A. K. RIDER.

CHILLS FOR CASTING

No. 180,641. Patented Aug. 1, 1876.

Fig. 1

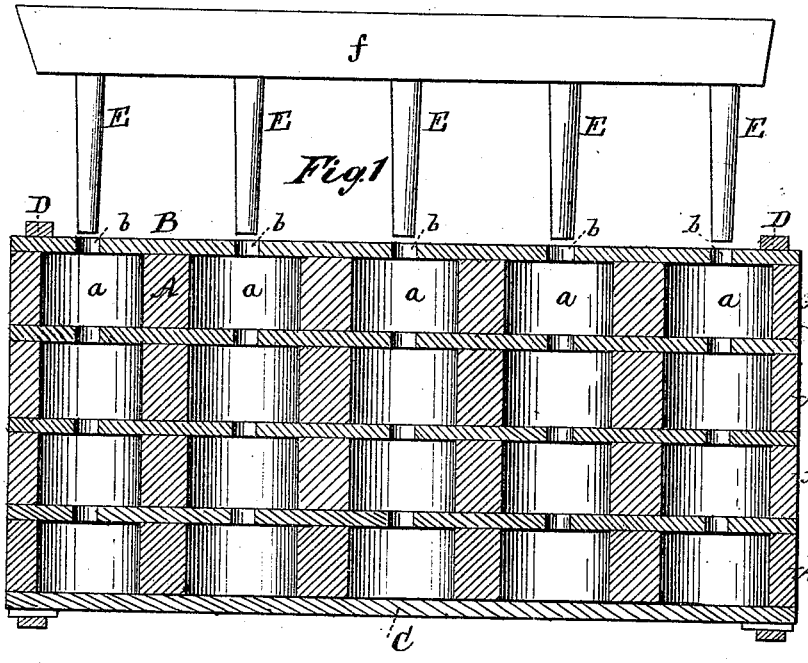


Fig. 2

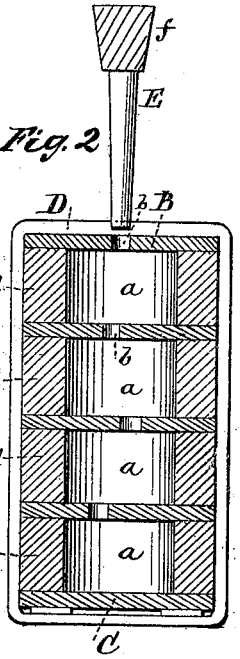


Fig. 3

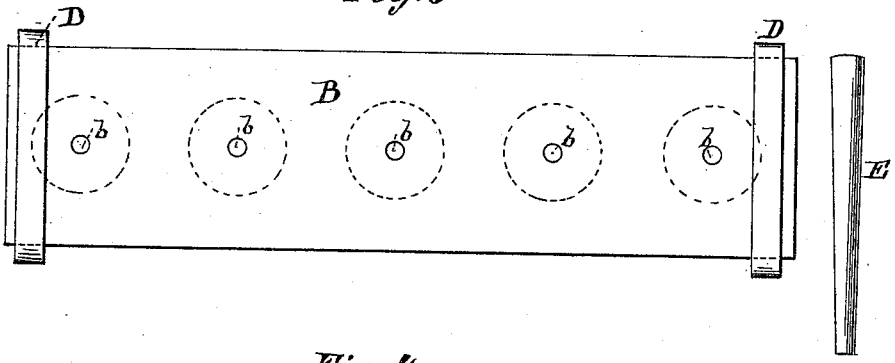
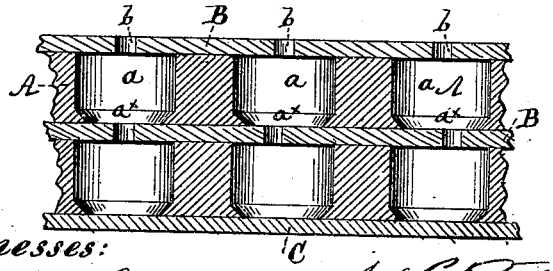


Fig. 4



Witnesses:

Michael Ryan

Fred Haynes

A. K. Rider

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UNITED STATES PATENT OFFICE.

ALEXANDER K. RIDER, OF WALDEN, NEW YORK, ASSIGNOR TO RIDER, WOOSTER & CO., OF SAME PLACE.

IMPROVEMENT IN CHILLS FOR CASTING.

Specification forming part of Letters Patent No. **180,641**, dated August 1, 1876; application filed April 11, 1876.

To all whom it may concern:

Be it known that I, ALEXANDER K. RIDER, of Walden, in the county of Orange and State of New York, have invented certain Improvements in Molds for Casting Chilled Rollers; and that the following is a full, clear, and exact description of the same:

My invention relates more particularly to the casting of friction-rollers for door-hangers; but is also applicable to molds for casting other chilled rolls and various other articles.

The object of this invention is to provide for the casting of several chilled rollers in one mold at one operation.

The invention consists, first, in a series of superposed chills with interposed perforated plates, which combine with suitable cavities in the chills to form multiple molds. It consists, secondly, in a novel construction of the chills to prevent the formation of fins upon the edges of the peripheries of the rollers.

The accompanying drawing illustrates the manner of carrying out my invention.

Figure 1 is a longitudinal vertical section of a mold adapted for casting short cylinders or rollers. Fig. 2 is a transverse vertical section; and Fig. 3 a top view of the same. Fig. 4 is a sectional view hereinafter referred to.

The chill A consists of a piece of cast-iron, provided with a number of holes, *a*, which may be made in any suitable manner, preferably by boring or drilling. B represents a plate of steel or iron, thinner than the chill A, provided with a number of perforations, *b*, much smaller than the holes *a*. C represents a solid plate for supporting the lowermost chill, and D is a link or stirrup for clamping the parts together. The chills A and perforated plates B are piled one upon another in any suitable number, with the lower chill resting on the solid plate C, the perforated plates B interposed between the chills, and one of the perforated plates resting on the uppermost chill, as shown. The chills and plates, forming a multiple mold, are then securely clamped together by means of the stirrup D, or a clamp of any suitable description, and the runner-sticks E are inserted in the perforations of the uppermost plate B. The runner-sticks may be connected by a bar, *f*, to facilitate their insertion and removal. The mold thus formed is placed in a flask together with any desired number of others, and sand is packed around and above the molds, and around the runner-sticks E. The runner-sticks are then withdrawn, and the metal is poured in. When the casting process is completed the parts are separated, as before described.

When made in the form shown in Figs. 1 and 2, the holes *a* are usually formed by boring or drilling through a number of pieces placed side by side, or one above another. When casting in a mold of this form it sometimes happens that fins are formed on the castings, projecting from the corners thereof; and in removing the castings these fins are liable to scratch and mar the inner surfaces of the chills, and in time to impair their usefulness. To obviate this difficulty the holes *a* may be made in the form shown in Fig. 4—that is to say, with parallel sides for the greater portion, and tapering inward at the lower end. When the holes are made in this form, the chills are used in connection with the perforated plates in the same manner as that above described. This shape of the holes effectually prevents the scratching of the surfaces, and renders the chills more durable. As the castings must always be removed in one direction, and any fins which may project from their lower corners will be broken off before reaching the main or parallel portions of the holes, if a projecting fin should break off a piece from the tapering portion $a^{\times}$ it will not injure the mold unless the break is large enough to extend to the cylindrical or parallel portion of the hole.

What I claim as new, and desire to secure by Letters Patent, is—

1. The interposed perforated plates B, in combination with a series of superposed chills, substantially as and for the purpose specified.

2. The chill A, having the lower portion of the hole *a* made tapering, as at $a^{\times}$, substantially as and for the purpose specified.

ALEXR. K. RIDER.

Witnesses:

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JAMES GOWDY.