

No. 697,794.

Patented Apr. 15, 1902.

A. BRAKE.
MOLD FOR CASTING BRAKE SHOES.

(Application filed Sept. 10, 1898.)

(No Model.)

2 Sheets—Sheet 1.

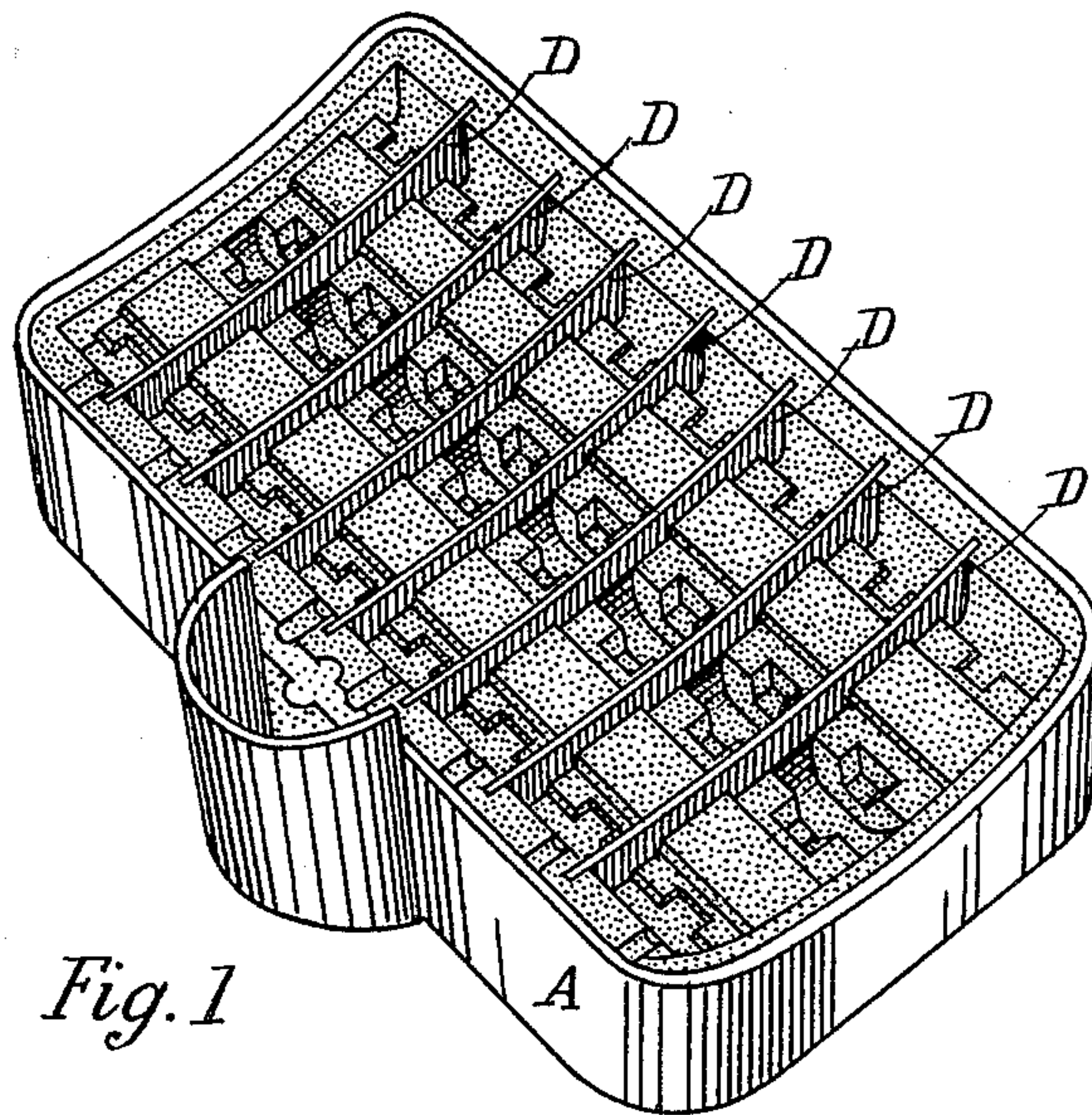


Fig. 1

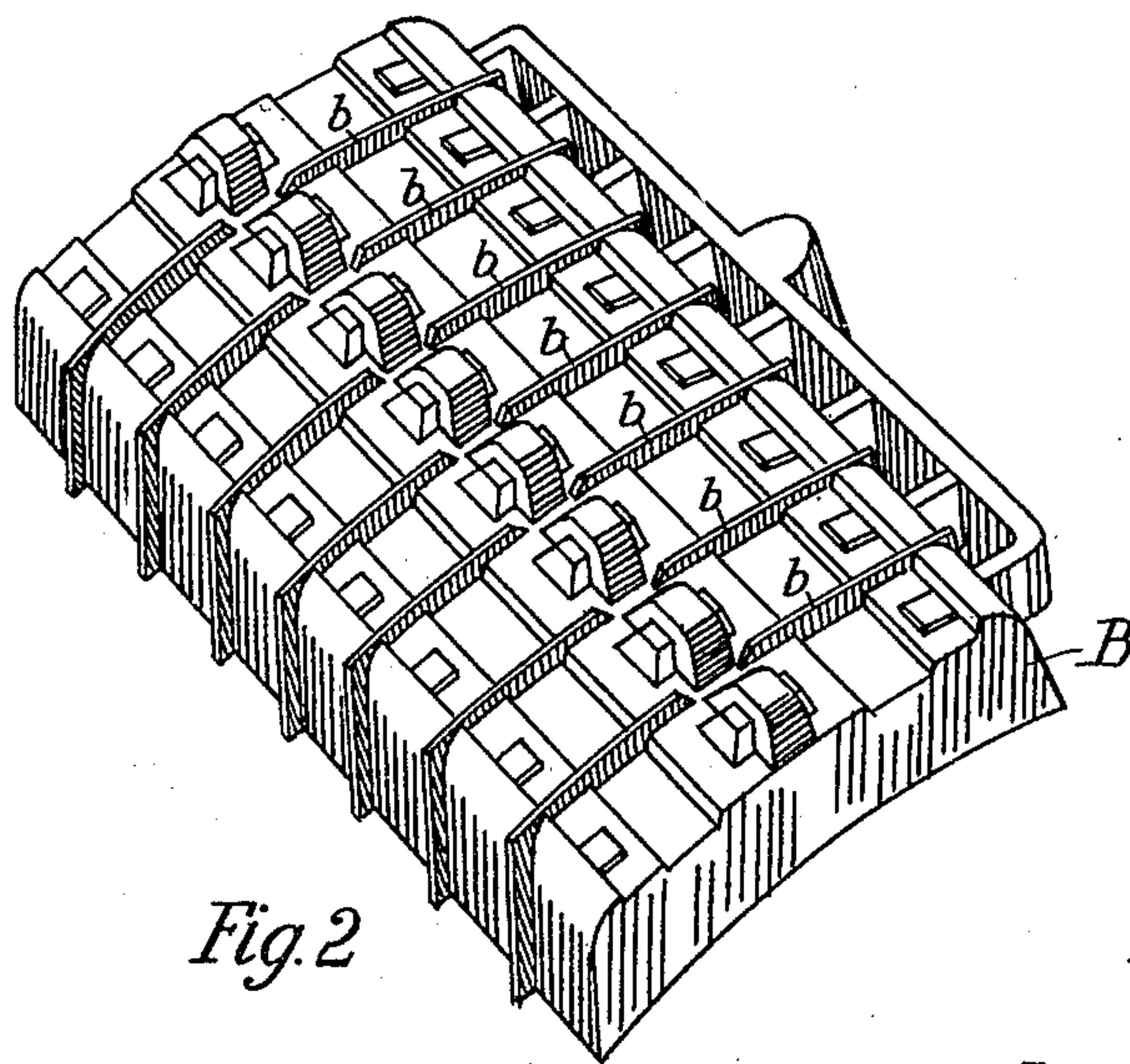


Fig. 2

Witnesses

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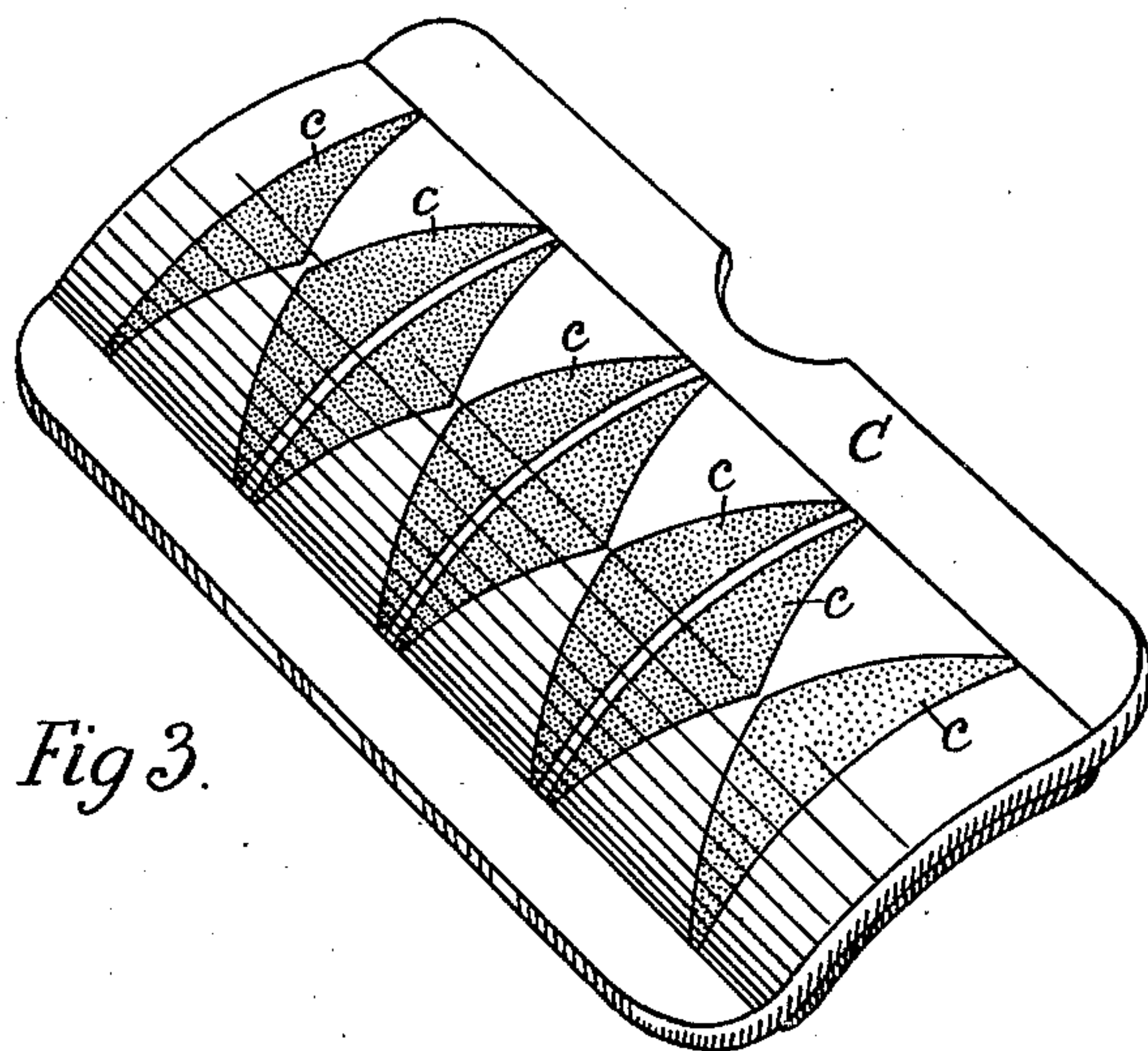


Fig. 3.

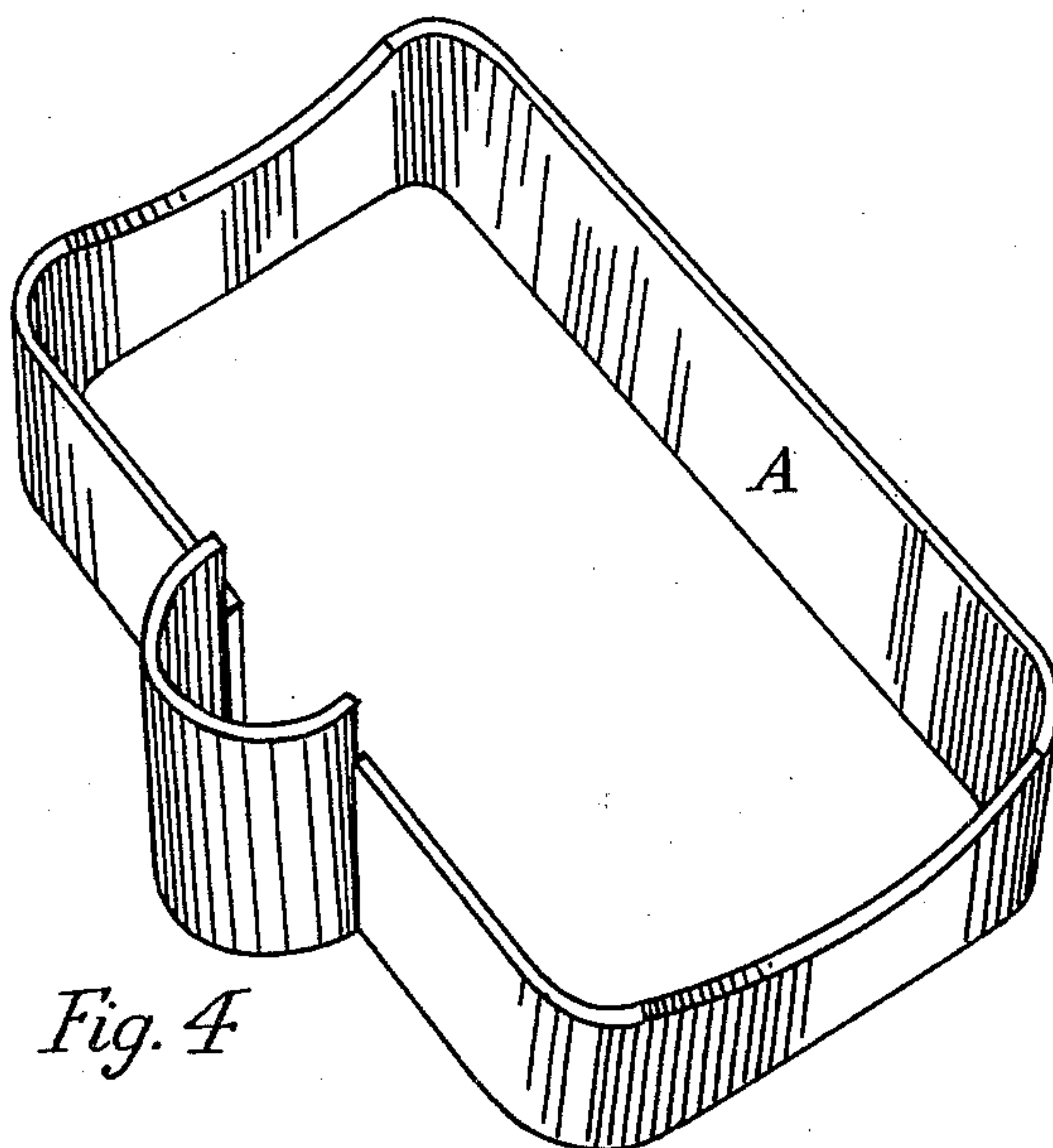


Fig. 4

Witnesses

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UNITED STATES PATENT OFFICE.

ARCHIBALD BRAKE, OF TORONTO, CANADA.

MOLD FOR CASTING BRAKE-SHOES.

SPECIFICATION forming part of Letters Patent No. 697,794, dated April 15, 1902.

Application filed September 10, 1898. Serial No. 690,622. (No model.)

To all whom it may concern:

Be it known that I, ARCHIBALD BRAKE, a subject of Her Majesty the Queen of Great Britain and Ireland, residing at Toronto, Canada, have invented certain new and useful Improvements in Molds for Casting Brake-Shoes, of which the following is a specification, reference being had to the accompanying drawings.

My invention relates to improved means for casting a plurality of brake-shoes in the same box at the same time; and the object of my improvement is to save time and labor, thus reducing the cost of manufacture.

Heretofore in casting a plurality of brake-shoes at the same time the following difficulties are experienced: In casting eight brake-shoes, for example, in one molding-box it is necessary that the box be made of greater length than can be conveniently and readily handled. It is necessary that considerable space be left between the shoe-patterns, so that there may be between the mold-cavities a considerable thickness of sand, which is necessary to prevent the molten metal from breaking through from one mold-cavity to another. Consequently considerable time is lost in turning this cumbrous box. Another difficulty which is experienced is that it is necessary, according to the most improved methods now in use, first to turn the drag upside down and fill in with sand around the patterns, then turn the drag back and with care and loss of time fill with sand the cope or part above the patterns, and afterward raise the cope to admit of the patterns being removed and again replace it.

I attain the object of my invention by means whereby it is possible to have the shoes cast close together and entirely dispense with the second operation of filling in the cope or part above the patterns with sand. The mechanism by which I obtain these objects is illustrated in the accompanying drawings, in which—

Figure 1 is a perspective view of the molding-box, showing the cavity left in the sand on removal of the block, showing also the dividing-plates which divide the space left by the block-patterns into several compartments or molds in which the shoes are cast. Fig. 2 is a perspective view of the block forming my

shoe-patterns. Fig. 3 is a view of the under side of my improved plate which forms the top or one side of the mold and bears on the rubbing-surface of the shoe. Fig. 4 is the jacket or drag.

A is the jacket or drag.

B is the series of shoe-patterns united in one block.

C is the plate forming the top of the mold-cavity.

D D are the plates dividing the shoe-mold cavity.

The series of patterns B may consist of a number of shoe-patterns secured together or be composed of a single block with ridges or prints *b b b* thereon, which project from the back thereof and form depressions in the sand. The block B is first placed upon the bottom board with the prints projecting upward and the drag turned upside down upon the same. The sand is then filled into the drag over the block B. The drag is then reversed and the block B removed. Into the prints made in the sand by the ridges *b b b* are dropped dividing-plates D D, which may be of metal or other suitable material separating the mold-cavity left by the block B in the mold into a number of compartments, each forming a mold for a brake-shoe. The plate C may also be used as a bottom board.

The plate C, which rests on the jacket A and bears on the rubbing-surface of the brake-shoe, is made by me usually of metal and has that part of its surface which comes in contact with the portions of the rubbing-surface of the shoe intended to remain unchilled of a material which will not chill and which will not be destroyed by the heat of the molten metal. A graphite composition, such as is ordinarily used in the making of crucibles, is the best material known to me for this purpose, and, as in making crucibles, it is desirable that fire-clay be mixed with the graphite. In the drawings, Fig. 3, the plate is shown as made of metal, with the exception of the triangular parts *c c c c*, which are of graphite composition, as aforesaid.

It will readily be seen that when the sand is filled into the drag or jacket, covering the block B with sand, and the drag reversed it will only be necessary to remove the block B and place the plate C on the top of the drag

to have the molding-box complete ready for pouring in the molten metal.

Other compositions may be used to form the plate C. It is only necessary that the under side of the plate C or so much thereof as is not intended to chill be formed of a material which will not chill and which will form a permanent plate notwithstanding the intense heat of the molten metal in order that it may be used a great number of times.

Having obtained a complete box of convenient length and a permanent plate which is not destroyed in the operation of molding and which dispenses with the necessity of filling in the sand to form the top of the mold-cavities for each operation of casting a series of brake-shoes, a great saving of time and labor is effected.

Having now fully described my invention, what I claim is—

1. A mold, comprising a drag, a sand mold therein provided with a series of connected mold-cavities, detachable partitions inserted vertically edgewise in the sand at the sides of the mold-cavities and partially separating the same into individual mold-cavities, and a plate-cope covering the upper edges of the partitions and mold-cavities, and shaped to conform to the adjacent faces of the articles to be cast; substantially as described.

2. A mold comprising a drag, a sand mold therein provided with a series of mold-cavities, and a metallic plate-cope covering said sand mold and having a portion of its surface over the several mold-cavities provided with a permanently-attached non-metallic com-

posite material to prevent chilling the adjacent face of the casting; substantially as described.

3. A mold, comprising a drag, a sand mold therein, a detachable metal partition within the mold and dividing the same into a plurality of mold-cavities, and a plate-cope shaped to conform to a portion of the contour of the article to be cast, said cope having its under or mold face composed partly of metal and partly of non-metallic material, substantially as specified.

4. A mold, comprising a drag, a sand mold therein divided into a plurality of mold-cavities, and a plate-cope shaped to conform to a portion of the contour of the article to be cast, said plate having its under or mold face composed partly of metal chilling-surfaces and partly of a composition of fire-clay and graphite, substantially as specified.

5. A mold, comprising the drag, the pattern-block provided with a series of individual patterns separated by a series of ridges or ribs and adapted to be set across the drag with its patterns and ribs depending therein, and an imperforate plate-cope adapted to serve as a bottom board to support the sand and, on removal of the pattern, cover the sand and the mold-cavities therein, the said cope being provided over the mold-cavities with non-metallic material; substantially as described.

A. BRAKE.

Witnesses:

J. DILLON,
EDITH LACKIE.