ANNING pea experiments have dual objectives—yield and quality—and both are subject to rapid change during the harvest period. An experiment consisting of several treatments and adequate replication requires an impractical amount of hand labor if the peas are harvested rapidly enough to insure valid quality and yield comparisons. Unless exceptionally conscientious labor is available, the recovery of shelled peas is extremely variable and usually too low to be considered valid. Hence, a limiting factor in the number of plots in a pea experiment is the speed with which the harvesting operations can be accomplished. The time required for harvest may be reduced by using small plots or by collecting small samples from plots, but these measures are frequently inadequate with respect to soil heterogeneity and other factors. Commercial viners have been used with success in some cases, but the large size of plot required limits the number of treatments that may be studied. Therefore, to facilitate harvest of adequate canning pea experiments a portable pea viner of a practical capacity and efficiency was constructed. In principle, the viner is similar to large commercial viners. A slowly-revolving closed, screened drum lifts the vines and drops them on rapidly revolving beaters. The impact of the beaters breaks the pods, and the peas pass through the screen.

CONSTRUCTION OF THE VINER

A view of the viner showing certain details of the construction is presented in Fig. 1. A welded angle-iron frame supports the engine, the gear-reduction train, the revolving drum, and the cover. The cover is bolted to a hinged mount and may be engaged or disengaged by a lever which lowers or raises the drum. The drum, which is powered by a 2 1/2 H.P. Briggs-Stratton gasoline engine. Starting and stopping the engine is accomplished by a lever which lowers or raises an appropriate container. The screened drum revolves at about 30 r.p.m. while the paddles or beaters revolve in the same direction at about 300 r.p.m.

OPERATION OF THE VINER

Only one person is required to operate the viner which is powered by a 2 1/2 H.P. Briggs-Stratton gasoline engine. Starting and stopping the engine is accomplished by a lever which lowers or raises an appropriate container. The drum revolves at about 30 r.p.m. while the paddles or beaters revolve in the same direction at about 300 r.p.m.

With a medium-vined variety such as Resistant Surprise the viner handled all the vines from 48 square feet of plot, rows drilled 7 inches apart, in from 3 to 5 minutes. The shelled peas were cleaned by rolling them down a wet canvas incline, and the spent vines from 30 pounds of shelled peas per hour. The effectiveness of the viner is indicated in Table 1.