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Adapting Horse-Drawn Mowers to Tractor Power

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Fig. 1.—A tractor hitch for a horse-drawn mower which has proven very successful. The cutter bar in this case is lifted by the lifting mechanism for an integrally attached plow.

It is often desirable to pull a horse-drawn mower behind a tractor. A farmer may have just purchased a tractor; yet he has a good horse-drawn mower. Sometimes only a limited acreage is to be cut, and the investment in a new tractor mower may not be warranted. In other cases it may be desirable to have an extra mower for tractor use.

A hitch of the type described in this circular is very simple and has many desirable features. It is easily attached to the tractor, it can be controlled entirely from the tractor seat, and it can be made to turn square corners. A mower pulled with a tractor will cut much more, in many cases twice as much, in a day as when pulled with horses, because rest stops are unnecessary and no time is lost

in turning. Most of the newer mowers with gears running in dust-proof, oil-tight cases should prove quite durable even when pulled with a tractor, and many mowers with exposed gears should prove satisfactory if they are kept well lubricated and are not pulled at excessively fast speeds.

Mower Not Pulled From End of a Stub Tongue

Most farmers, when hitching a tractor to a horse-drawn mower, hitch directly to the end of a stub tongue. The difficulty with such an arrangement is that the brace bar beneath the frame extends downward at an angle, and, in heavy cutting, an upward thrust is produced which tends to lift the weight of the mower frame off the wheels and thereby cause slippage.

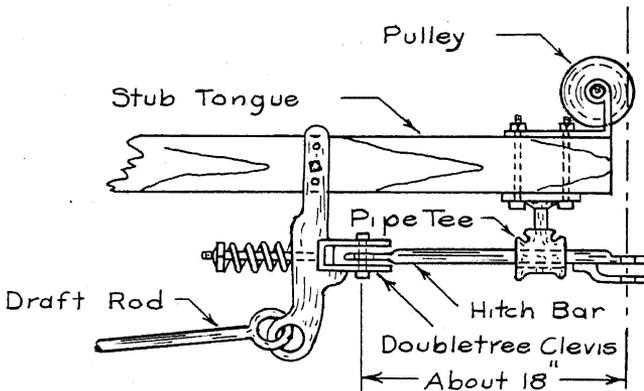


Fig. 2.—The mower is pulled from the doubletree clevis. The hitch bar should slide freely in the pipe tee, or other support, beneath the forward end of the stub tongue.

Fig. 2 shows an arrangement which permits the mower to be pulled from the regular doubletree hitch. About one-half the force required to pull the mower is applied, through the draft rod, to the yoke of the cutter bar. This type of hitch minimizes the difficulty described above, and allows much heavier cutting to be done without adding weight to the mower to provide traction.

Square Turns are Possible

The mower can be made to cut square corners if the regular tractor drawbar is extended backward about 18 to 20 inches, as illustrated in Fig. 3 and Fig. 4. The tractor must be turned very short just as the rear tractor wheel clears the corner of the land. It may be necessary to use the right wheel brake. It is not necessary to stop the tractor, and it is usually not necessary to lift the cutter bar on square corners. Extremely short corners are cut easiest by circling to the left.

A ball-and-socket type of hitch connection is very desirable, but a pin type of connection can be used if it is flexible enough to prevent binding on uneven ground.

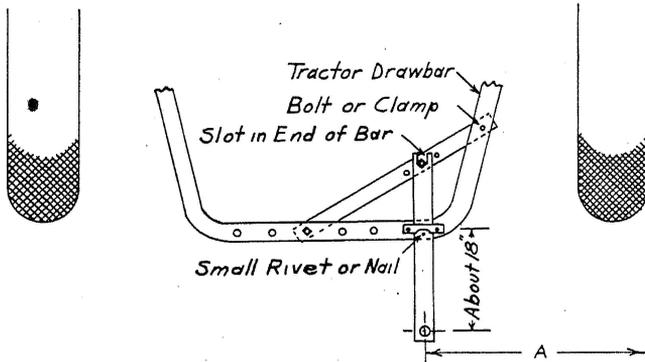


Fig. 3.—Drawbar extension for tractors with stationary drawbars. Distance "A" should be just sufficient to allow the mower to cut a full swath with the tractor wheel running next to the uncut grass.

The hitch bar should be just long enough to allow the tractor to be turned to the left or to the right without interfering with or bumping into the front parts of the mower. Some type of stop should be provided on the hitch bar just in front of the pipe tee, so that the pipe tee and its bracket take the thrust when backing. A pin through the bar should be satisfactory for this purpose.

The swinging drawbar or drawbar extension should be shifted to the right enough to allow the cutter bar to cut a full swath with the right tractor wheel running next to the standing grass. See Fig. 3.

Safety Device Needed in Hitch

Some safety device should be provided in the hitch unless the operator is sure the cutter bar will encounter no obstruction. Figures 3 and 4 show one type of safety device. It consists of a small

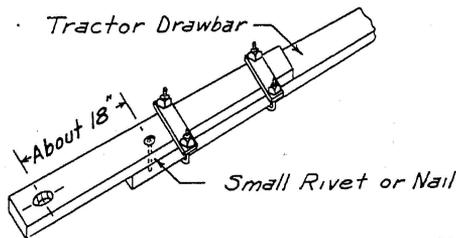


Fig. 4.—Drawbar extension for tractors with swinging drawbars. The drawbar is swung to the right and locked in position.

rivet or nail which shears, and allows the drawbar extension to slide through the clamps which hold it to the tractor drawbar. Tests

have proven that a one-fourth-inch soft iron rivet or a 16-penny nail should prove satisfactory for most conditions, but a slightly smaller rivet or nail can be used if greater safety is desired, and if the draft of the mower is not great enough to shear the pin under normal cutting. The clamps which allow the drawbar extension to slide out when the break pin shears should not be kept tighter than is required to hold the extension rigid.

Cutter Bar can be Lifted From Tractor Seat

One satisfactory arrangement for lifting the cutter bar from the tractor seat is illustrated in Fig. 5. It consists of a rope or small



Fig. 5.—Extremely short turns can be made when the drawbar extension is used. The cutter bar is lifted by a foot lever on the tractor.

cable which extends from the regular hand lift on the mower through at least two pulleys (one mounted on a bracket behind the mower axle and one mounted directly over the clevis pin in the hitch) to a hand or foot lift lever on the tractor. It is frequently possible to connect the lift rope to some part of the lifting mechanism of a cultivator or an integrally mounted plow. Fig. 1. The lift rope should extend directly upward between a pulley on the end of the mower tongue and the lifting mechanism on the tractor at a point directly over the clevis pin in the hitch, if short turns are to be made with the cutter bar in the lifted position. To make this possible it may be necessary to run the rope over another pulley mounted on the rear of the tractor as illustrated in Fig. 5.

A loop of small wire or other safety device should be used in the lifting linkage if the rope used is too large to break easily when the break pin in the hitch is sheared.