The New Laboratory Refining Machine

DETAILED plans have been completed for the Laboratory Refining Machine necessary for the new method adopted at the recent Interstate Cottonseed Crushers' Association Convention.

The machine will be built in multiples of three stirring units or paddles. The standard machine will have twelve (12) paddles in two rows of six (6) each, and larger machines can be built with eighteen (18) or twenty-four (24) paddles as may be desired.

In order to reduce noise and wear to a minimum, helical gears will be used wherever possible and ball-bearings where necessary. Where straight gears cannot be avoided fabricoid gears will mesh with steel gears.

The drive from motor to the transmission will consist of helical gears and shaft, obviating the use of noisy chain or slipping belt. The transmission will permit of either row of paddles being driven independently of the other at either 70 or 250 R. P. M., or both can be driven at the same speed if required. The gear shifting device will be simple and positive.

Power will be transmitted from the horizontal drive shafts to the paddle shafts by means of helical gears. It will be possible to stop any individual paddle while the others remain in motion. Paddles will comply with the requirements of the new method as to size and shape and will be of entirely new design to avoid the defects of the old type that caused some trouble. It will be possible to detach paddles from machine, as in the present type, for cleaning.

The refining method requires that water in the bath surrounding the oil be kept mixed by agitation. To accomplish this, paddles will be provided that will keep the water in motion and which will operate independently of the horizontal drive shafts and maintain a constant speed, unchanged by the change of speed of the refining paddles. This is an important point because when refining paddles are only revolving 70 R. P. M. the water will be heated and most in need of agitation of a rapid character.

Study of the new refining method leads to the recommendation that refining cups be left in the bath, the cold water drawn off at the end of ten minutes agitation and hot water of the proper temperature added. For this reason the twelve (12) paddle machine will be provided with a single copper water bath with suitable devices for draining and filling quickly. However, if a divided water bath is desired so that cups can be transferred from the rear (cold) bath to the front (hot) bath (or vice versa) such orders will be filled at actual additional cost of the work. This will also require some change in the arrangement for agitating the water.

A machine is now being built and will soon be completed. Until then it is impossible to arrive at costs and so prices cannot be quoted at present. It is certain that the use of stock gears and bearings and careful economy in machine shop work will result in a machine to be sold at a reasonable price.

All Chemists interested in this machine should communicate with Mr. G. Worthen Agee, c/o Barrow-Agee Laboratories, Memphis, Tennessee, without delay.