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A CATCHING AND WEIGHING ATTACHMENT FOR FORAGE HARVESTERS

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SUMMARY

An attachment fitted to a rear-mounted forage harvester is described and illustrated.

Forage harvesters are useful machines for cutting pasture and forage samples, but some modifications are needed if sampling time has to be reduced to a minimum.

A simple device can be fitted at little cost which will greatly speed up the catching and weighing part of the operation. This article describes and illustrates such a device which was fitted to a rear-mounted forage harvester (Cost Cutter by Grasslands Pty. Ltd.) by Emerald Mechanical Repairs, Emerald.

With the exception of the scales and the catching box, all parts are welded to the body of the harvester. The materials used were mostly scrap and no attempt is made to draw to scale or suggest quantities or dimensions as this will depend on the design of the model in question and the amount of money available.

The catching box, when in the rigid (collecting) position, hangs on two cradles (Figure 1) (A) and is attached to the body on each side of the machine by two pin, tongue and slot arrangements (B). To assume the weighing position the pins are removed, allowing the tongues to slip from the slots so that the box hangs on the cradles. It is then lifted clear of the cradles by means of the winch (C). To return the box to the rigid position it is lowered back onto the cradles (guided by D) and swung back to locate the tongues in the slots; the pins are then replaced.

The catching box can be emptied by unhooking the two catches (G), which allows the rear side to swing open (see Figure 2). The box can be emptied onto a sheet, into the back of a utility or over a fence.

The winch is a simple drum type with ratchet and pawl control. The pawl is hand-operated and held in position by a coil spring. A cable passes from the drum of the winch through a direction pulley to another attached to the arm of

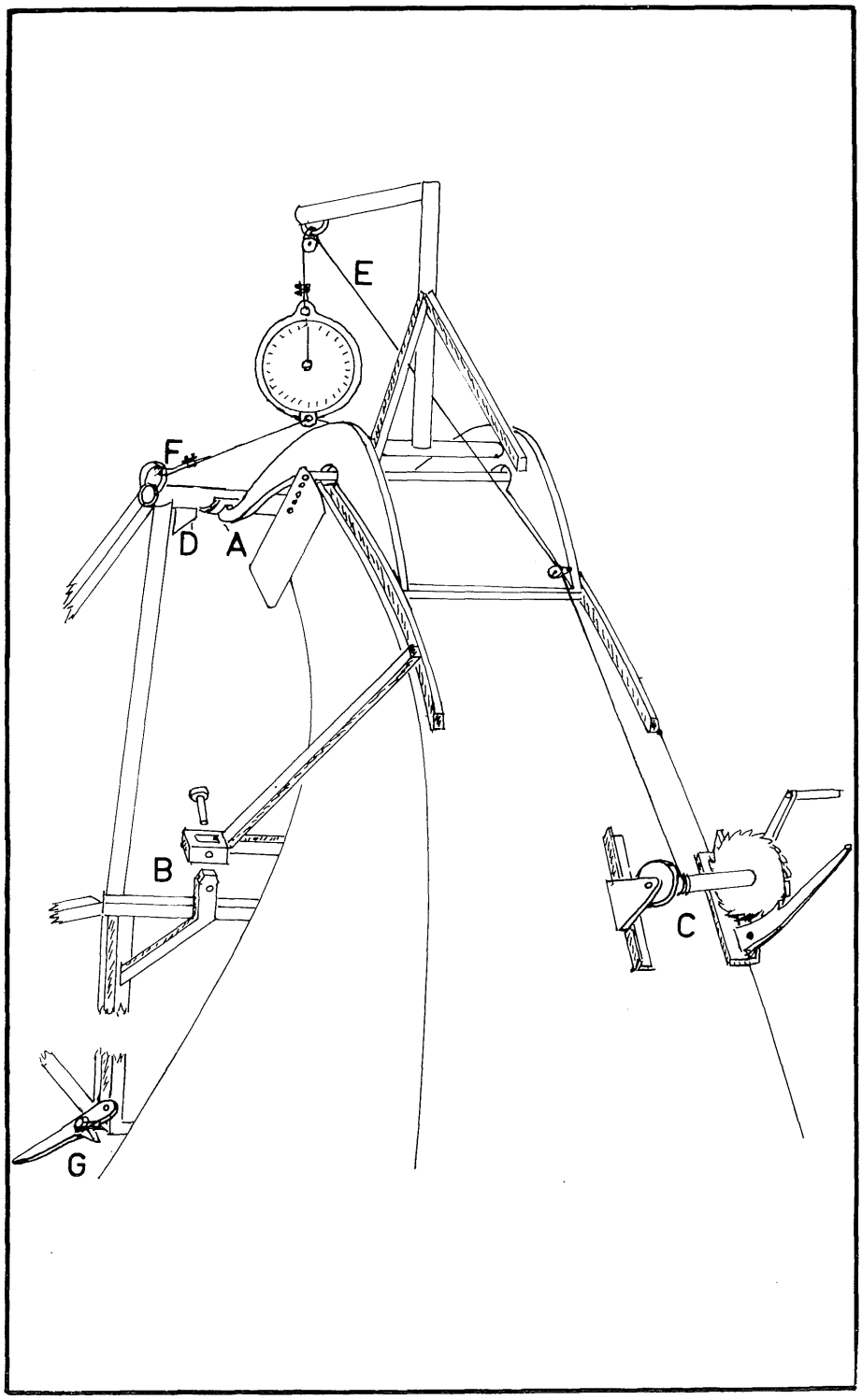

Fig. 1.—Front view drawing of equipment.

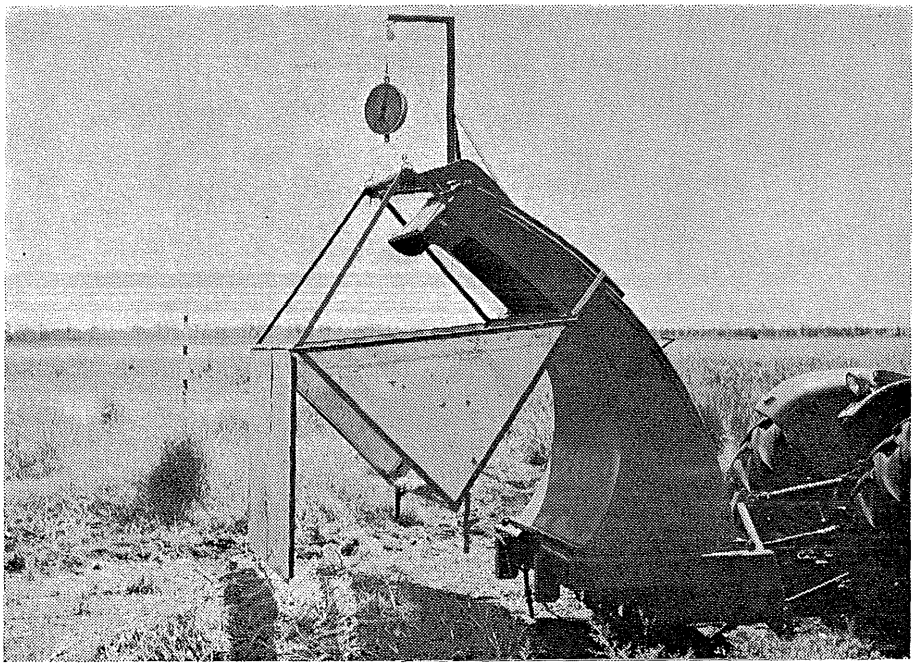

Fig. 2.—Rear-side view photograph showing catching box in the open position.

the gibbet (E). The end of the cable is attached to the top ring of a hanging scale and secured with a U-shackle. A short piece of cable connects the two rings (F) on the top bar of the catching box to the lower ring of the scales.

Two persons can operate the machine quite easily. One person is responsible for guiding the tractor driver, removing and replacing the securing pin on the near side (winch side) of the machine, operating the winch, recording the weight and unlatching the hinged door when emptying the load. The other person drives the tractor and is responsible for removing and replacing the pin on the far side, steadying the box while it is being raised and lowered and operating the door latch on his side. The complete operation takes less than 30 seconds.

The catching box shown in Figure 2 weighed 43 kg (95 lb), which meant that the scales had to weigh a total of 91 kg (200 lb) in order to weigh a full load. The box was made mostly from scrap materials but could be constructed of a lightweight material such as aluminium. A heavy box, however, is less affected by the wind.

It may be necessary with some harvesters to fit baffles or alter the design of the catching box to prevent loss of material over the back and/or sides.

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