

(No Model.)

J. P. HUNT.
PREPARING TYPE FORMS.

No. 253,057

Patented Jan. 31, 1882.

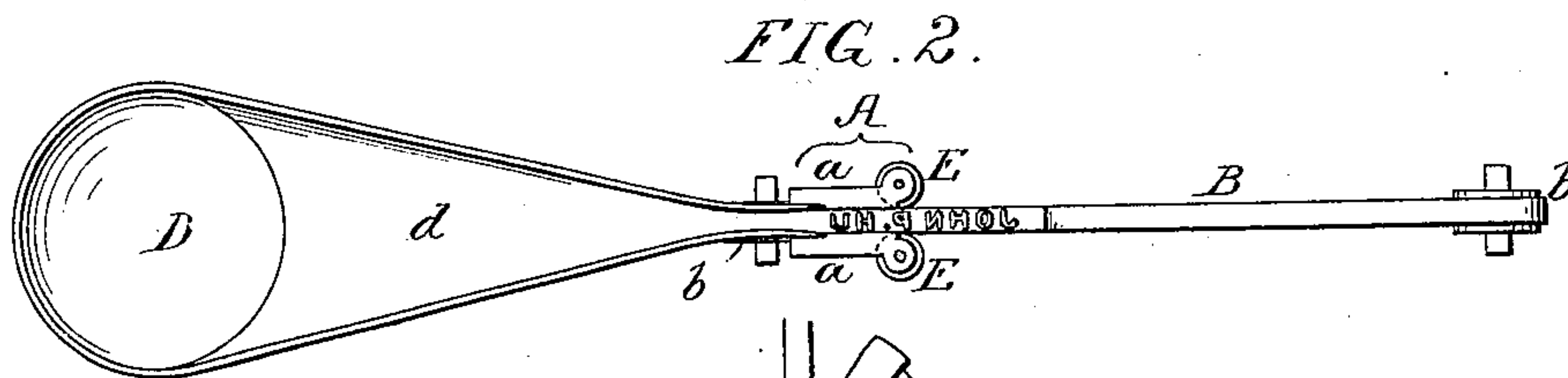
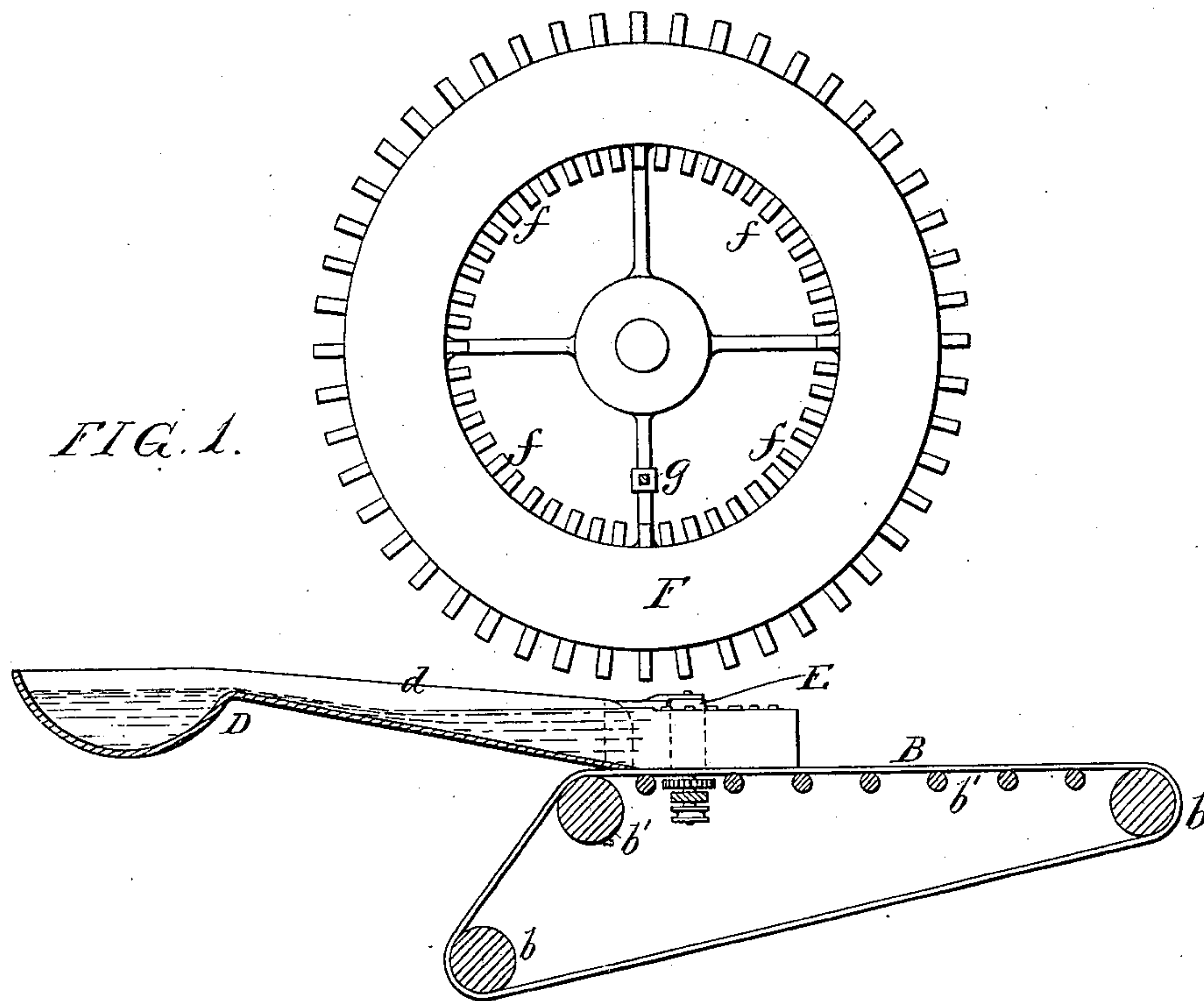
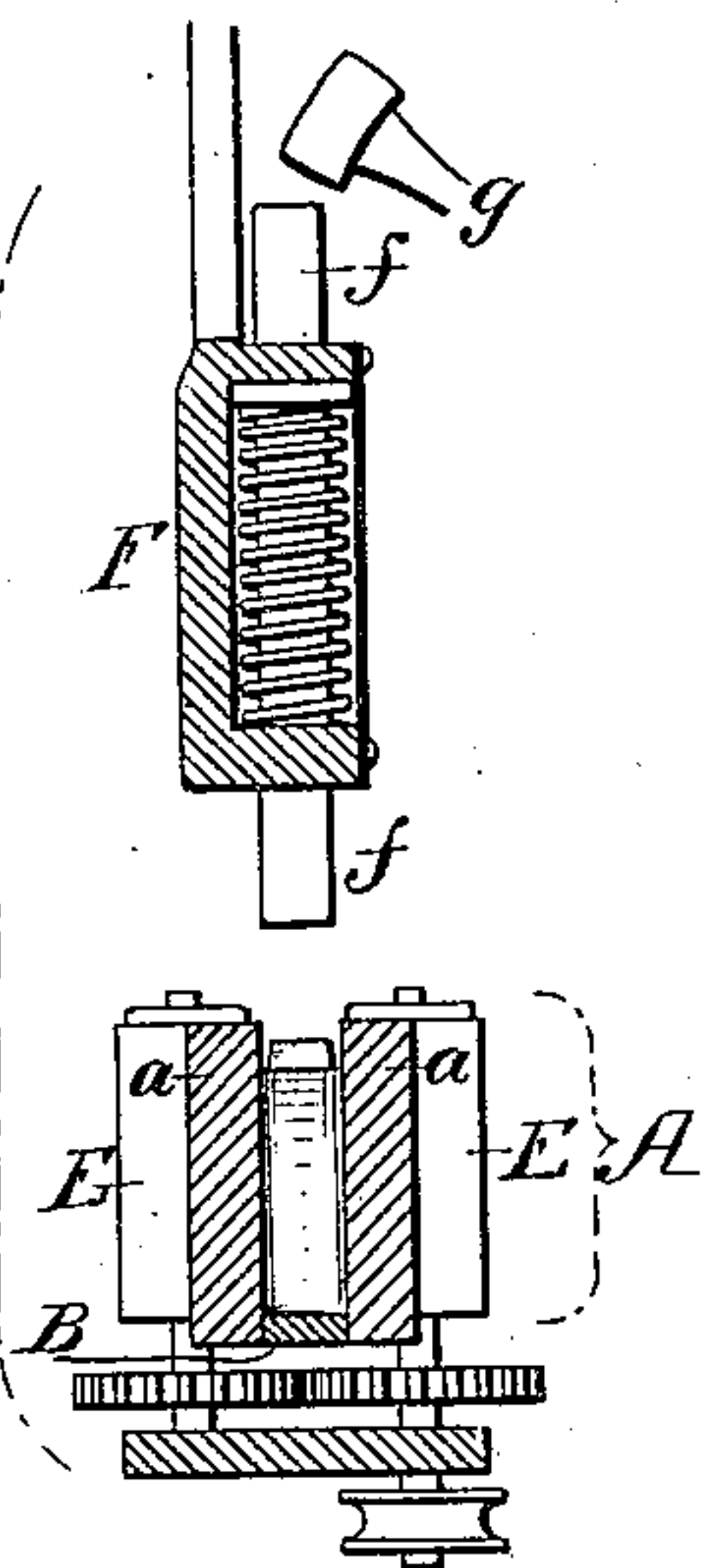


FIG. 3.



Witnesses:

Harry Drury
James F. Tobin.

Inventor
John P. Hunt
by his attorneys
Howe and Jones

UNITED STATES PATENT OFFICE.

JOHN P. HUNT, OF PHILADELPHIA, PENNSYLVANIA.

PREPARING TYPE-FORMS.

SPECIFICATION forming part of Letters Patent No. 253,057, dated January 31, 1882.

Application filed June 29, 1881. (No model.)

To all whom it may concern:

Be it known that I, JOHN P. HUNT, a citizen of the United States, residing in Philadelphia, Pennsylvania, have invented an Improvement in Preparing Type-Forms, of which the following is a specification.

The object of my invention is to facilitate the preparation of printing-forms by dispensing with the necessity of setting up separate types into line, as usual; and this object I attain in the manner which I will now proceed to describe, reference being had to the accompanying drawings, in which—

Figure 1 is a diagram illustrating the main features of apparatus for carrying my invention into effect; Fig. 2, a plan view of part of the same, and Fig. 3 a transverse section of part of the apparatus on a larger scale.

The plan of preparing printing-forms by setting up independent types into line is a tedious and costly method, which it is the aim of my invention to replace.

In carrying out my invention I maintain a mass of molten or semi-molten type-metal in a suitable trough or channel, and form the successive letters and characters directly upon the upper surface of this mass of metal by the impact of matrix-bars, the mass of metal as it solidifies into a bar being drawn along through the trough or channel, so that new surfaces are continually being presented to the action of said matrix-bars.

In the drawings, A represents the trough, which comprises opposite side bars, *a a*, and a movable bottom, B, the latter consisting of a flexible belt of steel, or of a series of linked plates passing over and around suitable rolls, *b b'*, the joints between the sides and bottom of the trough being such that while the escape of metal at these points is prevented, said bottom can be readily traversed by turning one or both of the rolls *b'*. The trough A communicates at one end through an inclined spout, *d*, with a reservoir, D, in which the type-metal is kept in a molten condition, and from which said molten metal descends through the spout into the trough, and is maintained in the latter at a height equal to that of an ordinary type. The reservoir D is gradually elevated and tilted as the supply of metal in the same is diminished, so that a uniform flow of metal down the

spout *d* is insured. At the opposite end of the trough A are a pair of vertical rolls, E E, the inner faces of which are in line with the inner faces of the sides *a a* of the trough.

Above the trough is hung a disk, F, which carries a series of bars, *f*, the ends of the latter forming matrices for the various letters and characters used in the preparation of the desired printing-form, these bars being preferably acted upon by springs, which tend to elevate them, and being depressed by a hammer, *g*, under which they are brought, as required, by the partial rotation of the disk F, the latter being connected to the keys of a key-board in such a manner that any one of its matrix-bars can be brought under the hammer *g* by depressing the corresponding key on the key-board.

When the apparatus is in operation a mass of molten or semi-molten metal is maintained in the trough A, and the bar formed by the solidification of the said mass as it reaches the end of the trough is grasped by the rollers E. The disk F being turned so as to bring the proper matrix-bar *f* into position beneath the hammer *g*, the latter is depressed and the matrix is caused to strike the surface of the metal in the trough, which by contact with the matrix is chilled and compressed, so as to form in relief the letter or other character engraved in the matrix. The rollers E and the movable bottom B are then operated, so as to feed the solidified portion of the mass forward to the desired extent, the disk F meanwhile having been partially rotated, so as to bring another bar *f* into position for making its impress upon the surface of the metal, and this operation is repeated indefinitely, a fresh supply of molten metal being fed into one end of the trough A as the solidified type-bar is drawn from the opposite end of the same. The metal immediately upon being fed into the trough is chilled by contact with the bottom and sides of the latter, and this forms a shell on the molten mass and permits the feeding operation above alluded to.

A complete machine based on my invention will include mechanism for automatically governing the feeding operation in accordance with the width of the impression made by each matrix-bar, as well as devices for dividing the type-bar into proper lengths and arranging the latter in the form; but the details of the machine

will form the subject of a separate application for a patent and need not be described here.

I claim as my invention—

1. The mode herein described of making type-
5 bars for printing, said mode consisting in main-
taining a mass of molten or semi-molten metal
in a trough or channel, impressing characters
upon the face of the same by suitable matrices,
and feeding the bar from the trough or chan-
o nel as it solidifies, as set forth.

2. The combination of the trough, the reser-
voir for supplying molten metal thereto, a disk,
F, carrying matrix-bars *f*, and means, substan-
tially as described, for depressing said bars, as
5 set forth.

3. The combination of the trough, the metal-
reservoir, the matrices, and the movable bot-
tom B of the trough, as set forth.

4. The combination of the trough, the metal-
reservoir, the matrices, and the feed-rolls E, as 20
set forth.

In testimony whereof I have signed my name
to this specification in the presence of two sub-
scribing witnesses.

JOHN P. HUNT.

Witnesses:

HARRY DRURY,
HARRY SMITH.