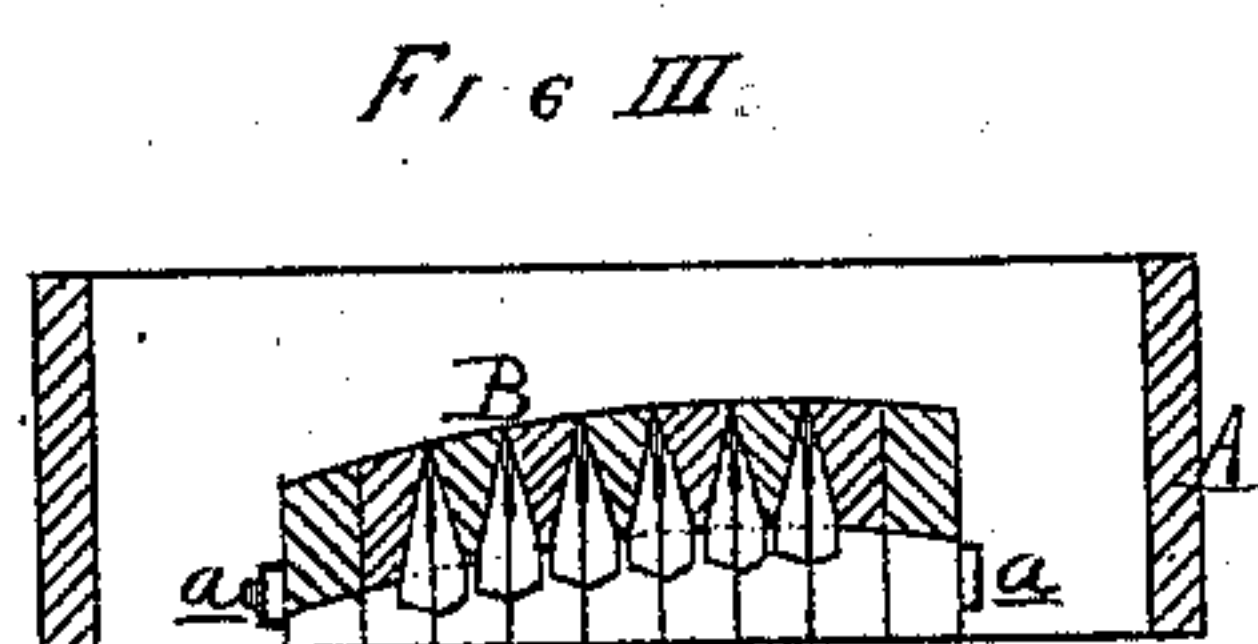
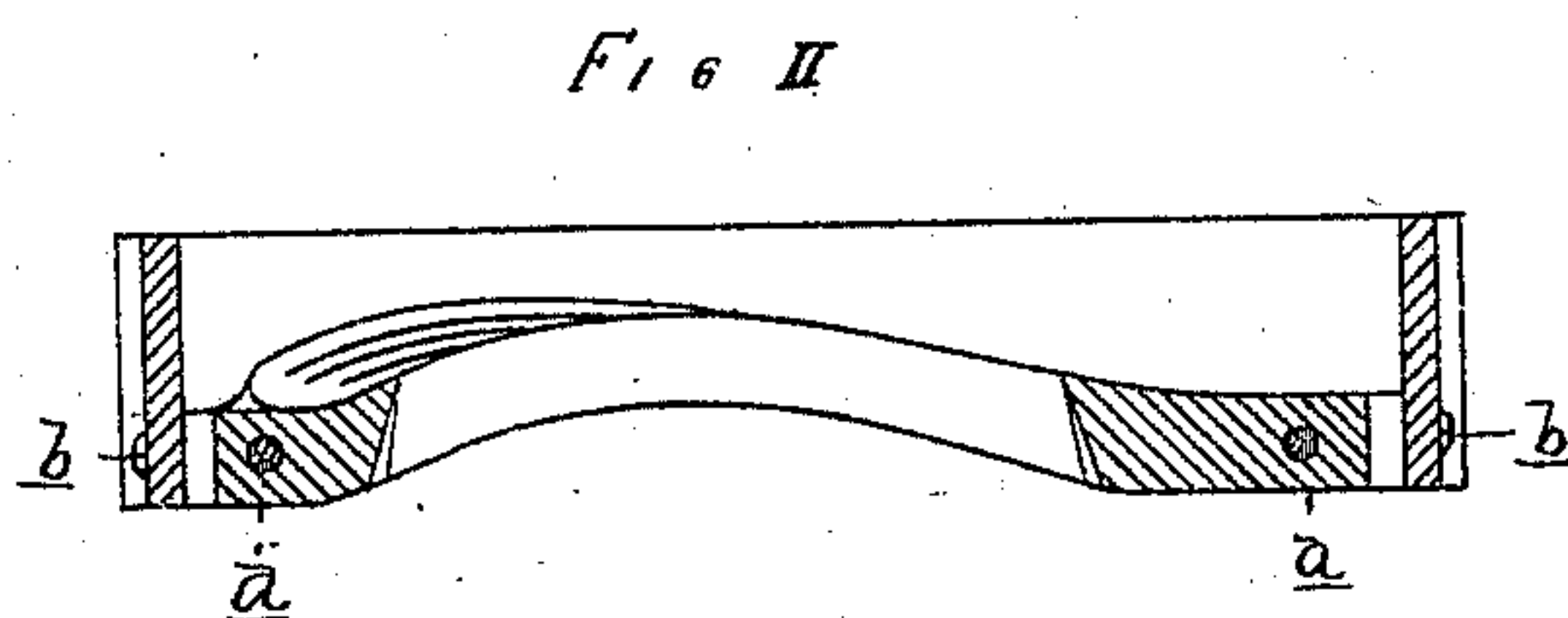
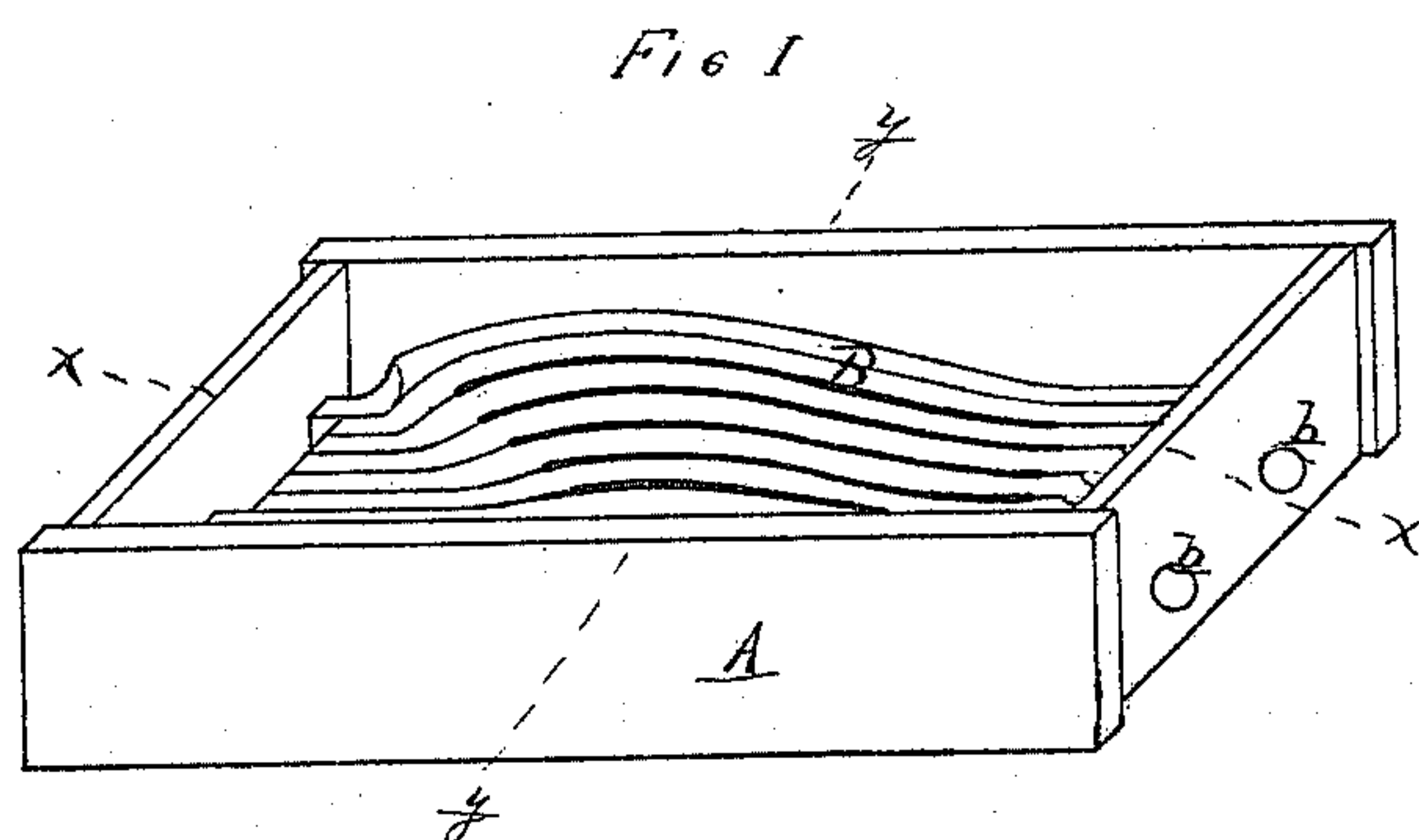


W. RALL.

Chill for Mold-Boards and other Castings.

No. 134,439.

Patented Dec. 31, 1872.



Attest
H. F. Sprague
H. F. Elbert

Inventor
Wm Rall
By Atty.
H. F. Sprague

UNITED STATES PATENT OFFICE.

WILLIAM RALL, OF SOUTH BEND, INDIANA, ASSIGNOR OF ONE-HALF HIS
RIGHT TO THILUS M. BISSELL, OF SAME PLACE.

IMPROVEMENT IN CHILLS FOR MOLD-BOARDS AND OTHER CASTINGS.

Specification forming part of Letters Patent No. 134,439, dated December 31, 1872.

To all whom it may concern:

Be it known that I, WILLIAM RALL, of South Bend, in the county of St. Joseph and State of Indiana, have invented a new and useful Improvement in a Chill for Mold-Boards and other Castings; and I do declare that the following is a true and accurate description thereof, reference being had to the accompanying drawing and to the letters of reference marked thereon and being a part of this specification, in which—

Figure 1 is a perspective view of my chill bolted into the lower half of a flask; Fig. 2 is a central longitudinal section on the line *x* in Fig. 1; and Fig. 3 is a cross-section on *y* in said figure.

Like letters refer to like parts in each figure.

The nature of this invention relates to an improved chill for mold-boards and other castings of a similar character; and has for its object to provide a full and free escape of the steam and gas generated in pouring the mold and then insure a perfect contact of the molten iron with the face of the chill, thereby insuring a face of uniform hardness to the casting. The invention consists in a series of iron bars bolted together at the ends and curved to the required form, having their sides partially beveled so as to present interstices, which interstices are to be rammed with molding-sand, through which the steam and gas escape.

In the drawing, A represents the lower half of a molding-flask, in which is secured a chill formed of a series of bars, B, of iron, about two inches wide and about one and a half or two inches thick, held together by a bolt, *a*, passing through all at each end. The two outside bars may be an inch or two longer

than the rest, and may be fastened by bolts *b* to the ends of the flask. The bars or frame of bars is curved to the form of the face of the mold-board, and each is cut or pared away at the sides for a portion of its length—say, from ten to twelve inches—presenting a series of openings from one-eighth of an inch to two inches wide on the face of the chill.

Before using the flask it is turned bottom up and filled with sand, which is well rammed into the interstices. The flask is then turned over and the upper half matched on in the usual manner, when the molten iron is poured into the mold. The steam and gas pass down through the sand between the bars, allowing the metal to come into close contact with the chill over its entire surface, and thus insuring a more perfect and uniform chill to the face of the casting than is possible where the chill-mold is not vented.

If desired, the chill can be constructed of a solid piece of iron having apertures running through it, either in parallel lines, as shown, or in different directions, so that the apertures may be packed with sand, or may be secured in the flask in a different manner.

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

An improvement in chills for mold-boards and similar castings, consisting in having a series of apertures through the iron of the chills, substantially as and for the purpose set forth.

WILLIAM RALL.

Witnesses:

ANDREW ANDERSON,
JACOB WOOLVERTON.