RAILWAY TRACK APPLIANCES.

The design of railway track tools has been greatly improved in recent years. Through the courtesy of Cooke's Railway Appliance Co., Kalamazoo, Mich., we are enabled to illustrate and describe an interesting example.

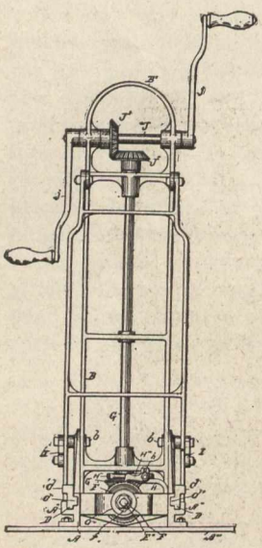


Fig. 1.

The track drill, Fig. 1, is turned by two cranks, bevel geared to a shaft, which is held in vertical position by jointed back brace rods while in service. The drill can be detached from the rail quickly by pulling back the brace rods. A special feature of this drill is the adjustable feed; by this means the drill can be made to turn faster when first entering the rail. The bit turns easiest when first starting a hole, and considerable time is thus gained by turning it faster until the drill point has fully entered the metal. An important improvement is the collar used on the bit stock, supporting the bevel pinion. Ball bearings are arranged to take the thrust of the drill; a ball bearing is used between the screw part of the shaft and the bit stock, the latter telescoping the former with the ball bearing between.

Figs. 2 and 3 show a drill and tool grinder, which can very easily be attached to the rail drill; no bolts or other

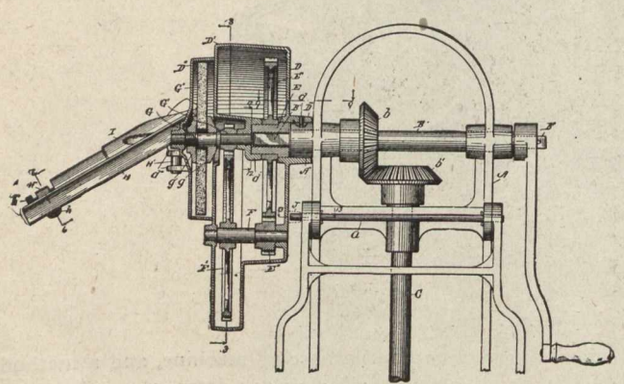


Fig. 2.

complicated fixtures being used in making the attachment. It is only necessary to remove the crank handle, and the grinder can be readily slipped on in its place; a quarter turn automatically locks the grinder securely to the rail drill, which serves as motive power in operating. As shown in Fig. 3, the disc which covers the emery wheel has an opening for grinding drill bits. The upper part of the disc is

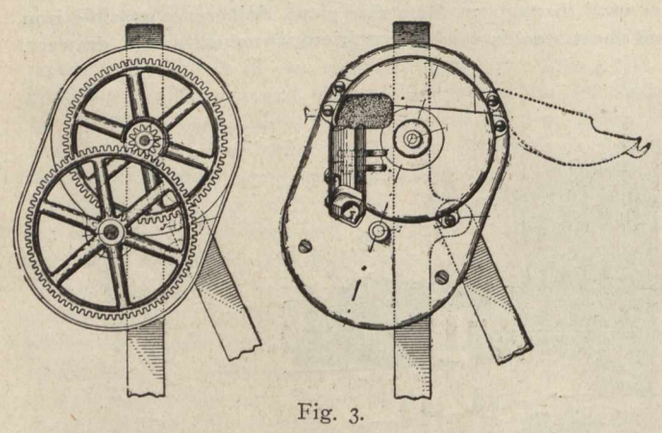
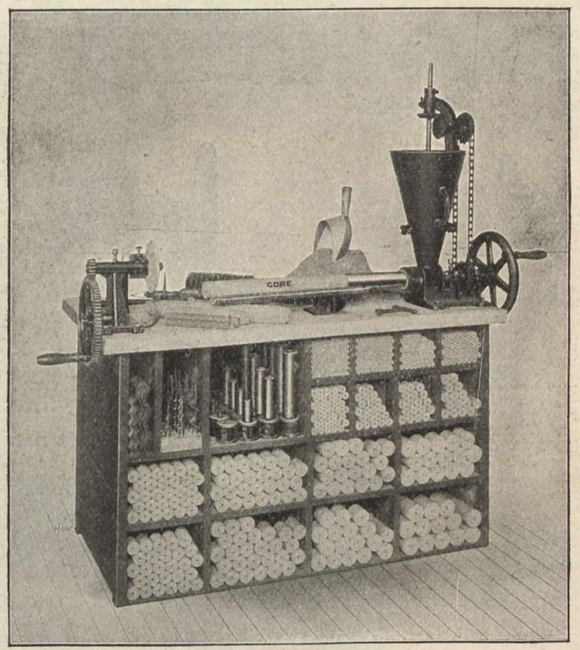


Fig. 3.

hinged, and may be thrown back for the purpose of grinding other tools. The only adjustment required when sharpening drills is by means of the screw at the end of the device for holding the drill, and then the operation consists of rocking the drill holder; a perfect cutting edge, with the necessary clearance, is the result

HAMMER CORE MACHINE AND CABINET.

The illustration below shows a valuable adjunct to the foundry; a cabinet specially designed for the storage of smaller centre cores, having table fitted with machines for forming straight and tapered cores, and commodious enough for the handling of same. The cabinet is 48" long x 30" high x 24" wide, constructed of 7/8" pine, with 1½" top. It consists of sixteen compartments—one for each standard sized core—besides three compartments for parts of the machine not in use. No foundry can be described as up-to-date, unless it is equipped with a "Hammer" Core Machine; upon which can be made 16 sizes of round cores—perfectly cylindrical,, graded 1/8ths, from 3/8" to 2¼" diameter, and produced at the rate of one 18" core in less than half a min-



ute. It is claimed that, upon a basis of five cents for wages, and a production of about 200 feet per hour, the machine will turn out 40 feet of finished core for one cent; a statement which would seem to be incredible were it not substantiated by nearly 1,000 users of these unique machines.

Up to recent date, only round cores were made on these machines, but recently the manufacturers have added equipment for making square, hexagon, octagon, triangular, quarter round, oval, and many other shaped cores.

In a subsequent issue we purpose dealing with this subject of machine made cores in considerable detail, having special reference to a new line of sand cores now being placed on the market by the manufacturers of the Hammer Core Machine, and which we believe will be profitable reading for the foundrymen of Canada.

MACHINE SHOP NOTES FROM THE STATES.

By Charles S. Gingrich, M.E.

XXII.

Electrically-driven Millers.

The days of experimental motor drive arrangements for machine tools are now practically over, and the manufacture of direct-connected tools is becoming rapidly standardized. The use of these tools has proven the truth of all the theories advanced in their favor for increased production owing to greater convenience and flexibility of the tools.

The problem varies according to the conditions under which each class of tool must operate, and what is perhaps the most difficult problem is that presented by the milling machine, on which the range between the minimum and maximum speed is very wide, so as to adapt it for large and small cutters for working the different metals used in machine construction.

An ideal arrangement for driving milling machines is shown in accompanying illustrations of a No. 4 Plain "Cin-