No. 896,489. PATENTED AUG. 18, 1908.

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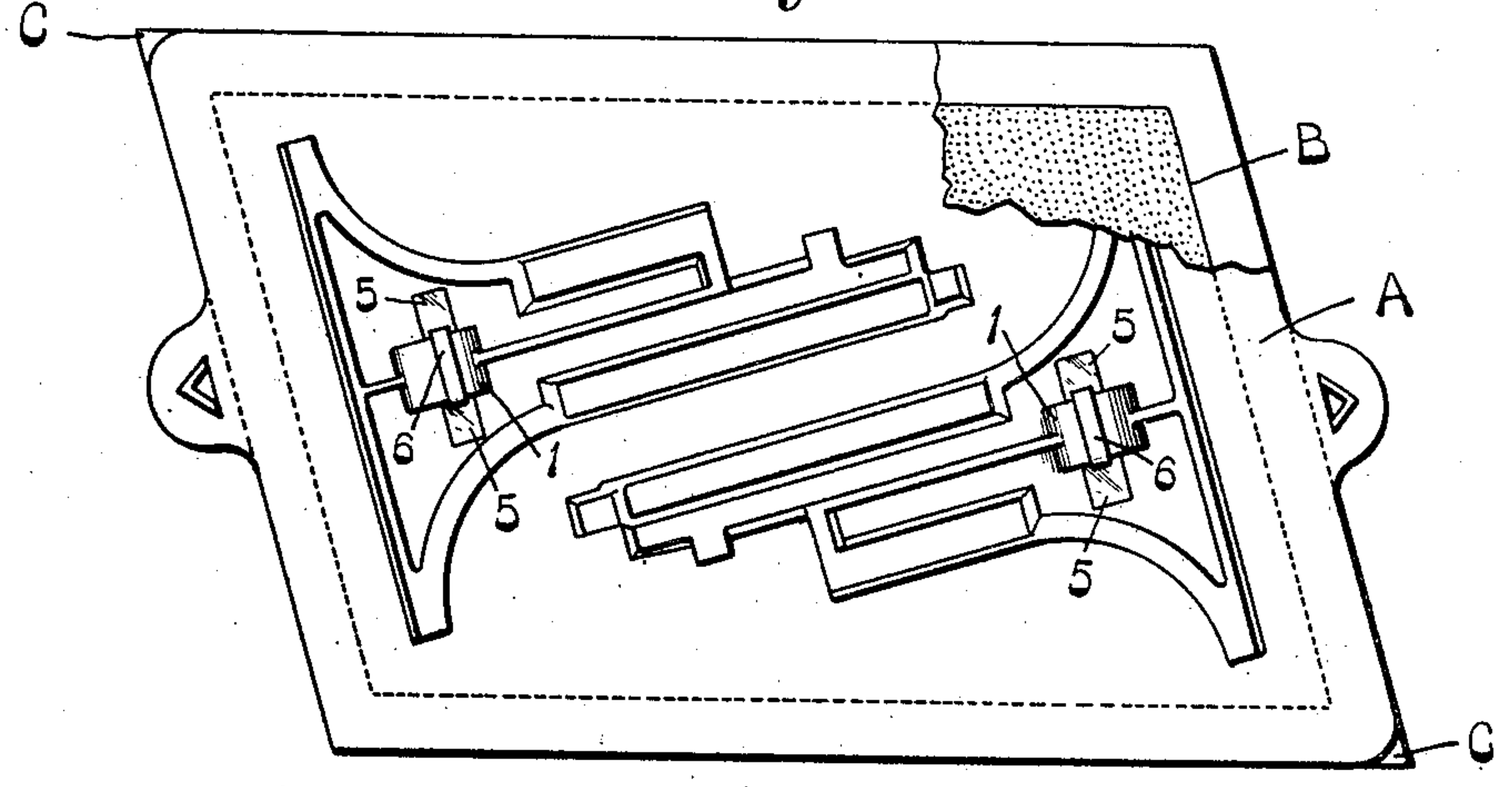
MATCH PLATE FOR FORMING PARTS OF STOVES.

APPLICATION FILED APR. 18, 1908.

Fig. 1.



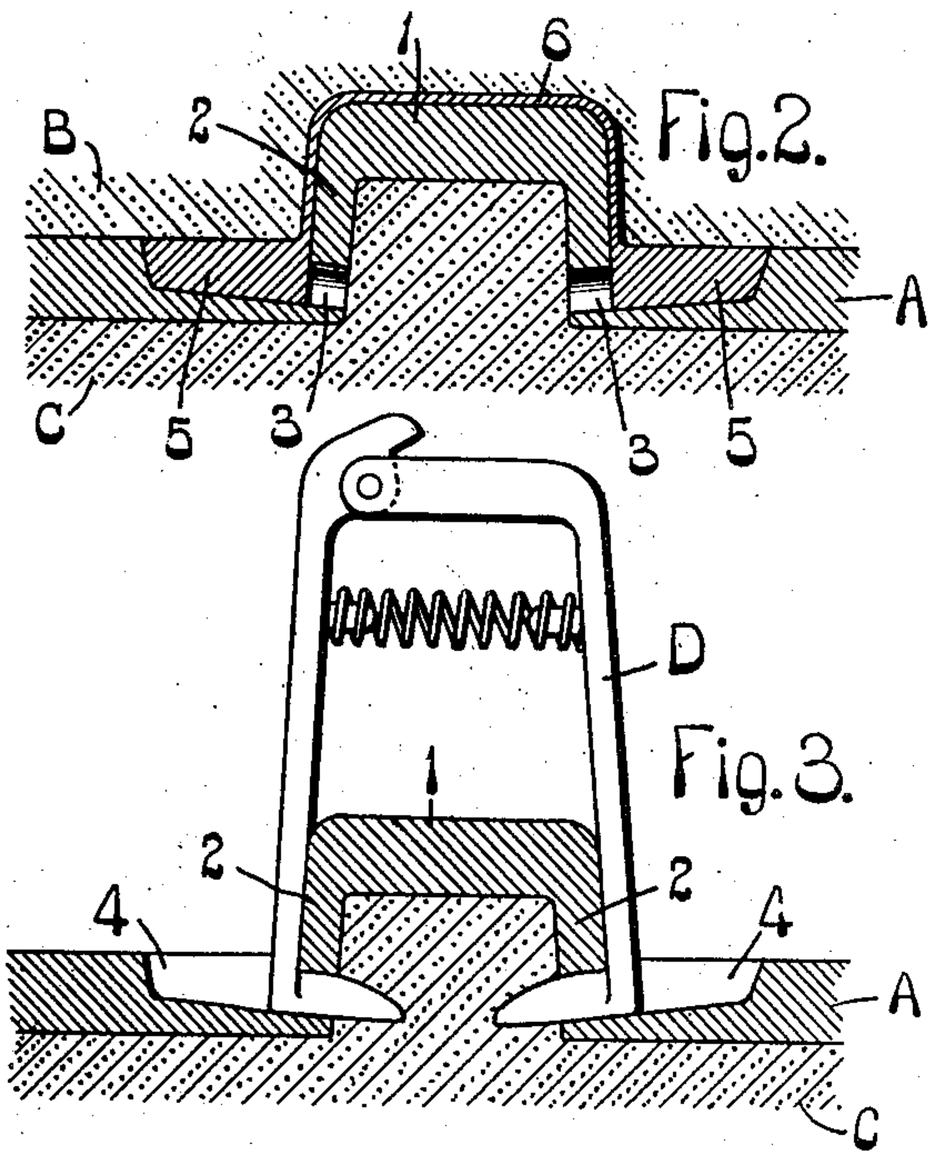


Fig. 2.

Fig. 3.

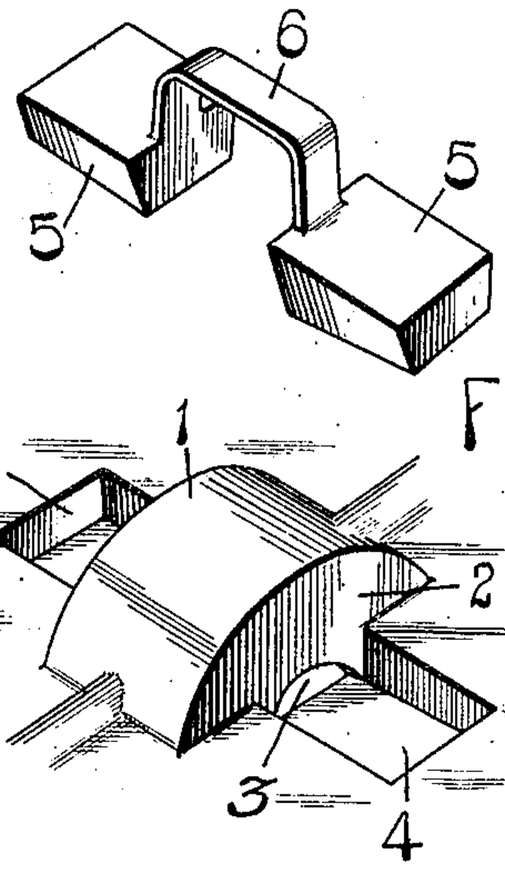


Fig. 6.

Fig. 4.

Fig. 5.

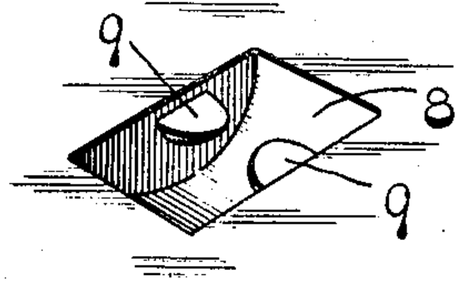


Fig. 7.

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UNITED STATES PATENT OFFICE.

LEE W. VAN CLEAVE AND GEORGE O. DEWEY, OF ST. LOUIS, MISSOURI, ASSIGNORS TO THE BUCK'S STOVE AND RANGE COMPANY, OF ST. LOUIS, MISSOURI, A CORPORATION OF MISSOURI.

MATCH-PLATE FOR FORMING PARTS OF STOVES.

No. 896,489. Specification of Letters Patent. Patented Aug. 18, 1908.

Application filed April 18, 1908. Serial No. 427,899.

To all whom it may concern:

Be it known that we, LEE W. VAN CLEAVE and GEORGE O. DEWEY, both citizens of the United States, residing at St. Louis, Missouri, have invented a certain new and useful Improvement in Match-Plates for Forming Parts of Stoves, of which the following is a full, clear, and exact description, 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, forming part of this specification, in which—

Figure 1 is a top plan view of a match-plate constructed in accordance with our invention; Fig. 2 is a sectional view showing our improved match-plate in operative position between the cope and drag of a flask; Fig. 3 is a sectional view of the match-plate in operative position on the drag and illustrates the operation of forming the impressions for the lifter lugs in the drag; Fig. 4 is a view similar to Fig. 3 but with the punching tool removed; Fig. 5 is a sectional view of the cope and drag arranged in operative position to receive the metal that forms the casting; Fig. 6 is an enlarged detail perspective view of the cup-shaped portion of the match-plate and the removable section; and Fig. 7 is a perspective view of a portion of the completed casting.

This invention relates to the manufacture of stove-lids and the center pieces for stove tops.

The center pieces and removable lids which form part of the top of a stove, are provided on their upper sides with a recess to receive the end of a stove-lid lifter and also lugs that project laterally into said recess so as to be engaged by the lid lifter when it is inserted in said recess. These center pieces and stove-lids are formed from cast metal and in view of the fact that the lifter lugs are disposed at approximately right angles to the side walls of the recess into which they project, it is necessary to form the impressions for the lifter lugs in the sand in which the lids and center pieces are molded by means of punches or devices that move relatively to that portion of the pattern which forms the impression of the recess in the sand of the mold, the punches being forced through openings in the walls of the portion of the pattern that forms the impression for the side walls of the recess and then withdrawn so as to enable the pattern to be lifted out of the sand. In manufacturing articles of this character it is desirable to use a "match-plate"; namely, a plate or member that is provided on its opposite sides with the two halves of a pattern, but prior to our invention it was impossible to use an ordinary cast match-plate for this purpose, due to the fact, that the impressions for the lifter lugs have to be formed in the sand before the pattern is removed therefrom. The match-plates that have heretofore been used for this purpose consisted of a hollow central member having punches arranged inside of same and mechanism leading to one end of said member for actuating said punches so as to force them into the sand and then withdraw them so as to enable the pattern on the underneath side of the match-plate to draw out of the sand.

Match-plates of the construction above referred to are very expensive and are also cumbersome, and the main object of our invention is to provide a solid cast metal match-plate provided on its opposite side with the two halves of a pattern and which is so constructed that the impressions for the lifter lugs can be formed in the sand before the half of the pattern that forms the impression for the upper side of the center piece or stove-lid is removed from the sand. To this end, we have devised a match-plate in which that portion of the pattern which forms the impression for the recess is provided with openings through which a punching tool can be inserted, and a removable section for closing said openings during the operation of forming the impression for the underneath side of the center piece or stove-lid. This removable section is arranged in operative position in the match-plate while the flask is being rammed and after the cope has been lifted off the drag said section is removed and a punching tool is then forced through the openings in the match-plate so as to make the impressions for the lifter lugs in the mold. The punching tool is then withdrawn and the match-plate is removed from the drag so that the cope can be arranged in operative position on the drag to form a hollow mold into which the molten metal is poured.

Referring to the drawings which illustrate the preferred form of our invention, A designates an ordinary cast metal match-plate provided on its opposite sides with the two

halves of a pattern. The match-plate shown in Fig. 1 is provided with patterns for two center pieces but it will, of course, be obvious that the match-plate could be provided with only one pattern or a pattern for a stove-lid instead of a center piece. Both patterns on the match-plate are of the same construction so we will refer to only one of them. The half of the pattern on the upper side of the match-plate forms the impression for the underneath side of the center piece in the cope of the flask and the half of the pattern on the underneath side of the match-plate forms the impression for the top face of the center piece in the drag of the flask. The match-plate is provided with a cup-shaped portion which has a curved bottom 1 and vertically disposed side walls 2, and said walls 2 are provided with openings 3, as shown in Fig. 6, that communicate with recesses 4 formed in the upper side of the match-plate on each side of said cup-shaped portion. A removable section consisting of two blocks 5 connected to a bail 6 is mounted in said recesses 4 and the upper faces of said blocks lie flush with the top face of the match-plate when said blocks are in operative position, as shown in Fig. 2, the bail 6 extending over or embracing the cup-shaped portion on the match-plate.

The blocks 5 are arranged in the recesses 4 of the match-plate prior to the operation of ramming the flask so that said recesses will not cause projections to form on the impression which the half of the pattern on the upper side of the match-plate makes in the cope of the flask. After the cope B has been removed from the drag C the blocks 5 are lifted out of the recesses 4 in the upper side of the match-plate and a punching tool D is forced through the openings 3 in the vertical walls 2 on the match-plate so as to form impressions 7 for the lifter lugs in the drag, as shown in Figs. 3 and 4. The match-plate is then removed and the cope is replaced on the drag, as shown in Fig. 5, and when the metal is poured into the space between the cope and drag a casting of the form shown in Fig. 7 will be produced, said casting being provided in its upper face with a recess 8 and lifter lugs 9 that project laterally into said recess.

Having thus described our invention, what we claim as new and desire to secure by Letters Patent is:

1. A match-plate provided on its opposite sides with the two halves of a pattern for a stove-lid or center piece, said pattern having a cup-shaped portion which comprises vertically disposed walls in which openings are formed, and a removable section that closes said openings; substantially as described.

2. A match-plate provided on its opposite sides with the two halves of a pattern, said pattern having a cup-shaped portion provided in its side walls with openings, and a removable section mounted in recesses located adjacent to said openings; substantially as described.

3. A match-plate provided on its opposite sides with the two halves of a pattern, said pattern comprising a cup-shaped portion having openings formed in its side walls adjacent the underneath face of the match-plate, and a removable section mounted in recesses on the upper side of the match-plate located adjacent to said openings; substantially as described.

4. A match-plate provided on its opposite sides with the two halves of a pattern, said pattern comprising a hollow cup-shaped portion that projects upwardly from the upper side of the match-plate and which is provided in its side walls with openings located adjacent to the underneath side of the match-plate, and a removable section consisting of blocks that fill recesses formed in the upper side of the match-plate adjacent the openings in said cup-shaped portion; substantially as described.

5. A match-plate provided on its opposite sides with the two halves of a pattern, said pattern having a hollow portion provided in its side walls with openings, and means for closing said openings; substantially as described.

In testimony whereof, we hereunto affix our signatures in the presence of two witnesses, this 15th day of April, 1908.

LEE W. VAN CLEAVE.
GEORGE O. DEWEY.

Witnesses:
WELLS L. CHURCH,
GEORGE BAKEWELL.