2 Sheets--Sheet 1.

J. GOUGH.

Embossing Presses.

No. 148,446. Patented March 10, 1874.

Fig. 1.

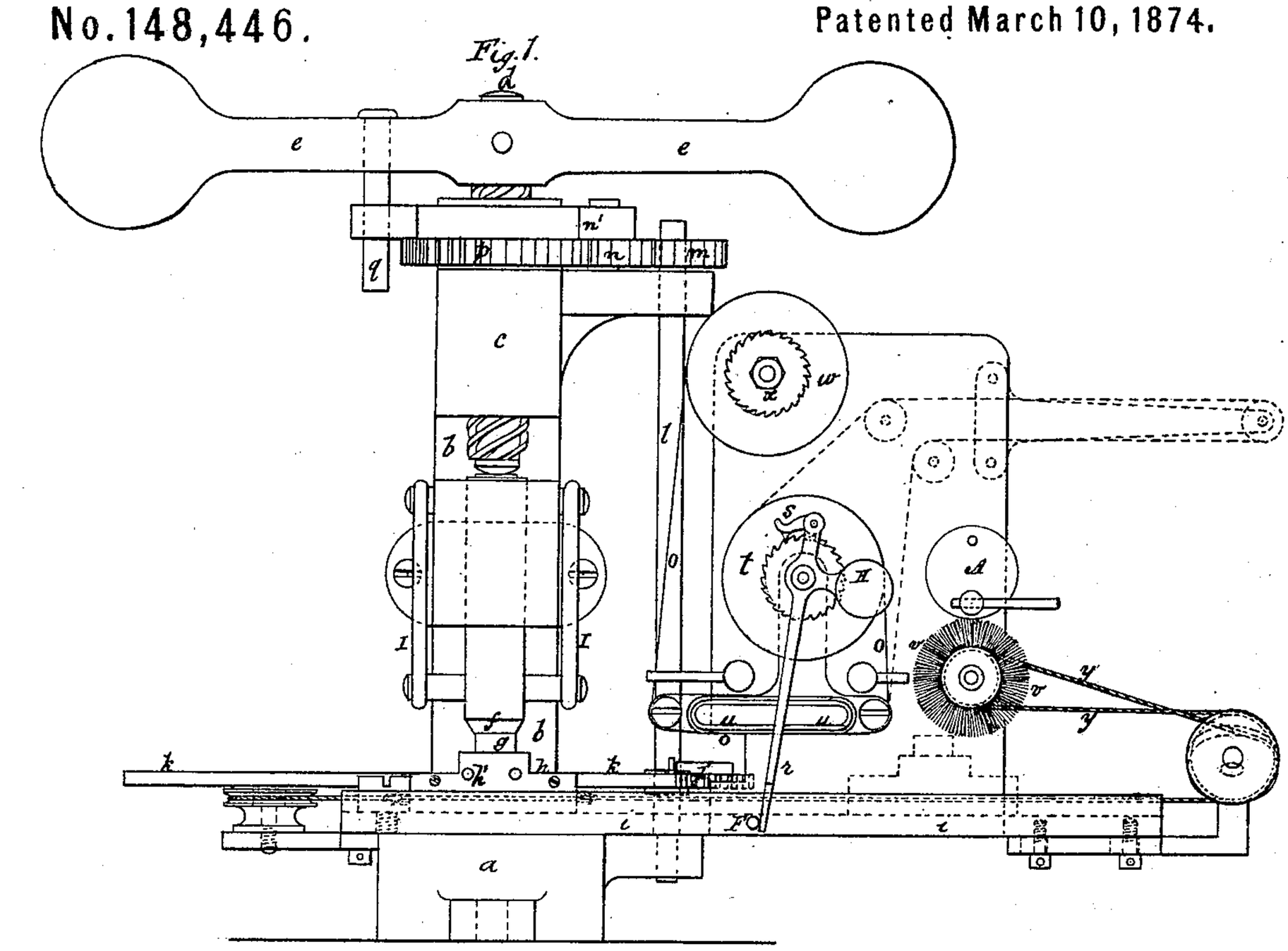


Fig. 7.

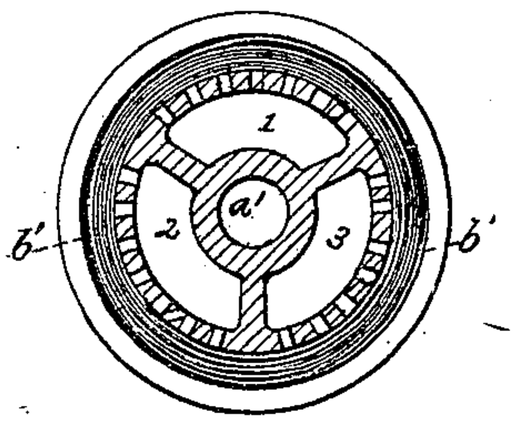


Fig. 2.

Fig. 6.

Witnesses.

Chas. M. Higgins.

Arthur C. Fraser.

Inventor.

John Gough,

Per Burke & Fraser Attys.

2 Sheets--Sheet 2.

J. GOUGH.

Embossing Presses.

No. 148,446. Patented March 10, 1874.

Fig. 3

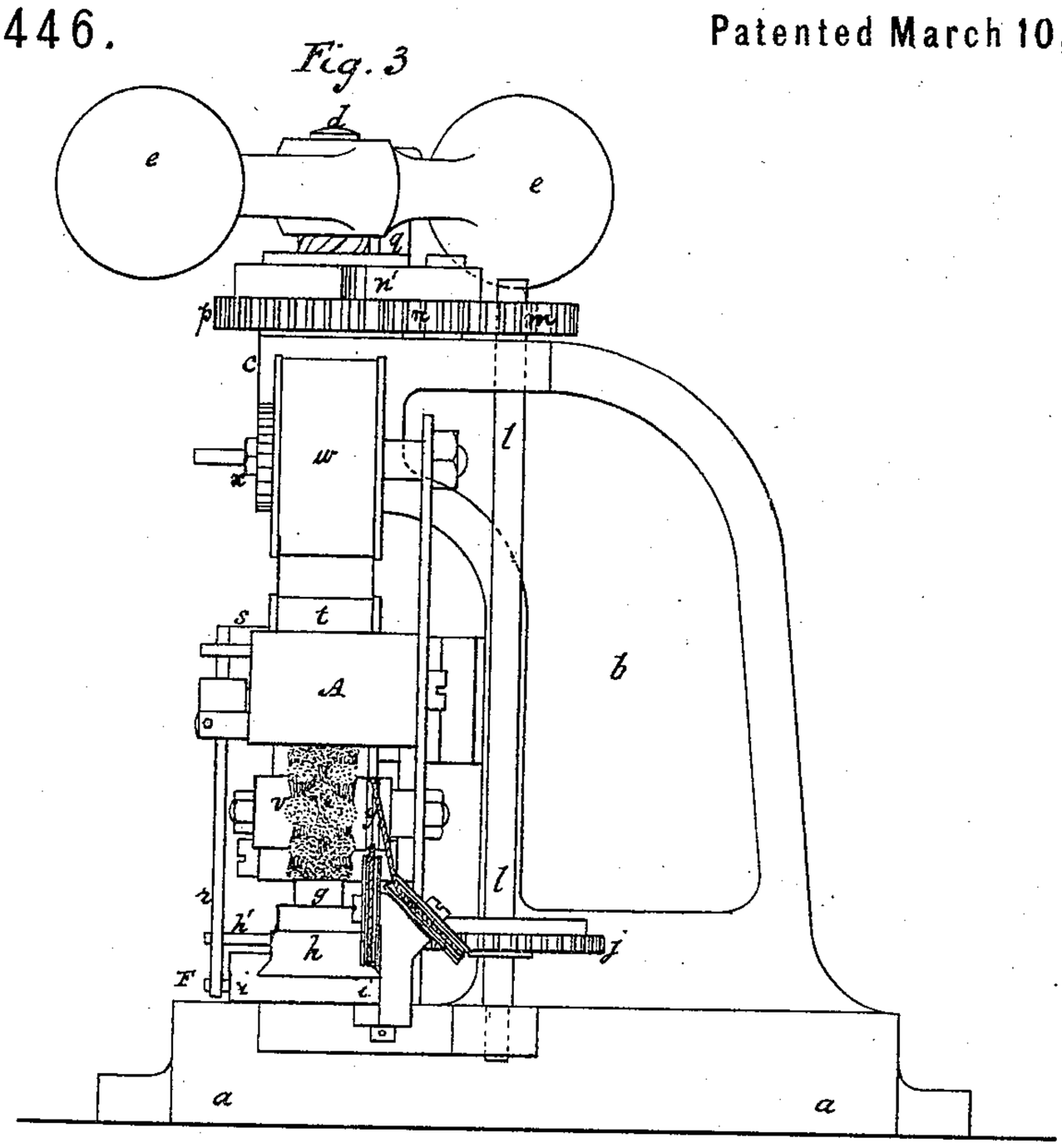
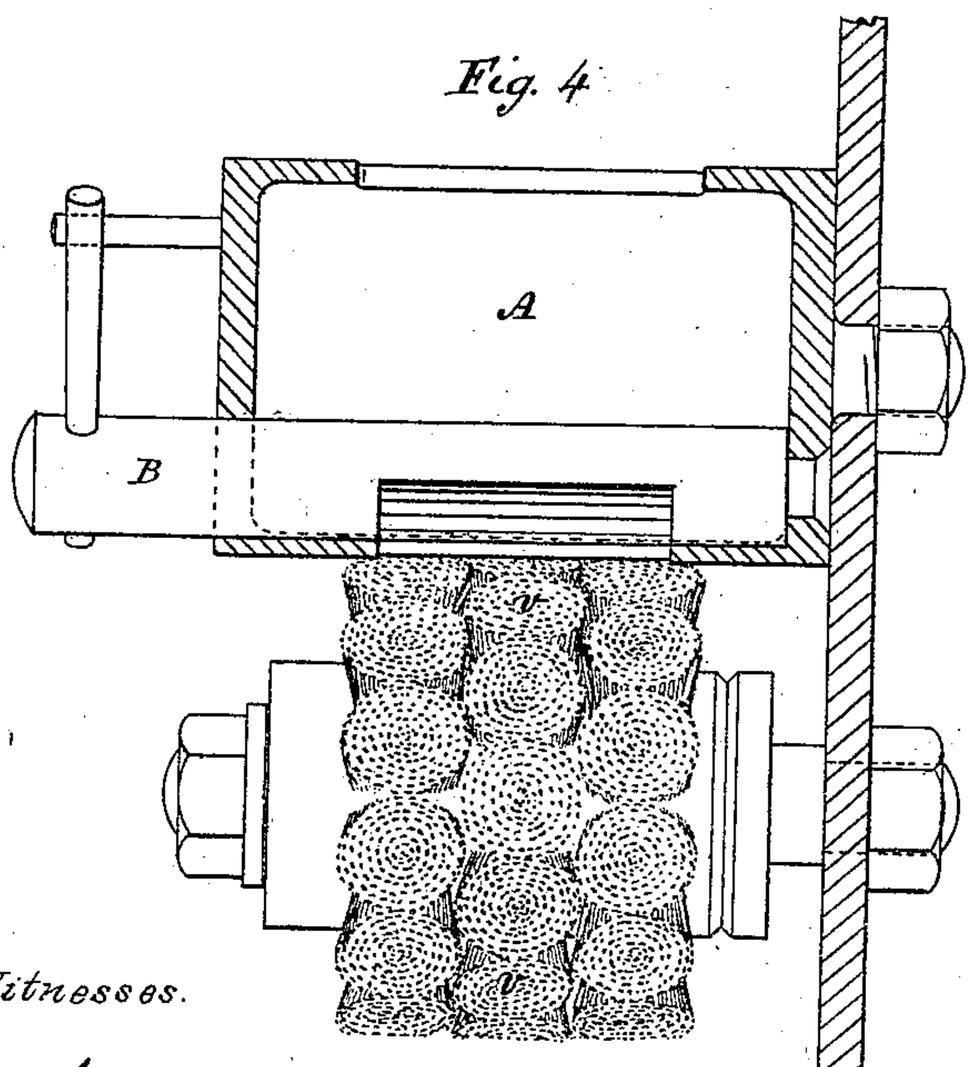


Fig. 4



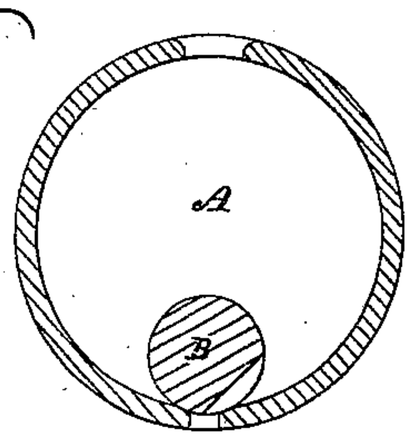
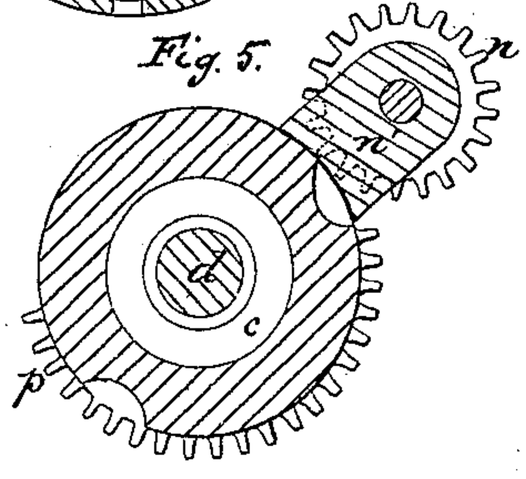


Fig. 5.



Witnesses.

Chas. W. Higgins.

Arthur C. Fraser.

Inventor.

John Gough

Per Burke & Fraser

attys

UNITED STATES PATENT OFFICE.

JOHN GOUGH, OF LONDON, ENGLAND.

IMPROVEMENT IN EMBOSSING-PRESSES.

Specification forming part of Letters Patent No. **148,446**, dated March 10, 1874; application filed April 10, 1873.

To all whom it may concern:

Be it known that I, JOHN GOUGH, of Kirby street, London, England, have invented certain new and useful Improvements in Apparatus for Printing and Stamping in Relief; and I hereby declare that the following is a full, true, and exact description thereof.

This invention relates to apparatus for printing and stamping note and other paper envelopes and other material; and it consists of an intermittingly-moving traveler or bed, upon which the die is arranged, connected by a series of toothed wheels and a rack with the revolving threaded rod of the press, for the purpose of imparting an intermittent motion to the die, to ink the same and clean its surface automatically at each impression; in a rotating inking-brush, in combination with the die and follower, for automatically inking the die; and in an intermittingly-moving band of paper, for cleaning the surface of the die automatically at each impression; and in the mechanical adjuncts connected therewith, hereinafter described.

The invention will be understood by referring to the accompanying drawings and to the following description.

Figure 1 is a front view, and Fig. 2 a plan, of a press composed of a bed-plate, *a*, with a standard or arm, *b*, with a head, *c*, in which the threaded rod or shaft *d* turns when the lever *e* is turned to the right, in the usual manner, for pushing or forcing the impression-plate *f* down upon the paper or other material on the die or stamp *g*, placed between them for the time being, the return movement of the lever *e* releasing the pressure for the paper to be removed. Fig. 3 is a side view of the same. Fig. 4 is an enlarged view of the stationary ink-reservoir and rotating ink-brush. Fig. 5 is a sectional plan view of a portion of the mechanism on the press-head for imparting an intermittent motion to the traveler. Figs. 6 and 7 are views of a rotating ink-reservoir and pad, as an equivalent of the stationary reservoir and rotating brush.

The die or stamp is fitted on a traveler, *h*, arranged in a groove in a plate, *i*, projecting from the side of the bed-plate *a*, its movement being governed by a pinion, *j*, taking into rack-teeth *k* on one of its edges. The pinion is fitted upon a vertical spindle, *l*, (shown more clearly in Fig. 3,) whose upper end carries another pinion, *m*, in gear with an idle-wheel, *n*, for transmitting the motion from a wheel, *p*, on the press-head *c* by the stud *q*, depending from the lever *e*. On the front edge of the traveler *h* is a pin, *h'*, which strikes, when moving in one direction, against the lever *r*, to cause a pawl, *s*, to give rotation to a roller, *t*, over which a strip of paper, *o*, becomes wound, the paper strip first passing under and against a pad, *u*, to bring fresh portions of the paper into operation for wiping the surface of the die *g* on its way to the inking or color brush *v*, from which the die receives a brushing and a fresh supply of ink or color for each successive printing, the die being again wiped by the paper strip on its return. The paper strip comes from a roller, *w*, arranged above, a strain or tension being put upon it by the nut *x*. The inking-brush is arranged to touch the bottom of a reservoir, A, (shown detached in Fig. 4,) and take a supply as it rotates against it through the action of the cord *y*, which is wrapped round it for the purpose, the ends of the cord being attached to the traveler in a permanent manner. The brush is like an ordinary wheel-brush, and it is caused to travel in the reverse direction to that of the travel of the die-holder or traveler.

The brush performs two functions—viz., brushing out the die and inking it at the same time—at each to-and-fro movement. The result is, that no solid particle of color, nor of size or varnish, nor dust, can remain in the die, which would interfere with the future working or printing, although the color is always taken from the bottom of the reservoir, where it is thickest by the precipitation of the heavy particles.

The flow of the ink or color from the reservoir is regulated by turning the pin B more or less, to bring a flat portion of the pin over the slit or opening shown in Fig. 4.

An equivalent device for the brush is shown in Fig. 6, which is an enlarged longitudinal sectional view; and it consists of a reservoir for holding the ink arranged to revolve partially upon an axis, *a'*, its bottom being rounded concentrically with the axis, and perforated to allow a flow of ink to the absorbent pad *b'*, secured thereto,

the flow being regulated by screwing the head *c'* more or less into the interior of the reservoir. The reservoir is so pivoted to the body of the press (in the same position as the reservoir and brush in Fig. 1) that the die *g*, as it is moved back and forth by the motion of the traveler *h*, is brought into contact with the pad *b'*, partially rotating the reservoir by friction, and the bite and suction produced thereby thoroughly inks the die. This reservoir may also be in the form of a roller or cylinder, as in Fig. 7, and its interior may be divided into separate chambers or cells, 1 2 3, for holding inks of different colors.

The paper strip is drawn from the upper roller *w* onto the lower one *t* by the movement of the pawl, as before explained, and this can be regulated by the placement of a pin, *h'*, into one or other of a series of holes in the traveler, the weight H returning the lever *r* until it is arrested by its abutting against the pin F. Thus, according to the distance the lever *r* travels, so will be the number of teeth of the roller-ratchet over which the pawl will slip. The two paper-rollers are of the same diameter, and both are provided with ratchet-teeth, so that they can be reversed—that is to say, as the bottom one becomes filled with the paper drawn from the upper one the two can be removed from their respective pins and transposed, so that the opposite face of the paper can be used for wiping the die or stamp.

If the color or the ink is of a gummy character, requiring an unusual time to dry, I can pass the paper over other rollers, as indicated by dotted lines, before the paper is allowed to be wound upon the lower roller. By this means the coils of paper are prevented sticking to each other, or from soiling the back of the paper by the color or ink upon its face.

If no color or ink is to be used in the stamping, I lift or remove the pin or stud *q* from the lever *e*, and this disconnects the train of wheels, so that no motion is given to the traveler and die. Plain stamping can thus be carried on, the "force" *f* being lifted by springs I I each time the lever *e* is turned to the left hand, as before.

To insure the perfect register of the die under the force, I employ a plate, *n'*, (shown detached in Fig. 5,) on the axle of the idle-wheel *n*, to rotate with it. This plate bears against a plain part on the edge of the wheel *p* when the die is home, and fixes the train of wheels while the impression is taking place, as shown in Figs. 2 and 5. There is a spring on the wheel *j*, and its free end engages against a pin on the rack, while the rack is moving for the impression, the object being to take up any backlash that there may be in the teeth of the rack, as seen in Fig. 2.

What I claim as my invention, and desire to have secured to me by Letters Patent, is—

1. In an embossing-press, constructed substantially as specified, the intermittingly-moving traveler *h*, carrying the die *g*, in combination with the inking mechanism A *v*, arranged to operate substantially as shown and described, for the purpose set forth.

2. In combination with the traveler *h*, the wheels *p*, *m*, *n*, and *j*, and stud *q*, substantially as shown and described.

3. In an embossing-press, constructed substantially as described, the rotating inking-brush *v*, in combination with an ink-reservoir, A, arranged to operate substantially in the manner and for the purpose set forth.

4. In an embossing-press having an intermittingly-moving traveler, *h*, and inking mechanism A *v*, the intermittingly-moving band of paper or other fabric *o*, substantially as and for the purpose herein set forth.

5. In combination with the band *o*, the pad *u*, rollers *t w*, and lever *r*, substantially as shown and described.

In witness whereof I, the said JOHN GOUGH, have hereunto set my hand this 18th day of July, one thousand eight hundred and seventy-three.

JOHN GOUGH.

Witnesses:
H. GARDNER,
E. EDMONDS,
166 *Fleet street, London.*