remove all bundling wires and contents of the carton.

Check each item with Fig. 15 and the packing slip to make certain the shipment is complete. Eleven (11) spring tines with shovels are furnished as regular equipment.

1. Assemble the struts to the main frame,

Fig. 16-A, with the short struts forward and the link pin clip on the right side.

2. Back the tractor into position until the tractor connecting links align with the link pins on the cultivator.

3. Attach the connecting links and raise the cultivator with the fingertip control

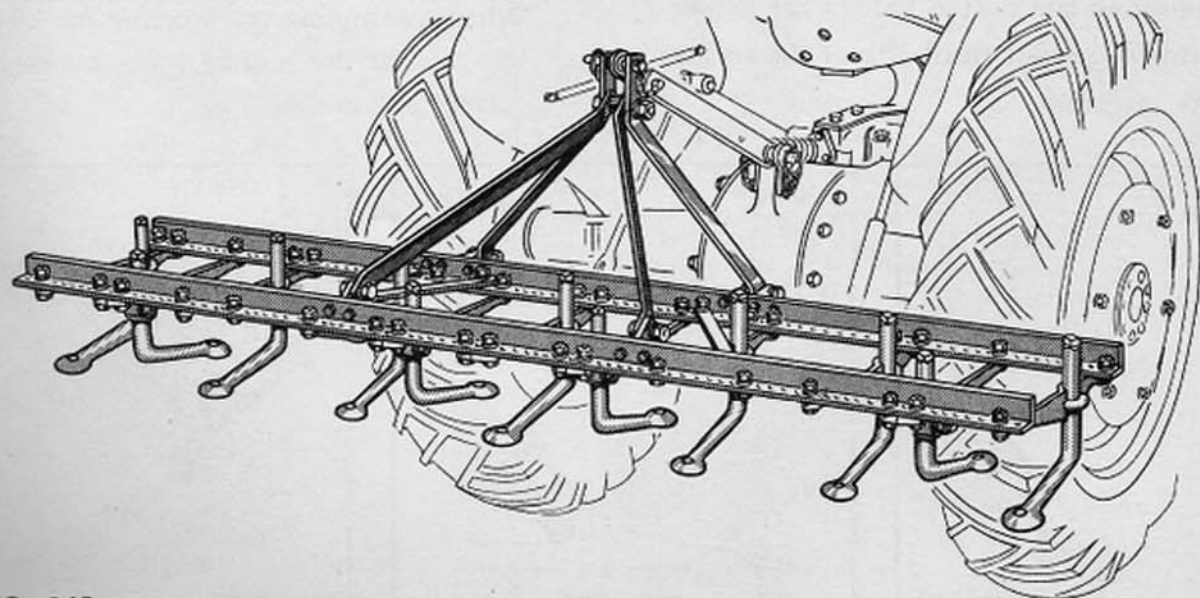
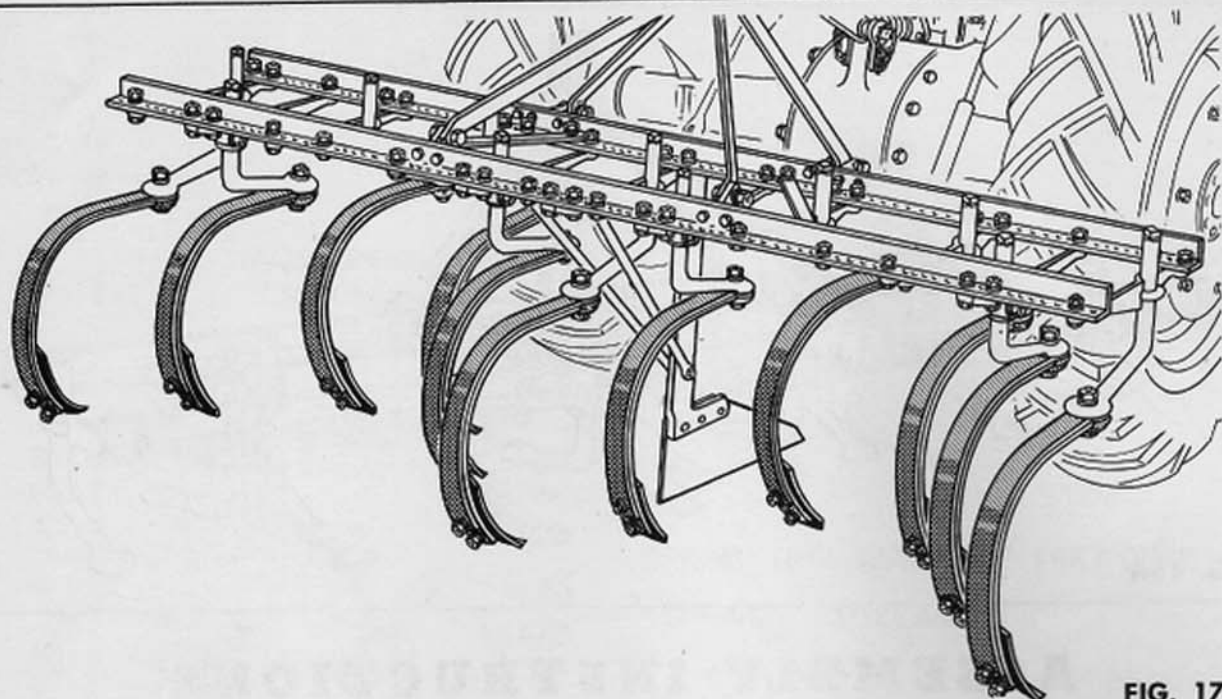


FIG. 16B



**FIG. 17A**

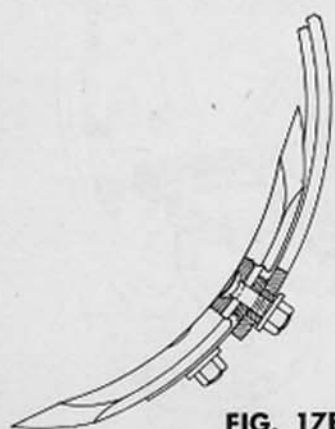
lever to transport position, Fig. 16-B.

3. Assemble the spring tine, Fig. 17-A, to the shank (stem) with the short helper spring on the back side.
4. Assemble the reversible shovels, Fig. 17B to the spring tine. Place the long bolt through the top hole. The spacer must be used in the slotted hole of the helper spring to permit flexibility of the spring tine assembly.

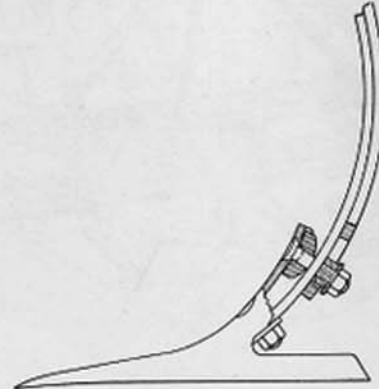
When sweeps are used, assemble them as shown in Fig. 17-C. Note that the large spacer must be used between the shovel and spring tine.

5. Assemble the steering fin and attach to the cultivator, as shown in Fig. 17-D. Rolling fin is assembled as shown in Fig. 18-A.

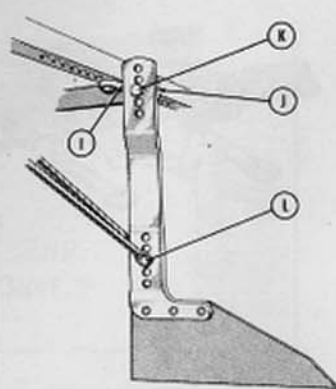
When assembling the steering fin, clean the face of the joining parts to assure correct alignment.



**FIG. 17B**



**FIG. 17C**



**FIG. 17D**

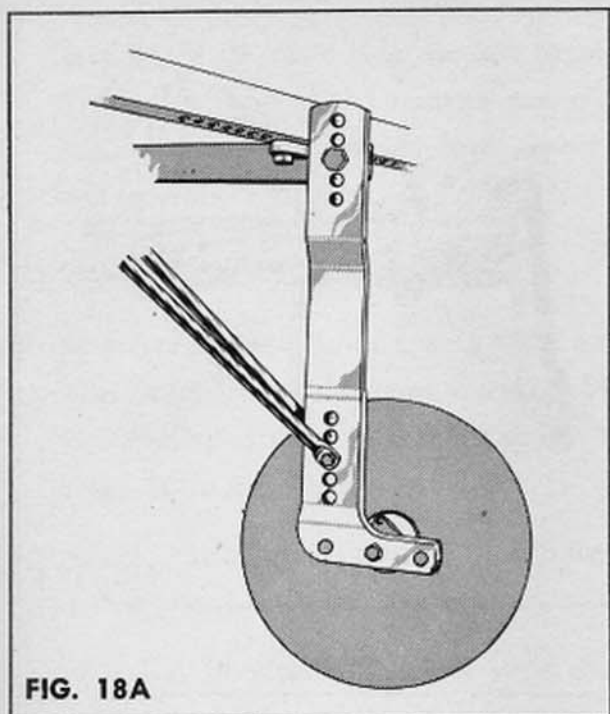


FIG. 18A

The steering fin braces (stay rods) are assembled as shown in Fig. 18-B. When bolting the braces at (L) to the fin, make certain the spacer (See Fig. 15) is in place and then bolt securely.

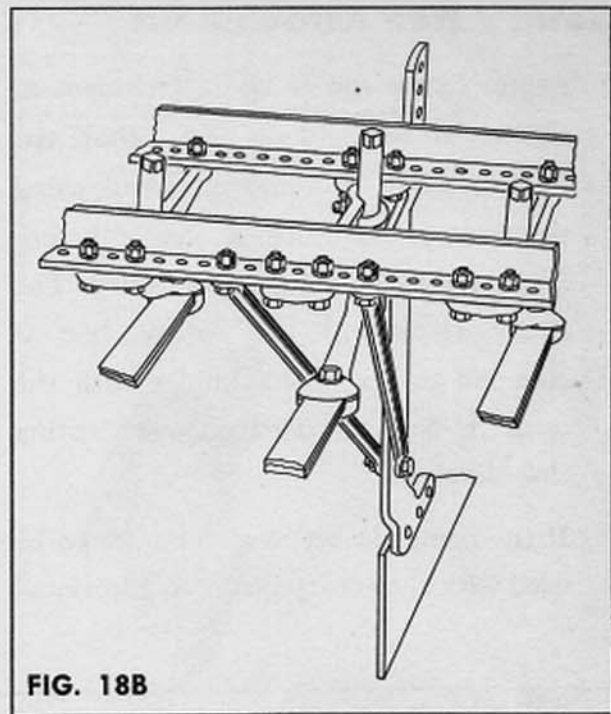


FIG. 18B

6. Assemble the fenders and attach to the cultivator, as shown in Fig. 18-C. It will be necessary to change the frame braces when attaching the fenders.
7. Attach steering pointer, as shown in Fig. 19-A.

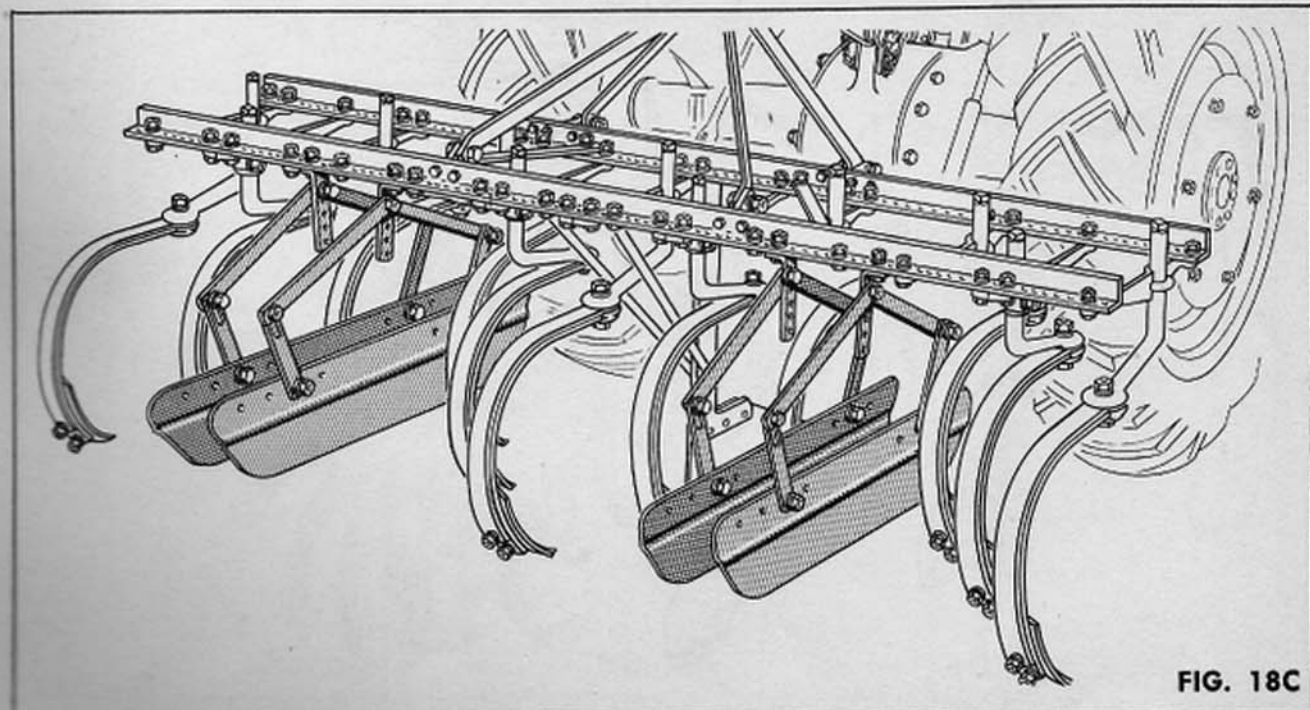


FIG. 18C

**Rotary Hoe Attachment**

8. Assemble the rotary hoe attachment as shown in Fig. 19-B. Note that the fenders must be removed when using the rotary hoe and a shank holder (stem seat) assembled into position. The shank (stem) of the rotary hoe is clamped to the shank holder with the same U-bolt as used for the spring tine shank.

If the complete set of shovels are to be used with the rotary hoe, two additional

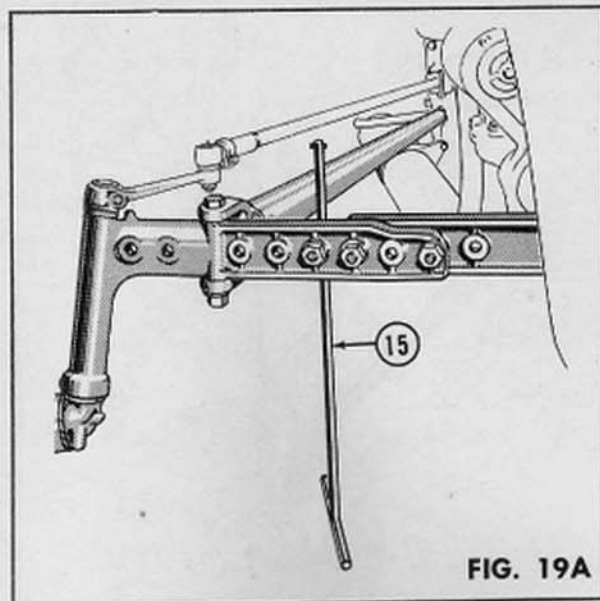


FIG. 19A

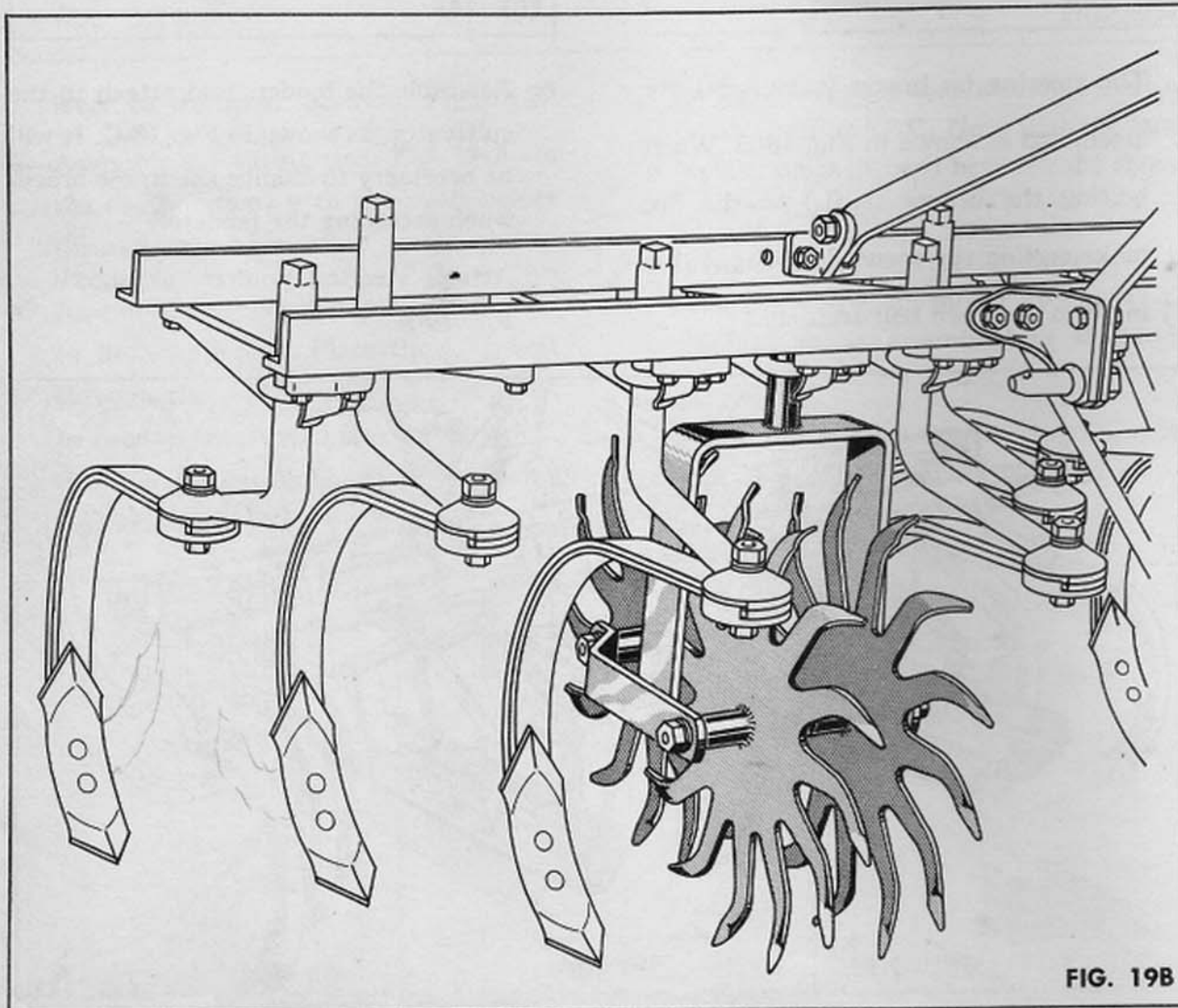


FIG. 19B

shank holders (stem seats) must be purchased for mounting the hoe shank. Otherwise, one of the holders which is not used may be moved into position for the rotary wheel.

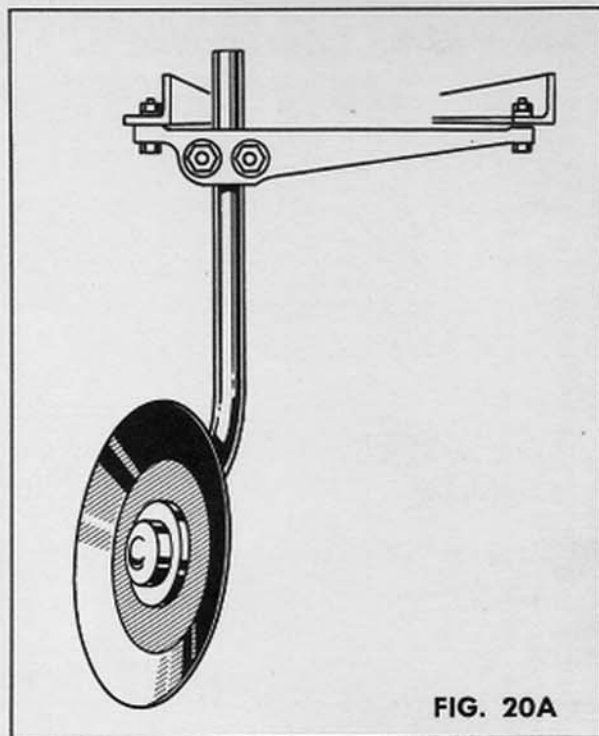


FIG. 20A

### Disc Hiller Attachments

- Remove the two front spring tines and shanks (stems) on each row and assemble the disc hiller attachments, as shown in Figs. 20-A and 20-B.

Adjust the shanks so that all four hillers will work at the same depth.

Fig. 6-A illustrates the two type disc hillers available.

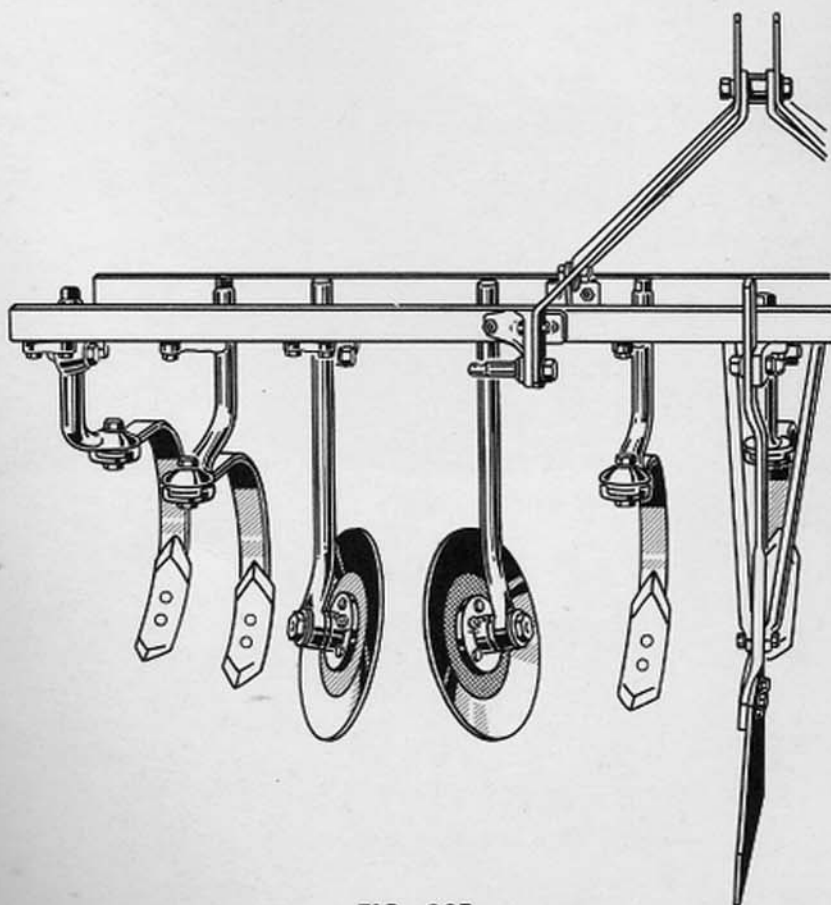


FIG. 20B

See Your Dealer for Information on the



## THE FERGUSON LINE

### Of Implements Includes

Single-Bottom Plows

Double-Bottom Plows

Disc Plows

Disc Terracers

Blade Terracers

Middlebusters

Lister Planters

Tillers

Single Disc Harrows

Tandem Disc Harrows

Spring Tooth Harrows

Row-Crop Cultivators

Spring-Tine Cultivators

Four-Row Weeders

Farm Mowers

Heavy Duty Mowers

Wood Bros. Corn Pickers

Transport Boxes

Sweep Rakes

Feed Grinders

Two-Way Plows

Cordwood Saws

¾Ton 2 Wheel Wagon



*The*  
**FERGUSON SYSTEM**