

(No Model.)

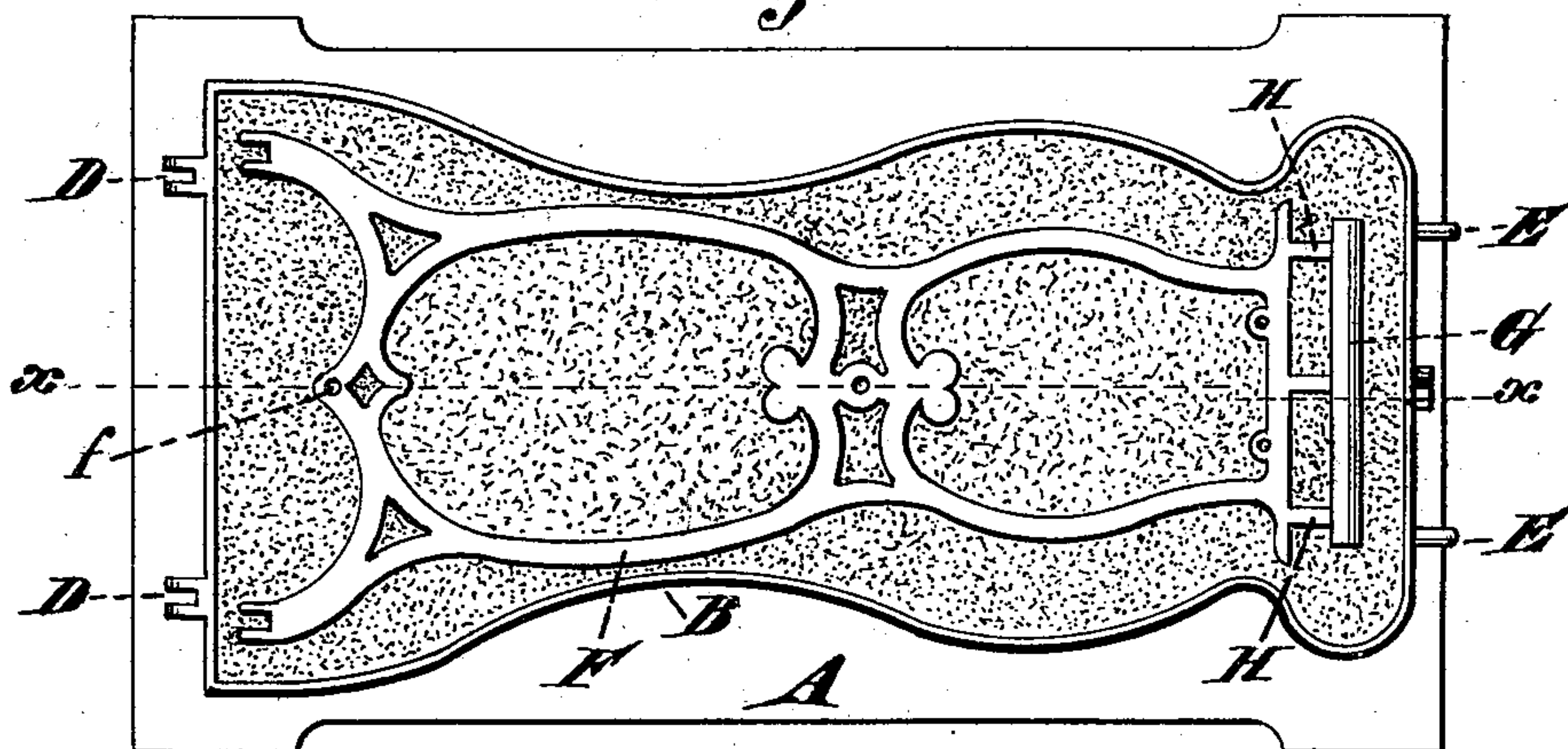
J. E. DONOVAN.

## PATTERN FOR PRODUCING CASTINGS.

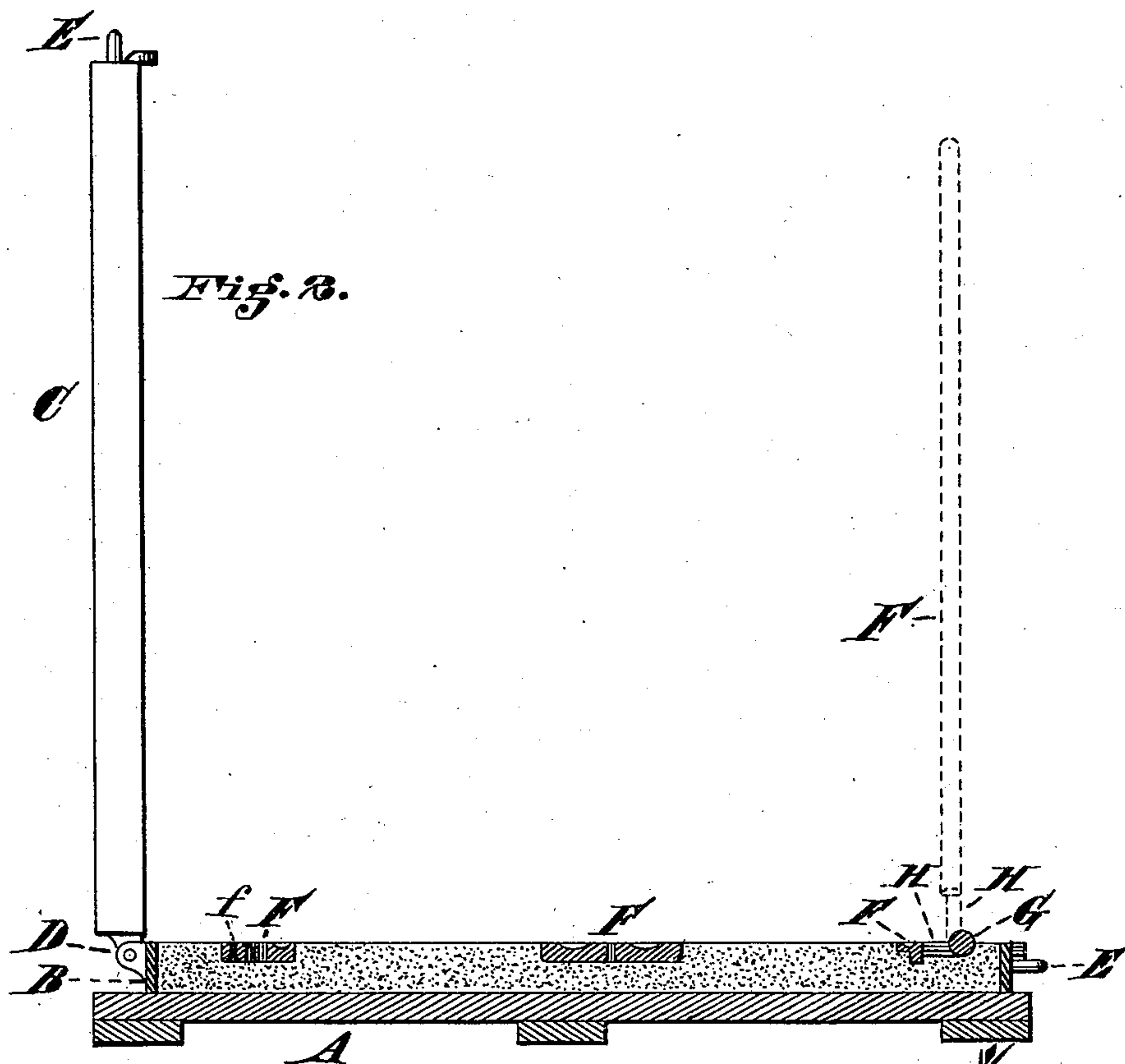
No. 275,166.

Patented Apr. 3, 1883.

*Fig. 1.*



*Eng. R.*



Attest  
Jno. C. Jones  
Jno. C. Miles

*Inventor*  
*John C. Donovan,*  
*by Wood & Boyd*  
*his Attorneys &c.*



# UNITED STATES PATENT OFFICE.

JOHN E. DONOVAN, OF CINCINNATI, OHIO.

## PATTERN FOR PRODUCING CASTINGS.

SPECIFICATION forming part of Letters Patent No. 275,166, dated April 3, 1883.

Application filed July 31, 1882. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN E. DONOVAN, a citizen of the United States, and a resident of Cincinnati, in the county of Hamilton and State of Ohio, have invented certain new and useful Improvements in Patterns for Producing Castings, of which the following is a specification.

My invention relates to an improvement in the art of preparing molds for casting.

It consists in the provision of a round bar connected with or attached to one end of the pattern by cross-bars, so that said pattern, when being drawn from the sand by its other end, will pivot or hinge by means of said round bar in the sand, and be removed therefrom without lifting the sand or otherwise disturbing it to injure the mold.

The object of my invention is to facilitate the removal of the pattern from the sand, so that inexperienced or unskilled labor may be employed to perform the work, and in the use of my attachment do it as well as that done by skilled workmen of long experience.

Other features of my invention will be fully set forth in the following description of the accompanying drawings, in which—

Figure 1 is a plan view of the drag and bottom board of a molding-flask with the pattern in the sand embodying my invention. Fig. 2 is a longitudinal section on line *x x*, Fig. 1, showing the cope of the flask in elevation in connection therewith, and the pattern in dotted lines swung from the sand in a vertical plane on the pivotal bar and ready to be finally removed.

A represents the bottom board of an ordinary molding-flask.

B represents the drag, and C the cope, both of the usual construction and pivotally connected together at one end by hinges D D, being parted and manipulated by pins or handles E E at the other end. The manner of placing and ramming the sand in the several parts of the flask and placing the pattern therein and forming the mold is conducted as usual; but the manner in which the pattern is fitted and withdrawn from the sand is what I deem as novel, and is in substance as follows:

F represents the pattern, in this instance one of the parts of a sewing-machine frame.

G is a transverse bar, preferably round in cross-section, of sufficient length to obviate any lateral rocking or twisting movement, and connected with or rigidly attached to one end of the pattern F by cross-bars H. This transverse bar G is arranged at one side of the pattern a sufficient distance to turn in the sand without disturbing the configuration of the pattern proper which is to be preserved in the sand. The impression formed in the sand by this transverse pivotal bar may be filled up, if desired; but I prefer to use it as a gate in which to pour the molten metal, and remove the surplus material after the casting is made. Cross-bars H are of sufficient length to permit the pivoting of the pattern by bar G in the sand, as shown in dotted lines, Fig. 2, without lifting the sand with it or in any other manner damaging the mold in its removal. In lifting the pattern at its free end a screw-bolt, pin, or other suitable instrument might be inserted in the perforation *f*. In place of inserting a pin or screw into the perforation *f*, a lug might be rigidly attached to the pattern at the same point, which can readily be removed from the casting. The furrows or channels left by the bars G and H in the sand form the gate or hole through which the melted metal is poured and conducted to the mold, and form an important feature of my invention.

It is obvious that the same attachment might be applied to any other form of pattern than the one herein shown.

When the casting is formed and taken from the flask it is clear that the round bar and connecting cross-bars can be readily removed without any damage thereto.

I am aware that a pattern for a flanged casting has been constructed to produce in the sand mold the gate for introducing the molten metal into such mold; but this I do not broadly claim.

I am also aware that one part of pattern has been hinged to another part to facilitate the removal of the pattern from the sand; but such does not constitute my invention.

I claim—

1. A pattern for producing a casting, provided at one end with a transversely-attached bar, G, which is arranged laterally beyond or

outside of the pattern and serves as a pivot on which to turn the pattern in withdrawing it from the sand, substantially as described.

5 2. A pattern for producing castings, provided at one end with a transverse bar, G, connected with the pattern by cross-bars H, for producing the gates in the sand to introduce the molten metal to the mold, said bar also serving as a pivot on which to turn the pat-

tern in removing it from the sand, substantially as described. 10

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

JOHN E. DONOVAN.

Witnesses:

JNO. E. JONES,

ADOLPH GLUCHOWSKY.