

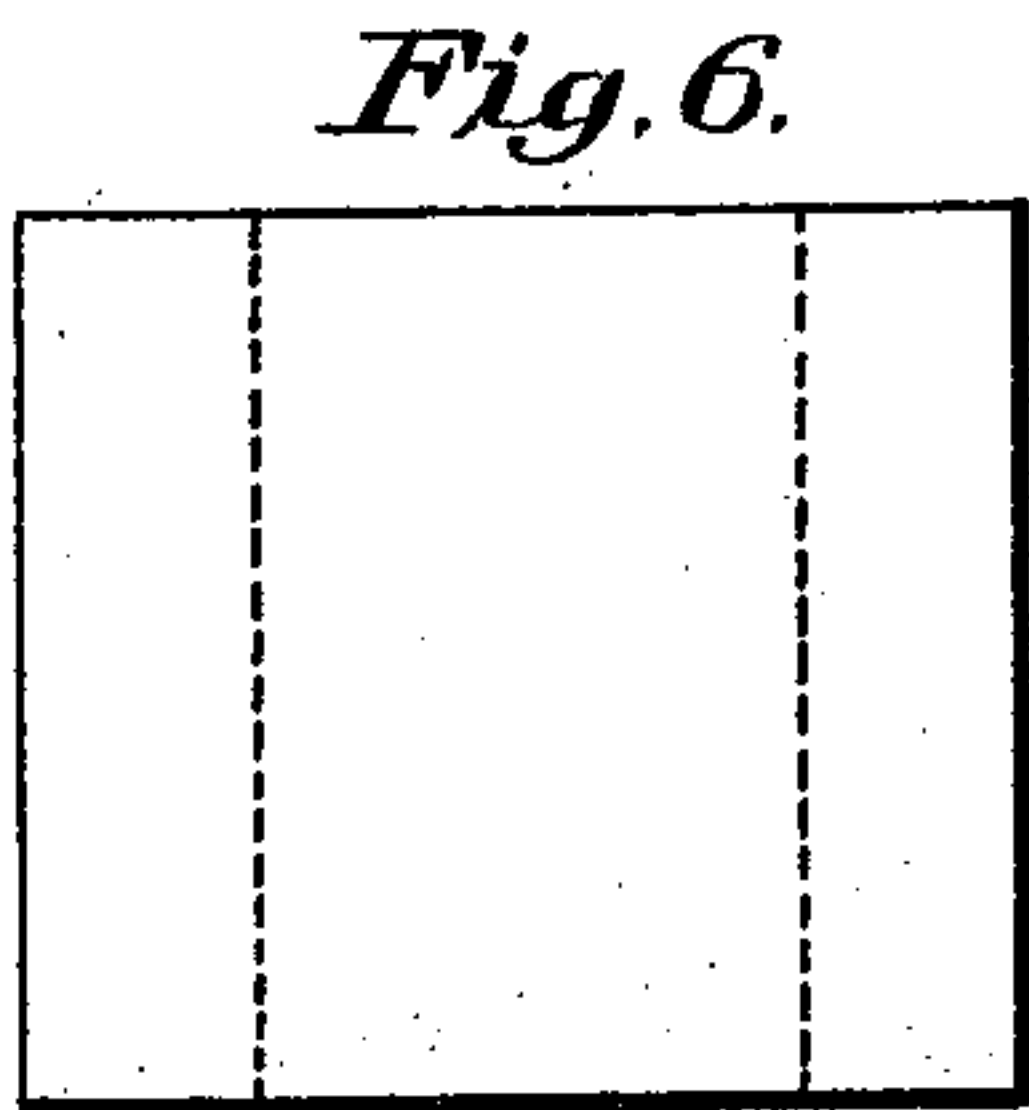
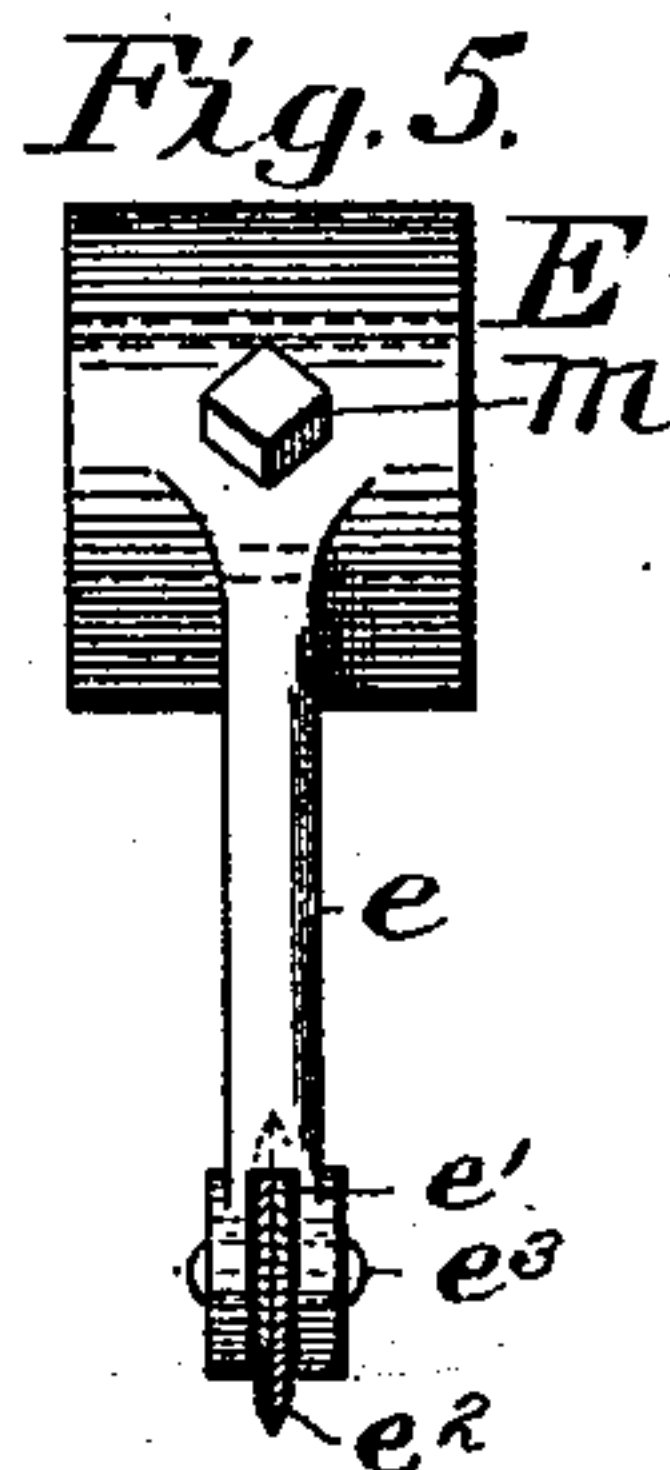
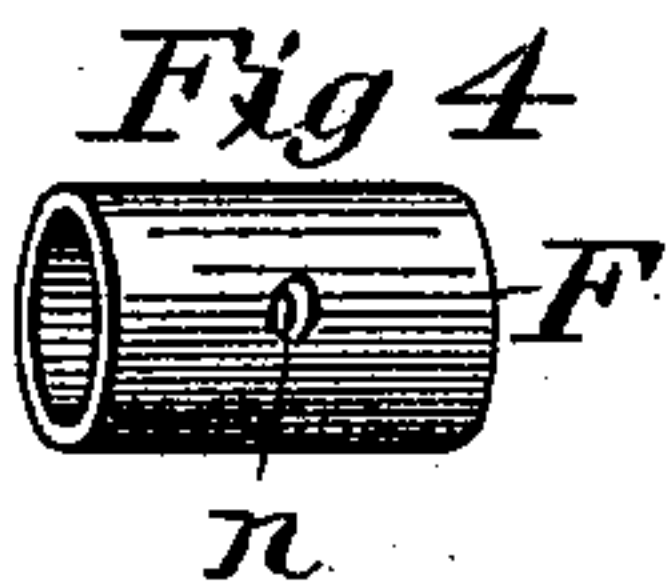
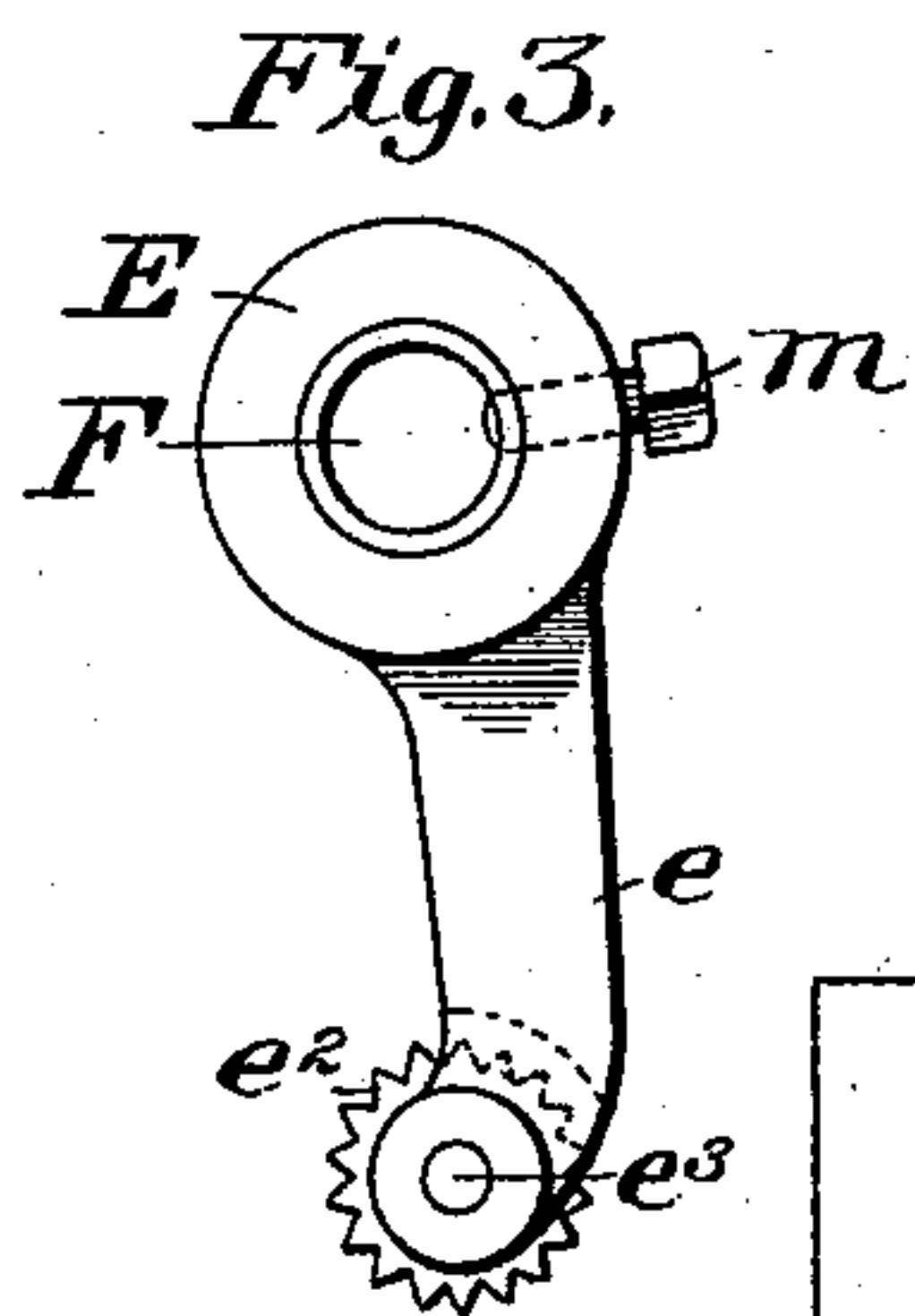
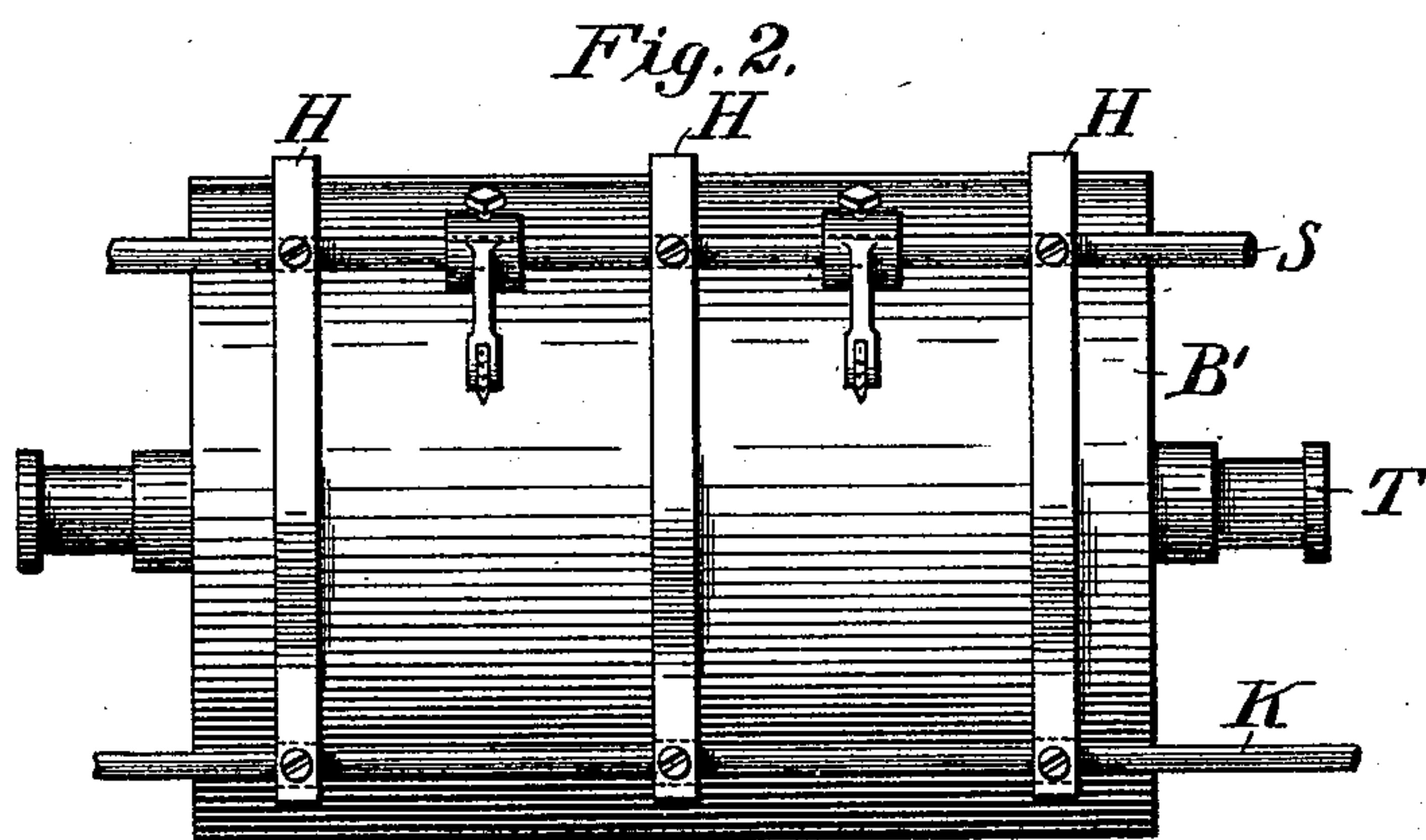
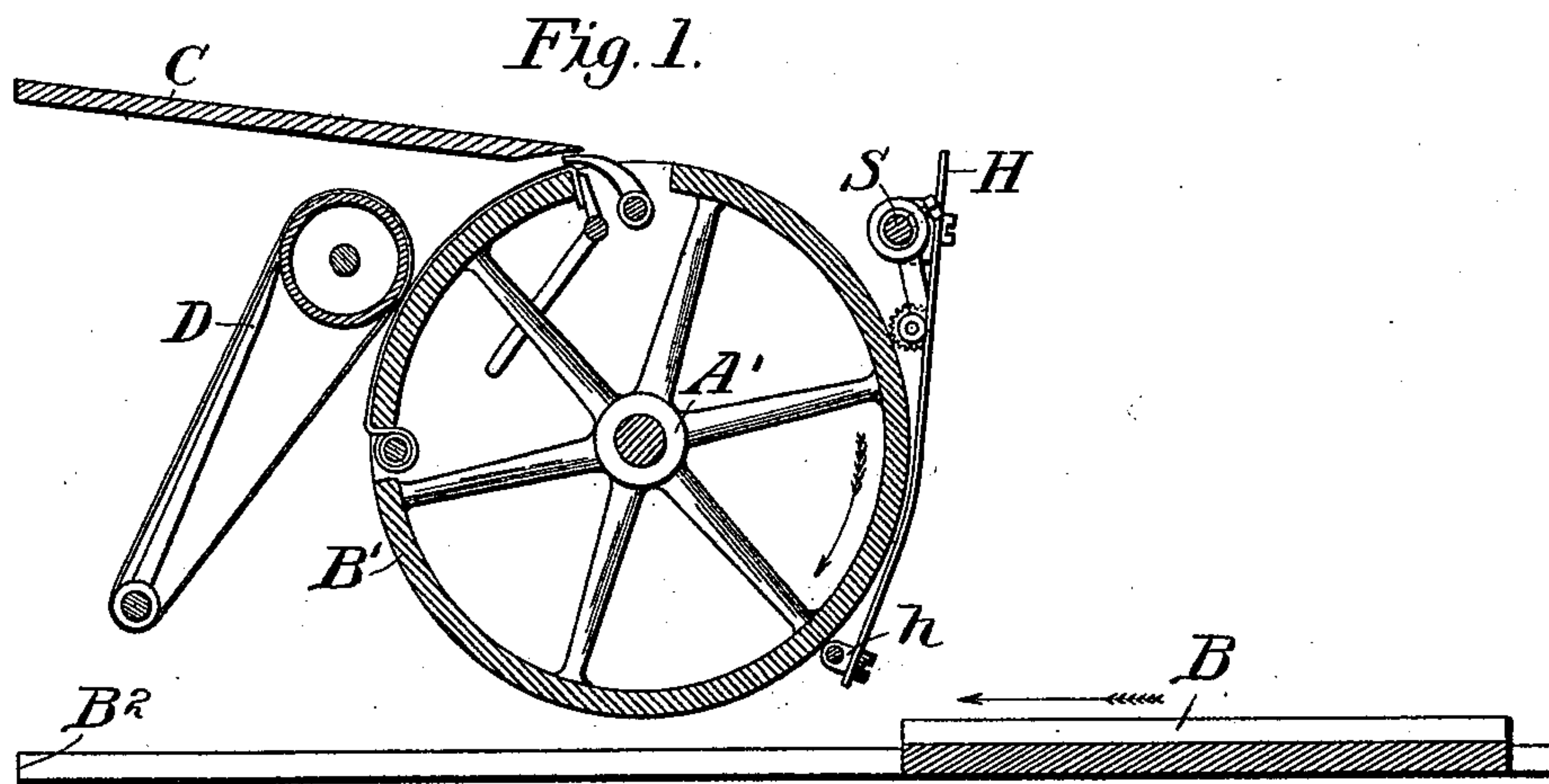
(No Model.)

C. L. SMITH.

PERFORATING ATTACHMENT FOR PRINTING PRESSES.

No. 516,317.

Patented Mar. 13, 1894.



Witnesses:

Wm J Brown
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Inventor:

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UNITED STATES PATENT OFFICE.

CHARLES LYNN SMITH, OF PHILADELPHIA, PENNSYLVANIA.

PERFORATING ATTACHMENT FOR PRINTING-PRESSES.

SPECIFICATION forming part of Letters Patent No. 516,317, dated March 13, 1894.

Application filed January 13, 1893. Serial No. 458,236. (No model.)

To all whom it may concern:

Be it known that I, CHARLES LYNN SMITH, a citizen of the United States, residing in the city of Philadelphia, State of Pennsylvania, have invented certain new and useful Improvements in Perforating Attachments for Printing-Presses, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification.

My invention relates to printing presses and has for its object to combine with the feeding-in, impression and delivery devices, mechanism for perforating the paper, in the manufacture of sheets of checks, postal orders, &c., simultaneously with the printing of the same in sheets; and to this end my invention consists of the perforating mechanism and its combination and arrangement with the feeding-in, printing and delivery devices of a printing press, as hereinafter fully described.

In the accompanying drawings illustrating my invention, in which similar letters of reference refer to like parts in the several views, Figure 1 is a vertical sectional view of such parts of a printing press, and their relative arrangement in combination, embodying my improvements, as is necessary to illustrate the invention. Fig. 2 is a side view of the cylinder, and a front view of the perforating mechanism and its supporting devices. Fig. 3 is a side elevation of the perforating finger; Fig. 4 an elevation of the inner adjusting sleeve, on which the same is mounted; Fig. 5 a top view of the perforating finger; and, Fig. 6 a diagram of the paper, illustrating the character of perforated sheet made by the device.

The cylinder of the press is designated B' in Figs. 1 and 2 and is arranged with relation to the other usual mechanism of the press such as is commonly employed in such machines, and it is rotated by the usual shaft T passing through the hub A' therein. Said cylinder is located over the type-bed B which is caused to slide laterally backward and forward under the cylinder B', upon a slide plate B².

The feed table C and the delivery fly D are mounted upon and actuated by appropriate devices and are constructed and arranged

with relation to the cylinder B' and slide plate B² as is usual and well known. On the opposite side, laterally, of the cylinder, from that on which the delivery fly and feed table are mounted, and over the type-bed, is arranged a rod S mounted in opposite sides of the frame of the machine and supporting a flat band-rod H (see Figs. 1 and 2) so arranged that it will maintain the paper delivered over the cylinder, in its rotation, and that said rod S will also maintain the dependent or inwardly projecting cutting wheel of the perforating device at all times in proper contact with and without undue pressure on the paper delivered between its points and the periphery of the cylinder B' by the rotation of the latter without the use of springs for that purpose the band rods giving sufficient resilience to the supporting shafts to effectuate that object when the perforating device is supported with the cutting wheel in a dependent or inwardly projecting position with relation to the shaft S, the pressure being thus upward against the wheel. Said band-rod H is supported at its lower extremity by means of a rod K secured to the frame of the press and passing through a journal h bolted to the lower end of the band-rod. As before mentioned, there is bolted to the rod S, at n, the perforating device shown in detail in Figs. 3, 4 and 5. Said perforating device consists of a hub E provided with a finger e, the extreme end of which is recessed at e' to admit the larger part of the perforating wheel e² which is mounted upon a pin e³ journaled in said recessed end of the finger e in such manner as to leave only the cutting points of the wheel projecting beyond the edge of the extreme end of the recess.

The bored-out hub E is mounted preferably upon a loose sleeve bushing F encircling the supporting rod or shaft S passing through the same and affixed to the frame of the press, or the bushing may be omitted and the hub E secured directly to the rod which is indicated at S (Fig. 1). The hub E is adjustable on the shaft by means of the set screw m passing through a recess n in the periphery of the hub end of the sleeve if used and impinging upon the shaft. The depth of the puncture can thus be regulated by circumferentially adjusting the hub on the shaft and thus bring-

ing the cutting points of the wheel e^2 nearer to or farther from the surface of the paper delivered against it, from the periphery of the cylinder B' . Several of said perforating devices may be arranged on the same shaft as indicated in Fig. 2, or several shafts or a series of them may be provided, if need be.

The operation of the device is as follows: As the paper is fed forward by the feed table it is engaged by the cylinder and passing around its peripheral surface, and under the band rods H , is first perforated in its said passage by the cutting points of the perforating device and then printed by the type from the form placed on the sliding type-bed, and then is delivered from the cylinder by the delivery fly; thus by the single rotation of the cylinder, and without a second, but by a simultaneous, operation, the paper sheets are both perforated and printed at practically one and the same time and operation of the press.

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

1. The combination in a printing press, with the feeding-in table, the cylinder and its band rods, the shafts which support the same from the frame of the machine the type-

bed, and the delivery-fly, of a puncturing device, supported upon one of said band rod shafts in the manner described, and combined and arranged with relation to the rotating cylinder of the press that the paper fed forward by the rotation thereof to the type-form shall contact with said puncturing device in its passage to the delivery-fly of the press; substantially as and for the purpose described.

2. The combination with the rotating impression cylinder of a printing press, and its delivery mechanism, and band rods H with means such as rods S and K to support the same adjacent to the periphery of the cylinder, of a puncturing device mounted on one of said supporting rods in a dependent or inwardly projecting position with relation to the said rod, consisting of a hub E adjustably secured upon said shaft and carrying a finger e slotted at its extreme end, with a perforating wheel e^2 journaled in said slot; substantially as described.

In testimony whereof I have hereunto affixed my signature this 5th day of January, A. D. 1893.

CHARLES LYNN SMITH.

Witnesses:

H. T. FENTON,
C. W. BECK.