

(No Model.)

T. BARTHOLOMEW.  
HAND PRINTING APPARATUS.

No. 403,822.

Patented May 21 1889.

Fig. 1.

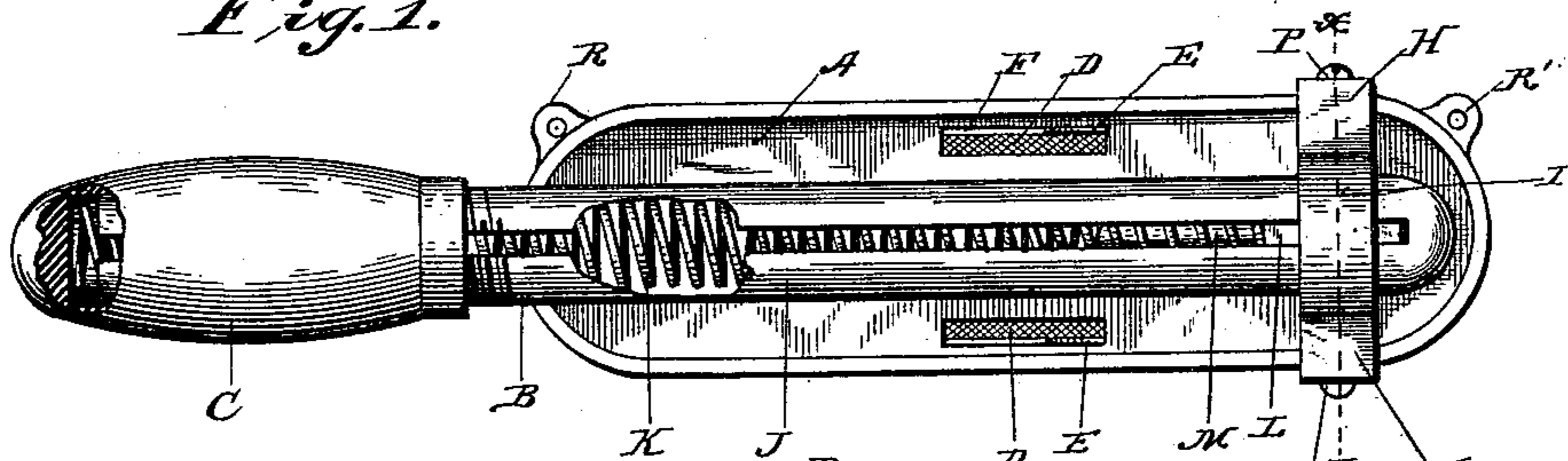


Fig. 3.

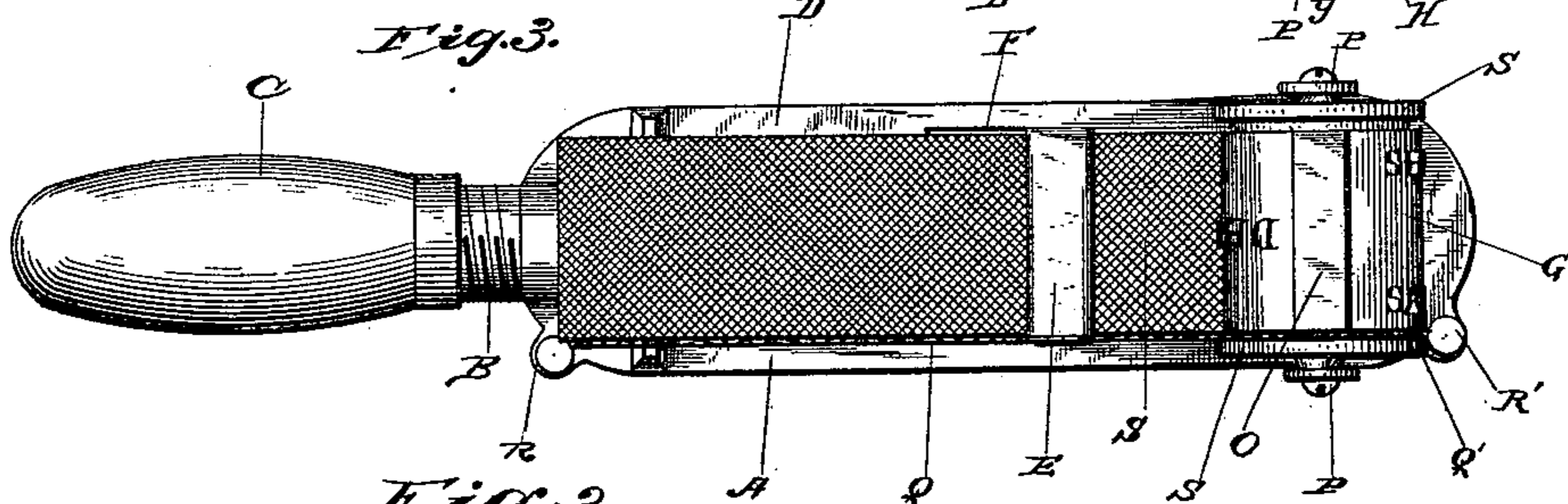


Fig. 2.

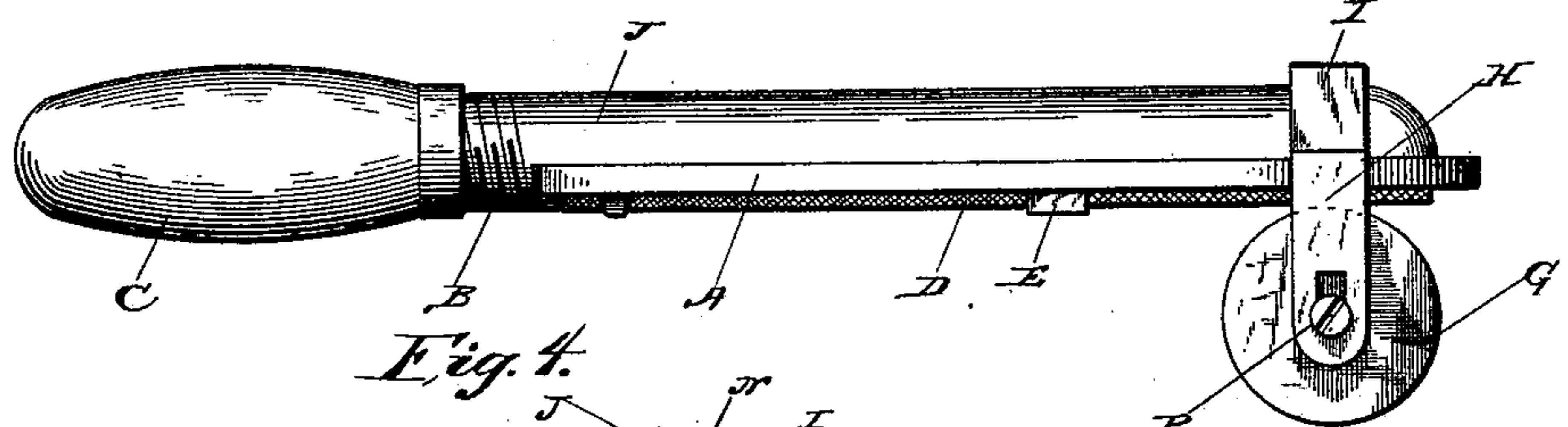


Fig. 4.

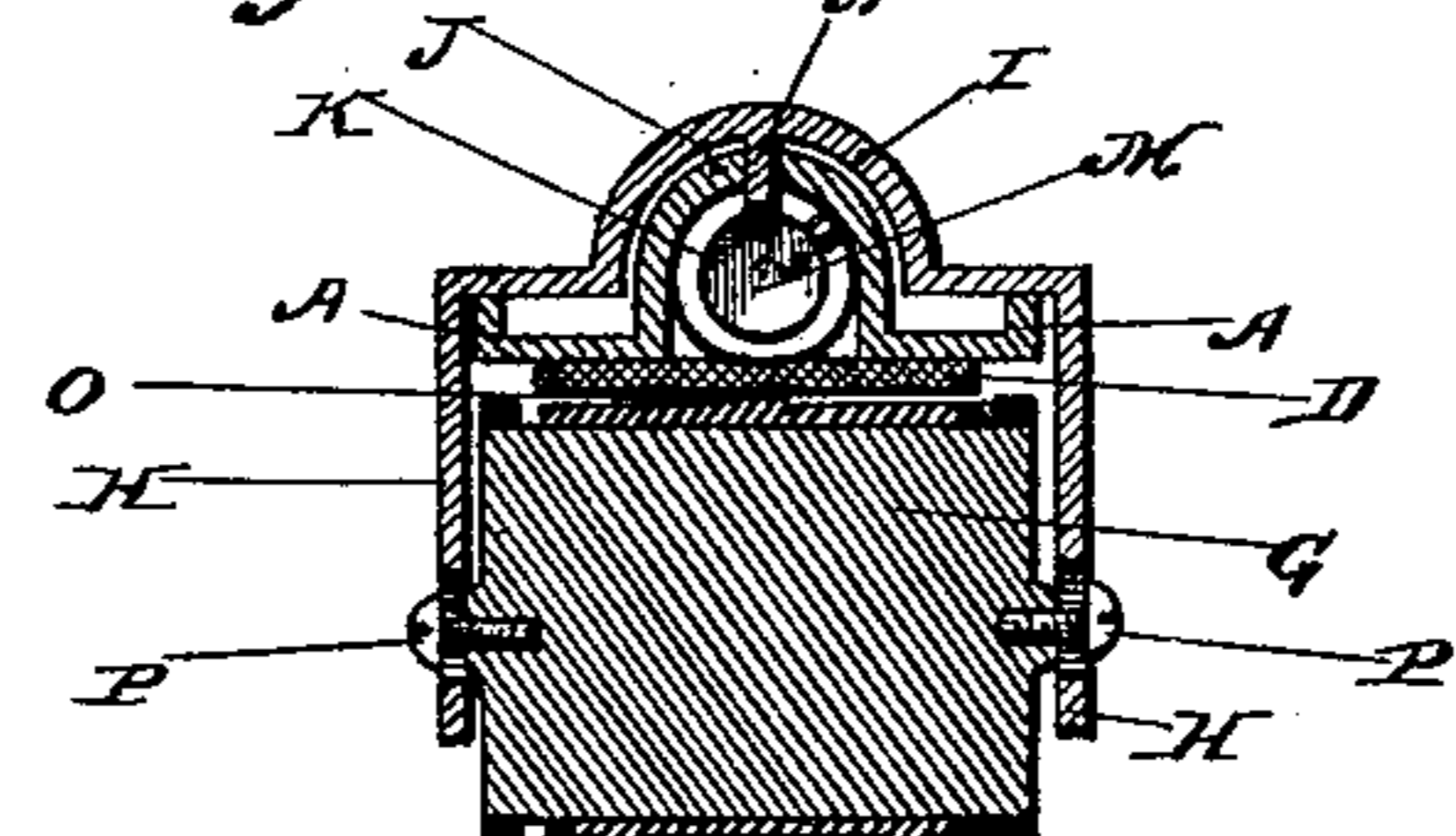


Fig. 5.

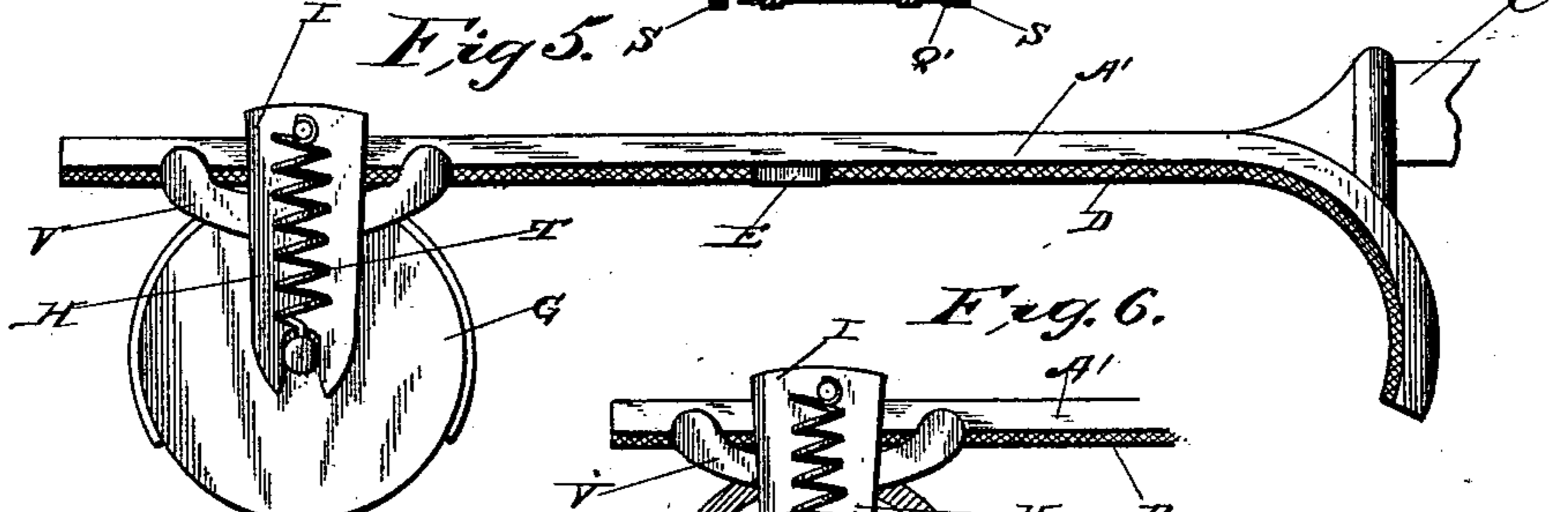
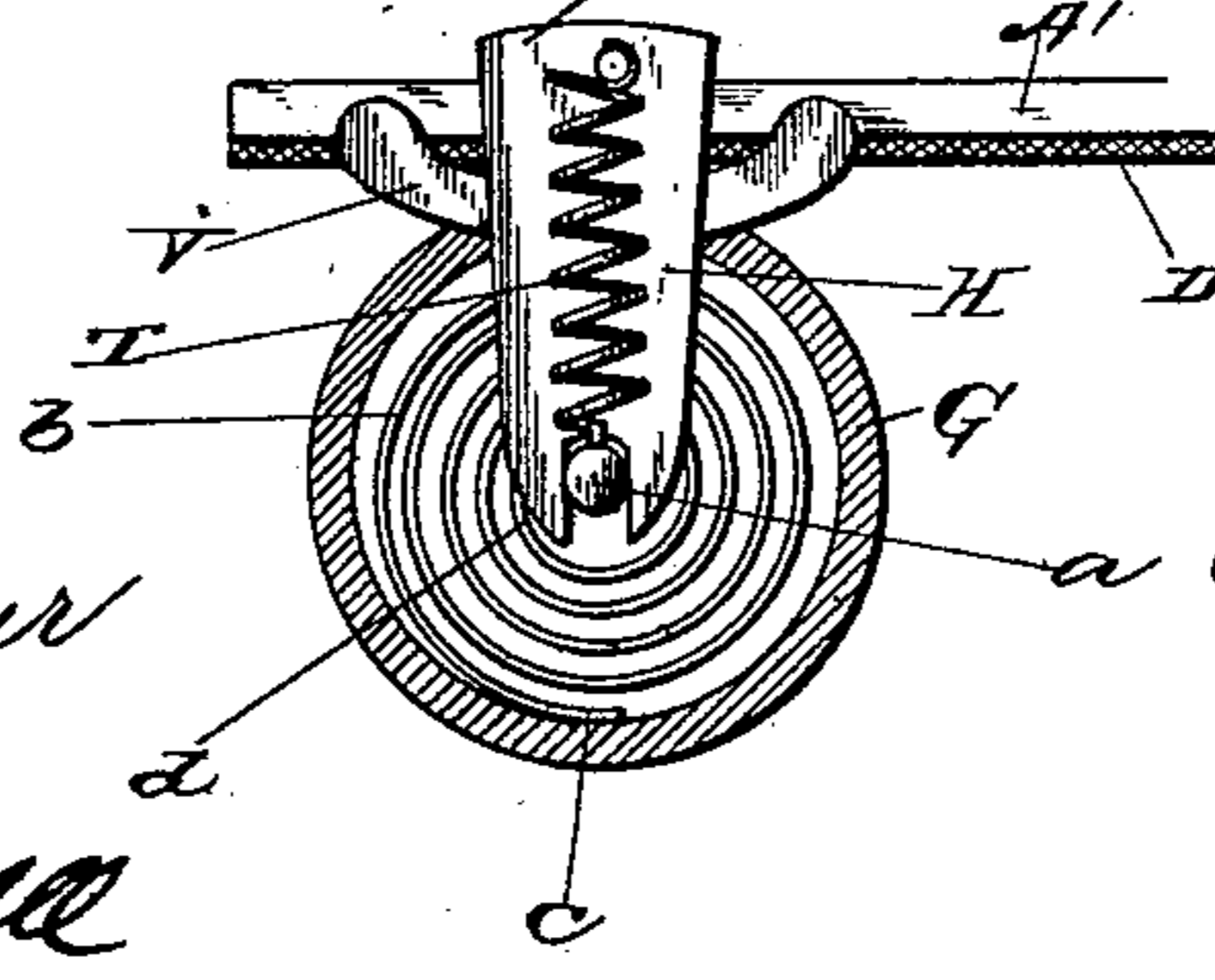


Fig. 6.



Witnesses.  
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# UNITED STATES PATENT OFFICE.

THOMAS BARTHOLOMEW, OF NEWARK, OHIO.

## HAND PRINTING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 403,822, dated May 21, 1889.

Application filed July 20, 1888. Serial No. 280,540. (No model.)

*To all whom it may concern:*

Be it known that I, THOMAS BARTHOLOMEW, a resident of Newark, in the county of Licking and State of Ohio, have invented certain  
5 new and useful Improvements in Hand Printing Apparatus; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to  
10 make and use the same.

This invention relates particularly to apparatus to be grasped by the hand and applied bodily to the surface to be printed, and includes a printing-cylinder that rolls bodily  
15 along an inking-pad, and at the same time makes the impression with the side opposite the pad. It is fully illustrated in the accompanying drawings, wherein—

Figure 1 shows the apparatus as seen from above. Fig. 2 is a side view. Fig. 3 is a bottom view. Fig. 4 is a section on the line  $x y$ , Fig. 1. Figs. 5 and 6 illustrate modifications of construction.

In the drawings, A is a broad bar provided  
25 with a screw-threaded shank, B, for insertion in a hollow handle, C, and with a plane inking-pad, D, secured to its lower surface by a flat spring-clamp, E, crossing the surface of the pad and entering slots F in the bar A. Below the bar, and in constant contact with the  
30 pad, is a printing-cylinder, G, revolvably mounted between rigid arms H, projecting downward at each side of the bar from a sliding saddle, I, resting on the top of the bar.  
35 The middle of the bar A is raised to form a downwardly-open tube, J, wherein is placed a longitudinally-compressible spiral spring, K. This tube is continuous with the shank B, and is slotted at the top throughout its entire length. The handle end of the spring  
40 rests against the bottom of the socket in the handle, and its opposite end acts against the flange L of a core, M, in the end of the spring. The core is integrally connected with the top  
45 of the saddle by a web, N, passing through the slot in the tube.

The printing-cylinder is provided with raised characters upon its surface, and with an equally raised elastic strip, O, between the  
50 beginning and the end of the matter to be printed. Its axial gudgeons P work in ver-

tically-elongated bearings in the arms H, so that it may rise and fall in following the inking-pad should there be any inequalities in either cylinder or pad. The cylinder being in  
55 the position shown in Figs. 1 and 2, an inelastic cord is firmly secured by its middle to the highest part of the cylinder. The end Q is carried directly to a point upon the bar near the handle, drawn taut, and secured in a clamp,  
60 R, of any convenient construction. The other end, Q', of the cord is passed once around the cylinder, drawn firmly, and secured in a similar clamp, R', at the opposite end of the bar A.

The parts should be so proportioned that with the strip O diametrically opposite the fixed point of the cord a half-revolution of the cylinder will bring the strip upon the clamp E, so that it may not be inked by con-  
70 tact with the pad. To permit adjustment of the clamp for this purpose the slots F are considerably elongated.

In operation, the apparatus being grasped by the handle, the strip O is pressed firmly  
75 against the surface to be printed and the bar is given a forward movement until the rotation of the cylinder ceases, when the matter upon the cylinder will have been imprinted perfectly upon the surface without the com-  
80 mon blurring or distortion of the edges of the first and last characters. In this operation the cylinder will have made precisely one revolution and will have traveled bodily with its saddle a corresponding distance toward  
85 the handle C, the spring K having been compressed a like amount. When the apparatus is again lifted from the surface, the spring at once returns the saddle and roller to the original position. The blurring above re-  
90 ferred to is prevented by the elastic strip O, which receives most of the pressure until the entire face of the initial letters of the lines is brought into contact with the surface to be printed, and in like manner receives the  
95 pressure while the final letters are being impressed. As the cylinder passes from its original position, the part Q' of the cord is unwound therefrom and the part Q wound upon it, and as the cord is inelastic it is evi-  
100 dent that no advance of the cylinder's axis is possible without an exactly corresponding

rotation. It is also plain that if the cylinder be rotated in either direction until the corresponding end of the cord is completely unwound no further rotation in the same direction is possible—that is, continuing the motion of the bar A after the printing is complete simply slides the uninked strip O along the surface upon which it rests, and the strip must always be at the lowest point of the cylinder when the latter has been returned to its normal position, Figs. 1 and 2, by the spring K. The cord would also limit the movement of the saddle I; but to avoid unnecessary strain upon the cord suitable stops for the saddle may also be provided upon the bar A.

The division of the inking-pad by the clamp E, besides securing the pad and preventing the inking of the strip O, renders it as easy to print perfectly in two colors as in one, for inks of different color may be applied to the two ends of the pad, respectively; without care as to the matter of overlapping and commingling.

In this apparatus the cylinder may or may not be provided with end flanges. In fact, they have not usually been employed, since the operation of the devices seems all that could be desired without them. I have, however, shown flanges in the drawings, as rubber bands S, equal in thickness to the elevation of the characters above the cylinder's surface. As they pass on each side of the pad, they are never inked and they entirely preclude undue strain upon the raised characters, if such strain be possible in this device.

Fig. 5 is a side view of a modification securing some but not all of the advantages. The bar A' and pad D are curved to the arc of the cylinder near the handle C', the cylinder-gudgeons are retained in slots in the arms H by springs T, the saddle is kept steadily in place by bars V, and the spring K, with its connection, is omitted. With this form the cylinder does not return automatically to its original position, but may be returned by printing with a contrary motion of the bar or by other means.

Fig. 6 shows the same form with a plane spiral spring, b, inserted in the cylinder, with its outer end, c, attached thereto and its inner end, d, secured to a non-revoluble shaft, a, inserted in slots in the arms H. This spring, like the spring K, returns the cylinder to its normal position, acting like the spring in an ordinary shade-roller.

I do not desire to limit myself to the exact constructions shown, since mechanical skill may vary my forms, using, for example, other means for securing uniform rotation of the cylinder with reference to its bodily advance.

What I claim is—

1. In hand printing apparatus, the combination of a bar having an inking-pad upon one of its faces and a printing-cylinder mounted upon said bar to roll along said pad, whereby the cylinder may be inked upon one side while its opposite side prints upon any surface over which it is rolled.

2. A handled bar, a sliding saddle mounted thereon, a printing-cylinder revolvably secured to said saddle, an inking-pad fixed to said bar tangent to said cylinder, and a spring adapted to resist while permitting the movement of the cylinder from its normal position, all combined substantially as set forth.

3. The combination, with a handled bar, of a printing-cylinder revolvably mounted in a saddle sliding on said bar and an inelastic cord fixed at each end to the opposite ends of the bar, passing once about the cylinder, and fixed thereto at one point, whereby the cylinder rotates equally in passing bodily through equal distances along the bar and conversely.

4. In a hand printing apparatus, an inking-pad and a printing-cylinder mounted to roll along said pad while printing with its opposite side, said cylinder having a letterless elemental space, and said pad an inkless band registering with said space as the cylinder passes along the pad, substantially as and for the purpose set forth.

5. The combination, with the bar A, having the adjustable handle C, of the pad D, divided and secured to the bar by the clamp E, the saddle I, sliding upon said bar and carrying the rotating cylinder G in contact with said pad, the elastic strip O upon said cylinder, the cord Q Q', passing around and having its middle point secured to said cylinder and its ends secured to the bar upon opposite sides of the cylinder, and the spring K, acting against said saddle and reacting against said handle, substantially as set forth.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

THOMAS BARTHOLOMEW.

Witnesses:

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CHAS. H. FOLLETT.