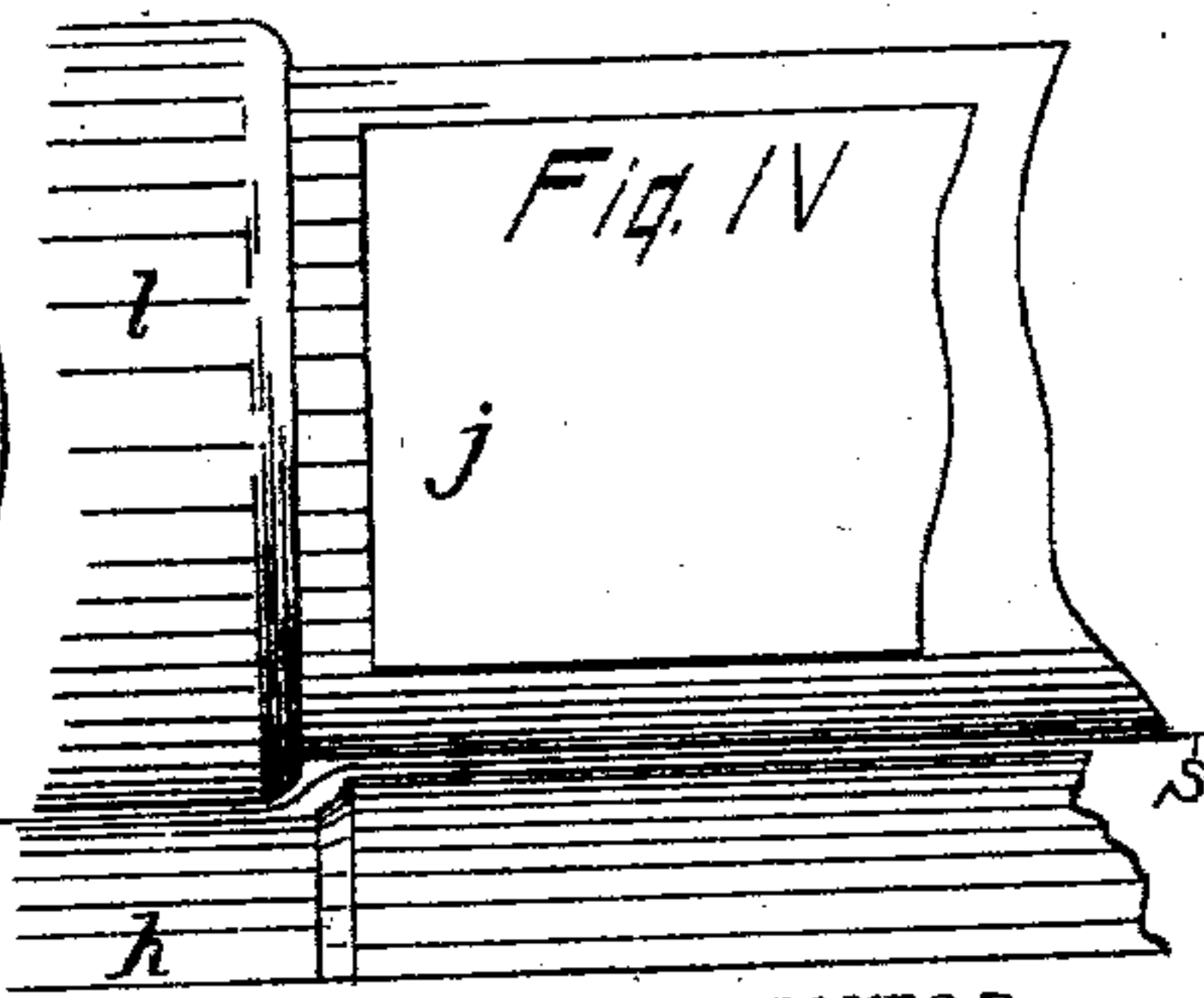
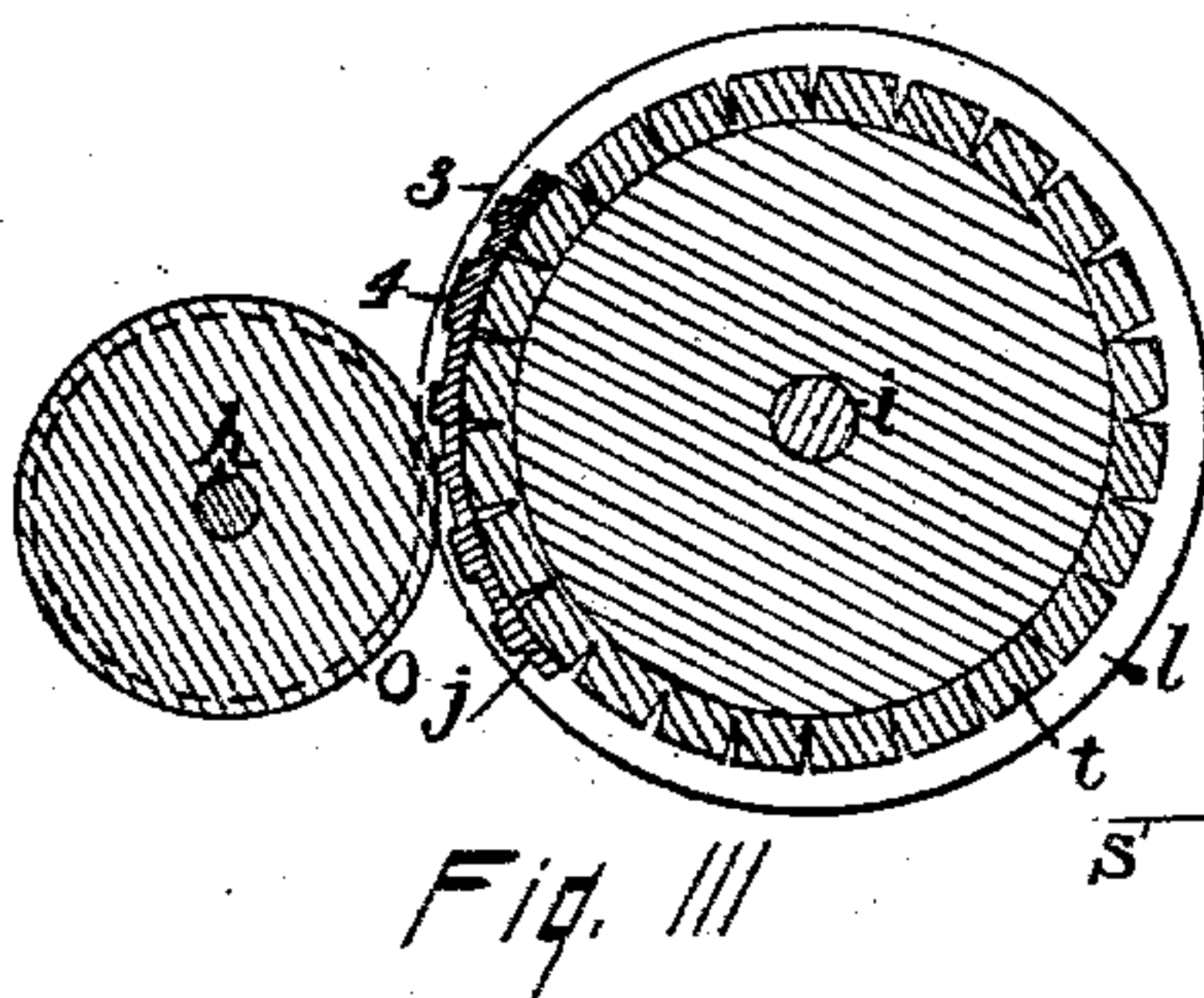
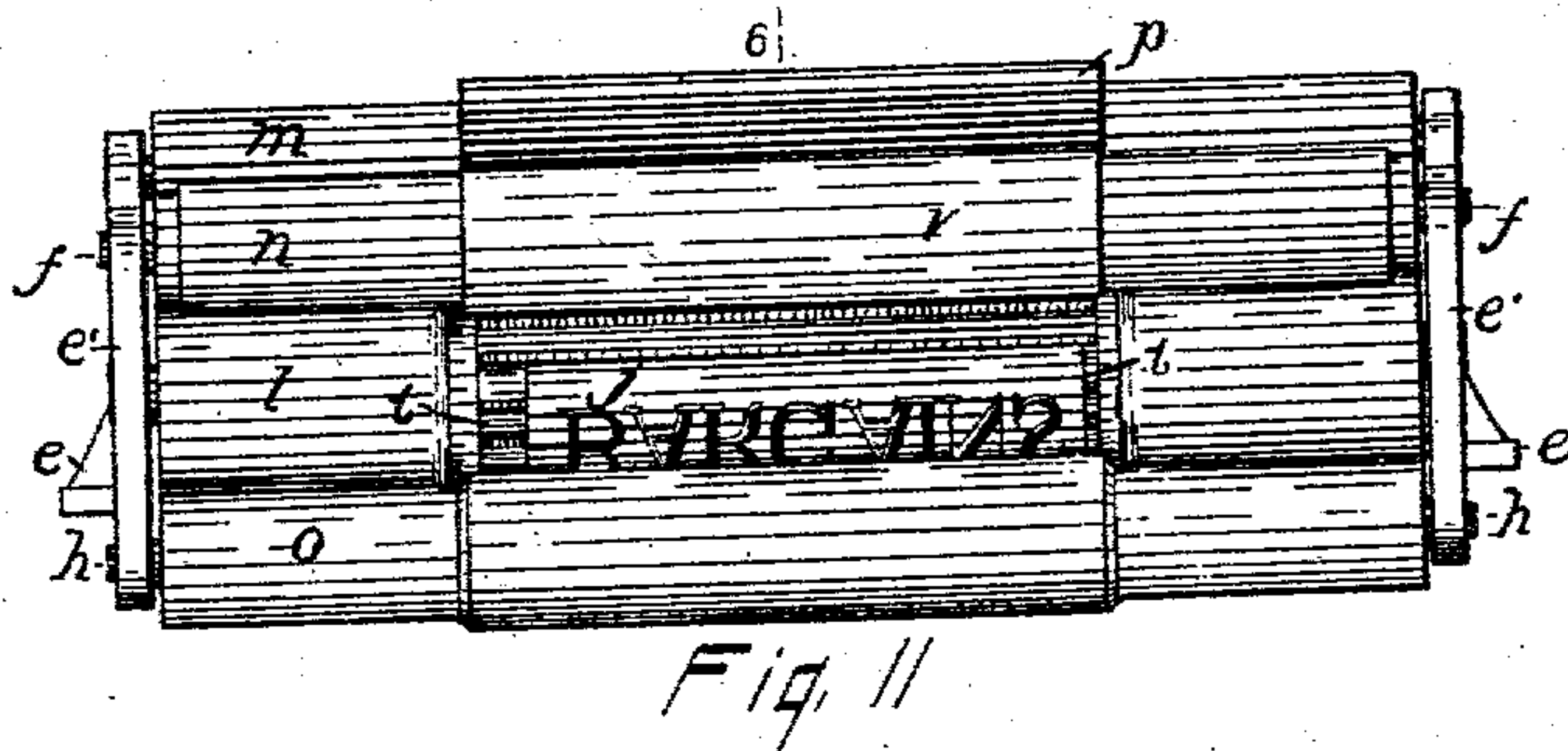
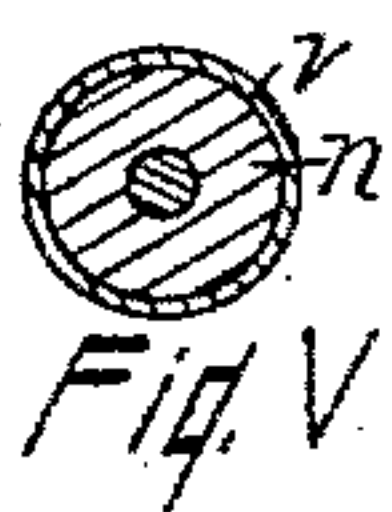
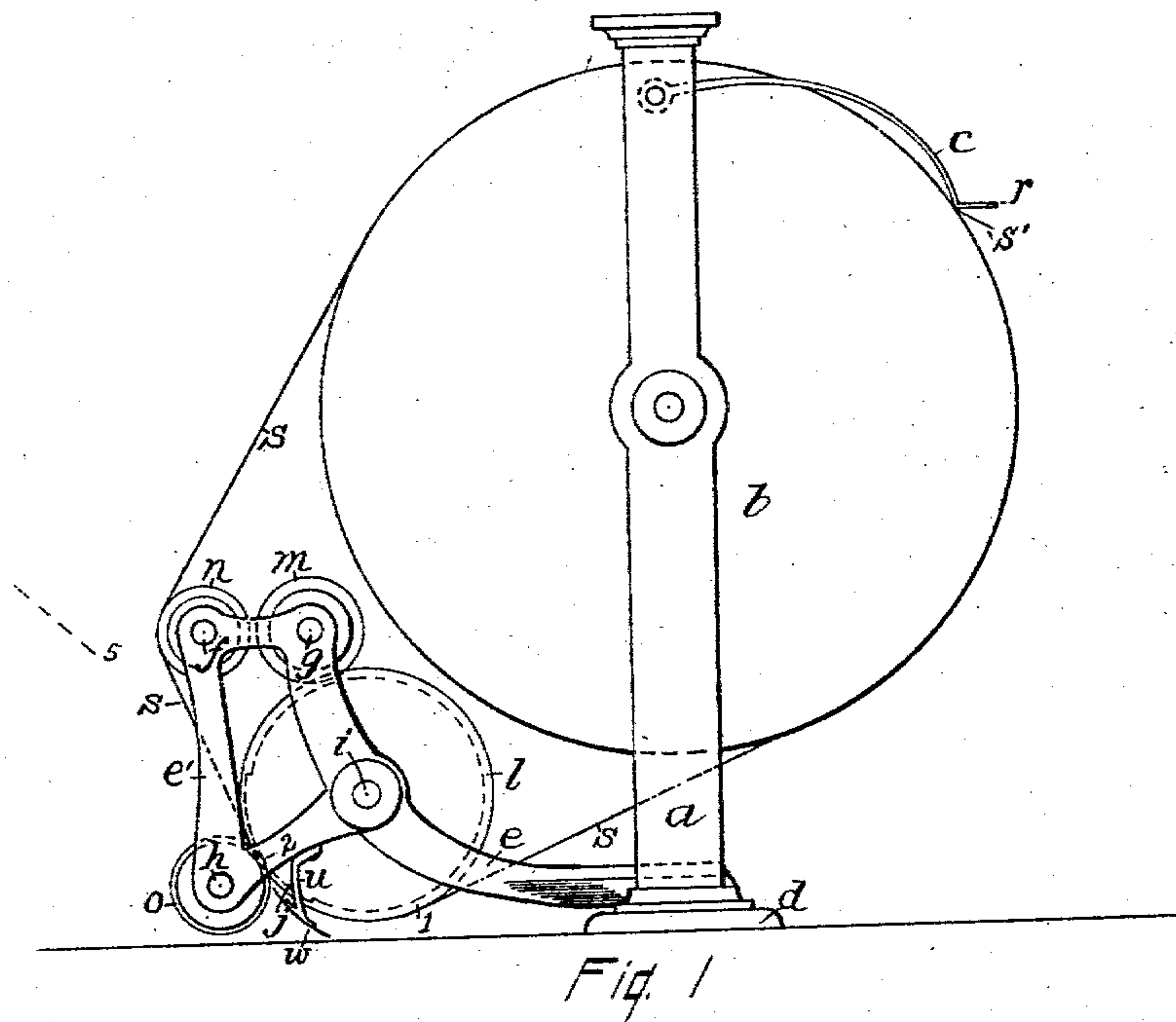


No. 720,910.

PATENTED FEB. 17, 1903.

J. M. FOX.
ROLL PAPER PRINTER.
APPLICATION FILED SEPT. 3, 1901.

NO MODEL.



WITNESSES:
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JOSEPH M. FOX, OF PEEKSKILL, NEW YORK.

ROLL-PAPER PRINTER.

SPECIFICATION forming part of Letters Patent No. 720,910, dated February 17, 1903.

Application filed September 3, 1901. Serial No. 74,088. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH M. FOX, a citizen of the United States, and a resident of Peekskill, in the county of Westchester and State of New York, have invented certain new and useful Improvements in Roll-Paper Printers, of which the following is a specification.

My invention relates to the printing of business cards and advertisements on roll-paper, and has for its object convenient facilities that will do the work while the paper is being unrolled and so neatly that it can hardly be distinguished from presswork. This object is attained by the means set forth in this specification and the drawings that accompany it.

In the several figures of the drawings like letters and digits refer to similar parts.

Figure I is a side elevation of my device as applied in practice. Fig. II is a rear view of the device from the line of sight 5, Fig. I. Fig. III is a cross-sectional enlarged view of the printing and platen rollers through the line 6, Fig. II. Fig. IV is an enlarged detail of the printing and platen rollers. Fig. V is a cross-section of the blotting-roller. Fig. VI is a cross-section of the inking-roller through the inking-pad.

Fig. I illustrates a roll of paper *b*, supported in a frame *a*, provided with a tearing-off blade *c*. My invention does not relate to the frame *a* particularly, except that it is applicable to any frame and is here shown as attached to the frame, although it may be secured directly to the table contiguous to the roller-frame.

My device comprises simple end pieces *e e'*, Figs. I and II, the part *e* being extended as a supporting-bracket. Supported by these end pieces are four rollers—a printing-roller *l*, an inking-roller *m*, an impression or platen roller *o*, and a blotter-roller *n*. The printing-roller *l* is provided with the matter to be printed, preferably in rubber-type form, although a metal-type form may be used.

It will be observed that the printing is done independently of the roll of paper, the paper being first taken from the roll, passed through the printing device, as shown in Fig. I, (*s s'* representing the web of paper which passes between the printing and platen roll-

ers,) over the blotter-roller, back upon the paper-roll, and under the tearing-off blade *c*.

Particular attention is directed to the forms of the printing and impression rollers. If the face of the type-form *j* were in a plane with the periphery of the ends of the roller *l*, it is plain that the printing would begin at the point 1, Fig. I, instead of at the point of contact between the printing and impression rollers at the point 2, and the result would be a poor impression. I therefore make the ends of the printing-roller of equal diameters, as shown in Fig. II. In the middle of the roller its diameter is reduced to a suitable width to receive the type-form and to such a degree that the surface of the type-form shall be below the larger ends of the roller, as shown in cross-section in Fig. III, in which the periphery of the end of the roller is shown at 3 and the face of the type at 4. Without the roller *o* the paper would be drawn over the printing-roller without contact with the type-form.

The impression-roller *o* is made in reverse form from the printing-roller, having its largest diameter in its middle portion, as shown in Figs. I to IV, inclusive. Its large part projects within the depression in the printing-roller and is adapted to force the paper to contact with the type-form, the paper passing between the two rollers in the shape shown in Fig. IV. The rollers crimp the paper between them not sufficiently to break or mar the paper, but enough to produce a friction upon the two rollers that insures their being revolved. As shown in the figure, it is not needful that the two rollers should come together at any point. Thus the moving of the paper causes the rollers to revolve with freedom and ease, and the manner of its moving enables an impression to be taken only with the aid of the impression-roller, insuring a clean and distinct impression.

To further give elasticity to the type-form even when using rubber types, I surround the reduced portion of the printing-roller with rubber backing, as shown at *t*, Figs. II and III, and encircle the roller with it, so that the entire surface may be covered with a printing-form, if desirable.

The inking-roller *m* is preferably, but not necessarily, made with a removable ink-pad, as shown in cross-section in Fig. VI, *p* representing the pad. This pad, like the impression-roller, projects within the type-space in the printing-roller, as shown in Fig. I, so that it comes in contact with nothing but the type-form.

The roller *n* carries a blotter *v*, Figs. II and V, and its object is to remove superfluous ink from the paper after it leaves the printing-roller to avoid blurring and setting off the impression. The blotter-pad may also be removable, so as to be renewable.

A guide *w* to facilitate passing the paper into the device is shown as suspended by an arm *u* from the frame *e e'*.

In order to avoid disturbing the paper in its stretched position between the roll and the printer, it is desirable to have some means of grasping the end of the paper after a piece is torn off. To accomplish this, I provide the tearing-off blade with a projecting flange *r*. By tearing the paper upon the outer edge of this flange a length of paper, as *s'*, will always be in readiness for grasping.

The blotting-roller is not an essential feature of this printer; but it adds greatly to the perfection of the impressions.

Having described my invention, what I claim is—

1. In a roll-paper printer of the character

described, the combination with a roll-paper carrier of a support for printing, impression, blotting and inking rollers in the order shown, the printing-roller having a depression around its central type-carrying portion, the impression-roller having a correspondingly-enlarged portion that moves within and crimps the paper within said depression, the printing and impression rollers being supported contiguous to the table, the inking-roller near the top of the printing-roller, the blotting-roller adapted to guide the paper away from the inking-roller, and a guide adjacent to the printing and impression rollers to facilitate passing the paper between the said rollers, substantially as herein shown and described.

2. In a roll-paper printer of the character described, the printing-roller provided with a depression around its central portion and the impression-roller having a correspondingly-enlarged portion moving within and crimping the paper within the said depression, substantially as and for the purpose herein set forth.

Signed at Peekskill, in the county of Westchester and State of New York, this 24th day of August, A. D. 1901.

JOSEPH M. FOX.

Witnesses:

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