NOTES

A HULLER FOR CLOVER HEADS

In 1943 and 1944 the author was confronted with the problem of removing the seed from approximately 4,000 bags of clover heads. The number of clover heads per bag varied from 150 to 600. To hull this volume of clover heads by hand methods would have involved hundreds of hours of labor and great expense. With this problem at hand the author, because of necessity, began to assemble plans for a mechanical clover huller that would operate with speed and efficiency. The planning provided for the combining of the fundamental principles that are commonly built into the commercial clover hullers, the hammer mill, and those of the various hand methods that may be used to hull clover seed. The final product of the author's thoughts and efforts are herein presented for review by those who may be interested in a small mechanical clover huller. This huller has speed, accuracy, and efficiency. The accuracy of the machine is practically 100% because the clover seed cannot leave the hulling compartment until the hull is removed from the seed.

Figs. 1 and 2 show the general construction plan of the huller. The stationary and revolving beaters are made of rubber cut from the sidewalls of a four-ply automobile tire. Except for the beater shaft, belt pulley, and screen, the entire machine is made of wood, rubber, and glass. Seasoned walnut was used for the beater and the wooden housing that surrounds the beater. Seasoned poplar was used for the wooden bearings that were equipped with wick-type oilers. The general frame construction is from seasoned white pine. All joints were closed and held in place by both wood screws and glue.

The multiple speed V-belt pulley allows for adjustment of the beater speed from 800 to 1,800 R.P.M. A speed of 1,200 R.P.M. was found to be very satisfactory for dry clover heads. Both the stationary and the rotating rubber beaters can be adjusted quickly and easily. The stationary beaters are held firmly by wooden wedges made from seasoned walnut. The rotating beaters are held in position by screws. To keep down vibration the rotating beaters must be of equal weight.

The adjustment of the beaters was found to be much less frequent than expected for 200,000 heads were hulled before the first adjustment for wear was necessary. The machine was powered by a ½ H.P. electric motor equipped with a built-in switch for starting and stop-