(No Model.)

M. V. B. ETHRIDGE.

INKING ROLLER.

No. 345,035. Patented July 6, 1886.

Fig. 1.

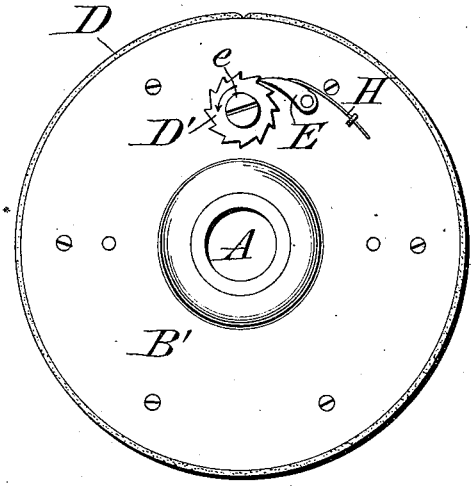


Fig. 2.

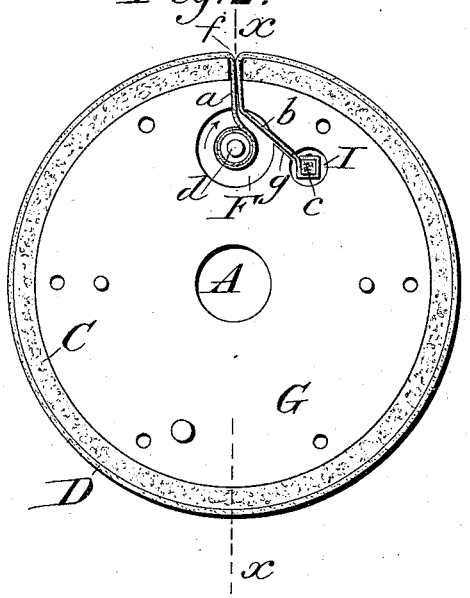


Fig. 3.

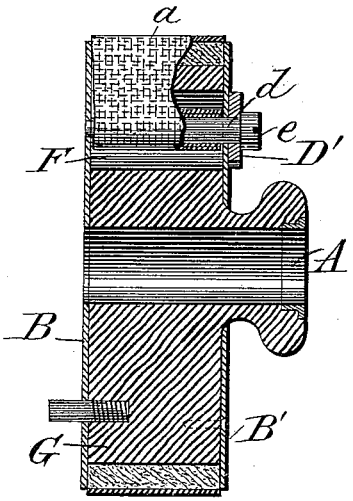
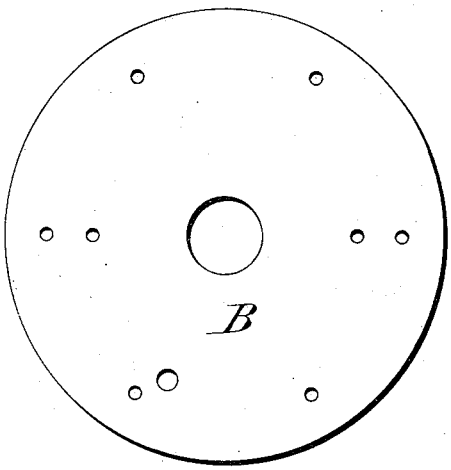


Fig. 4.



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UNITED STATES PATENT OFFICE.

MARTIN V. B. ETHRIDGE, OF BOSTON, MASSACHUSETTS, ASSIGNOR TO ANDREW J. BAILEY, OF SAME PLACE.

INKING-ROLLER.

SPECIFICATION forming part of Letters Patent No. 345,035, dated July 6, 1886.

Application filed January 15, 1886. Serial No. 188,667. (No model.)

To all whom it may concern:

Be it known that I, MARTIN V. B. ETHRIDGE, a citizen of the United States, residing at Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Inking-Rollers; and I do 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, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

My invention relates to an improvement in inking rollers or pads for use with printing-presses or other printing-machines, particularly such rollers as are covered with a felting or similar material for holding the ink; and the invention consists in a suitably-constructed roller-body, which is first covered with felt or similar material for holding the ink, and over which felt is placed a second covering of cloth, through which the ink in the felt will exude in such a manner as to distribute itself evenly over the type when the roller is brought into contact with them for the purpose of inking; and the invention further consists in devices for securing the outer cloth covering upon the roller, so that no stitches or seams will be exposed to catch into or be cut by the type or other projecting points, but the periphery of the outer envelope shall be smooth and unbroken.

In the annexed drawings, illustrating my invention, Figure 1 is an end elevation of the roller. Fig. 2 is an end view with the outer plate or head removed, so as to expose the inner mechanism. Fig. 3 is a cross-section on the line *x x* of Fig. 2, and Fig. 4 is a detail view of one of the end plates.

Like letters of reference designate like parts in the several views.

The body G of my improved roller consists in a cylinder made of any desired size and of any suitable material. This cylinder is provided with a central perforation, A, through which passes the shaft for supporting the roller, and to each end of the body G is preferably secured a plate, B and B′.

The cylindrical body G is covered on its periphery with a layer of felt, C, of greater or less thickness, as desired, (see Fig. 2,) and outside of the felt is a second covering of cloth, D, preferably of fine-meshed cloth.

The manner in which this cloth covering D is secured to the roller is as follows: At any convenient point in the cylindrical surface of the roller-body a transverse slot, *f*, is cut, extending into the roller a short distance until it meets a circular hole or aperture, F, which extends through the cylinder-body from end to end and parallel with the slot *f*. Within the circular opening F is a short rod or shaft, *d*, journaled at either end in the plates B and B′, in such a manner that it can be rotated. To one side of the aperture F is a second aperture, I, preferably smaller than the aperture F, and, like said hole, extending from end to end through the body G. The two perforations F and I communicate by means of a slot, *g*. Now, the cloth covering D, being cut to the proper width and to a length considerably in excess of the length of the periphery of the roller, is placed around the roller and the two ends *a* and *b* of said covering folded within the slot *f*, as shown in Fig. 2. Before inserting these ends, however, into the roller-body the end *b* is wrapped once or twice about a removable pin or post, *c*, and secured to it tightly, and the end *a* is wrapped about and secured to the shaft *d*. The parts are then placed in the relative position shown in Fig. 2, the end *b* passing through the slot *g*, as well as through the slot *f*, and the pin *c* being placed tightly within the perforation I. The end plate, which must be removed in order to place the parts in their proper position, is next secured in place, which will give the shaft *d* its second bearing, one bearing being found in the other plate already in place. Obviously, now, if the shaft *d* be rotated, the end *a* of the cloth will be rolled upon it and the covering be drawn tightly around the roller. In order to facilitate the rotation of the shaft, one end thereof is provided with a screw-head, *e*, located outside of the plate B, (see Fig. 1,) also with a ratchet-wheel, D, which is held in any desired position by a pawl, E, which in turn is held against the

ratchet by means of a spring, H. Any ordinary screw-driver can be applied to the screw-head for operating the shaft, and thereby tightening the cloth covering D, and the pawl and ratchet serve to keep it tight.

In using my improved roller, the outside is covered or saturated with ink, so that it will squeeze or soak through the outer covering into the felt, which acts as a reservoir to receive the ink, and when in actual operation the roller-surface comes into contact with the type-faces the ink will squeeze through the interstices in the fine-meshed cloth and distribute itself evenly over the outside of the same. This is advantageous, in that the fuzz of the felt will not come into direct contact with the type, to leave its filaments thereon, and thus clog and blur the printing. The ink will be better distributed, a given amount will last a longer time, for the whole supply will not be brought into contact with the type each time the roller touches them; the printing will be neater, and both the working and the results will be of a higher order than heretofore. Further, the manner of attaching the covering, so that no stitches or seams shall be exposed, prevents the ripping or tearing of the cloth, which would otherwise occur when the threads caught the type, and prevents the cutting or tearing of the threads by the type.

It will be noted that I do not confine myself to the mechanism shown and described for tightening the outer cloth covering. There are many ways in which the tightening may be effected without departing from the spirit of my invention, which includes, broadly, the covering of a cylindrical inking pad or roller with cloth in such a manner that no stitches or seams shall be exposed, to catch or be cut or worn by the type or other projecting points.

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

1. The combination, with a roller-body having a felt surface, of an outer envelope of fine-meshed material, so secured upon the said roller as not to expose any stitches or seams for entangling with or being cut or worn by projecting points on the type, substantially as shown and described.

2. The combination, with a cylindrical roller-body, of an envelope of felt for holding the ink, and an envelope of fine-meshed material surrounding the felt, and through which the ink comes into contact with the type, substantially as shown and described.

3. The combination, with a roller-body having a felt covering, of a cloth envelope whose ends pass into the substance of the roller-body and are secured tightly, substantially as shown and described.

4. The combination of the roller-body having central perforation, A, transverse slot *f*, and perforations F and I, connected by slot *g*, the end plates, B B′, the felt covering C, and the cloth covering D, whose opposite ends pass through the slot *f* into the holes F and I, one end, as *b*, being made fast within the hole I, and the other end, as *a*, being secured to a shaft, *d*, journaled in the end plates and adapted to be rotated so as to tighten the cloth covering, substantially as shown and described.

5. The combination, with the roller-body G and the felt covering C, of a cloth covering, D, and mechanism within the body for tightening said covering about the roller, consisting of a shaft, *d*, journaled in bearings, and provided with screw-head, whereby it can be rotated, and with ratchet and pawl, whereby it can be held at any point, one end of said covering D being secured to the shaft *d*, while the other is made fast within the roller, substantially as shown and described.

6. The combination of a roller-body, G, a felt covering, C, the cloth covering D, whose ends enter the roller-body through a slot, *f*, one being made fast and the other being wound upon a shaft adapted to be rotated, and held at any point in the rotation by suitable means, as a pawl and ratchet, substantially as shown and described.

7. A roller-body having a porous or spongy surface, in combination with a surrounding seamless envelope of thin finely-meshed fabric, substantially as and for the purposes set forth.

In testimony whereof I affix my signature in presence of two witnesses.

MARTIN V. B. ETHRIDGE.

Witnesses:

FRANCIS PEABODY, Jr.,

CHAS. HALL ADAMS.