

(No Model.)

J. McDERMOTT.  
CASTING STOVE LININGS.

No. 482,689.

Patented Sept. 13, 1892.

Fig. I.

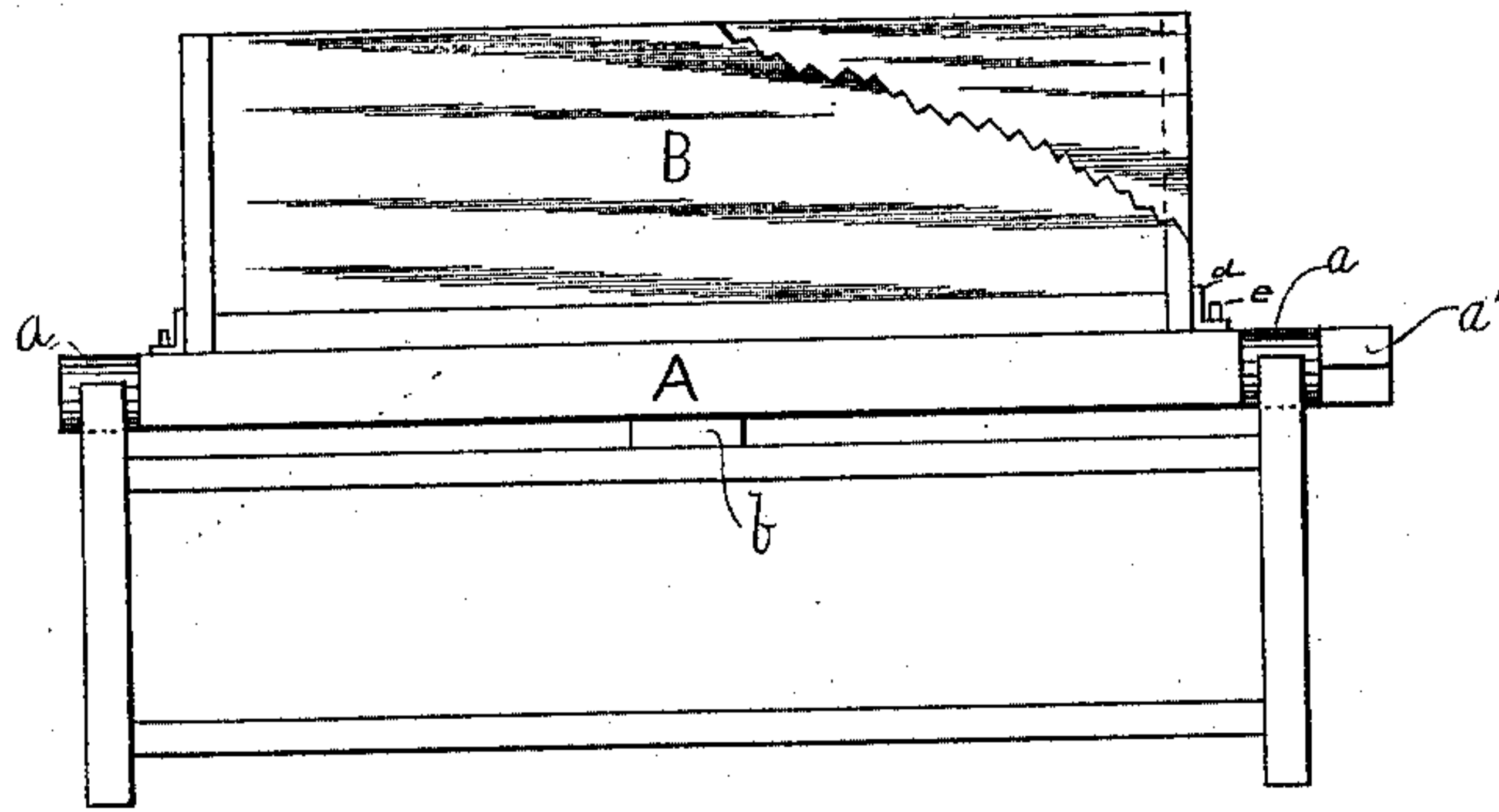


Fig. 2.

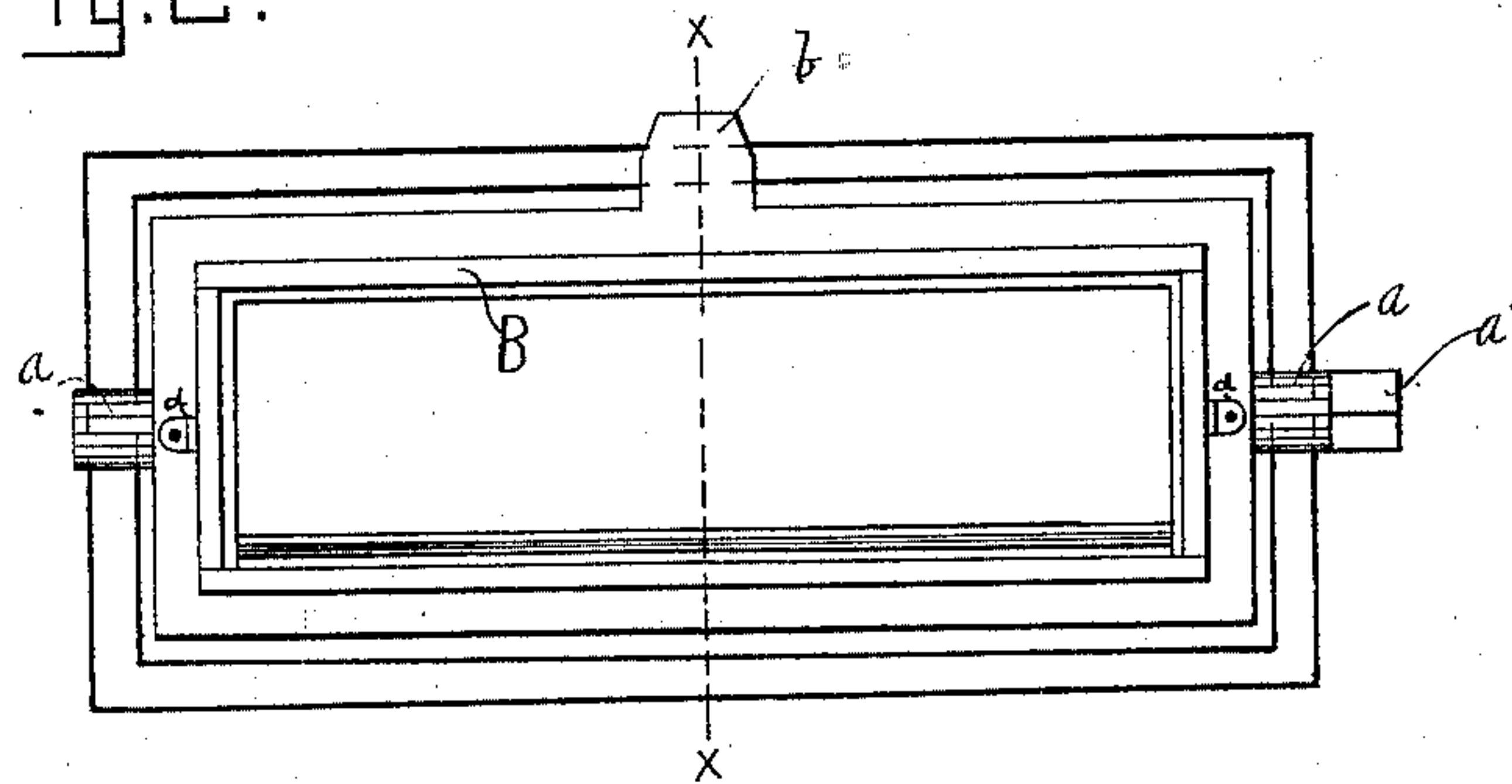


Fig. 3.

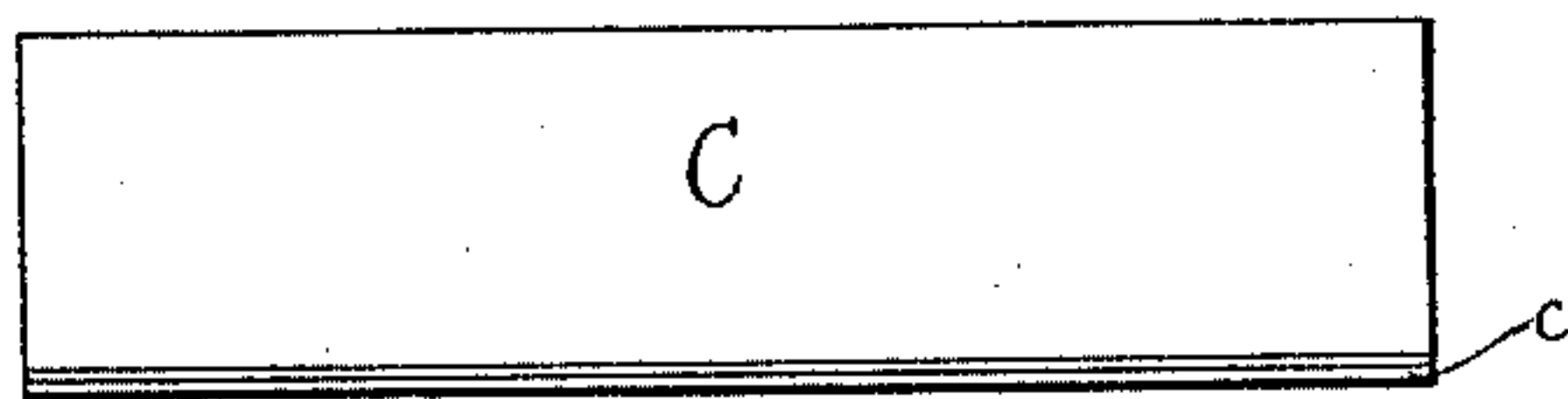
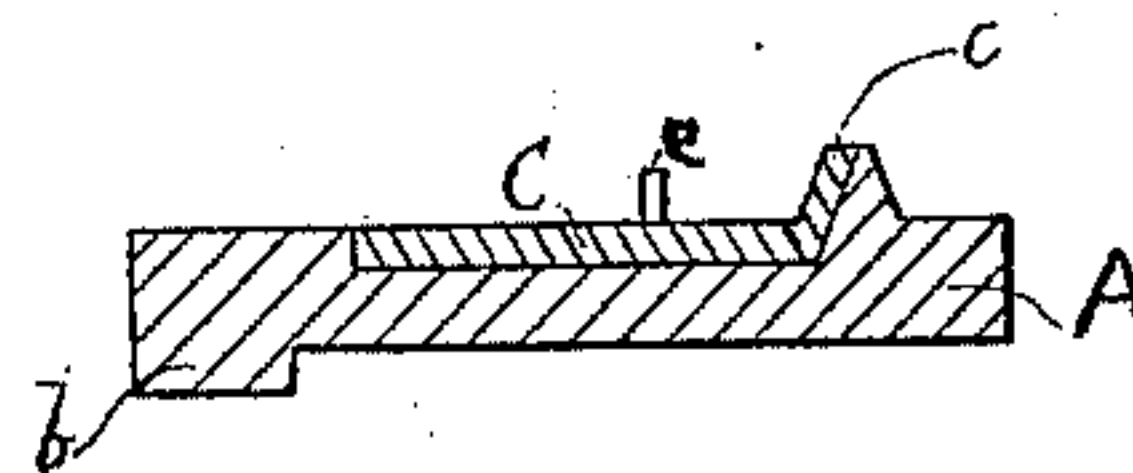


Fig. 4.



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# UNITED STATES PATENT OFFICE.

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TO DAVID A. KELLAR, OF SAME PLACE.

## CASTING STOVE-LININGS.

SPECIFICATION forming part of Letters Patent No. 482,689, dated September 13, 1892.

Application filed April 24, 1891. Serial No. 390,238. (No model.)

*To all whom it may concern:*

Be it known that I, JAMES McDERMOTT, of Louisville, in the county of Jefferson, in the State of Kentucky, have invented new and useful Improvements in Casting Stove-Linings, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

This invention relates to improvements in molds for casting stove-linings and analogous articles; and it consists in certain details of construction, all as hereinafter more fully set forth, and specifically pointed out in the claim.

In the annexed drawings similar letters of reference denote corresponding parts in all the views, wherein—

Figure 1 is a side view of my improved molding-flask with the cope and drag mounted as in use. Fig. 2 is a top plan view of the same. Fig. 3 is a plan view of the pattern to be used in casting the fire-back of fire-linings of stoves; and Fig. 4 is a cross-section on line  $xx$  of Fig. 2, showing the metallic drag with the removable plate or pattern C in position, as while filling the cope with sand.

It will be observed that the drag A is provided at both ends with journals  $a$ , forming extensions thereof, and at one end with a square portion  $a'$  to receive a crank for turning the same on its axis, while on one of its sides is provided a stop  $b$ , hereinafter referred to.

The drag A and cope B are provided with "steady-pins"  $e$  to secure restoration to the exact relative position after removal when the cope has been filled with sand and properly rammed to the pattern.

In my invention I employ a drag of metal, in the upper surface of which is formed a depression D in the shape of one side of the desired casting.

For purposes of illustration I have selected the back plate of the fire-box of an ordinary cook-stove or range and will follow out the process of casting such back plates. The metallic drag is mounted in any suitable manner, so as to furnish a proper support for the same and an abutment against which the stop  $b$  may be caused to strike, as desired. The drag being depressed in its upper surface to

form one side of the casting, I use a pattern, as C, which lies in said depression. Placing the pattern and cope in position, I proceed to fill the cope B with sand, which is properly rammed, a gate being placed in position in said sand to form a sprue or pour hole for the metal. Having filled one cope it is removed and the gate is allowed to fall out by inverting the cope. Another cope is placed in position on the drag and the operation of filling is again repeated until the required number of flasks are prepared. After this is done the drag is given a partial revolution on its axis to cause the pattern to fall out. A cope is again placed on the drag and the molten metal is poured to fill the matrix formed by the cope and drag when united. The molten metal will cool very rapidly upon coming in contact with the chill formed by the metallic drag and the face of the casting next the drag will be very hard and dense. For this reason I so arrange the pattern that the fire side of the particular lining-piece being cast will come into contact with and be formed by the chill-drag, and thus form a superior fire-lining, which in practice will be found to more effectually resist the action of the fire than do the softer castings formed in the ordinary sand-molds in general use. By using the chill-drag and sand-filled cope I am enabled to cast a lining which will be very light and durable under the action of the fire. Having formed one casting the cope is removed, the drag given a half-revolution to bring the stop  $b$  into contact with its abutting-piece to expel the casting from the chill, after which the drag is again righted, another cope placed in position thereon and filled. The process may be repeated till all the copes are used. For casting the "chunks" or side linings and grates the pattern is prepared to conform to the shape of the casting; but in other respects they are made in the same manner as the back lining.

Having described my invention, what I claim is—

The improved mold for casting stove-linings, consisting of the cope B, the drag A of metal, a fixed journal  $a$  on each end thereof, a flattened portion  $a'$  on one end of one of said journals  $a$ , adapted to receive a crank



for revolving said drag, a stop *b*, projecting laterally from one side of said drag, and a matrix in one face of said drag adapted to receive a pattern corresponding thereto while  
5 filling the cope with sand, in combination with the pattern C, all constructed and combined to operate substantially as described, and for the purpose shown.

In testimony whereof I have hereunto signed

my name, in the presence of two attesting witnesses, at Louisville, in the county of Jefferson, in the State of Kentucky, this 10th day of April, 1891.

JAMES McDERMOTT.

Witnesses:

FREDERICK H. GIBBS,  
NANNIE WHITE.