(No Model.)

G. K. SMITH.

Mold for Casting Mold Boards.

No. 237,619. **Patented Feb. 8, 1881.**

Fig. 1.

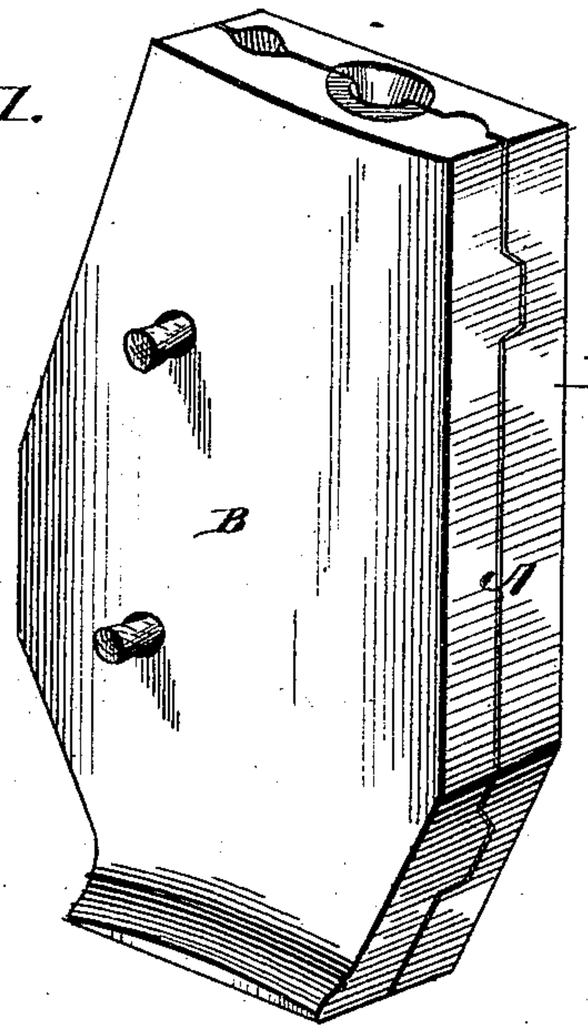

Fig. 2.

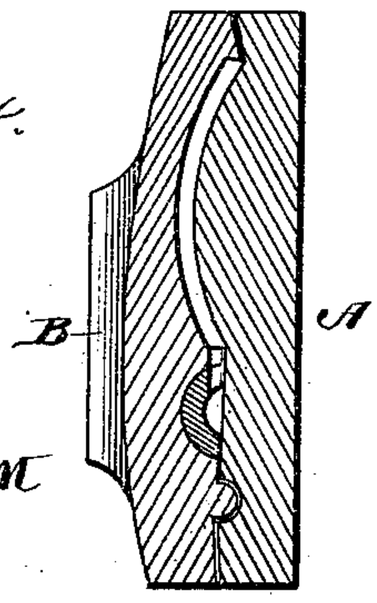

Fig. 4.

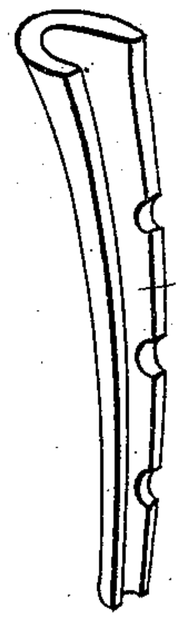

Fig. 3.

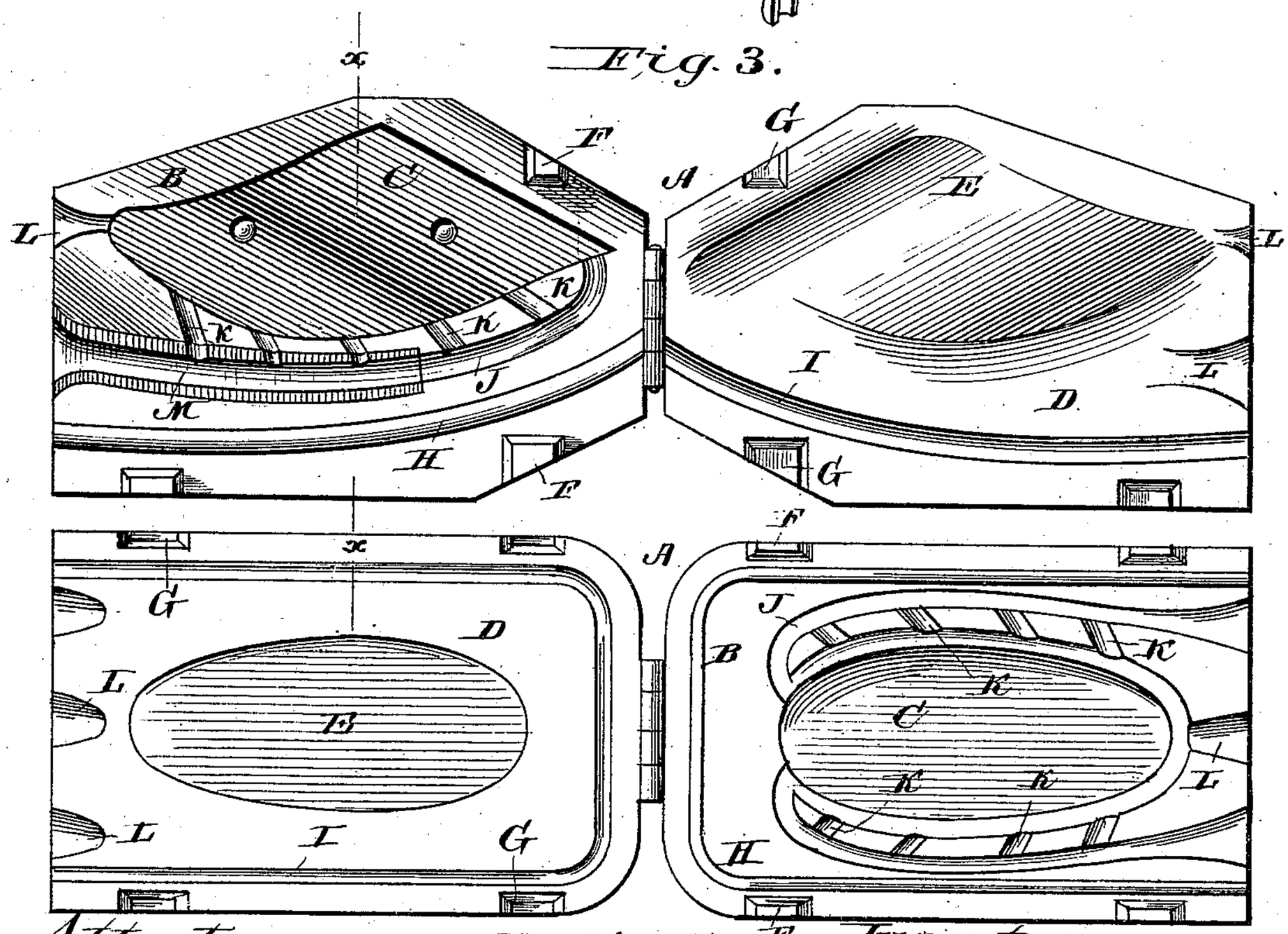

Fig. 5.

Attest:
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By H. A. Abbot Atty.

UNITED STATES PATENT OFFICE.

GEORGE K. SMITH, OF FREEPORT, ILLINOIS, ASSIGNOR OF ONE-HALF TO ELAM B. WINGER, OF SAME PLACE.

MOLD FOR CASTING MOLD-BOARDS.

SPECIFICATION forming part of Letters Patent No. 237,619, dated February 8, 1881.

Application filed July 3, 1880. (No model.)

To all whom it may concern:

Be it known that I, GEO. K. SMITH, a citizen of the United States, residing at Freeport, in the county of Stephenson and State of Illinois, have invented certain new and useful Improvements in Molds for Casting Mold-Boards; 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, reference being had to the accompanying drawings, and to letters or figures of reference marked thereon, which form a part of this specification, in which—

Figure 1 is a perspective of the mold; Fig. 2, a cross-section thereof; Fig. 3, a plan view representing the mold as opened; Fig. 4, a detached view of the throat; and Fig. 5, another plan view of the mold open, and illustrating another form of mold-board.

My invention relates to molds for casting mold-boards, plow-points, plowshares, and the like; and it consists in the construction and combination of parts hereinafter described, and then specified in the claims.

In the accompanying drawings, the letter A indicates a two-part mold, hinged at one end, as illustrated. One part, B, is formed with a depression, C, of the shape of one side of a mold-board, and the other part, D, with a protuberance, E, of the shape of the other side of the mold-board, so that when the two parts are brought one opposite to the other there will be left a space between the two having the configuration of a mold-board. On the inside faces of the two parts, at convenient points, near the outside edges, there are formed on one part dovetails or lugs F and on the other recesses or notches G, both of which are intended to serve as guides in clamping the parts together, and also as braces when the parts are brought together. To one side of these lugs and recesses, to one or both sides of the mold-board form, and preferably extending from end to end and describing a curved line, there is formed on one part a tongue, H, and on the other a groove, I, so that when the two parts are brought together the tongue will fit into the groove and the two parts be thereby more closely and securely held together, and the metal prevented from running out over the sides of the mold. Extending from one end toward the other of the mold, on the inside face of one or both parts, and to one or both sides of the mold-board form, (in this instance it being illustrated as on one part and to one side only of the form,) there is made a groove or channel, J, which communicates at different points, by means of lateral channels K, with the depression C of the part B. It is designed to feed the molten metal to the mold through the longitudinal channel J and lateral channels K.

If in feeding the metal, as has been the common practice, it is allowed to enter the depression C at or near the top, and then flow down over the broad surface to the lower portion of the depression, it will be found that the surface of the casting will be full of wrinkles and other imperfections; but if the depression is filled from the bottom, and then from each a succession of channels along the side upward, those imperfections will not exist, for the metal will not be kept flowing over the same surface too long. To attain that desirable end, the lateral channels K are made to extend from channel J to depression C, the lower end connecting with channel J and the higher end with depression C, so that when the metal runs down channel J it does not enter the depression C until it reaches the lower end of the channel and depression. When the depression is filled to a point above the lowest lateral channel the metal will run through the lateral channel next above, and so on until the depression has been filled, the formation of the board being commenced at the lower end of the mold and continuing upward to its completion. In the formation of the mold-board, as thus described, the gases have free egress through the riser L, opening at the upper end of the mold.

Practice has demonstrated that the molten metal, when fed down the naked channel J, will in a comparatively short time eat away the sides of the channel next to the laterals and destroy the usefulness of the mold. The renewal of these molds involves some outlay, and it is therefore valuable to have some means

for extending their usefulness. To effect that object I construct and use a throat, M, made either of cast-iron, plumbago, fire-clay, dry sand core, or any refractory clay. This throat is set in the channel J, as illustrated in Fig. 3, and may extend the whole length of the channel or only a portion of its length. It is represented as made partially annular. It is made so in order that the flat surface of the part D may rest closely thereon and the mold be tightly closed. It is obvious, however, that if there is a groove made for that purpose in the part D the throat may be annular and fit therein. This throat is cheap, and when broken or worn out can be readily and cheaply replaced, it being detachable and not fastened to the channel.

Two holes are indicated as being made in the part B of the mold. They are for the insertion of suitable cores to form the usual bolt-holes in the mold-board.

The afore-described method of feeding the metal can be employed in casting plow-points, shares, and the like; and the projecting throat can also be used.

In filling the mold it is set in an inclined position, so that the metal can flow with ease down the channel.

Having described my invention, what I claim is—

A two-part metal mold, A, provided with channels for feeding metal to the molds, and having combined therewith a detachable protecting-throat, M, of refractory material, provided with lateral openings for the passage of the metal to channel K, for the purpose set forth.

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

GEORGE K. SMITH.

Witnesses:
E. B. WINGER,
A. W. GREENE.