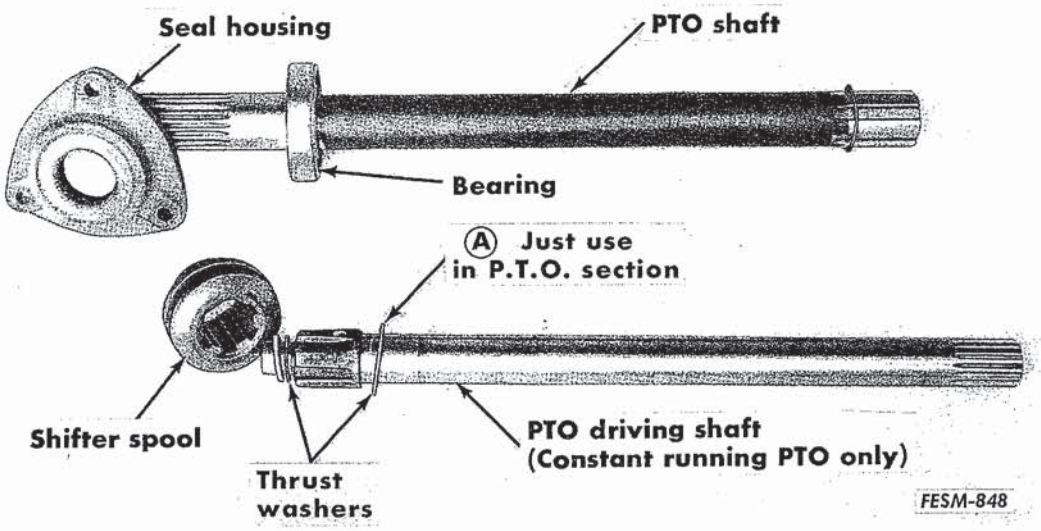


Illust. 135. PTO components. (Constant running PTO shown.)

5. If the PTO driving shaft (constant running PTO only) is to be removed, it also can be removed through this opening. See Illust. 135.

6. Servicing of the front PTO components requires removal of the engine.

Cleaning, Inspection and Repair

1. Thoroughly clean all parts.

2. Inspect the bearings for damage.

3. Inspect the shaft and splines.

4. Inspect the thrust washers.

5. Inspect the seal, and replace if necessary.

Installation

1. Install the PTO driving shaft (constant running PTO only). Be certain thrust washers are in position.

2. Install the shifter spool by using a small rod to position the spool and engage it with the control arm. Engage the control lever to hold the shifter spool in position.

3. Install the PTO shaft and bearing into the housing, engaging the front splines with the shifter spool.

4. Install the seal housing with new gasket.

STEERING CLUTCHES AND BRAKES

Preliminary Inspection

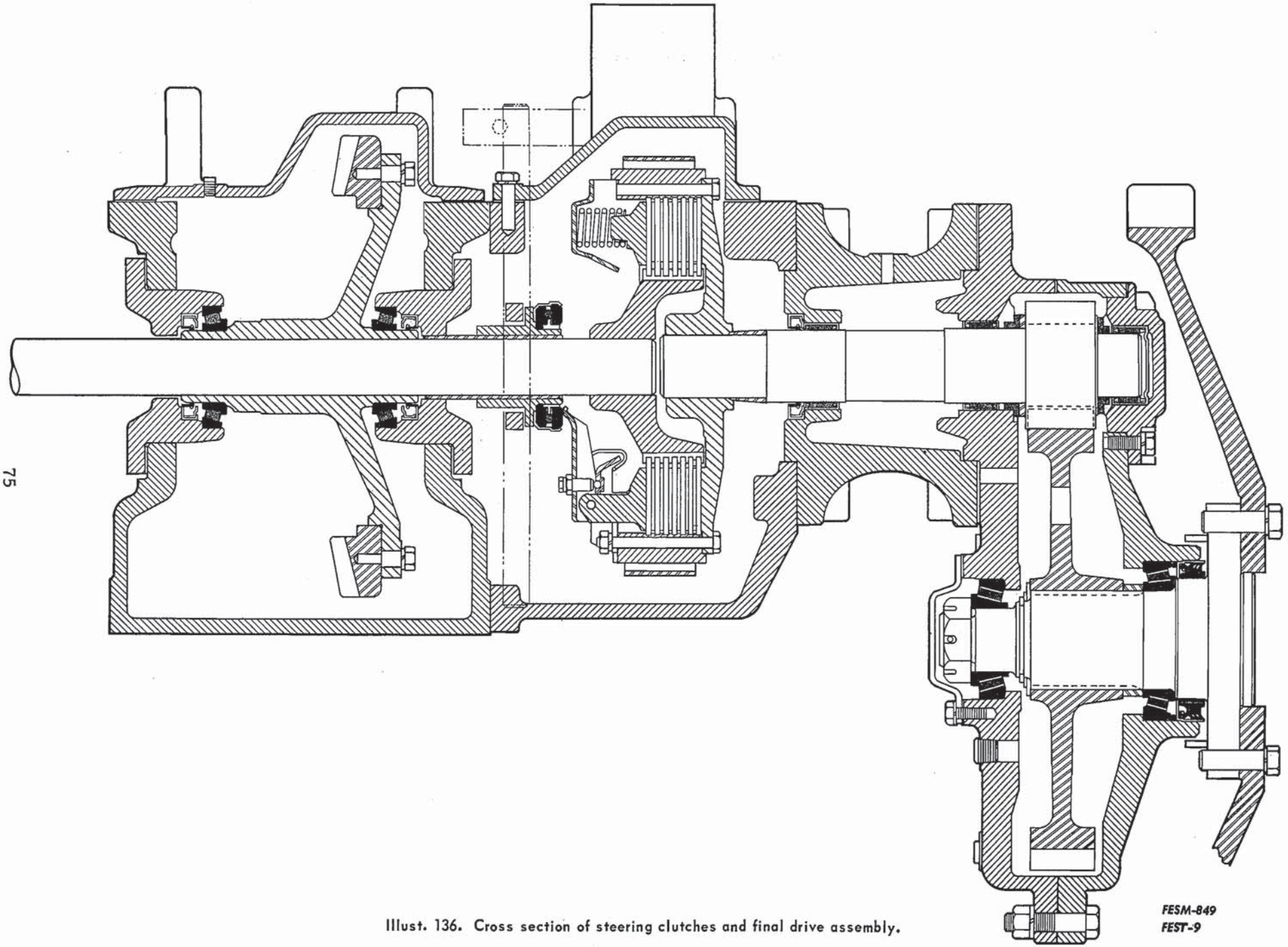
(Refer to Illust. 136)

If, on inspecting a 500 crawler or skidder, it is found that the free play is non-existent, a check of the holding ability of the steering clutch assemblies should be made. A lack of free play signifies a partially or perhaps completely loaded release system.

Check the steering clutch assemblies as follows:

1. Adjust the linkage to give the desired free play. Refer to page 78.

2. Lodge the blade or bucket against some immovable object (tree, rock, etc).



Illust. 136. Cross section of steering clutches and final drive assembly.

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FEST-9

3. Release both clutches, then engage both. Both tracks should drive or engine die.

4. Release both clutches and engage each one separately. The clutch should hold and the track spin or engine die. Repeat on other clutch. If either clutch fails to hold, servicing is required. Refer to the following section.

NOTE: It is possible that step three will be satisfactory and step four will result in a slipping clutch. Reason: All power (100% available) is divided equally between the two clutches in step three. In step four, all power must be absorbed by one clutch.

Servicing

Removal (Where both LH and RH clutches are involved)

1. Jack up the front and rear of the tractor and turn both drive sprockets until the opening in each sprocket is aligned with the final drive pinion bearing retainer.

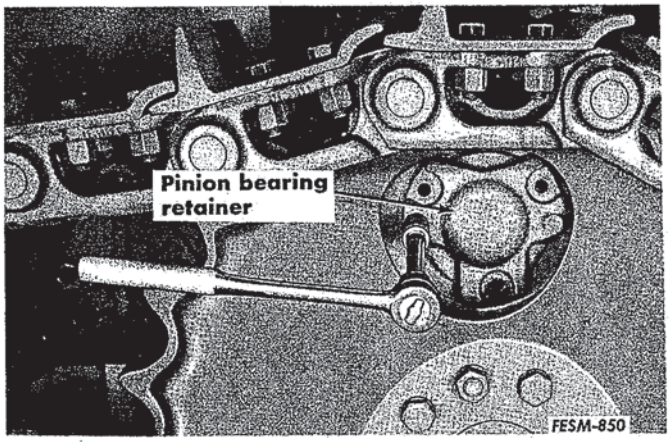
NOTE: If the tractor is equipped with a loader and scarifier, the tractor can be temporarily raised off the ground by applying down pressure to the loader and scarifier. The tractor should be lowered as soon as the sprockets are aligned.

CAUTION: Do not work under or around the tractor when it is raised off the ground unless the tractor is blocked to prevent it from accidentally dropping and when blocked, only when necessary. Do not work alone. Be sure someone is available if help is required.

2. Remove the seat assembly, rear fender brackets and inspection covers. Disconnect the brake floating levers by removing the clevis pins. Shorten the adjustable steering links and remove by turning the clutch release shaft to the rear on each side.

NOTE: Do not drop the steering lever inserts located in each steering lever.

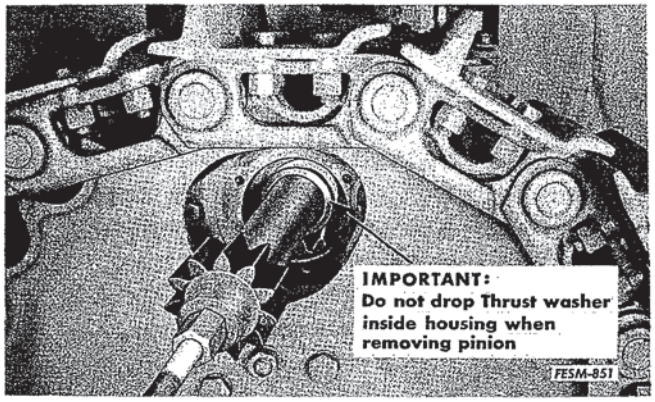
3. Remove both steering clutch housing covers.



Illust. 137. Removing pinion bearing retainer.

4. Remove the capscrews from one pinion bearing retainer. Use two of these capscrews as jack screws and remove the retainer. See Illust. 137.

NOTE: Do not drop the thrust washer. If it is dropped into the housing, it will be necessary to disassemble or remove and invert the final drive assembly to recover the thrust washer.



Illust. 138. Removing pinion and thrust washer.

5. Remove the final drive pinion and thrust washer, using a slide hammer puller. See Illust. 138.

6. Repeat steps 4 and 5 on the other final drive. It is not necessary to remove the bevel gear shaft. The shaft can be slid from side to side with the slide hammer to allow the steering clutch assemblies to be removed.

NOTE: If difficulty is encountered in sliding shaft, due to accumulation of rust adjacent to the clutch hubs, slide the clutch assembly toward the final drive as far as possible. Carefully apply penetrating oil to the shaft while working the shaft back and forth until the shaft clears the steering assembly. In this event, it is advisable to remove the shaft for thorough cleaning. If no difficulty is encountered the shaft does not have to be removed. If the shaft is removed, it is advisable to sparingly apply a light coating of NEVER-SEEZ to the shaft before installing the shaft.

NOTE: Excessive rust is an indication of:

a. Leaking covers.

b. Poor seal at "umbrella" on top of release shaft.

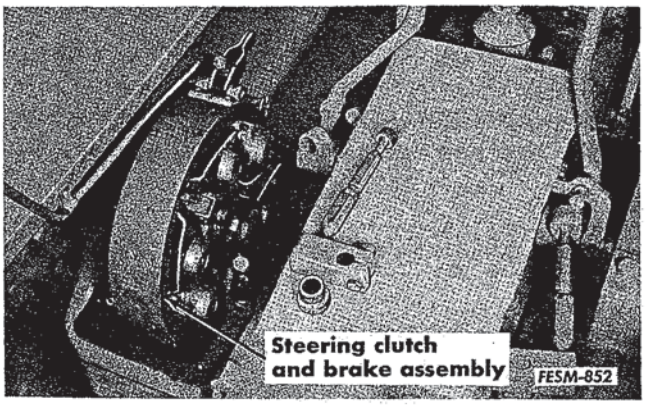
c. Failure to use vent plug at bottom of case to full advantage.

7. Remove both steering clutch assemblies. For specifications and servicing, refer to the clutch manual GSS-1281-D.

Removal (Where only one clutch is involved)

1. Perform preceding steps one through five. It is only necessary to remove the steering clutch housing from the side being worked on.

2. Do not remove the bevel gear shaft. Remove the pinion bearing retainer from the other final drive. Remove the pinion shaft and thrust washer. Slide the bevel gear shaft to one side to clear the clutch assembly being removed, thus preventing misalignment of the clutch not being serviced.



Illust. 139. Removing steering clutch assembly.

3. Remove the steering clutch assembly. See Illust. 139. For specifications and servicing, refer to the clutch manual GSS-1281-D

Installation

1. Lower the steering clutch assembly into the housing, positioning the brake band on the dowel in the bottom of the housing.

NOTE: It will be necessary to tighten the brake band assembly to restrict the clutch assembly from cocking during installation. A flashlight will aid in positioning the brake band on the dowel.

2. Align the splines on the bevel gear shaft and clutch hub and slide the shaft through the steering clutch assembly. Install the other steering clutch assembly, if removed. Locate the bevel gear shaft between the two clutch assemblies.

3. Install both pinion shafts with thrust washer.

4. Install the pinion bearing retainers. Refer to NOTE below.

NOTE: The pinion bearing retainer should slip into its bore and onto the pinion shaft with no interference. If any difficulty is encountered during installation of the pinion bearing retainer, refer to page 89 for correct alignment of the final drive housing.

5. Install the steering clutch housing covers. Install the steering lever inserts and the adjustable steering links.

6. Install the clevis pin in the floating link on each brake.

NOTE: Perform the adjustments covered in the following section before installing the inspection covers, fender brackets and seat assembly.

Adjustment

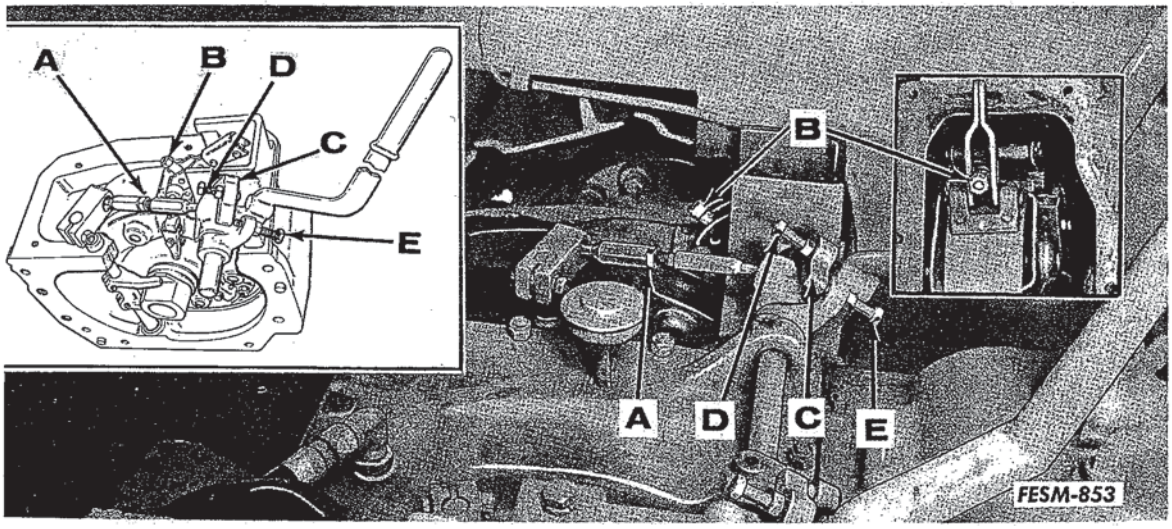
1. Back off all adjustments.

NOTE: Any tendency of any parts to "hang up" must be corrected prior to making any adjustments. Rust should be removed, parts polished, and a light coating of NEVER-SEEZ applied to the parts. The brake cross shaft support and each steering lever is provided with lubrication fittings to permit periodic greasing.

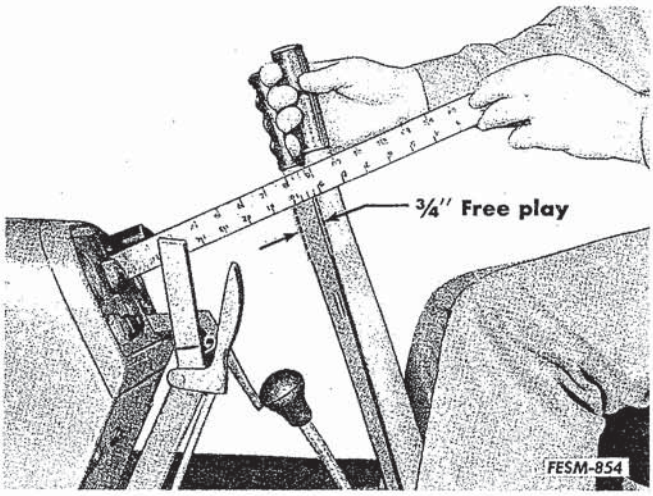
2. Adjust the steering clutch free play by expanding the adjustable link ("A" Illust. 140) until there is no slack, then back off the linkage exactly 2/3 of a turn. Lock the locknut. This should give 3/4 inch free play at the steering lever. See Illust. 141. If not, readjust the linkage to obtain the correct free play.

NOTE: Do not use a wrench to expand the linkage. If it cannot be turned by hand, remove and free up the linkage.

3. Adjust the brake band ("B" Illust. 140) by tightening the adjustment until it is snug (nut bottoms against lock), then back off one turn, or two locking notches. Be sure the lock is properly seated against the nut.

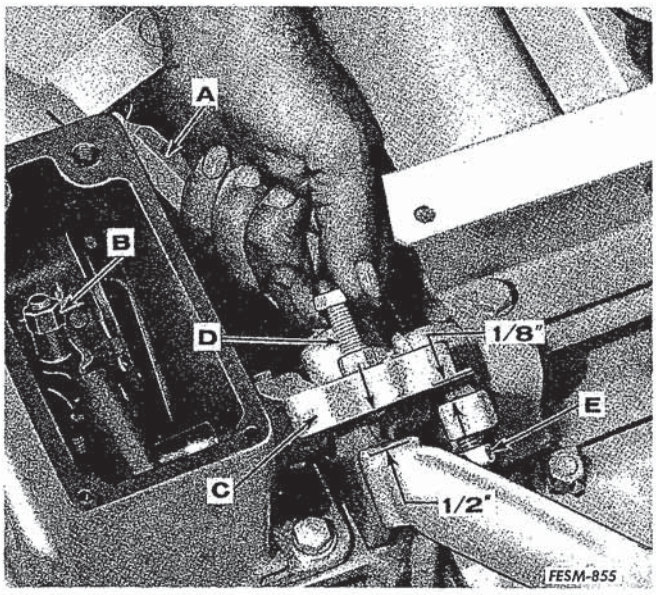


Illust. 140. Steering clutch adjustment points.



Illust. 141. Checking steering clutch free play.

4. Hold the brake actuating lever ("C" Illusts. 140 and 142) rearward and adjust the brake pickup bolt ("D" Illust 140 and 142) to obtain a 1/2 inch gap between the pickup bolt and the steering clutch lever. See Illust. 142.



Illust. 142. Steering clutch adjustment.

5. Hold the brake adjusting lever ("C" Illusts. 140 and 142) rearward and adjust the steering lever stop bolt ("E" Illusts. 140 and 142) to obtain a 1/8 inch gap between the steering lever stop bolt and the brake actuating lever. See Illust. 142. Replace the inspection cover.

NOTE: Whenever one of the adjustments is changed, all adjustments should be checked and readjusted if necessary.

6. Never allow the clutch free play to fall below 1/4 inch. See Illust. 141. Readjust the clutch control linkage ("A" Illust. 142), then readjust the brake pickup bolt ("D" Illusts. 140 and 142), and the steering lever stop bolt ("E" Illusts. 140 and 142). When all the thread on the brake pickup bolt has been used, back off the bolt and readjust the brake band adjusting nut ("B" Illusts. 140 and 142).

7. To check the operating sequence of the steering clutches and pivot brakes, the tractor may be driven up an incline of sufficient pitch to permit the tractor to roll backwards when the engine clutch is disengaged.

a. As the tractor is being driven forward, pull back on the steering levers until the steering clutches disengage.

b. The tractor should roll backwards until continued rearward movement of the steering levers applies the pivot brakes.

c. The tractor must follow this sequence as it is climbing the incline. The clutches must completely disengage as the steering levers are slowly brought rearward. The levers then pass through an interval where no power is transmitted to the sprockets. Further rearward movement of the clutch levers will apply the brakes, which must evenly brake the tractor.

d. If the above sequence does not take place, readjust the linkage to obtain these results.