(No Model.)

A. CAMPBELL.

PRINTER'S INKING ROLLER.

No. 285,011. Patented Sept. 18, 1883.

Fig. 1.

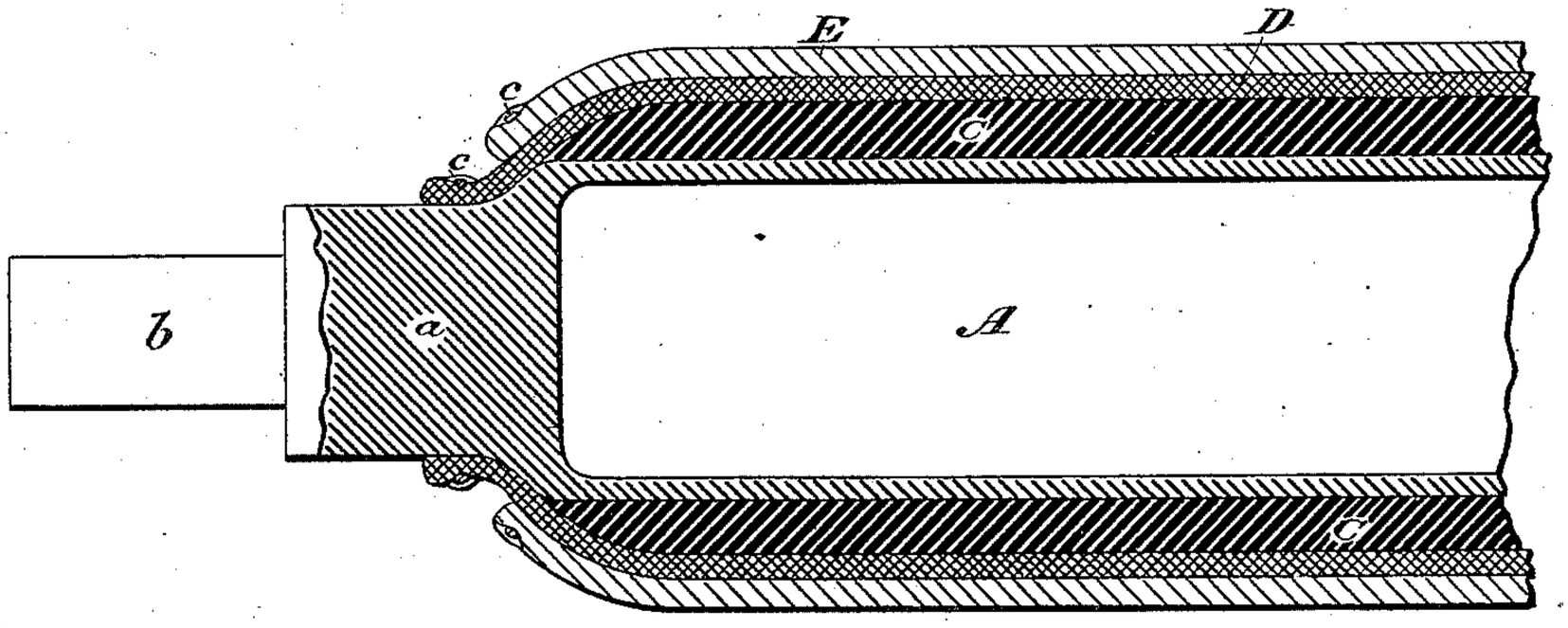
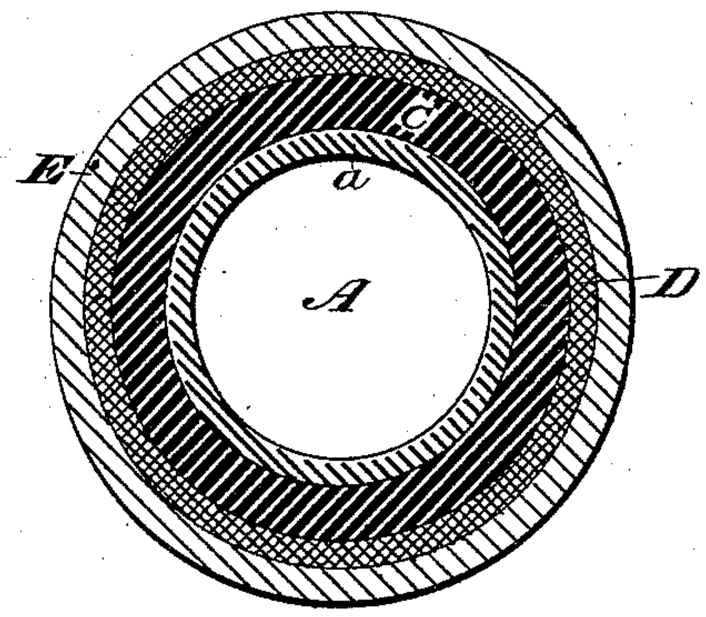


Fig. 2.



WITNESSES:

E. B. Bolton

Geo. Gaintons

INVENTOR:

Andrew Campbell

By his Attorneys,

Burke, Fraser & Connett.

UNITED STATES PATENT OFFICE.

ANDREW CAMPBELL, OF BROOKLYN, ASSIGNOR TO JOHN McLOUGHLIN AND EDMUND McLOUGHLIN, OF NEW YORK, N. Y.

PRINTER'S INKING-ROLLER.

SPECIFICATION forming part of Letters Patent No. 285,011, dated September 18, 1883.

Application filed July 3, 1882. (No model.)

To all whom it may concern:

Be it known that I, ANDREW CAMPBELL, a citizen of the United States, residing at Brooklyn, Kings county, New York, have invented certain Improvements in Printers' Inking and Distributing Rollers, of which the following is a specification.

This invention relates to a roller for inking forms, whether on stone or in type, and also for distributing the ink for the form-rollers. It is intended to take the place of the ordinary leather and composition rollers used for these purposes.

The ordinary composition rollers, molded from a compound of glue and a saccharine substance, have many objectionable features, arising partly from their susceptibility to changes of temperature and hygrometric changes and partly from failure to properly perform their functions, even when in good condition. This defect is most observable in cases where fine cuts enter into the form to be inked. Notwithstanding these defects, however, these composition rollers have up to the present served the purposes of the printer in general better than any other kind of rollers. The ordinary leather roller used in lithography also possesses many objectionable features. Its hard, irregular, and unyielding surface soon destroys or impairs the work on the stone. This defect I seek to correct by providing a light roller with a flexible, uniform, and elastic surface, and free from the well-known defects inherent in the rollers in ordinary use.

For the stock of my roller I prefer to employ a hollow metal cylinder for the sake of lightness, although the stock might be solid, or it might be of other material. Over this metal stock I place a thick covering of vulcanized india-rubber, which I prefer to vulcanize on the stock to form a permanent part of the same. This, however, is not absolutely essential. The rubber tube might be forced on, or it might be cemented to the cylindrical stock. Over the rubber I place a tightly-fitting sleeve or covering of felt, and over this a sleeve of leather, both sleeves being drawn down and confined tightly at their ends. The leather should be so thick as to avoid any tendency to wrinkle or cockle, yet not be hard and stiff. I prefer to employ a leather thoroughly tanned by a slow process, and which is about one-eighth of an inch in thickness when shaved and finished. The hair side is placed on the outside to receive the ink, by preference; but either side may be outside. This leather is uniformly flexible, and especially suitable for my work.

In the drawings which serve to illustrate my invention, Figure 1 is a longitudinal mid-section of a roller constructed according to my invention, and Fig. 2 is a cross-section of the same.

A represents the hollow stock or core, in the end of which is welded the shank *a*, on which is formed the journal *b*. Both ends of the roller being alike, I have only shown one end.

C is the rubber covering, D the felt, and E the exterior covering of leather. One method I employ in securing the ends of the felt and leather coverings is to run draw-strings *c* through their ends and draw them tightly down upon the shank *a*, or over the shoulder formed where the shank joins the body of the stock A. Other methods may, however, be employed. I employ the felt sleeve D mainly to protect the rubber cushion from the oil in the ink that might penetrate to it or work under the leather at the ends.

It is well known that the oil in the ink is a solvent of rubber, to the extent, at least, of rotting or disintegrating it, and the covering of felt serves to protect it. The felt alone, if the ink were applied directly to it, would hardly accomplish this purpose; but when it is remembered that very little of the oil from the ink will penetrate the exterior leather covering it will be seen that the felt will serve to protect the rubber for a long time. The felt also forms an excellent cushion as well, and this is necessary to properly preserve the elastic character of the surface of the roller.

I am aware that rollers have been made by rolling several thicknesses of woolen blanket on the stock and then stretching a leather covering over this. This method always fails to produce a regular, elastic, and uniform roller.

I am also aware that a roller with a rubber

core and a leather cover drawn over the same and in direct contact therewith has been proposed. In this construction, however, no protection is provided for the rubber except that afforded by the leather, which I do not find sufficient.

Having thus described my invention, I claim—

An inking and distributing roller for printing composed of the following elements, namely: a cylindrical stock, a uniformly-thick vulcanized-rubber covering, C, a felt protecting sleeve or covering, D, and an exterior leather covering, E, all arranged substantially as shown and described.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

ANDREW CAMPBELL.

Witnesses:

ARTHUR C. FRASER,

HENRY CONNETT.