

(No Model.)

B. A. DOLAN.
COPYING PRESS.

No. 373,769.

Patented Nov. 22, 1887.

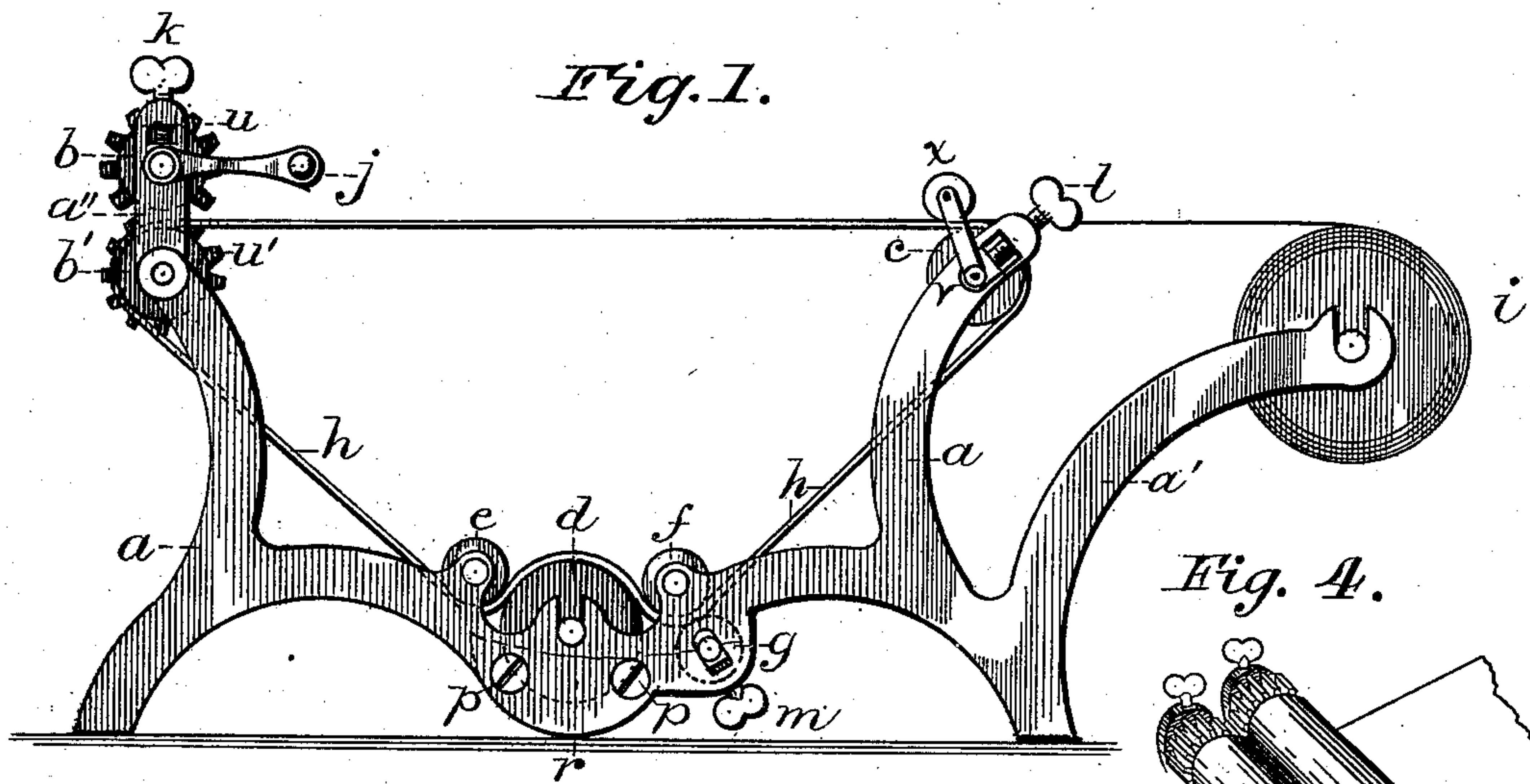


Fig. 4.

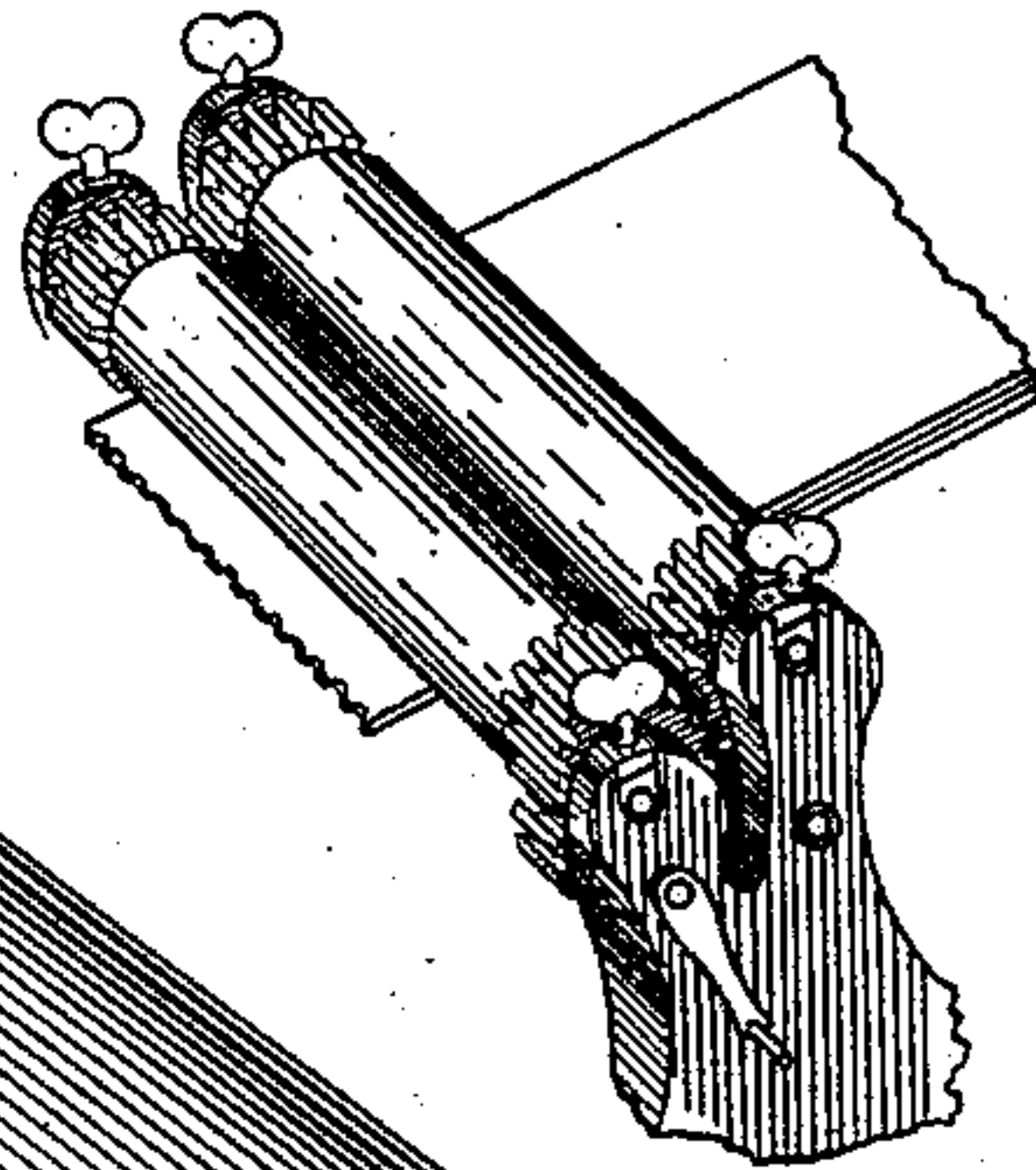


Fig. 2.

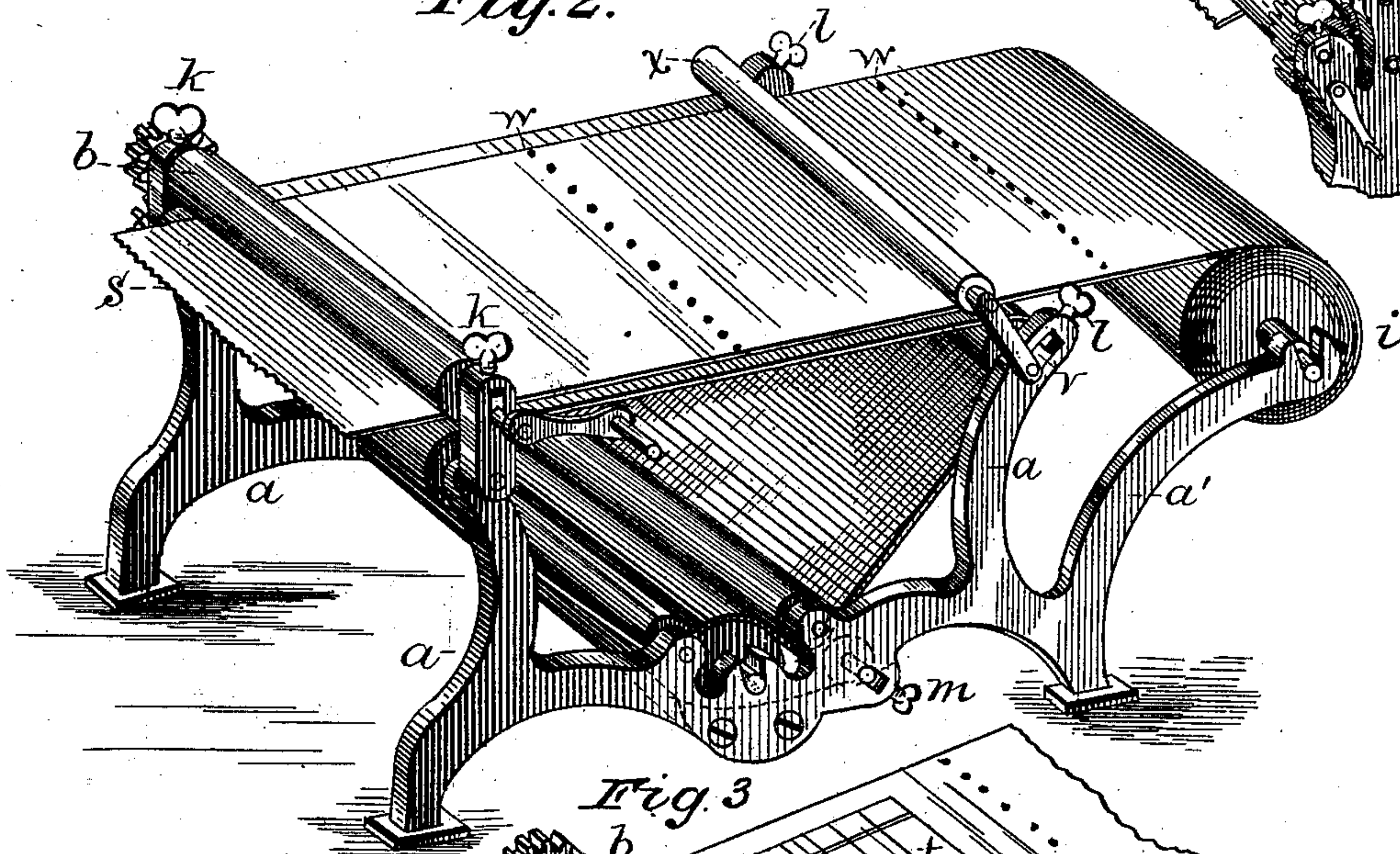
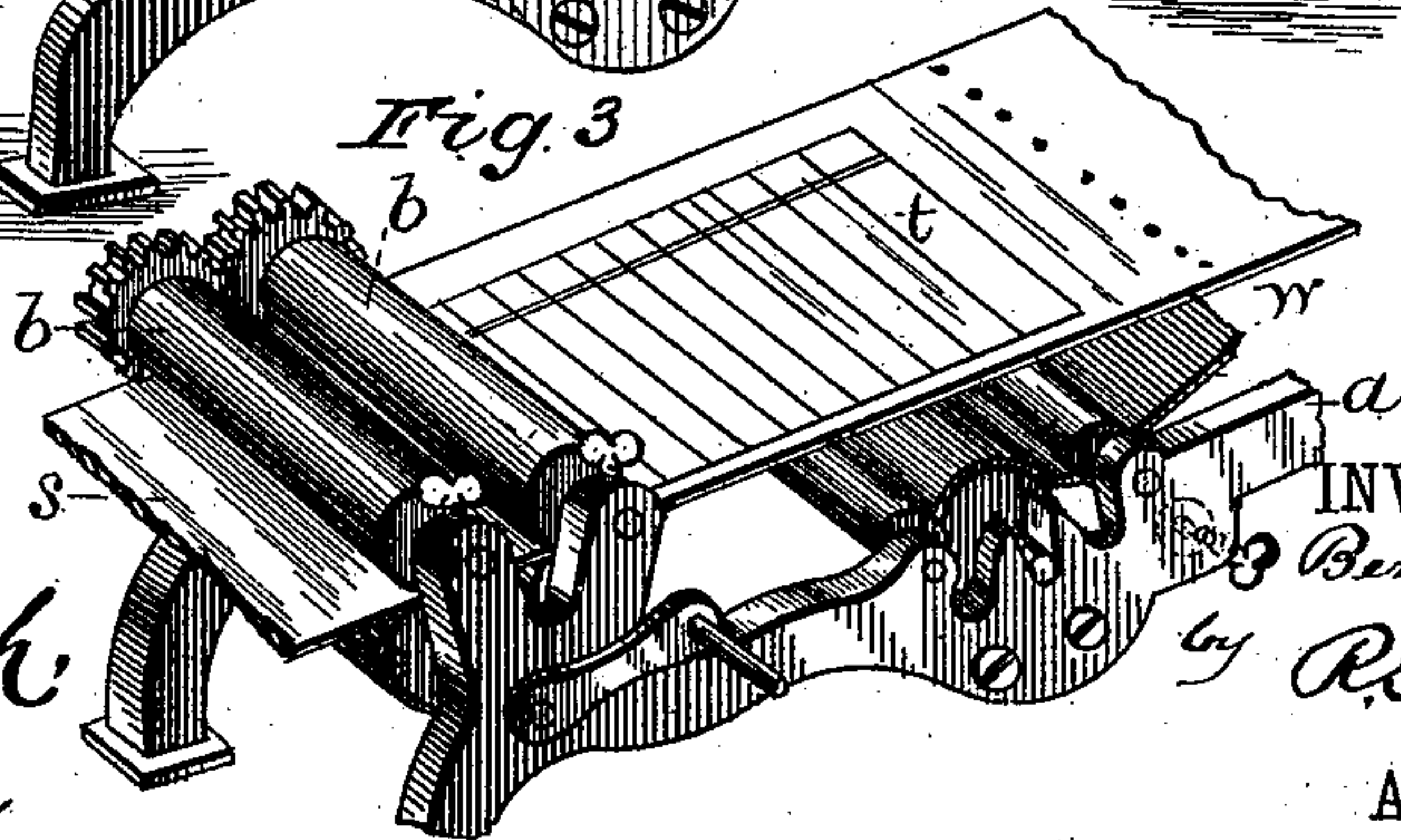


Fig. 3.



WITNESSES:

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COPYING-PRESS.

SPECIFICATION forming part of Letters Patent No. 373,769, dated November 22, 1887.

Application filed August 19, 1884. Serial No. 140,987. (No model.)

To all whom it may concern:

Be it known that I, BERNARD A. DOLAN, a citizen of the United States, residing at Keokuk, in the county of Lee, State of Iowa, have invented certain new and useful Improvements in Copying-Presses; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to that class of copying-presses in which a pair of pressure-rollers are made to operate in combination with a moistening device; and it consists of the peculiar construction and combinations of parts, more fully described hereinafter, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a side elevation; Fig. 2, a perspective view; Fig. 3, a partial view showing double sets of rollers and a sheet of manuscript passing between them; Fig. 4, a partial view showing rollers with cogs on both ends.

In the said drawings, *a* represents the main frame, and *a'* and *a''* extensions or arms thereof. Said frame is held together by means of screws or bolts *p p*, screwed to the ends of water trough or reservoir *r*.

b', c, f, d, and *e* are rollers about which is stretched a web, *h*. This web is made of some absorptive material, preferably of the composition of rubber pads.

b is an adjustable pressure-roller provided with cogs *u*, and movable bearings operated in slots by thumb-screws *K*, and the office of this roller is to press the web *h*, copying-paper *s*, and manuscript *t* together against the roller *b'*, thereby forcing the moisture of said web into the copying-paper, which absorbs the ink from the manuscript when drawn between the rollers, as shown in Fig. 3. The reservoir *r* supplies water to the web *h* through the agency of roller *d*.

i is a spool of copying-paper journaled in the projection or arm *a'*. At suitable intervals in the copying-paper I make perforations *w*, so that sheets can be easily torn off and preserved in some form of ready binder.

Journaled in the frame *a*, just above the water-trough *r*, is a saturating-roller, *d*, the lower part of which plays in the water contained in said trough and supplies moisture to the web.

This roller may be made more efficient by covering its periphery with some absorbent material, which will serve to equalize the moisture supplied to the web. Rollers *q* and *b* can also be made more efficient in their action by covering their peripheries with some elastic material.

In order to prevent too much moisture being gathered and carried to the copying-paper, I use an equalizing-roller, *g*, provided with adjustable bearings operated by thumb-screws *m*, similar to those of rollers *b c*. This roller presses the web against idler *f* and removes the surplus water from the web. On either side of roller *d* are idlers *e f*, serving to keep the web drawn down over the upper part of saturating-roller *d*. The idler *f* performs the additional function of offering resistance to the roller *g*. The roller *c* is journaled in movable bearings *v*, operating within the slotted frame *a*, and by screwing up or unscrewing the thumb-screws *l* the web may be tightened or loosened, as required.

x is an idler journaled in standards pivoted to the journals of rollers *c*, and serves to dampen the copying-paper passing under it by pressing said paper lightly to the web. The ends of rollers *b b'* are provided with gearing *u u'*, which insures uniform action of the rollers and web.

To operate my invention, partially fill the trough with water. Give the web a few revolutions in order to dampen it. This is done by turning the crank *j*, which operates the whole mechanism. Place the end of the copying-paper upon the web under the idler *x* and carry it along to the rollers *b* and *b'*, so that when the crank is turned the paper will be drawn through. Lay the letter or sheet of manuscript to be copied upon the copying-paper with the written side down, as shown in Fig. 3. Then as the crank *j* is turned both the copying-paper and the manuscript are drawn through the rollers. After the copying-paper has once been started through the rollers *b b'* many sheets of manuscript can be copied in rapid succession by simply laying them on the copying-paper over the web and turning the crank.

It will be noticed from the foregoing that when the trough is once supplied with water and a spool of copying-paper placed in the

bearings the supply of paper and water thus furnished will last for a large amount of copying and the labor of laying on separate sheets of copying-paper dispensed with. The rollers
5 by having movable bearings and thumb-screws can be so nicely adjusted that an exceedingly clean copy of the manuscript can be taken off without the usual wetting and blurring. I sometimes use two sets of rollers, *b b' b b'*, with
10 cogs or gearing on both ends of each roller, as shown in Figs. 3 and 4, and other details in construction, such as might suggest themselves to a skilled mechanic, may be varied without departing from the spirit of my invention.

15 I do not herein broadly claim the combination of a roller containing a continuous sheet of copying-paper and two pressure rollers, one of which is moistened.

Having thus described my invention, what I
20 claim as new, and wish to secure by Letters Patent, is—

1. The combination, in a copying-press, of the frame containing pressure-rollers with the reservoir, moisture-roller, and rollers carrying
25 a web having an idler resting thereon and journaled in standards pivoted to journals of one of the web-carrying rolls, substantially as described.

2. The combination, in a letter-copying press,
30 of a frame containing pressure-rollers with the reservoir, moisture-roller, and rollers carrying an endless web having an idler bearing thereon to keep the paper down, in the manner and for the purposes set forth.

3. A letter-copying press provided with pressure-rollers, a reservoir, a moistening-roller
35 journaled above and adapted to play in said reservoir, in combination with rollers carrying an endless web, said web being drawn down
40 over the top of said moistening-roller, in the manner and for the purpose substantially as described.

4. In a letter-copying apparatus, a reel carrying a roll of copying-paper, pressure-rollers,
45 and rollers carrying an endless web which is adapted to pass between said pressure-rollers with said copying-paper, in combination with a moistening device, substantially as described.

5. In a letter-copying press, the combination of two suitably-journaled parallel rollers, an
50 endless web supported on said rollers, means, substantially as described, for moistening said web as it moves, and a pressure-roller mounted above the upper fold of said web over one of
55 the supporting-rollers, said rollers being adapted to receive, press, and pass forward a manuscript-sheet and copy-receiving sheet, and the upper fold of said web being a moving
60 apron to receive and carry forward the sheets passing between the pressure-rollers, substantially as set forth.

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Witnesses:

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JAMES C. DAVIS.