OPERATING INSTRUCTIONS

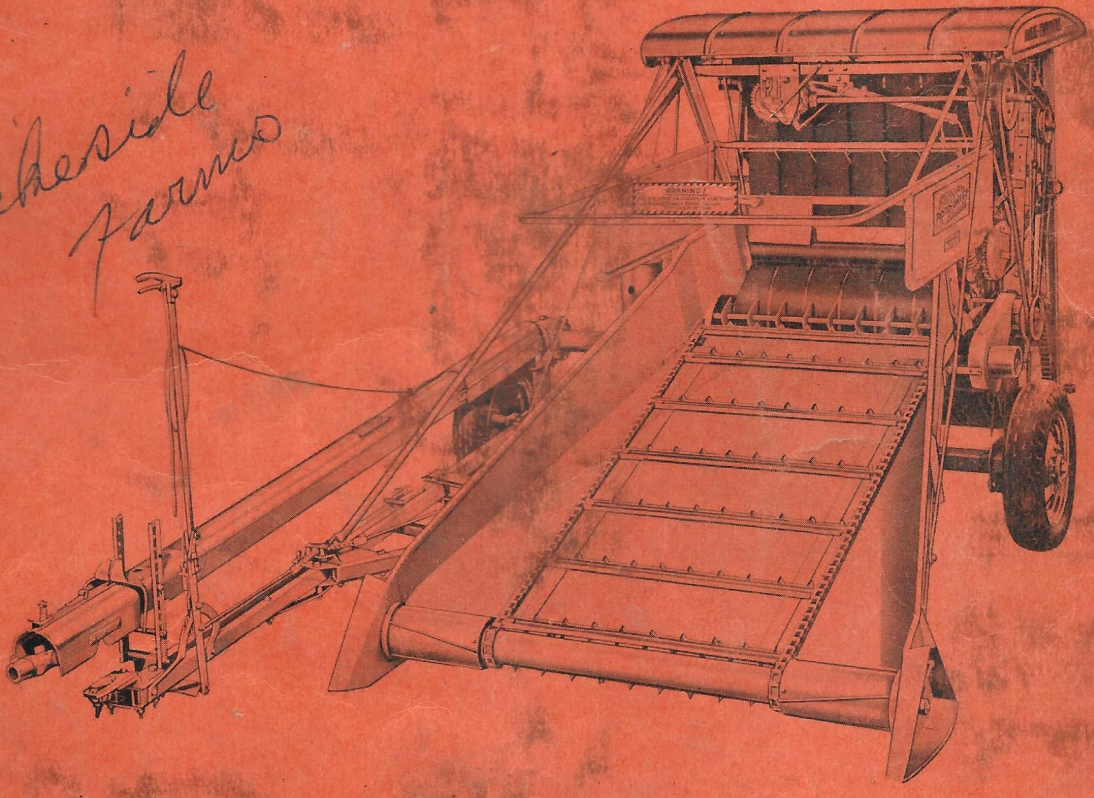
AND

REPAIR PARTS ILLUSTRATIONS

"ROTO-BALER"

BUILT BY

ALLIS-CHALMERS MFG. CO.



ALLIS-CHALMERS MFG. CO.

TRACTOR DIVISION

MILWAUKEE, WISCONSIN, U. S. A.

LITHO. IN U. S. A.

FORM TPL-212E

DEALERS PRE-DELIVERY SERVICE
ROTO-BALER

FIRM NAME _____ SERIAL # _____

ADDRESS _____ DATE DELIVERED _____

PHONE _____

THE FOLLOWING PRE-DELIVERY SERVICE HAS BEEN COMPLETED:

1. LUBRICATED
2. GEAR BOX OIL LEVEL CHECKED
3. TIRE PRESSURE CHECKED
4. SLIP CLUTCHES ADJUSTED
5. CHAINS ADJUSTED
6. DISCHARGE MECHANISM FREED UP
7. TENSION BRAKE FREED UP
8. BOLTS AND NUTS TIGHTENED

★ ★ ★

YOUR ROTO-BALER HAS BEEN SET UP, ADJUSTED AND SERVICED BY DEALER PRIOR TO ITS DELIVERY TO YOU.

YOU ARE REQUESTED TO ADVISE DEALER WHEN THIS MACHINE WILL START TO WORK SO DEALER REPRESENTATIVE CAN BE ON HAND TO MAKE NECESSARY FIELD ADJUSTMENTS AND HELP YOU GET STARTED RIGHT.

DELIVERY RECORD

ROTO-BALER

THIS FORM MUST BE FILLED OUT, IN TRIPLICATE, BY THE DEALER AND SIGNED BY THE CUSTOMER AT TIME UNIT IS DELIVERED.

DELIVERED TO _____

R. R. # _____ BOX # _____

TOWN _____

STATE _____

PHONE _____

DEALER _____

TOWN _____

SERIAL # _____

SERVICED BY _____

EXPLAIN CARE, SAFE OPERATION AND ADJUSTMENTS OF ITEMS LISTED BELOW:

- ☐ LUBRICATION
- ☐ TIRE PRESSURE
- ☐ HITCHING
- ☐ SAFETY SHIELDS
- ☐ PREPARING WINDROWS
- ☐ SAFETY CLUTCHES
- ☐ CONVEYOR
- ☐ GEAR BOX CLUTCH
- ☐ PRESS ROLL
- ☐ BALE FORMING BANDS
- ☐ OPERATORS SAFETY PRECAUTIONS
- ☐ BALE DIAMETER
- ☐ BALE DENSITY
- ☐ TWINE TENSION
- ☐ TWINE LENGTH
- ☐ TWINE CUTTING
- ☐ BALE DISCHARGE
- ☐ RELATCHING
- ☐ OPERATING SPEEDS
- ☐ APPEARANCE OF BALER
- ☐ STORING
- ☐

REMARKS: _____

THIS MACHINE HAS BEEN DELIVERED TO ME IN GOOD CONDITION AND I HAVE BEEN INSTRUCTED IN ITS CARE, ADJUSTMENT AND SAFE OPERATING PRACTICES.

DELIVERED BY _____
Dealer

BY _____ _____
Date

OWNER
OPERATOR _____
Signature

Original copy — FOR ALLIS-CHALMERS BRANCH

BE CAREFUL

1. KEEP ALL SHIELDS IN PLACE.
2. STOP MACHINE TO ADJUST AND OIL.
3. WHEN MECHANISM BECOMES CLOGGED, DISCONNECT POWER BEFORE CLEANING.
4. KEEP HANDS, FEET AND CLOTHING AWAY FROM POWER-DRIVEN PARTS.
5. KEEP OFF IMPLEMENT UNLESS SEAT OR PLATFORM IS PROVIDED. KEEP OTHERS OFF.

BE A SAFE OPERATOR

AVOID ACCIDENTS

Most accidents, whether they occur in industry, on the farm, at home, or on the highway, are caused by the failure of some individual to follow simple and fundamental safety rules or precautions. For this reason most accidents can be prevented by recognizing the real cause and doing something about it before the accident occurs.

Regardless of the care used in the design and construction of any type of equipment, there are many conditions that can not be completely safe guarded against without interfering with reasonable accessibility and efficient operation.

A CAREFUL OPERATOR IS THE BEST INSURANCE AGAINST AN ACCIDENT.

THE COMPLETE OBSERVANCE OF ONE SIMPLE RULE WOULD PREVENT MANY THOUSAND SERIOUS INJURIES EACH YEAR. THAT RULE IS:

NEVER ATTEMPT TO CLEAN, OIL, OR ADJUST A MACHINE WHILE IT IS IN MOTION!

"NATIONAL SAFETY COUNCIL"

NEVER STEP ON BALER PLATFORM UNLESS MOTOR POWER IS DISENGAGED

DELIVERY RECORD
ROTO-BALER

THIS FORM MUST BE FILLED OUT, IN TRIPLICATE, BY THE DEALER AND SIGNED BY THE CUSTOMER AT TIME UNIT IS DELIVERED.

DELIVERED TO _____

R. R. # _____ BOX # _____

TOWN _____

STATE _____

PHONE _____

DEALER _____

TOWN _____

SERIAL # _____

SERVICED BY _____

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DELIVERED BY _____
Dealer

BY _____ _____
Date

OWNER
OPERATOR _____
Signature

2nd. copy — FOR DEALERS FILE

INTRODUCTION

The "Roto-Baler" built by Allis-Chalmers Mfg. Co., is controlled entirely by the tractor operator and powered by the power take-off of any full two plow tractor, picks up hay or straw from a windrow, rolls it into a bale three feet in length and of a diameter which can be controlled from 14 to 22 inches. When the bale is rolled to the predetermined diameter, the conveyor automatically shuts off and the operator shifts the tractor out of gear while the bale is spirally wrapped with ordinary binder twine and discharged. The operator then moves the tractor forward to pick up material for the next bale.

The rolled bale presents many decided advantages over any previous method of packaging hay or straw for storage or shipping. Its big advantage is ability to save leaves and retain the full food value in the hay. More leaves are saved with this machine, as the complete windrow is gently picked up and raised over a small diameter pickup roll onto a common conveyor which feeds it to the bale forming mechanism with a minimum amount of disturbance to the windrow, permitting the leaves to be rolled into the bale.

As the full length of the hay is rolled onto the bale, there is a minimum amount of crushing or breaking of stems; when the bale is rolled out for feeding the material lies in the same manner in which it was picked up, thus retaining the hay in its natural state with a minimum amount of sharp ends. The unique manner in which this bale is formed eliminates the tendency for the bale to expand. The material itself holds the bale together, making it possible to use only ordinary binder twine to hold the outer wrap on the bale. The rolled bale is much easier to handle, because it can be rolled instead of carried. There are no sharp wires to catch clothing.

These bales can also be handled with the ordinary hay hook. The bale will withstand rough handling and can be raised to the mow with ordinary hay tools. There is no possibility of the bale breaking apart as it is dropped to the floor of the mow, and due to the density of the rolled bale more weight can be stored in a given space.

The rolled bale is weather-resistant, in case of rain while bales are in the field there is only a small portion of the bale resting on the ground permitting very little water to be absorbed and the shape of the bale forms a natural shed to protect it from the rain.

There are also various feeding advantages with the rolled bale. It can be unrolled in the feedway. It can be fed in feed bunks, or lots right from the bale with very little waste, or the bale can be cut lengthwise to its center and fed in layers. The small feeder reduces waste by rolling off only the amount of hay needed and the balance remains compact in the bale.

INDEX

GENERAL SPECIFICATIONS

Pick-Up Conveyor

Width — at Pick-Up ..... 6 ft.
Width — at rear ..... 3 ft.
Height of Lift — for transport .....12 in.
Type of Pick-Up .....Chain Raddle
Pick-Up Roll diameter (amount windrow raised)... 9 in.

Bale Forming Bands, Upper

Number 6
Width .....5½ in.
Length .....72 in.

Bale Forming Bands, Lower

Number 6
Width .....5½ in.
Length .....102 in.

Bale Compression Method

Rolled between Forming bands.

Rolled Bale

Length .....36 in.
Diameter (optional) .....14 to 22 in.
Weight (optional) .....40 lbs. to 100 lbs.

Twine Wrapped Bale

Twine used .....Standard Binder Twine
How applied .....Spirally wrapped (no knotters or needles)
Amount used per bale (optional) .....27 to 45 ft.
Tons baled per ball (average) .....3 to 4 tons
Twine box capacity .....Four 8 lb. balls

Baler Capacity

Tons per hour .....4 to 8 tons

Power to Operate

Power Take-Off Operation
(no extra motor).....Any full 2-plow tractor
P. T. O. Speed (optional) .....Up to 600 RPM

Power Line

Conforms to A. S. A. E. Hitch Standards..P. T. O. Spline Coupling 1⅜"

Drives

V-Belt 1
Chains (exclusive of pick-up raddle) 2
Gear boxes (steel cut, case hardened gears in oil) .. 2

Air Tires

Number used 2
Size.....5.50 x 16
Ply 4
Tire Pressure .....35 to 40 lbs.

Anti-Friction Bearings

Number used 24

Slip Clutches

Number used 3

Overall Dimensions

Width for field operation .....9 ft., 10 in.
Width for transport .....8 ft., 10 in.
Range of swinging tongue adj. ..... 33 in.
Overall Length .....13 ft., 6 in.
Overall Height .....6 ft., 11 in.
Shipping Weight .....2300 lbs.

Extra Equipment

Bale Counter
Feeder Roll Cover

The Allis-Chalmers Manufacturing Company reserves the right to make changes in the above specifications or to add improvements at any time without notice or obligation.

LITHO. IN U. S. A.

UNLOADING AND SETTING UP INSTRUCTIONS

The conveyor drive chain, hitch ball, drive belt, shifter rope and all attaching bolts and pins are in a sack placed in the twine box. All other parts are wired to the baler and should be removed before starting to set up the machine.

Instructions referring to right and left of machine are determined by facing in the direction of travel.

To unload the baler, remove all blocks, hold down wires and rods. Bolt the tongue in place on the tongue straps and attach the frame brace to the upper R. H. frame angle and the frame brace tie clip.

Raise the R.H. baler frame angle behind the axle high enough to permit installation of R. H. wheel. Place stub axle into axle tube and bolt fast. Then, raise L. H. side and install axle in same manner. Baler can then be pulled from car or transported.

Place a block under rear frame angle to prevent baler from tipping back. Remove the conveyor and the two angle irons that hold it to the baler frame. Remove the hanger latch from R. H. hanger and raise the L. H. latch. Slide the conveyor back to where the hangers rest on the L. H. lower drive roll bearing and the roll drive gear box housing. Replace R. H. latch and hook L. H. latch over bearing housing. Attach the two lift rods to the conveyor sides and the upper conveyor lift cranks.

Bolt the lift lever and quadrant in place on the swinging tongue. Place the lift link through guide on top of tongue having the long rod to the rear, attach it to the lift bell crank and the short rod to the lift lever. Remove the stop bolt from R. H. lift crank.

Place the conveyor raddle over the conveyor drive shaft and the pick-up roll as shown. Install the conveyor drive chain and shield at left end of shaft. Install twine mechanism drive belt and adjust to apply proper belt tension.

Install safety shields and make certain the large WARNING sign is in place on the cross bar at front of shields and the BE CAREFUL sign is attached to the top of twine box.

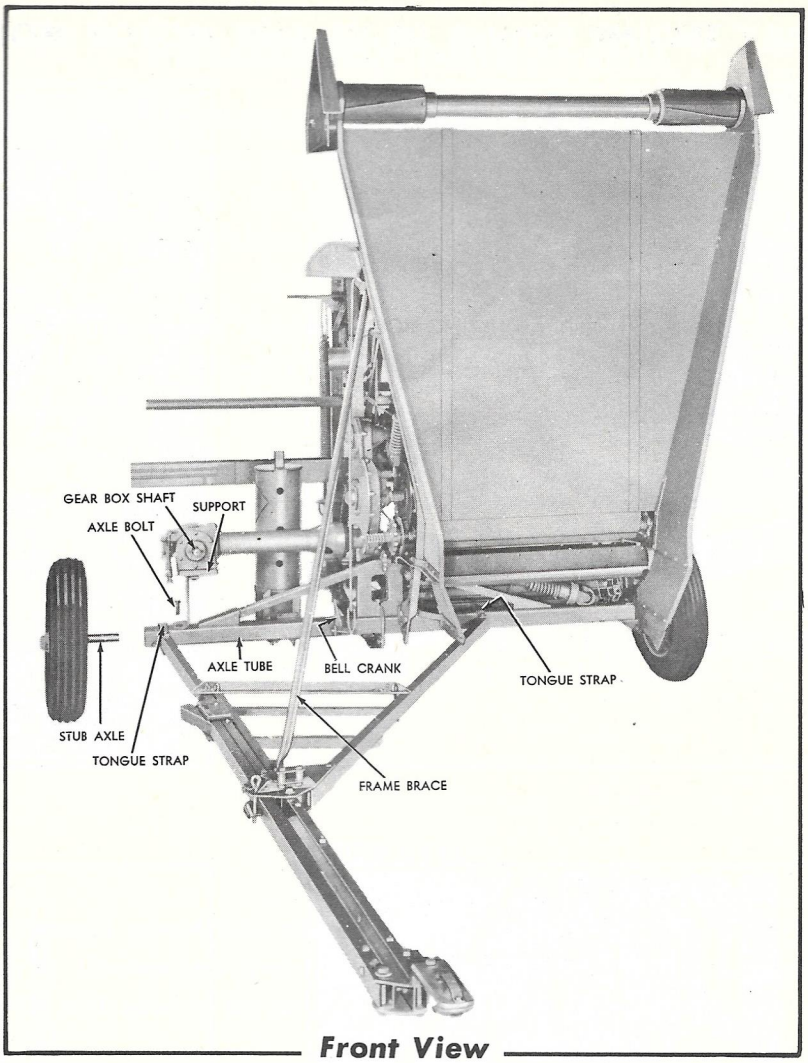
NEVER ATTEMPT TO OPERATE MACHINE UNLESS SHIELDS ARE IN PLACE.

If P.T.O. driven, remove paint from gear box shaft and inside of rear universal joint yoke. Place yoke on shaft and install the bolt. Slide the rear P.T.O. shield over the slip clutch and joint assembly bolting it to support on front of gear box.

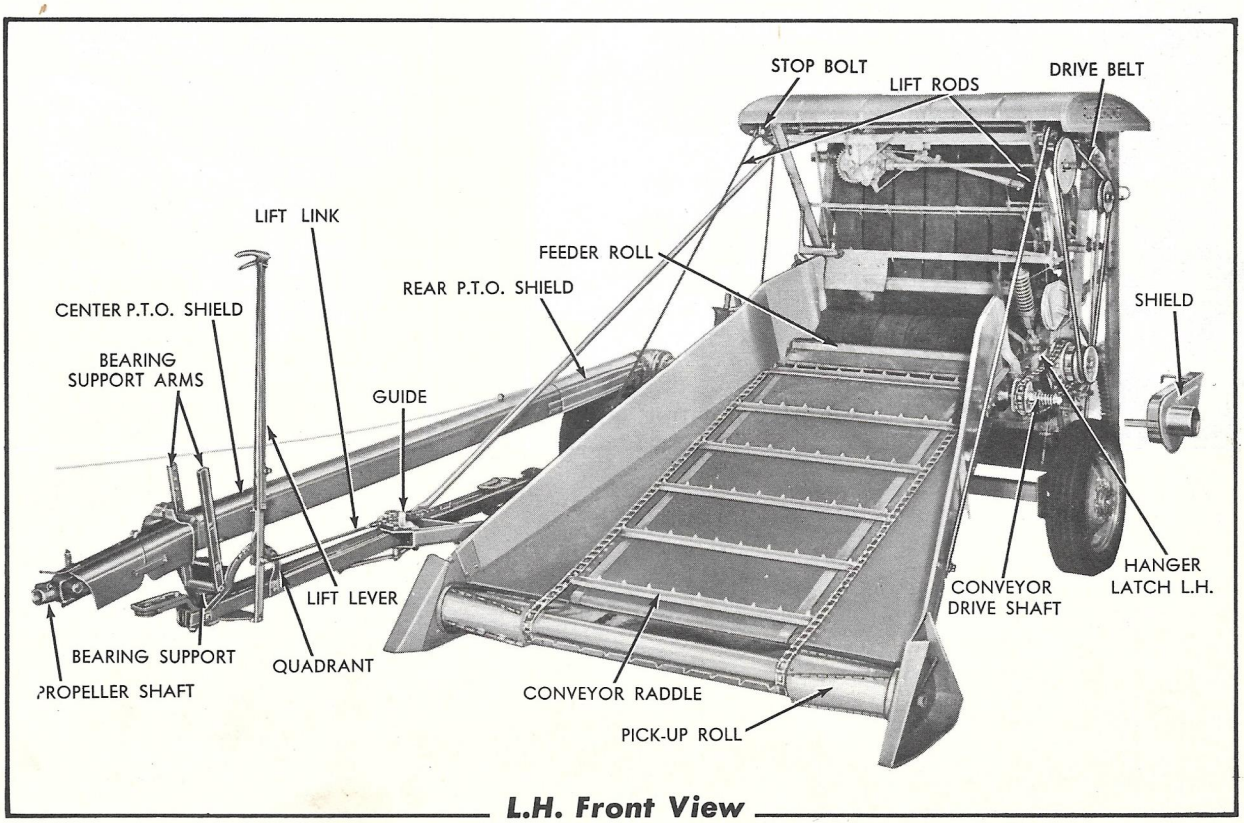
Remove paint from square part of slip clutch shaft, slide the propeller shaft on the square shaft and bolt the front bearing support to the outer tongue tube. Remove both nuts from the upper pin in the bearing support arms, nut from R. H. end of the two lower pins and remove the R. H. support arm. Slide the center P. T. O. shield into the rear shield and place the upper support bolt through the shield and the support bearing housing. Replace the R. H. support arm and the nuts.

Tie rope to shift lever and feed through eyebolt on shield. Place 3/16" cord in lower end of trip crank arm.

Never Operate Machine Without These Shields in Place.

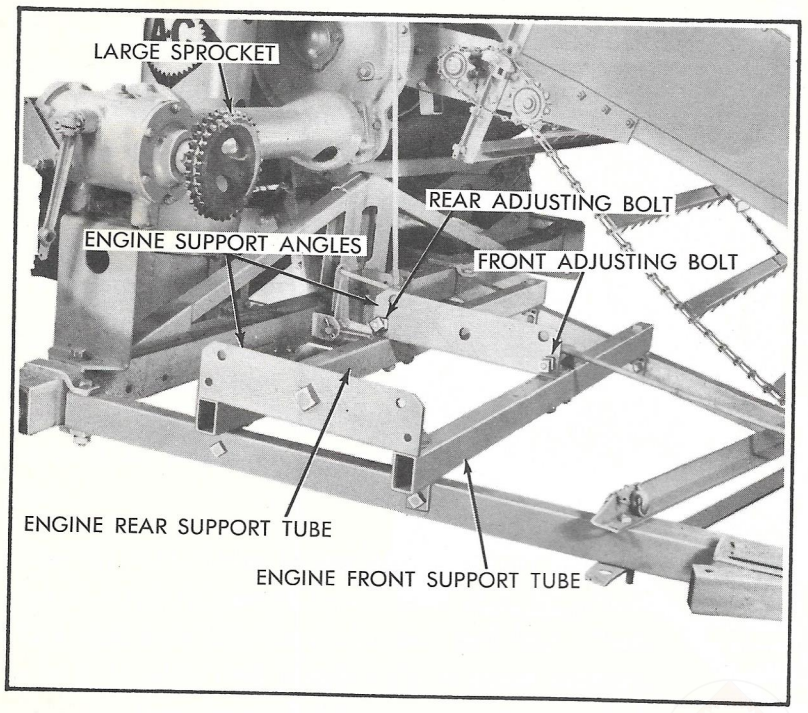


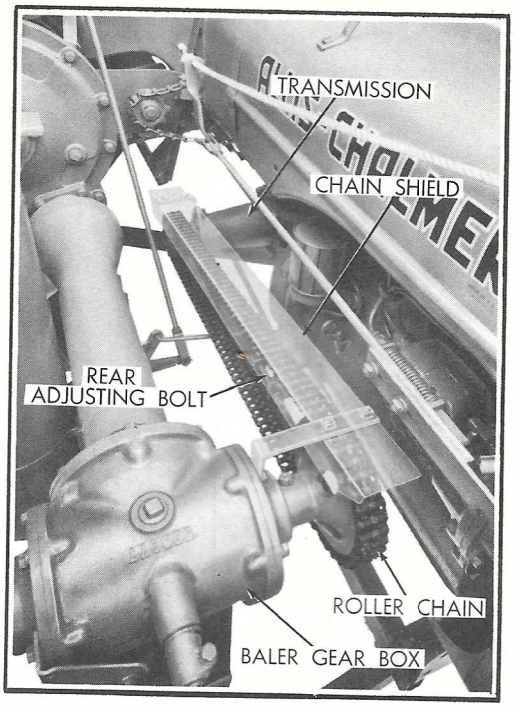
Front View

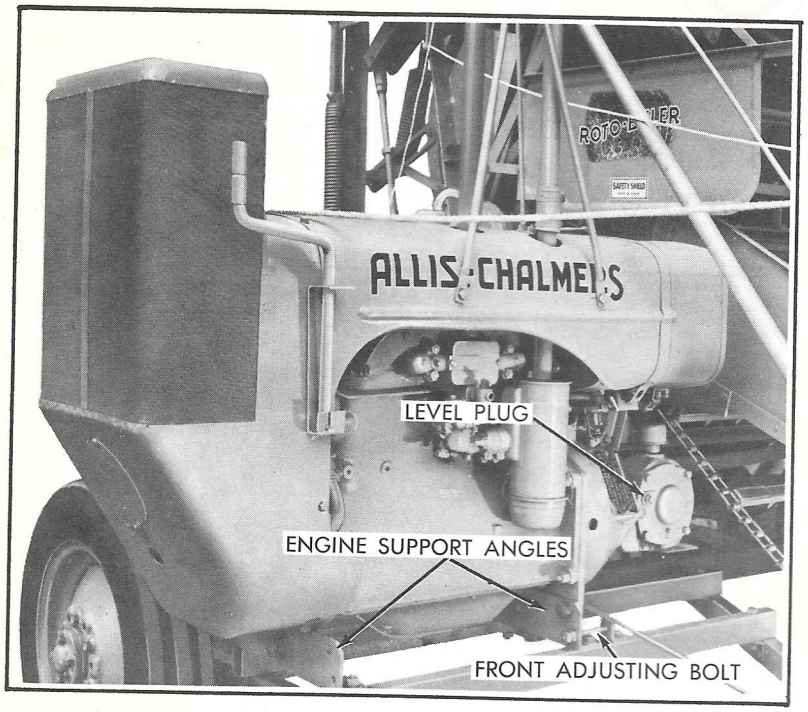


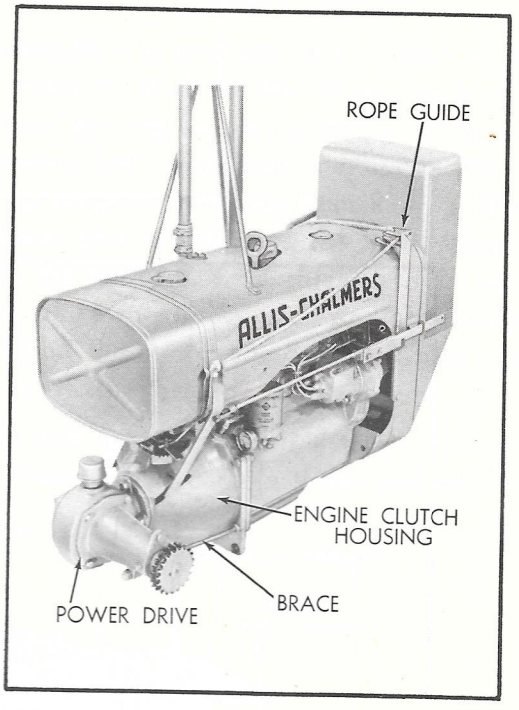
L.H. Front View

AUXILIARY ENGINE POWER DRIVE AND MOTOR MOUNTING









INSTALLATION INSTRUCTIONS

On balers purchased as P.T.O. operated machines, remove the complete propeller shaft, propeller shaft shield and slip clutch assembly. The above parts are not furnished with balers purchased with an auxiliary engine.

To install the auxiliary engine on the "Roto-Baler," bolt the front and rear motor support tube to the baler tongue.

Bolt the two motor support angles to the motor support tubes leaving bolts loose at this time. Place large sprocket on baler gear box shaft.

Insert power drive shaft into the engine clutch, bolt power drive housing to engine clutch housing and install the brace. Remove shipping angles and set engine in frame, bolting it to L.H. side of both engine support angles as shown, using same bolts as were used to attach shipping angles.

Install the roller chain and adjust it up snug with the front and rear adjusting bolts, then tighten bolts that attach motor support angles to the motor support tubes. Bolt chain shield to transmission housing and baler gear box. Place rope guide pulley in position shown and connect rope to clutch lever.

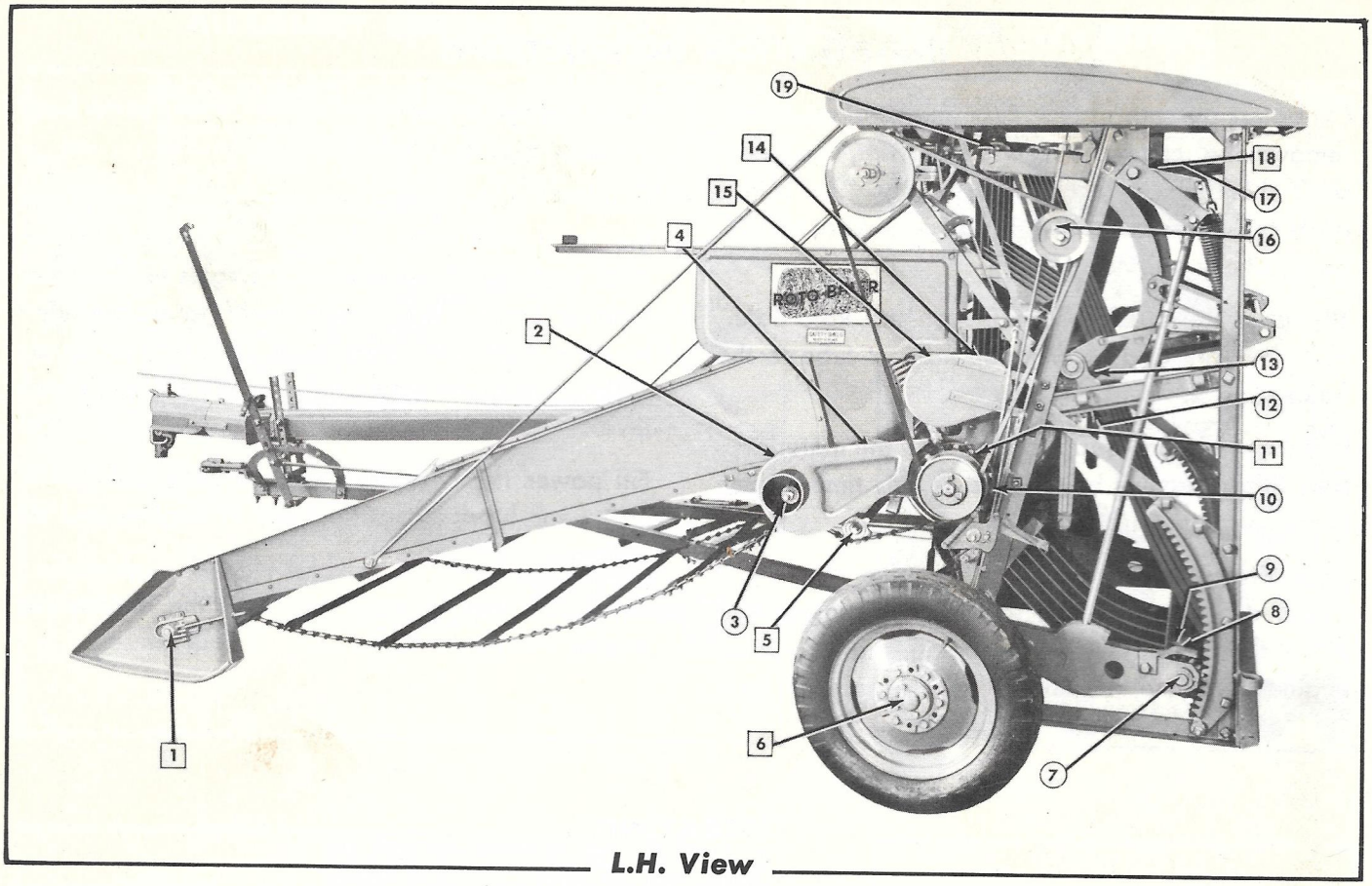
Fill power drive housing to level plug with S.A.E. 140 gear lubricant. Check oil in engine and fill radiator.

For installation of other parts on the engine see engine instruction book.

OPERATING

Set engine throttle at desired speed then throttle will close when clutch is disengaged and when clutch is engaged throttle will open to set position.

To disengage the engine clutch pull clutch control rope forward to where clutch is locked in forward position, to engage clutch pull rope forward and release slowly.

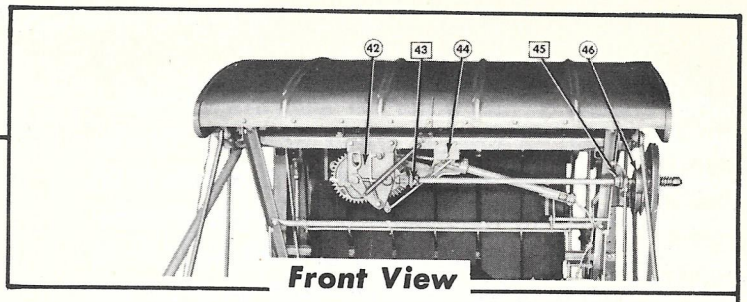


L.H. View

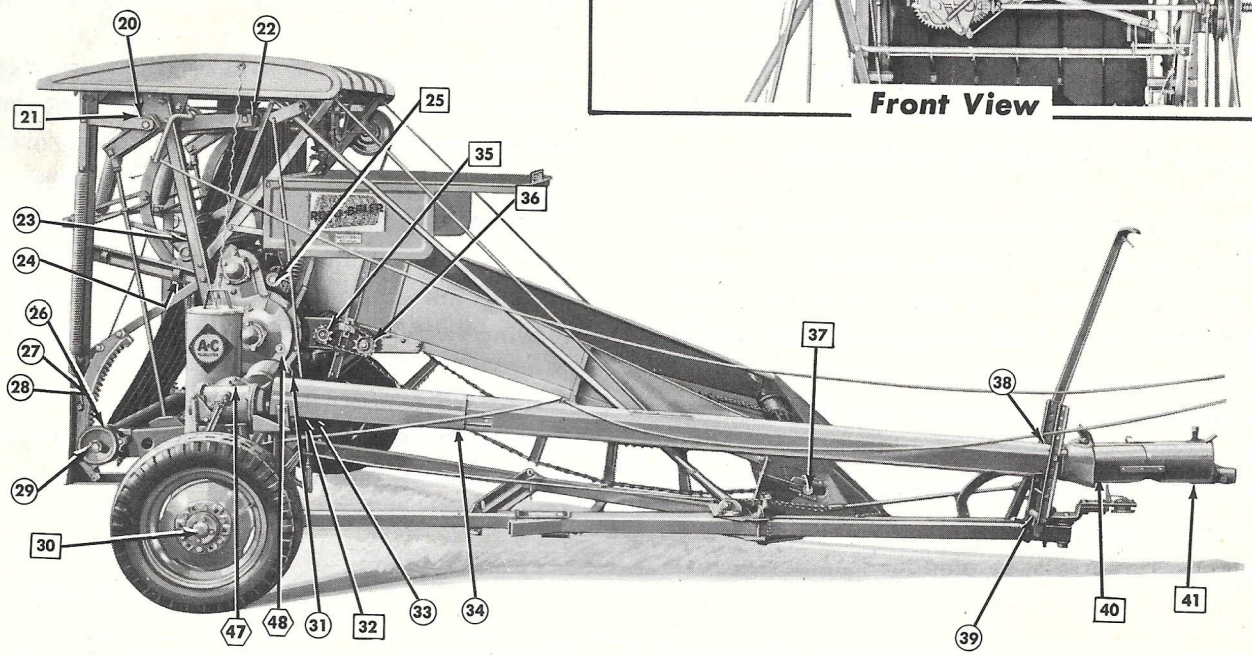
LUBRICATION CHART

This chart points out pressure gun fittings which require lubrication as indicated, □ twice daily, ○ once daily. ⬡ Check periodically. When working in extremely dusty or sandy conditions the machine may require lubrication oftener.

1. PICK-UP ROLL, BEARING, L. H.
2. RADDLE DRIVE SHAFT, BEARING, L. H.
3. RADDLE DRIVE, SLIP CLUTCH
4. FEEDER ROLL, BEARING, L. H.
5. CONVEYOR DRIVE, IDLER SPROCKET (Not used after serial No. 20402)
6. WHEEL, BEARING, L. H.
7. LOWER TENSION ARM, BEARING, L. H. OUTER
8. LOWER TENSION ARM, BEARING, L. H. INNER
9. LOWER TENSION ROLL, BEARING, L. H.
10. CONVEYOR CLUTCH
11. LOWER DRIVE ROLL, BEARING, L. H.
12. LOWER TRIP ROLL, BEARING, L. H.
13. UPPER TRIP ROLL, BEARING, L. H.
14. UPPER DRIVE ROLL, BEARING, L. H.
15. PRESS ROLL, BEARING, L. H.
16. IDLER, SHEAVE
17. DISCHARGE ROCKER ARM, L. H.
18. UPPER TENSION ARM SHAFT, BEARING, L. H.
19. UPPER TENSION ROLL, BEARING, L. H.



Front View



R.H. View

(20) DISCHARGE ROCKER ARM, R. H.

[21] UPPER TENSION ARM SHAFT, BEARING, R. H.

(22) UPPER TENSION ROLL, BEARING, R. H.

(23) UPPER TRIP ROLL, BEARING, R. H.

(24) LOWER TRIP ROLL, BEARING, R. H.

[25] PRESS ROLL, BEARING, R. H.

(26) LOWER TENSION ARM, BEARING, R. H. OUTER

(27) LOWER TENSION ARM, BEARING, R. H. INNER

(28) LOWER TENSION ROLL, BEARING, R. H.

(29) TENSION BRAKE

[30] WHEEL, BEARING, R. H.

(31) ROLL DRIVE, UNIVERSAL JOINT

[32] SLIP CLUTCH, UNIVERSAL JOINT

(33) SLIP CLUTCH

(34) PROPELLER SHAFT, TWO FITTINGS

[35] FEED ROLL, BEARING, R. H.

[36] RADDLE DRIVE SHAFT, BEARING, R. H.

[37] PICK-UP ROLL, BEARING, R. H.

(38) P. T. O. SUPPORT, BEARING

(39) P. T. O. SUPPORT, TRUNNION

[40] HITCH JOINT, REAR

[41] HITCH JOINT, FRONT

(42) TWINE WRAP MECHANISM, 3 FITTINGS (GEAR PIN, GEAR FRAME BEARING FRONT AND REAR)

[43] BEVEL PINION SHAFT, BEARING, R. H.

(44) TWINE TENSION DISC CRANK

[45] BEVEL PINION SHAFT, BEARING, L. H.

(46) TWINE MECHANISM, SLIP CLUTCH

⟨47⟩ MAIN DRIVE GEAR BOX. FILL TO LEVEL PLUG. USE S. A. E. 140 GEAR LUBRICANT

⟨48⟩ ROLL DRIVE GEAR BOX. FILL TO LEVEL PLUG. USE S. A. E. 140 GEAR LUBRICANT

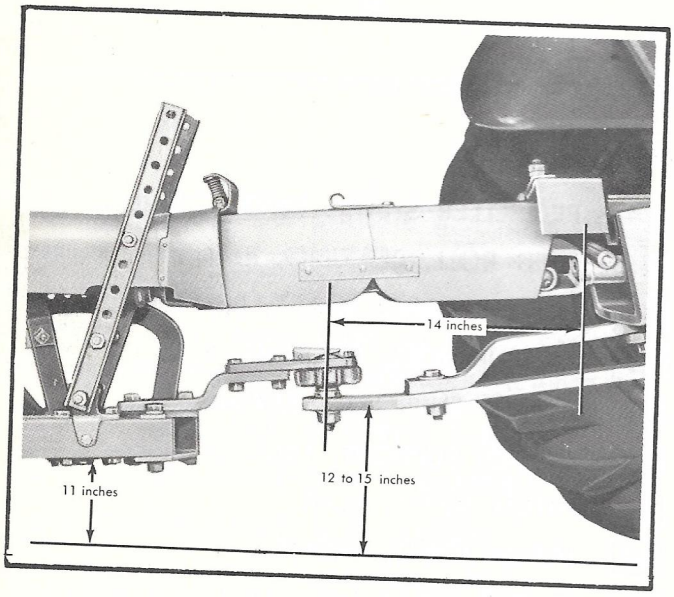
HITCHING

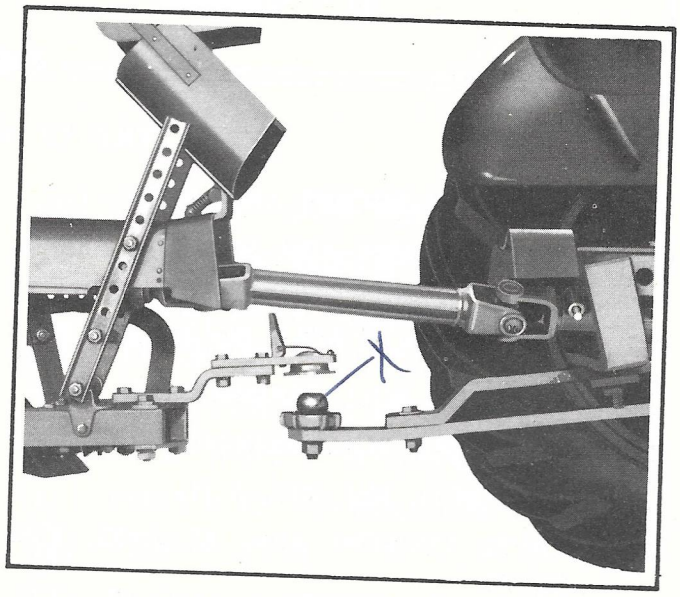
Before hitching the baler to the tractor adjust tractor wheels to narrow tread position. Tractor must be equipped with an A. S. A. E. drawbar set to measure 12" to 15" from ground to top of drawbar. The distance from center of hitch pin hole to end of tractor power take-off shaft must be approximately 14", measuring horizontally.

Bolt the hitch ball on top of tractor drawbar with lock ring between ball and drawbar. Connect baler tongue to hitch ball and secure with lock ring (be sure the pin that engages the lock ring is holding). Tongue extension and hitch plate should be placed on baler tongue so that the distance from the bottom of the tongue to the ground is approximately 11 inches. Press the front universal joint yoke plunger in, slide the yoke onto the power take-off shaft and release plunger to enter groove around shaft. If tractor has a P. T. O. spline shaft other than 1⅜" the front universal joint yoke must be replaced with yoke to fit spline shaft of tractor.

Place propeller shaft support bearing at proper height in the support arms so the front universal joint assembly runs in as near a horizontal line as possible. Place the support pin below the propeller shaft bearing pin leaving three open holes between the two pins. If there are not three open holes, by placing the support pin below then place it above leaving two open holes between the two pins.

Connect the propeller shaft shield to the tractor P. T. O. shield. If the tractor does not have a shield it should be purchased from the tractor manufacturer.





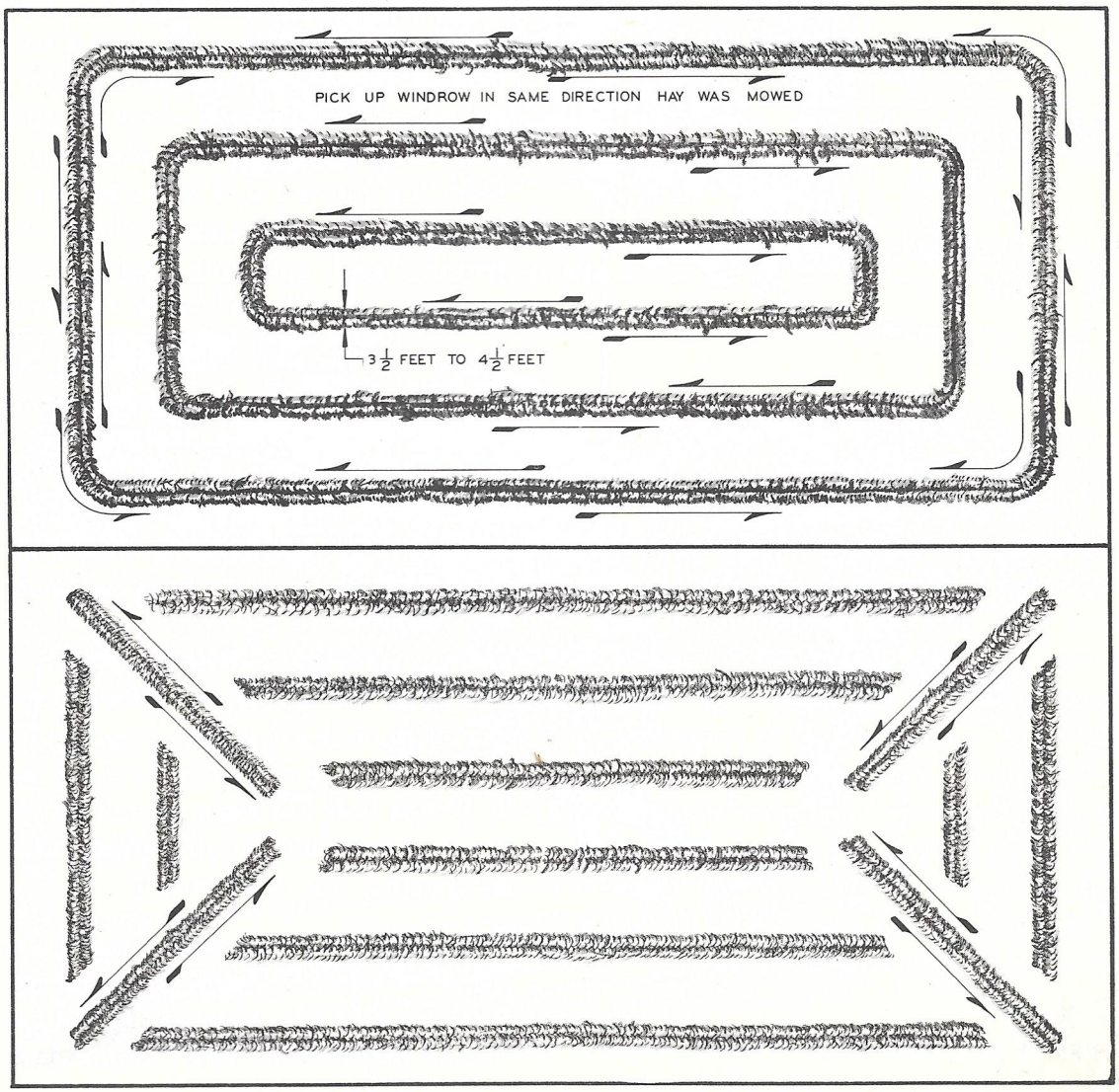
PREPARING WINDROWS

We cannot over-emphasize the importance of properly preparing the windrows for the "Roto-Baler." They should be made larger and wider than for the conventional square bale type of baler or for hay loaders. The appearance of the finished bale, ease of unrolling, uninterrupted operation of the baler and the number of bales baled per day are governed by the care taken in making the windrows.

Windrows should be made with a side delivery rake placing the two windrows side by side. The yield of the hay per acre will determine the number of feet or deliveries required to form the proper windrow. In hay yielding up to 1 ton per acre, about 40 feet or 4 deliveries (two each way) are required. In hay yielding from 1½ to 2½ tons per acre about 20 feet, or two deliveries (one each way) will build a good windrow.

Rake one or two deliveries (depending on yield of hay per acre) away from the fence line and continue on around field, then reverse the travel and rake same number of deliveries out from center of field along side (not on top) of first windrow made, to make a double windrow 3½ to 4½ feet wide. Continue this method of windrowing around the field and finish up in the center. Side deliveries thrown on top of each other make a narrow windrow and will tend to make an uneven bale.

After finishing in center of field making a windrow from each corner to the center will gather all of the loose hay at the corners and will provide ample turning room at the ends of the windrows, the result will be more hay baled in less time and cleaner fields.

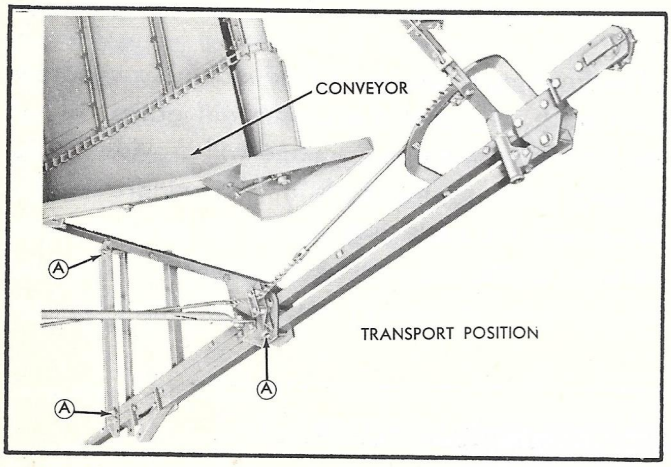


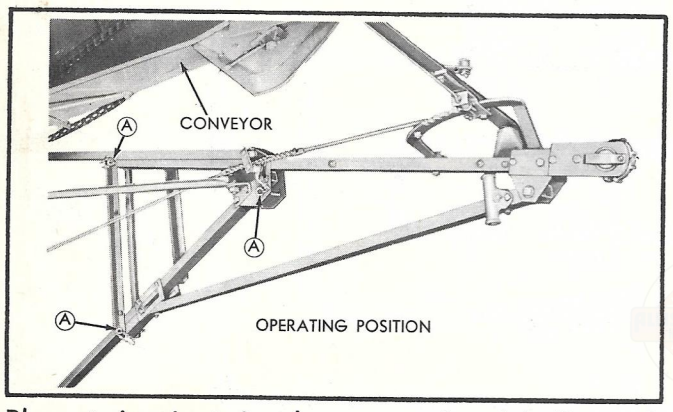
PREPARING TO START "ROTO-BALER"

Lubricate machine as outlined in lubrication chart. Free up and oil all discharge linkage and other moving parts.

Place tongue in operating position. This is done by removing the three pins (A), pulling the conveyor away from the swinging tongue and replace the pins as shown in sketch below.

Never attempt to run machine without placing tongue in operating position.





Place twine in twine box, capacity 4 balls, and thread as follows: Tie center loose end, of first ball placed in box, to outer loose end of the next ball, using a square knot, and tie each additional ball in same manner. Then thread center loose end of last ball through twine box lid, hole in right hand side of deck, through guide fastened to under side of deck, between tension discs, over roller at upper end of twine tube cam, under tube pivot stud and through twine tube, making certain twine is between tension springs in twine tube. Pull twine through tube far enough to have about 8 inches extend out of lower end of tube.

Note:
Before attempting to thread twine through tube, pull out about five feet of twine, double the end back and run the doubled end through your hand a few times to straighten out the kinks. The doubled end can then be threaded through the tube.

The main drive gear box has a sliding jaw clutch which can be shifted into reverse by pulling a rope tied to the operator's seat. When the rope is pulled forward, the baler is in reverse. This allows the operator to clear the press roll quickly if it should become plugged with a wad of material.

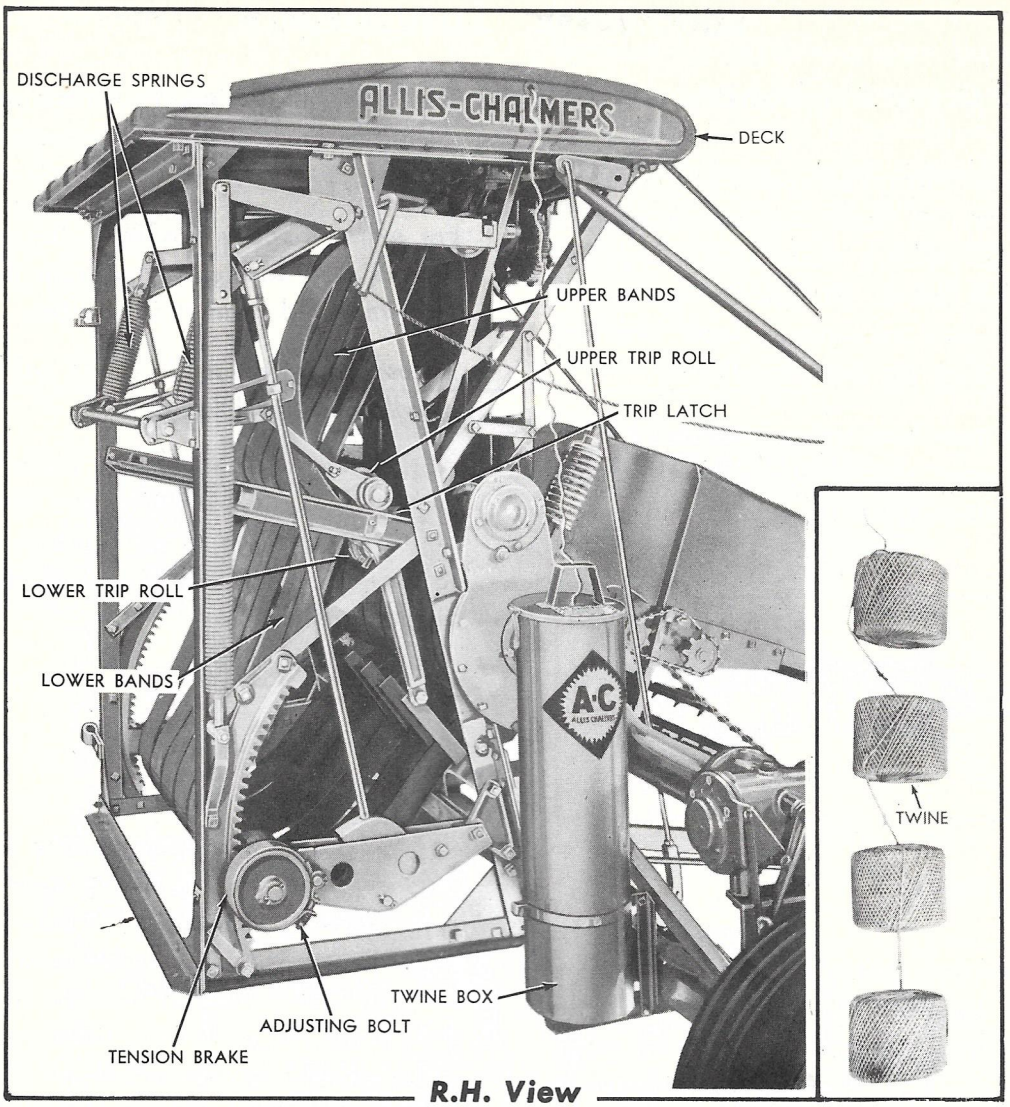
CAUTION: Machine should not be held in reverse longer than necessary to clear the press roll. Releasing the rope allows the return spring to pull the shifting lever back into the forward operating position.

NOTE: P. T. O. shaft must be stopped before gears are reversed.

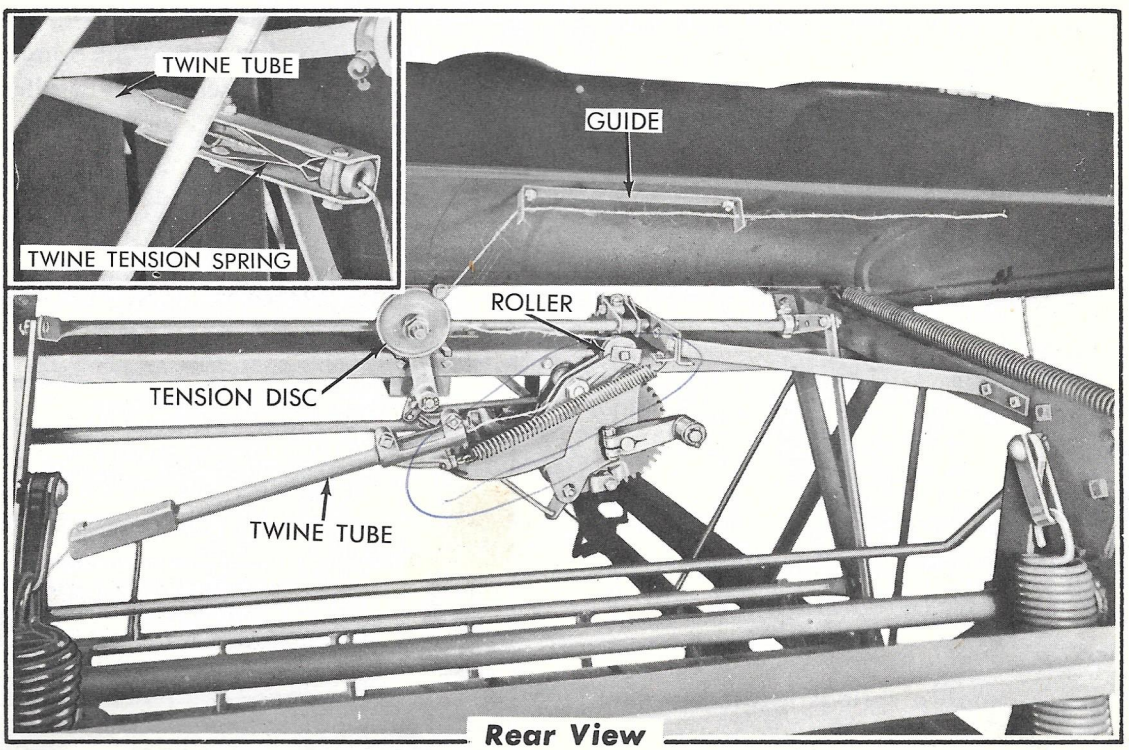
Check tension brake at R. H. end of lower tension roll to see that it is not too tight or stuck. This can be done by loosening the brake adjusting bolt, moving band back and forth on the drum then tighten adjusting bolt to where the spring is about half compressed. Unhook discharge springs, release trip latches, and open the trip rolls. Place the power take-off in gear, with throttle on tractor nearly closed, and start machine to see that the conveyor, all rolls and bands run freely.

Close the trip rolls and hook up the discharge springs. With power take-off in gear, place tractor in forward gear (new operators should use low gear and half throttle or less), and lower the pick-up conveyor to the ground. Drive around field in same direction as hay was mowed with windrow in center of the pick-up conveyor. When the bale has been formed the twine tube will drop and the pick-up conveyor will stop, then stop the forward motion of the tractor by shifting the transmission out of gear, leaving the power take-off running. This will wrap the twine around the bale and eject it. When bale has been ejected and the conveyor starts, the tractor is again put in forward motion for making the next bale.

After making a few bales the operator should check to see if they are of the desired diameter and density. For any adjustments necessary see "Baler Adjustments" and "Suggestions for Operator." Pages 12 and 20.



R.H. View

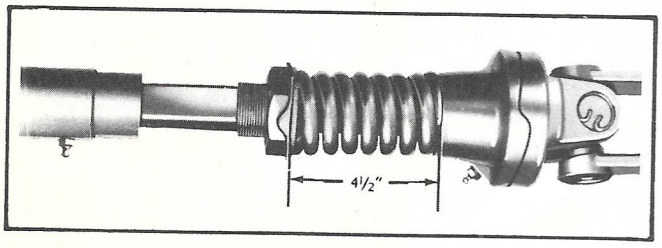


Rear View

Tongue and Drive Mechanism

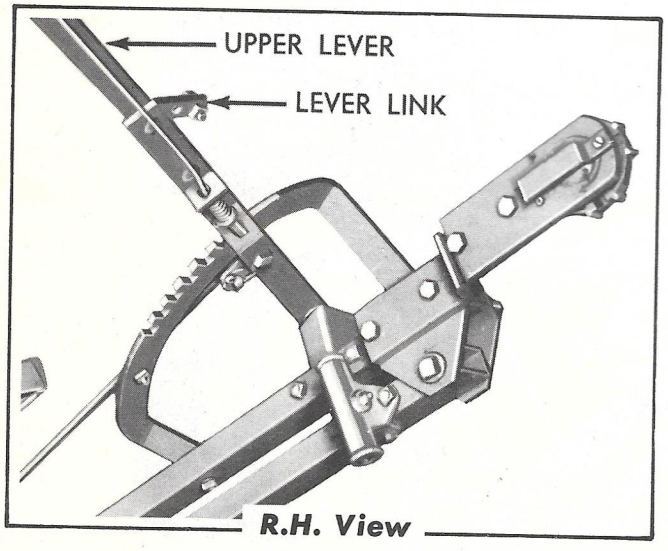
The power take-off shaft is equipped with a master slip clutch to protect the machine against overloads. Adjustment of this clutch is made by the large hex nut in front of the spring. Use just enough tension on the spring to pull the ordinary load. 4½ inch length is satisfactory for most conditions.

The stop on the gear box, which is located behind the gear shift lever, should be adjusted so that the shifter fork does not press against the clutch.



Pick-Up Conveyor

The pick-up conveyor should be set to follow the ground. This is controlled by a hand lever. This lever can be adjusted so that it is within easy reach of the operator's seat. The lever is adjustable in both directions by pivoting the upper lever on the lower bolt and relocating the second bolt and lever in the lever link.



R.H. View

The two conveyor balance springs located at the top of the baler frame should be adjusted so the conveyor will raise easily.

The raddle chain should rake the ground for about 24 inches back of the pick-up roll, to rake up the loose hay.

For extreme rocky conditions the pick-up roll can be adjusted farther away from the ground and links removed from raddle chain.

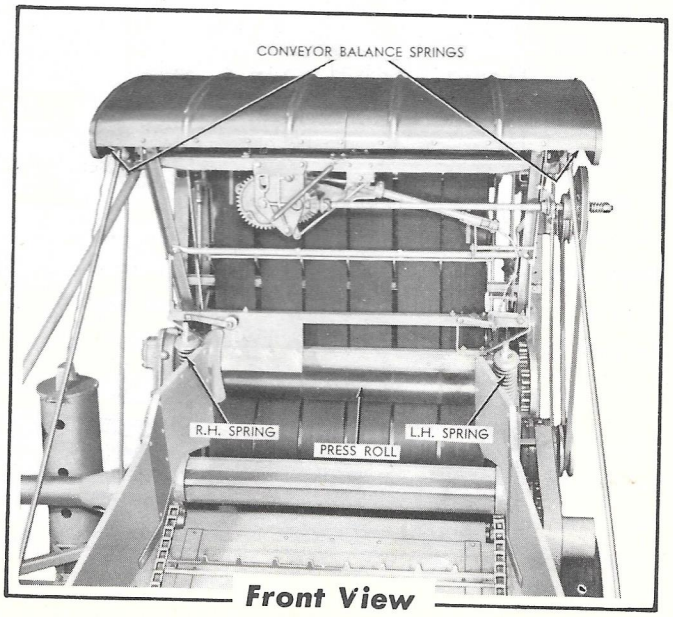
Adjust the conveyor slip clutch just tight enough to handle a normal load.

Adjust the conveyor drive chain with the idler which runs on the inside of the chain. Apply very little or no tension to the chain as it must be free to move back and forth with the idler as the slip clutch ratchets.

Adjust the feeder roll drive chain with the tightener block.

Press Roll

The press roll which flattens the material after it leaves the conveyor, is spring controlled. The pressure exerted by the press roll may be regulated by adjusting the length of the pressure springs. (Spring on L. H. side is heavier because roller is driven at that end.) To start with, these springs should be adjusted so they measure seven (7) inches over-all length. This setting is satisfactory for most baling conditions. However, the amount of pressure required varies with the size of the windrow and the material in it. Heavy windrows of alfalfa may require more pressure.

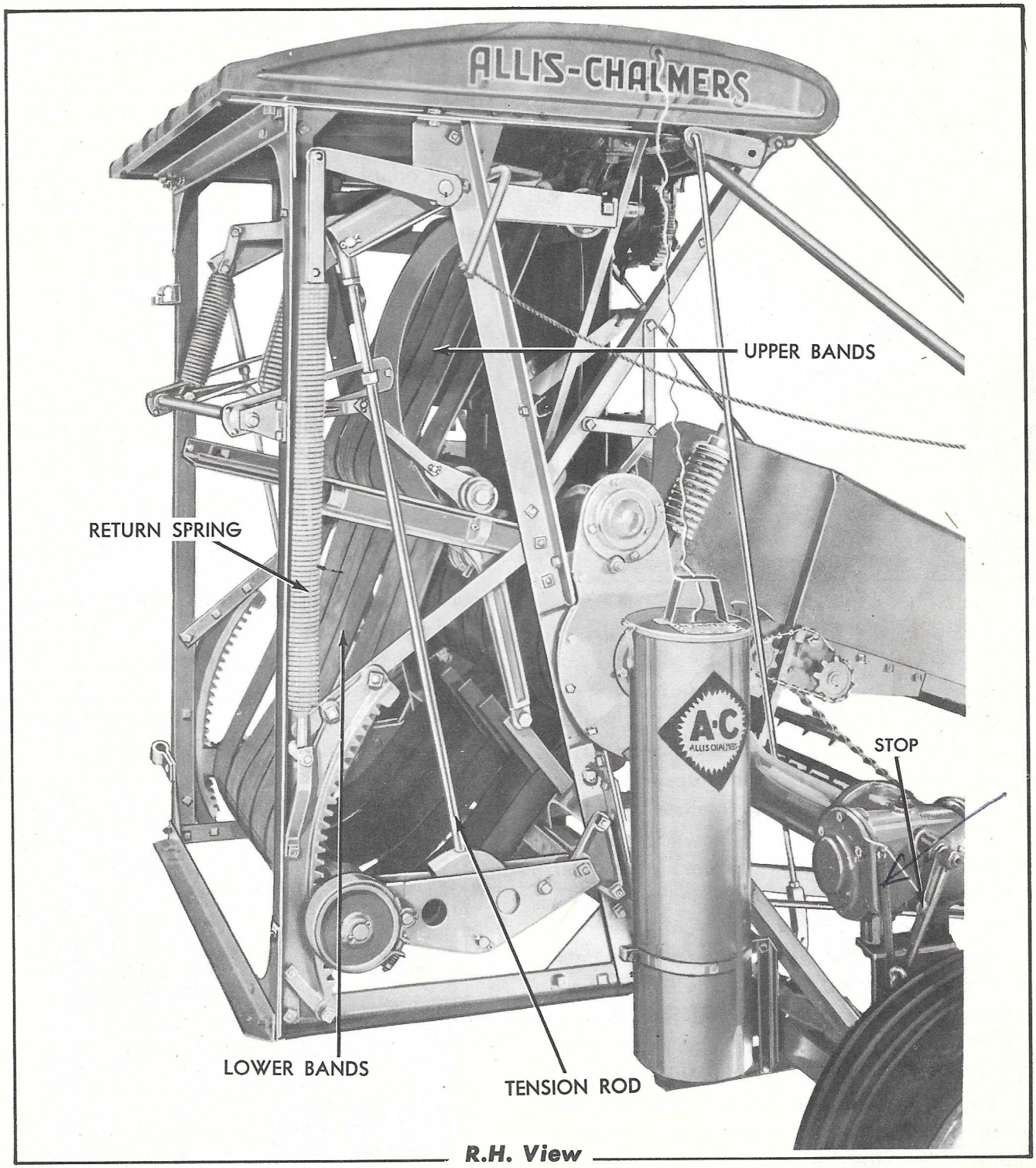


Front View

Bale Forming Bands

After the hay has been flattened into a mat by the press roll, it enters the bale forming chamber. The upper bands are always kept under tension by the tension roll return spring. This spring should be tightened so there is only about one (1) inch of thread left on the bolt.

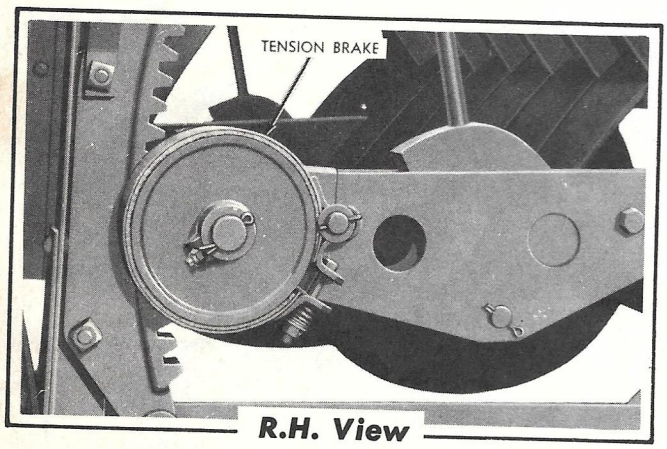
The lower bands are loose forming an opening between the upper and lower bands in which the mat of material doubles over to start the core of the bale. Adjustable tension rods connect the upper and lower tension arms. Both rods should measure 52⅞ inches on centers, however, if upper bands continually run to one side, correction can be made by shortening the connecting rod a little on that side.



R.H. View

Bale Density Adjustment

A brake on the lower tension roll resists the rotation of the lower tension roll shaft as it moves upward in the gear rack. The tighter the brake band is, the tighter the bale will be. The brake band is tightened by screwing down the nut on the bolt that holds the band ends together. Do not, however, set this brake too tight or it will cause excessive strain on the machine. The spring should be compressed very little on the initial setting and then adjusted a little at a time until the desired weight of the bale is reached. If the baler remains idle for some time, the brake band may become stuck to the brake drum, especially during damp or rainy weather. Therefore, it should be checked and loosened, if necessary, before the machine is operated.



R.H. View

Adjusting Diameter of Bale

The diameter of the bale can be adjusted from a minimum of 14" to a maximum of 22" by adjusting the locked nuts on the end of the conveyor drive trip rod. Turning the nuts farther up on the rod trips the conveyor sooner which results in a smaller diameter bale. Moving the nuts down toward the end of the trip rod permits more material to enter the bale before the conveyor is stopped which results in a larger diameter bale. CAUTION: Do not attempt to make bales larger than the maximum recommended diameter of 22". The limit of bale diameter can be determined by noting the upward travel of the lower tension roll gears in the gear racks as the bale is being formed. Material should never be permitted to enter the bale after the gears have reached the upper end of the gear racks or damage to the machine may occur.

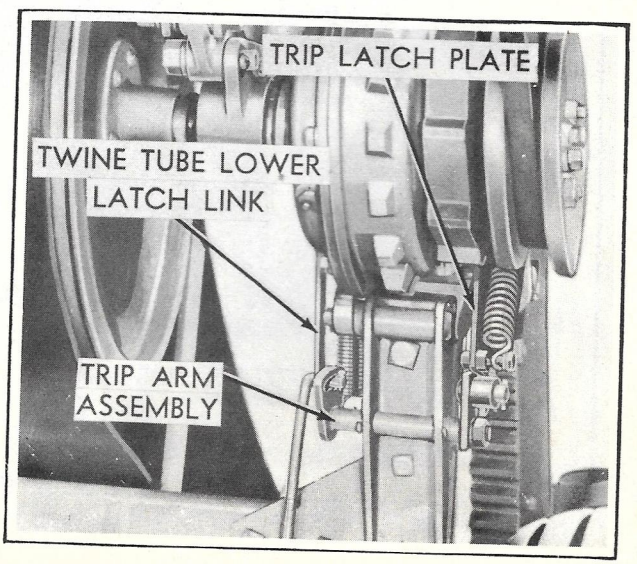
In some crops such as timothy or flax which tend to cling together in the windrow it may be necessary to adjust the lower trip rod to disengage the conveyor clutch sooner to compensate for additional material that may be pulled into the bale after the conveyor has stopped.

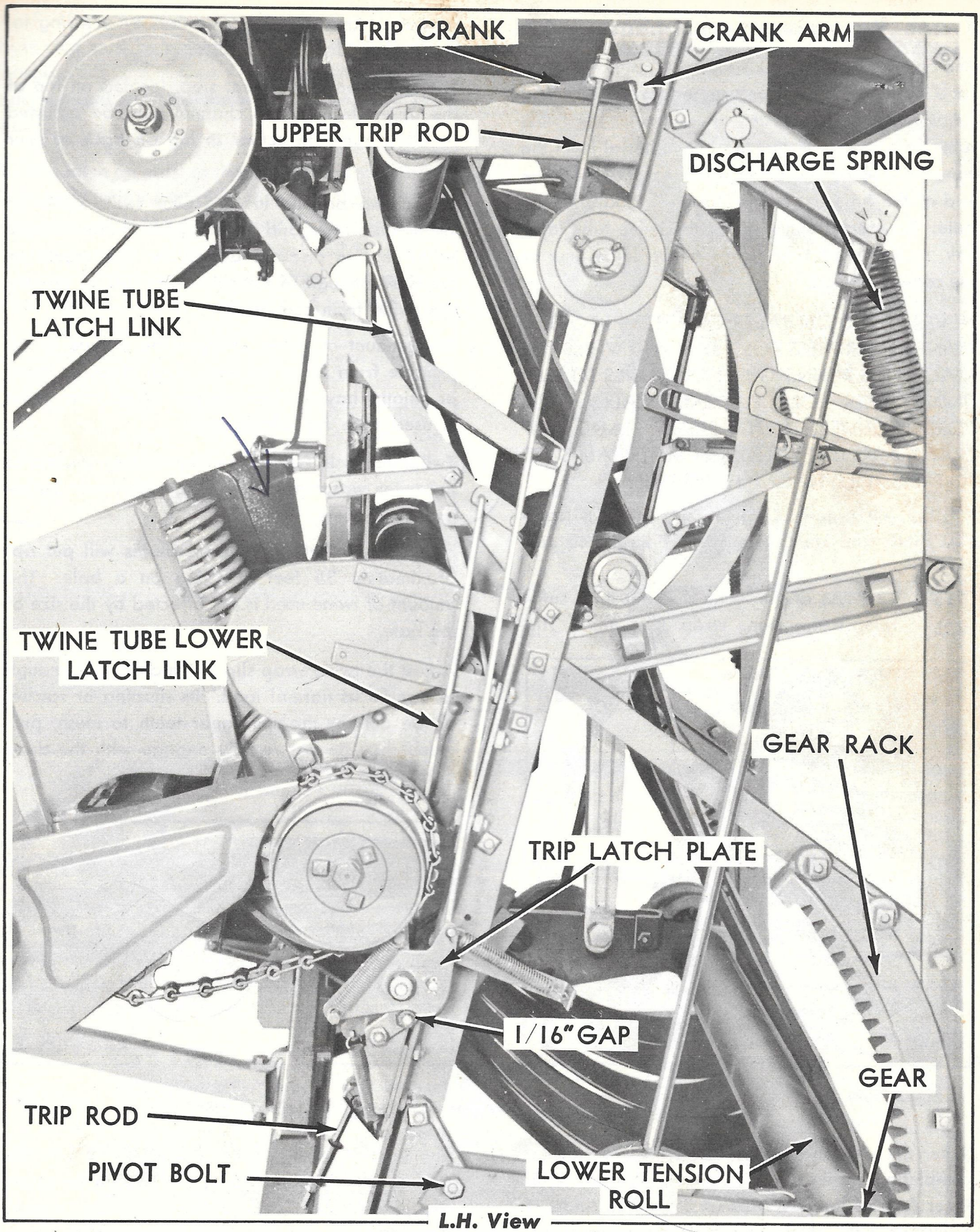
Conveyor Drive and Trip Rod

When adjusting the upper trip rod make certain the crank arm is approximately ⅜" above parallel to the trip crank and set screw is locked securely. The bale chamber must be empty and the discharge springs hooked up. Check twine tube latch link adjustment to determine that lower latch link is not bottoming in slot in the trip arm assembly. Then adjust the nuts at upper end of upper trip rod with enough tension to move the latch plate away from trip roller about 1/16 inch as shown.

Tension Roll Gear Adjustment

The gears, one on each end of the lower tension roll, are keyed to the shaft, and mesh with the teeth in the gear racks. Adjustment of gear mesh in gear rack is made by loosening the hex nut on the eccentric pivot bolt which is located at the front end of the lower tension arm, and turning the head of the eccentric pivot bolt until gear meshes properly for the full travel of the rack. Gears meshing too tight in gear rack may cause several things, such as bale not discharging, sluggish bale discharge, trip rolls not relatching, twine tube not relatching, or pick-up conveyor not starting up again after bale has been discharged. Consequently, these gears should be adjusted to operate freely in the gear racks.




TRIP CRANK
CRANK ARM
UPPER TRIP ROD
DISCHARGE SPRING
TWINE TUBE LATCH LINK
TWINE TUBE LOWER LATCH LINK
GEAR RACK
TRIP LATCH PLATE
1/16" GAP
GEAR
TRIP ROD
PIVOT BOLT
LOWER TENSION ROLL

L.H. View

Twine Wrapping Adjustments

The twine tube latch link should be adjusted so the tube drops an instant before conveyor stops. This adjustment is made at the lower end of the twine tube latch link. The last feed of material from the conveyor carries the twine which extends from the end of the tube under the press roll and onto the bale. For stack baling, adjust the twine tube latch link, so the twine tube drops at the same time as the conveyor stops.

NEVER STAND ON BALER OR ATTEMPT TO FEED TWINE UNDER PRESS ROLL BY HAND WHILE THE MACHINE IS RUNNING. IF TWINE FAILS TO FEED UNDER PRESS ROLL AUTOMATICALLY, PULL CORD CONNECTED TO RIGHT HAND TRIP CRANK ARM UNTIL ENOUGH MATERIAL IS FED TO PRESS ROLL TO CATCH THE TWINE.

If twine still fails to feed under press roll STOP MACHINE and determine what adjustments are necessary.

The twine tension at the twine discs must be sufficient to release the twine wrap spur gear. The tension of the twine is controlled by a spring located behind the twine discs.

The twine tension bracket stop, located on top of the upper frame cross channel must be adjusted to allow roller to center in lug on back of spur gear.

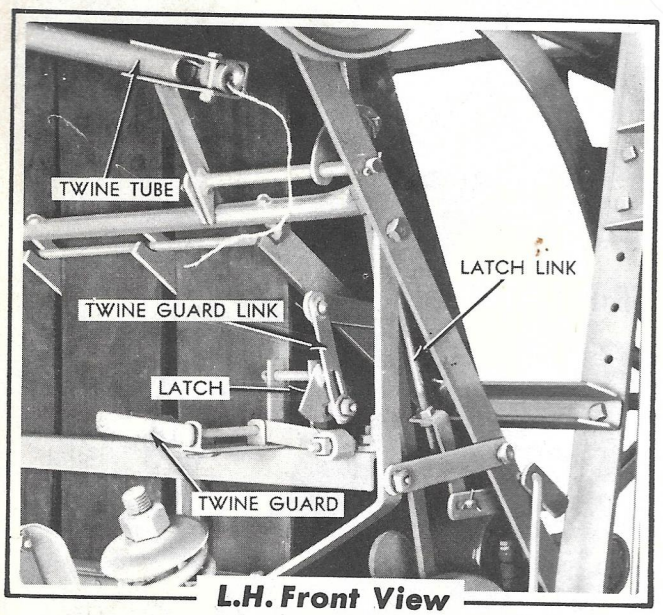
The clamp bracket located over twine roller on twine tube cam and spacer pipe located above twine tension disc are adjustable and should be set close enough to the roller and disc to prevent the twine from coming off.

The amount of twine wrapped on a bale is adjustable from 27 to 45 feet. Such crops as straw or timothy hay will look ragged unless more twine is used than for alfalfa hay.

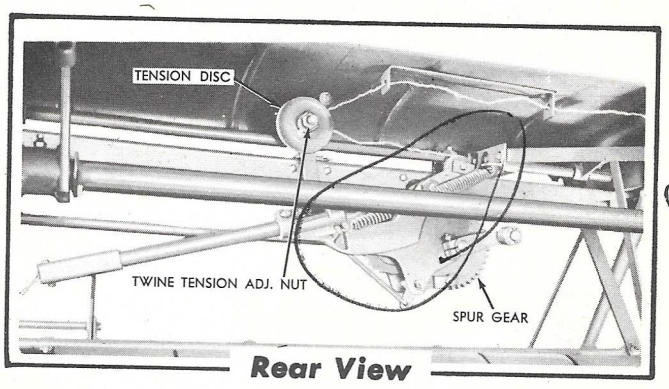
Twine per bale is increased by adding spacers to the twine wrap drive sheave, or decreased by removing spacers.

Four spacers between sheave plates will put approximately 35 feet of twine on a bale. The amount of twine used is not affected by the size of the bale.

Adjust the twine wrap slip clutch only tight enough to handle its normal load. Its slipping or ratchet action permits the spur gear teeth to mesh, provided they do not readily engage with the drive gear when twine tube drops.



L.H. Front View



Rear View

Bale Discharge and Twine Cutting Mechanism

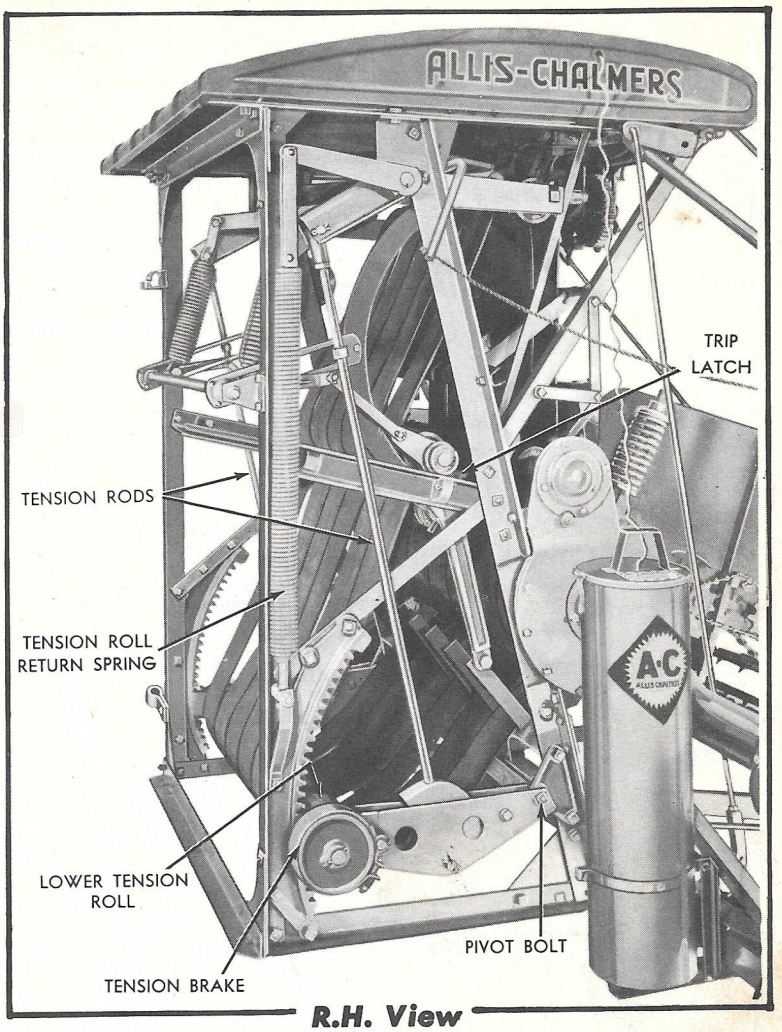
When the twine tube has moved across the machine completing the wrapping operation, a cam on the inner face of the spur gear lifts the R.H. and L.H. discharge links releasing the twine guard latch.

The twine guard link should be adjusted to allow the twine to be cut and wrapped on the bale before it is discharged.

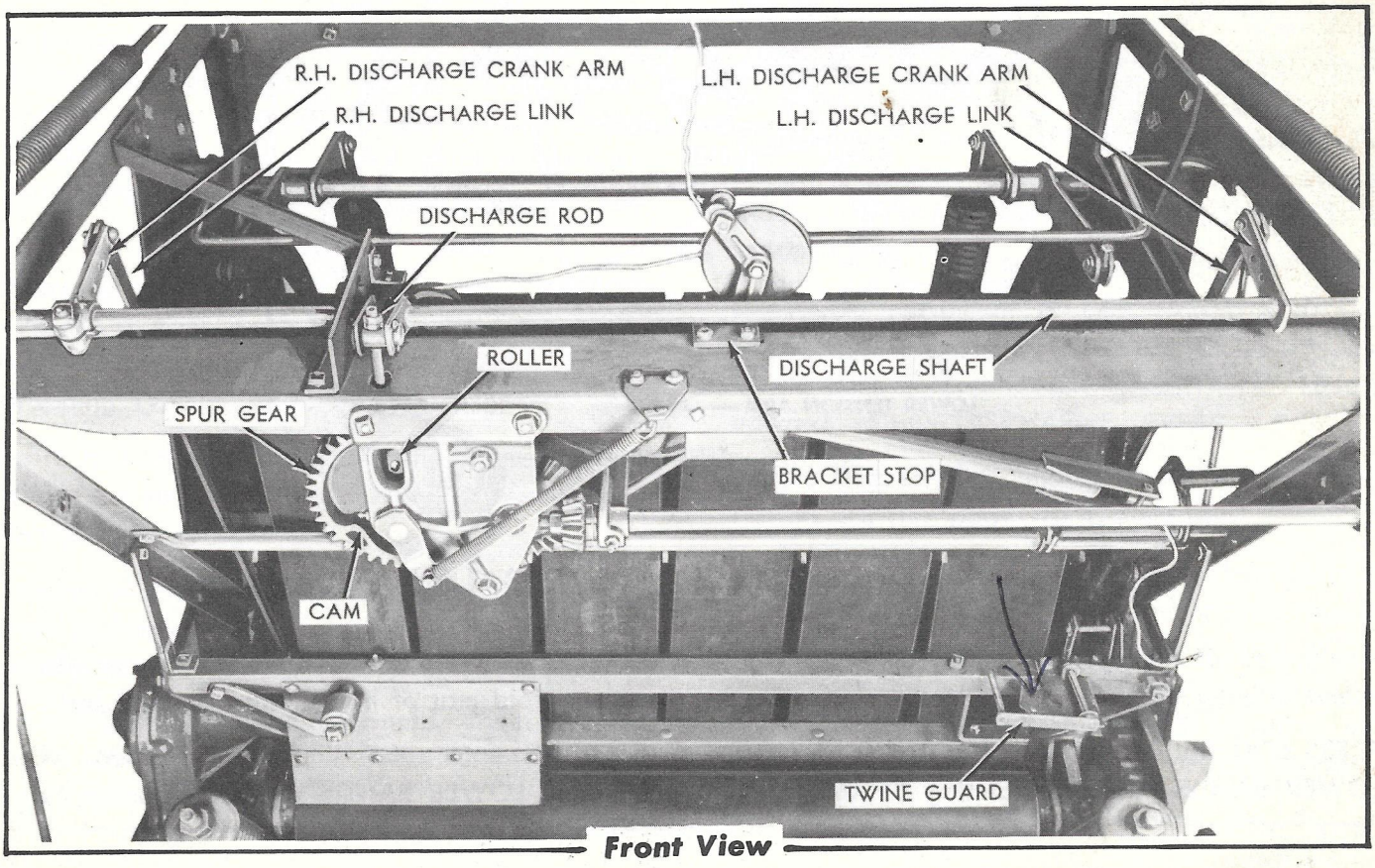
The amount of lift of the R.H. and the L.H. discharge links is regulated by the nuts on the upper end of the bale discharge adjusting rod. To make this adjustment, turn the spur gear until the bale discharge roller reaches the top of the cam, then adjust the nuts on the discharge adjusting rod until the discharge levers raise the full height.

The R. H. discharge crank arm is clamped to the shaft, and must be synchronized with the L. H. discharge crank arm so that the two crank arms work together and produce the same lift on each discharge lever.

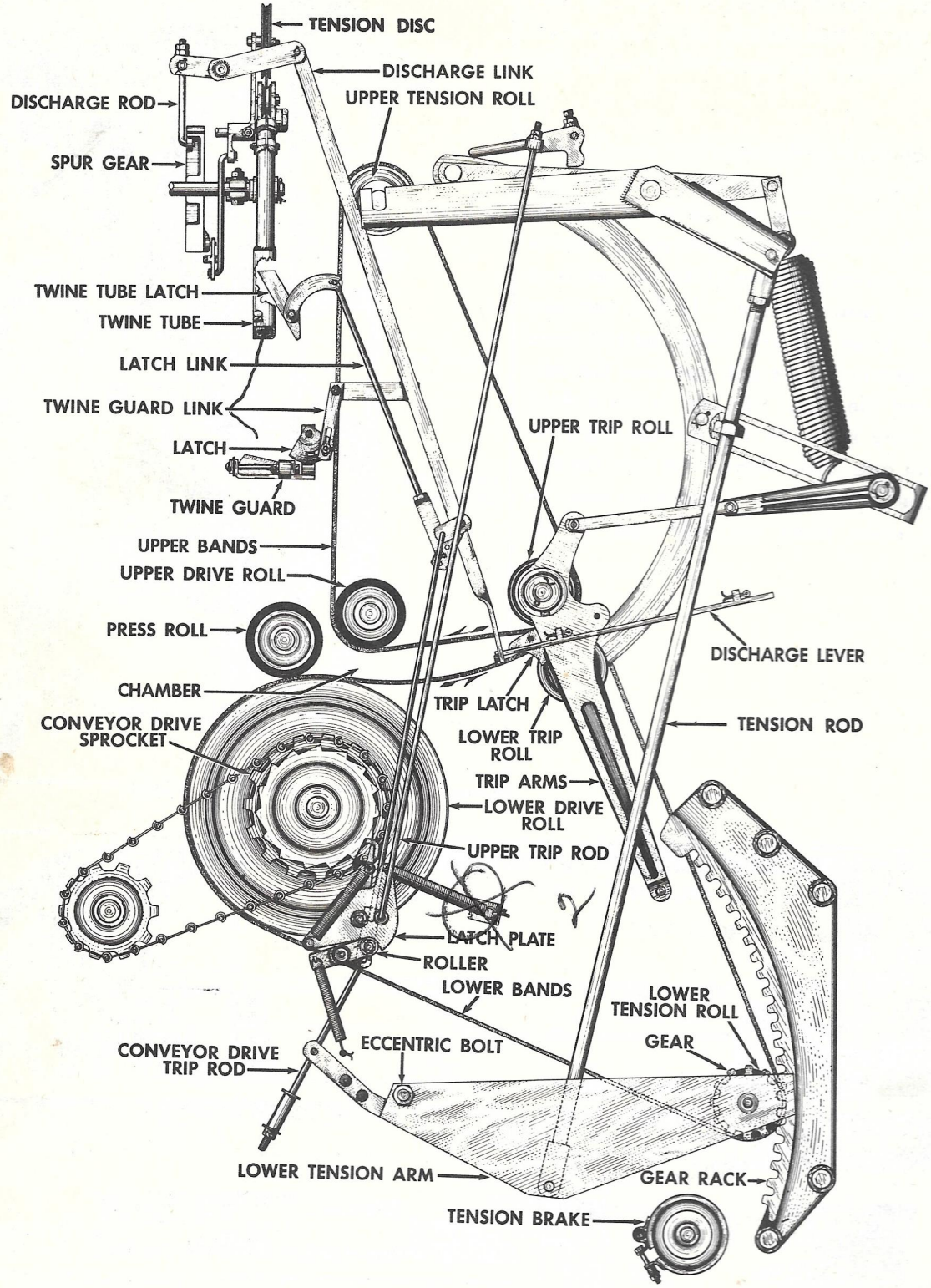
The trip latch on each of the inner trip arms is held down by a spring controlled plunger. This plunger bears against a lug on the rear of the trip latch. The action of this plunger is regulated by means of a castellated nut on the stem of the plunger and there should be a gap of about 1/16 inch between the nut and the inner trip arm when the trip arms are latched together. If the gap between the castellated nut and the inner trip arm is more than 1/16 inch, it may keep the trip latches from relatching. If the gap is less than 1/16 inch the trip latches will open, but the bale discharge may be sluggish, and often times not discharge at all.



R.H. View



Front View



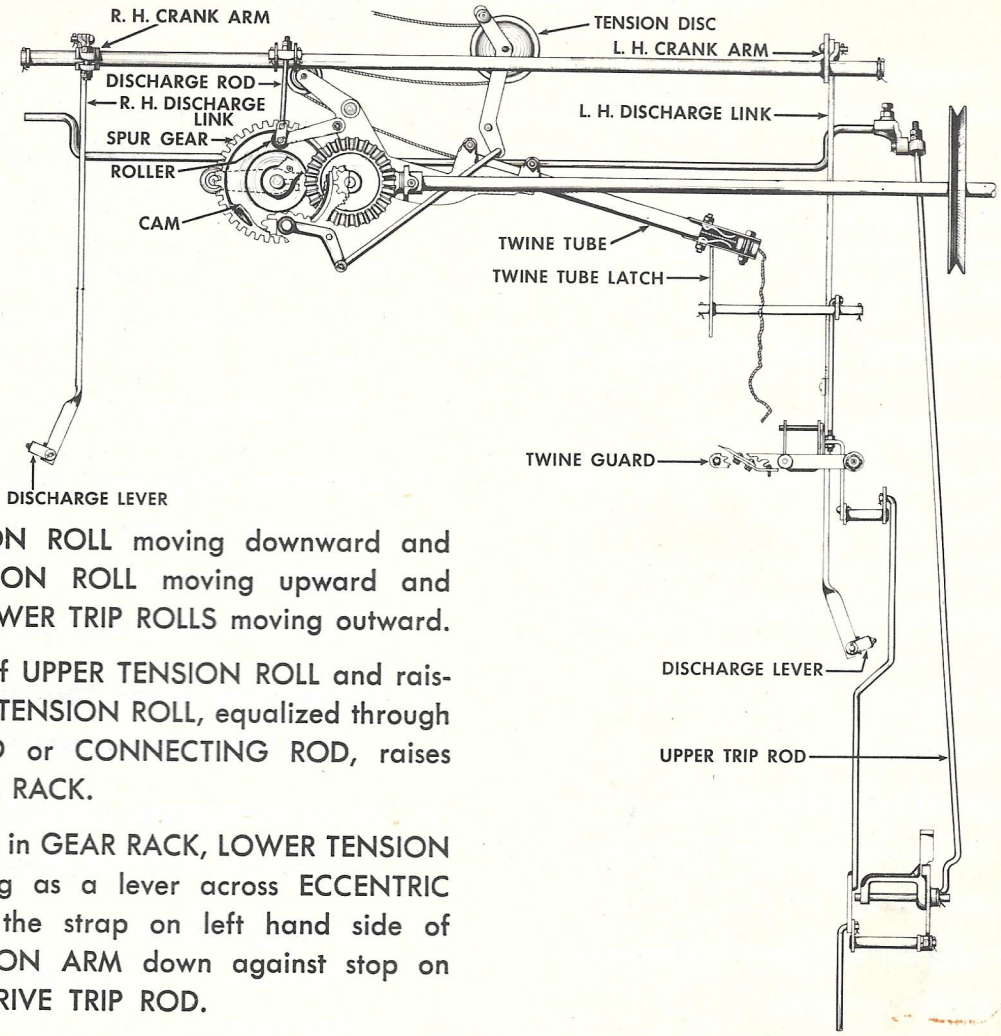
OPERATION CYCLE—"ROTO-BALER"

Hay moves up conveyor to feeder roll where it is raised to enter under PRESS ROLL.

PRESS ROLL flattens hay into mat and feeds it on LOWER BANDS into bale forming CHAMBER.

UPPER and LOWER bands, traveling in opposite directions, fold mat of hay to start core of bale.

Growing diameter of bale causes tension on UPPER and LOWER BANDS which is relieved by



UPPER TENSION ROLL moving downward and LOWER TENSION ROLL moving upward and UPPER and LOWER TRIP ROLLS moving outward.

The lowering of UPPER TENSION ROLL and raising of LOWER TENSION ROLL, equalized through TENSION ROD or CONNECTING ROD, raises GEAR in GEAR RACK.

As GEAR raises in GEAR RACK, LOWER TENSION ARM, operating as a lever across ECCENTRIC BOLT, pushes the strap on left hand side of LOWER TENSION ARM down against stop on CONVEYOR DRIVE TRIP ROD.

Downward motion of CONVEYOR DRIVE TRIP ROD, operating through LATCH PLATE, disengages clutch controlling CONVEYOR DRIVE SPROCKET, stopping conveyor (which is signal for operator to stop tractor, but leave PTO shaft running).

Disengagement of clutch on CONVEYOR DRIVE SPROCKET pulls down rod connected to LATCH LINK which in turn trips TWINE TUBE LATCH, dropping TWINE TUBE (see page 19).

Loose end of twine is pulled under PRESS ROLL with last of hay into CHAMBER and is overwrapped on right end of bale.

Tension on twine at TENSION DISC pulls lever over and through linkage, trips latch releasing partial SPUR GEAR.

SPUR GEAR now being engaged, drives TWINE TUBE across the bale and twine keeps feeding, thus spirally wrapping bale.

At end of TWINE TUBE travel, cam on face of SPUR GEAR wedges above ROLLER and pulls DISCHARGE ROD downward. Twine is cut off by blade at TWINE GUARD and TWINE TUBE LATCH holds TWINE TUBE.

Downward movement of DISCHARGE ROD rotates shaft leading to R.H. and L.H. CRANK ARMS which pulls R.H. and L.H. DISCHARGE LINKS upward, raising DISCHARGE LEVERS.

DISCHARGE LEVERS unlatch UPPER and LOWER TRIP ROLLS (see page 18) to eject bale.

Long tension spring and discharge springs (shown on Fig. N) relatch TRIP ROLLS and upward movement of arch levers, through UPPER TRIP ROD, re-engages clutch on CONVEYOR DRIVE SPROCKET to start conveyor which is signal for operator to place tractor in gear and move forward to make another bale.

SUGGESTIONS FOR OPERATOR

The following suggests particular adjustments which can be made to overcome possible field problems.

A study of these suggestions will guide you in locating the cause or making the proper adjustment to overcome the problem.

1. Pick-up conveyor does not pick up clean.

Pick-up not running on ground.

Raddle chain not dragging ground far enough back of the pick-up roll.

Picking up windrow in wrong direction.

Not stopping forward travel when conveyor stops.

Conveyor slip clutch slipping.

Ground travel too fast.

2. Hay wrapping on pick-up roll.

Pick-up roll adjusted too far forward.

Material too damp.

3. Conveyor slip clutch slips excessively.

Clutch adjusted too loose.

Raddle dragging ground too far back of pick-up roll.

Ground travel too fast.

Raddle slats bent.

Material wrapping on drive shaft, sprockets, or pick-up roll.

Starting forward travel too soon.

4. Conveyor drive unlatching before bale is completed.

Trip crank arm not 3/8" above parallel with trip crank.

Twine tube latch link adjusted too long, allowing the lower latch link to bottom in slot in inner trip arm assembly.

5. Pick-up conveyor fails to start after bale has been discharged.

Upper trip rod adjusted too long.

Conveyor drive trip latch return spring not pulling latch into clutch wheel.

Trip crank arm loose on shaft or not set 3/8" above parallel with trip crank.

Trip linkage or tension roll gears binding.

Starting forward travel too soon.

6. Hay will not feed into baler.

Driving too fast; material bunching on conveyor.

Press roll springs adjusted wrong.

7. Excessive plugging at press roll.

Windrow too heavy or roped.

Material too damp.

Press roll springs adjusted wrong.

8. Twine tube drops too soon.

Twine tube latch link adjusted too short.

9. Twine tube drops too late.

Twine tube latch link adjusted too long.

10. Breaking twine.

Twine tangled and catching in twine box.

Poor quality twine.

Twine tension disc adjusted too tight.

Twine ends incorrectly tied.

Not feeding from center of ball.

Guides not adjusted properly on tension disc and twine roller.

11. Excessive twine on R. H. end of bale.

Twine tension disc adjusted too loose.

Twine wrap drive gears not engaging.

Twine wrap drive belt or slip clutch too loose.

12. Twine does not cut.

Twine knife dull.

Twine knife guard binding.

Twine tension disc adjusted too loose.

Twine knife installed upside down.

Twine wrap drive belt or slip clutch too loose.

Twine guard latch link adjusted too long.

13. Twine tube fails to relatch.

Twine tube latch link adjusted too short.

Various parts of discharge linkage binding, trip latch springs too loose, tension arms binding.

Bale discharge sluggish.

14. Twine not entering press roll.

Twine tube dropping too late.

Stopping forward motion too soon, or windrow broken.

15. Not enough twine on L. H. end of bale.

Twine guard latch link adjusted too short.

16. Making cone shaped bales.

Windrow too narrow.

Material being fed up one side of machine.

Not enough material to feed full length of press roll.

17. Bale tight in center and loose on ends.

Windrow too narrow.

All material going up center of conveyor.

18. Lower tension roll jerks as it raises in gear racks.

Brake too tight.

Brake pawls worn or binding.

19. Discharging small bale with no twine.

Tension bracket stop improperly adjusted.

Trip latch plates worn or loose.

Trip latch plungers not properly adjusted.

20. Bale will not discharge.

Discharge lever bars not raising high enough.

Trip latch plungers improperly adjusted.

Tension arms binding.

Gears binding in gear racks.

Making bale too light.

21. Bales discharge from one side of machine first.

Discharge lever bars not raising together.

Trip latch plungers improperly adjusted.

Trip roll bearings or bow pivot caps loose.

Release pin or latch plate loose or missing on one side.

Plunger spring weak or broken.

22. Trip rolls fail to relatch.

Tension arms binding.

Gears binding in gear rack.

Pawls stuck in brake.

Trip latch plungers improperly adjusted.

Material caught in latches holding them apart.

23. Upper bands run to one side.

Tension rods improperly adjusted.

Bands stretched or cut on one side.

Trip roll bearings loose.

Feeding material to one side of conveyor.

24. Tractor wheels running on windrow.

Rear wheels on tractor adjusted too wide.

Baler tongue in transport position.

25. P.T.O. clutch slipping excessively.

Clutch adjusted too loose or overlubricated.

Windrow too heavy, too damp, or roped.

Tension brake stuck.

26. Power take-off shaft vibrating excessively on turns.

Tractor improperly hitched.

Hitch points not secure.

Baler tongue in transport position.

27. Bale counter not working.

Trip arm not properly adjusted.

Trip spring unhooked.

STORING MACHINE

For better service and less repair bills follow the few simple instructions outlined below; when storing a baler.

1. Clean machine thoroughly, remove all dirt and chaff to avoid holding moisture.

2. Check machine thoroughly, or have your dealer inspect it for necessary repairs so it can be made ready for next season's work.

3. Lubricate all bearings, force enough clean lubricant into each bearing to force out all old grease, dirt and moisture.

4. Paint all spots where paint has been rubbed off, to prevent rust.

5. Oil all chains to prevent rust.

6. Block up under axle to take weight off of tires and keep them out of the dirt.

7. Place a board or block under conveyor shoes and end of tongue to keep them out of the dirt and moisture.

8. Release brake tension.

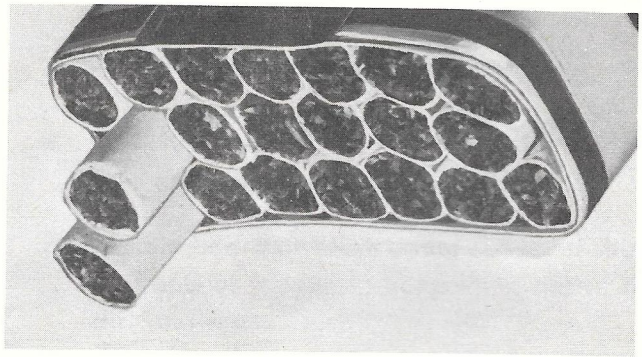
Retain This Book For Ready Reference
See Your "Allis-Chalmers" Dealer
For Further Service Information.

SUGGESTIONS ON HANDLING, TRUCKING AND STORING ROLLED BALES

In addition to the many advantages of the rolled bale in greater leaf-saving, resistance to weather, and convenience in feeding and bedding, it has other advantages in handling, trucking and storing, as well.

It stacks tightly together on rack, truck or in mow or outside stack, nesting much as cigarettes in a package — see picture. Therefore more tonnage of rolled bales can be stored in a given cubic area.

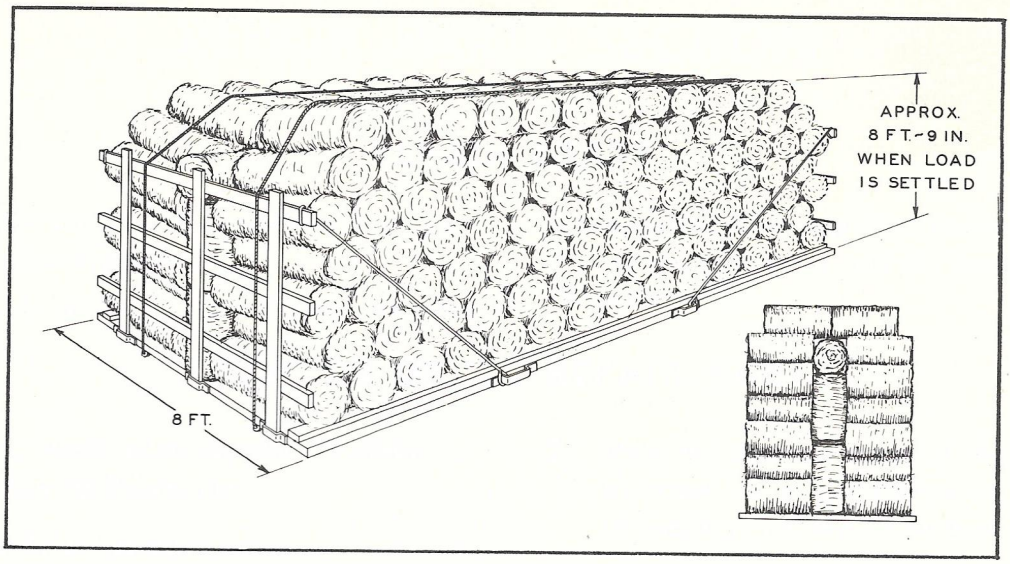
Here are several pictures illustrating the handling, trucking and stacking of rolled bales with a brief description of each that we are sure will be of interest to you.



A bale loader, similar to that shown, can be used to save hand labor in loading bales in the field for hauling to barn or stack.

Rolled bales are easier to load and haul on truck or rack because they can take all kinds of rough handling without breaking. They fit compactly together like cigarettes in a pack and are all exactly 36 inches long.

For farm handling from field to mow or feed lot your regular equipment is all that is required. For large-tonnage truck loading or custom hauling to city markets, suggestions follow for correct loading methods to insure efficient maximum loading for long hauls.

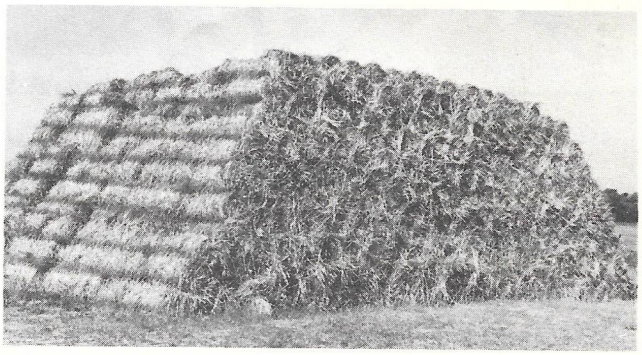


Custom truckers who are experienced in hauling rolled bales like them because they handle easily, are extremely sturdy, stack well and load more tonnage per trip.

This sketch shows one simple and effective method of loading rack or truck with maximum tonnage for long hauls. The following suggestions may also be of assistance depending on type of truck to be loaded, length of haul, etc.

1. Some type of closed or latticed uprights or end-racks should be used at each end of bed of height suitable to permit loading within state law specifications. Rope or brace rod supports to truck sides should be provided as needed.
2. A 2 x 4 should be toe-nailed lengthwise along outer edge of each side of truck bed, as shown, to tilt outer tiers of bales slightly toward the center.
3. Bales in outer tiers should be nested like cigarettes in a pack to increase tonnage and add to compactness of load.
4. Between outer tiers of horizontal bales there should be at least two rows of bales *set on end* in center of truck, one row on top of the other as shown. *Do not stack these two center rows horizontally*, as they would tend to roll towards sides and push load outward.
5. A third center row of bales, if needed, can be laid horizontally and the top rows of outer bales should be moved in to meet at center to tie load together.
6. For long hauls ropes can be placed lengthwise over the load and cinched tight with no danger of breaking bales open.

Rolled bales are unloaded and mowed away with conventional hay handling equipment such as elevators, grapple forks, hooks, rope slings, etc. They roll into place and take plenty of rough handling and don't buckle or break apart, even when dropped long distances to the mow floor.



It is easy to build stacks with "rolled bales." Merely block or stake the lower tier and the rest of the bales nest into place, forming a firm and solid stack. The use of end poles supported by tie wires, anchored in the stack, permits building stacks of greater height and tonnage. Canvas, loose hay or other protective cover for the top of stack is recommended.

When storing rolled bales in the mow remember that more tonnage is normally stored in a given cubic area than with either loose hay or rectangular bales.

REPAIR PARTS SECTION

REPAIR PARTS

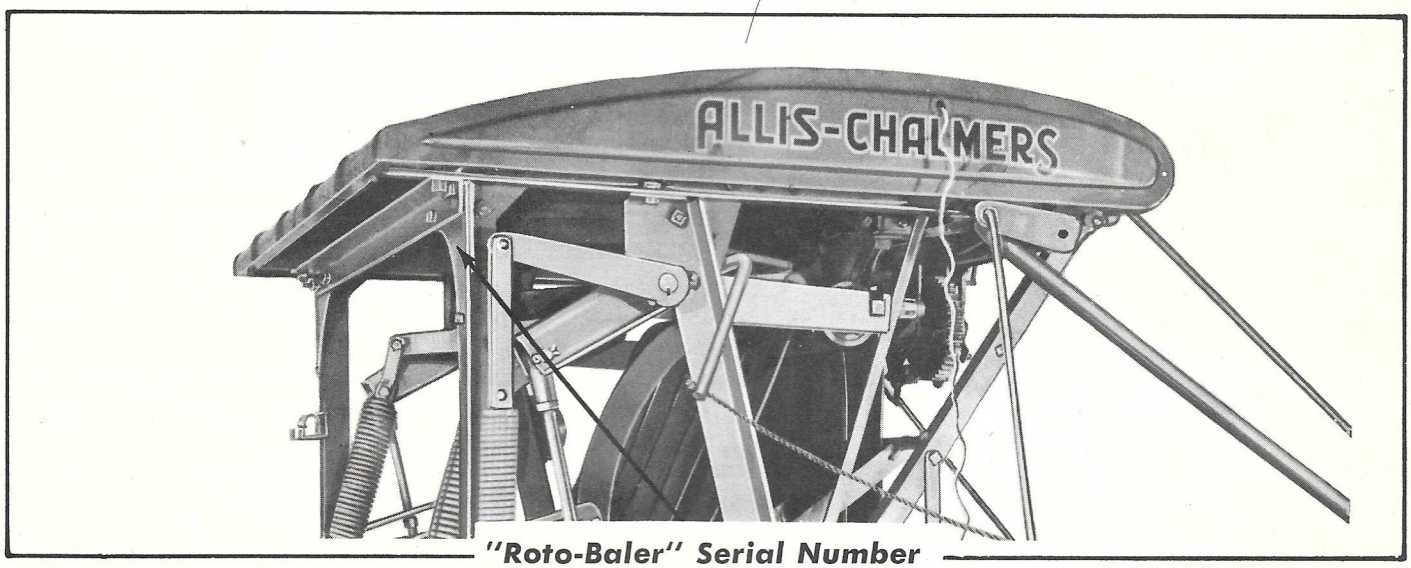
Order all repair parts for this machine from your local "Allis-Chalmers" dealer.

To guide you in ordering repair parts, we have prepared the following illustrations which identify the various assemblies and the basic parts of your "Roto-Baler."

HOW TO ORDER REPAIR PARTS

When ordering repair parts for your "Roto-Baler," supply the following information:

1. The "Roto-Baler" serial number.
   The serial number of your "Roto-Baler" is located on the upper R.H. gusset on the rear of the machine as shown in illustration below.
2. State the common name of the part you wish to order, or a description of the part, and its location on the "Roto-Baler."
3. Always print your name and post office address, where parts are to be shipped; also specify whether material is to be shipped by freight, express or parcel post.



"Roto-Baler" Serial Number

IMPORTANT

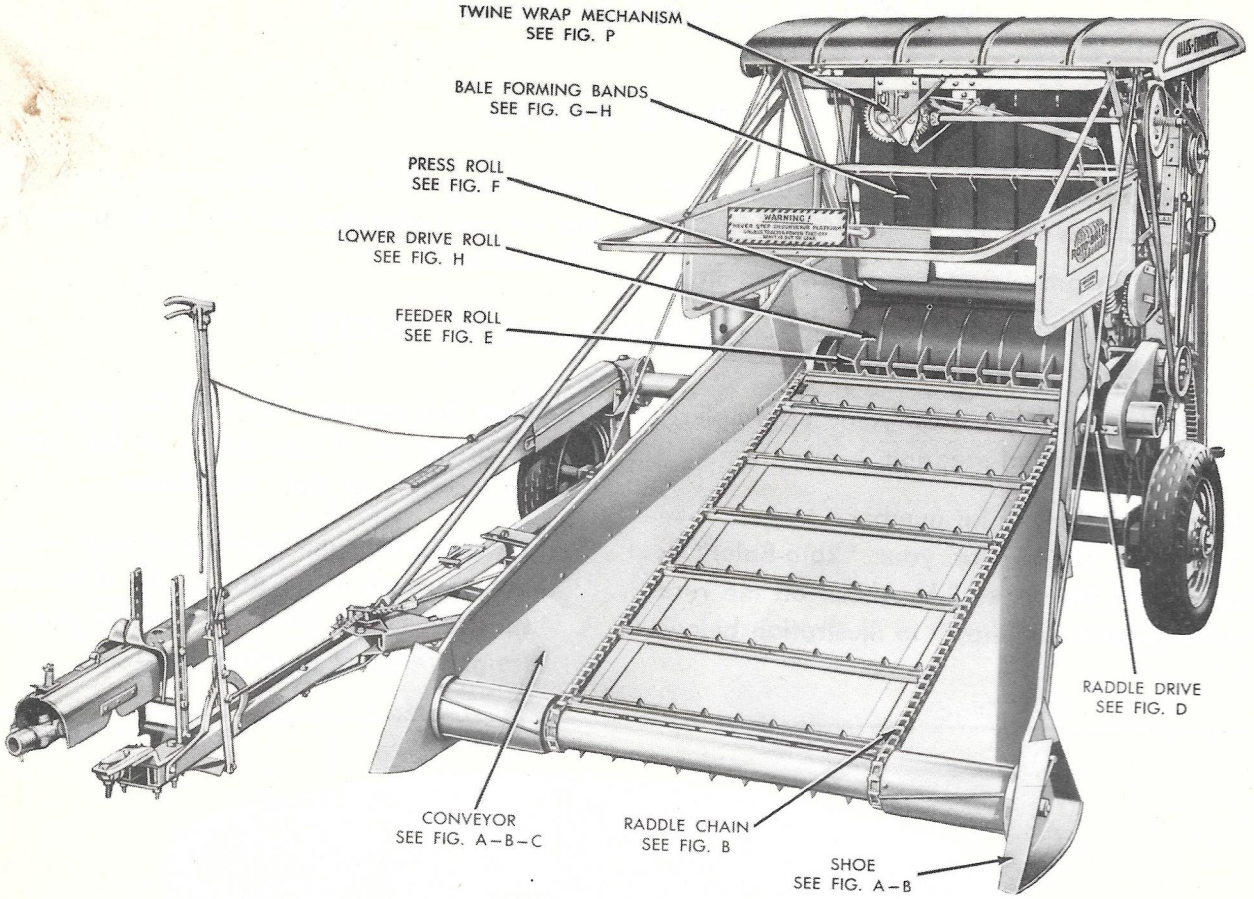
Unless claims for shortages or errors are made immediately upon receipt of goods, they will not be considered.

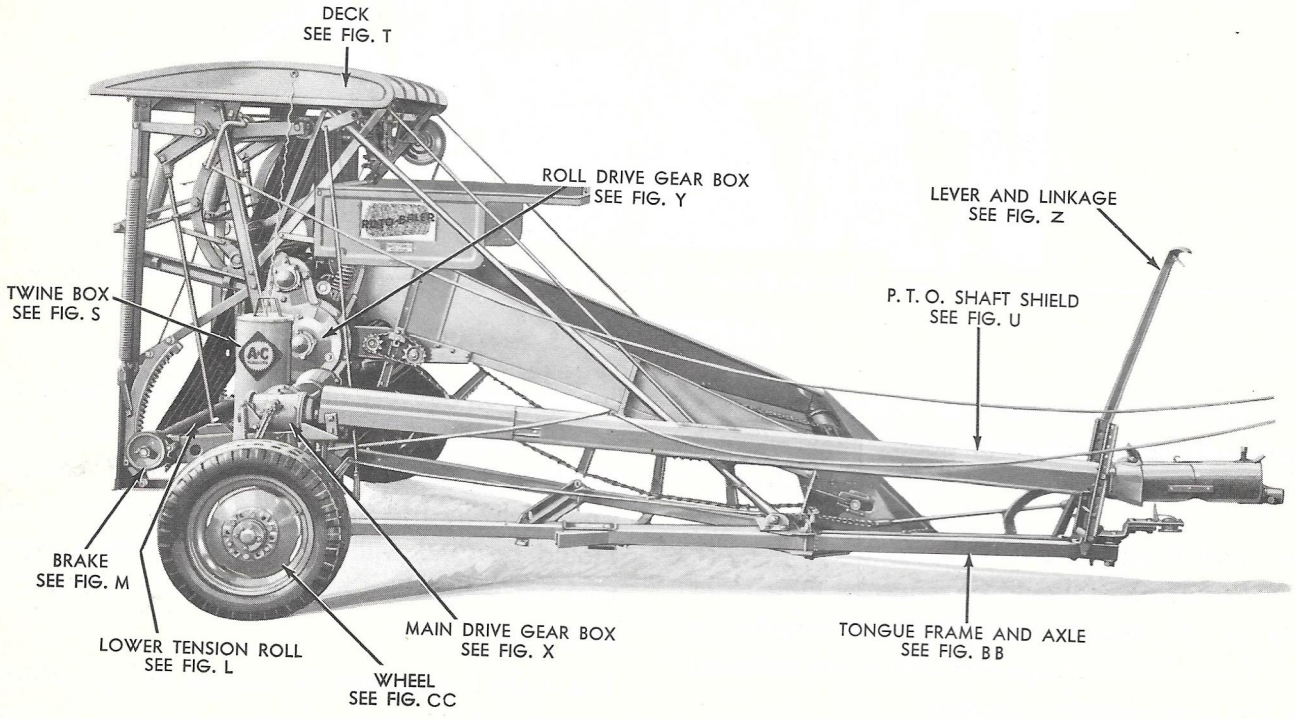
When broken goods are received, a full description of the damage should be made by the carrier agent on the freight bill. If this description is insisted upon full damage can always be collected from the transportation company.

No responsibility is assumed for delay or damage to merchandise while in transit. Our responsibility ceases upon delivery of shipment to the transportation company, from whom a receipt is received showing that shipment was in good condition when delivered to them; therefore, claims (if any) should be filed with the transportation company and not with Allis-Chalmers Manufacturing Company.

The right is reserved to change the construction or material of any parts where it seems desirable to do so, without incurring the obligation of installing such changes on units already delivered.

Order Repair Parts by Description.





General Description

Order Repair Parts by Description.

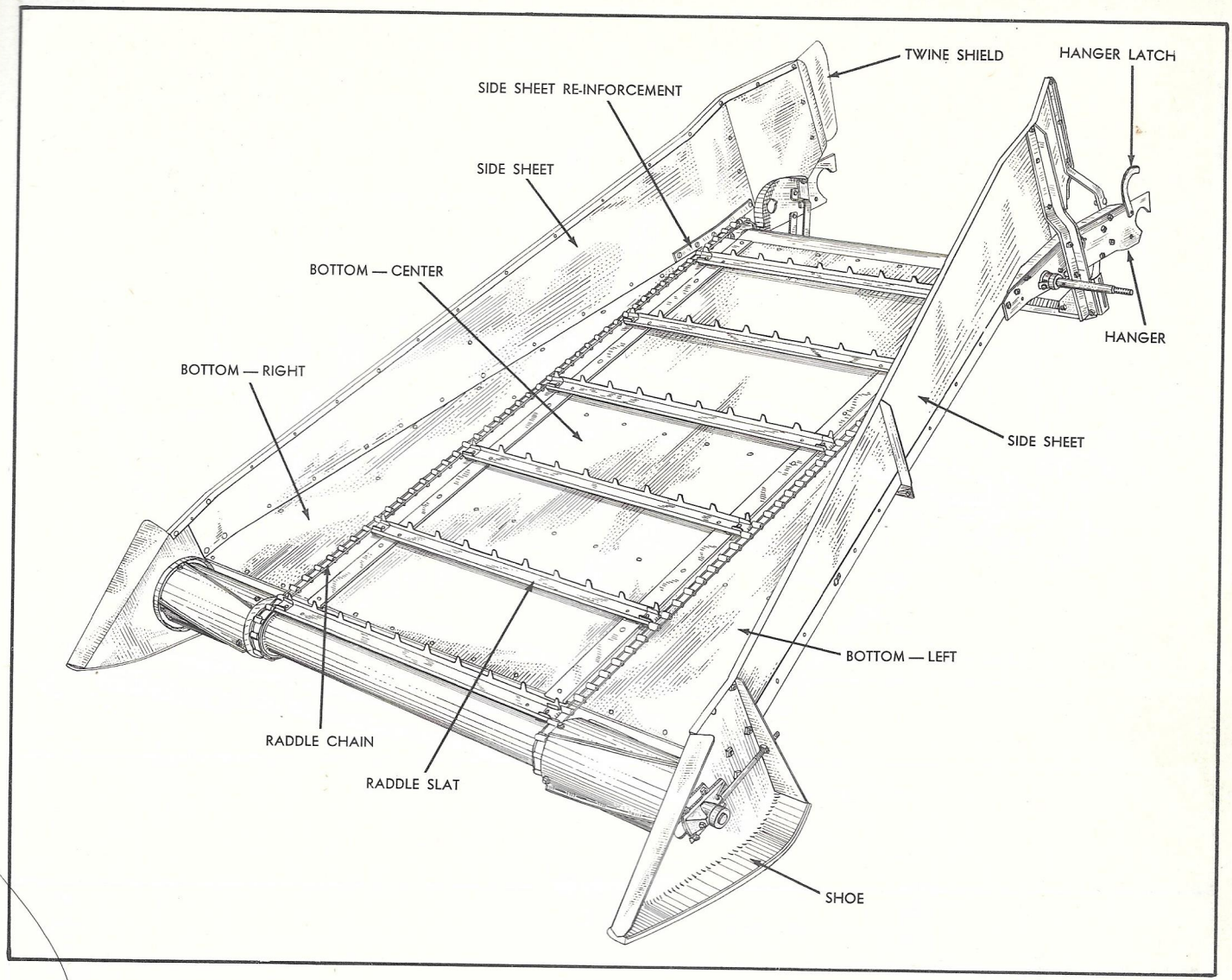
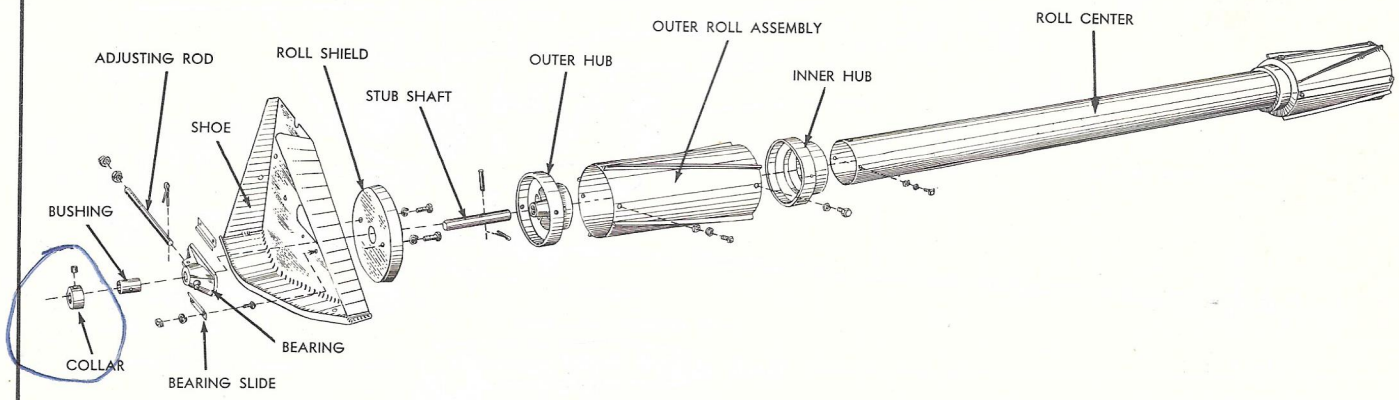


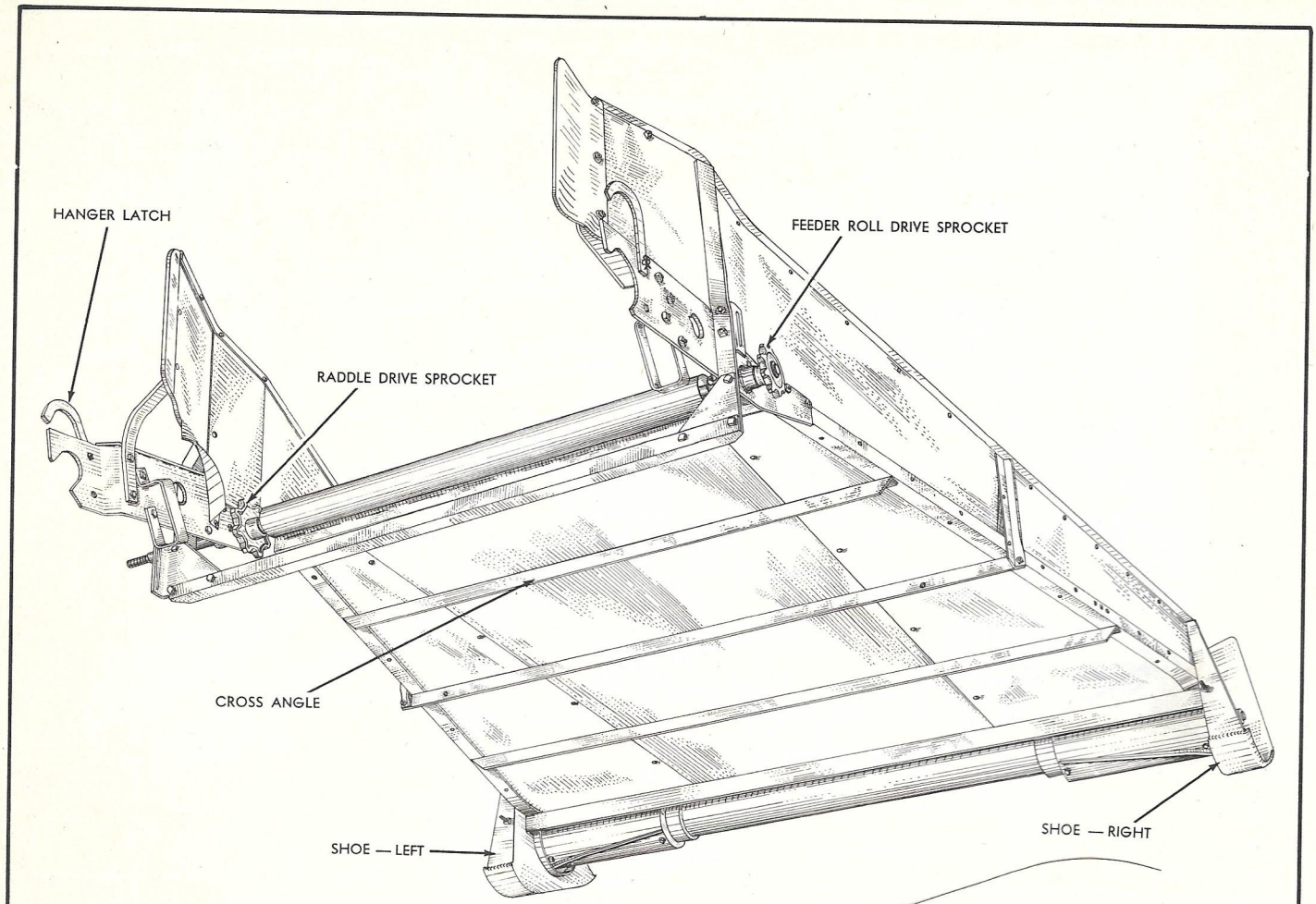
FIG. A



Conveyor

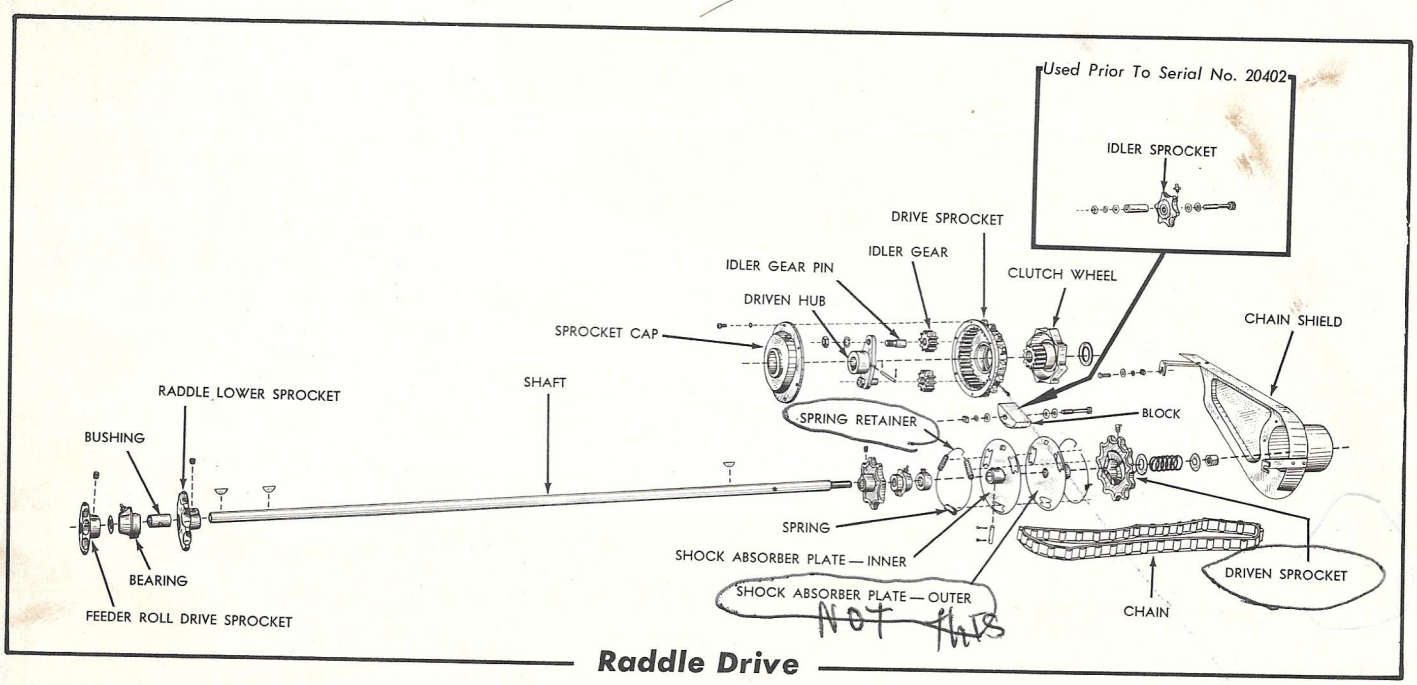
FIG. B

Order Repair Parts By Description.



Conveyor

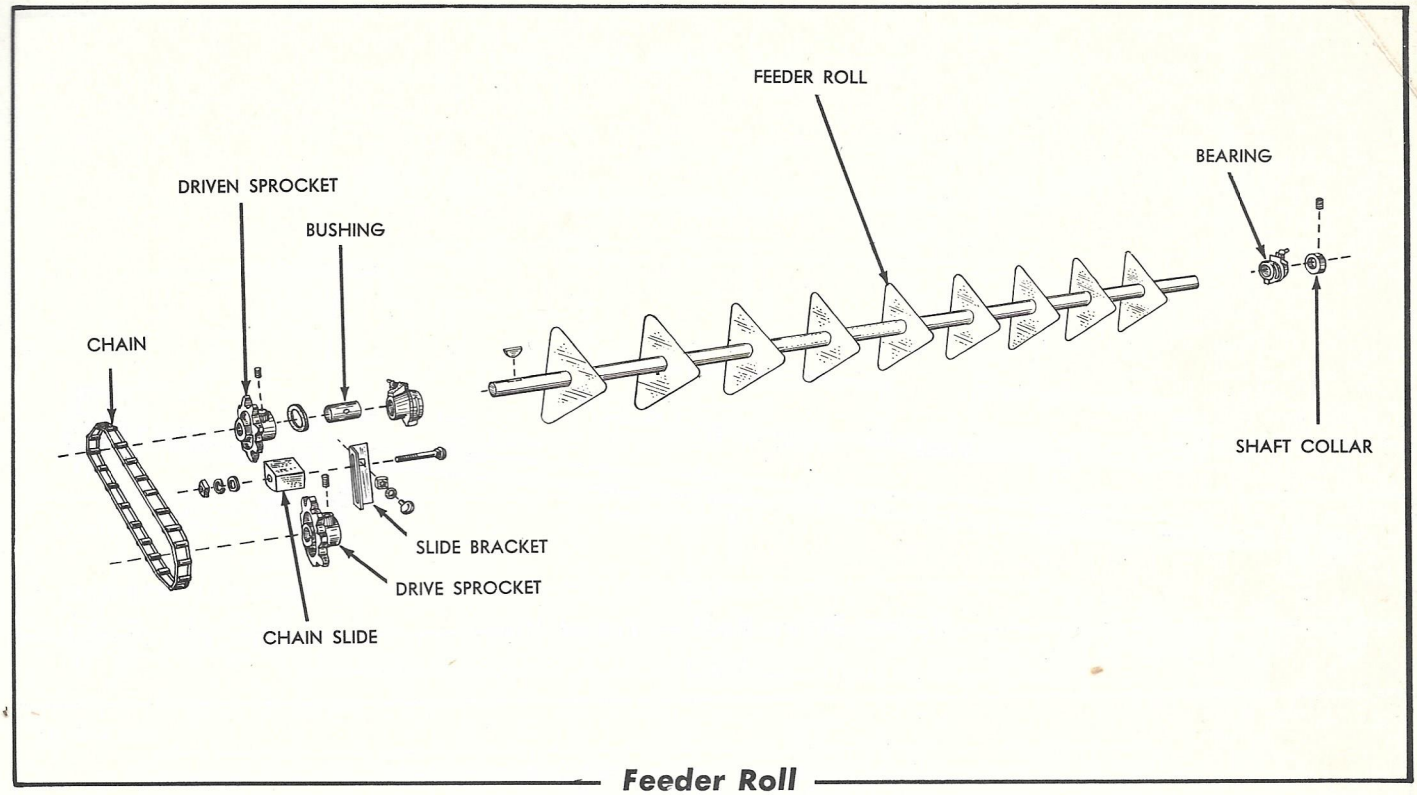
FIG. C



Raddle Drive

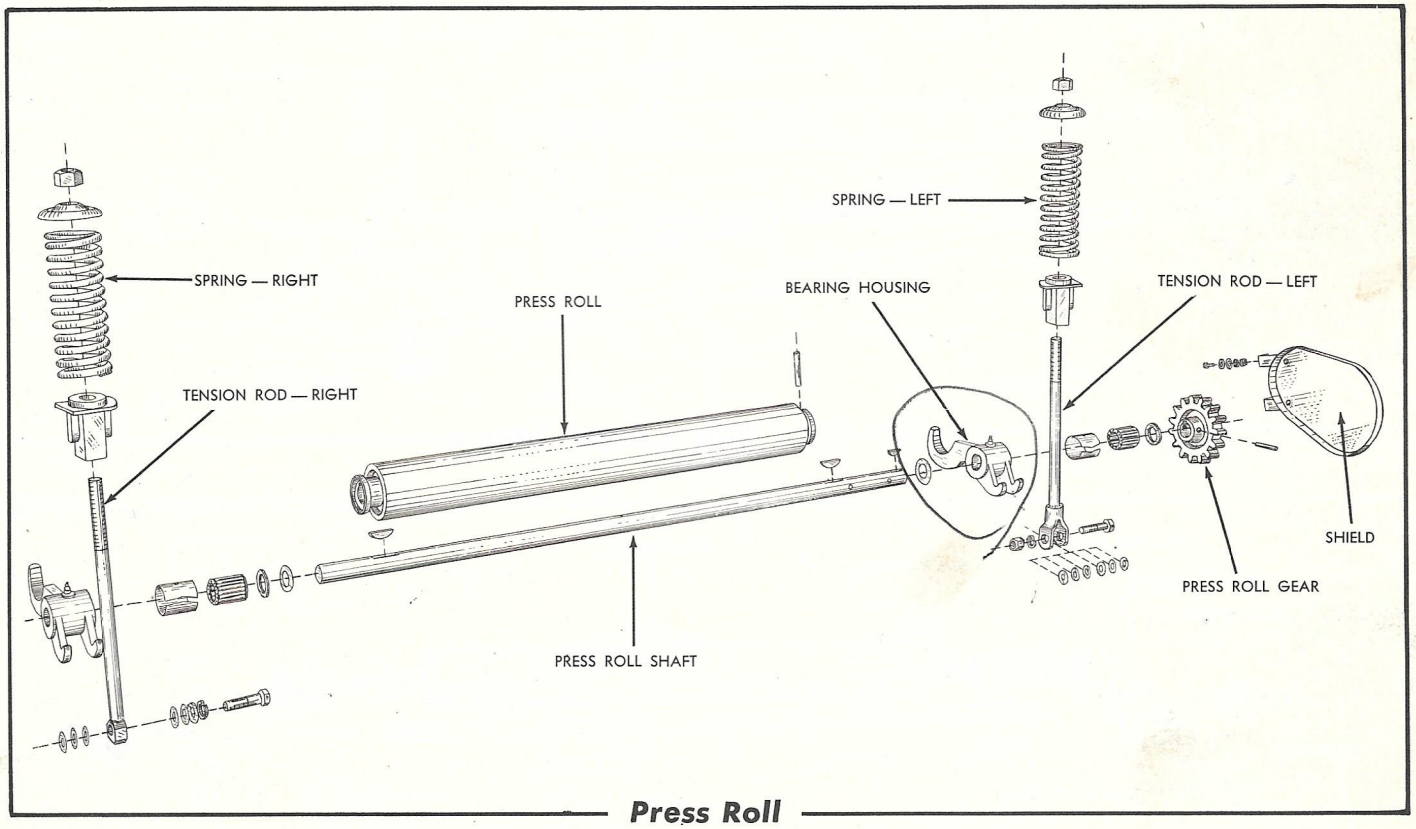
FIG. D

Order Repair Parts By Description.



Feeder Roll

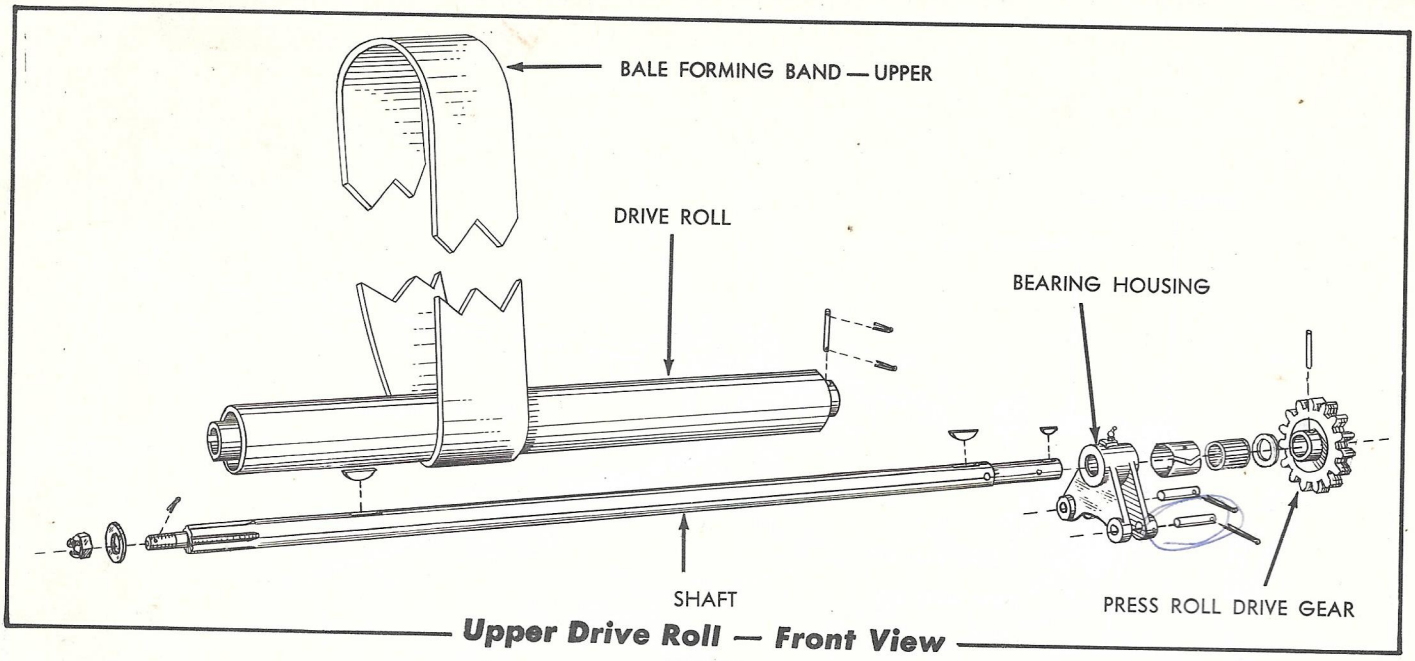
FIG. E



Press Roll

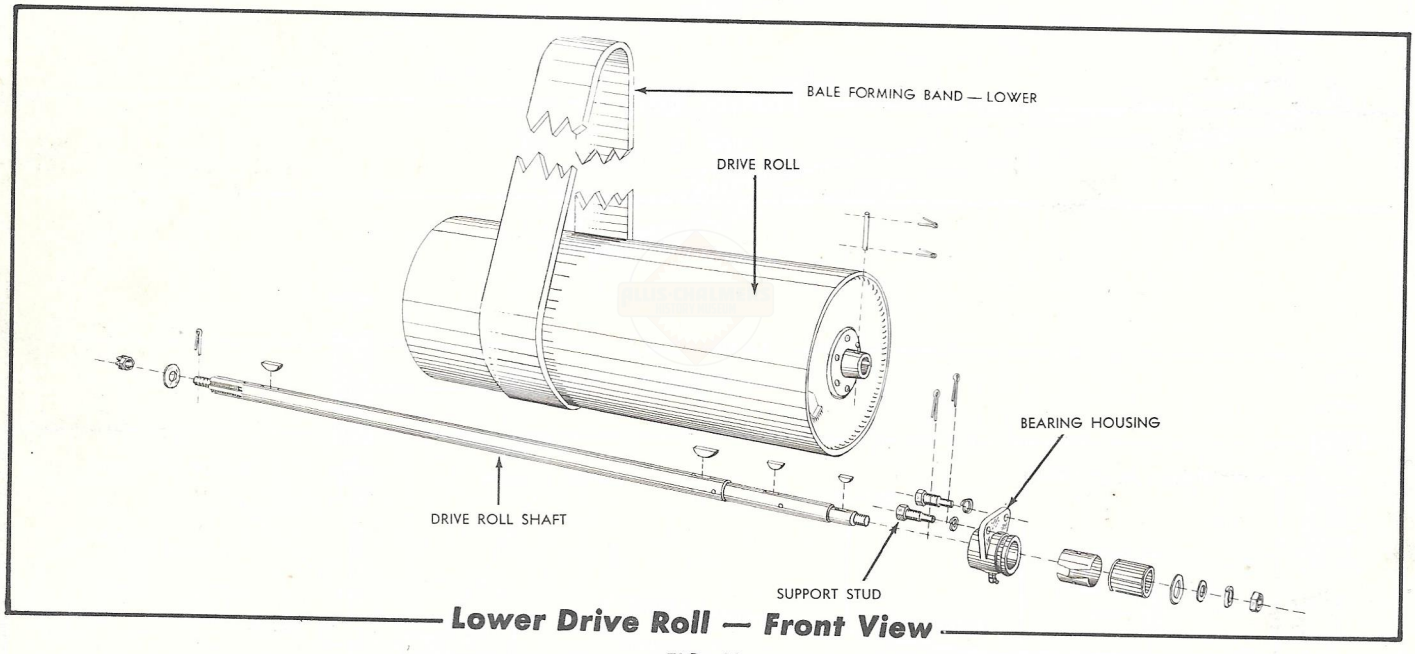
FIG. F

Order Repair Parts By Description.



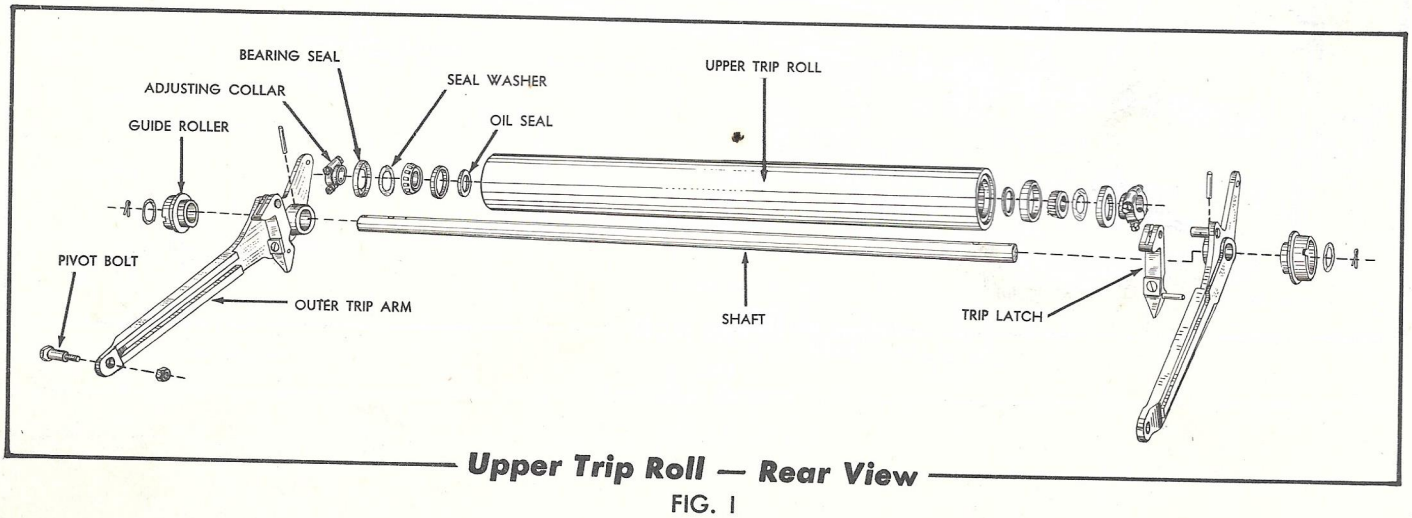
Upper Drive Roll — Front View

FIG. G



Lower Drive Roll — Front View

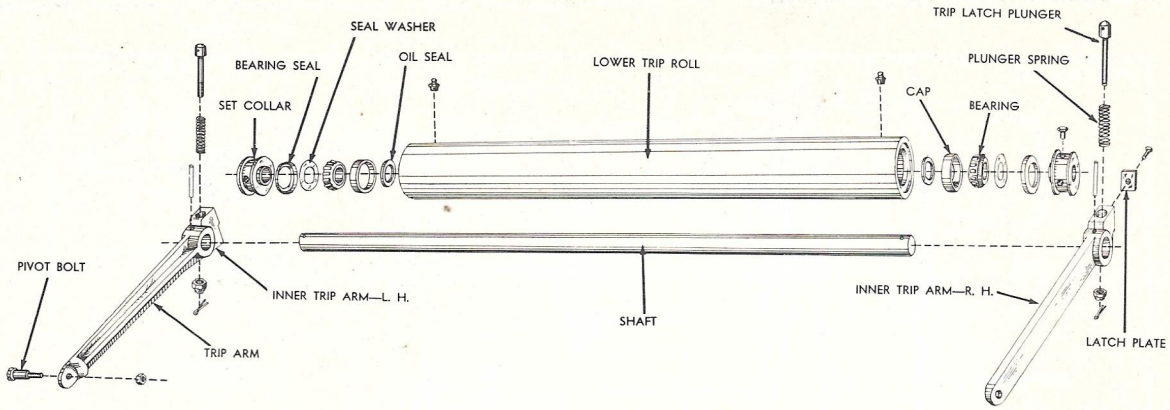
FIG. H



Upper Trip Roll — Rear View

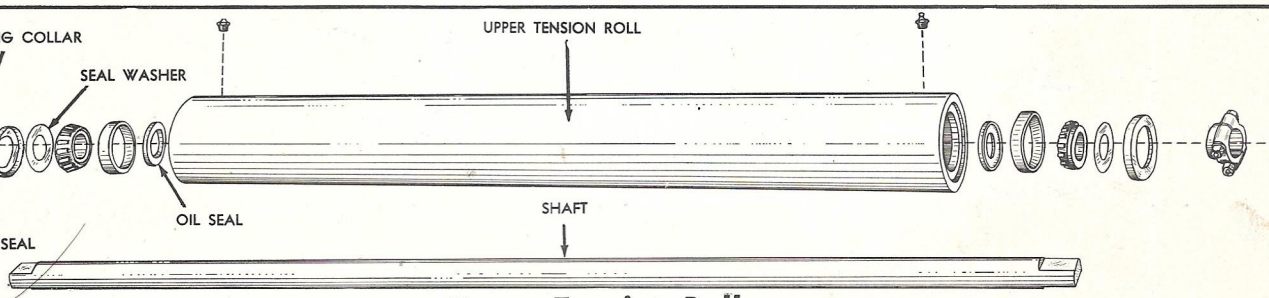
FIG. I

Order Repair Parts by Description.



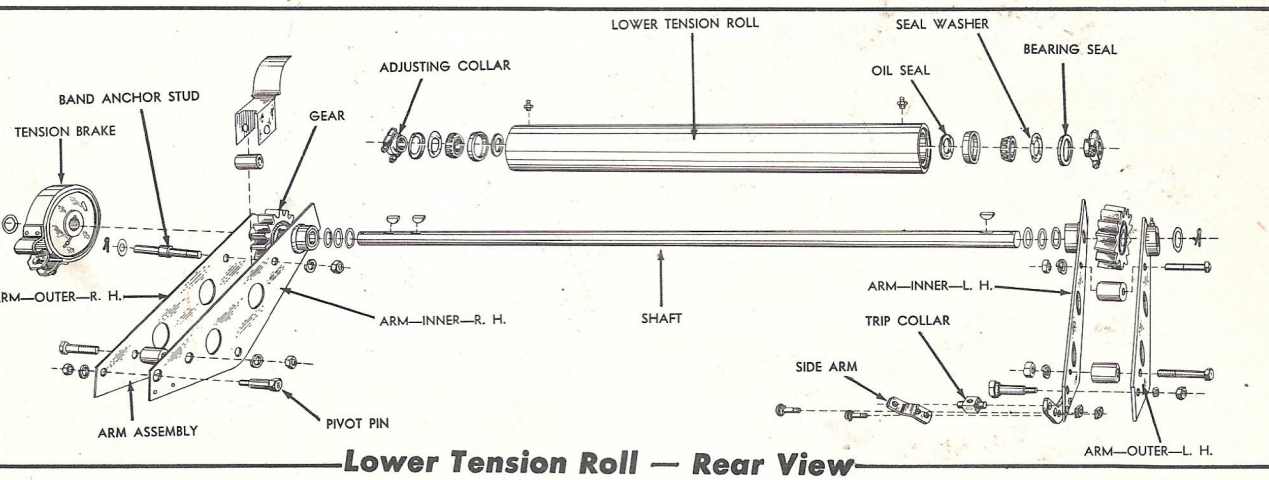
Lower Trip Roll — Rear View

FIG. J



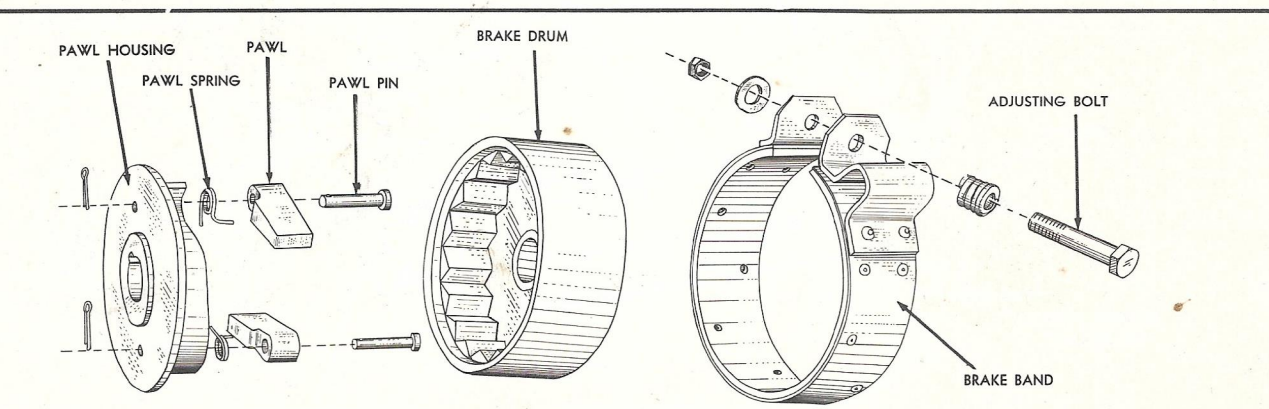
Upper Tension Roll

FIG. K



Lower Tension Roll — Rear View

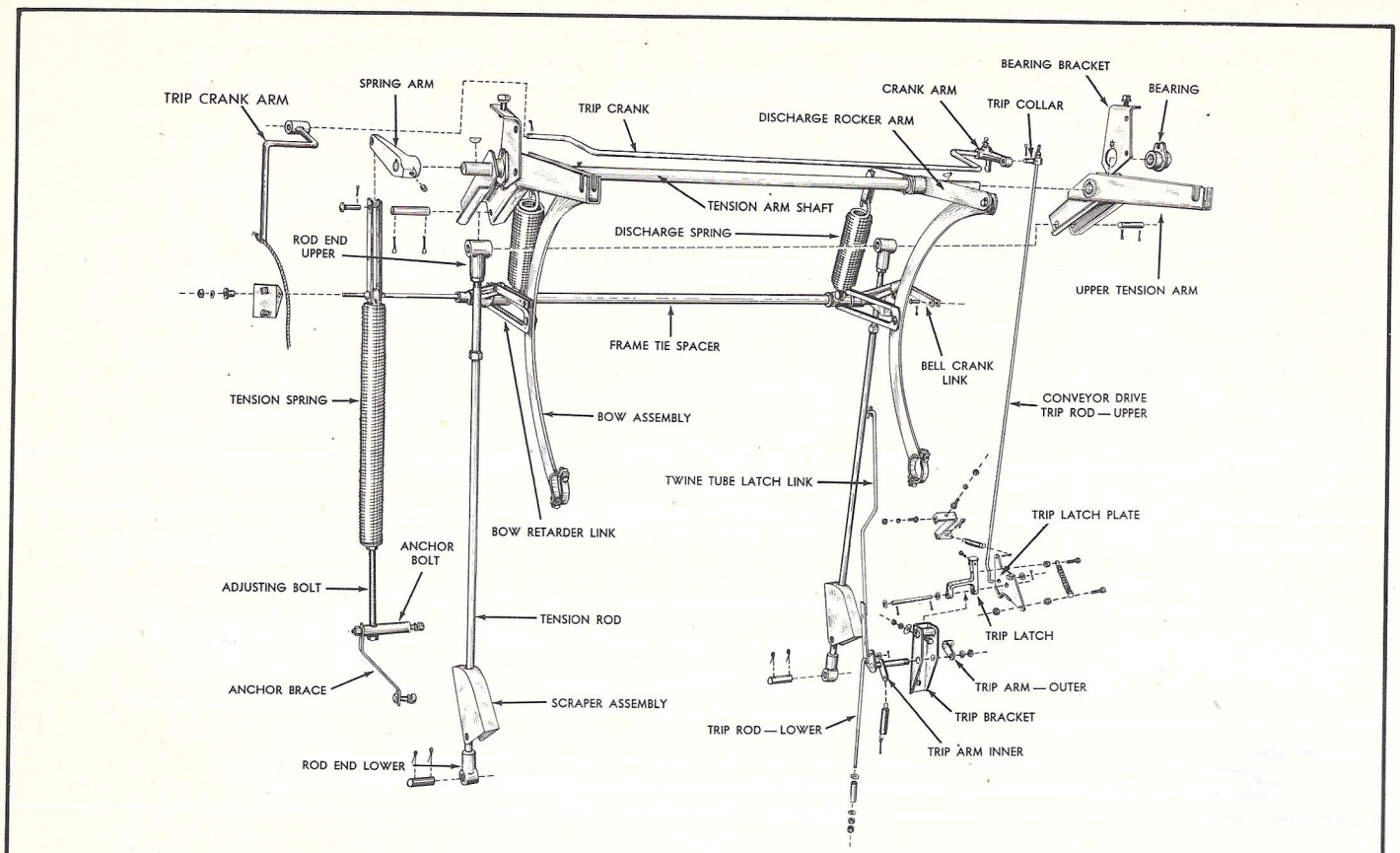
FIG. L



Brake

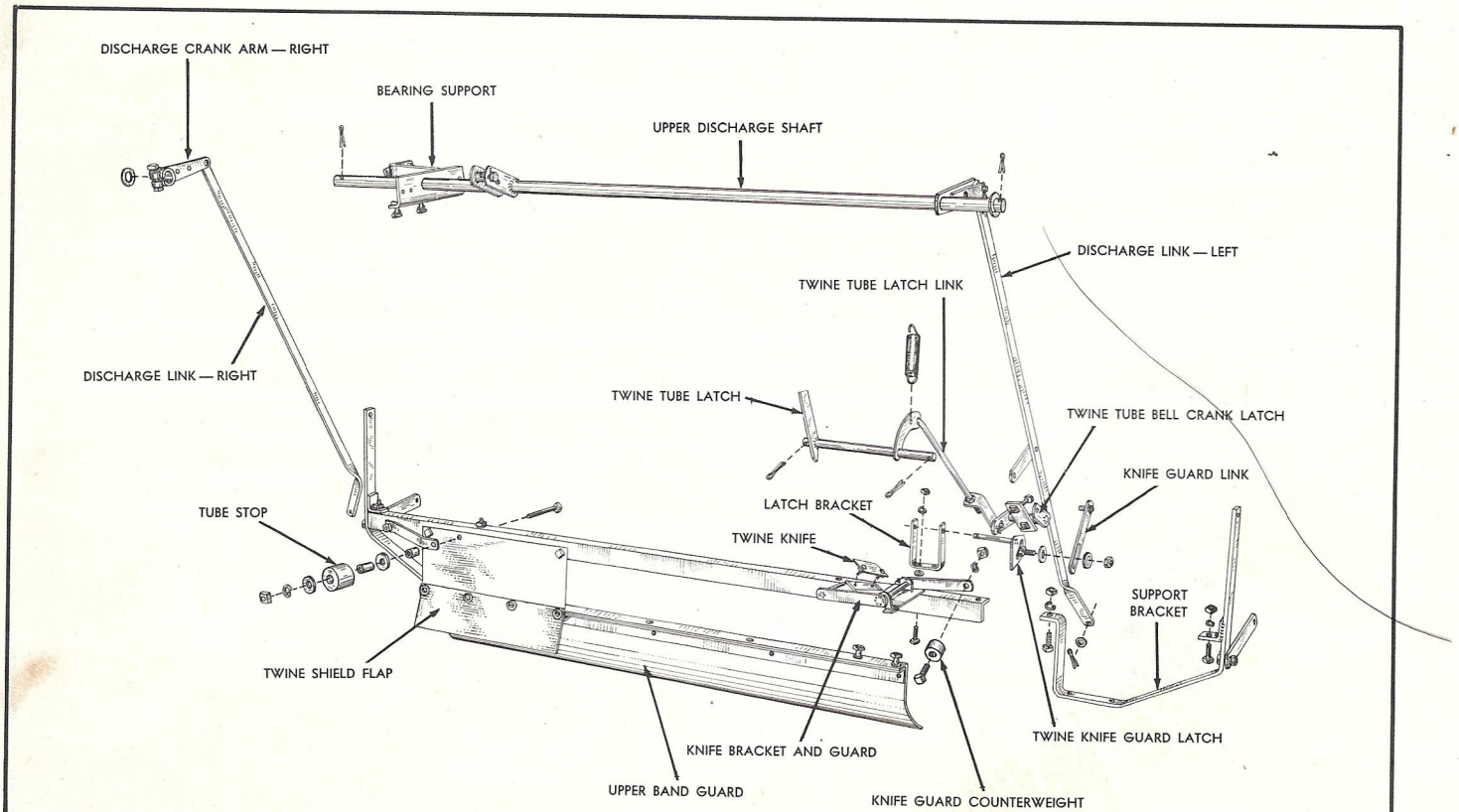
FIG. M

Order Repair Parts By Description.



Bale Forming Linkage

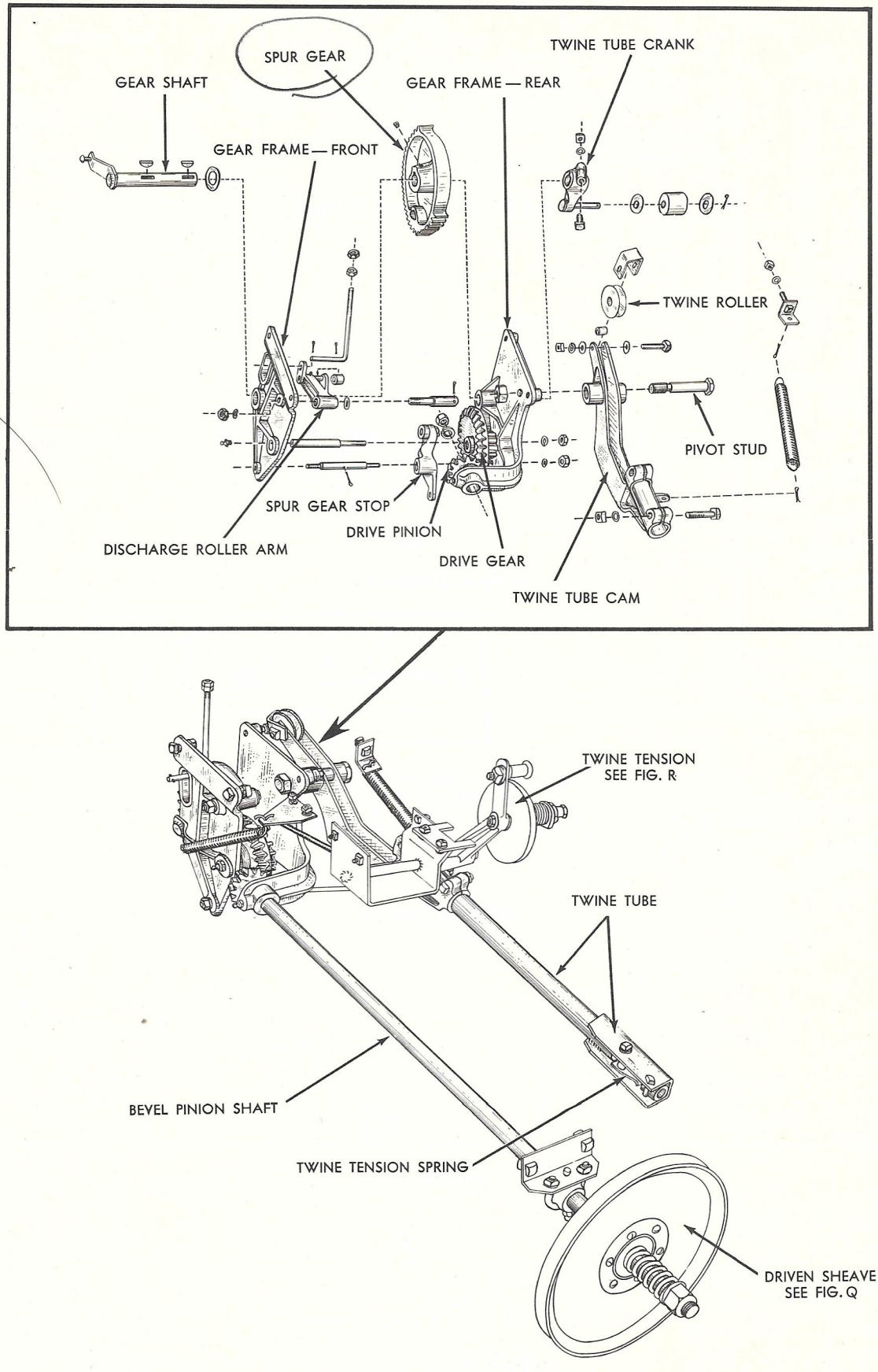
FIG. N



Discharge Linkage

FIG. O

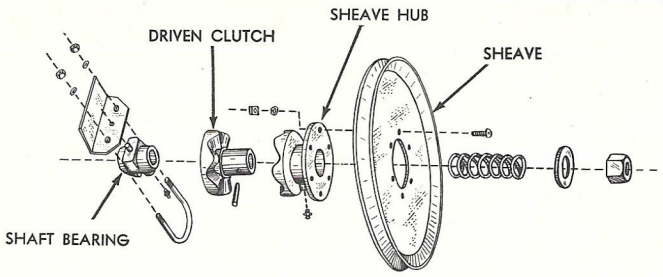
Order Repair Parts By Description.



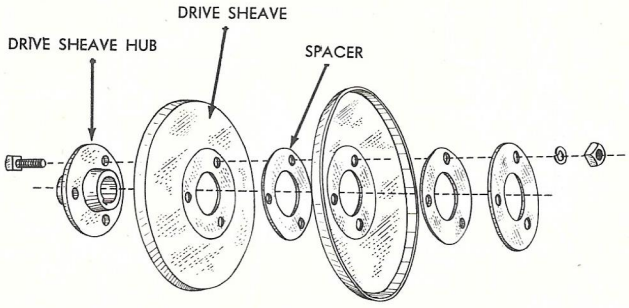
Twine Wrap Mechanism

FIG. P

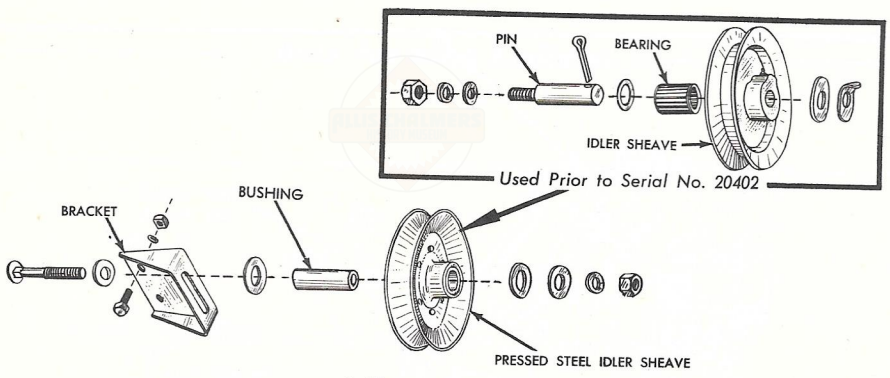
Order Repair Parts By Description.



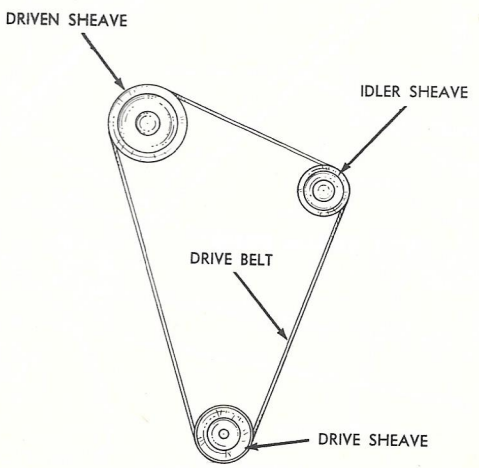
Driven Sheave and Clutch



Drive Sheave



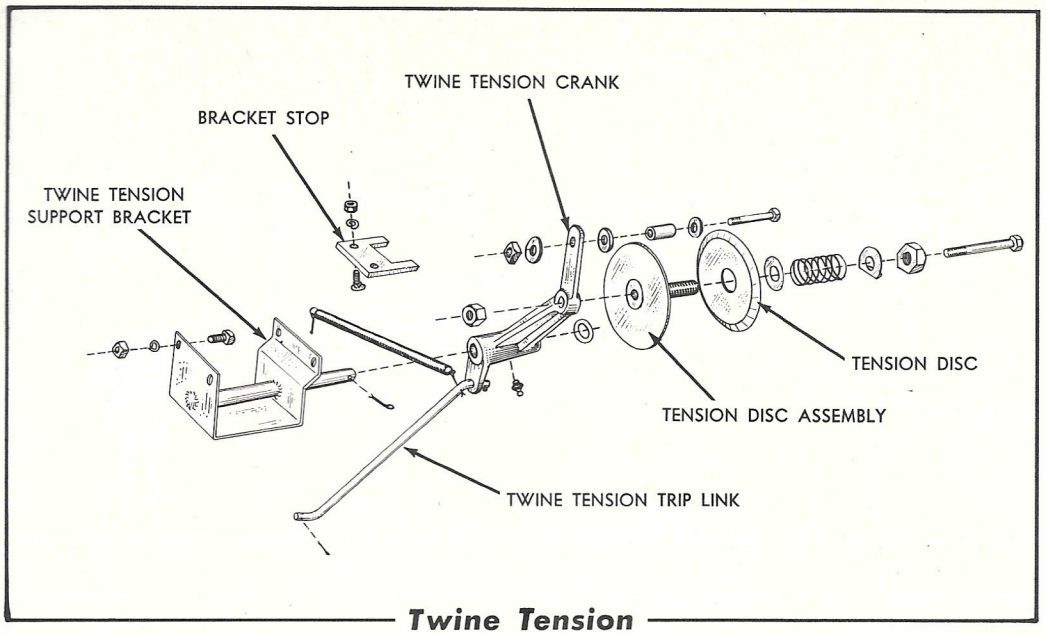
Idler Sheave



Belt Diagram

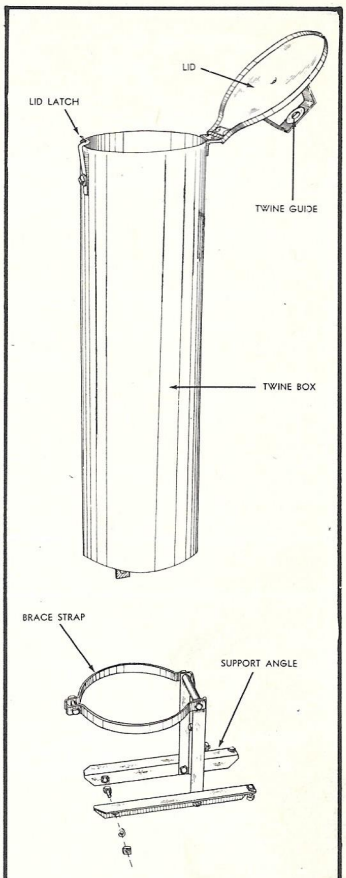
FIG. Q

Order Repair Parts by Description.



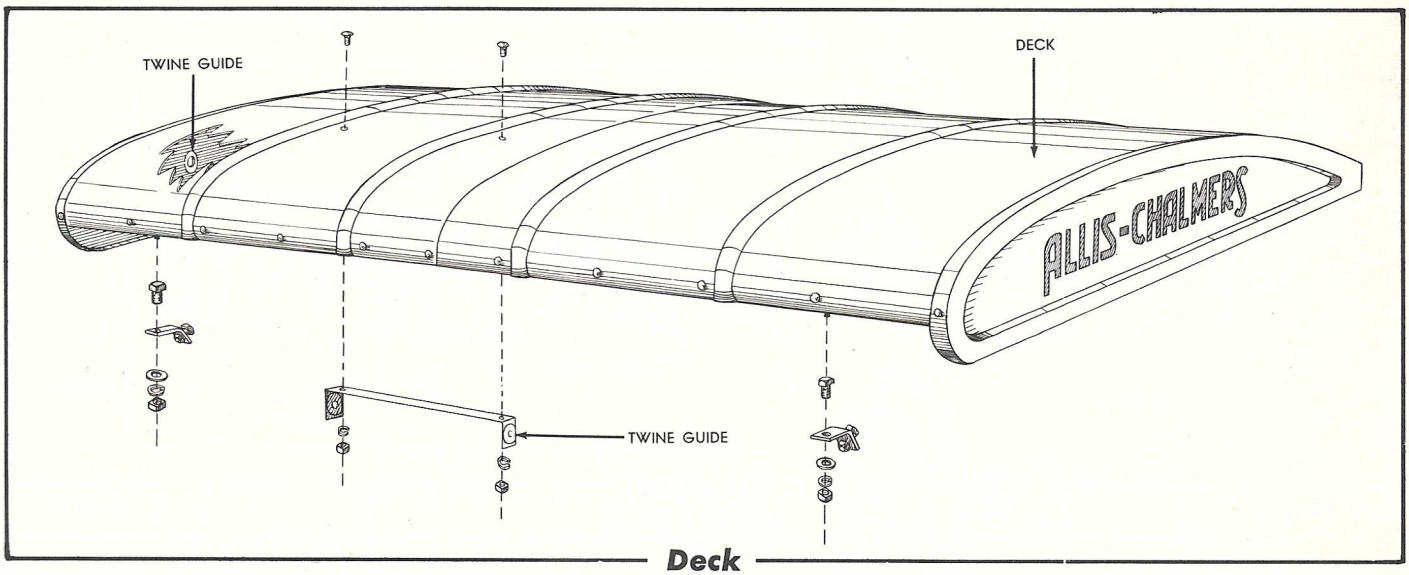
Twine Tension

FIG. R



Twine Box

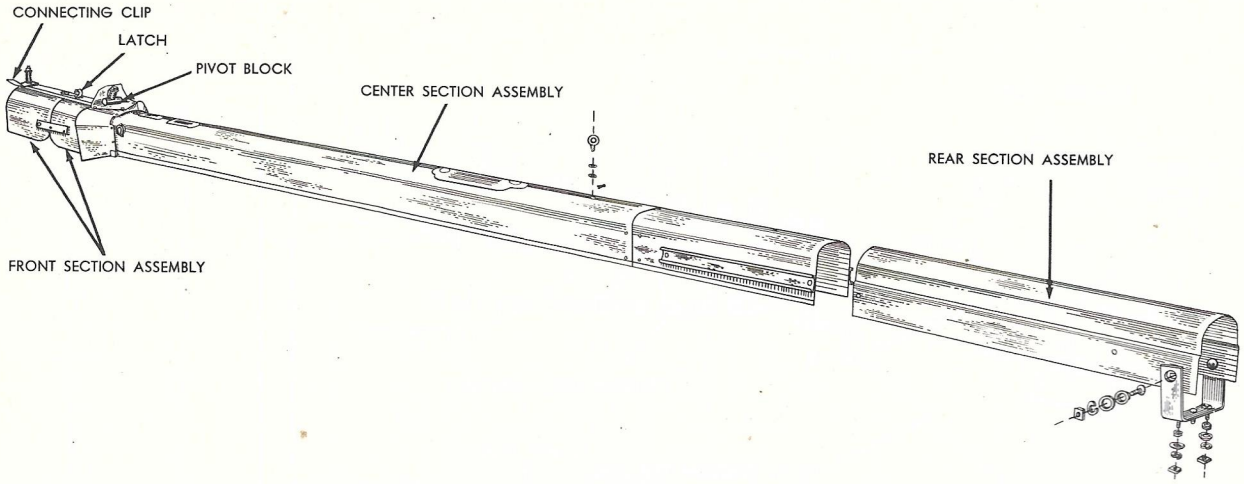
FIG. S



Deck

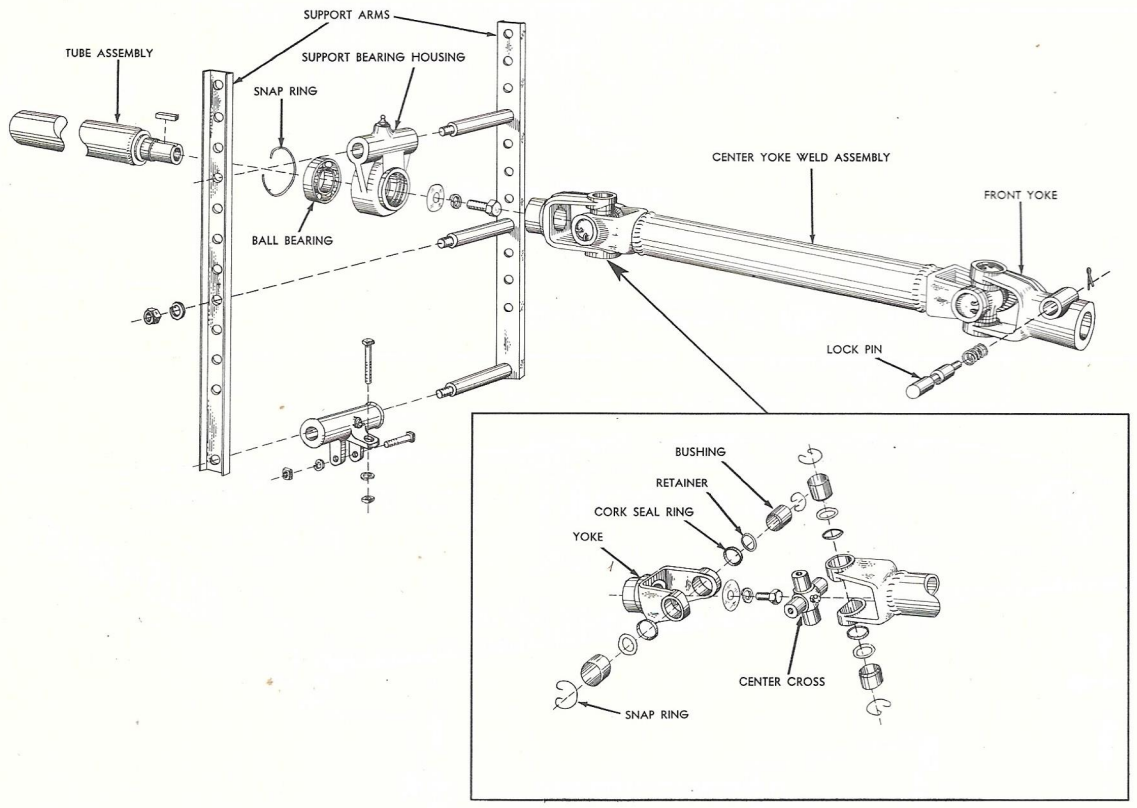
FIG. T

Order Repair Parts by Description.



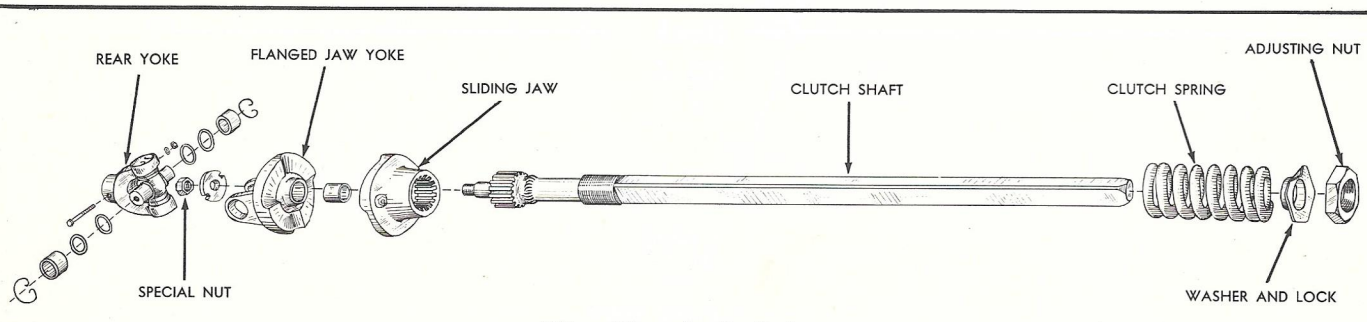
P.T.O. Shaft Shield

FIG. U



P.T.O. Shaft

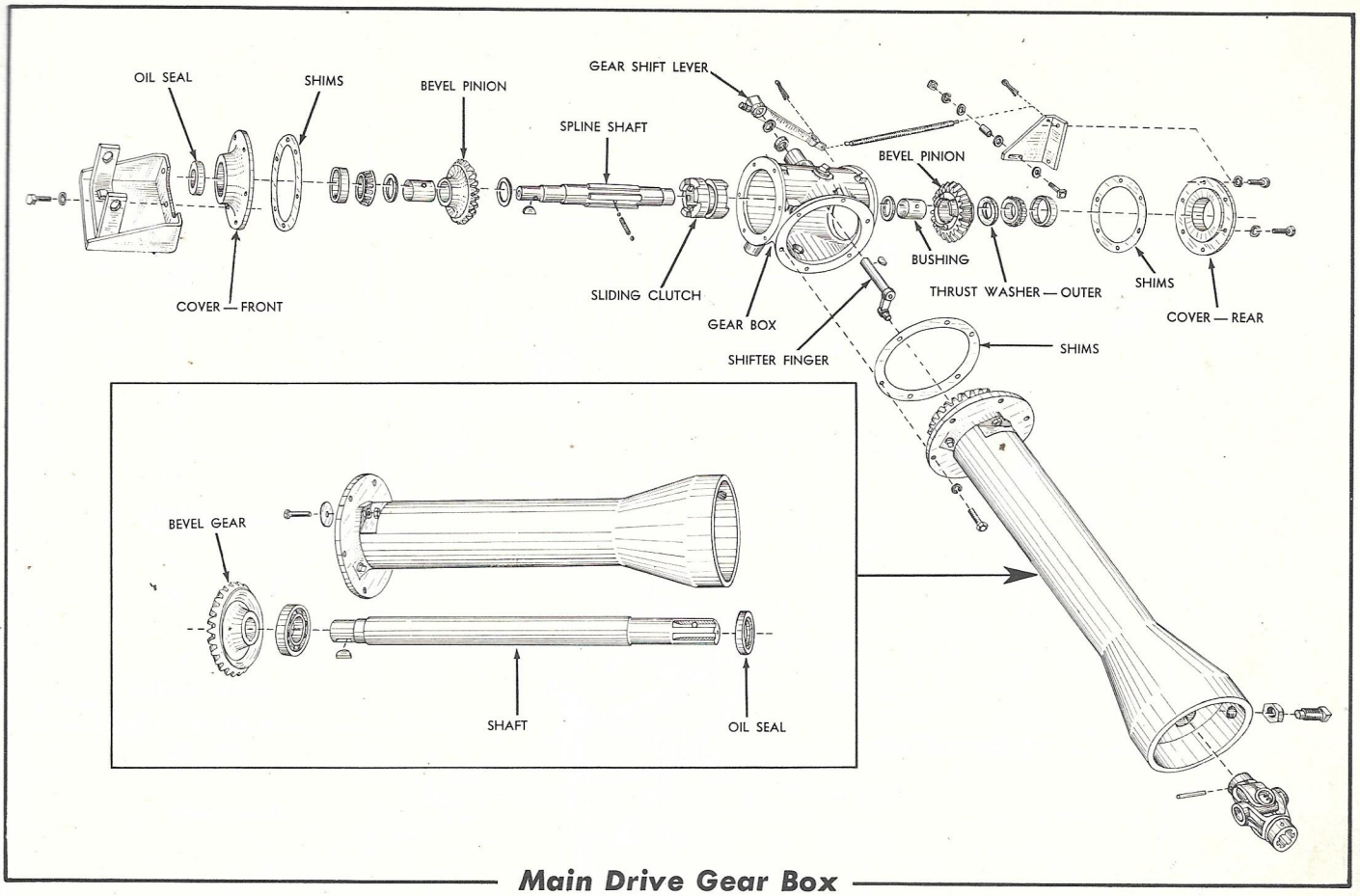
FIG. V



Slip Clutch & Joint

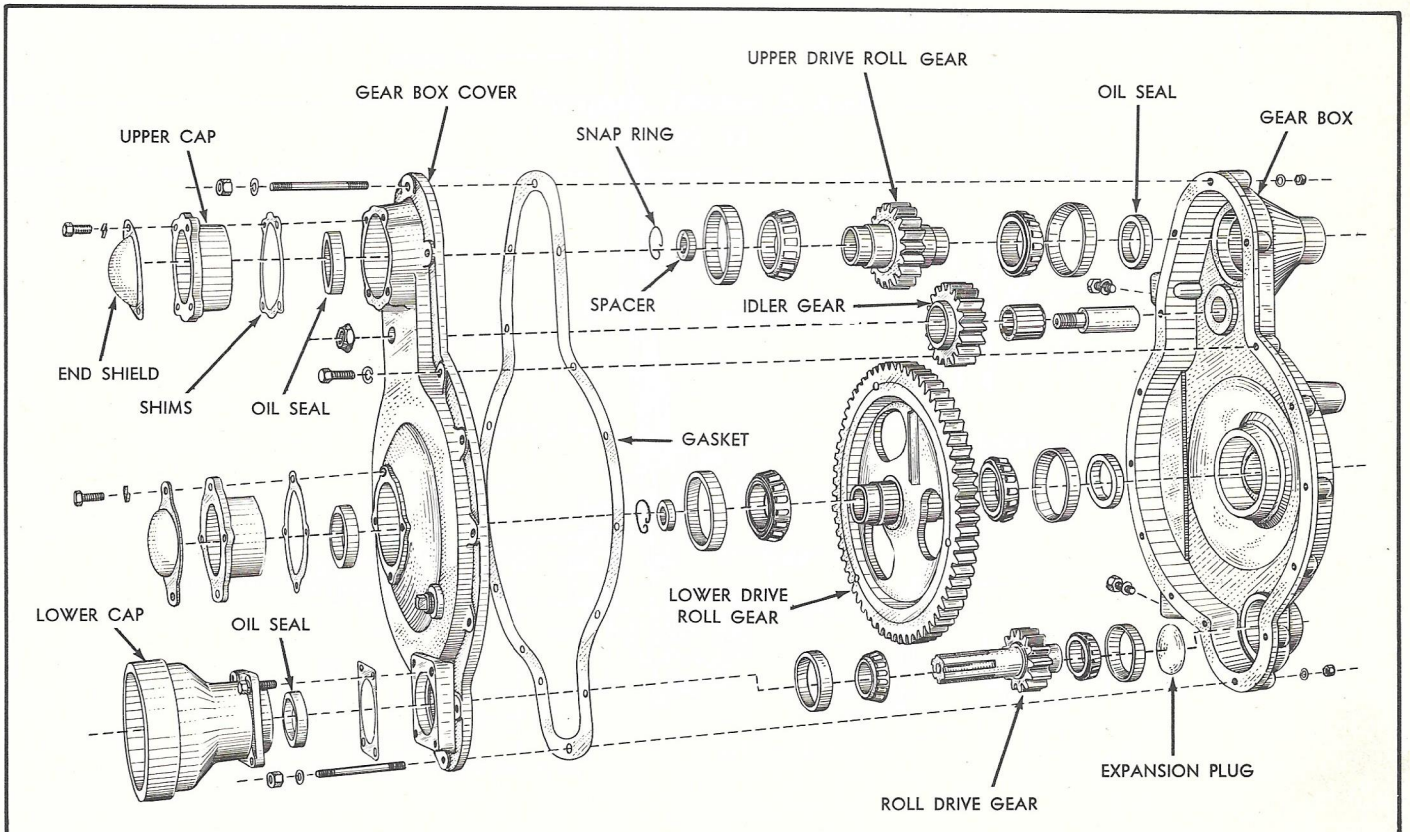
FIG. W

Order Repair Parts By Description.



Main Drive Gear Box

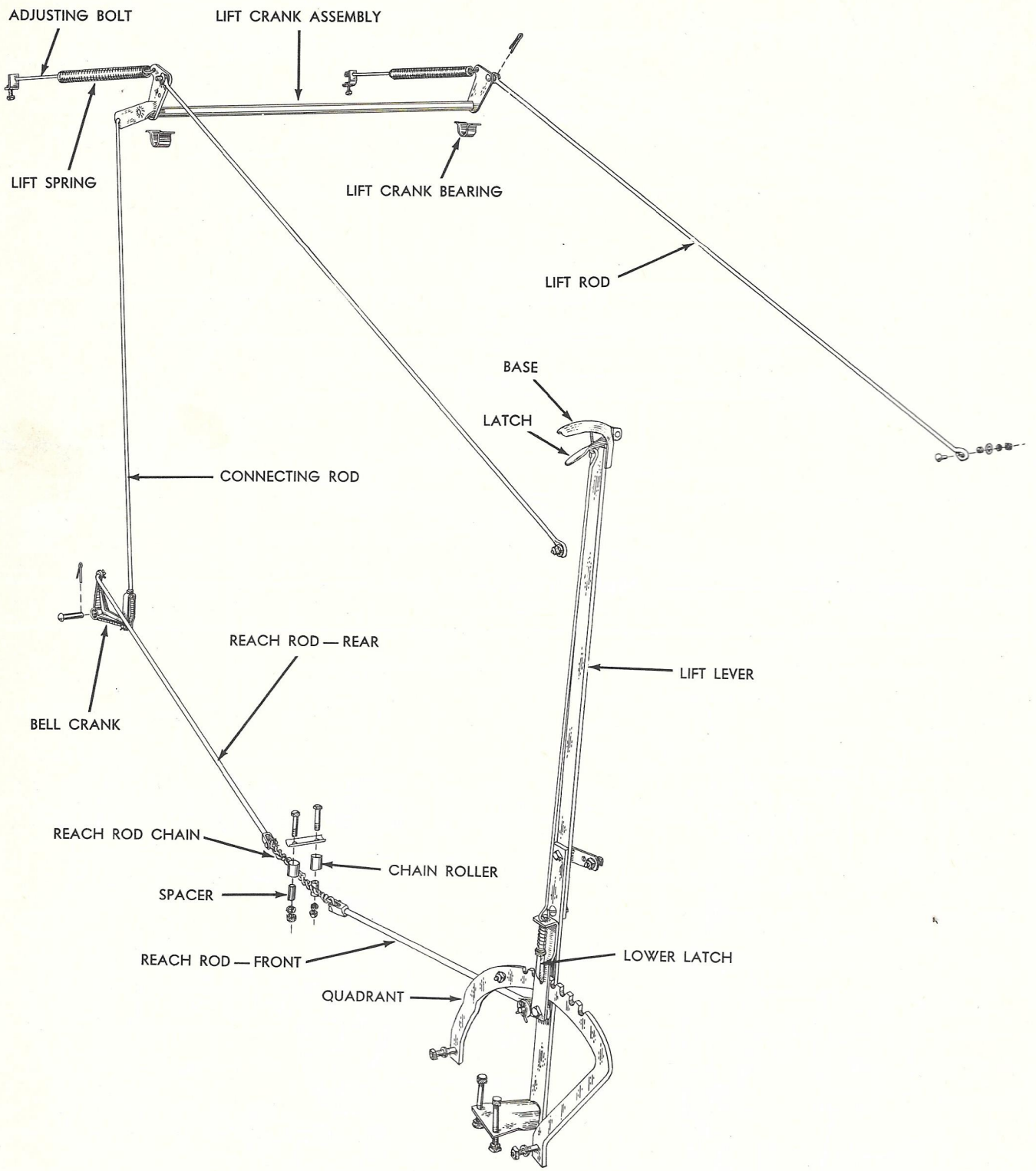
FIG. X



Roll Drive Gear Box

FIG. Y

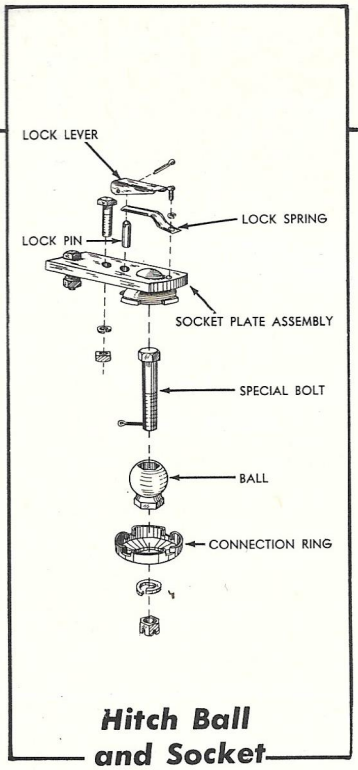
Order Repair Parts by Description.



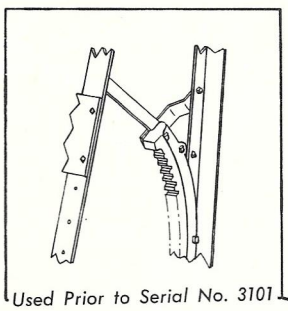
Lever and Linkage

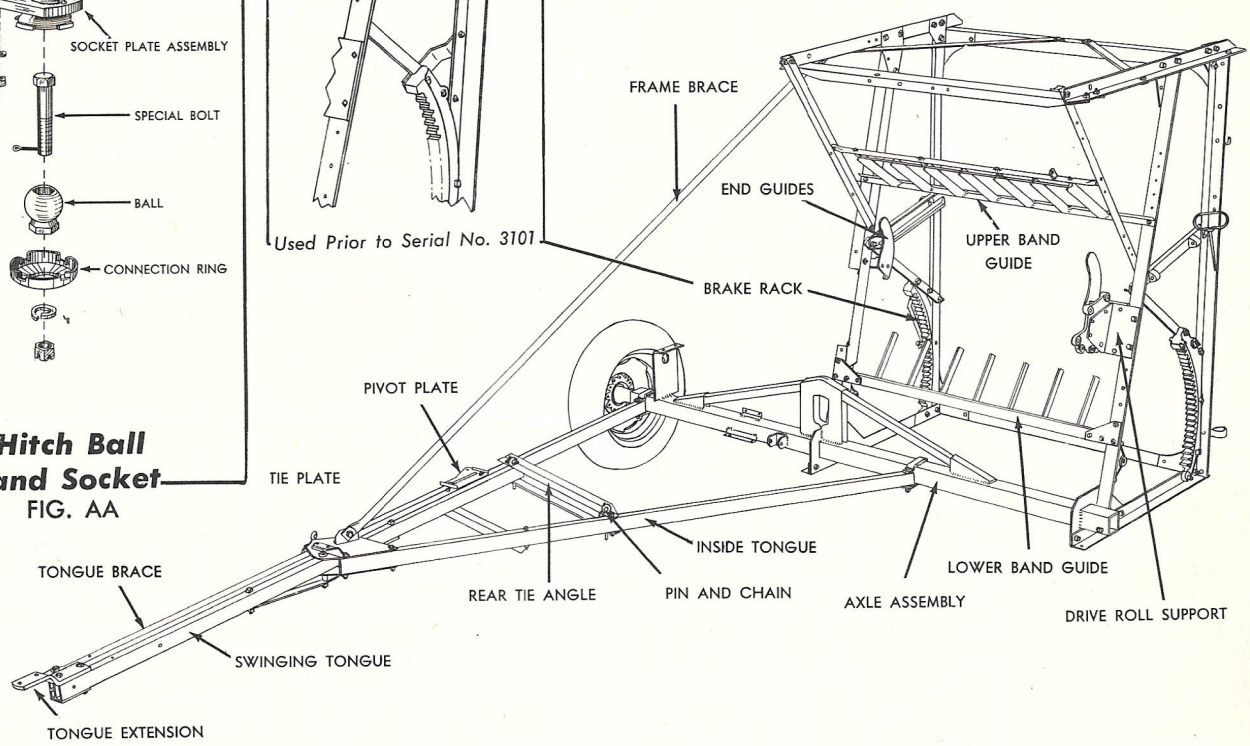
FIG. Z

Order Repair Parts By Description.

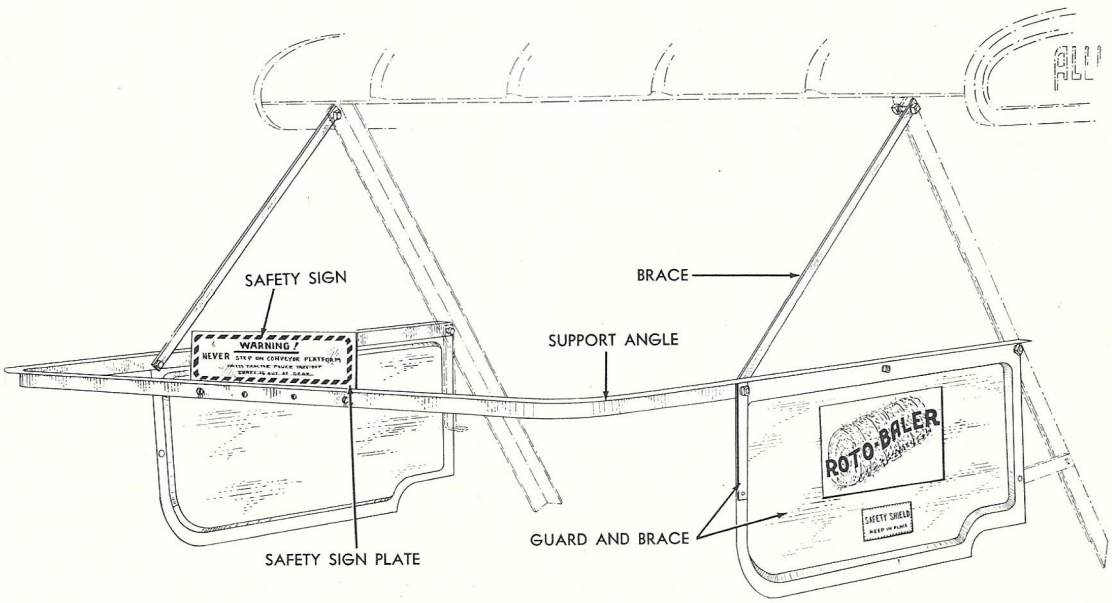


Hitch Ball and Socket
FIG. AA



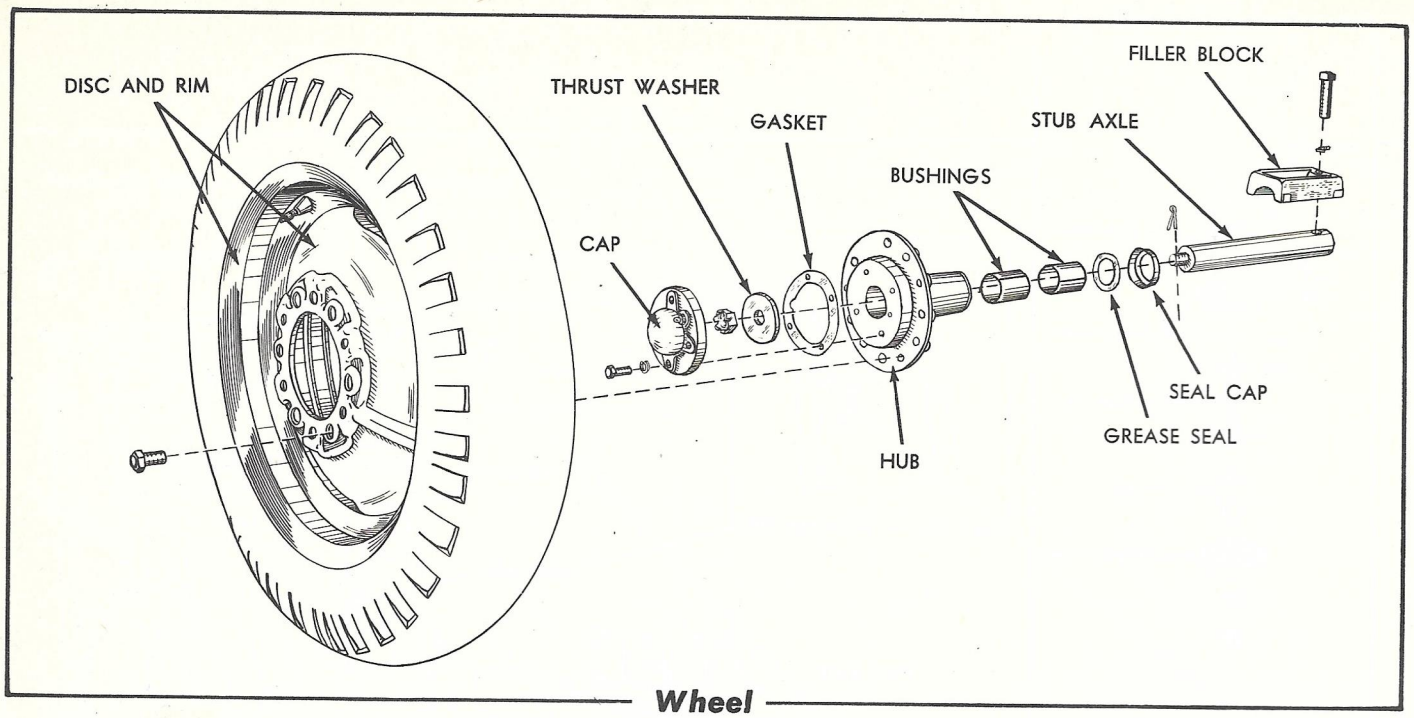


Tongue, Frame & Axle
FIG. BB



Roll Guard
FIG. CC

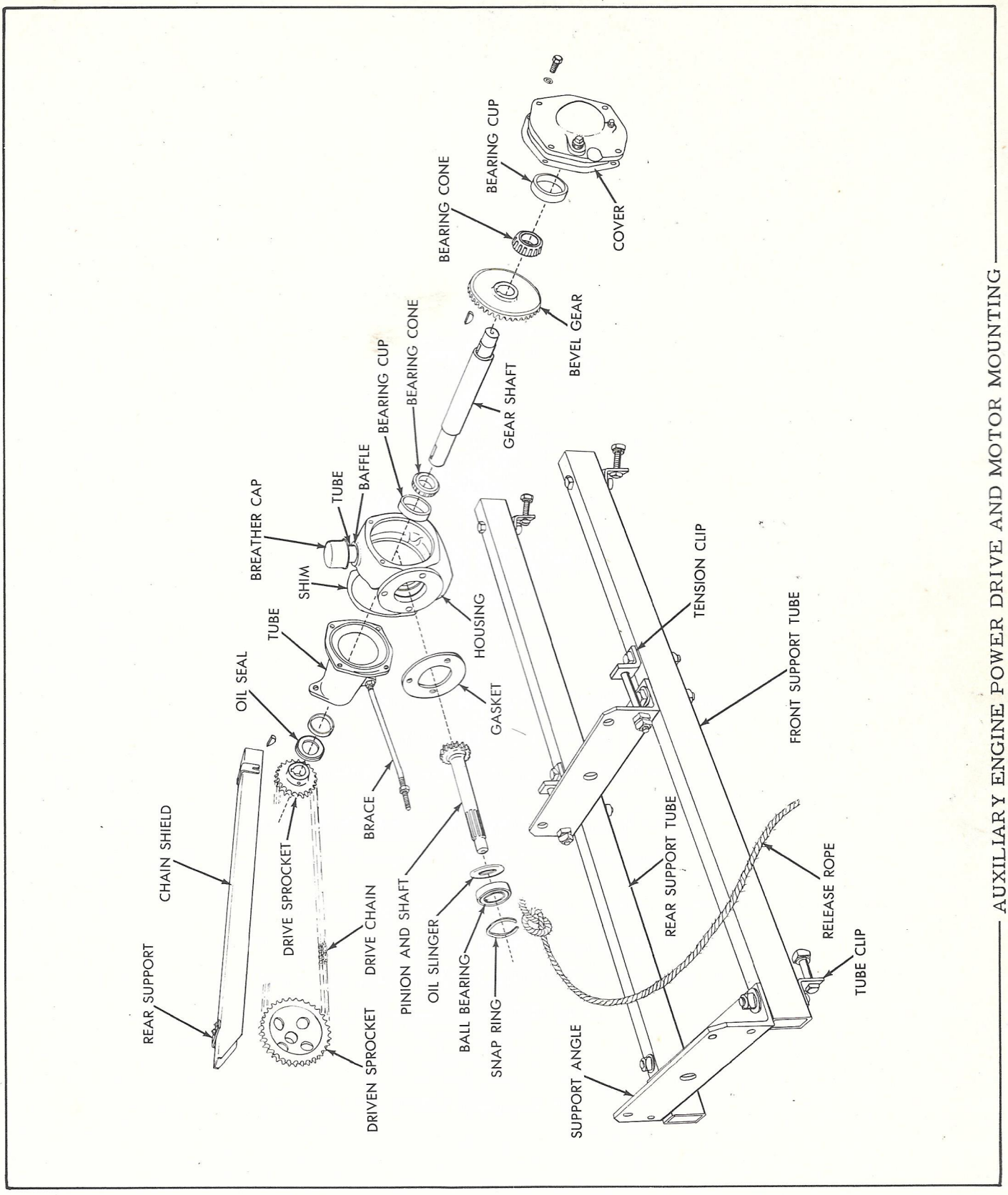
Order Repair Parts by Description.



Wheel

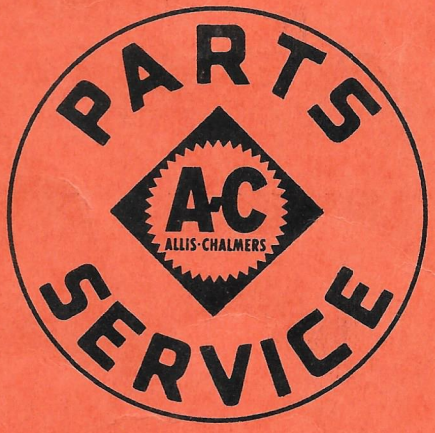
FIG. DD

Order Repair Parts By Description.



AUXILIARY ENGINE POWER DRIVE AND MOTOR MOUNTING

Order Repair Parts By Description.



We maintain a completely equipped shop in order to give our customers the very best possible tractor and implement service.

Our mechanics are factory trained and we carry a complete stock of repair parts.

Whether you are in need of repair parts, a repair job or complete information regarding your ALLIS-CHALMERS equipment, we will be glad to serve you.

Your ALLIS-CHALMERS Dealer