inches deep. The four legs $U$ have lugs at the base by which the machine is fastened firmly to a wooden floor with lag screws.

The total cost of material in this thresher at retail prices was less than $25.00. Some second-hand parts were used. Very little power is required for operation. A 1$\frac{1}{2}$ H. P. gasoline engine gave more than adequate power for any operating condition.

The capacity of the machine is sufficient to handle rod rows with a maximum yield of approximately 17 bushels per acre. A machine with a larger capacity can be constructed by widening the cylinder and enlarging the bottom area of the tray.—H. D. Jacquot, Adams Branch Station, Lind, Wash.

WASHING AND HALVING SUGAR BEETS PREPARATORY TO SUGAR AND PURITY DETERMINATIONS

In the preparation of samples of sugar beets for a determination of their quality by chemical analyses, it is often necessary to wash the beets composing the samples free from soil and to cut each beet longitudinally into halves in order to provide two comparable sub-samples for parallel determinations. At the Michigan Agricultural Experiment Station two machines have been built which materially reduce the amount of labor involved. One machine washes the samples and the other saws the individual beets into halves. With these machines the work of washing and halving the beets has been speeded up materially and operating costs have been reduced to a minimum.

THE WASHER

As shown in Fig. 1, the washing machine consists of a basket set in a rack on the end of an inclined, revolving shaft. The base of this shaft is set on a thrust bearing. As the basket turns, the beets in the sample are rolled one over the other, exposing all parts of the roots to the action of the water jets. The nozzles through which the water is admitted to the machine are mounted on the inside of the galvanized cover and are quite close to the beet roots when the cover is closed. Because the water is admitted under high pressure, the basket is inclosed in a galvanized iron tank to confine the spray. An outlet for the water is provided at the bottom of the tank.

Power for turning the basket is secured from a $\frac{1}{4}$ H. P. motor operating at 1,700 R. P. M. The first reduction in speed is secured by running the belt from the $1\frac{1}{2}$ inch pulley to a 22-inch pulley mounted on the side of the machine. A second reduction in speed is secured in the bevel gears between the jack shaft and the inclined shaft. These bevel gears were secured from the differential of a Model T Ford rear axle. With this reduction in speed, the basket revolves about 40 times a minute.

For convenience in operating, the switch for starting the motor is placed within reach of the operator when standing in front of the machine and the quick closing valve controlling the water supply is mounted on the outside of the cover. The water supply is carried to the machine through a pressure hose.

In actual operation samples consisting of 20 beets with a large amount of adhering soil were washed sufficiently clean for use in 45