effect on productivity, it was not of sufficient magnitude to mask the expression of heterosis.

There was a considerable difference in the specific combining ability of the nine commercial varieties for yield of seed cotton. The F$_1$ of Pandora × DeRidder Red Leaf produced only 0.8% more seed cotton than its better parent, while the F$_1$ of Stoneville 2B × DeRidder Red Leaf produced 47.0% more seed cotton than its better parent. Other comparisons can be made in Table 1. Of the nine commercial varieties, the Pandora and Plains varieties were poor combiners with DeRidder Red Leaf and the Stoneville 2B, White Gold Wilt, and Empire varieties were relatively good combiners with DeRidder Red Leaf. — Jack E. Jones and Harold D. Loden, Assistant Agronomist, Louisiana Agricultural Experiment Station, Baton Rouge, La., and Geneticist, Paymaster Farm, Western Cotton Oil Company, Plainview, Tex., respectively.

Literature Cited


A SELF-PROPELLED PLOT COMBINE

The small-grain breeding plots at the University of Tennessee Agricultural Experiment Station have been harvested by hand in the past. This made it necessary to employ a large amount of labor, and valuable information regarding the harvesting characteristics of the grain under field conditions could not be obtained.

It was desired to use a combine for this job, but because the varieties were randomized and because they matured at different times, it was necessary to use a self-propelled machine if all replications of each variety were to be harvested in sequence. Also, from the standpoint of cleaning the combine, it was desirable to harvest all replications of each variety at one time. The present commercially-built self-propelled combines are not satisfactory for small plot work because of their size and because they are difficult to clean. Tests by Hurlbut$^8$ indicate that the average combine is a very difficult machine to clean thoroughly.

Design

The Tennessee Crop Improvement Association financed a project to build a self-propelled combine especially designed for harvesting experimental plots. Rather than build the complete machine it was decided to use a small pull-type combine and adapt it to existing conditions. An Allis-Chalmers Model 40 Harvester was selected, since the plots on which this machine was to be used are 36 inches wide.

Fig. 1.—Front view of assembled plot combine.