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Flail Clutch and Roller Height Adjuster
for
Swift Current Forage Harvesters

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E.R.S. cont. # 346

Flail Clutch and Roller Height Adjuster for Swift Current Forage Harvester

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1.0 Flail Clutch

The Swift Current Harvester, Models MK 2 and 4 are equipped with a centrifugal clutch to operate the flail rotor. For safety reasons, a modification has been made to provide clutching to the flail shaft, regardless of engine speed. This provides safety to field workers as the flail may now be stopped when moving from plot to plot or when making turns. During these movements the front end of the harvester is usually held up to permit turning, which leaves the front end of the machine open and subject to throwing rocks, stakes or other foreign objects forward. The same is true when loading the machine onto trucks or trailers.

The modification consists of the complete removal of the entire flail drive and its replacement with two drive belts and an idler type clutch (Figure 1). Two belts were required because of a centre distance-pulley size limit for effective clutching action. The idler pulley is situated on the first belt and is controlled by a lever on the handlebars. A bracket is placed over the periphery of the drive pulley to control belt drag in the idle position to stop free wheeling of the belt. The intermediate pulley is mounted on a ball bearing hub and is adjustable to tighten the front belt. The rear belt is tightened by adjustments in the clutch idler linkage. The motor starting pulley was replaced on the motor shaft. A guard was placed over the front portion of the belt drive, completely enclosing the belts except for access to the motor starting pulley.

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1.1 Parts List

Parts used in the modification are listed below and shown on figure 1.

- | | |
|--|------------------|
| 1. Transmission shaft pulley 5-3/8" OD | B section |
| 2. Intermediate pulley 5" OD double groove | B section |
| 3. Flail pulley 9.7" OD | B section |
| 4. Belt from transmission to intermediate pulley | B-52 |
| 5. Belt from intermediate pulley to flail rotor | B-78 |
| 6. Clutch idler 4-5/8" OD flat face | Fafnir 010-10601 |
| 7. Bearings in intermediate shaft hub | SKF 6204 2 RS |

2.0 Roller Cutting Height Adjuster

The Swift Current harvesters are supplied with a full width skid for adjusting height of cut. For some conditions, especially where soil is wet and plant crowns may be easily damaged, a roller is preferable to a skid.

A roller was fitted to a S.C. II harvester. The roller consisted of a length of $1\frac{1}{2}$ " EMT tubing fitted with roll end bearings. A pivot shaft is fitted through the harvester body and has two arms extending forward to hold a $5/8$ " axle for the roller and one arm extending rearward to act as an adjustment handle. The handle has a hand grip and a lug to fit into a series of holes on one side of the harvester body (Fig. 2).

2.1 Parts List

1. Roll end bearings for $1\frac{1}{2}$ " EMT. Boston 12 EMD. $5/8$.
2. Roll- $1\frac{1}{2}$ " dia. electrical mechanical tubing.

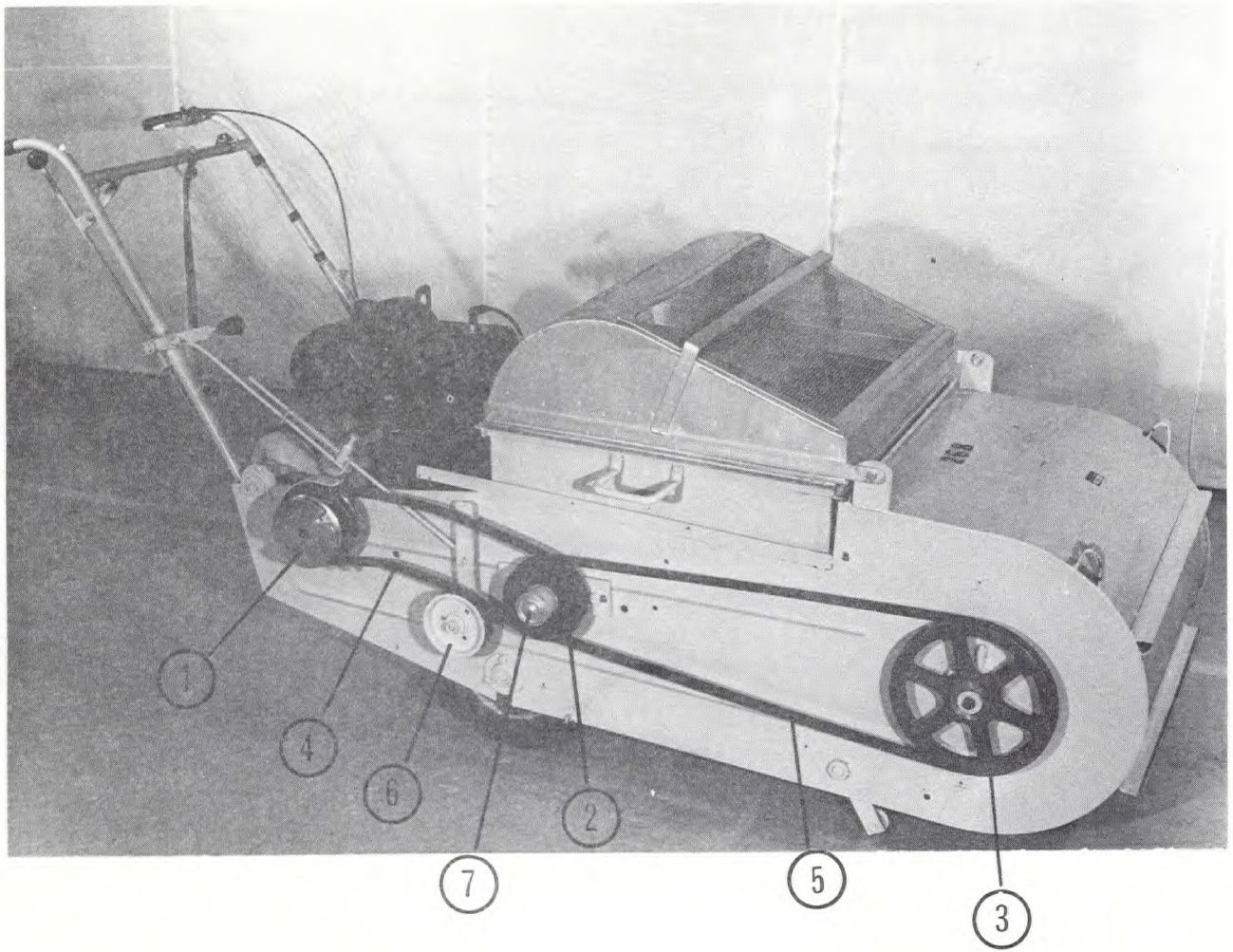


FIG. 1

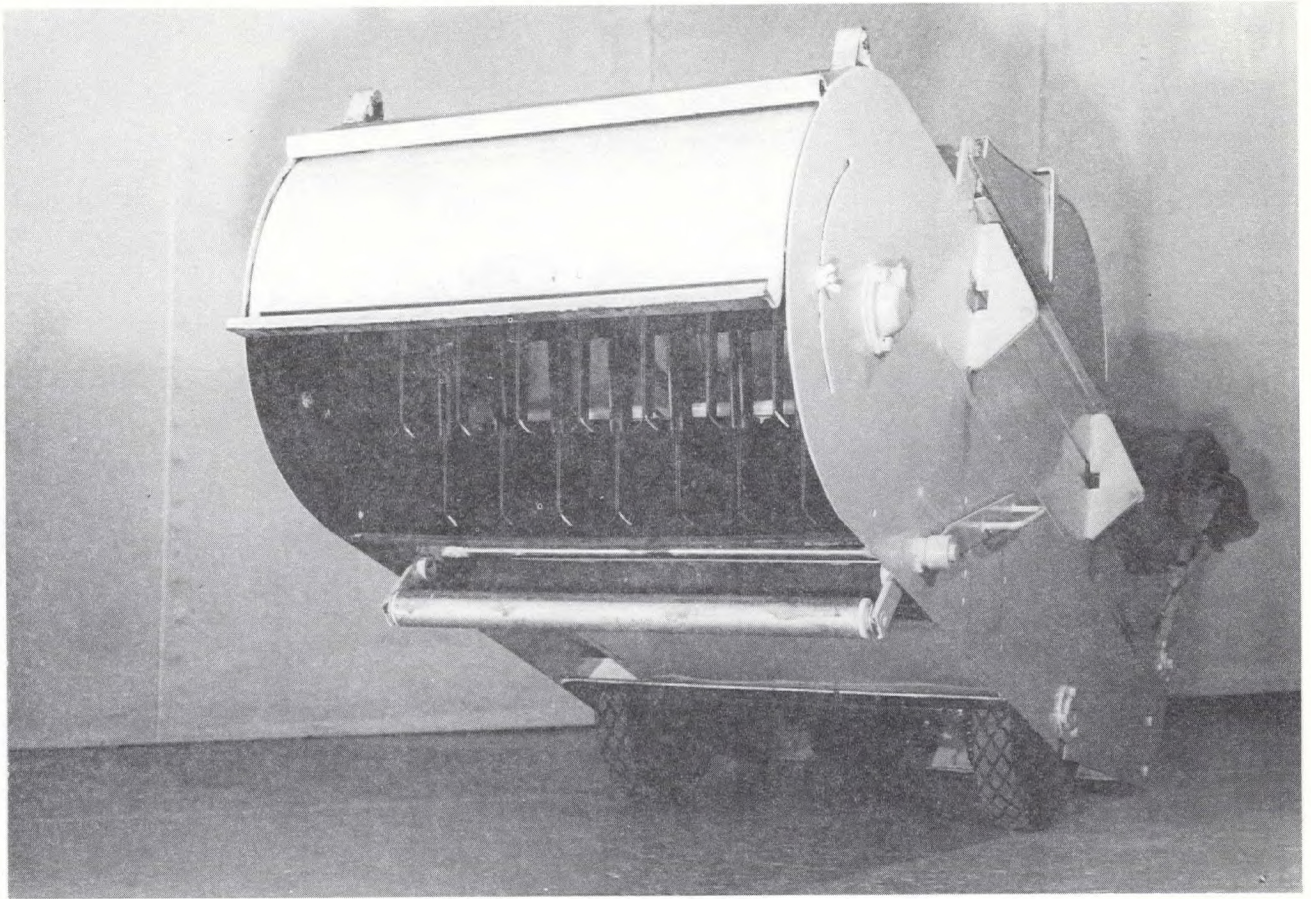


FIG. 2