No. 632,251. Patented Sept. 5, 1899.

H. C. COOPER.

CLAMP FOR MOLDERS' FLASKS.

(Application filed May 31, 1899.)

(No Model.)

Fig. 3.

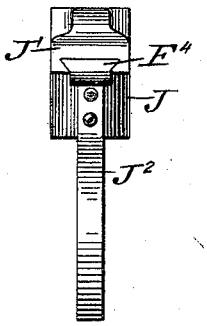


Fig. 1.

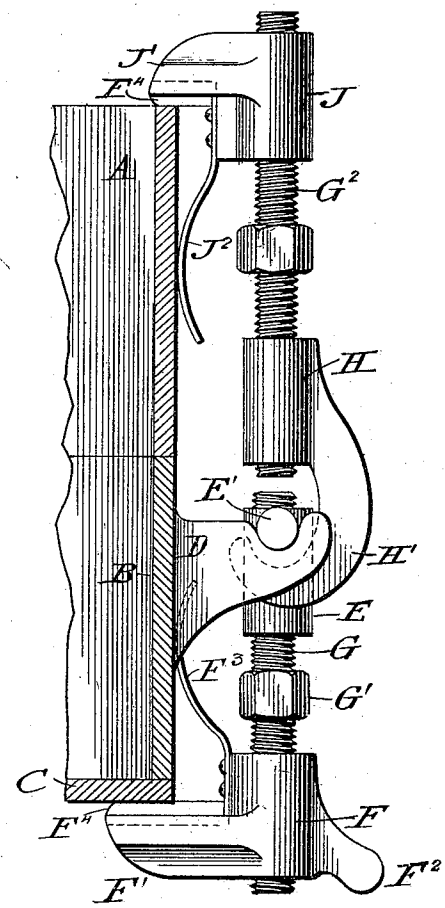
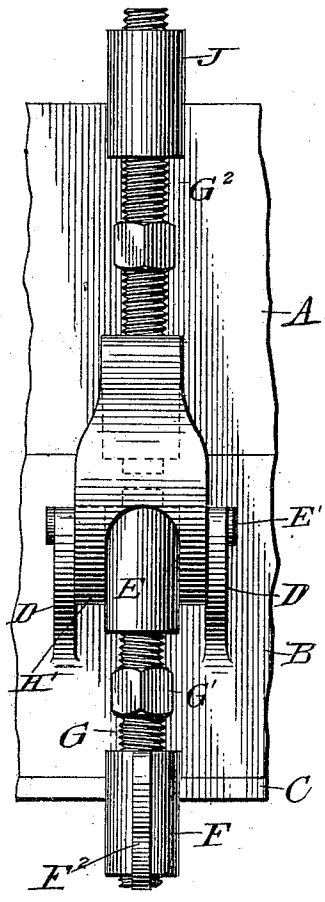


Fig. 2.



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UNITED STATES PATENT OFFICE.

HARRY C. COOPER, OF CHICAGO, ILLINOIS.

CLAMP FOR MOLDERS' FLASKS.

SPECIFICATION forming part of Letters Patent No. 632,251, dated September 5, 1899.

Application filed May 31, 1899. Serial No. 718,868. (No model.)

To all whom it may concern:

Be it known that I, HARRY C. COOPER, a citizen of the United States, residing at Chicago, county of Cook, State of Illinois, have invented a certain new and useful Improvement in Clamps for Molders' Flasks; and I 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 pertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification.

My invention has for its object the production of a clamp for use particularly to bind together the cope portion and the drag portion of a sand-mold flask and also for clamping the bottom board onto the drag portion of the flask.

The construction of the clamp will be hereinafter described and claimed.

In the drawings, Figure 1 shows my clamp applied to the two portions of the flask and to the bottom board. Fig. 2 is a view at right angles to Fig. 1. Fig. 3 is a detail of one of the fittings, showing the cushion.

In carrying out the invention, A represents the cope portion of a sand-mold flask, B the drag portion, and C the bottom board. Extending from the face of the flask B are two lugs D of hook shape.

E is a fitting having projecting lugs or trunnions E′, adapted to fit into the recesses in the hooks D, and provided also with two cam-shaped surfaces E^2.

F is another fitting having a projecting nose F′, adapted to fit over the bottom board, and a lug F^2.

The fittings E and F are bored longitudinally and threaded and are connected by a right and left hand screw G, having a nut G′ to adapt it to be easily turned.

H is another fitting having two depending hooks H′, which fit over and engage the cam-surfaces E^2 of the fitting E.

J is another fitting having a nose J′ to engage over the edge of the flask.

The fittings H and J are connected by a right and left hand screw G^2.

Springs F^3 J^2 are provided, which bear against the sides of the flask and serve to readily throw the fittings and clamp out from the flask when they are loosened.

The operation of the clamp will be readily understood. The operator engages the lugs E′ in the hooks D, throws the nose F′ over the bottom board C, and then by means of the nut G′ draws the fittings E F together until they bind. He then engages the hooks H′ of the fitting H over the cam-surface E^2 on the fitting E and engages the nose J′ over the edge of the flask A, then by revolving the screw G^2 draws the parts together until they bind. To separate the flask, it is only necessary to strike the projection F^2 on the fitting F, when the nose F′ will slide off from the bottom board, and because of the cam-surfaces E^2 the hooks H′ will be released, and this will release the fitting J, and the spring J^2 will throw it off from the flask.

In practice where metal flasks are used the head of the molton metal when poured into the mold causes the flask to expand. It is therefore necessary to provide at some point in the clamp a yielding quality, so that the clamp can give slightly as the flask enlarges. Preferably I provide the nose F or any other bearing-point with a cushion F^4. This may be a block or strip of wood or fiber or some composition with asbestos or the like to make it non-combustible, the particular substance or composition and the particular location of the cushion being immaterial.

What I claim is—

1. The combination with two portions of a sand-mold flask one portion provided with an arm or projection, of a clamp for engaging them consisting of a fitting having means for engaging said arm or projection, a second fitting having means to engage the first and two outer or flask-engaging fittings each connected with one of the two first-named fittings by adjustable means, substantially as described.

2. The combination with two portions of a sand-mold flask one portion provided with an arm or projection, of a clamp for engaging them consisting of a fitting having means for engaging said arm or projection, a second fitting having means to engage the first and two outer or flask-engaging fittings each connected with one of the two first-named fittings by right and left hand screws, substantially as described.

3. The combination with two portions of a sand-mold flask one portion provided with an

arm or projection, of a clamp for engaging them consisting of a fitting having means for engaging said arm or projection, a second fitting having means to engage the first and two outer or flask-engaging fittings each connected with one of the two first-named fittings by adjustable means, and an eccentric in engagement between the two first-named fittings, substantially as described.

4. The combination with the cope portion, drag portion and the bottom board of a sand-mold flask of a clamp for binding the parts together consisting of a fitting adapted to engage the bottom board of the flask, another fitting adapted to engage the drag portion of the flask, a right and left hand screw connecting the two first-named fittings, a third fitting adapted to engage the cope portion of the mold eccentric surfaces on the second-named fitting, a forth fitting adapted to engage said eccentric surfaces and a connecting-screw between the third-named fitting and the fourth-named fitting, substantially as described.

5. A clamp for a molder's flask consisting of two or more fittings adjustably engaged together each adapted to bear upon and engage a part to be clamped and a yielding cushion carried by at least one of the fittings and adapted to bear on the clamped surface, substantially as described.

In testimony whereof I sign this specification in the presence of two witnesses.

HARRY C. COOPER.

Witnesses:
GERTRUDE HEIDELBERGER,
LUTE S. ALTER.