(No Model.)

C. TRUESDALE.

GATE FOR CASTING.

No. 332,462. Patented Dec. 15, 1885.

FIG. 1.

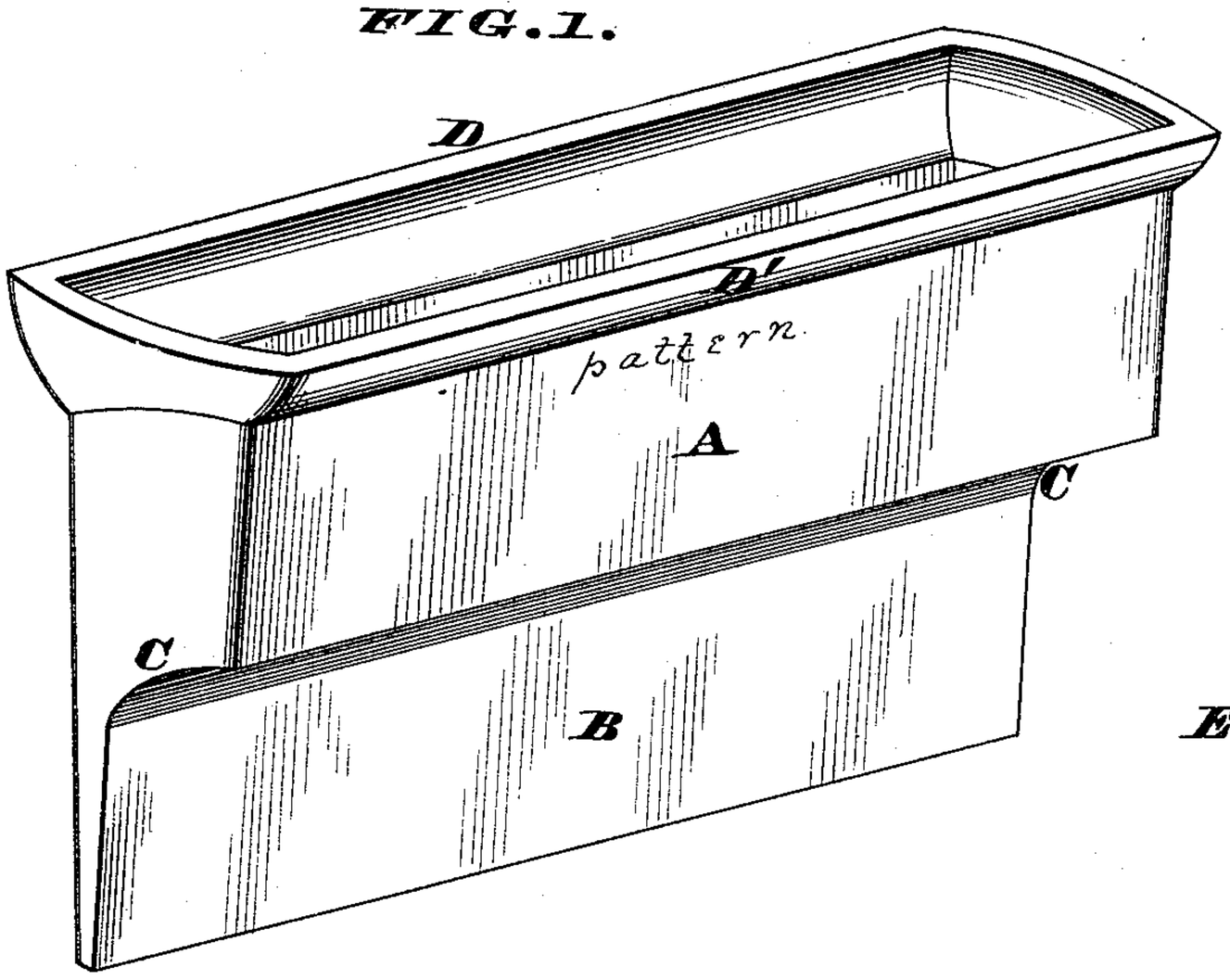


FIG. 2.

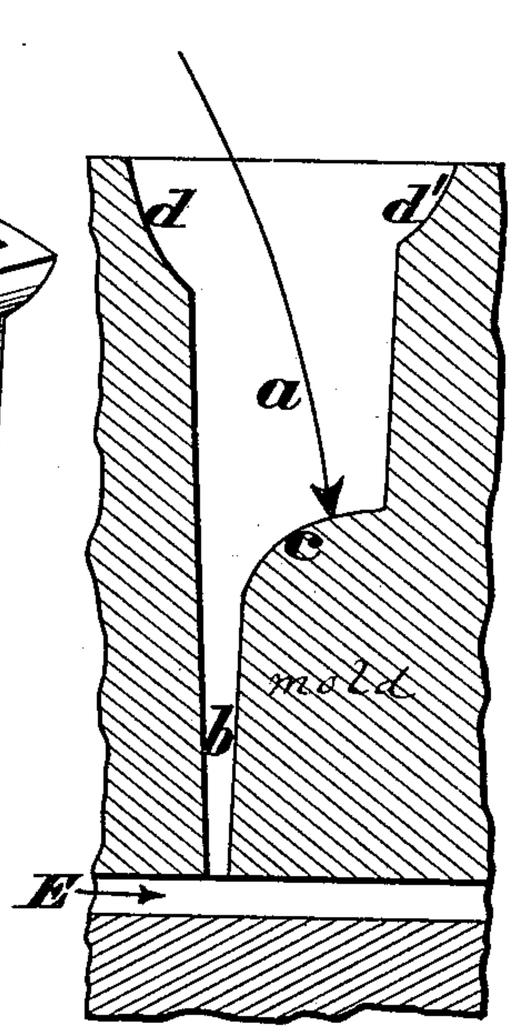


FIG. 3.

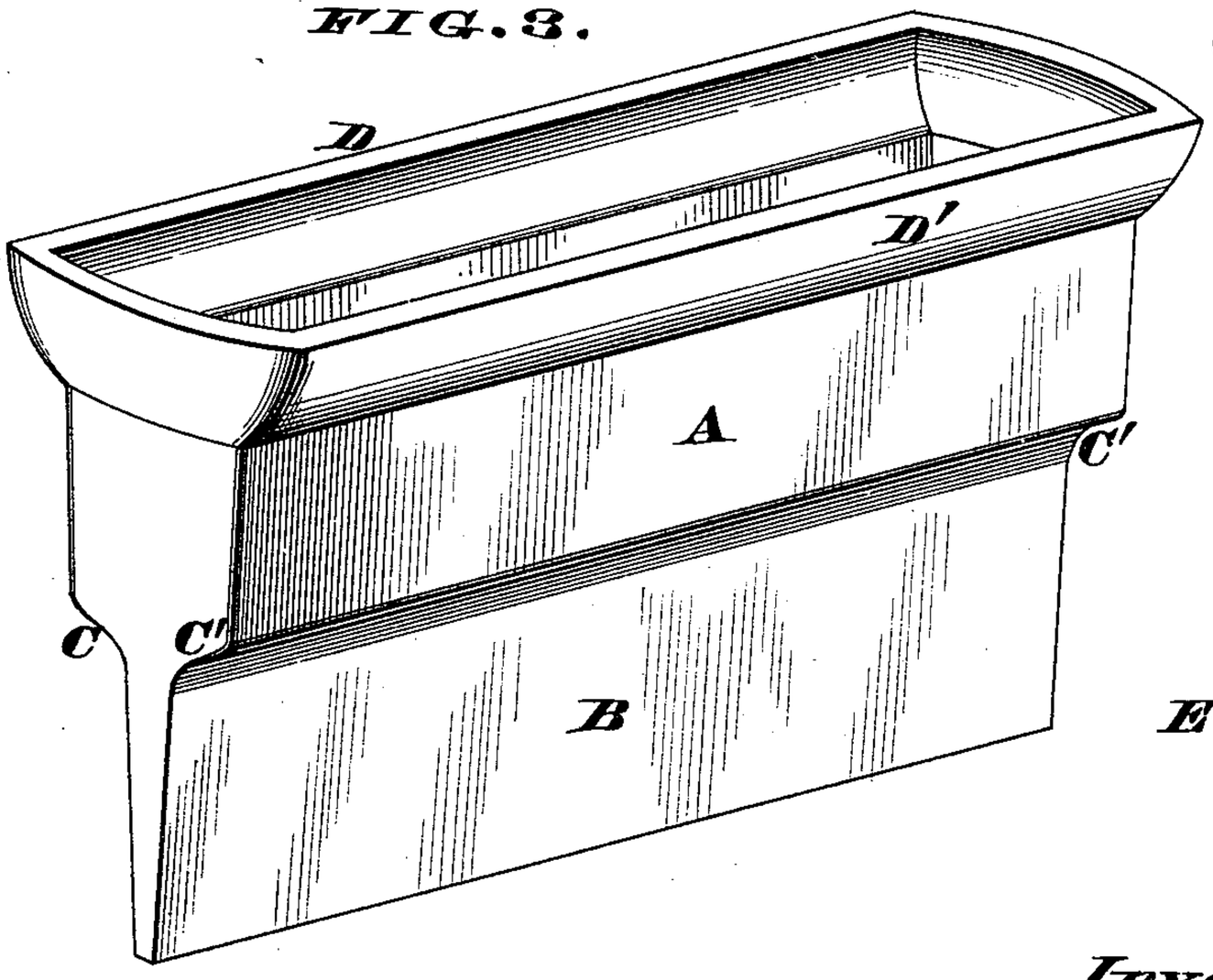
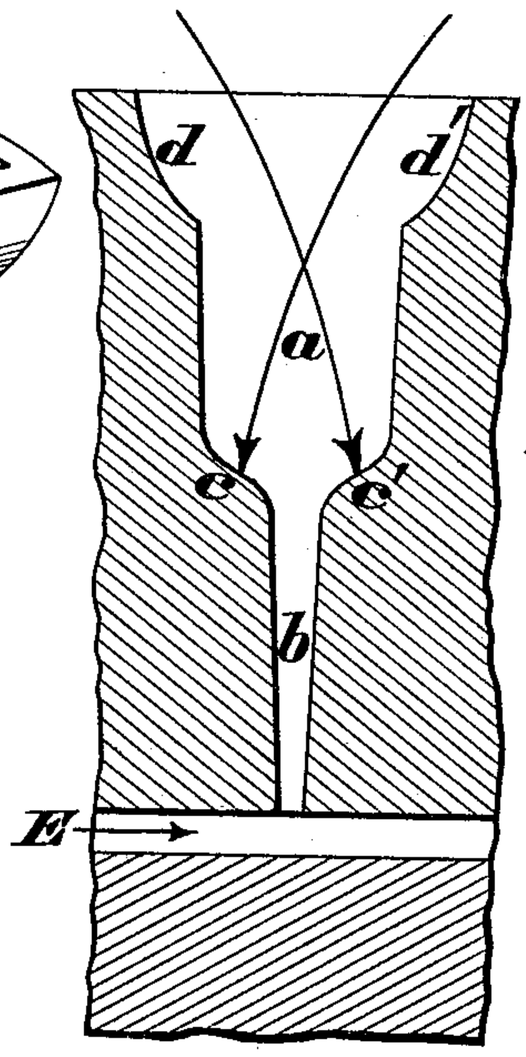


FIG. 4.



Attest.
John Manning Jr
A. S. Carpenter.

Inventor.
Charles Truesdale
by James H. Layman
Atty.

UNITED STATES PATENT OFFICE.

CHARLES TRUESDALE, OF CINCINNATI, OHIO.

GATE FOR CASTING.

SPECIFICATION forming part of Letters Patent No. 332,462, dated December 15, 1885.

Application filed July 6, 1885. Serial No. 170,761. (No model.)

To all whom it may concern:

Be it known that I, CHARLES TRUESDALE, a citizen of the United States, residing at Cincinnati, in the county of Hamilton and State of Ohio, have invented certain new and useful Improvements in Gates for Casting, of which the following is a specification, reference being had therein to the accompanying drawings.

The object of my present invention is to improve the peculiar form of molders' gates seen in Letters Patent No. 153,863, granted to me August 4, 1874, in which patent a gate is shown composed of two distinct and separable members, of which members the lower one is permanently attached to the edge of the pattern, while the upper device is seated in a longitudinal groove of said lower member. Now, this composite gate, although eminently adapted for producing a free flow of metal at the edge of a mold, is of no use whatever when the iron must be run in at the center or other part of what is commonly known as the "face" of the matrix, because the peculiar shape of said gate prevents the "cope" being disengaged therefrom in case the former should be applied to the face instead of the margin of a pattern. Therefore, to obtain all the advantages of this composite device, and at the same time to permit the metal being poured in at any part of the face of the mold, I provide a gate which is complete in itself and is capable of being readily withdrawn from the cope after the latter has been properly rammed. The new gate is accordingly a simple piece of wood or metal having three distinct features—to wit, a body, a shank, and an extended shoulder—which body and shank taper or converge from top to bottom in the same manner as all other devices of a similar character; but this taper is interrupted by the shoulder that joins the shank to the body, the shape of said shoulder being such as to form a prolonged ledge or other barrier in the sand, which ledge serves as an abutment that temporarily arrests the flow of metal, and thus prevents it falling directly and forcibly into the matrix or mold. The sides of the body and shank are flat both horizontally and vertically, but are displayed laterally, so as to afford an extended bearing on the pattern in the mold. By this arrangement of gate the pouring-hole formed in the cope compels the molten iron to enter the latter in a thin but comparatively extended current or sheet that insures a complete and uniform filling of the matrix and without danger of washing out the sand on the lower face of the mold. The extended shoulder may be situated at any desired level, according to the size and special shape either of the flask or pattern embedded therein, and in some cases a shoulder may be provided on each side of the gate.

In the annexed drawings, Figure 1 is a perspective view of the more simple form of my gate. Fig. 2 is a vertical section of a portion of a molder's flask, the cope of which is provided with a pouring-hole made by said gate. Fig. 3 is a perspective view of a more complex form of gate. Fig. 4 is a section showing the peculiar pouring-hole made in the cope by this last pattern.

The more simple form of gate, as seen in Fig. 1, consists of a body, A, of any desired size, said body having a downward taper to insure the proper draft, and being joined to a shank, B, by a concave or sloping or other suitably-shaped shoulder, C. As the gate is usually made of cast-iron or other common metal, it is chambered out at the top to diminish its weight, and terminates with convex flanges or beads D D'. After this gate has been placed in the cope, the sand properly rammed, and the gate then withdrawn, the pouring-hole in said cope will present the appearance seen in Fig. 2, reference to which illustration shows that the main chamber *a* is of the same size and shape as the body A of the gate, while the two flanges D D' have produced concavities or gullies *d d'* at the entrance to said chamber. Furthermore, this illustration shows that the shank B has formed a gradually-converging channel, *b*, in the sand, which channel is joined to the chamber *a* by a ledge or projection, *c*, the latter having been produced by the shoulder C of the gate. Consequently, said ledge or barrier will be of the same length as this extended shoulder.

In filling the mold the molten metal should be poured into the same in the direction of the arrow, in order that the stream may first strike the extended ledge or projection *c* and be deflected therefrom into the channel *b*, from which latter it flows into the matrix E. It will thus be seen that the aforesaid ledge serves

as an extended barrier that intercepts the descending stream, thereby diminishing its velocity and preventing its heavy fall into the mold, which momentary arrest of said stream is sufficient to prevent a pit being cut into the lower surface of the matrix at a point directly opposite the discharging end of channel *b*. Therefore, there is no danger of the face of the casting being disfigured by an unsightly protuberance on the same.

In the modification of the invention seen in Fig. 3 the gate is substantially the same as previously described, with the exception of the shank B being joined to the body A by two extended shoulders, C C′, instead of one. Consequently, these shoulders form a pair of prolonged ledges or barriers, *c c′*, within the cope, as seen in Fig. 4, which arrangement permits the mold to be filled from either side, as indicated by the two arrows.

I am aware that it is not new to enlarge the heads of gates and to provide pouring-basins in the upper ends of the same; but I know of no instance where a gate has been made with body and shank having flat tapering sides displayed laterally and joined by one or more prolonged shoulders situated between the top and bottom of the gate for the purpose of forming an extended barrier or barriers in the pouring-hole of the cope. Therefore, my claim is not to be construed broadly, but is limited to this specific construction of molder's gate.

I claim as an improvement on Letters Patent No. 153,863 and as a new article of manufacture—

A molder's gate consisting of a body and shank having flat and laterally-displayed sides tapering from top to bottom, and joined by one or more prolonged shoulders located at any suitable distance between the top and bottom of said gate, whereby a pouring-hole having an extended barrier or barriers is formed in the cope of the flask, for the purpose of causing the molten metal to enter the matrix in a thin but broad sheet, as herein explained.

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

CHARLES TRUESDALE.

Witnesses:
JAMES H. LAYMAN,
CHAS. TRUESDALE, Jr.