

**No. 666,884.**

**Patented Jan. 29, 1901.**

**E. C. McFARLAND.**  
**MOLD FOR CASTING TYPE.**

(Application filed June 4, 1898.)

(No Model.)

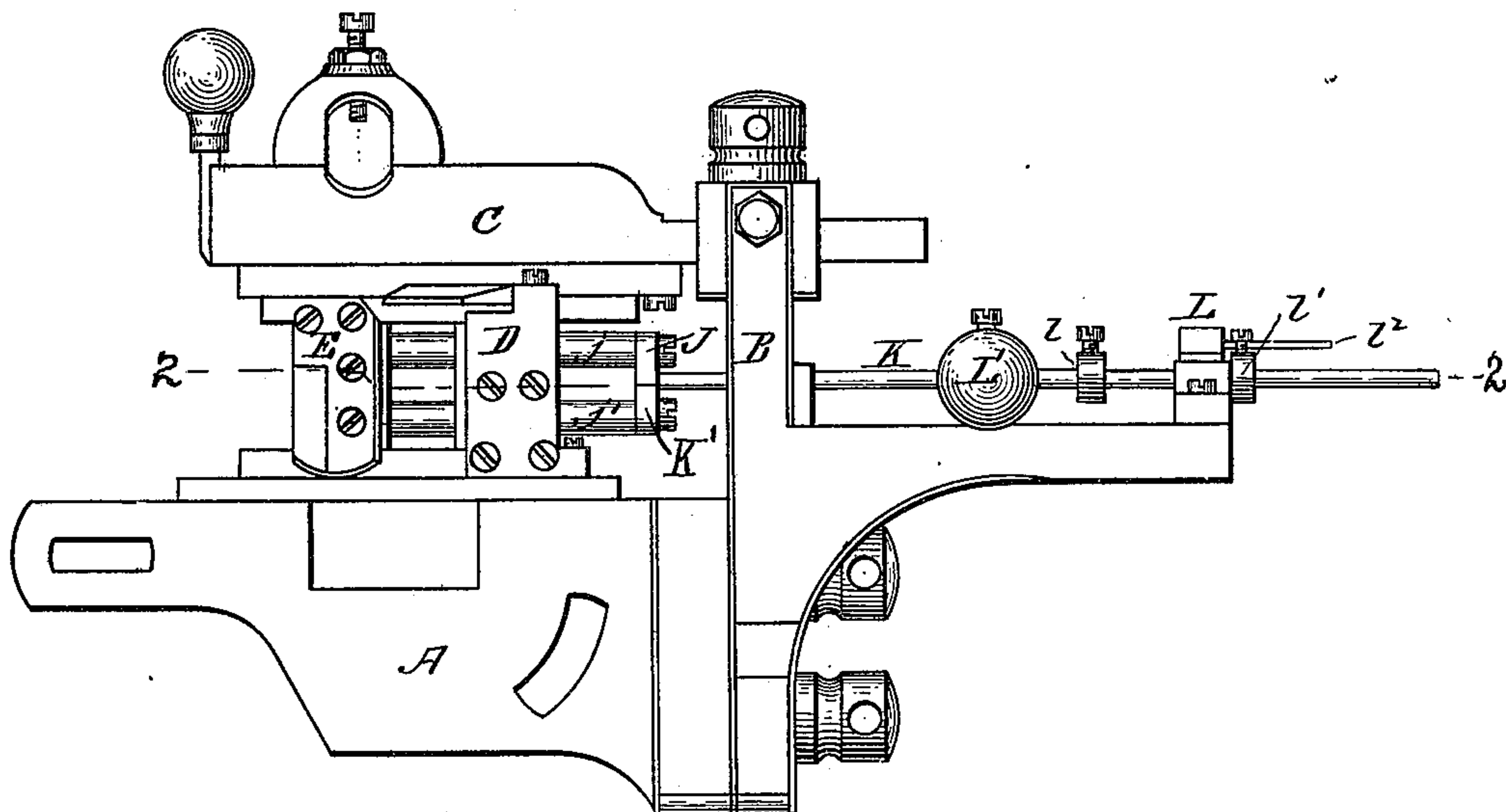


Fig. 1.

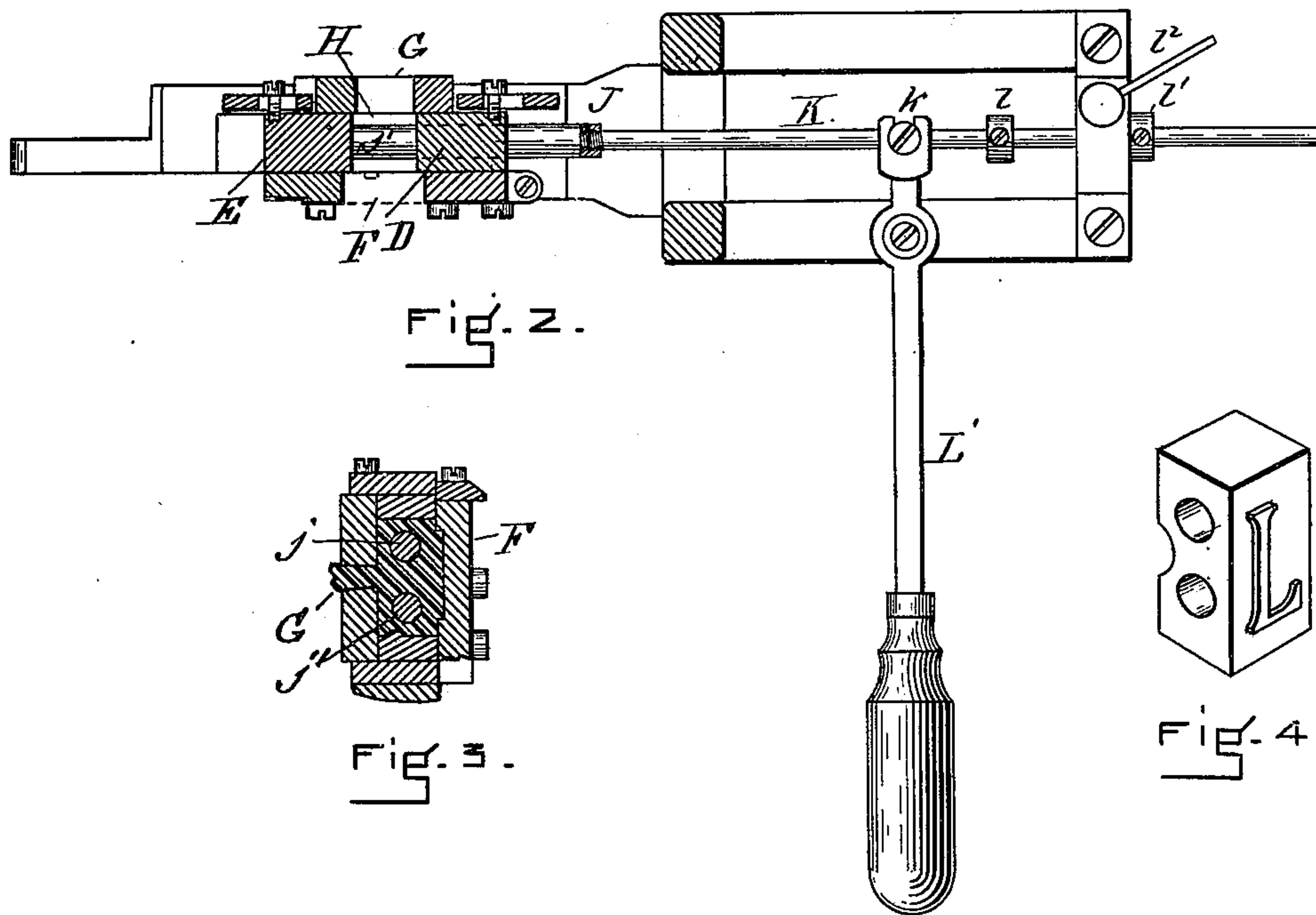


Fig. 2.

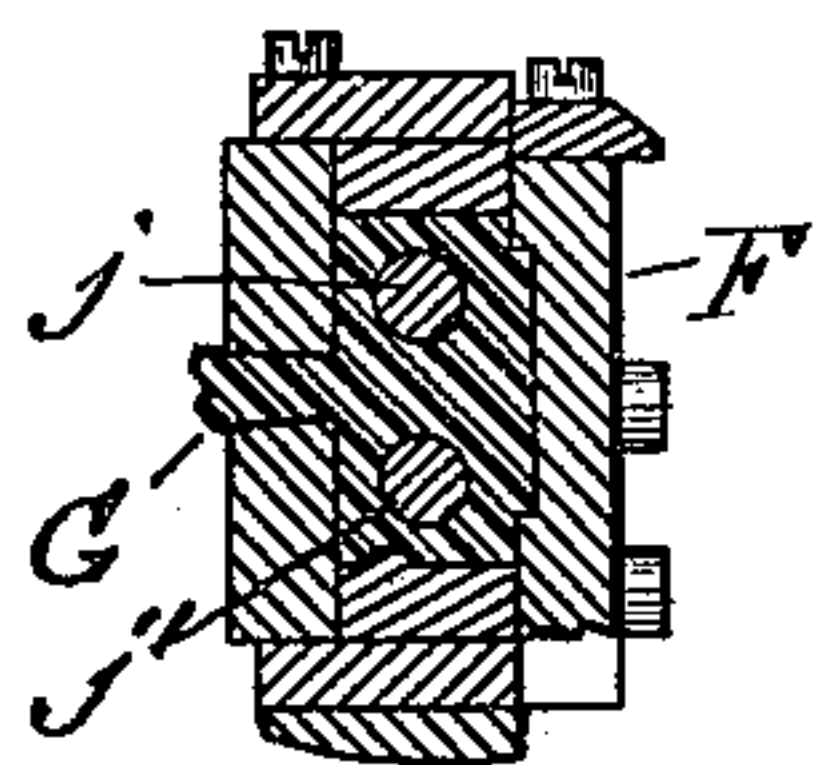


Fig. 3.

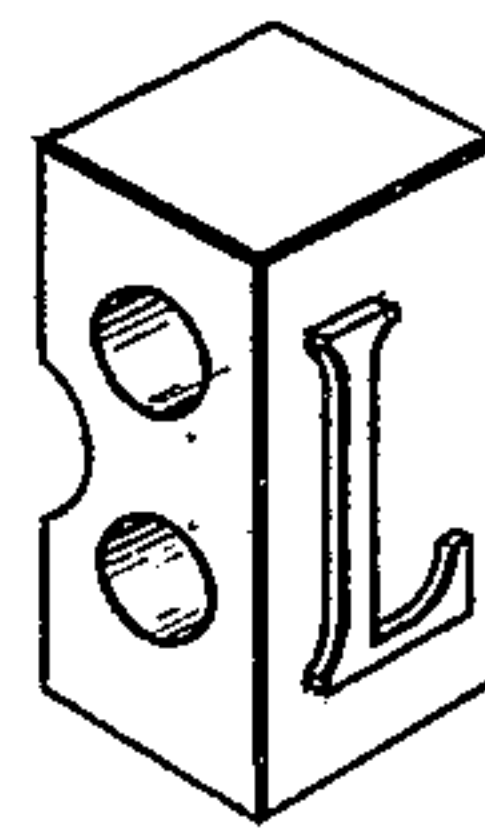


Fig-4.

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# UNITED STATES PATENT OFFICE.

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## MOLD FOR CASTING TYPE.

SPECIFICATION forming part of Letters Patent No. 666,884, dated January 29, 1901.

Application filed June 4, 1898. Serial No. 682,605. (No model.)

*To all whom it may concern:*

Be it known that I, EDWIN C. MCFARLAND, of Melrose, in the county of Middlesex and State of Massachusetts, have invented a new and useful Improvement in Molds for Casting Type, of which the following is a specification.

Types of a large size when cast solid are both heavy for the type-setter to handle and also expensive, in that considerable metal is required for casting them. I have found, however, that by introducing into the mold-cavity a suitably-shaped core which may be withdrawn from the filled mold before the type is thrown out apertures may be formed in the type of such a size as to materially reduce its weight and of such a shape and so located as to leave a framework sufficiently strong to withstand the crushing action of the printing-press and such other pressure as type is usually subjected to. A type will thus be formed which will combine lightness, cheapness, and strength with the size essential for the largest faces in general use, the openings in the type always bearing the same relations both to the face and feet of the type, thus insuring a framework to support the face which shall be predetermined and uniform in shape, and consequently in strength, throughout the font.

My invention is especially applicable to all the larger sizes of type from fifty-four point upward.

In the practice of my invention I prefer that the core used should be cylindrical, for the reason that the arrangement of the metal about an aperture formed by such a core gives to the type the greatest strength with the least substance, so that it will fully withstand all the ordinary pressure given to it without crushing. It is evident, however, that the shape of the core by means of which these apertures are made and their number may be varied to suit the requirements of any particular case.

My invention is intended to be practiced more especially in those cases where the metal is forced into the mold by pressure, such as is now the usual practice in machine-cast type; and my invention consists especially in the mold hereinafter described, provided with

a core-piece having one or more cores and means whereby this core-piece is operated, these cores being preferably so shaped and so located within the mold when the casting operation is to take place that they will in no wise impede the movement of the stream of metal as it comes into the mold-cavity, but will allow the metal free passage to the matrix and, being withdrawn after the metal has set, will leave a structure capable of withstanding the pressure both vertical and lateral to which type is subjected when in use. Therein my present invention differs from a mold in which the entrance is constricted or the location of the entrance is changed according to the shape or size of the matrix, the purpose of the core in such a case being to partially close the entrance to the mold-cavity and to provide both a groove and feet for the type, as well as a more perfect casting, and also from that form of mold in which a core lies at right angles to the matrix, so that the product of the mold is a "mortised type," so called.

In describing my invention below I have used the term "core-piece" to indicate the structure, whether composed of one or more cores proper, which causes the formation of the apertures above referred to.

In the drawings, Figure 1 is a front elevation of a mold embodying my invention, the matrix being omitted. Fig. 2 is a horizontal section on line 2 2 of Fig. 1. Fig. 3 is a cross-section of the mold-cavity filled with metal, and Fig. 4 is a view of the finished type.

A is the base or bed piece, carrying a post B, to which is hinged the upper portion of the mold C. The piece A carries an adjustable upright D, and the piece C carries a downwardly-projecting portion E, also adjustable, which, with the part D, form the side walls of the mold-cavity H, the parts A and C forming the top and bottom of this cavity.

F is the matrix, which is shown only in Fig. 3.

G is the entrance to the mold-cavity H.

Within the mold-cavity and passing through suitable openings in the upright D is the core-piece J, which, as shown, consists of two cylindrical cores  $j j'$ , projecting from a yoke K', attached to the end of a rod K, run-



ning in a suitable clamping-support L, carried by the bed-piece A. This support L is a portion of a frame, to one side of which is pivoted the handle-lever L', the front end of  
 5 which engages with a suitable post k on the rod K.

l l' are collars by means of which the throw of the core into the mold-cavity can be adjusted, and l<sup>2</sup> is a set-screw for the purpose  
 10 of clamping the rod K, which is desirable during the casting process.

The operation of my device is as follows: It is designed to be attached in front of the nozzle of the metal-pot, so that the metal may  
 15 be forced therefrom into the mold-cavity by pressure in the usual manner. The core-piece J, as shown, has two cores j j', which, it will be noticed, are located one on each side of the entrance of the mold-cavity, so that  
 20 they will in no wise interfere with or obstruct the flow of metal into the cavity. In practice the operator first adjusts the collars l l' upon the rod K so that the inward throw of the rod will cause the cores to abut against  
 25 the opposing wall E of the mold-cavity and the outward throw to withdraw them entirely from the mold. He throws the core-pieces in and binds them in place by turning the clamp-screw l<sup>2</sup>. The stream of metal is then forced  
 30 into the metal-cavity, and when the mold-cavity is full and the metal is set somewhat the set-screw l<sup>2</sup> is released and the core-pieces are withdrawn. It will be noted that the mold with the core-pieces when used as described will produce a type which will not  
 35 only be much lighter than if solid, but will be able to receive and withstand any strain in any direction to which it would be likely to be subjected, thus making a type which  
 40 is sufficiently strong for all practical pur-

poses and is also lighter, easier to handle, and cheaper. In case the type is to be subjected to a very heavy pressure the core may be thrown not quite so far into the mold—that is, so that the cast type will have a shell,  
 45 say, one-eighth of an inch thick, closing one end of each perforation, such a shell adding somewhat to the resisting power of the type. It will be noticed that the core shown is supported only at one end and is free to be moved  
 50 in and out from the mold without contact with either of its faces. With the smaller size of type a single core could be used instead of a double core, as shown, and with a larger type three cores would perhaps be used with  
 55 advantage. After the type has been removed from the mold the jet is removed and it is grooved in the usual manner.

What I claim as my invention is—

In a hinged type-mold having a metal entrance or gate in one wall and a place for a matrix in the opposite wall, a movable core-piece consisting of a yoke having two cores projecting therefrom, said cores extending  
 60 from one side to the other of the mold parallel to the entrance and matrix-walls thereof and midway between them, the space between said cores lying opposite to the metal-entrance of said mold, the yoke carrying said  
 65 cores lying outside said mold and being provided with mechanism whereby said cores may be withdrawn from and enter into said mold while said mold is closed, as and for the purposes set forth.

In testimony whereof I have hereunto set  
 my name this 26th day of May, 1898.

EDWIN C. McFARLAND.

Witnesses:

GEORGE O. G. COALE,  
 E. A. GUILD.