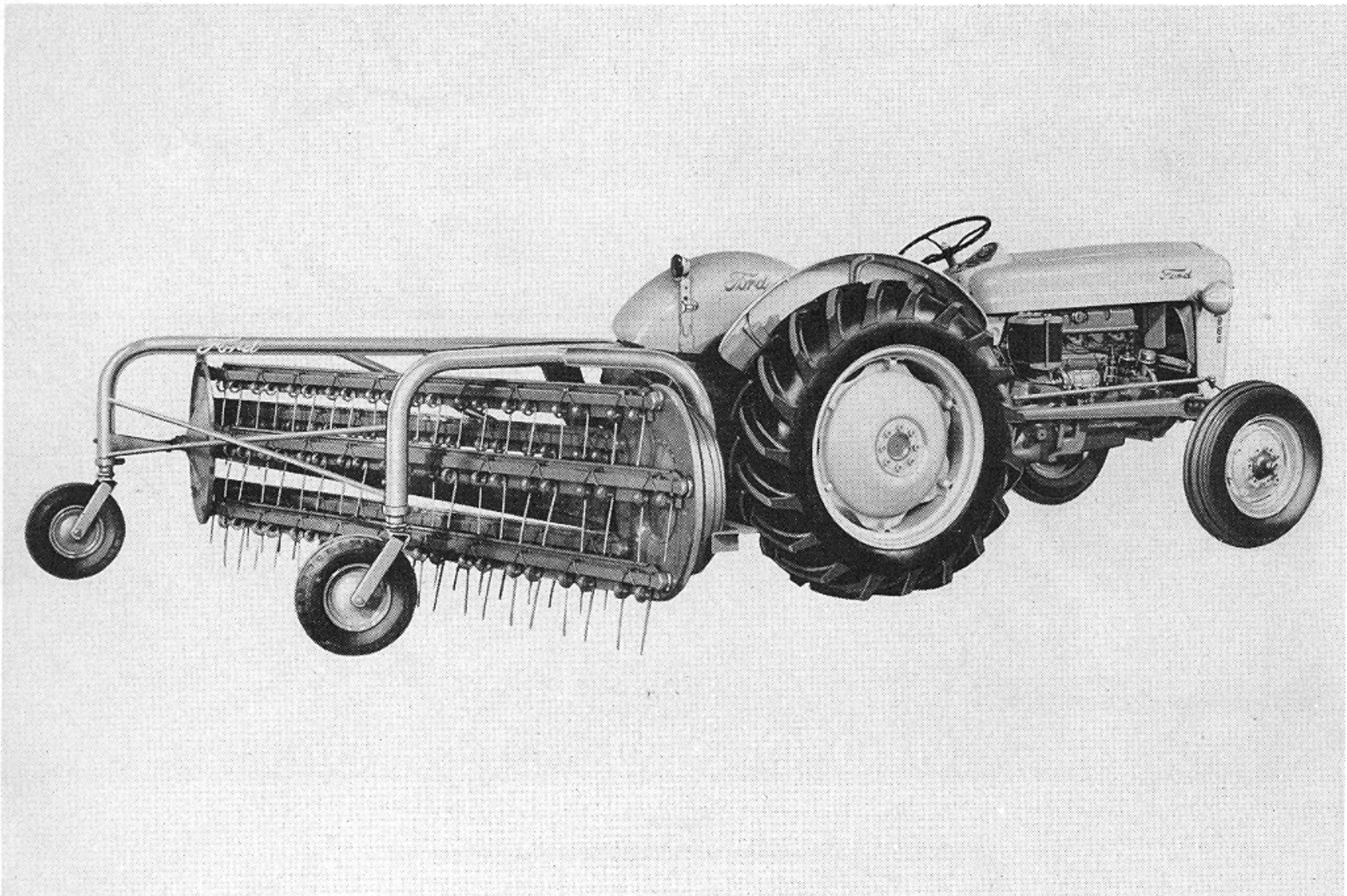




FORD
MOUNTED SIDE DELIVERY RAKE
MODEL 14-72



ASSEMBLY AND OPERATING INSTRUCTIONS



The Ford Mounted Side Delivery Rake, Model 14-72, is an efficient, high capacity machine for windrowing or turning hay crops, grain crops, straw, seed crops, etc. The rugged, tubular main frame absorbs shocks and strain, adds stability and firmly supports the reel in operating position.

The power driven rotary stripper uniformly removes hay or other material from the rake teeth. The stripper also prevents interference with teeth that may become bent from striking obstructions in the field.

This fully mounted rake features such advancements as full castoring gauge wheels with rake height adjust-

ments, easily replaceable teeth and a folding parking stand. A two speed drive makes it possible to operate the tractor in high gear when the crop is light and in a lower gear for heavy crops.

The Ford Mounted Side Delivery Rake can be quickly attached to any model Ford Tractor and is easily transported by means of the tractor hydraulic system.

This manual contains information on the assembly, lubrication and operation of your new Ford Mounted Side Delivery Rake. Read it carefully, study the illustrations and keep it available for ready reference.

Prepared by

TRACTOR AND IMPLEMENT DIVISION

Ford Motor Company

BIRMINGHAM, MICHIGAN

www.fordtractorclub.com

SIDE DELIVERY RAKE

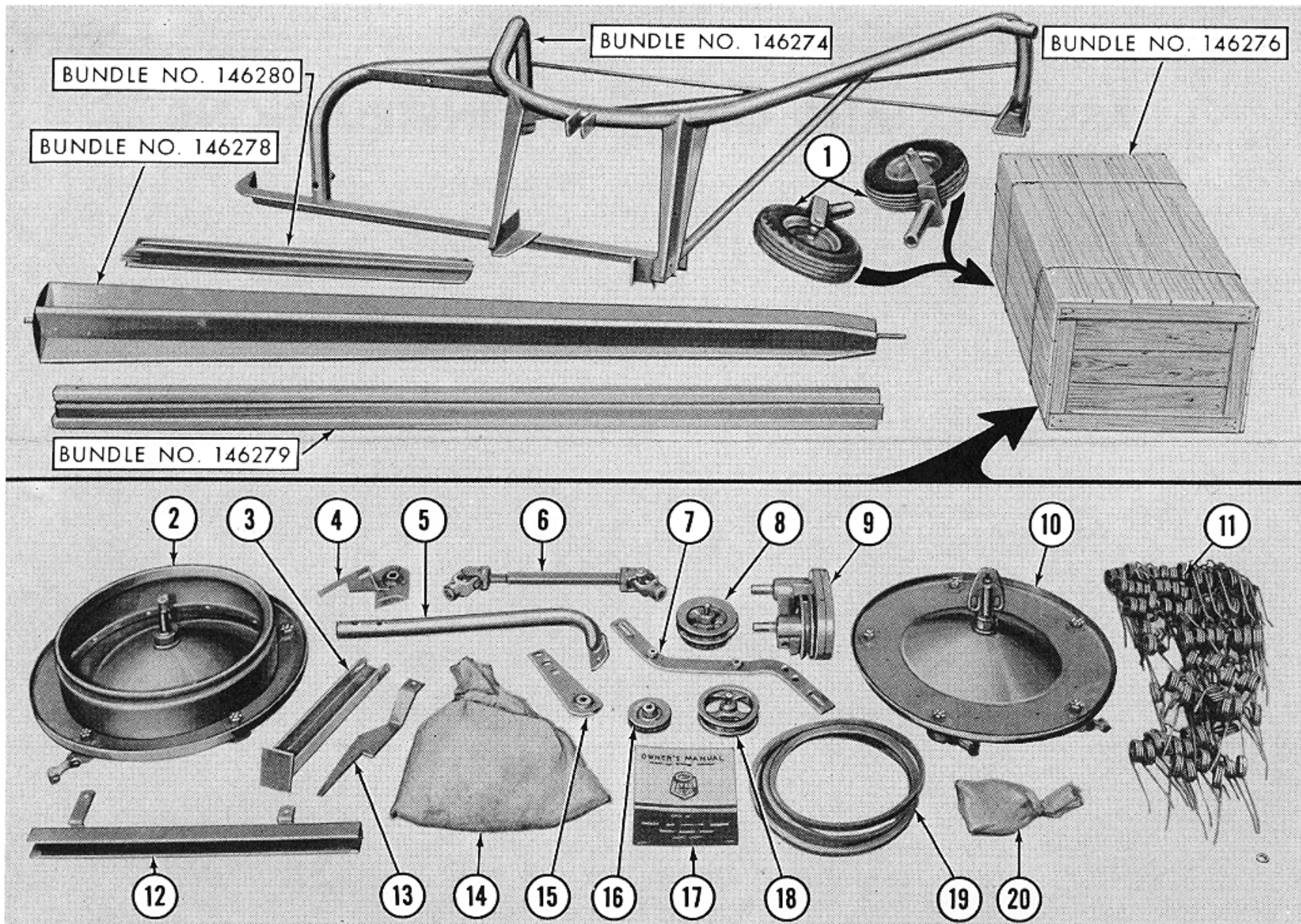


Figure 1
Shipment Breakdown

SHIPPING INFORMATION

The Ford Mounted Side Delivery Rake, Model 14-72, is shipped in five bundles as shown in Figure 1. Check the shipment against the following list and Figure 1, to be sure all parts are received.

Bundle No.	Description
146274	One Main Frame Assembly
146280	Five R.H. and Five L.H. Tooth Shields
146278	One Stripper and one R.H. and one L.H. Spindle Assembly
146279	Five Tooth Bars
146276	One Wire Bound Box of Parts

Key	Description	Qty.
1.	Gauge Wheel Assemblies	2
2.	R.H. Reel Assembly	1
3.	Stand Assembly	1
4.	R.H. Stripper Bearing, Bracket and Belt Guard Assembly	1
5.	L.H. Stripper Bearing Bracket Support.	1
6.	Universal Shaft Assembly	1
7.	Idler Hanger Assembly	1
8.	Idler and Stripper Drive Sheave	1
9.	Main Drive Assembly	1
10.	L.H. Reel Assembly	1
11.	Spring Teeth	50
12.	Main Drive Belt Shield	1
13.	Rear Chain Shield	1

The wire bound box of parts, Bundle No. 146276, contains the following:

SIDE DELIVERY RAKE

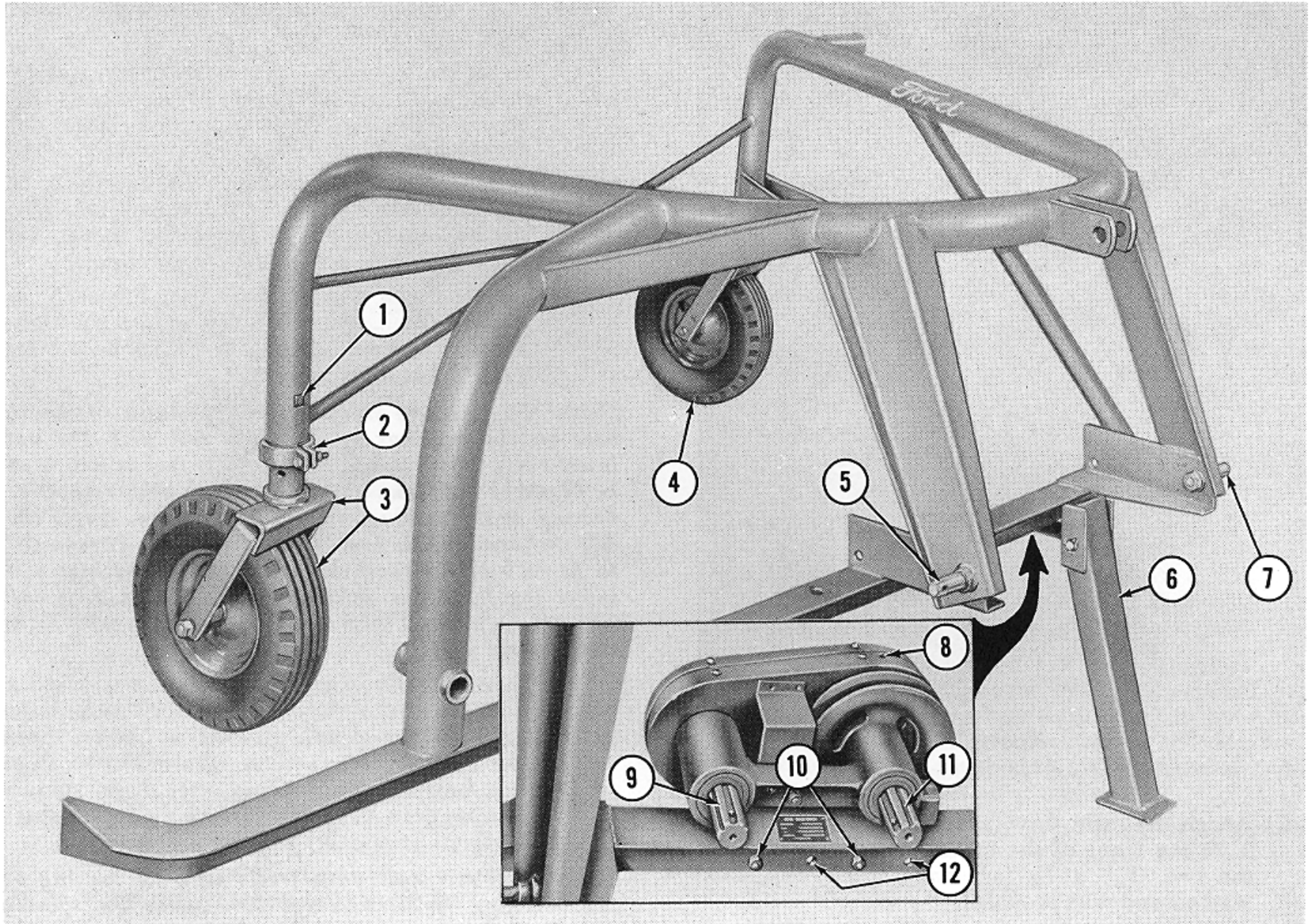


Figure 2
Gauge Wheels and Main Drive Assembly Installed

Key	Description	Qty.
14.	Burlap Bag of Parts	1
15.	L.H. Stripper Bearing and Bracket Assembly	1
16.	Stripper Drive Sheave	1
17.	Envelope containing Assembly and Operating Manual	1
18.	Idler Sheave	1
19.	V-Belts (Main Drive and Stripper Drive)	2
20.	Cloth Bag of Nuts, Bolts, Pins, etc....	1

ASSEMBLY PROCEDURE

NOTE: Assembly of the Ford Mounted Side Delivery Rake is the responsibility of the Ford Tractor and Implement Dealer. The implement should be delivered completely assembled and ready for use. The following instructions are provided in case of need.

1. Cut and remove bundle wires and lay out all the parts to facilitate assembly.
2. Attach the jack stand (6), Figure 2, to the front

- of the main frame with a $4\frac{1}{4}$ " pin and two cotter pins as shown.
3. Install the hitch pins (5) and (7), Figure 2, and secure with the lockwashers and nuts provided. Tighten securely.
4. Install the right gauge wheel (3), Figure 2, as follows:
 - a. Insert the gauge wheel spindle in the main frame.
 - b. Place a square head bolt (1), Figure 2, through the main frame and the top hole in the gauge wheel spindle and secure with a lockwasher and nut.
 - c. Install a $\frac{7}{16}$ " x 2" bolt through the ends of the gauge wheel collar (2), Figure 2, and secure with the lockwasher and nut provided.
5. Attach the left gauge wheel (4), Figure 2, to the main frame in the same manner described above and inflate the two gauge wheel tires to 30 pounds pressure.

SIDE DELIVERY RAKE

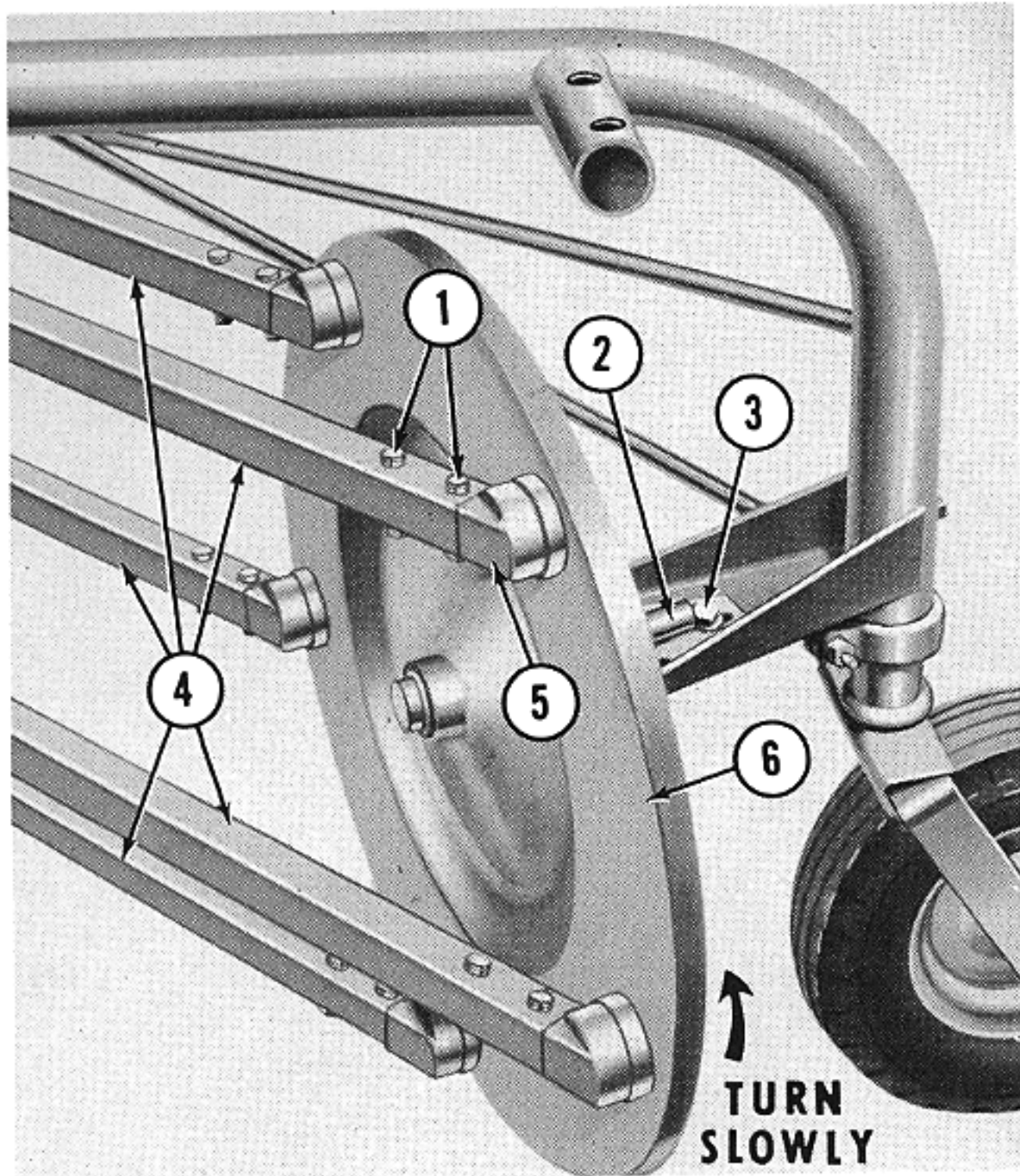


Figure 3
Left Reel with Tooth Bars Attached

6. Attach the main drive assembly, see insert Figure 2, to the front of the main frame as shown with the two $\frac{7}{16}$ " x $1\frac{5}{8}$ " carriage bolts (10), lockwashers and nuts provided.

NOTE: Extra mounting holes (12), Figure 2, are provided to remove slack when the drive belt becomes stretched.

7. Assemble the reel on the main frame as follows:
 - a. Place the large V-belt (2), Figure 7, on the right reel (1) and insert the reel spindle through the main frame as shown at (11). Secure with the lockwasher and large nut provided.
 - b. Bolt the left reel assembly (6), Figure 3, to the main frame with the $\frac{1}{2}$ " x $1\frac{1}{2}$ " bolt (3), flat washer, lockwasher and nut as shown. Do not tighten the nut securely at this time.
 - c. Attach the five tooth bars (4), Figure 3, to each of the bearing housings (5) on the right and left reel with two $\frac{3}{8}$ " x 2" hex head bolts (1), lockwashers and nuts.

NOTE: To facilitate this assembly, position the tooth bars on the bearings in the right reel first. Do not insert bolts. Then, slowly turn the left reel as indicated in Figure 3 and start each tooth bar on its respective bearing as the bearings come into position. Angle the left reel and spindle bracket (2), Figure 3, as required to fit each of the tooth bars (4) on the bearings and insert the tooth bar retaining bolts (1) at each end of each tooth bar. Tighten the bolts securely with lockwashers and nuts.

- d. Place a flat washer on each of the two $\frac{1}{2}$ " x $1\frac{1}{2}$ " bolts (7), Figure 6, and insert the bolts through the spindle bracket as shown. Spin the reel assembly several revolutions to align the bearings and secure the three spindle bracket bolts (7) and (8) with the lockwashers and nuts provided.

NOTE: The reel must turn freely with no loading of the bearings. If the bearings bind when the spindle bracket bolts are tightened, release tension on the bolts and eliminate the cause before attempting to use the rake.

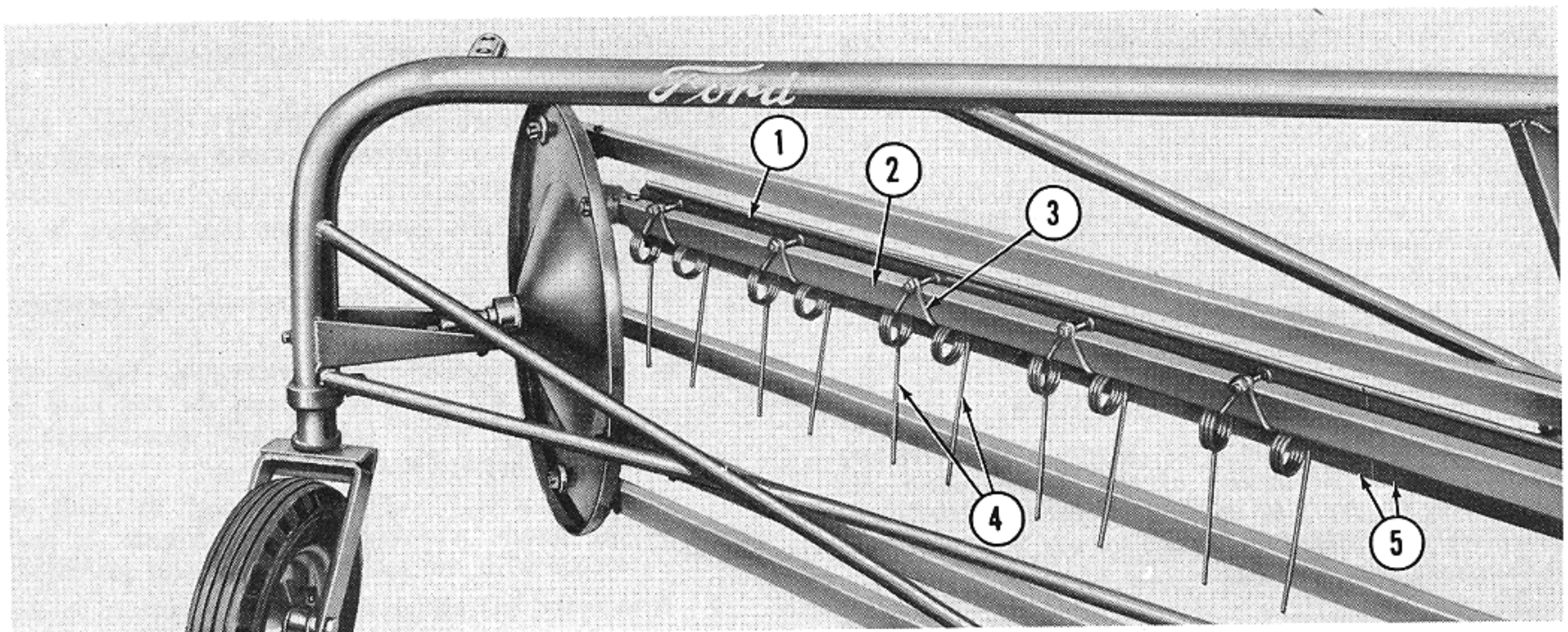


Figure 4
Reel Teeth and Tooth Shield Installed

SIDE DELIVERY RAKE

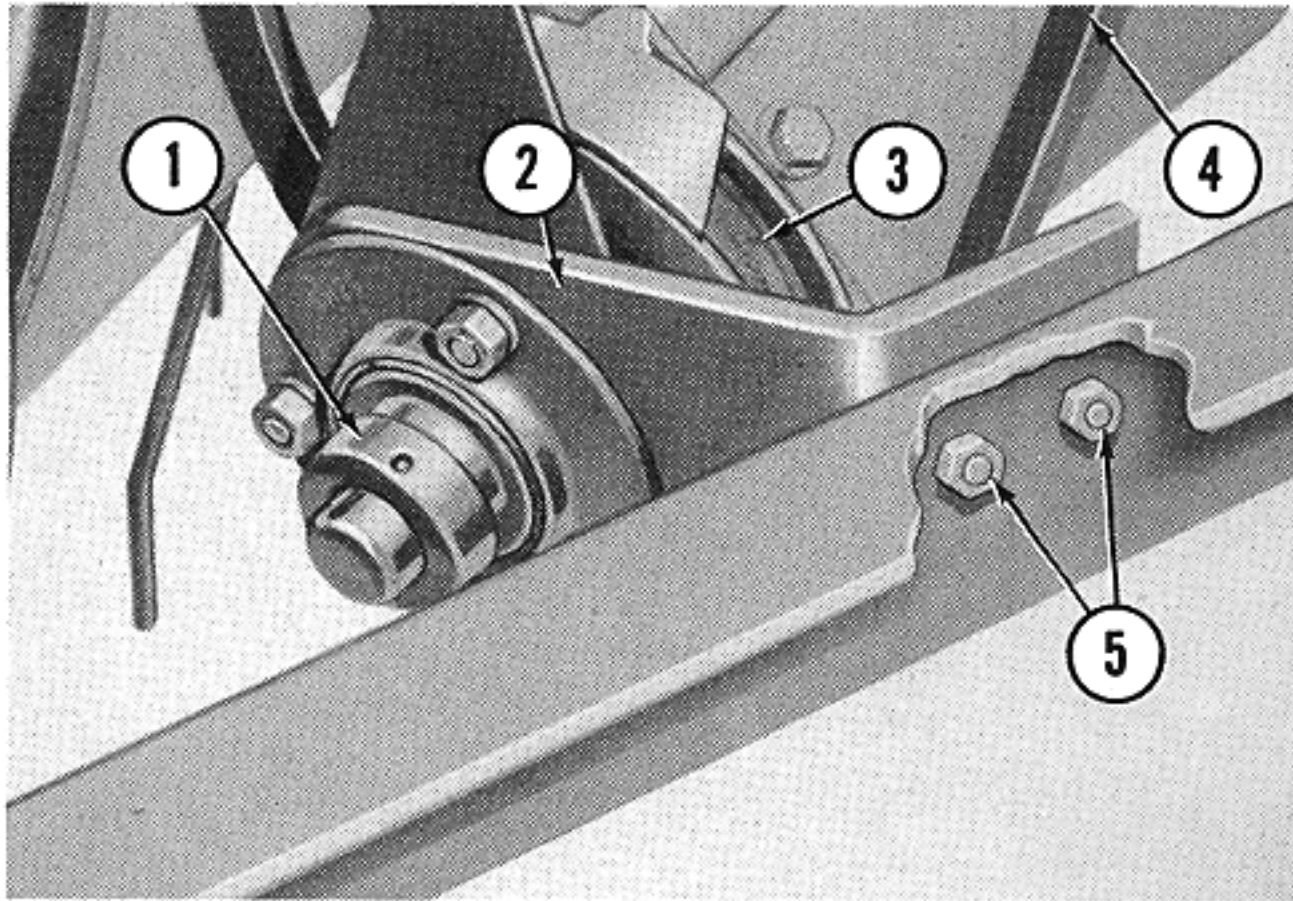


Figure 5

Right Stripper Bearing Bracket and Sheave Assembly

8. Install the spring teeth, tooth clamps, and shields as follows:
 - a. Position one shield (1), Figure 4, flush with the end of each tooth bar (2) and install the teeth (4) and tooth clamps (3), as shown. The trimmed corners of the shields should be at the ends of the tooth bars. Secure with the $\frac{5}{16}$ " x $2\frac{1}{2}$ " carriage bolts, flatwashers, lockwashers and nuts.
 - b. Position a shield on the other end of each tooth bar so the shields butt against each other as shown at (5), Figure 4, and install the teeth and tooth clamps in the same manner. Tighten all clamp bolts securely.
9. Install the right stripper drive sheave (3), Figure 5, on the small end of the stripper.
10. Install the bearing and bracket (2) Figure 5, on the right end of the stripper. Position the bearing collar on the end of the shaft, but do not tighten the set screw (1) at this time.
11. Install the left stripper support (5) Figure 6, on the main frame with two bolts (6). Secure with the lockwashers and nuts provided.
12. Install the left stripper bearing and bracket assembly (3), Figure 6, on the left end of the stripper. Do not tighten the set screw (2) in the bearing collar at this time.
13. Position the left stripper bearing bracket (3), Figure 6, on the support bracket (5) and secure with two bolts (4), lockwashers and nuts. Place the stripper drive belt (4), Figure 5, around the stripper drive sheave (3). Be sure the right end of the stripper is inside the reel drive belt and attach the stripper right bearing bracket (2) to the frame with the bolts (5), lockwashers and nuts. Tighten the bearing eccentric locking collar at each end of the stripper and secure with the set screws (1), Figure 5 and (2), Figure 6, at this time.

14. Attach the double idler sheave (4), Figure 7, and idler sheave (5) to the idler bracket (13) with the bolt and two drive pins provided.
15. Install the idler bracket (13), Figure 7, on the main frame with the bolts (3) and (10), Figure 7, flat washers, lockwashers and nuts. Do not tighten at this time.
16. Position the stripper drive belt (12), Figure 7, around the small half of the double idler (4). Raise the bracket (13) until the belt (12) is taut and tighten the bolts (3) and (10) securely. Attach the adjusting link bolt (17), Figure 7, between the idler bracket and the main frame as shown.
17. Position the reel drive belt (2), Figure 7, around the reel (1) over the large half of the double idler (4), under the idler (5) and around the drive sheave (14) as shown.
18. Loosen the main drive assembly mounting bolts (10), Figure 2, and install the drive assembly adjusting bolt (6), Figure 7, as shown. Tighten the adjusting bolt until the belt (2) is taut and secure with the jam nut provided. Tighten the bolts (10), Figure 2, securely.
19. Bolt the small belt shield (8), Figure 7, and the left end of the long belt shield (15) to the main frame with the bolt (9), lockwasher and nut. Bolt the right end of the shield (15) to the frame with the bolt (16), lockwasher and nut.
20. Spin the reel a few times by hand to be certain all belts and sheaves are running free, and the bearings are not binding.

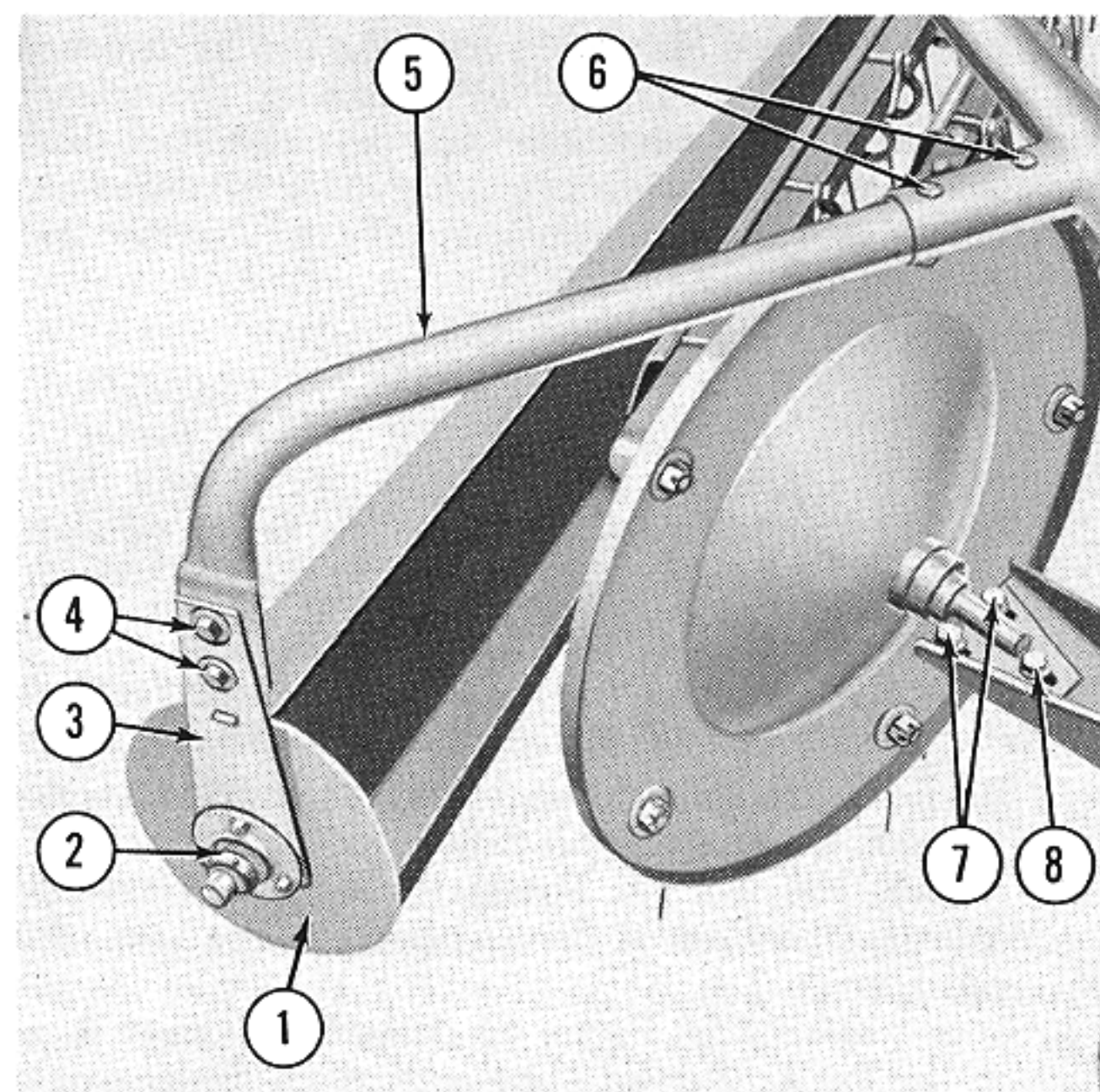


Figure 6

Left Reel and Stripper Bracket Installed

SIDE DELIVERY RAKE

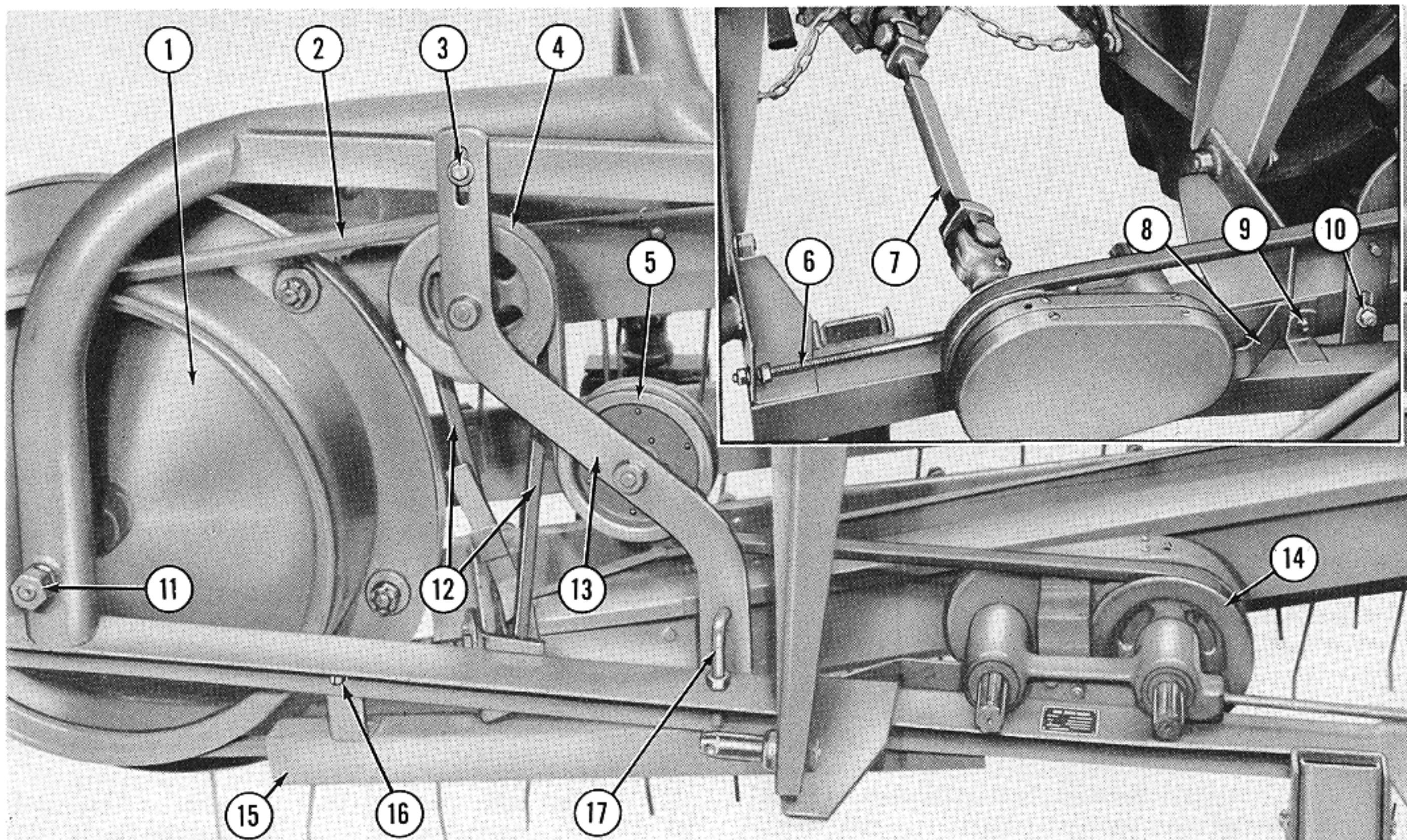


Figure 7

Belt Idler Assembly with Belts and Belt Guards Installed

ATTACHING

The Ford Mounted Side Delivery Rake can be attached to any model Ford Tractor by means of the tractor 3-point hitch. It is recommended that stabilizer bars be used to eliminate side play. Stabilizer kits are sold separately, at extra cost, by your Ford Tractor and Implement Dealer.

These kits are available as follows:

Part No.	Description	Model or Series
230908	Stabilizer Kit	NAA and Prior
230909	Stabilizer Kit	Series 600-800
230914	Stabilizer Kit	Series 700-900

Attach the rake to the tractor as follows:

NOTE: Make sure the tractor lift links are level to equalize the weight of the rake on the two lift arms.

1. Back the tractor into position and attach the rake using the tractor 3-point hitch.
2. Attach the P.T.O. Power Tube and Universal Joint to the desired driven shaft on the rake. See chart, page 7.
3. Insert the P.T.O. Power Shaft and Universal Joint in the P.T.O. Power Tube and attach the assembly to the tractor P.T.O. shaft.
4. Raise the rake by means of the Ford Tractor Hydraulic Touch Control Lever.

5. Swing the stand (6), Figure 2, forward into an inverted position and insert in the slots provided.

OPERATION

Raking is an important factor in harvesting and conserving a hay crop. Unless care is exercised in raking, many of the nutrient rich leaves will be lost. Raking should be done in the same direction in which the hay was cut. This procedure will turn a greater portion of the leaves toward the center of the windrow and leave the stems exposed for faster drying. It is also important that raking be done when the moisture content of the cut crop has been reduced to about 40% or when the crop is thoroughly wilted. If the hay is too dry, leaves may be lost in the process of raking.

NOTE: The chart on page 7 is based on a recommended reel speed of 72.7 rpm, and a maximum reel speed of 101 rpm. The shaft (9), Figure 2, is reduced and (10) is direct. Do not operate shaft (9) at a speed exceeding 654 rpm, or shaft (10) at a speed exceeding 327 rpm.

Curing can be hastened in heavy or rain dampened windrows by driving with the left tractor wheel to the right side of the original windrow. This operation turns the crop onto clean dry stubble and exposes the underside of the windrow for curing.

SIDE DELIVERY RAKE

TRACTOR SPEED AND P.T.O. RPM CHART

TRACTOR			RECOMMENDED		MAXIMUM	
*Model or Series	Trans. Gear	Rake Drive	PTO RPM	Ground Speed	PTO RPM	Ground Speed
9N, 2N	2nd	Reduced	472	2.5	654	4.0
9N, 2N	3rd	Direct	236	2.9	327	4.7
8N, NAA, 640, 740	3rd	Reduced	472	3.4	654	5.6
8N, NAA, 640, 740	4th	Direct	236	3.6	327	5.8
650, 660	4th	Reduced	472	5.1	654	7.0
650, 660	5th	Direct	236	5.0	327	6.9
850, 860 950, 960	4th	Reduced	472	4.8	654	6.6
850, 860, 950, 960	5th	Direct	236	4.7	327	6.5

*It will be necessary to check the P.T.O. rpm with a speed counter on tractors not equipped with a Proof-Meter.

DETACHING

Detach the rake from the tractor as follows:

1. Drop the stand (6), Figure 2, into position as shown.
2. Lower the rake to the ground and turn off tractor engine.
3. Detach the P.T.O. shaft from the tractor.
4. Detach the rake from the tractor 3-point hitch.

ADJUSTMENTS

Several adjustments are provided to aid the operator in obtaining maximum operating efficiency.

Tooth Angle: The angle of the spring teeth can be adjusted by varying the length of the tractor adjustable upper link and changing the height of the frame at the gauge wheels. Lengthening the tractor upper link requires lowering the frame height at the gauge wheels. This results in increasing the pitch of the teeth.

Gauge Wheels: The height of the caster wheels can be adjusted by loosening the clamp bolts (2), Figure 2, and repositioning the bolt (1) in the desired holes in the gauge wheel shaft. The holes are spaced $\frac{5}{8}$ " apart.

Tractor Upper Link: Adjust the tractor upper link to suit the height of the frame.

Stripper Belt: Proper tension on the stripper drive belt (12), Figure 7, can be obtained by repositioning the double sheave (4) and the idler support (13). This is done by loosening the bolts (3) and (10), Figure 7, adjusting the support and retightening the bolts.

NOTE: If the stripper drive belt is adjusted, the main drive belt must also be adjusted as described below.

Main Drive Belt: Adjust tension on the main drive belt (2), Figure 7, by repositioning the main drive housing. The bolts holding the main drive housing to frame must be loosened while this adjustment is being made. The push bolt (6), Figure 7, and the main drive housing attaching bolts govern the position of the main drive housing.

NOTE: Be sure the belt guards (8) and (15), Figure 7, are free of the main drive belt and stripper drive belt.

Rotary Stripper: The rotary stripper (1), Figure 6, can be raised or lowered by means of the bolts (4). This adjustment can be made in two 2" increments. The stripper should be positioned low enough to allow clearance of the windrow. Do not allow it to dig in. The distance between the rotary stripper and spring teeth should be 1 inch. Adjust for this distance by means of the slotted holes provided in the bearing bracket (3) Figure 6.

Reel End Plates: It is important that both the right and left reel end plates travel in the same plane. To prevent binding, adjust the end plate by loosening the three bolts (7) and (8) Figure 6. Bring the reel up to speed, allow the bearings to align themselves and tighten the bolts.

LUBRICATION

The Ford Mounted Side Delivery Rake has four pressure lubrication fittings. Two are located on the caster wheels, one is located on the P.T.O. shaft U-joint, and one is located on the P.T.O. tube U-joint. Lubricate the gauge wheels after assembly and twice daily with a good grade of grease. The U-joints should be lubricated after assembly and every 50 hours of operation thereafter. Periodically place a few drops of machine oil in the hole (8), Figure 2, to lubricate the variable speed drive chain. Consult your local Ford Tractor and Implement dealer for special lubrication instructions when replacing the tooth bar bearings.

DUAL WHEEL ATTACHMENT

A Dual Wheel Attachment, Model No. 14-115, is available for use on the Ford Mounted Side Delivery Rake.

The attachment consists of a double fork and one wheel and tire set. Two such attachments are required, one for each side of the rake, and the regular wheels are assembled on the double forks with the new wheels. Dual Wheel Attachments are used in irrigated areas where corrugation is practiced. Since one of the dual wheels on either end of the rake will always be on top of the corrugation, a more complete raking job will result.

Here are some of the implements in the Ford and Dearborn Equipment Line:

DISC PLOWS
DISC TILLERS
FIELD CULTIVATORS
MIDDLEBUSTERS
MOLDBOARD PLOWS
ONE-WAY PLOWS
SUBSOILERS
BUSH & BOG HARROWS
FOLD-OVER HARROWS
SPRING TOOTH HARROWS
TANDEM DISC HARROWS
CORN PLANTERS

CORN & COTTON PLANTERS
GRAIN DRILLS
ROTARY HOES
ROW CROP CULTIVATORS
SIDE DRESSERS
HAY BALERS
COMBINES
CORN HARVESTERS
CORN PICKERS
COTTON HARVESTERS
FORAGE HARVESTERS
MOWERS

SIDE DELIVERY RAKES
BLADES
CRANES
FRONT & REAR LOADERS
SCOOPS
LIME & FERTILIZER SPREADERS
MANURE SPREADERS
WAGONS
CORDWOOD SAWS
DRIVER & BREAKERS
POST HOLE DIGGERS
ROTARY CUTTERS

For Further Information . . .

See Your Ford Tractor and Implement Dealer

EQUIPMENT WARRANTY

FORD MOTOR COMPANY (hereinafter called "Company"), warrants to the original purchaser (hereinafter called "Purchaser") from it each part of any equipment (except pneumatic tires) sold by it bearing the name "Ford" or the trade-mark "Dearborn" to be free under normal use and service from defects in material and workmanship for a period of six (6) months from the date of delivery to the original retail purchaser. Company's obligation under this warranty is limited to replacement of, at Company's factory or at a location designated by Company, or credit for, such parts as shall be returned to Company with transportation charges prepaid and as shall be acknowledged by Company to be defective. Purchaser shall notify Company of any such defective part of which Purchaser obtains knowledge within twenty (20) days after Purchaser obtains such knowledge. This warranty shall not apply to any equipment that has been subject to misuse, negligence or accident, or in which parts not made or supplied by Company are used if, in the sole judgment of Company, such use affects its performance, stability or reliability, or which shall have been altered or repaired outside of Company's own factory in a manner which, in the sole judgment of Company, affects its performance, stability or reliability. This warranty is expressly in lieu of all other warranties, express or implied, and of all other obligations or liabilities on the part of Company, except such obligations or liabilities as Company may assume by other separate written instrument.

Company reserves the right to make changes in its products at any time and from time to time without notice to Purchaser and without incurring any obligation with respect to any of its products theretofore ordered or purchased by or delivered to Purchaser.

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