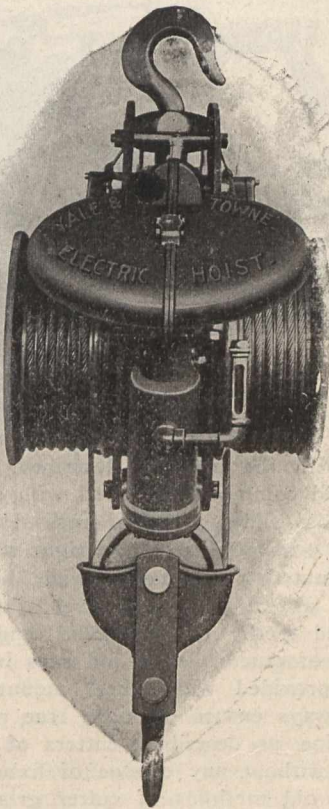


THE YALE & TOWNE ELECTRIC HOIST.

This hoist is designed to meet the growing demand for a simple, convenient and durable power hoist. It is made to withstand the roughest usage and give satisfactory service in the hands of the inexperienced workman. It may be moved from one place to another as easily as a chain block, and used in any part of the works or yards where current is available. It greatly increases the efficiency of any hand crane, and its compactness enables it to be hung up and operated in the smallest space. It is described by the manufacturers, the Yale & Towne Mfg.



Co., of New York, as follows: The material throughout its construction is the best obtainable, and all parts are made to gauge, thus securing complete interchangeability. The motor is placed above the oil submerged parts of the hoist and the motor shaft bearings prevent the possibility of oil entering the motor. The improved oiling devices preclude heating from overload, or injury from the high temperatures usually existing near the ceiling. The load is taken on wire hoisting rope of the toughest steel, wound on grooved drums that are keyed direct to the main shaft. At the bottom hook the steel hoisting rope passes around an equalizing sheave, thereby balancing the strain. All parts under tension or subjected to transverse strain are of forged steel or wrought iron. The hoist always balances properly on its single upper hook whether loaded or empty, and pulls in a true vertical line throughout the lift. The single swivel hook suspension allows the hoist to pull as well at any angle. The working parts are enclosed in an oil tight iron casing, which excludes the dust and water, at the same time insuring thorough lubrication. The load cannot run away even should the motor or brake become inoperative; an automatic cut off prevents the load being hoisted too high. The hoist is operated from the floor, and is regularly equipped with a telescoping controller rod enabling the workman to control it from a point in full view of his work without depending on signals to a crane operator. Pendant cords or chains will be furnished if preferred, but the rod-controlling device gives more accurate control of the load and is so made that it cannot catch any obstruction and start the hoist when traversing on a crane or runway.

The company have one of these hoists in operation at their exhibit at the World's Fair, St. Louis, where they have also one each of their triplex, duplex and differential blocks operated by electric motors for the purpose of showing relative efficiency. Each block is supplied with a 1,000-lb. weight and so arranged that equal power is sup-

plied to each block. The result is that the triplex block lifts its load much more quickly than the others, while at the same time the ammeters show equal power applied to each block. The mechanism is automatic, so that when the triplex weight arrives at the top all three blocks reverse their motion and lower the weight until all reach the floor, when they again automatically reverse and begin to hoist. The arrangement shows at a glance the comparative efficiencies of a block and is particularly interesting to any engineer.

BECKER-BRAINARD NO. 1, 14" CUTTER AND REAMER GRINDER.

This machine, which is made by the Becker-Brainard Milling Machine Co., of Hyde Park, Mass., is unlike other cutter grinders in that it requires no extra fixtures for handling any style of milling cutter or reamer. It has two separate knees each provided with its own slides. The cutter to be ground is transferred from one to the other for the different operations on the side and end teeth. Fig. 1 gives a view of the machine as regularly made from which we get a very good idea of the weight and proportion as a whole. Here we see the two different knees mentioned above. On the left-hand side of the machine we have the main knee, which swivels around the supporting column, and carries the head and tail stock for grinding cutters on centres, or with bar inserted in place of the head stock centre, and the tail stock removed. We grind cutters by sliding them on the bar in front of the wheel, which ensures a cutter ground straight and true with the hole. On the right-hand side we have a novel arrangement for grinding the end mills, or the side teeth

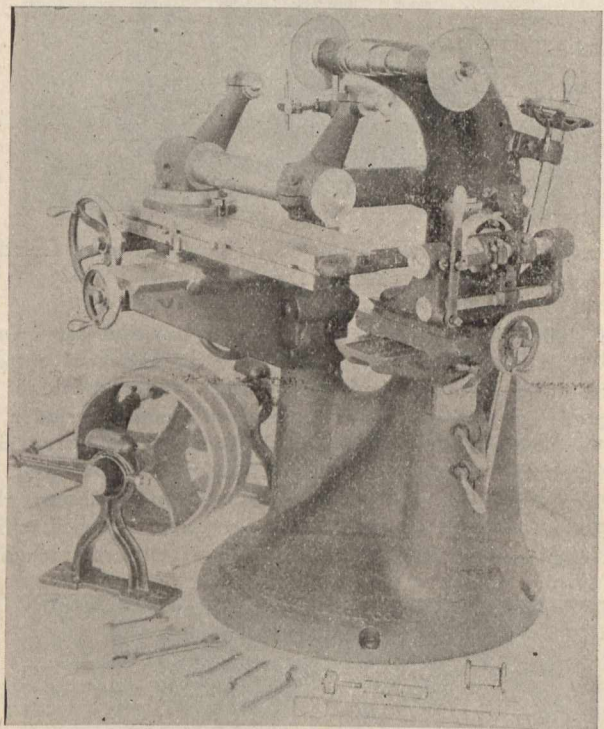


Fig. 1.—No. 1. Fourteen-inch Cutter and Reamer Grinder.

of straddle mills and inserted tooth cutters. This sliding head can be swivelled for grinding bevel or dove-tail mills, and is provided with a plunger finger which is always set on the centre. The object sought for in this arrangement is to do away with many of the devices ordinarily used for this work, and it is also unnecessary to use any other than 7-in emery wheel shown. In Fig. 2 is shown a machine arranged with motor drive and which is on exhibition at Becker-Brainard Milling Machine Co.'s space in Machinery Hall at the Louisiana Purchase Exposition. Figs. 3 and 4 show good illustrations of the improved manner of handling work on the machine, showing as they do, straddle and end mill in both positions. This also shows how the clearance is obtained on the end and side teeth. Other illustrations, which cannot here be given for