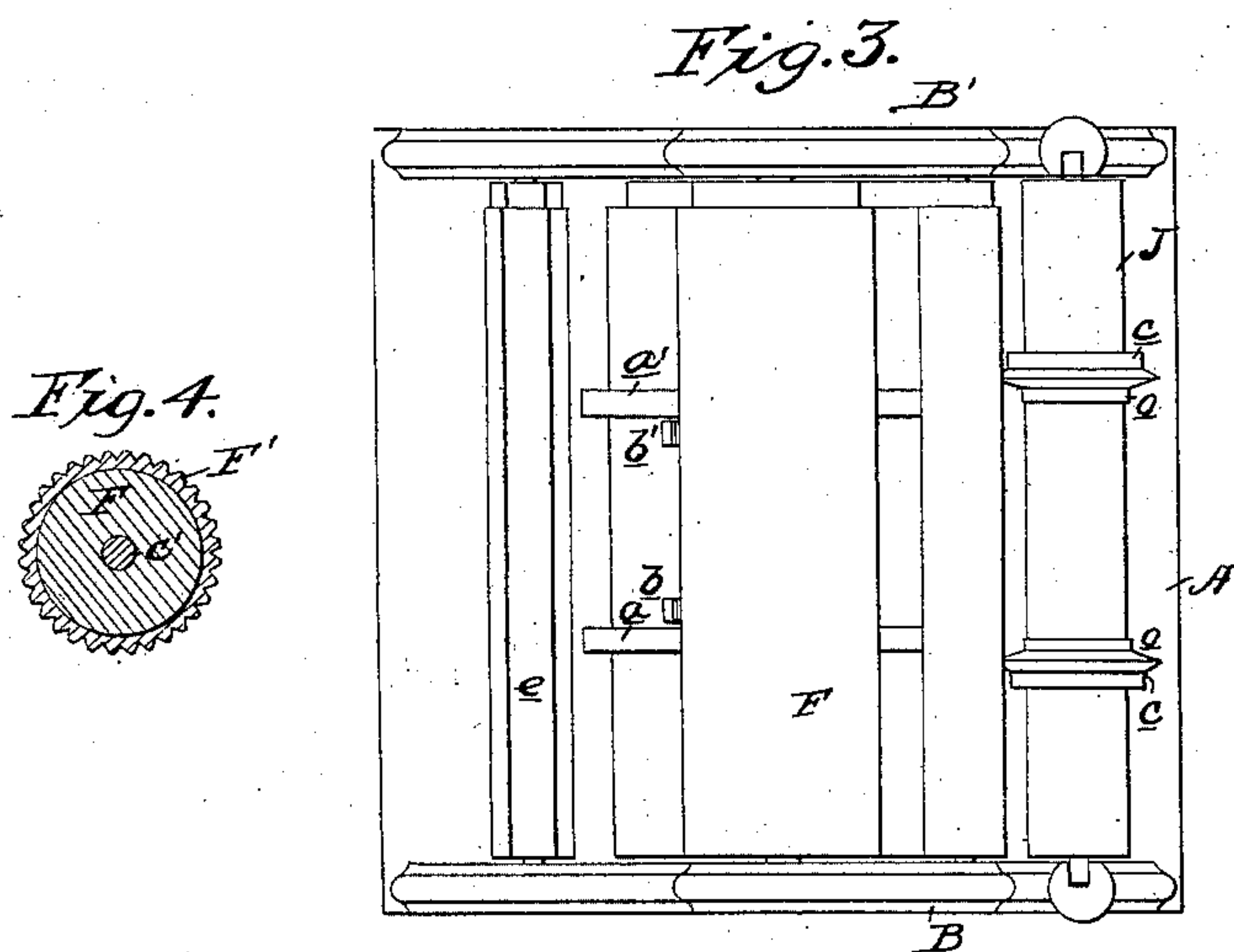
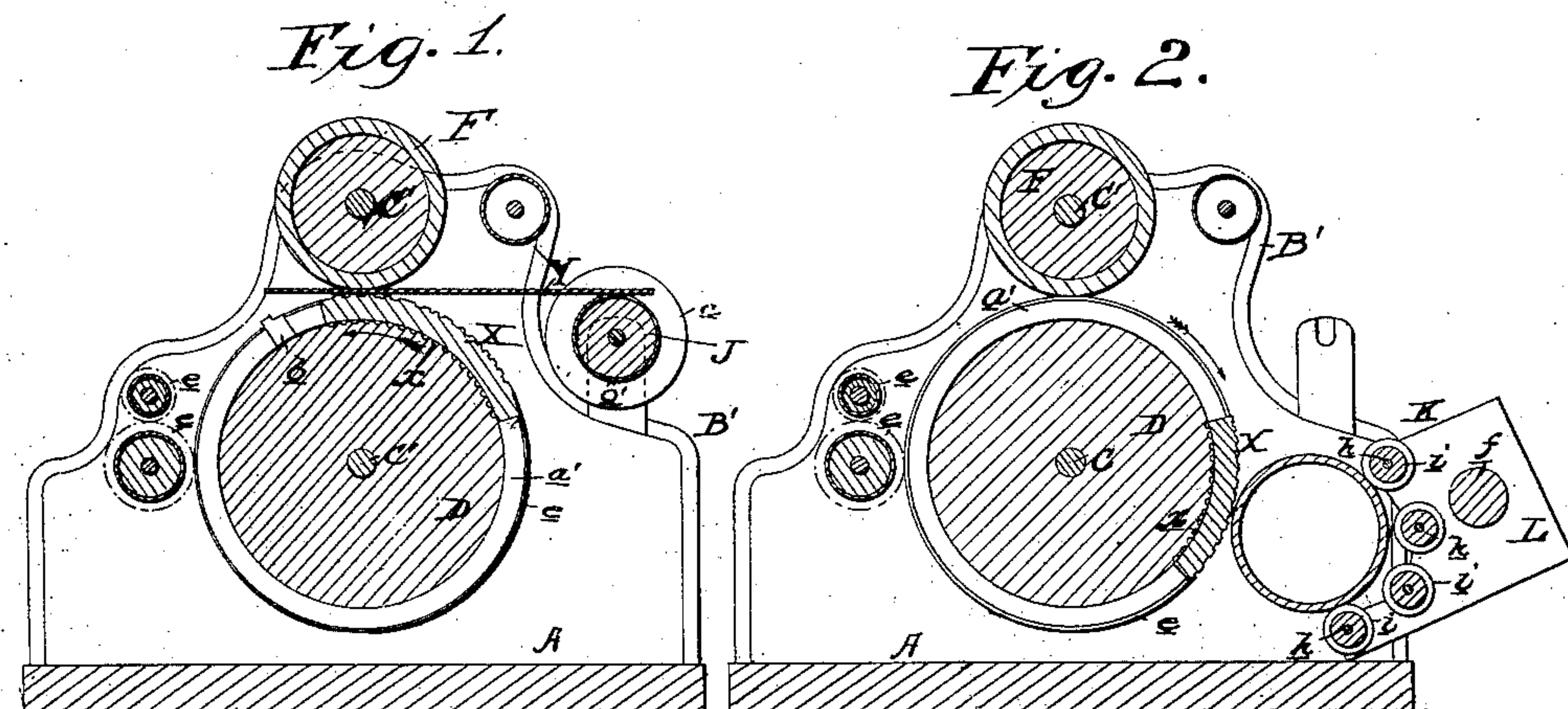


I. L. MILES.
APPARATUS FOR PRINTING ON GLASS.

No. 62,666.

Patented Mar. 5, 1867.



Witnesses
W. H. Allen & Co.
R. H. Allen

Inventor
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By his attorney
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United States Patent Office.

ISAAC L. MILES, OF CHARLESTOWN, MASSACHUSETTS.

Letters Patent No. 62,666, dated March 5, 1867.

APPARATUS FOR PRINTING ON GLASS.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, ISAAC L. MILES, of Charlestown, Massachusetts, have invented an improved Apparatus for Printing on Glass, etc.; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawing, and to the letters of reference marked thereon.

My invention consists of certain devices, fully described hereafter, whereby impressions may be rapidly and correctly transferred from a form of elastic type to plates or cylinders of glass or other material.

In order to enable others skilled in the art to make and use my invention, I will now proceed to describe its construction and operation. On reference to the accompanying drawing, which forms a part of this specification—

Figure 1 is a sectional elevation of my improved apparatus for printing on glass, etc., showing the parts arranged for printing on flat plates.

Figure 2 the same, showing the parts arranged for printing on curved or cylindrical bodies.

Figure 3, a plan view of fig. 1; and

Figure 4, a detached sectional view showing a modification of part of the apparatus.

A is a base-plate, to which are secured two side-frames, B and B', and in the latter turn the journals of two parallel shafts C and C', to which are secured rollers D and F. To the face of the lower roller D are secured two adjustable annular or curved ways $a a'$, the edges of which are covered with strips $e e$ of gum elastic or other suitable elastic material, and to the roller, between the said ways, is secured a detachable form of elastic type, X, the curved surface of which is level with or projects slightly above the edges of the ways. When the roller D is made of wood, corrugations or grooves x are formed in the surface of the same beneath the type X for a purpose described hereafter. To the roller D, between the ways $a a'$, are secured adjustable stops or guides $b b'$, and in the side-frames B B' turn the journals of a roller, J, on which are rubber rings $o o$, the upper edges of the said rings being level with the upper edges of the ways $a a'$. On the roller J are two adjustable guides or rings $c c$. The roller F is adjustable vertically, and is covered either wholly or partly with gum elastic or other suitable elastic material, the surface of the elastic covering being a short distance from the edges of the ways $a a'$. In the side-frames, at one side of the roller D, turn the journals of inking rollers $e e$, which are so arranged as to apply the ink or other material to the surface of the type X, when the latter is carried past them. Between the side-frames slides an adjustable frame K, in the sides of which turn the journals of rollers $h h$, and on each roller are two or more adjustable elastic rings $i i$. The different parts of the apparatus being in the position shown in fig. 1, a rotary motion in the direction of its arrow is imparted to the roller D, and as the guides $b b'$ are brought towards the roller F, a plate, Y, to be printed on, is placed on the roller J, (so as to rest on the rings $o o$ between the guides $c c$) with its inner edge against the stops $b b'$, the said guides and stops determining the position of the plate in respect to the type X. As the plate is carried between the two rollers D and F, the latter presses on the upper surface of the same and holds it firmly against the ways $a a'$, while the elastic type is brought against the lower surface of the plate and prints the design thereon. In some instances, corrugated bands F' (fig. 4,) may be secured to the roller F, the projections on the band yielding to accommodate themselves to irregularities in the plate, and yet maintaining a firm hold and pressure on the latter so that it is retained in contact with the type and effectually prevented from slipping. When it is desired to print the glass on both sides at the same time, a roller, with a form of elastic type secured to the same, is substituted for the roller F. When a bottle or other cylindrical object is to be printed, the frame K is brought towards the roller D, the roller J and guides $b b'$ are removed, and the bottle is placed on the rollers $h h$ so as to rest on the rings $i i$, the said rings being so adjusted as not to come in contact with the bottle at the point where the same is to be printed. A rotary motion in the direction of the arrow (fig. 2) is imparted to the roller D, the frame K is moved to the position shown in fig. 2, and the bottle is thus brought against the ways $a a'$, and is caused by the motion of the latter to revolve so that it shall receive an impression from the type, which is brought in contact with and carried past the same. A vibrating or revolving segment, with the type X secured to the curved face of the same, may be substituted for the roller D in some instances; also two or more adjustable rollers h , the journals of which turn in the side-frames B B' may be substituted for the carrier K so as to form a permanent rest for the bottles to be printed. A pressure pad or springs may also be used in place of the roller F. When

corrugations or grooves *z* are made in the face of the roller or segment at the point where the type is secured to the same, the expansion or contraction of the roller or segment, from being moistened when the type is cemented in its place, is prevented, and the uniformity of the curved surface is thus preserved.

I claim as my invention, and desire to secure by Letters Patent—

1. A roller or segment *D*, to which are secured curved ways *a a'*, and a form of elastic type, *X*, in combination with inking rollers *e e*, and a pressure-roller *F*, or their equivalents, the whole being arranged and operating substantially as and for the purpose described.

2. The roller or segment *D* with its ways and type, in combination with two or more rollers *h h*, substantially as and for the purpose specified.

3. The adjustable stops or guides *b b'*, in combination with the roller or segment *D*, substantially as and for the purpose set forth.

4. The corrugated bands *F'*, in combination with the roller *F*, for the purpose specified.

5. The roller *J*, with its adjustable guides *c c*, arranged in respect to the roller *D*, substantially as described.

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

I. L. MILES.

Witnesses:

CHAS. E. FOSTER,

JOHN WHITE.