

C. TRUESDALE.
Gates for Castings.

No. 153,863

Patented Aug. 4, 1874.

FIG. 1.

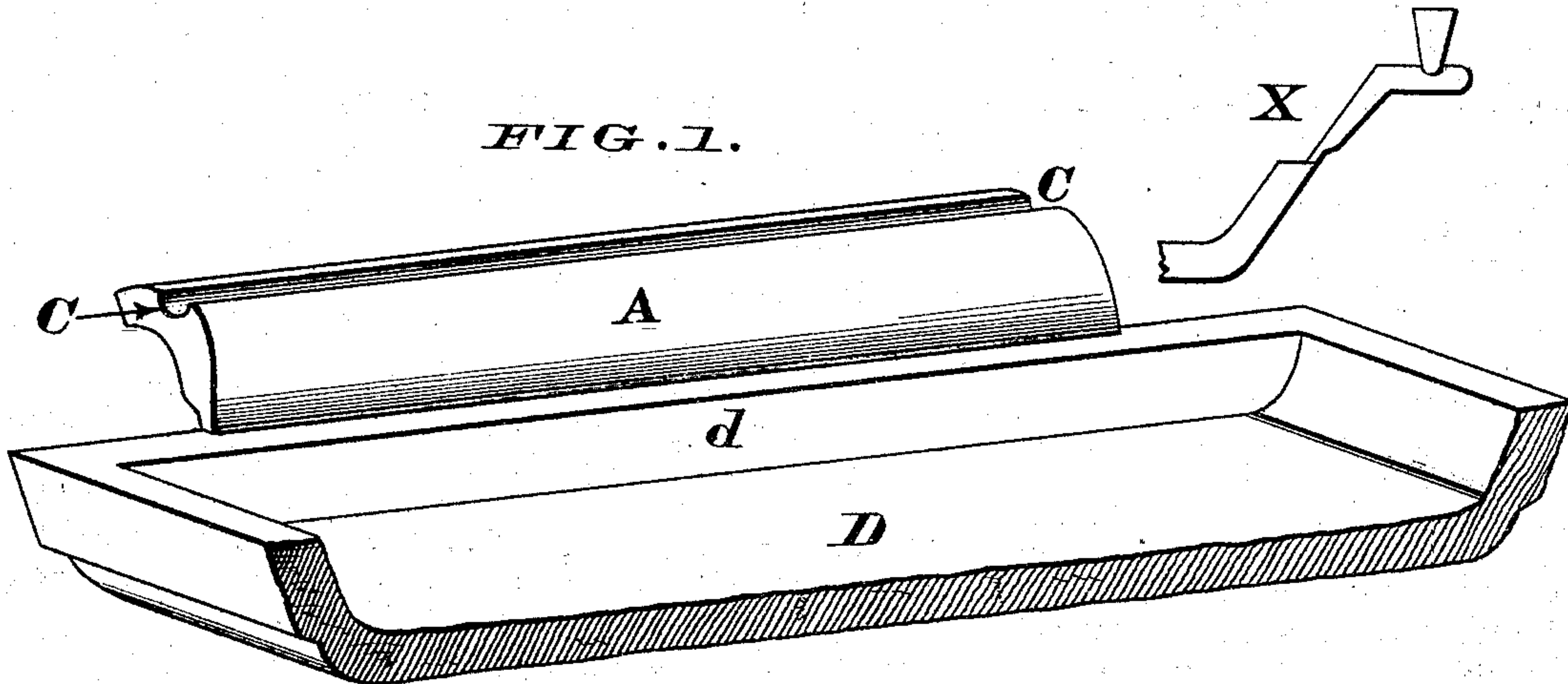


FIG. 2.

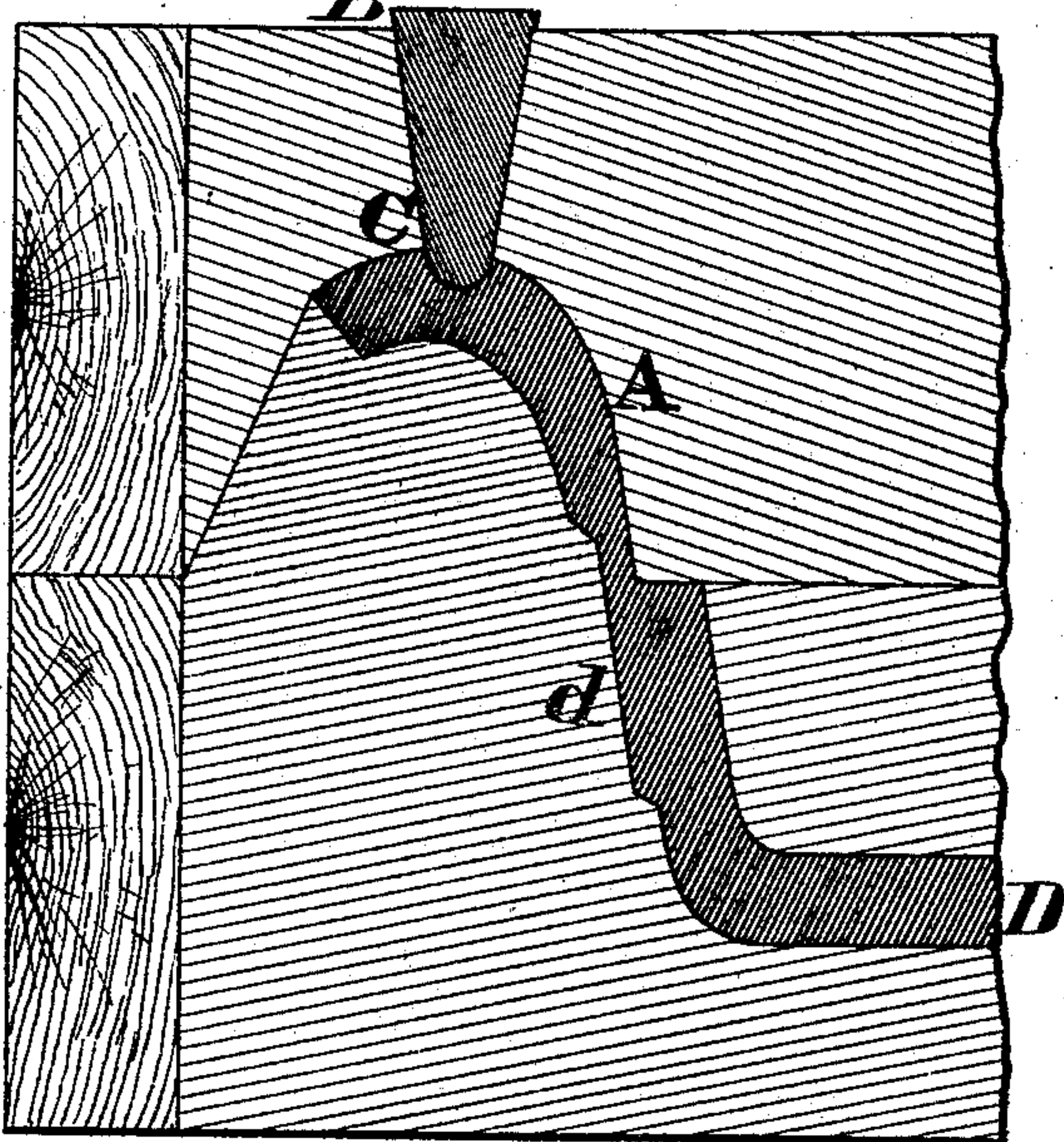


FIG. 3.

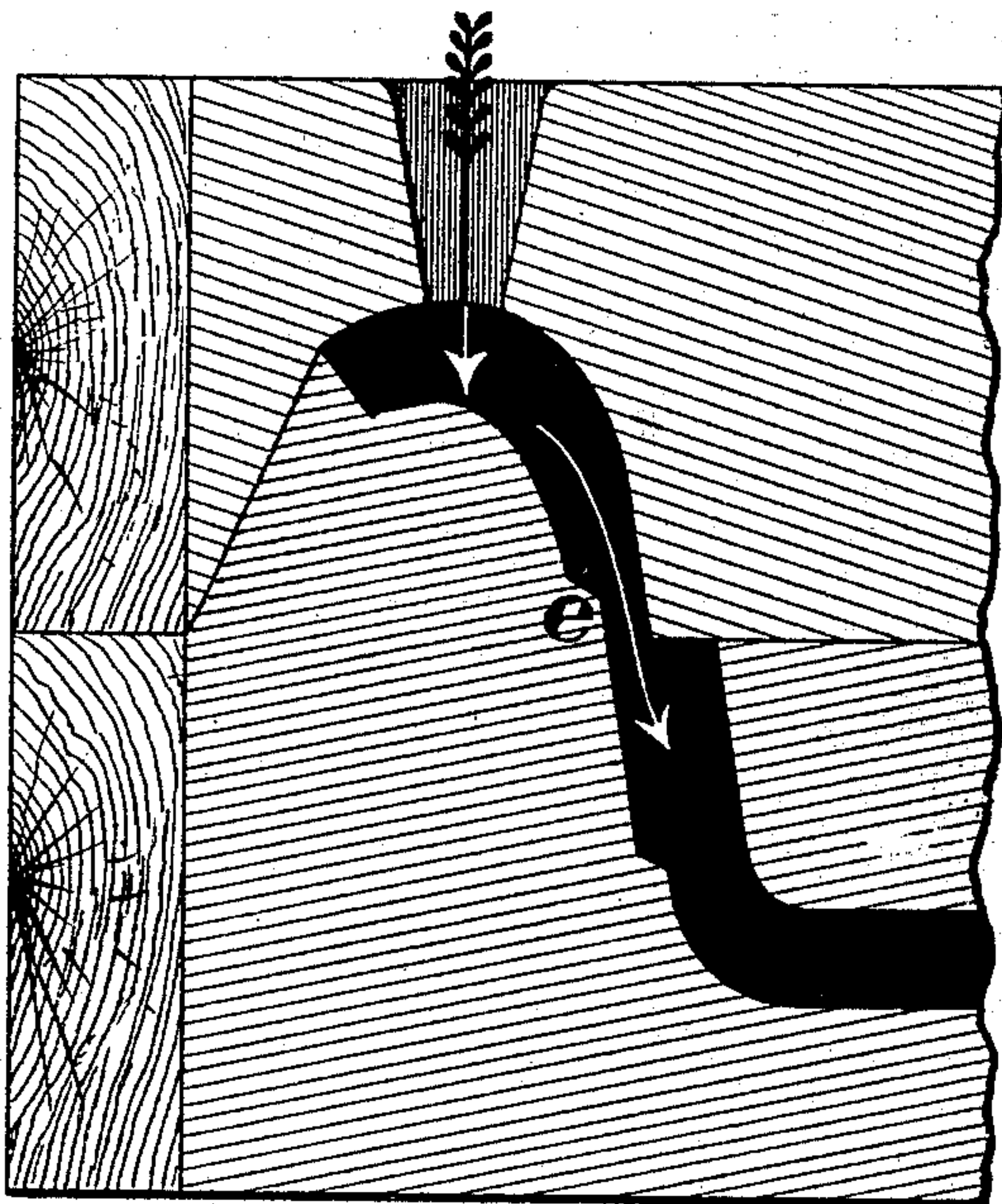


FIG. 4.

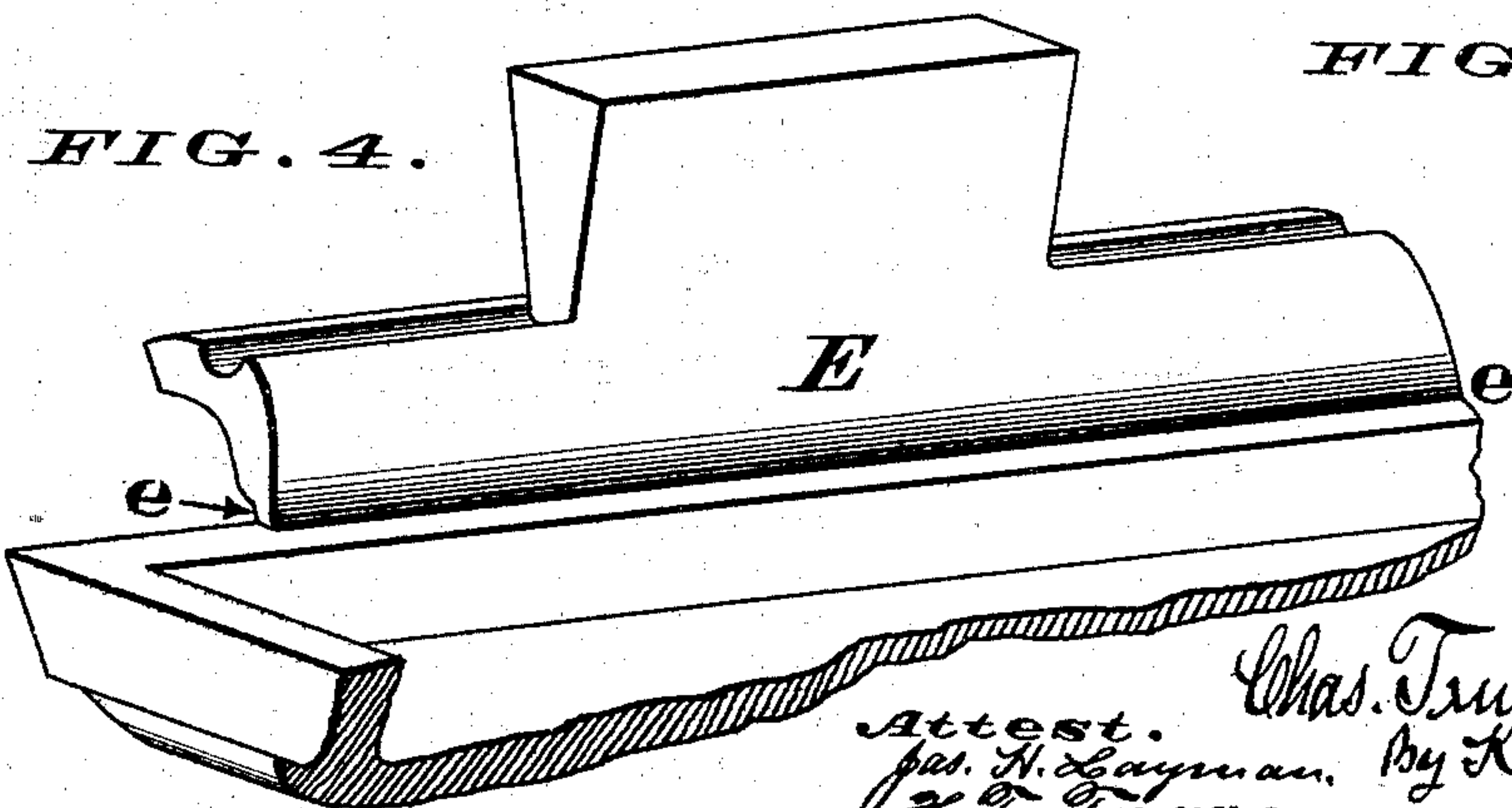
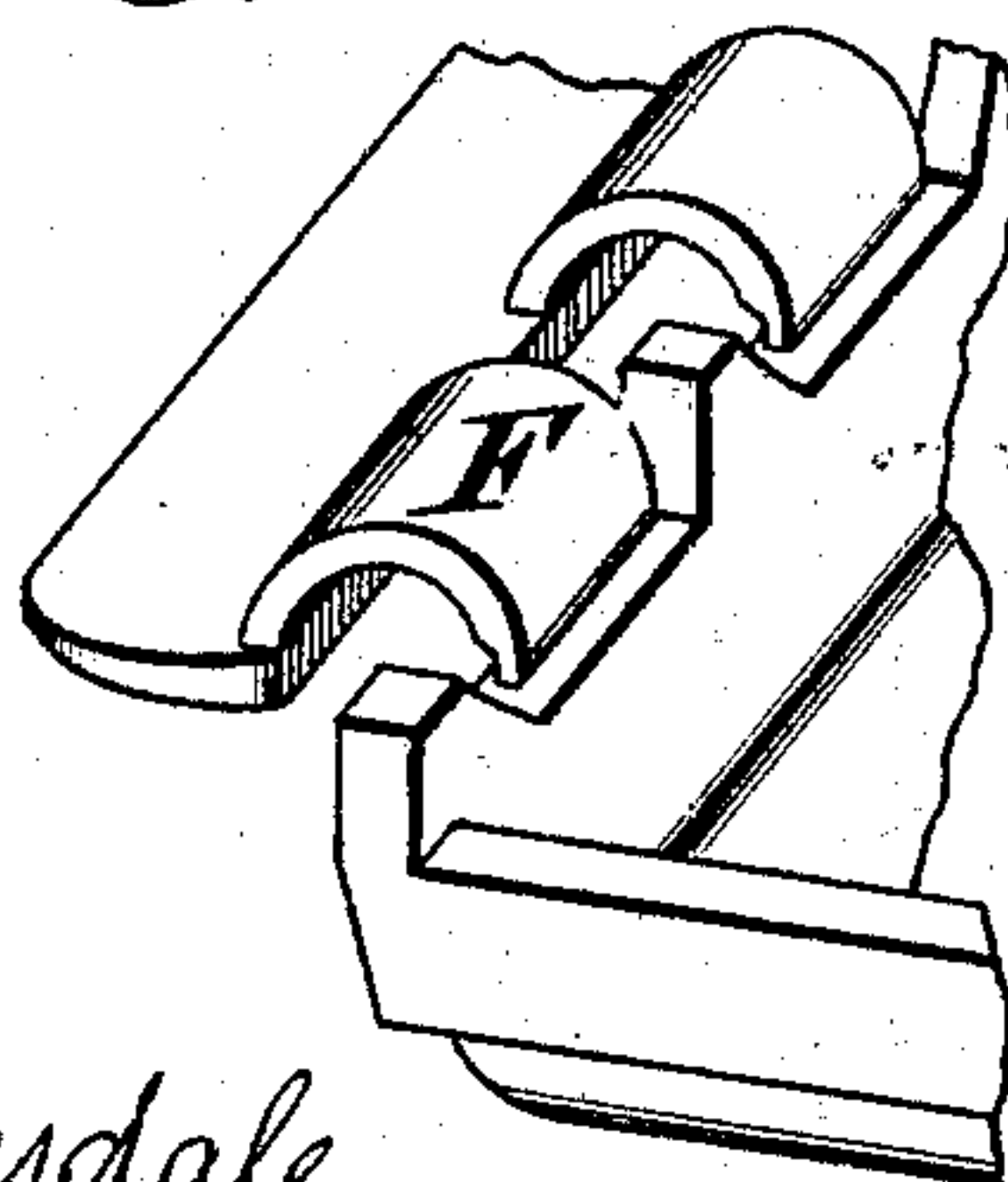


FIG. 5.



Attest.
Jas. H. Layman.
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Chas. Truesdale.
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Att'ys.

UNITED STATES PATENT OFFICE.

CHARLES TRUESDALE, OF CINCINNATI, OHIO.

IMPROVEMENT IN GATES FOR CASTINGS.

Specification forming part of Letters Patent No. **153,863**, dated August 4, 1874; application filed June 4, 1874.

To all whom it may concern:

Be it known that I, CHARLES TRUESDALE, of Cincinnati, Hamilton county, Ohio, have invented a new and useful Gate for Castings, of which the following is a specification:

My invention relates to an improved mode of forming the gate or inlet-passage for molten metal to an ordinary sand-mold, which secures the advantages of prompt access of the metal to all parts of the matrix without liability of disturbing the sand or "facing," and without leaving any scar upon the external or exposed face of the casting.

In the accompanying drawing, Figure 1 is a perspective view of a portion of a stove-door pattern embodying my improvement. Fig. 2 is a vertical section through a portion of the mold before removal of the gate and pattern. Fig. 3 is a similar section of the same after the removal of the pattern and gate. Fig. 4 is a perspective view of a portion of the casting before separation of the sprue. Fig. 5 is a perspective view of a modification of the improvement.

My invention is particularly designed to facilitate the perfect casting of the doors and other external plates of a stove, and its essential feature is the wing or flange A, which, receiving in its grooved upper edge, C, the front of the common wedge-formed gate B C, reaches the rear edge of the pattern D by an ogee curve, as shown.

It will be perceived that the form of the said wing is such as to pass by easy curves from the inlet B to the raised margin *d* of the pattern D, with which latter it is tangential at the line of junction of the wing A with the margin *d*, at which junction the said wing is narrowed, so that, when cast, the resulting sprue E, being weaker at the line *e* than elsewhere, shall readily separate at that line on being subjected to a smart blow, or, in other words, shall break close to the casting, so as to leave as slight a scar as possible, and that on the unexposed or rear surface of the casting. In order to compensate for this lessened thickness at the part *e*, and at the same time to introduce the metal promptly to distant portions of the matrix, I give the wing an expansion in the plane of the margin *d*, as shown. This expansion is further useful by enabling

the wedge to be placed at whatever part of the wing it is most desirable to concentrate the flow of metal, varying with diverse forms of matrix, or two or more inlets may be made into one wing. The groove C facilitates the application of the wedge B, and serves to hold it immovable after its insertion.

In case it shall be necessary to compact or "dress" the gate-opening, so as to prevent the liability of the washing down into the matrix of the loose fragments of sand, such dressing can be readily accomplished, because all parts are accessible.

It will be seen that this form of inlet avoids the concussion of molten metal at any place in a line perpendicular to the opposing surface of the matrix; nor is the metal compelled to pass around acute salient angles, actions which, in the customary modes of gating in this class of manufacture, operate to wash down portions of the mold, causing inequalities of surface and thickness in the castings, so as to waste material by useless thickness in particular spots, and at the same time to seriously deface the work, and thereby injure its sale. The expansion of the inlet-wing in the direction of the length of the margin *d* and the directly-tangential passage of the metal at this part enable the sprue to be made thinner at the line of junction, and consequently to part with the greatest facility, and with the nearest possible approximation to an even and unblemished surface at the place of fracture. Hence the rear edge of the door, stove-top, or other plate requires little or no grinding or filing. In the application of my improvement to stove-tops absolutely no finishing or dressing is required, because the scar is left on the under side wholly of the plate, which is neither exposed to view nor is in contact with any other part. This form of gate produces no salient and uncompact angles of sand, liable to be washed away by the entering flow of metal. The passage of the entering metal being comparatively easy, it can be run without being brought to such a heat as to endanger the substance of the facing, and thereby to produce a rough and unfinished cast. When the form of casting is such as not to admit of a continuous wing, a wing composed of a number of separated members may be

employed, as shown at F, Fig. 5. This form of my gate is applicable to castings which may have projections or "stops" so placed as to prevent a continuous wing, as shown in Fig. 1. While preferably curved, as shown, it is evident that my wing might answer substantially the same purpose if composed of a succession of obtuse angles, as shown at X; and I therefore claim such as a modified form of my improvement.

I do not claim novelty in flattened and expanded wings, or concealed junctions, separately considered; but

What I do claim, and desire to secure by Letters Patent, is—

The mode of gating molds for marginally-flanged castings by means of a pattern having a reversely curved or inclined wing, A, extending obliquely downward from the sprue or inlet, and having a thin extended junction with the rear or concealed edge of the flange *d* of the pattern D, and tangential thereto, as and for the purposes set forth.

In testimony of which invention I hereunto set my hand.

CHAS. TRUESDALE.

Attest:

GEO. H. KNIGHT,
JAMES H. LAYMAN.