

(No Model.)

S. STEEN, Jr.
PLATE PRINTING PRESS.

No. 471,723.

Patented Mar. 29, 1892.

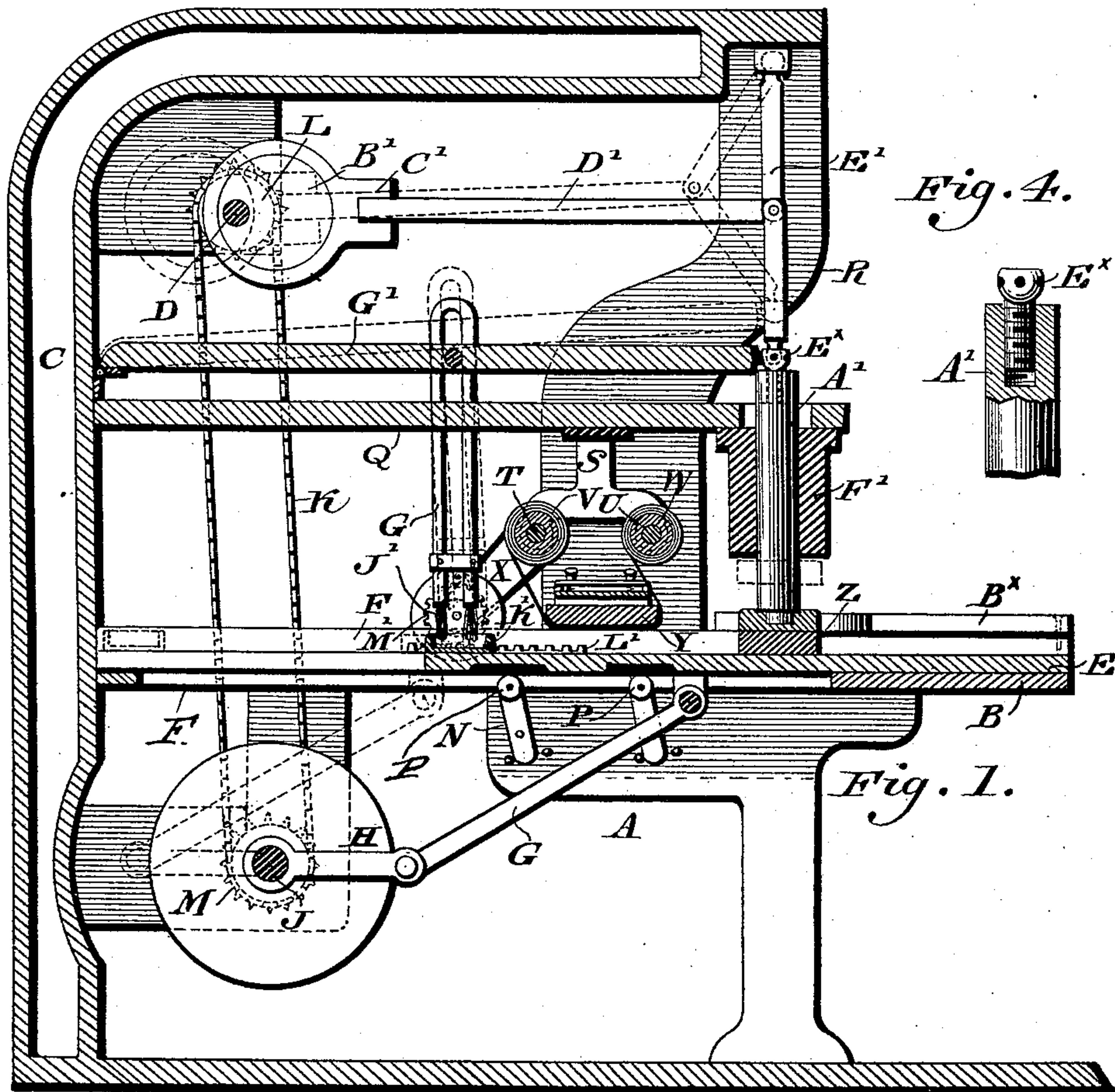


Fig. 4.

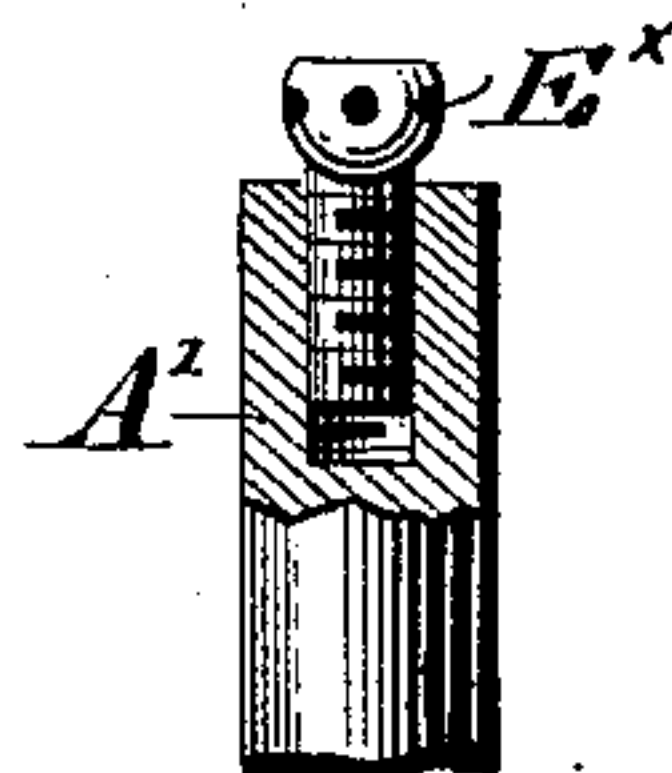


Fig. 1.

Fig. 2.

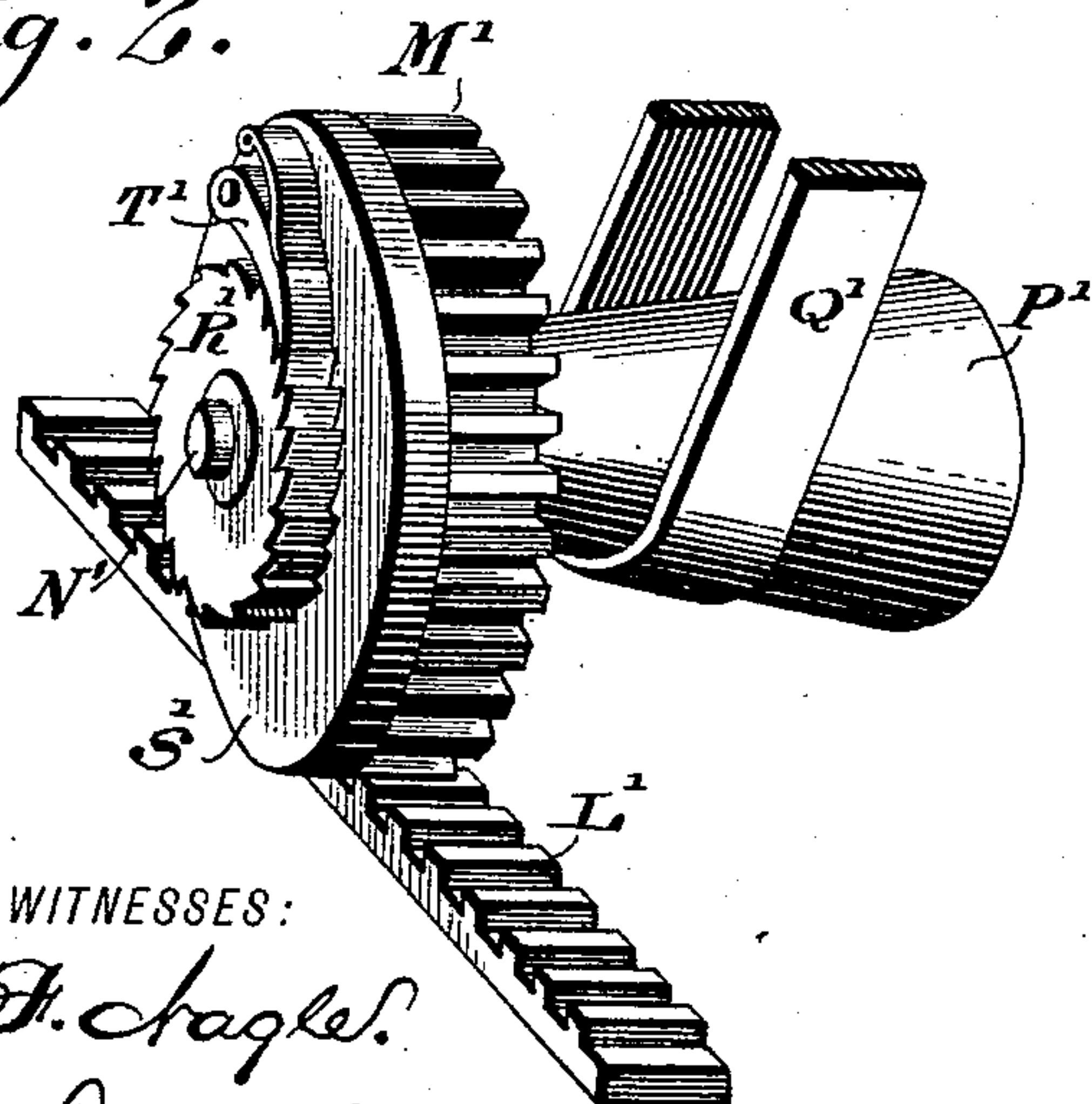
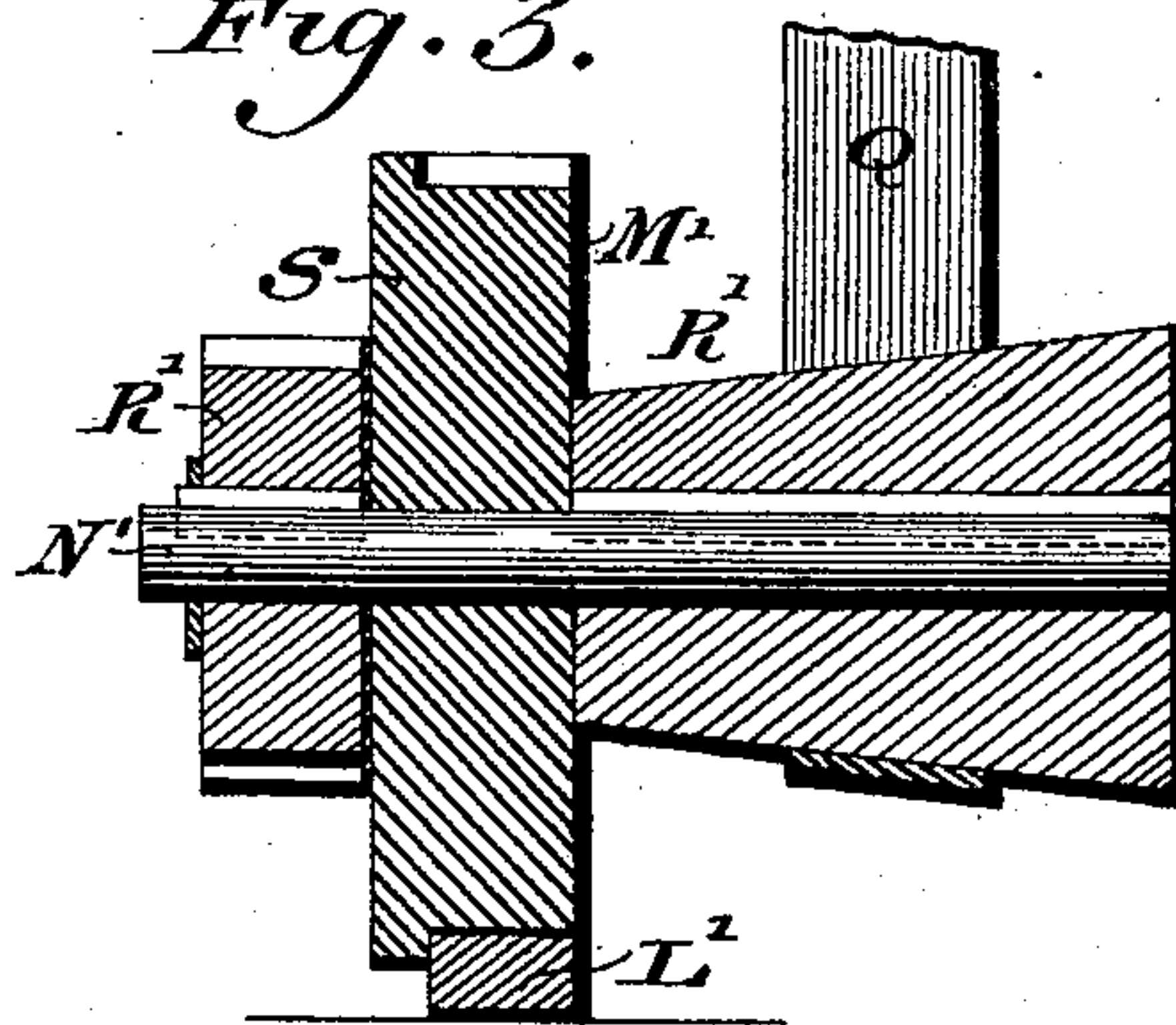


Fig. 3.



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SAMUEL STEEN, JR., OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR OF ONE-HALF TO CHARLES H. ELLIOTT, OF SAME PLACE.

PLATE-PRINTING PRESS.

SPECIFICATION forming part of Letters Patent No. 471,723, dated March 29, 1892.

Application filed April 28, 1891. Serial No. 390,798. (No model.)

To all whom it may concern:

Be it known that I, SAMUEL STEEN, Jr., a citizen of the United States, residing in the city and county of Philadelphia, State of Pennsylvania, have invented a new and useful Improvement in Plate-Printing Presses, which improvement is fully set forth in the following specification and accompanying drawings.

My invention consists of a plate-printing press having novel features; as hereinafter set forth and claimed.

Figure 1 represents a vertical sectional view of a press embodying my invention. Fig. 2 represents a perspective view of a portion of the wiper-operating mechanism on an enlarged scale. Fig. 3 represents a central longitudinal section of the parts shown in Fig. 2. Fig. 4 represents a partly-side and partly-sectional view of a detail portion of the device.

Similar letters of reference indicate corresponding parts in the several figures.

Referring to the drawings, A designates the frame of the press, and B the bed thereof. In the arms C of the frame is journaled the shaft D, which receives rotary motion from any suitable motor.

E designates a sliding table, movable in the guides F on the bed B by means of a connecting-rod G, secured to an ear on the under side of the said table and to an arm H on a shaft J, which is journaled in attachments of the frame A below the bed B and receives motion from the shaft D by means of a sprocket-chain K and the sprocket-wheels L and M or other suitable gearing.

Secured to the frame A underneath the table E are the arms N, carrying at their upper ends the rollers P, adapted to contact with the under side of the table, so as to slightly raise the same to bring the die more positively against the wiper.

Q designates a cross-bar secured at one end to the upright C of the frame and supported near its other end in the standard R. To the said bar Q is secured a bracket S, in which are journaled the parallel shafts T and U, carrying the spools V and W for the wiper X of the device, the said wiper being wound on said spools, passing around the bar Y, which is secured to the bed B above the said table E. The lower die or plate Z is supported on

the table E, and the plunger A', the flat head of which bears upon the paper to be printed on, resting on the lower die Z, is raised and lowered by means of an eccentric B' on the shaft D, a yoke C' embracing said eccentric and having an arm D' pivotally connected to the toggle-lever E', one end of which has a ball-bearing in an upper part of the standard R and the other end has a ball-bearing E' in connection with the said plunger A', the latter moving in a boss or guide F', secured to the bar Q.

Connected with a rising-and-falling arm G', secured to and operated by the movement of the plunger, is the brush or brushes J' of the ink or color distributing device, adapted to receive the ink from an ink-well K', secured to the table E.

To operate the wiper X, which consists of a strip of paper or other suitable material adapted to remove the ink from the smooth face portion of the die Z, so as to continually present a clean face to the die, the table E is provided with a rack L', which engages a cog-wheel M', mounted on a shaft N', journaled in an attachment to the frame A and carrying a cone-pulley or wheel P', which is connected by a band Q' with a wheel on the shaft T. It will be seen that the movement of the table in one direction or to the rear will cause the rack L' to rotate the cog-wheel M', and thereby the shaft N' and pulley P', rotating the wheel on the shaft T, and thus the said shaft, and thereby winding the paper on a drum or spool V and unwinding it from the spool W, thus presenting a clean portion of the wiper to the die on the return movement of the table. To prevent the unwinding of the strip from the spool V on the said return movement of the table, the cog-wheel M', which is loosely mounted on the shaft N', is secured thereto by means of a ratchet-wheel R', which is fastened to the shaft, so as to rotate therewith, and a disk S', secured to the side of the cog-wheel M' and carrying a spring-pressed pawl T', which engages the ratchet-wheel, when the rack is moved backward or away from the plunger A', but rides over the teeth of the said ratchet-wheel when the rack is moved toward the said plunger, whereby the said cog-wheel runs free on the shaft N' with-

out rotating the same in the forward movement of the table and rack and the wiper remains tightly drawn and without any slack, so as to efficiently perform its work.

5 The operation of the device is as follows: The shaft D is rotated, so as to operate the shaft J, and thereby move the table E, so that the die Z, which is placed thereon, as shown, is passed under the brush J', receiving the
10 color thereon, the excess of color, or that on the smooth surface of the die, being wiped therefrom as the die passes under the wiper in the forward movement of the table. The paper on which the printing or impression is
15 to be made is now placed on the upper portion B^x of the bed B, which is formed of sections cut away on one side of their inner ends, so as to permit the easy handling of the dies Z within the bed, the said die now being under the paper at the place designed to receive the impression. The parts are so timed that the
20 plunger now descends, dwelling a short time on the paper, whereby the latter is brought in close contact with the die, thus printing the design thereon. At the same time the lowering of the arm G' dips the brush J' in the ink or color well, which is directly below the same. The further rotation of the shaft D raises the plunger A', lifts the brush J' from
30 out the well K', and moves the table E to the rear, the rearward movement of the rack L' causing the winding of the wiper on the spool V from off the spool W. A further rotation of the shaft D causes the backward movement
35 of the table E and the repetition of the operation hereinbefore described.

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

40 1. A printing-press having a frame, a table movable on said frame and carrying an ink-well and die thereon, and a rising-and-falling brush pivoted above said table in the path of said well and die, said parts being combined
45 substantially as described.

2. A frame, a movable table with ink-well thereon, a rising-and-falling brush in the path of said well, a wiper, and a die, said parts being combined substantially as described.

3. A frame, a driving-shaft, a plunger, a toggle-lever connected with said plunger and said frame, an eccentric on said shaft, a yoke embracing said eccentric and having an arm connected with said toggle-lever, a rising-and-falling brush, a hinged arm carrying said
55 brush, and a lower die, said parts being combined substantially as described.

4. In a printing-press, a brush, a plunger having a rising-and-falling arm connecting with said plunger and brush, a reciprocating
60 table carrying a die and an ink-well, a wiper in the path of the die, and mechanism for adjusting the wiper, said parts being combined substantially as described.

5. In a printing-press, a movable table, pivoted arms carrying rollers bearing against the under side of said table, and stops for said arms, said parts being combined substantially as described.

6. A printing-press having a sliding table
70 with ink or color well thereon, a die on the table, mechanism for sliding said table, a rising-and-falling brush above said table and in the path of said well, a plunger, and operating mechanism for said plunger, said parts
75 being combined substantially as described.

7. In a printing-press, a frame, a reciprocating table movable thereon and adapted to carry a die and an ink-well, a rising-and-falling brush in the path of said die and well, a
80 bracket secured to said frame, shafts journaled in said bracket, drums on said shafts, a bar secured to the bed of said frame above said table, a strip of suitable material secured at one end to one of said drums and passing
85 around said bar and secured at its other end to the other drum, so as to wind and unwind on and from said drums, a rack on the said table, a shaft having a suitable bearing and
90 having a cog-wheel and a pulley thereon, and a band connecting said pulley with a wheel on one of the shafts of said drums, said parts being combined substantially as described.

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