(No Model.) 2 Sheets—Sheet 1.

J. B. LECKIE.

COPYING ROLLER.

No. 336,926. Patented Mar. 2, 1886.

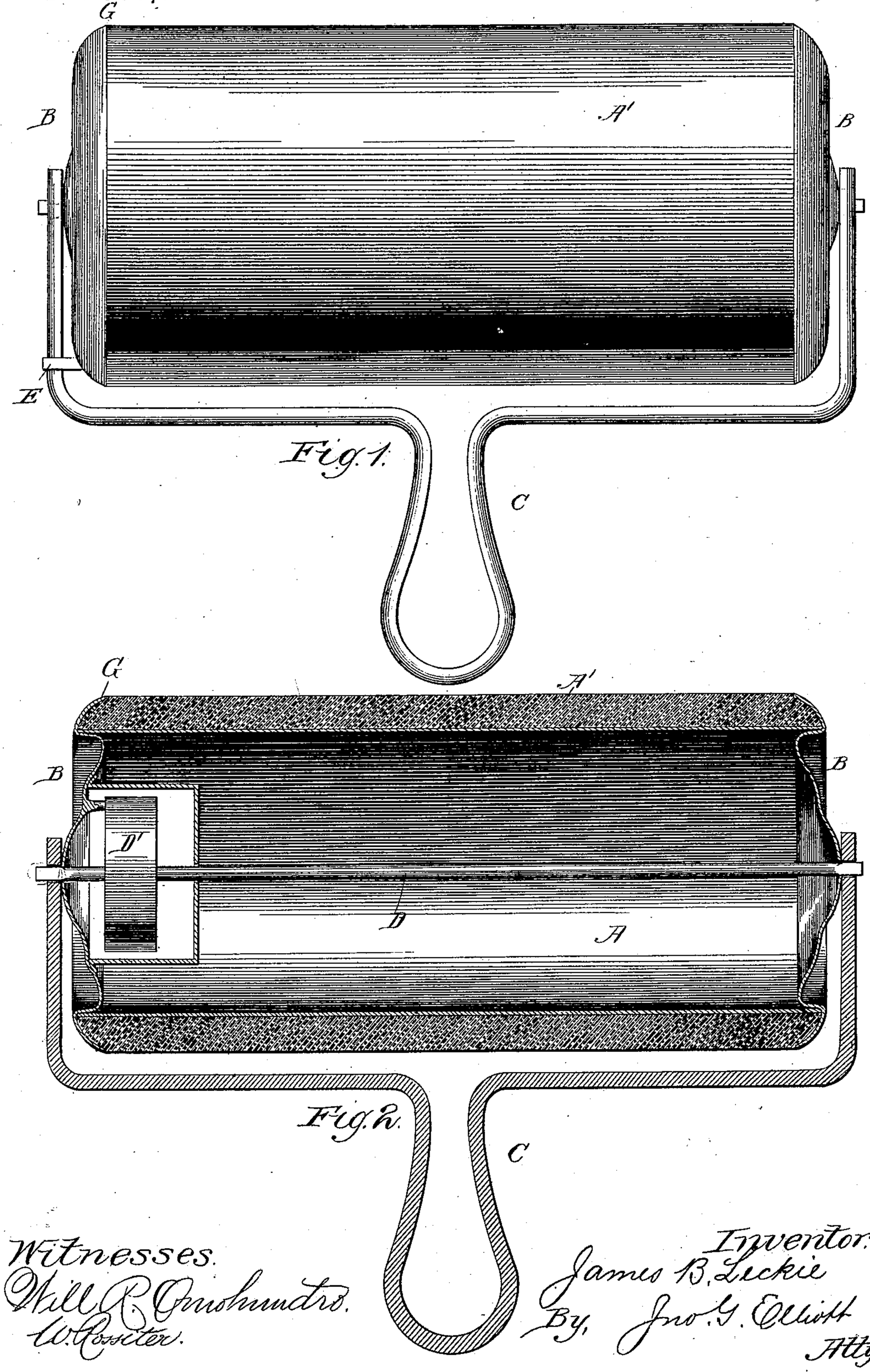

Fig. 1.

Fig. 2.

Witnesses.
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(No Model.) 2 Sheets—Sheet 2.

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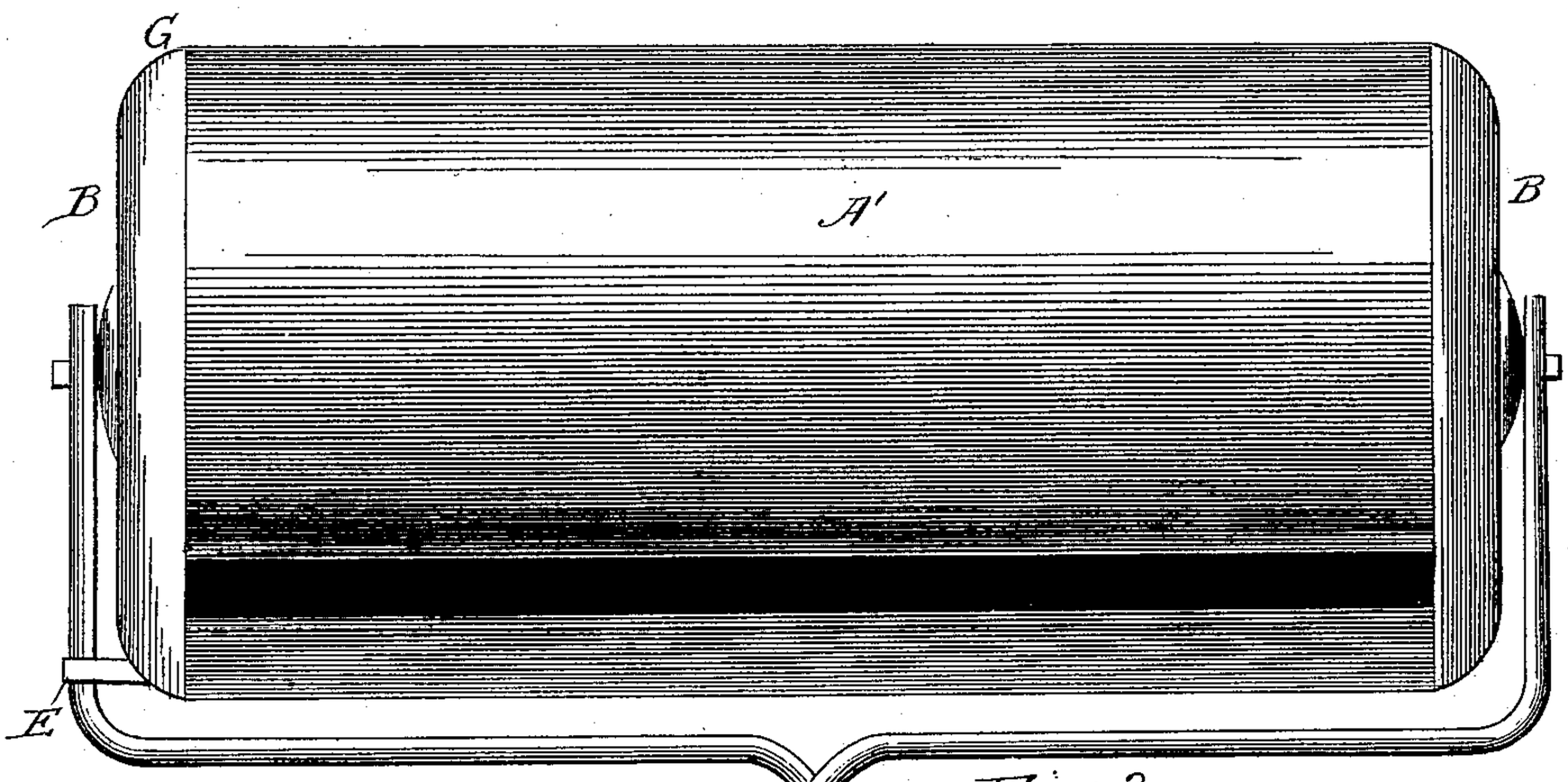


Fig. 3.

Fig. 4.

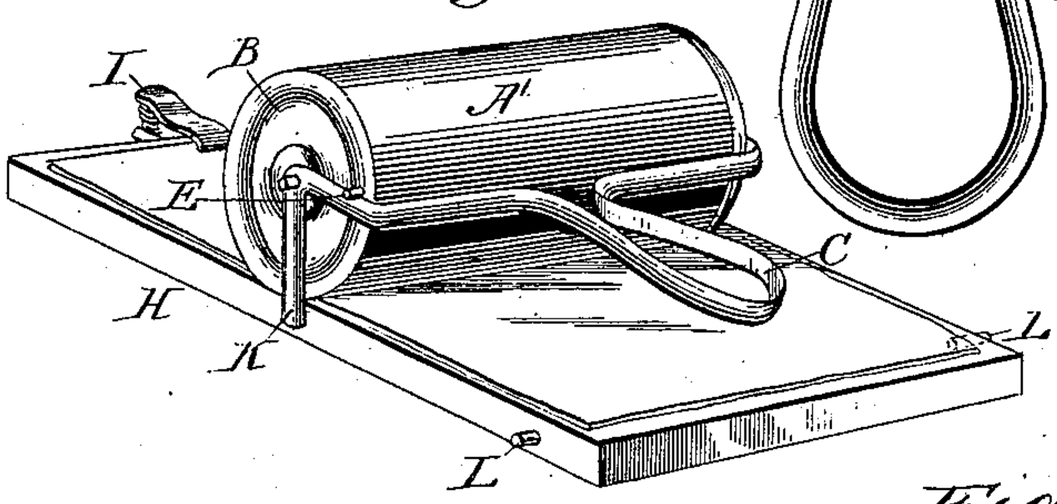
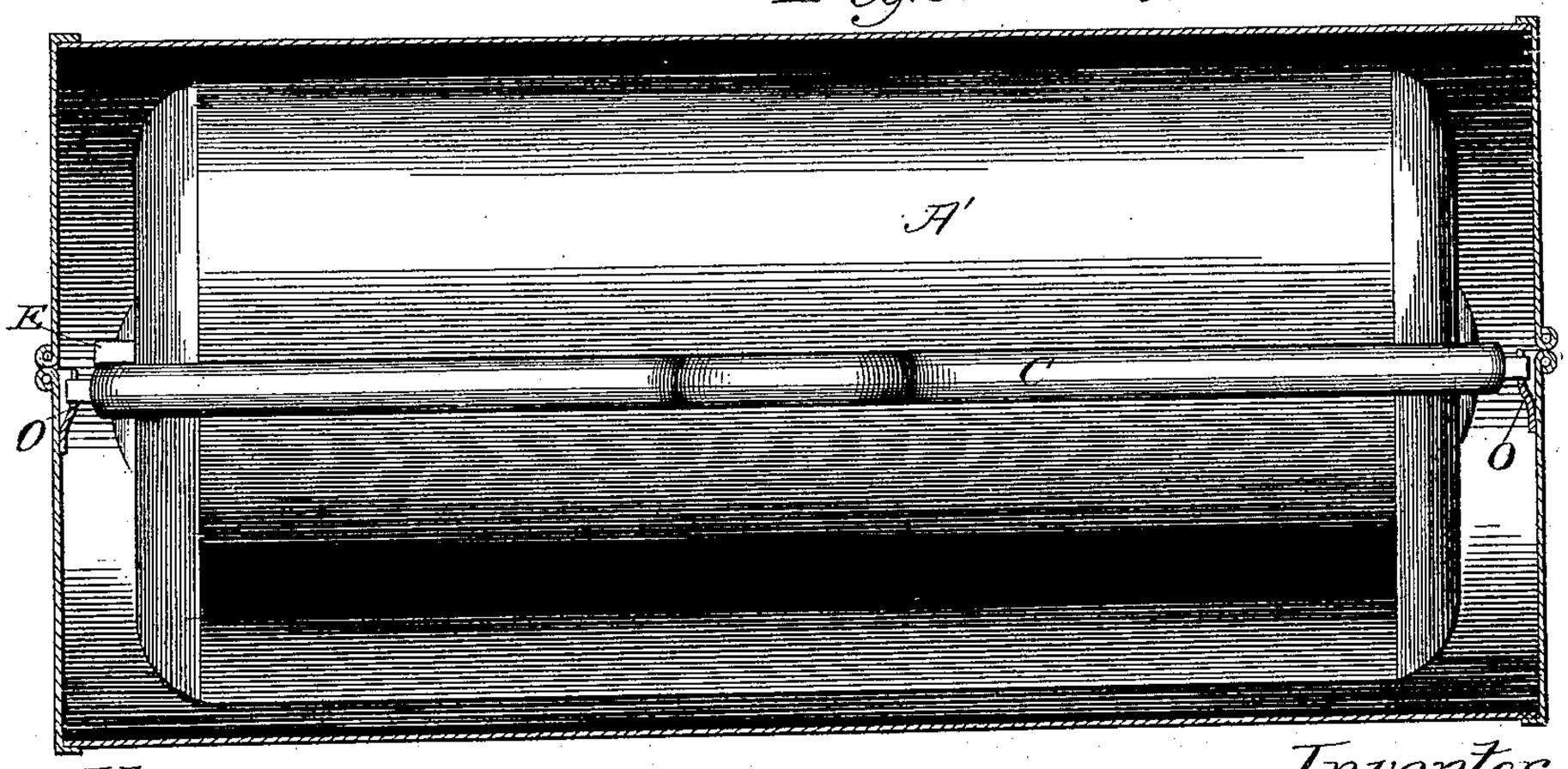


Fig. 5.



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UNITED STATES PATENT OFFICE.

JAMES B. LECKIE, OF CHICAGO, ILLINOIS.

COPYING-ROLLER.

SPECIFICATION forming part of Letters Patent No. 336,926, dated March 2, 1886.

Application filed July 30, 1884. Serial No. 139,218. (No model.)

To all whom it may concern:

Be it known that I, JAMES B. LECKIE, a citizen of the United States, residing in Chicago, county of Cook, and State of Illinois, have invented certain new and useful Improvements in Copying-Rollers, of which the following is a specification.

This invention relates to improvements in copying-rollers coated with a gelatinous material for absorbing an original writing in ink and imparting said writing to sheets of paper, whereby a number of copies of an original writing is produced.

The objects of this invention are to promote the simplicity in the construction and operation of the several parts of copying-rollers and the boards or pads necessarily used in connection therewith, all as hereinafter described, and shown in the accompanying drawings, in which—

Figure 1 is a plan view of the copying-roller; Fig. 2, a longitudinal section of the same. Fig. 3 is a plan view of the roller with a spring; Fig. 4, a perspective on a smaller scale of the roller resting on a pad and having extensions at the sides of its bail. Fig. 5 is a longitudinal section of a case with the roller supported therein.

Referring by letter to the several figures of the drawings, in which like letters denote like parts, A indicates a cylindrical roller, which, for the sake of lightness and economy of material, is made hollow, and closed at its ends by suitable caps or heads, B. This roller is faced—that is to say, its face or perimeter is covered—with a layer of some gelatinous compound suitable for the copying process hereinbefore referred to. The roller is adapted to be run over a writing, and to be then run over blank sheets, so as to multiply copies of the original, and for this purpose a bail or handle, C, is provided, whereby, while the roller is resting on the paper, the operator can grasp the said handle, and then readily run the roller along the same. The bail shown in Fig. 2 embraces the roller, at the ends thereof, and has its prongs rigidly secured to an axle or journal, D, passing through the end of the roller, which arrangement admits of a return-spring, D′, being arranged within the roller, and connected in some suitable way with the roller and with the axle. The roller has a stop, E, on one of its ends, so that after the roller has been run over the paper and turned against the resistance of the spring, (where such spring is employed,) so as to wind up the spring, and the roller then raised from the paper, the spring will turn the roller in a reverse direction until the stop E comes in contact with one side of the bail, and hence checks the back rotation of the roller after the latter has arrived at its first position. In Fig. 3, however, I have shown means whereby the return-spring, to which I make no claim, can be dispensed with. For this purpose the bail, which is made of spring metal or some suitable spring material, crosses itself at the side of the roller, as at F, and has its bow or loop shaped portion adapted to be grasped and compressed by the operator, so that the side or prong of the bail at the end of the roller on which the stop is located shall be sprung out and away from the end of the roller sufficiently to allow the stop to pass from one to the other side of the prong of the bail. In this way, assuming the stop to be against one side of the bail-prong, and the roller to be rested upon the paper and run over the same until a nearly complete revolution of the roller has been made, so as to bring the stop against the opposite side of the bail-prong, then by compressing the handle end of the bail its prong will be forced out, so that by slightly turning the roller the stop thereon can be carried under and past the bail-leg, thereby bringing the roller into its first position. In this way, a copy being taken up by the roller and the latter then brought into the first position, the roller can be placed on a sheet of paper, at one end thereof, and moved in the same direction as that in which it was run in taking up the copy, the reproduction of which will in the subsequent operation be made in proper order upon the blank sheet. The caps or heads of the roller extend beyond the face or perimeter of the latter, or are otherwise formed so as to provide an annular lip or flange, G, at each end of the roller. These flanges are curved in cross-section, so as to extend to a suitable extent over the face of the roller and toward a point intermediate of the ends thereof. The

gelatinous sheet or facing of the roller fills in the space between the latter and the inner sides of these flanges, and is preferably flush or substantially flush with the greatest diameter of the flanges. These flanges serve to provide finished edges for the ends of the annular gelatinous facing upon the roller, and also serve to cover any crack or space which may be left at the ends of the roller consequent upon the shrinkage of the facing after its application to the roller.

In using my copying-roller the original written sheet can be laid upon a board or pad, H, and secured thereon by any suitable construction of clip, I, after which the operator will run the roller over the sheet, so as to take up the writing from the same. After this the blank sheets can be secured in tablet form upon the said board or pad by the same clip, and the roller successively run over these sheets, so as to part with copies of the writing, each sheet being removed as soon as a copy has been made.

As a means for accurately starting the roller upon either the written sheet or upon the blank sheets, so that the copy shall be commenced at the proper point on the roller, and also so that it can be commenced at the same relative point on each blank sheet, the ends of the prongs or legs of the bail are each provided with a downwardly bent extension, K, at or near the point where the bail is connected with the journals of the roller, the board or pad H is also provided at each of its opposite side edges with a stop, L, and the board or pad is made of such width that the extensions of the bail-prongs shall embrace the sides of the same. The stops on the pad are so located that when the roller rests upon the pad with the arms or extensions of its legs embracing the sides thereof and backed against the said stops the roller shall be in proper relative position to the writing on the paper, or to the copy-sheet between the roller and the pad, so that when the roller is drawn along the paper in a direction away from the stops on the pad the impression shall be properly taken up by the roller, or after being taken up thereby shall in being parted with commence at the required point on the blank sheet. These extensions passing along the sides of the pad also serve to guide the roller, so that the same can be rolled in a line parallel with the edges of the paper without any care or effort on the part of the operator.

When not in use the roller is conveniently inclosed in a two-part box or cylindrical case, M, the two parts of which are hinged together at one edge.

A suitable opening is provided for the passage of the handle end of the bail, and catch-springs or other catch devices are provided for locking the two parts of the case together. Each end of one of the parts of the case is provided with a half-seat, O, which said seats are arranged so that when the roller is placed in the case and the latter closed the roller-journals shall be supported in said seats, in which way, by making the diameter of the case somewhat greater than that of the roller, the latter will be supported in the case without its gelatinous or ink-absorbing face coming in contact with the surrounding casing.

In applying the gelatinous face to the roller the latter is inclosed in a mold, and the material run in through an aperture formed through one of its end flanges. The mold is preferably of some flexible material, which can be clasped around the roller, so as to leave space for the facing material, and which after the material has been run in can be sprung away from the same. This method of forming a facing on the roller, however, is reserved as subject-matter for a subsequent application.

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

1. A copying-roller of the character and for the purpose described, having at one of its ends a stop, in combination with a bail susceptible of being sprung out, so as to allow the stop on the roller to pass the side of the bail, substantially as set forth.

2. A copying-roller of the character and for the purpose described, having at one end a stop, in combination with a spring-bail crossing itself at the side of the roller, substantially as set forth.

3. A copying-roller of the character and for the purpose described, provided with a bail having downward extensions of its sides or legs, in combination with a board or pad adapted to support the copy-sheets, and provided with side stops, against which the said extensions of the bail can be backed when the roller is placed upon the pad or any copy-sheets thereon, substantially as set forth.

4. A copying-roller having a gelatinous or analogous ink-absorbing facing of the character described, and provided with end flanges curving over the face of the roller and serving to cover the ends of the annular facing upon the roller, substantially as set forth.

JAMES B. LECKIE.

Witnesses:
CHAS. G. PAGE,
W. W. ELLIOTT.