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Patented Apr. 12, 1910.

2 SHEETS—SHEET 1.

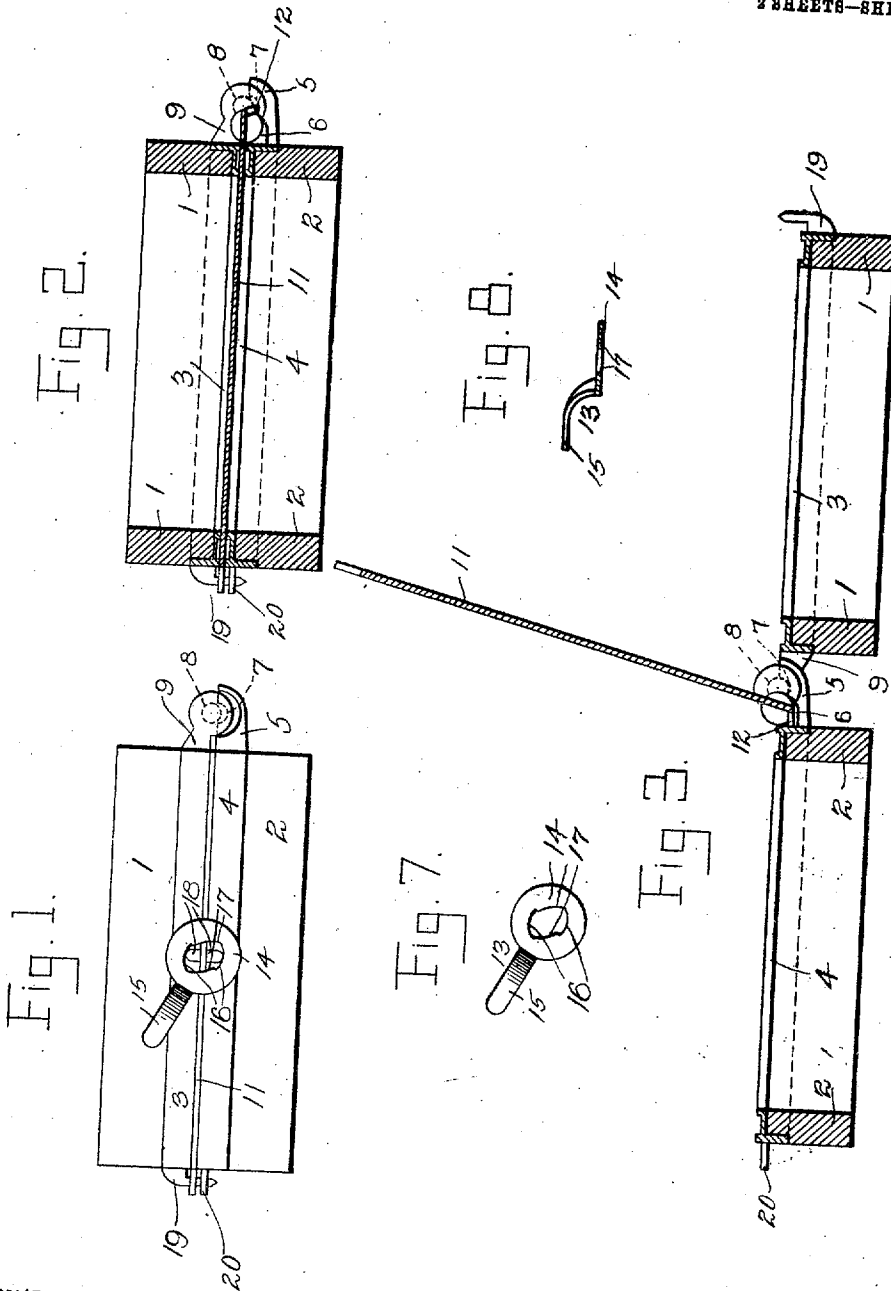


Fig. 1.

Fig. 2.

Fig. 7.

Fig. 8.

Fig. 3.

WITNESSES
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 MOLDER'S FLASK AND MATCH PLATE.
 APPLICATION FILED AUG. 17, 1909.

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2 SHEETS—SHEET 2.

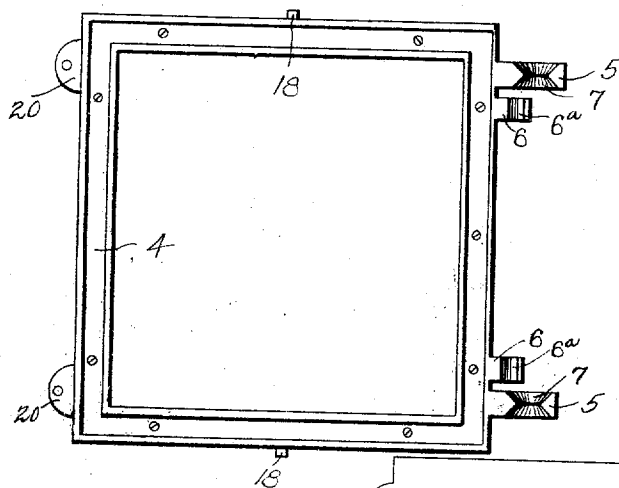


Fig. 4.

Fig. 6.

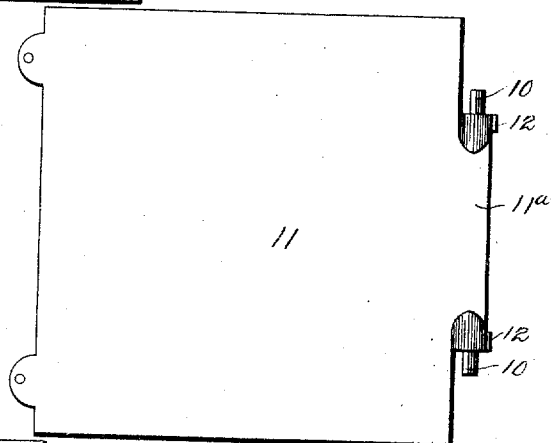
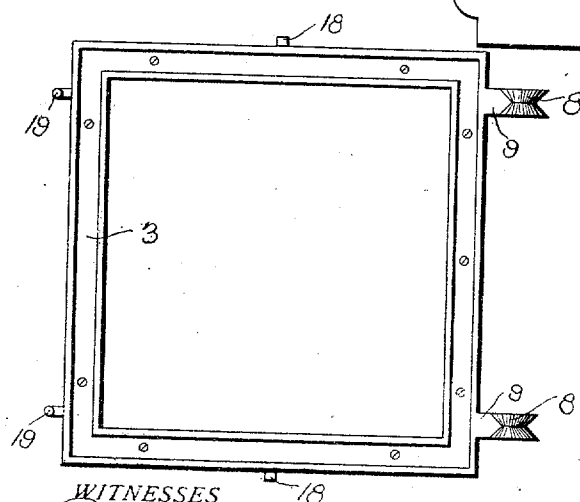


Fig. 5.



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UNITED STATES PATENT OFFICE.

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MOLDER'S FLASK AND MATCH-PLATE.

955,021.

Specification of Letters Patent.

Patented Apr. 12, 1910.

Application filed August 17, 1909. Serial No. 513,298.

To all whom it may concern:

Be it known that I, JAFEW S. VAN BUREN, a citizen of the United States, residing at Albany, in the county of Albany and State of New York, have invented certain new and useful Improvements in Molders' Flasks and Match-Plates; and I do hereby 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.

My invention relates to flasks and match-plates for use in metal founding.

The principal object of my present invention is to provide for the removal of the match-plate without disconnecting the cope from the drag.

Another object is to increase the efficiency and durability of a flask by the use of metal frames secured to the meeting edges of the wooden frames of the parts thereof, said metal frames having hinge lugs and clamping lugs formed integral therewith. These metal frames eliminate what is known as "run outs," that is, prevent the melted iron from escaping between the cope and drag. By attaching said metal frames to old and partly worn flasks, they may be further utilized, whereas they would otherwise be of no use. My improvement also eliminates the necessity of dove-tailing or rabbeting the flask because the flanges at the outer edges of the metal frames hold the parts of the flask firmly together, thereby saving lumber and lessening the cost of production of each flask as well as making them stronger and more durable. The making of the hinged lugs integral with the metal frames saves the time and trouble of attaching separate hinged lugs and also does away with the liability of said hinged lugs becoming loose which would throw the parts of the flask or the match plate out of proper alinement and spoil the mold. The provision for removing the match-plate without first disconnecting the hinges on the cope from those on the drag is a great protection against injury to the mold by careless workmen, the connection between the hinge lugs on the cope and drag at all times with each other always insuring perfect alinement between the two halves of the mold.

Another object of my invention is to provide simplified clamping devices for secur-

ing the parts of the flask together, said clamps being adapted for locking said parts firmly together after the match-plate has been removed as well as when it is in place between them.

The invention consists in the features of construction and combinations of parts hereinafter described and specified in the claims.

In the accompanying drawings illustrating the preferred embodiment of my invention: Figure 1 is a side view of a flask having a match plate between the parts thereof and said parts clamped together as when the mold is being formed. Fig. 2 is a central vertical sectional view thereof taken from front to back. Fig. 3 is a similar section showing the cope turned back away from the drag and the match-plate supported out of contact with either of the parts of the flask. Fig. 4 is a detailed view of the metal frame secured to the drag. Fig. 5 is a similar view of the metal frame secured to the cope. Fig. 6 is a plan view of the match-plate, and Figs. 7 and 8 are detailed front and edge views of one of the clamps.

Referring more particularly to the drawings, 1 and 2 designate the cope and drag, respectively, and 3 and 4 the metal frames secured thereto. The metal frame 4 secured to the drag has two pairs of integral hinge lugs 5 and 6, the former for connection with the cope being arranged outwardly of the other pair which is designed for engagement by the match-plate. Each of the lugs 5 has a groove 7 therein adapted to receive a pin 8 on one of the hinge lugs 9 of the cope. Said pin 8 is formed like two oppositely arranged cones meeting at their apexes, and said groove 7 is suitably shaped to correspond. The hinge lugs 6 are provided with straight grooves 6^a into which fit pivot pins 10 projecting in opposite directions from a reduced extending portion 11^a at the rear edge of the match-plate 11. This reduced extending portion fits between the lugs 6 thereby preventing lateral movement thereof with respect to the drag when the match-plate is attached to the latter. When the cope is turned back away from the drag, as illustrated in Fig. 3, the match-plate may be removed by reason of the separate hinged lugs and pivots connecting them without disengaging the hinged lugs on the cope from those corresponding thereto on the

drag. After the match-plate is removed, the cope may be turned back on its hinges until it is in position again on the drag without danger of said parts getting out of alignment.

I provide one or more stops 12, two being shown, on the rear edge of the rearward extending portion 11 of the match-plate. These stops are designed for holding the match-plate at an angle of about ten degrees beyond the perpendicular by coming in contact with the rear edge of the drag. This prevents said plate from turning so far as to strike and injure the cope when the latter is turned back, as illustrated in Fig. 3. The plate will sustain itself at the angle shown, enabling the workmen to face and perform other operations on the drag part of the mold before "printing back" or returning the plate to its original position.

Each of the clamps 13 for fastening parts of the flask together comprises a disk-shaped portion 14 and a laterally offset handle 15. The disk-shaped portion contains an irregular opening having two pairs of oppositely arranged cam surfaces 16 and 17, the former being farther apart than the latter. The cam surfaces 16 are adapted to engage the clamping lugs 18 on the parts of the flasks when the match-plate is arranged between them. The cam surfaces 17 are arranged closer together so as to clamp said lugs 18 when the match-plate has been removed and they are accordingly advanced toward one another.

The simplicity of my clamp over the old forms and the greater ease with which it may be manipulated will be readily appreciated by those skilled in this art. This clamp, applied as it is to the lugs formed integral with the metal frames attached to the cope and drag, is not liable to be knocked off in the ordinary operation of molding, nor does it wear upon the top edge of the flask as does the old style of clamp. Still another advantage is that one size of clamp will fit all sizes of flasks by making the clamping lugs the same size. It will be noted further that the pins 19 and guides 20 are also made integral with the metal frames. In small sizes of flasks, hinges are not used but the pins and guides are always employed. The same advantage in making said pins and guides integral with the metal frames applies as in making the hinge lugs integral therewith.

I claim:

1. The combination, with a flask comprising a cope and drag, of a match-plate adapted to be arranged between the adjacent edges of said parts, hinge lugs on said cope and drag adapted to engage one another, means to hinge the match-plate to the same side of the cope on which said hinge lugs are located, and stops on said match-plate adapted

to support the same out of contact with either the cope or drag when the former is opened away from the latter.

2. The combination, with a flask comprising a cope and drag, of a pair of hinge lugs on each of these parts adapted to engage one another, a separate pair of hinge lugs on the drag arranged between the other pair of hinge lugs thereon, a match-plate adapted to fit between the adjacent edges of said cope and drag and having a restricted outwardly extending portion adapted to fit between the inner pair of hinge lugs on the drag, and laterally projecting pivot pins at the opposite edges of said outwardly extending portion of the match-plate adapted to engage said inner pair of hinge lugs on the drag.

3. The combination, with a flask comprising a cope and drag, of a pair of hinge lugs on each of these parts adapted to engage one another, a separate pair of hinge lugs on the drag arranged between the other pair of hinge lugs thereon, a match-plate adapted to fit between the adjacent edges of said cope and drag and having a restricted outwardly extending portion adapted to fit between the inner pair of hinge lugs on the drag, laterally projecting pivot pins at the opposite edges of said outwardly extending portion of the match-plate adapted to engage said inner pair of hinge lugs on the drag, and stops on the outer edges of the extending portion of said match-plate adapted to support the same out of contact with either the cope or drag when the former is opened away from the latter.

4. A molder's flask comprising a cope and drag, each of said members composed of a wooden frame and a metal frame covering the face of said wooden frame which is presented to the other member, said metal frames having flanges at their outer edges extending around the outsides of their respective wooden frames for the purpose specified.

5. A molder's flask comprising a cope and drag, each of said members composed of a wooden frame and a metal frame covering the face of said wooden frame which is presented to the other member, said metal frames having flanges at their outer edges extending around the outsides of their respective wooden frames for the purpose specified, and hinge lugs on said members adapted to engage one another.

6. A molder's flask comprising a cope and drag, each of said members composed of a wooden frame and a metal frame covering the face of said wooden frame which is presented to the other member, said metal frames having flanges at their outer edges extending around the outsides of their respective wooden frames for the purpose specified, and integral hinge lugs on said metal frames adapted to engage one another.

7. A molder's flask comprising a cope and drag, each of said members composed of a wooden frame and a metal frame covering the face of said wooden frame which is presented to the other member, said metal frames having flanges at their outer edges extending around the outsides of their respective wooden frames for the purpose specified, and integral pins and guides on said metal frames adapted to engage one another when the flask is closed.

8. A molder's flask comprising a cope and drag, each of said members composed of a wooden frame and a metal frame covering the face of said wooden frame which is presented to the other member, said metal frames having flanges at their outer edges extending around the outsides of their respective wooden frames for the purpose specified, integral pins and guides on said metal frames adapted to engage one another when the flask is closed, and integral hinge lugs on said metal frames adapted to engage one another.

9. The combination, with a flask comprising a cope and drag, of a match-plate, projecting clamping lugs on said parts near the facing edges thereof, and a clamp having an irregular opening therein adapted to embrace said lugs and hold said cope and drag

tightly together when the match-plate is removed as well as when it is in place between said parts.

10. The combination, with a flask comprising a cope and drag, of a match-plate, projecting clamping lugs on said parts near the facing edges thereof, and a clamp comprising a disk-shaped portion and a projection for turning the same, said disk-shaped portion having an irregular opening therein adapted to embrace said lugs and hold said cope and drag tightly together when the match-plate is removed as well as when it is in place between said parts.

11. The combination, with a flask comprising a cope and drag, of metal frames secured to the facing edges of said parts, a match-plate, projecting integral lugs on said frames, and a clamp having an irregular opening therein adapted to embrace said lugs and hold said cope and drag tightly together when the match-plate is removed as well as when it is in place between said parts.

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

JAFEW S. VAN BUREN.

Witnesses:

GEORGE FISCHER,
JOHN A. SCOTT.