etries within species for pasture purposes. Trials indicate that it will also handle the more mature crops.—H. B. Howell, Supt., J. J. Astor Branch Experiment Station, Astoria, Oregon.

HARVESTER FOR EXPERIMENTAL FORAGE PLOTS

Researchers dealing with forage crops have long been seeking a satisfactory harvester for experimental plots. The ideal harvester should meet the following minimal specifications:

1. Utilize existing basic equipment insofar as possible to keep costs down.
2. Be simple in construction so as to minimize mechanical difficulties in operation.
3. Be readily transportable with available transportation.
4. Expedite the harvesting operation
   a. faster
   b. cheaper
   c. lower experimental error.

The writer and Mr. Lake Wall have developed a harvester with the potential of meeting all these requirements. It was demonstrated in operation during the meeting of the Northeastern Section of the American Society of Agronomy at University Park, Pa., on July 25, 1955. Development of this harvester was initiated in April, 1955. Numerous variations were tried, finally resulting in the model shown in the accompanying figures.

An ordinary rotary mower attachment for a Gravely tractor was modified as follows:

1. Fins to provide additional “airlift” were welded to the cutter blades.
2. A solid metal shield was welded at the rear of the circular housing.
3. Skids and shields were welded to the sides of the circular housing.
4. An outlet pipe was attached on the top left of the circular housing. A short length of ensilage-filler pipe was utilized for this.
5. A light metal frame of \( \frac{1}{4} \) inch angle iron was devised for supporting a basket made of \( \frac{1}{4} \) inch hardware cloth. The frame is detachable to expedite transporting the equipment. Four of the baskets were used to facilitate continuous operation of the mower.

The normal speed Gravely tractor was not adequate for the power requirement. In trials during August and September 1955, a \( \frac{3}{4} \) speed Gravely tractor (5 H.P. motor) was adequate but not always adequate. Experience has demonstrated that even when the tractor is operating at \( \frac{3}{4} \) normal speed, the power source is not adequate for removal of the chopped forage through pipes with surfaces perpendicular to the airstream.

Additional problems were encountered on plots with exposed, dry soil. The suction was sufficient on occasions to pick up a considerable amount of dust—obviously a factor in increasing experimental error. Fist-size, loose rocks occasion both mental trepidation and mechanical hazard.

The model shown was used for harvesting regular experimental orchardgrass plots and alfalfa plots last fall. When operating at peak efficiency, a 3-man crew was able to perform all the operations incident to harvesting experimental plots at the rate of slightly less than 1 minute per plot. One man operates the mower, and 2 men handle the sub-