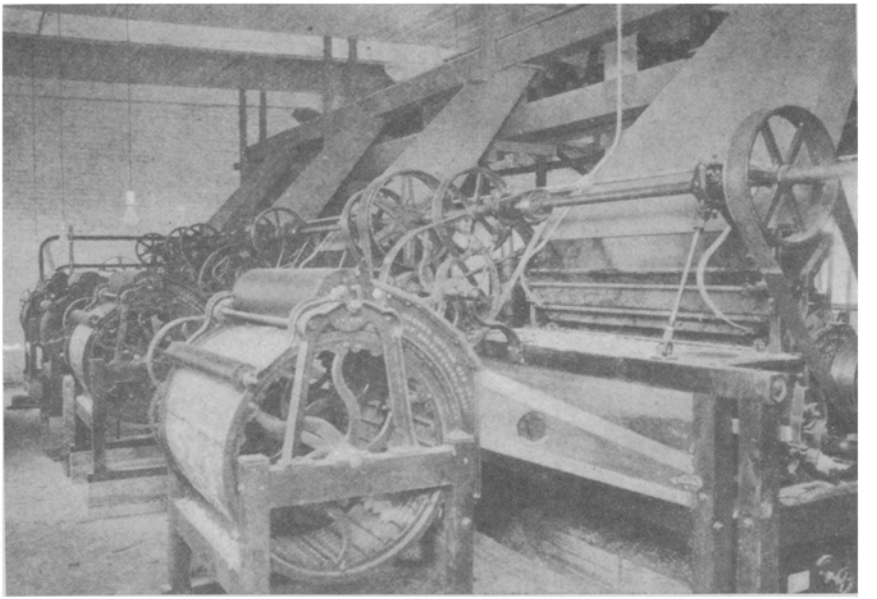
A Model Plant Demonstrates Efficient Methods for Cottonseed Crushing

The layout and equipment of this factory represents the last word in scientific cottonseed crushing and is worth careful study.



Part of a battery of linters at the demonstration plant of the Western Engineering Co. plant. These machines are all electrically driven

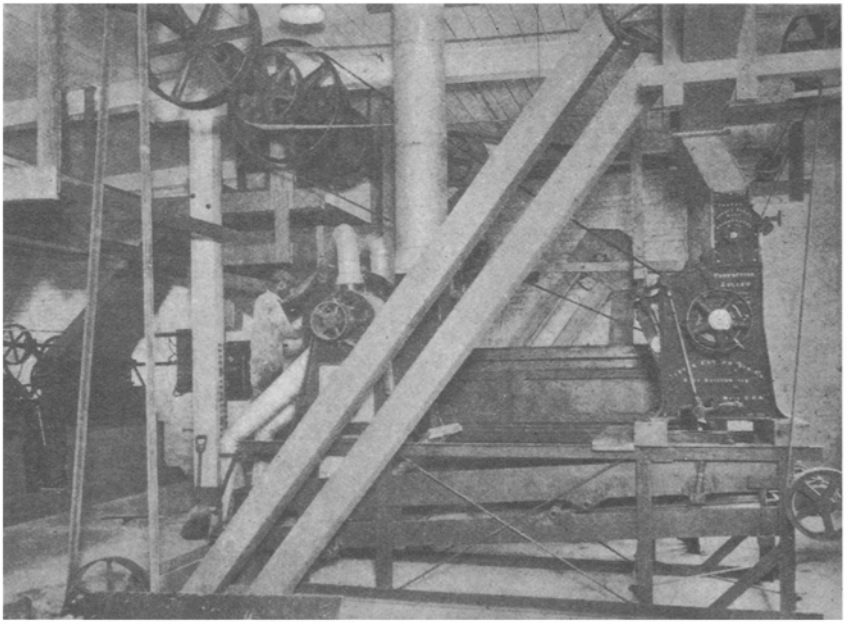
THE Western Engineering Company of Dallas, Texas, builders of vegetable oil crushing plants, have just completed and put into operation a model demonstrating plant at Garland, Texas, for the crushing of cotton seed.

The seed house is of truss type construction, 60 feet wide at the base and 8 feet at the top, 35 feet from the ground, being constructed entirely without supporting posts and having the natural slope of a pile of cottonseed so that, when seed is discharged from the overhead conveyor, this seed storage house completely fills itself. The seed is cleaned in the seed house, then elevated and conveyed overhead to the two-story brick and concrete mill building where it passes through automatic scales and falls into a supply bin which holds enough seed to furnish ample supply to run the plant for 18 hours. By the use of this bin, the seed house is operated only during the day and enough seed is accumulated in the supply bin during the day to furnish ample supply for continuous operation of

the mill during the night. The seed from this supply bin is fed to the mill by a special constructed feeder which is so regulated to discharge from this bin only enough seed to supply the line of linter machines. Any overflow or surplus of seed from the linter machines is returned and discharged back into the bin, but this seed does not pass through the automatic scales. After the cotton seed passes through the linter machines, it is then conveyed to a Bauer Bros. 153 Special separating unit which separates the meats from the hulls, the hulls passing to the hull storage house and the meats passing through the protein control machine, then going directly to the press room.

The press room of this mill is equipped with three Anderson oil expeller type presses, two of these being of the new model roller bearing type and built along modern ideas of heavy machinery construction. These roller bearing presses have been under construction and testing for the past eight years, and the two at Garland are the first of the new model type to be shown to the industry. They are very rigid in construction, exert greater pressure than the old type Anderson expeller and produce greater capacity and lower extraction than heretofore known.

The cotton seed meats coming from the separating machinery flow directly into a special dryer which gives control of the amount of moisture to be left in the seed, and the meats then go directly to the presses which are continuous in operation. The presses receive a steady stream of meats. As the meats pass through the presses, the oil is pressed out and picked up at the bottom of presses with an oil pump and pumped into a scale tank



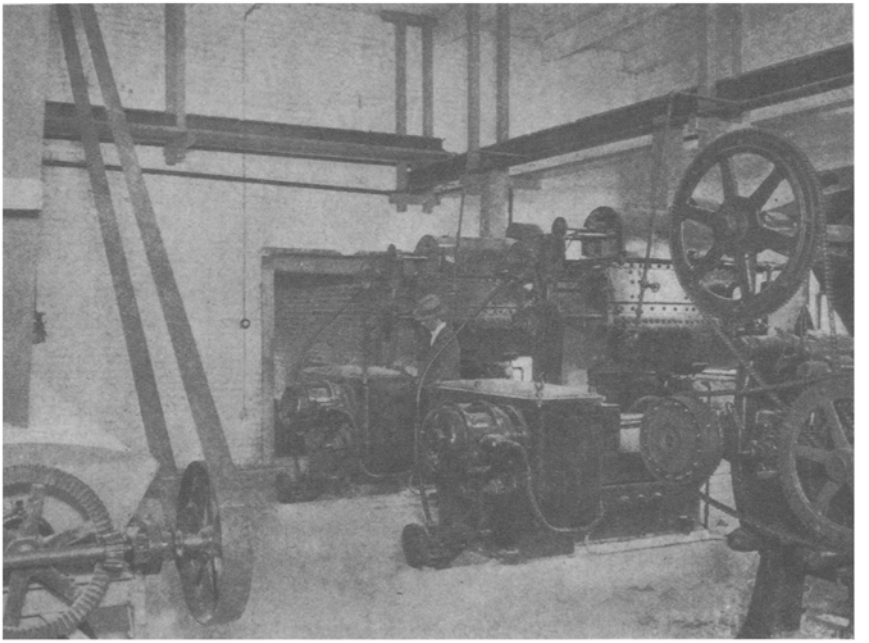
Separating equipment, elevators and conveyors

and, after being weighed, it is pumped into a storage tank. The cake comes from these presses in a continuous stream and drops into a conveyor which carries it to the meal grinding room where it is ground and sacked.

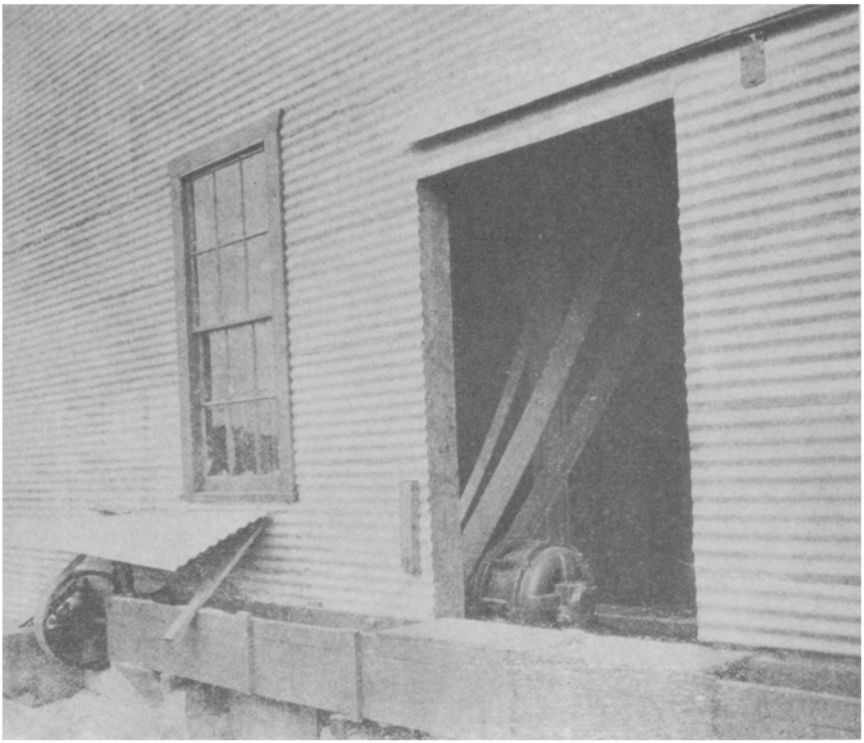
The necessary steam used for drying (it is not necessary to cook with cookers as in the old style mills) is furnished by a 20 horsepower marine type boiler fired with natural gas. The equipment for the boiler room also includes all automatic control features on both gas burner and boiler feed pump, thus eliminating the use of a fireman.

This plant has also a complete and up-to-date chemical laboratory with a competent chemist in charge where all products and materials are carefully analyzed.

The entire plant is equipped with General Electric motors, the power being furnished by a high tension power line of the Texas Power & Light Company. The motors are of the latest design, starting with a 30-horsepower motor in the seed house which operates all of the seed house equipment, seed cleaning machines and delivers the seed to the mill building. A 50-horsepower motor drives the line of linter machines and a 40-horsepower motor drives the separating equipment, elevators and conveyors. Both of these motors are equipped with silent chain drives. In the press room are two small motors to operate elevating and conveying equipment. The roller bearing Anderson expeller presses are equipped with special built-in General Electric motors requiring no clutch, this being standard equipment on these new type presses. These



Anderson Cold Press Expellers



Seed house equipment and cleaners are likewise driven by individual motors

presses are started and stopped by a push button mounted on each machine. The smallest motor in this plant is a one-sixth horsepower motor in the laboratory operating the line of agitators.

One of the novel features of this plant is the direct reading meters mounted on each motor which show at a glance the amount of horsepower required by each machine. There are also graphic wattmeters showing the variation of the load.

As all cotton seed is weighed into this plant and all lint, meal or cake and oil is weighed out, it is possible at all times to have an exact check on just what is being done and to know from the recording instruments what power is required to do the work. The plant has a capacity of 25 tons daily and requires 6 men during the day and 3 men at night to operate.

Southern cotton interests are agitating the substitution of cotton in place of jute bags for shipping cottonseed meal. One individual states that it would require about 4,000,000 bales of cotton for this purpose alone. The Coweta Cotton Oil Co. states that it is now using cotton bags, which it finds slightly more expensive. M. L. Taylor, secretary-treasurer of that company, has issued an appeal to all oil mills in the south to come to the rescue of the cotton crop by using cotton bags. "If everyone used them," he says in the *Atlanta Constitution*, "it would put all on a parity."