(No Model.)

W. W. McMAINS.

HAND PRINTING ROLLER.

No. 346,489. Patented Aug. 3, 1886.

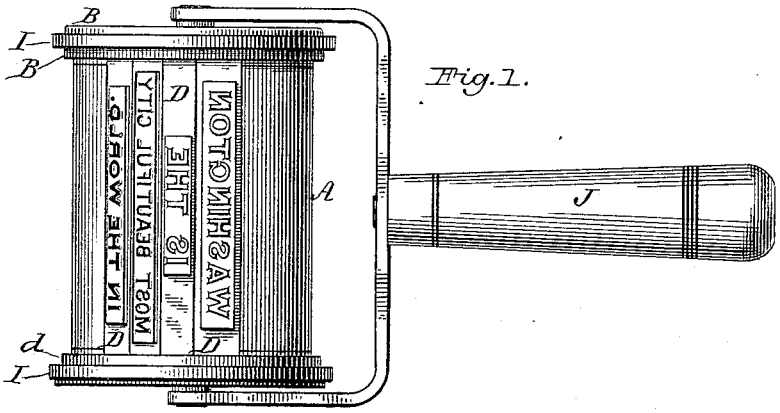

Fig. 1.

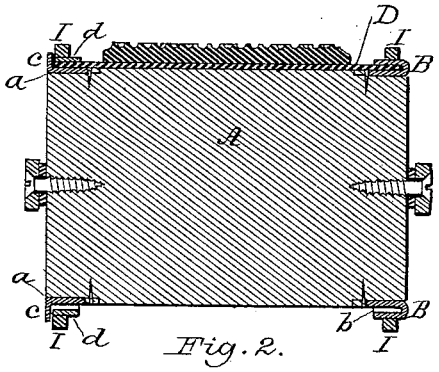

Fig. 2.

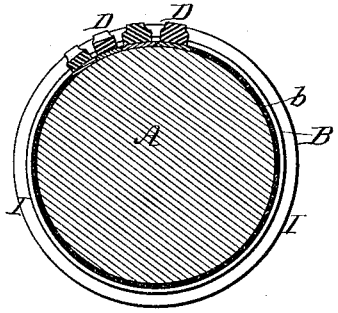

Fig. 3.

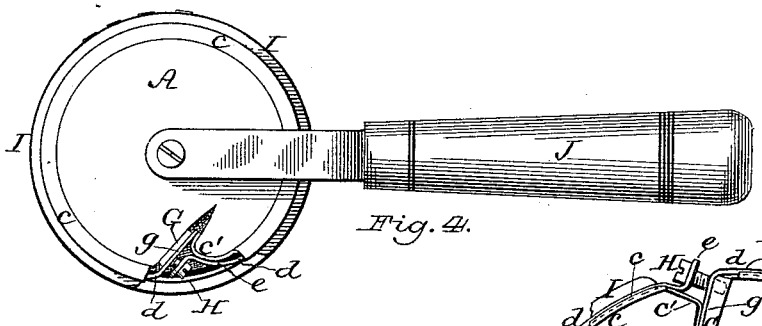

Fig. 4.

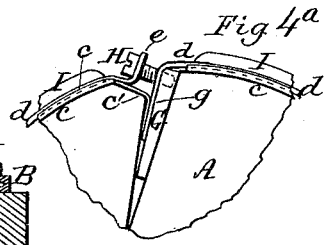

Fig 4a

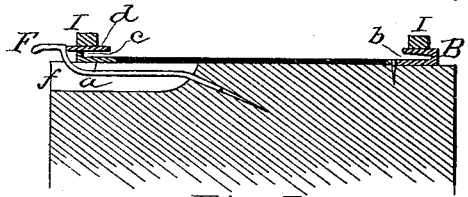

Fig. 5.

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UNITED STATES PATENT OFFICE.

WILLIAM W. McMAINS, OF MONONGAHELA CITY, PENNSYLVANIA.

HAND-PRINTING ROLLER.

SPECIFICATION forming part of Letters Patent No. 346,489, dated August 3, 1886.

Application filed October 12, 1885. Serial No. 179,701. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM W. McMAINS, a citizen of the United States, residing at Monongahela City, in the county of Washington and State of Pennsylvania, have invented new and useful Improvements in Hand-Printing Rollers, of which the following is a specification.

My invention relates to improvements in hand-printing rollers. I provide a cylinder or roller with strips or plates carrying the printing-letters, said strips being detachable from the roller to substitute others therefor having different letters, or to change their positions. Thus, in the case of the strips having letters arranged to print a circular or handbill the lines of letters or strips forming the most prominent word or words may be shifted to present a printing-surface of different form and arrangement. Again, if a person should change his place of business, or the latter should change hands, all that is necessary to be done is to insert or substitute lettered strips provided with the new address or name without destroying the main body of the matter already formulated, thereby producing by these slight changes a printing-surface adapted for the required purpose. This roller can be used to print a variety of forms, according to the letters used, and as a plate may contain one or more words or phrases common to a particular business said plate may be advantageously used in any form designed in which said words or phrases may appear.

To these ends the invention consists in combining with a roller or cylinder a series of strips or plates of equal length and varying width to suit the letters or words, and removably securing such strips or plates to the roller by inserting one end in an annular band, groove, or recess fixed at one end of the roller, and having their other ends abut against a fixed annular shoulder provided in a band at the other end of the roller, these latter ends of the strips being held in place by a removable ring or band secured over that end of the roller having the abutting-band shoulder, as more fully hereinafter set forth and claimed.

In the annexed drawings, Figure 1 is a side view of my improved printing-roller. Fig. 2 is a central longitudinal section of the same. Fig. 3 is a cross-section of the same. Fig. 4 is an end view, and Fig. 4ª shows the spring-band fastening device enlarged. Fig. 5 shows a modification for securing the removable band over the printing-strips.

The cylinder or roller A may be made of any suitable material, although wood is deemed preferable, owing to its cheapness and lightness. A ring or band, B, is fixedly secured to one end of this roller, and is provided with an annular recess or groove, *b*. This ring may be of cast or wrought material, and have the groove turned or stamped therein; or it may be made of sheet metal folded on itself, having the recess between its folded portion. The latter form is preferred. The opposite end of the roller is provided with a band or ring, *a*, fixedly secured thereto, and having a shoulder, *c*. This ring may likewise be made of cast metal; but sheet metal is preferable. In the latter case the shoulder is formed by upsetting a portion of the edge of the band.

The letter-plates D are all of a length equal to the distance between the shoulder *c* and the bottom of the recess *b* in the band B, so as not to have any longitudinal play. The plates are provided with letters, which may be of metal or rubber, secured thereto in any approved manner, although a cementitious material is deemed best for the purpose. It will be noticed that the plates are of varying width to suit different sizes of letters, and are secured to the roller by having one end slipped in the recess *b*, and its other end abutting against the shoulder *c*. A clamp ring or band, *d*, over this shouldered band *c* will firmly secure the plates D in position. This clamp-band *d* may be a solid wing, in which case it may be held in place by spring-catches F, seated in grooves *f* in the roller. However, it is preferred to make such band *d* of spring metal and have one end, *g*, fixed to the roller, and the other end, *e*, adjustable to and from the fixed end, to bind or loosen the band upon the ends of the type-plates. In this latter construction the roller has a nearly radial slot, Fig. 4, cut therein, and a metal piece, G, set therein. One end, *g*, of the spring-band *d* is bent inward and held in place in the slot by the piece G, and the other end, *e*, of the band is bent upward or outward, and a set-screw, H, passing therethrough and into a threaded opening in the upper end of the

piece G, serves to adjust this end to loosen or clamp the band upon the ends of the lettered plates.

In order that the set-screw and outward bent end of the band *d* may not interfere with the printing-surface, one side of the slot is cut away, and the end of the band *d* correspondingly bent inward toward the center of the roller. As the band *c* is necessarily cut, one end is secured by being bent down into the slot and held therein by the piece G, and its other end, *c'*, is clamped between the roller and the fixed end *g* of the spring-clamp *d*. It is absolutely necessary that the lettered plates should have a firm bearing throughout their entire length, and for this reason the ends of the rollers are cut away or recessed, as shown in Fig. 2, to allow the surface of the band *c* and the inner wall of the recessed band B to come flush with the surface of the roller; or the space between the two bands may be blocked up or blanketed, as shown in Fig. 5, to accomplish the same result. The outer wall of the recess *b* may be inclined slightly to the inner wall, to insure a firm contact of the plate with the roller, as seen in Fig. 5. Around the clamping and recessed rings bands I of non-metallic material are secured. These bands have their surface slightly below the face of the type, and form guides for the roller, and prevent an uneven bearing on the type. This roller is provided with suitable gudgeons, to which a bail-handle, J, is journaled in any well-known manner.

The operation and use of this roller being manifest, a description is deemed unnecessary.

I claim—

1. The combination of the roller, an annular recessed ring fixedly secured to one end, a shouldered ring secured to its other end, and an adjustable clamp-ring surrounding the shouldered ring, substantially as set forth.

2. In combination with the roller having an annular recessed ring at one end and a shouldered ring fixedly secured at its other end, a spring-clamp band surrounding the shouldered ring, one end rigidly secured to the roller, and a set-screw for adjusting the other end to and from the fixed end, substantially as and for the purposes described.

3. In a printing-roller, the combination of removable lettered plates, annular recessed and shouldered rings secured to opposite ends of the roller, the surface of the shouldered ring and the inner wall of the recessed ring being flush with the surface of the roller, and a clamp-ring surrounding the shouldered ring, substantially as described, and for the purpose specified.

4. The combination, in a printing-roller provided with removable lettered plates and holding-rings, of non-metallic bands secured to said rings, their surfaces being slightly below the printing-surface, substantially as and for the purposes set forth.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

WILLIAM W. McMAINS.

Witnesses:
J. P. TAYLOR,
E. W. KELLER.