

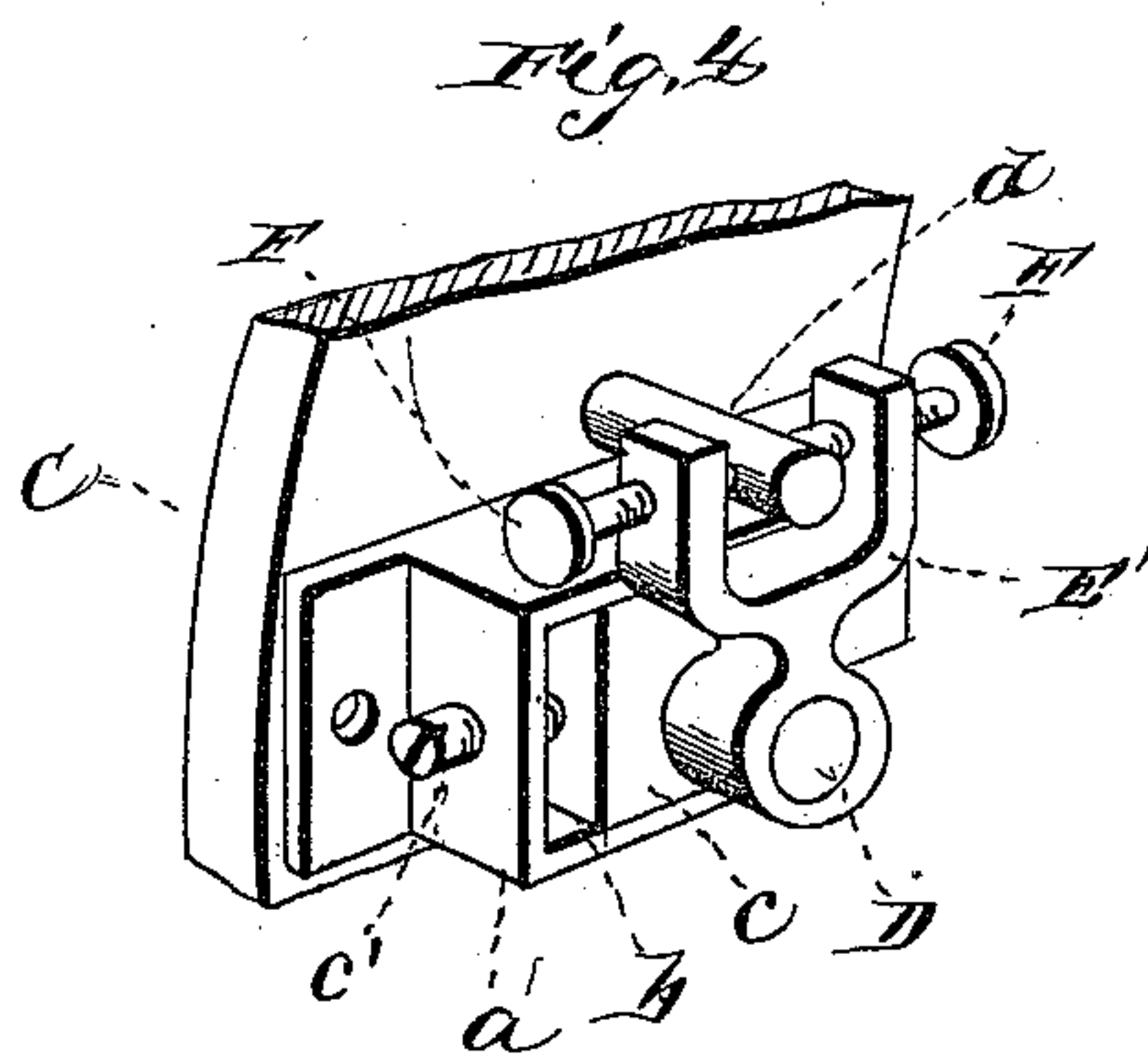
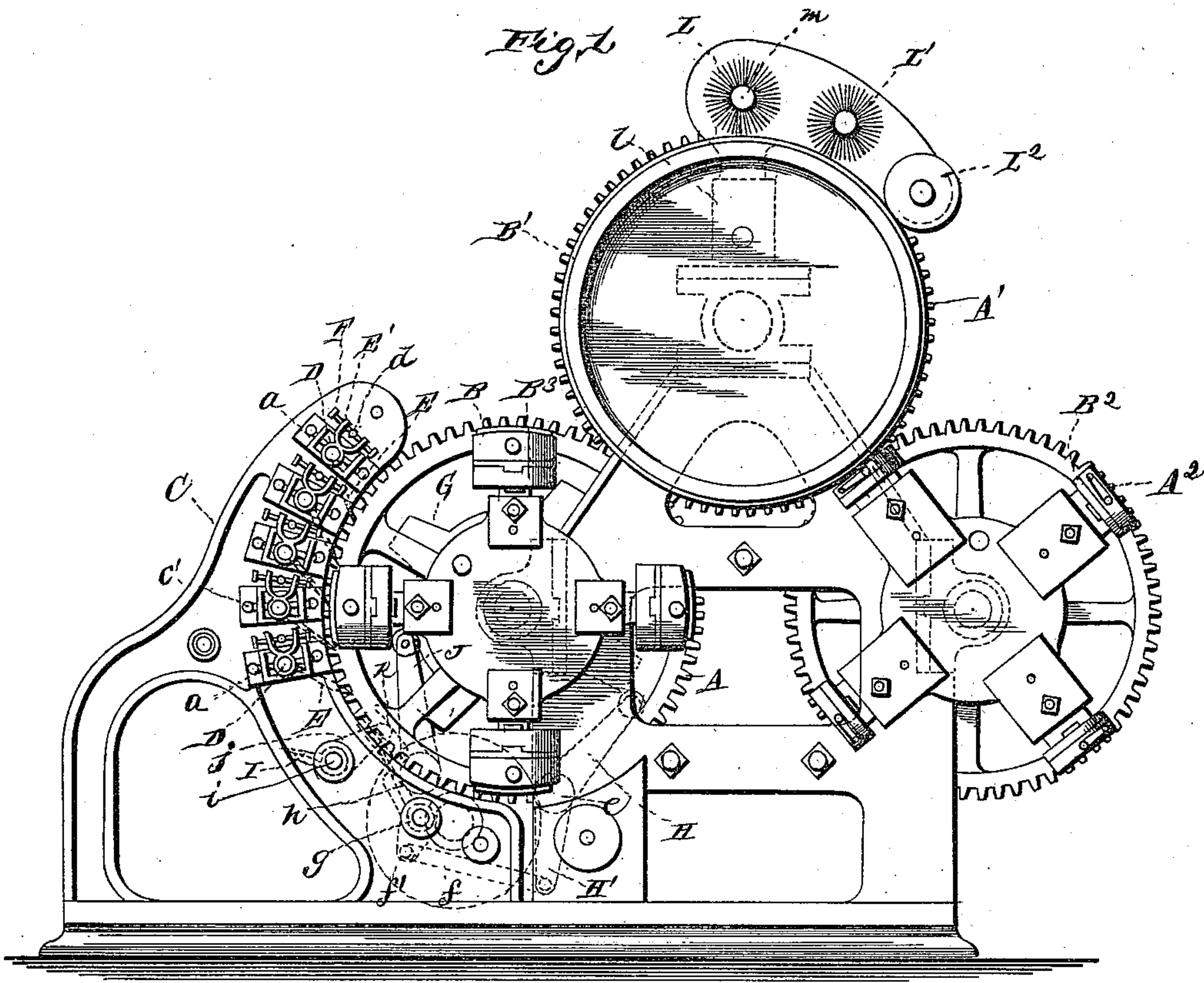
(No Model.)

3 Sheets—Sheet 1.

E. S. BRADFORD.  
DIAL PRINTING MACHINE.

No. 441,129.

Patented Nov. 25, 1890.



Witnesses  
*Chas. L. Taylor*  
*P. C. Masi.*

Inventor  
*Eugene S. Bradford*

By his Attorney

*E. W. Anderson.*

(No Model.)

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Fig. 2.

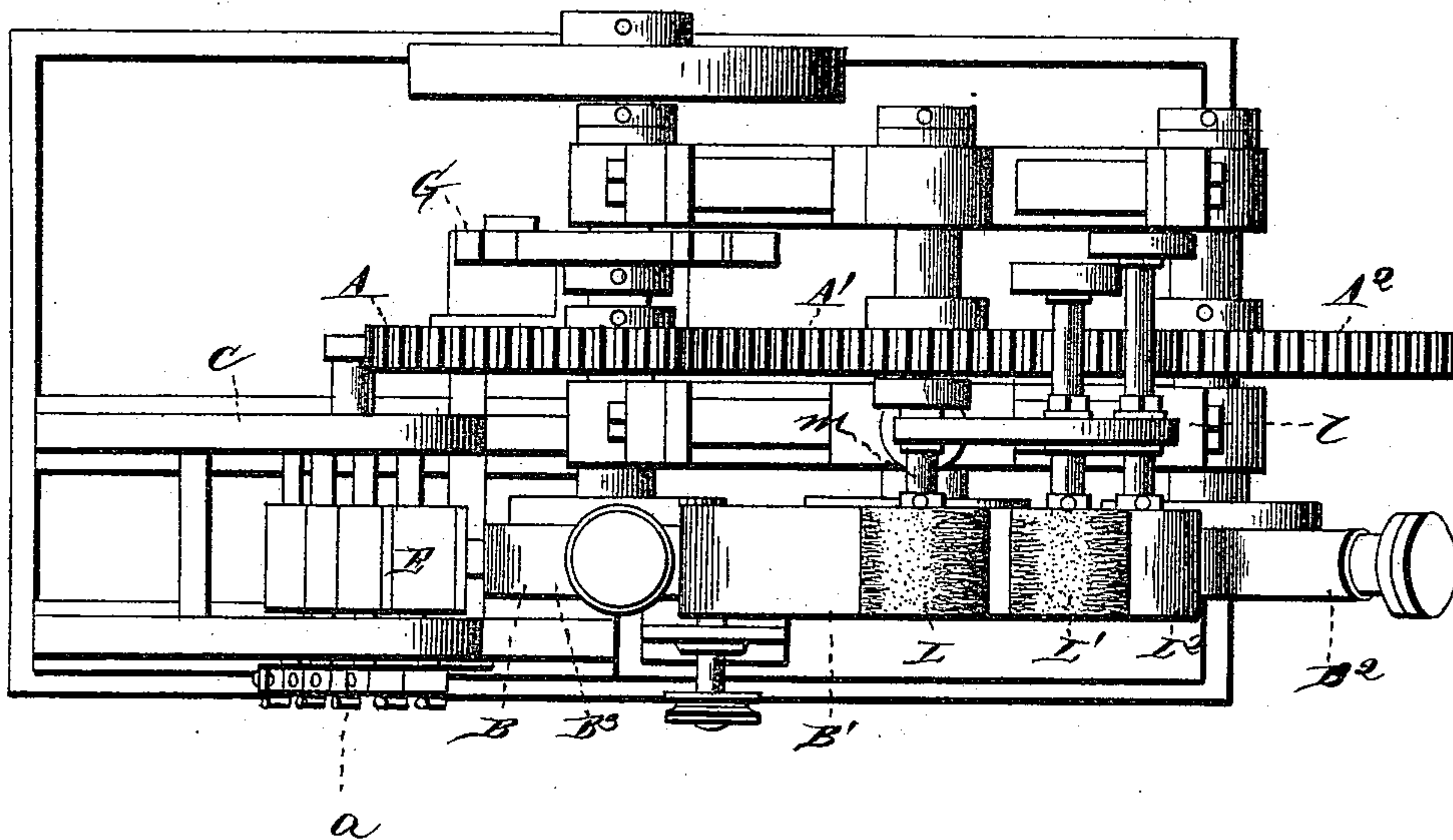
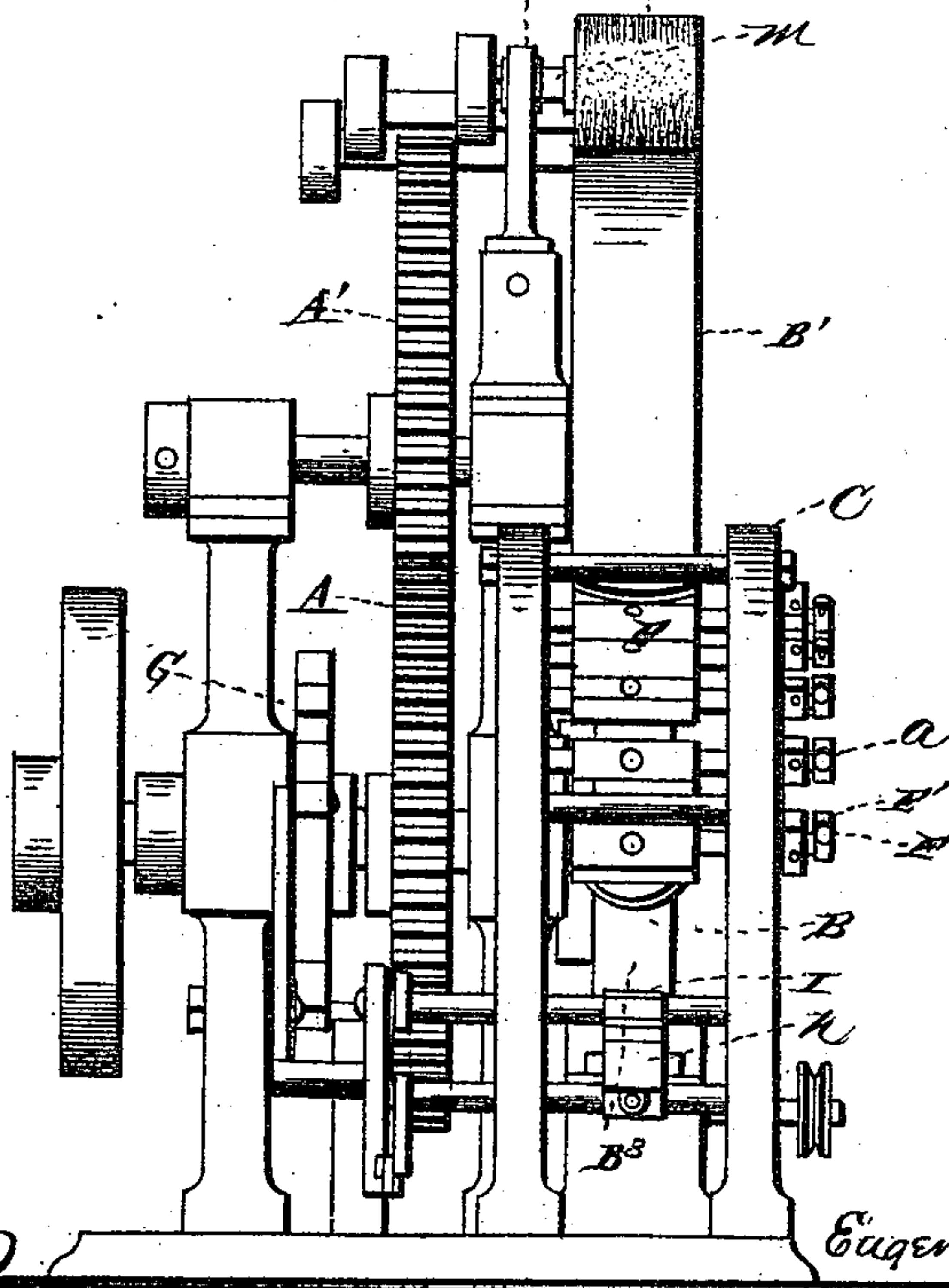


Fig. 3.



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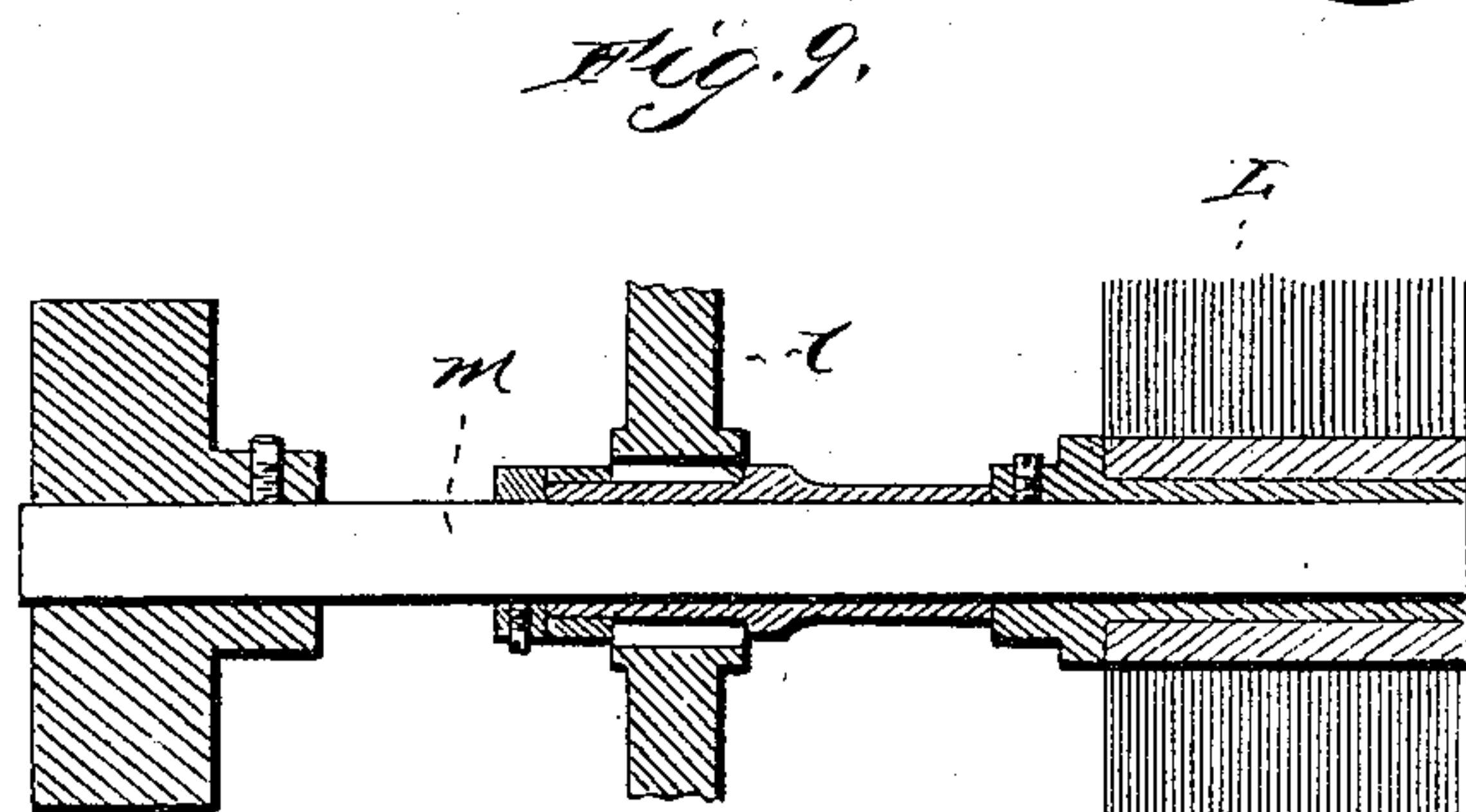
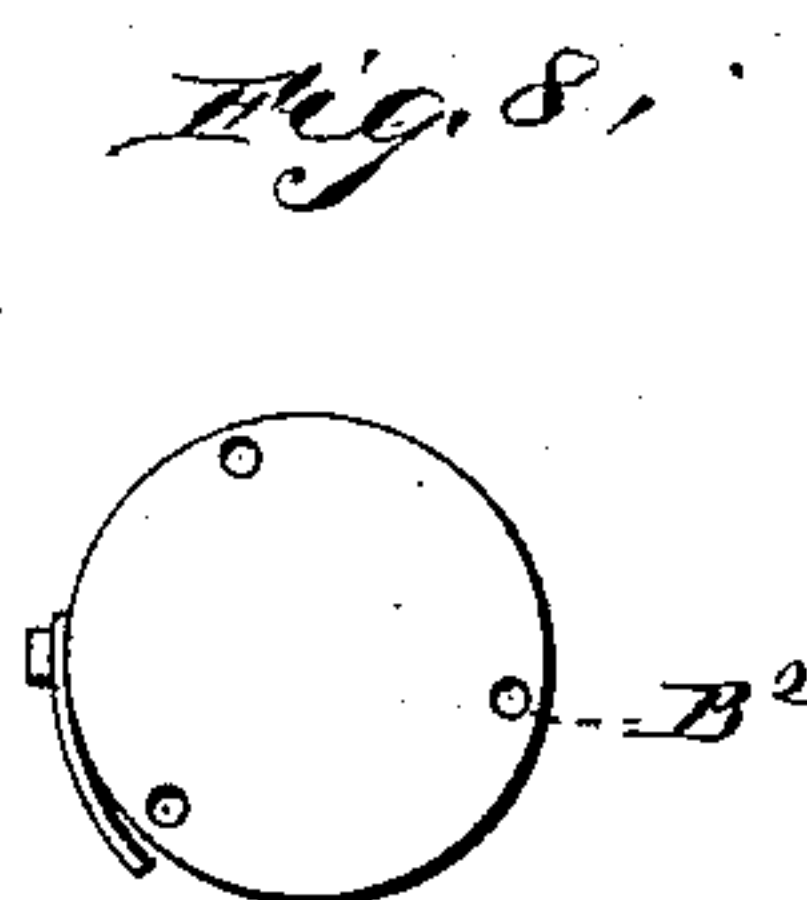
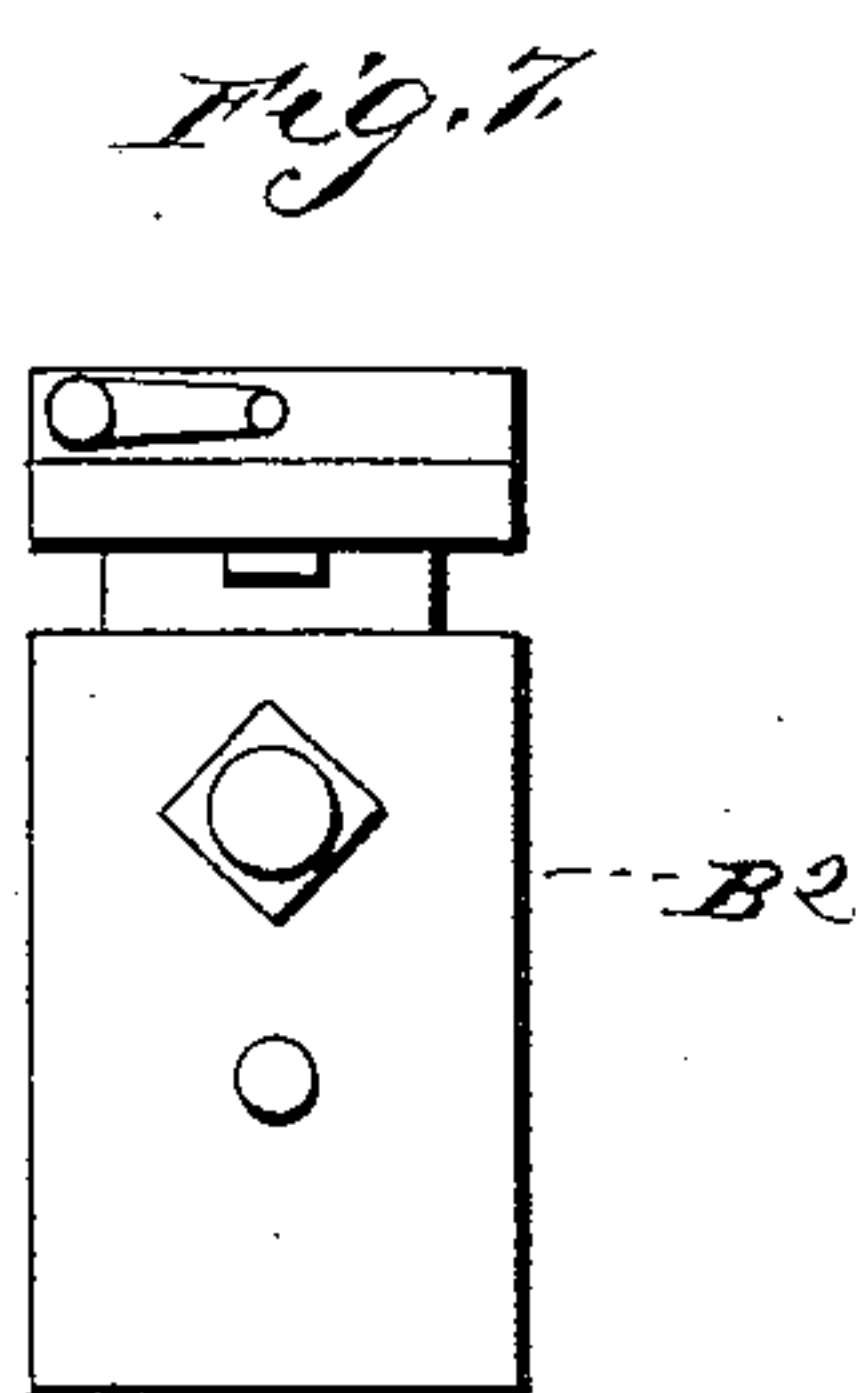
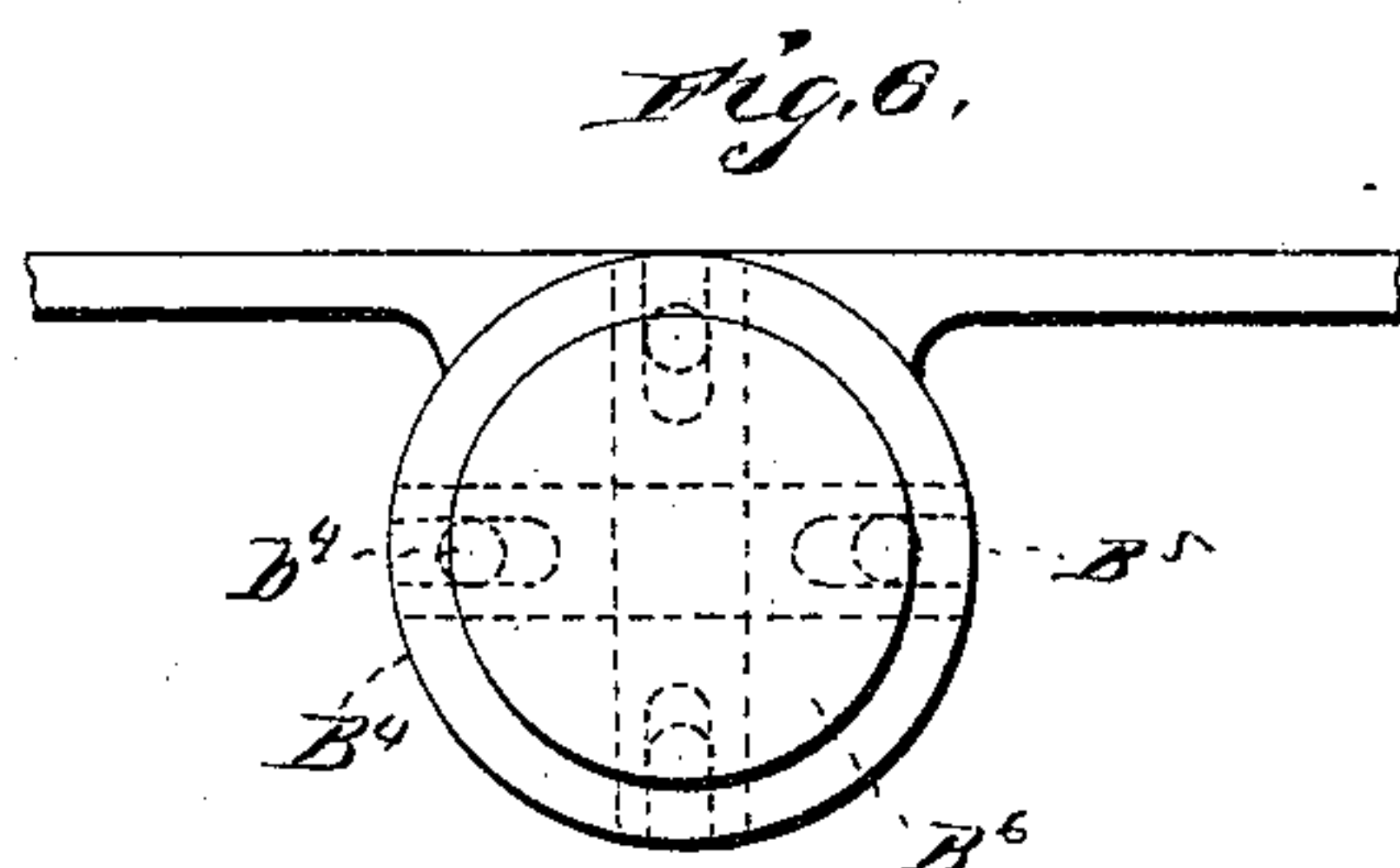
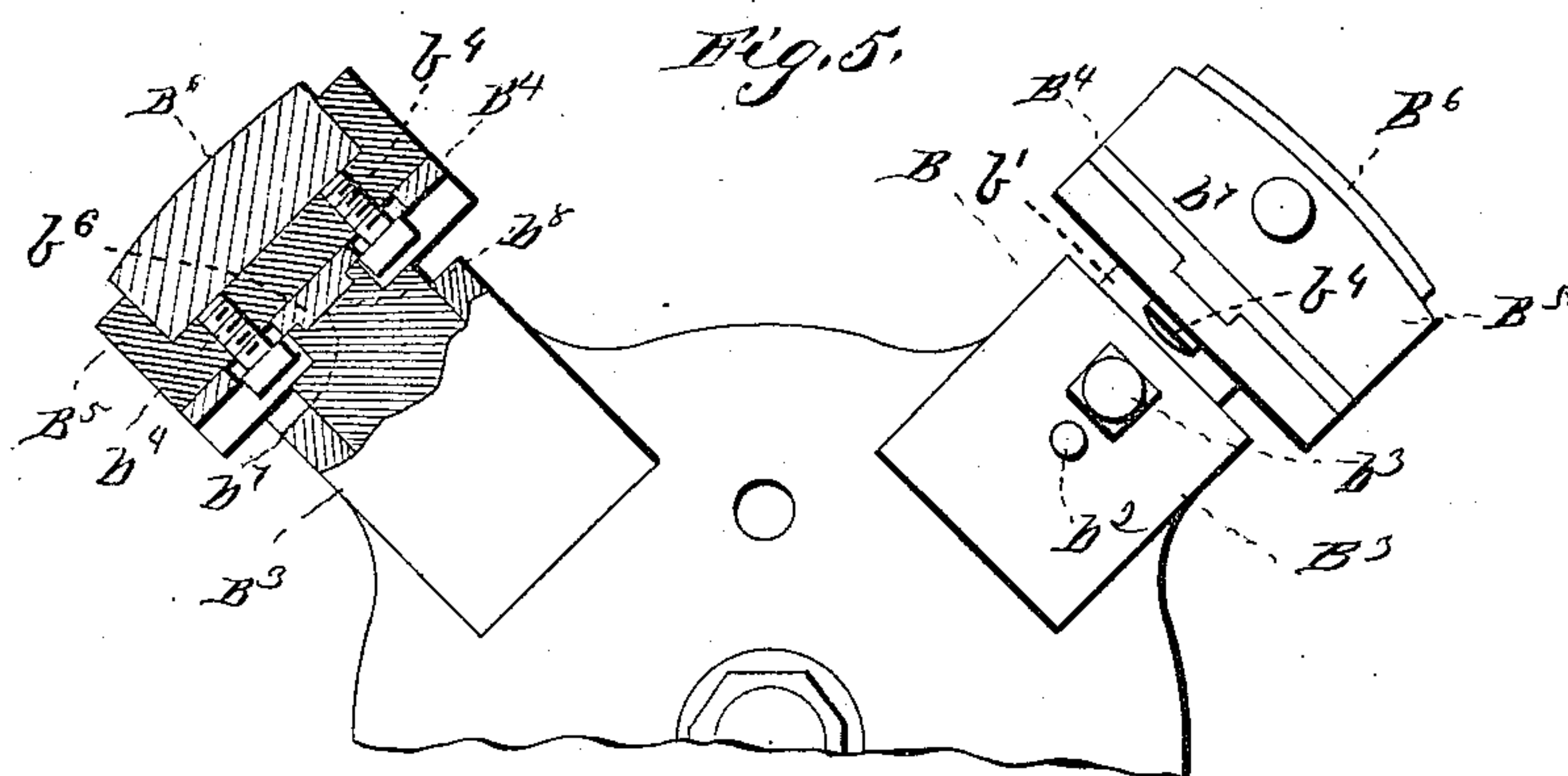
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Witnesses

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# UNITED STATES PATENT OFFICE.

EUGENE S. BRADFORD, OF SPRINGFIELD, ILLINOIS.

## DIAL-PRINTING MACHINE.

SPECIFICATION forming part of Letters Patent No. 441,129, dated November 25, 1890.

Application filed December 23, 1889. Serial No. 334,665. (No model.)

*To all whom it may concern:*

Be it known that I, EUGENE S. BRADFORD, a citizen of the United States, and a resident of Springfield, in the county of Sangamon and State of Illinois, have invented certain new and useful Improvements in Dial-Printing Machines; and I do 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 appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

Figure 1 of the drawings is a side elevation. Fig. 2 is a top plan view. Fig. 3 is an end elevation. Figs. 4, 5, 6, 7, and 8 are details, and Fig. 9 is a sectional detail.

This invention relates to certain improvements in dial-printing machines of like nature as embodied in my patent dated April 1, 1890, and numbered 424,851; and it consists of the novel combination and construction of parts, as will appear from the following description and accompanying illustrations.

In carrying out my invention I employ a series of three large gear-wheels  $A A' A^2$ , upon the shaft or axis of one of which is secured the die-carrier B, upon the shaft or axis of the intermediate one the rubber-faced or transfer cylinder B', and upon the shaft of the other the dial-carrier B<sup>2</sup>.

C is an arc frame arranged coincidently to the plane of rotation of the die-carrier B and supporting a series of boxes or bearings  $a a$ , which are adapted to support adjustably spindles D D, said spindles passing through holes  $b$  in the arc-frame side pieces larger than the diameters of said spindles, and bearing in blocks  $e$ , engaged by screws  $c'$ , working in offsets of said boxes. These spindles are provided with scrapers E, which are adapted to stand parallel with and remove adhering paint from the dies. The ends of the spindles D D are carried by ring portions of yokes or hangers E', whose arms are engaged by screws F, working against opposite sides of a stop  $d$ , projecting from the frame C, whereby the spindles are so adjusted as to vary or regulate the pressure of the scrapers upon the die as may be desired. Also, upon the shaft or

axis of the wheel A is secured a four-arm cam G.

H is a lever arranged on a stud or trunnion  $e$ , one arm H' being connected or linked, as at  $f$ , to a second arm  $f'$ , hung upon a stud or trunnion  $g$ , said studs or trunnions projecting from the supporting-frame. The arm  $f'$  carries the paint-table  $h$ , which, it will be seen, as an arm of the cam G strikes the lever H, is so actuated as to apply the paint to the opposite die, each successive die being similarly treated as each arm of the cam G comes in contact with the lever H. Supplementing this action of parts in order to insure the proper application of paint to the dies, a subsequent application is made by a second paint-table I. This table is arranged upon a stud or trunnion  $i$ , projecting from the supporting-frame, and has an arm  $j$ , acted upon by an arm  $k$  of a lever J, also engaged by the arms of the cam G, but at a different time from that when the lever H is acted upon. The outer ends of the levers H and J are provided with frictional rolls to receive the action of the arms of the cam G.

Suitably supported in position upon a pedestal-like portion of the main supporting-frame is a standard  $l$ , bearing a shaft  $m$ , which carries a brush L, which, together with a similar brush L', also borne by a shaft supported by an extension of said standard, serves to remove the paint from the rubber face of the transfer-cylinder B' after making each impression. These brushes revolve in an opposite direction to the plane of rotation of the transfer-cylinder.

L<sup>2</sup> is a felt-covered roll, which is similarly supported as said brushes upon a shaft-bearing in the extension of said standard, and which is to catch the dripping alcohol used upon the transfer-cylinder, thus preventing it running down upon the dials when the machine is in operation. These brushes and felt-covered rolls are arranged in the arc of a circle.

The dial holder or carrier B<sup>2</sup> comprises hub-like or cylindric radial arms B<sup>3</sup>, which are fitted with cylindric posts  $b'$ , having a dowel-pin and set-screw connection  $b^2 b^3$  with said arms. These posts carry the dial-holders B<sup>4</sup> proper, each of which consists of chambered



or recessed head  $B^5$  and a bed  $B^6$ , which is seated or let into the head and engaged by adjusting-screws  $b^4$ , passing through slots in crossing bars or cleats  $b^6$ , secured to the under side of said heads and through the latter itself. The under side of the merging or intersecting portion of the bars or cleats  $b^6$  has a stud  $b^7$ , which enters a corresponding socket in a tenon-like projection or extension  $b^8$  of the post  $b'$ .

Having thus described my invention, what I claim is—

1. In a dial-printing machine, the combination, with the die-carrier, of a series of painting tables, a common cam having arms, and levers actuated by said arms and operating said tables, whereby said tables are adapted one to supplement the action of the other and to successively apply the paint to the dies of said carrier, substantially as set forth.

2. In a dial-printing machine, the combination, with the rubber-faced transfer-cylinder, of the series of brushes and felt-covered roll arranged in the arc of a circle, substantially as set forth.

3. In a dial-printing machine, the dial holders or carriers having radial tubular arms, and the dial-holders proper fitted and held in said arms and themselves provided with chambered or recessed heads provided with adjustable beds, said beds resting in the chamber or recesses of said heads and engaged by adjusting-screws, substantially as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

EUGENE S. BRADFORD.

Witnesses:

EDWIN A. WILSON,  
GEORGE J. BARRETT.