(No Model.)

R. PRESTON.

METHOD OF MAKING CORES.

No. 435,858. Patented Sept. 2, 1890.

Fig. 1.

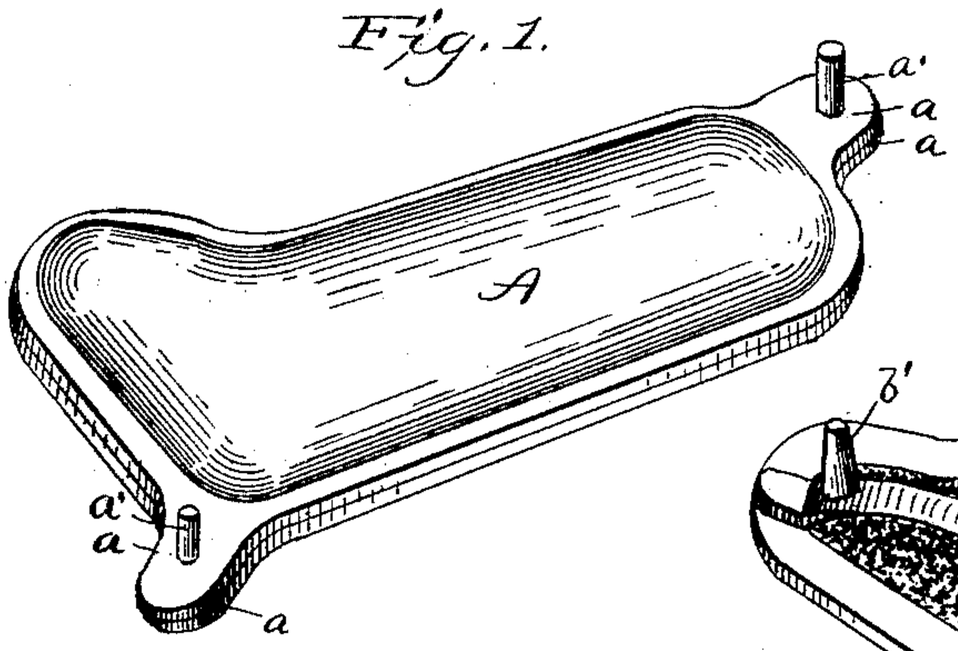


Fig. 2.

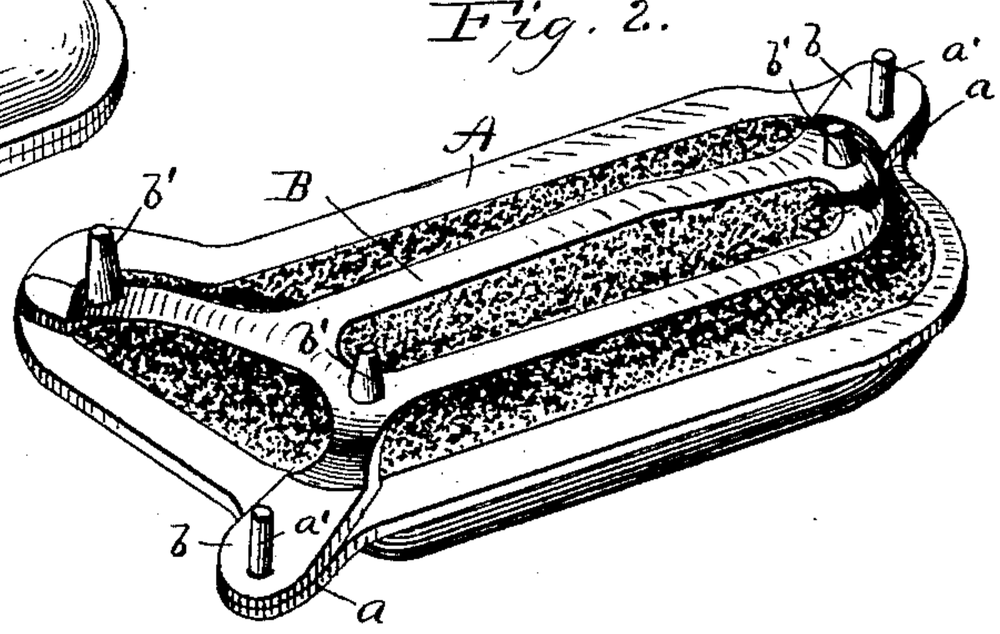


Fig. 3.

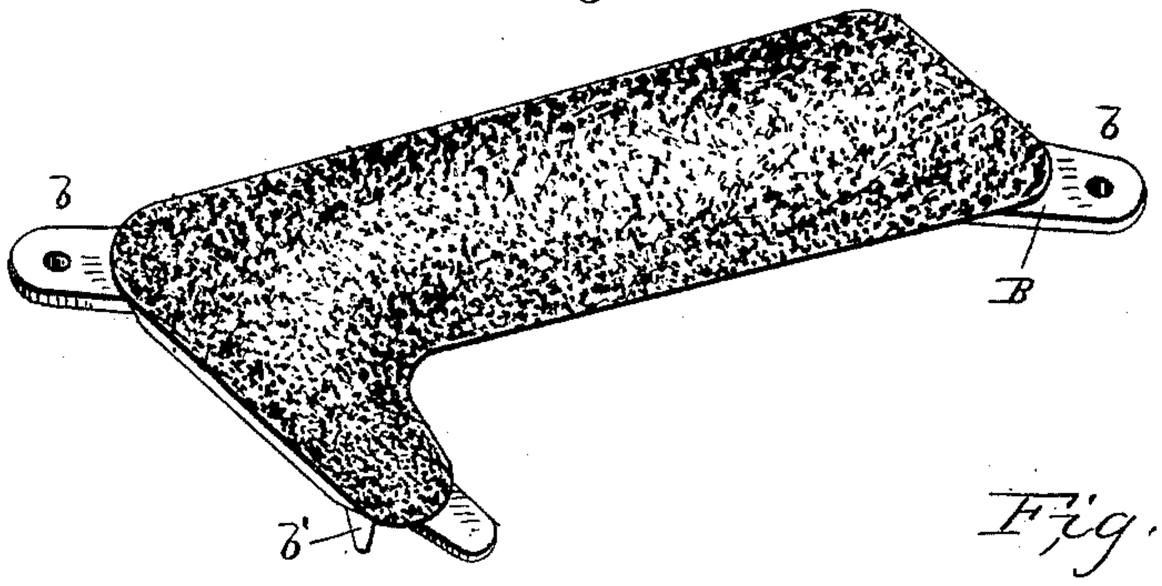
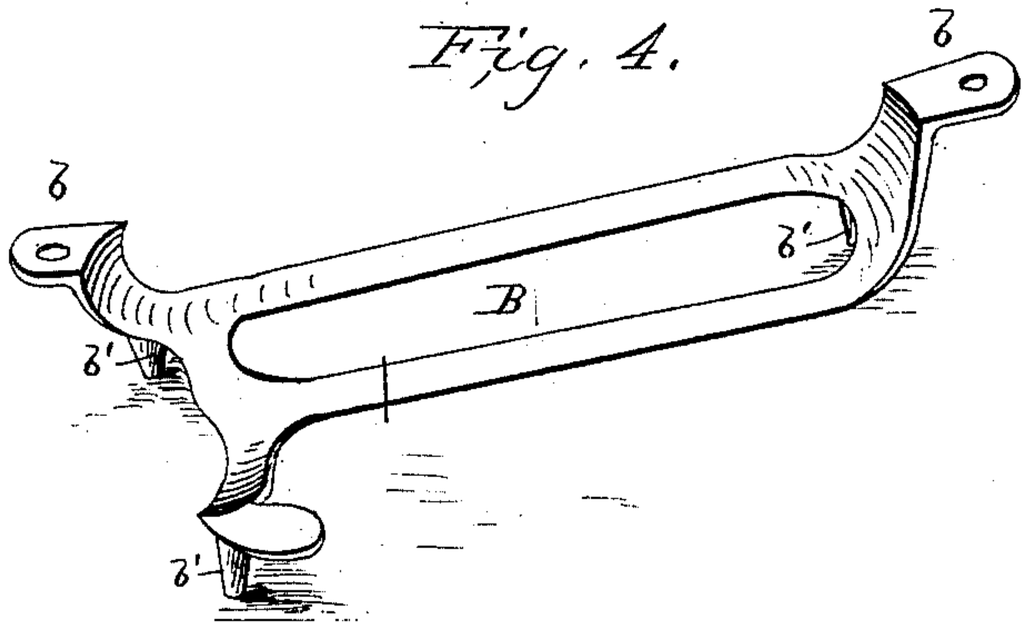


Fig. 4.



Witnesses
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METHOD OF MAKING CORES.

SPECIFICATION forming part of Letters Patent No. 435,858, dated September 2, 1890.

Application filed May 20, 1890. Serial No. 352,548. (No model.)

To all whom it may concern:

Be it known that I, ROBERT PRESTON, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in the Method of Making Cores; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification, in which—

Figure 1 represents a perspective view of the core-mold complete; Fig. 2, a similar view showing the upper half of the core-mold removed and my improved core-support substituted therefor; Fig. 3, a similar view of the parts shown in Fig. 1 inverted and the lower half of the core-box removed, and Fig. 4 a detail view of the open or skeleton core-support.

My invention has relation to a new and useful method of making and baking the sand-cores employed in casting operations; and, generally speaking, its object is to provide a method whereby the cores may be more economically produced and more thoroughly dried or baked, as will be more fully hereinafter set forth.

Heretofore it has been the usual practice in making cores to first form the cores in the usual way—that is, by means of boxes or molds—and then place them in the oven upon a bed or box of sand placed therein, where they are allowed to remain until properly baked or dried. In practicing this method skilled labor is required to avoid injuring the cores. The cores are not thoroughly baked and dried throughout, inasmuch as the heat of the oven has not access to their entire surfaces. Sand is wasted and rendered unfit for use, and the capacity of the baking-oven not fully utilized, thereby causing a waste of fuel.

It is the object of this invention to overcome the objections to the above method of making cores, and in practicing my invention I proceed as follows: The core is molded or formed in the usual way in a two-part box A, as shown in Fig. 1, the adjacent edges of the halves of the mold being provided with corresponding ears *a a*. The ears on the lower half are provided with pins *a'*, which extend up through holes in the adjacent corresponding ears of the upper section and serve to guide the parts of the mold and keep them in alignment. When the core is properly shaped between the halves of the mold, the upper half is carefully lifted off, and in its place is substituted a skeleton or open metal frame B, which is shaped to conform to the contour of the core, and is provided with lateral perforated ears *b* to fit over the pins *a'* and rest upon the ears *a* of the lower half of the mold. This open frame is also provided with a suitable number of legs or supports *b'*. The lower half of the mold is now inverted or turned over, so as to bring it upon top and the open frame underneath, the latter resting upon the floor and supported upon its legs *b'*. The lower half of the mold is then removed from the core, leaving the latter resting in the open frame, the pins *a'* serving to guide the mold-section and prevent its breaking or injuring the core during its removal. The core and its skeleton support are then introduced into the oven and allowed to remain therein until the former is sufficiently baked or dried to be removed. By this method there is very little liability of breaking the core, and a great saving of time will be effected, both in forming and baking the core, and by reason of the fact that the support for holding the core while in the oven is formed of open bars the heat of the oven will have access to the entire surface of the core and thoroughly and evenly bake the same and expel all moisture from it.

A further advantage in my method lies in the fact that the full capacity of the oven may be utilized, thereby effecting a saving of fuel over the old way, where the space in the oven is occupied with sand to support the core, and where consequently not so many cores can be introduced into the oven at the same time. Thus exposing nearly the entire surfaces of the cores to the oven heat, instead of supporting the cores in sand, as has here-

tofore been done, not only saves sand, but also makes the cores much harder and drier, as is evident.

It is obvious that the shape of the skeleton support may be varied indefinitely to suit the form of core being made.

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

The method herein described of making sand-cores, consisting in first forming the core in a sectional mold; second, removing the upper section of the mold and substituting therefor an open frame conforming to the shape of the core, and, finally, removing the other section of the mold and placing the core and open frame in the oven, the frame serving to support the core while baking, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

ROBERT PRESTON.

Witnesses:

CHAS. A. SMITH,

JAMES HALLIWELL.