

No. 692,051.

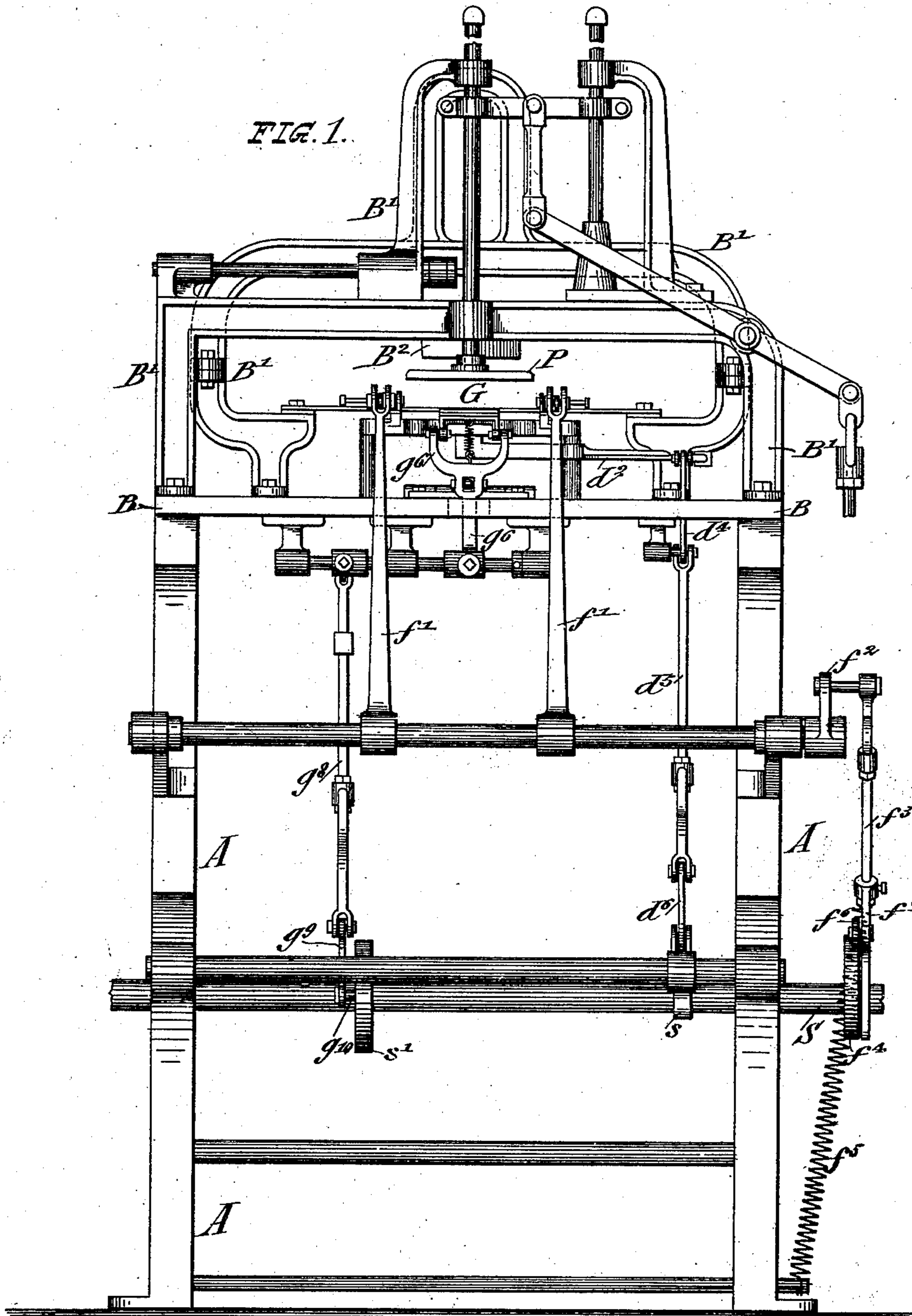
Patented Jan. 28, 1902.

E. ERMOLD.  
ENVELOP MACHINE.

(Application filed June 19, 1900.)

(No Model.)

5 Sheets—Sheet 1.



WITNESSES:

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W. H. Wurtzel

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Edward Ermold  
BY *George R. R. R.*  
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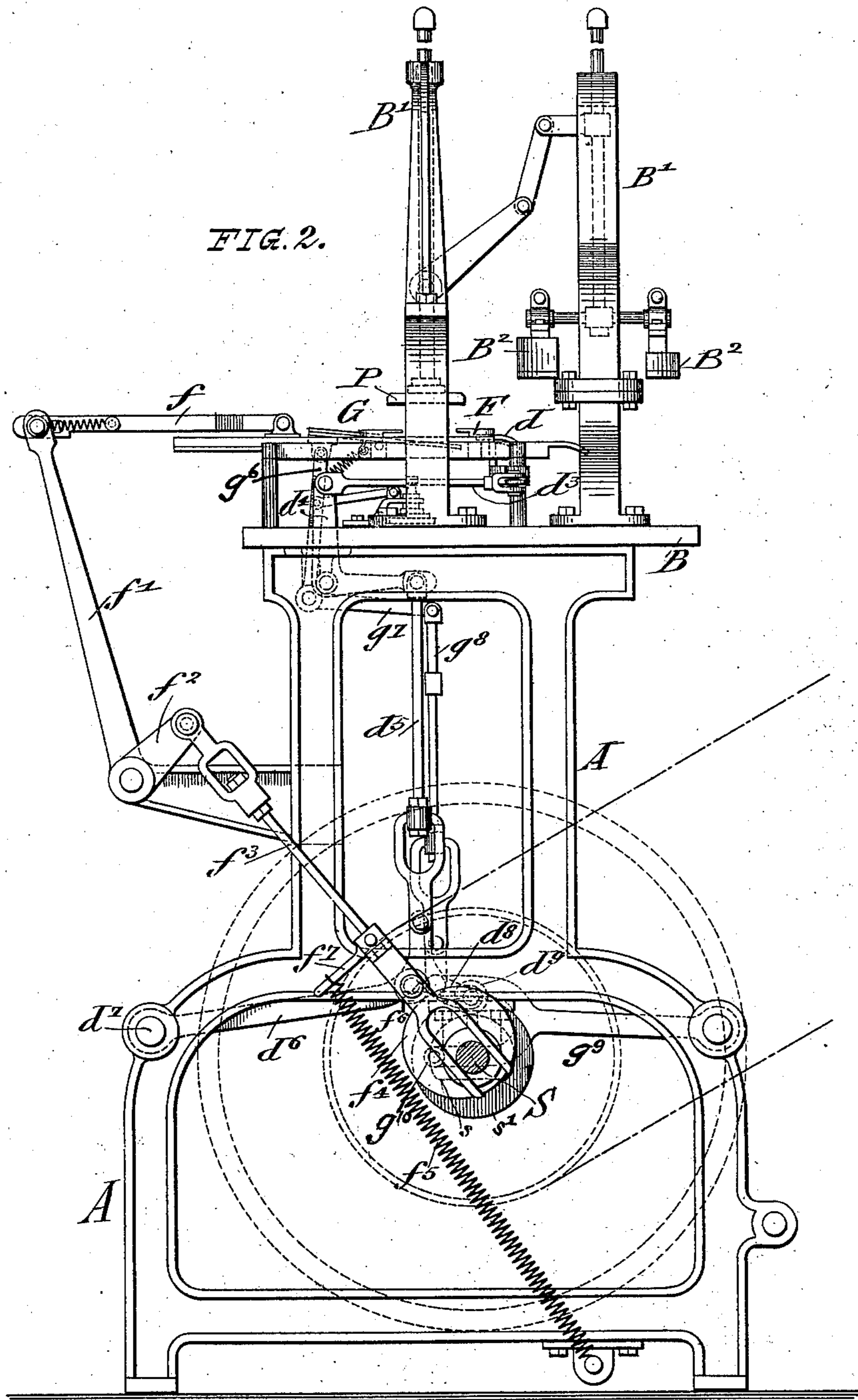
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FIG. 3.

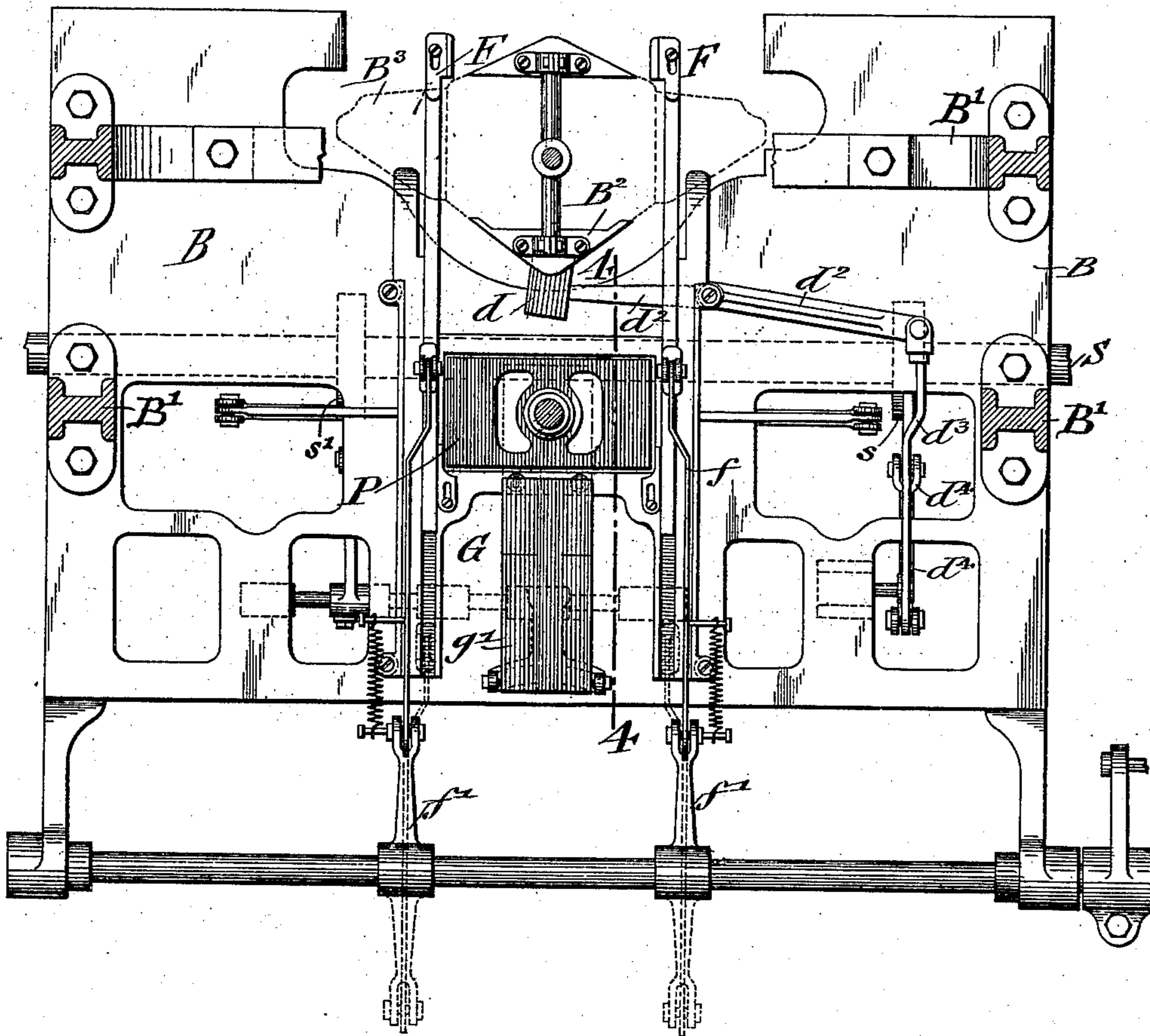
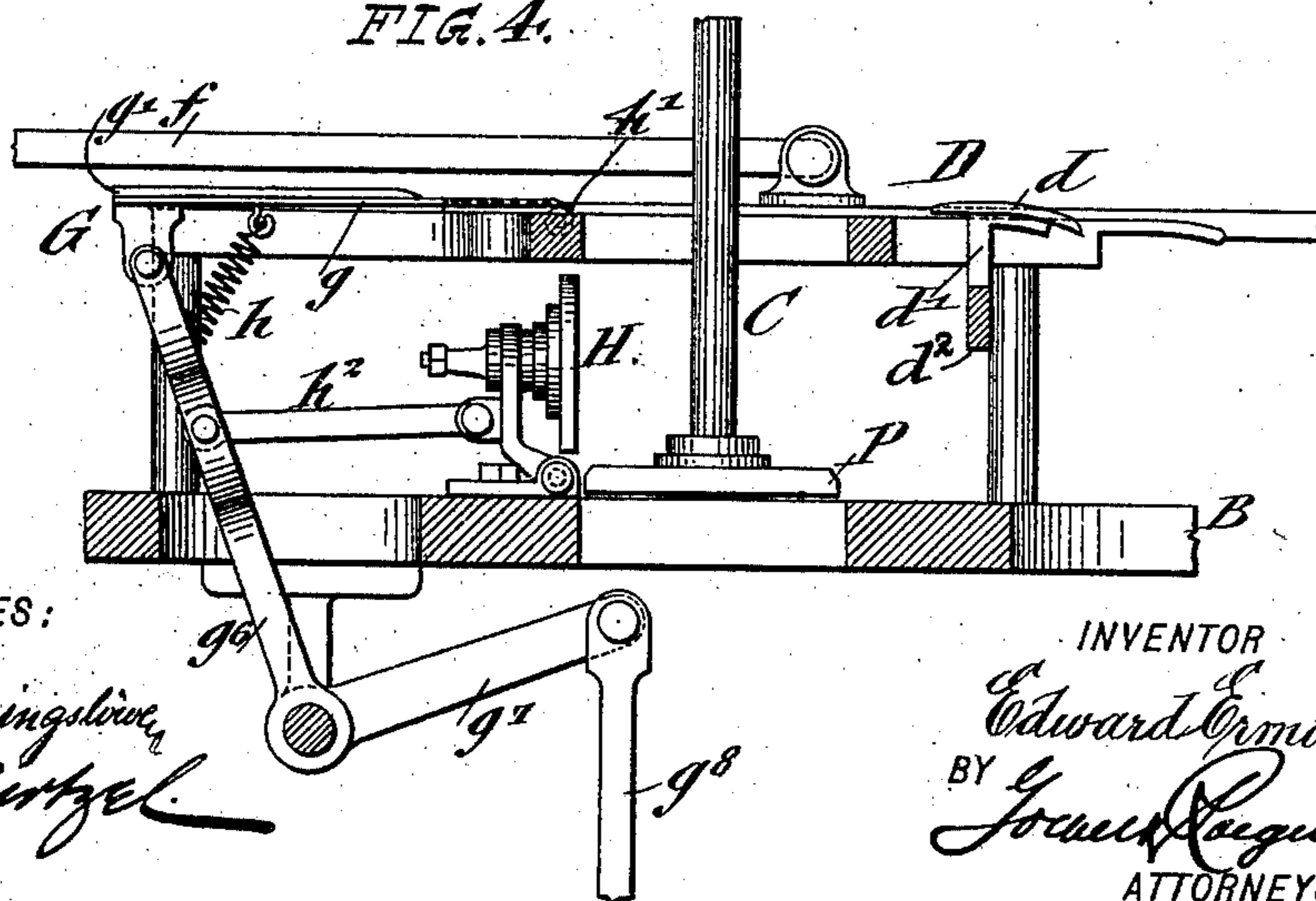


FIG. 4.



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FIG. 5.

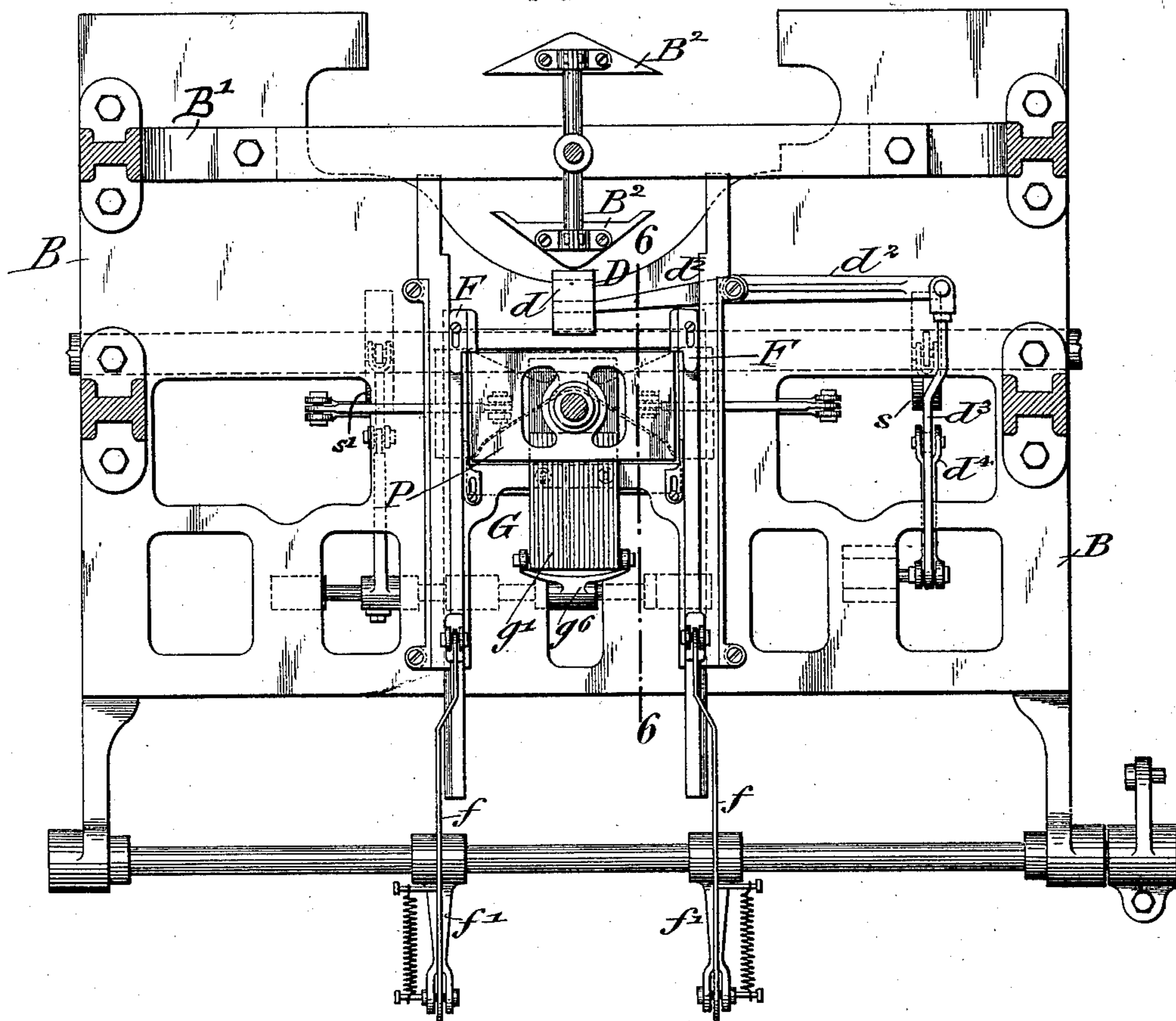
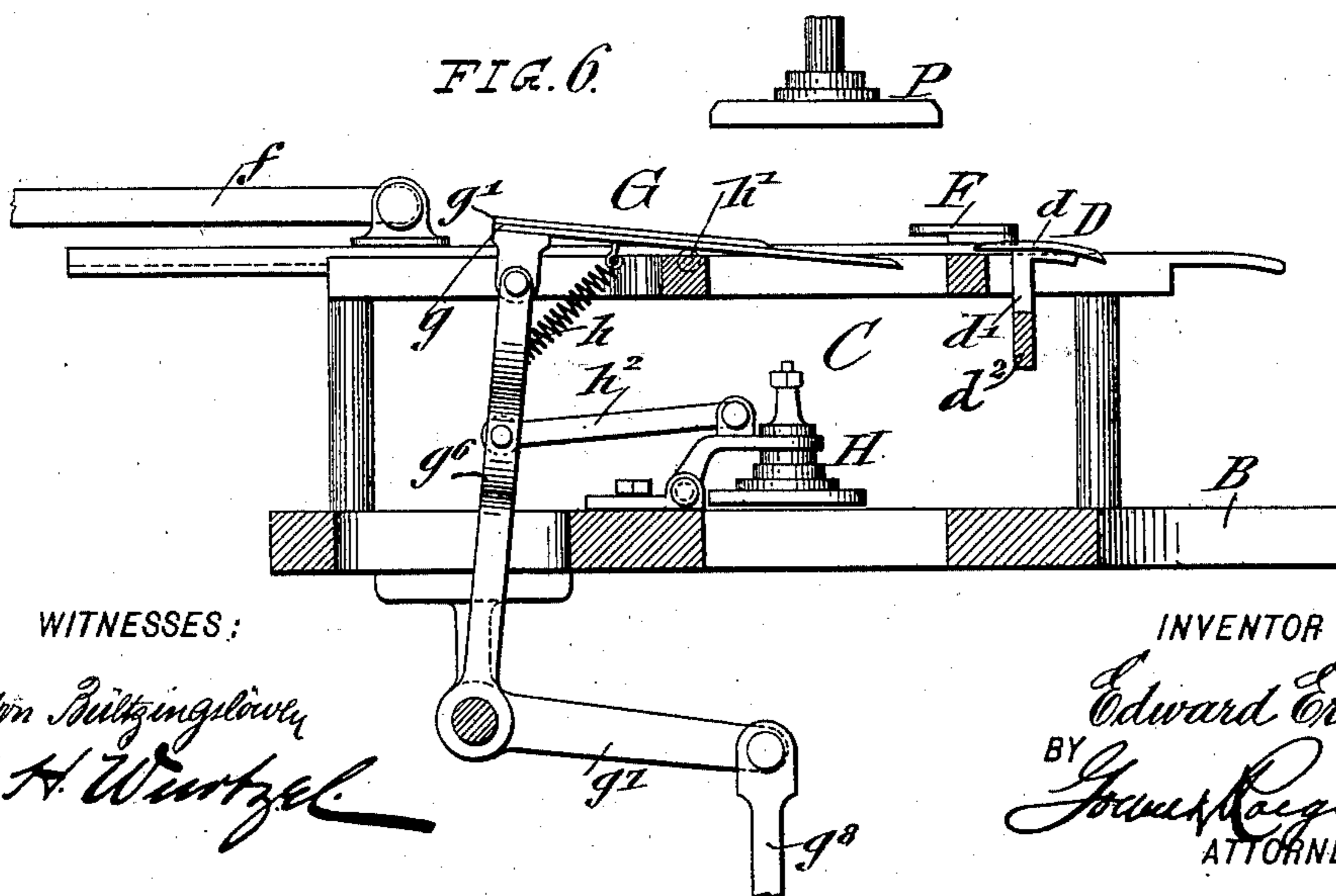


FIG. 6.



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FIG. 7.

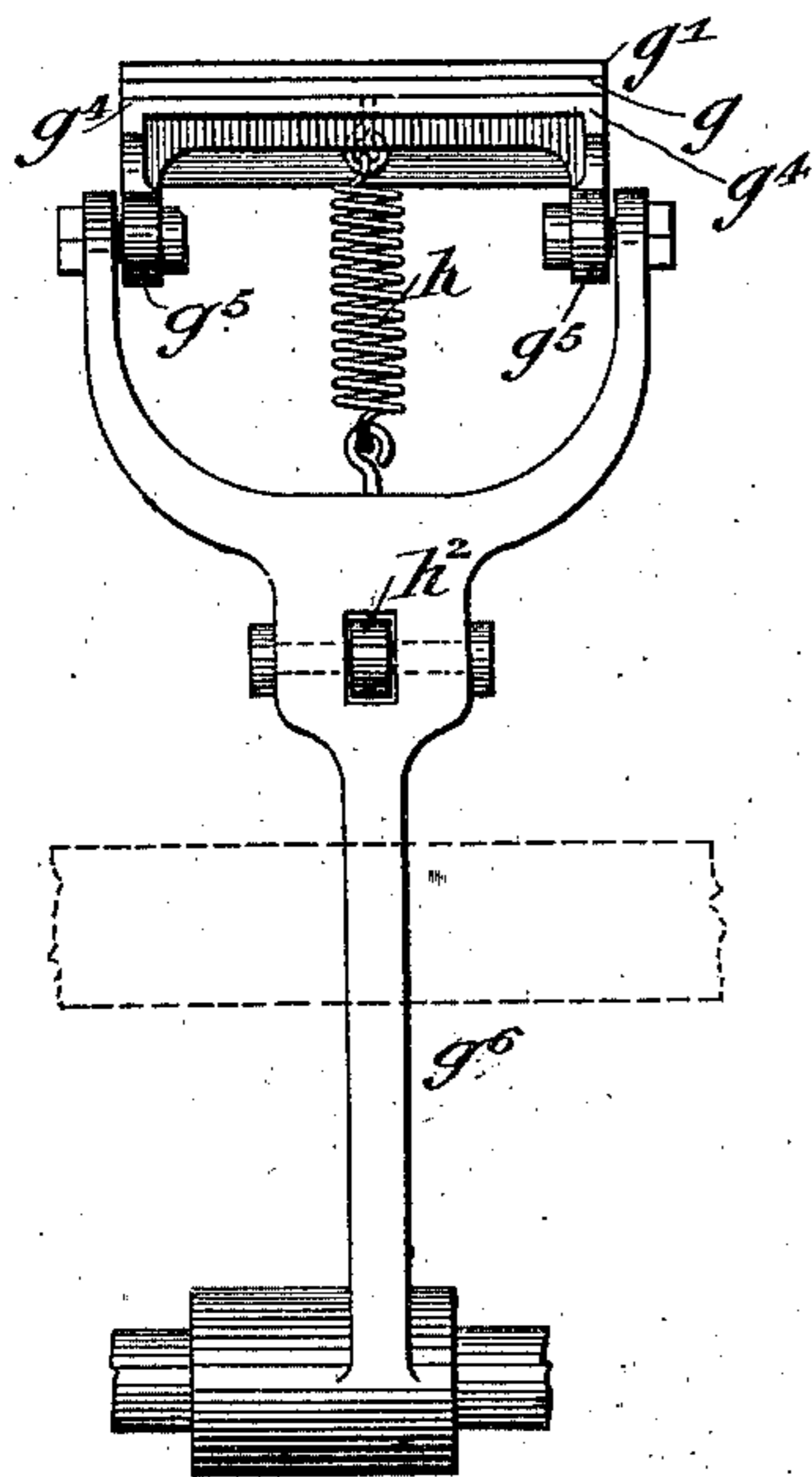


FIG. 8.

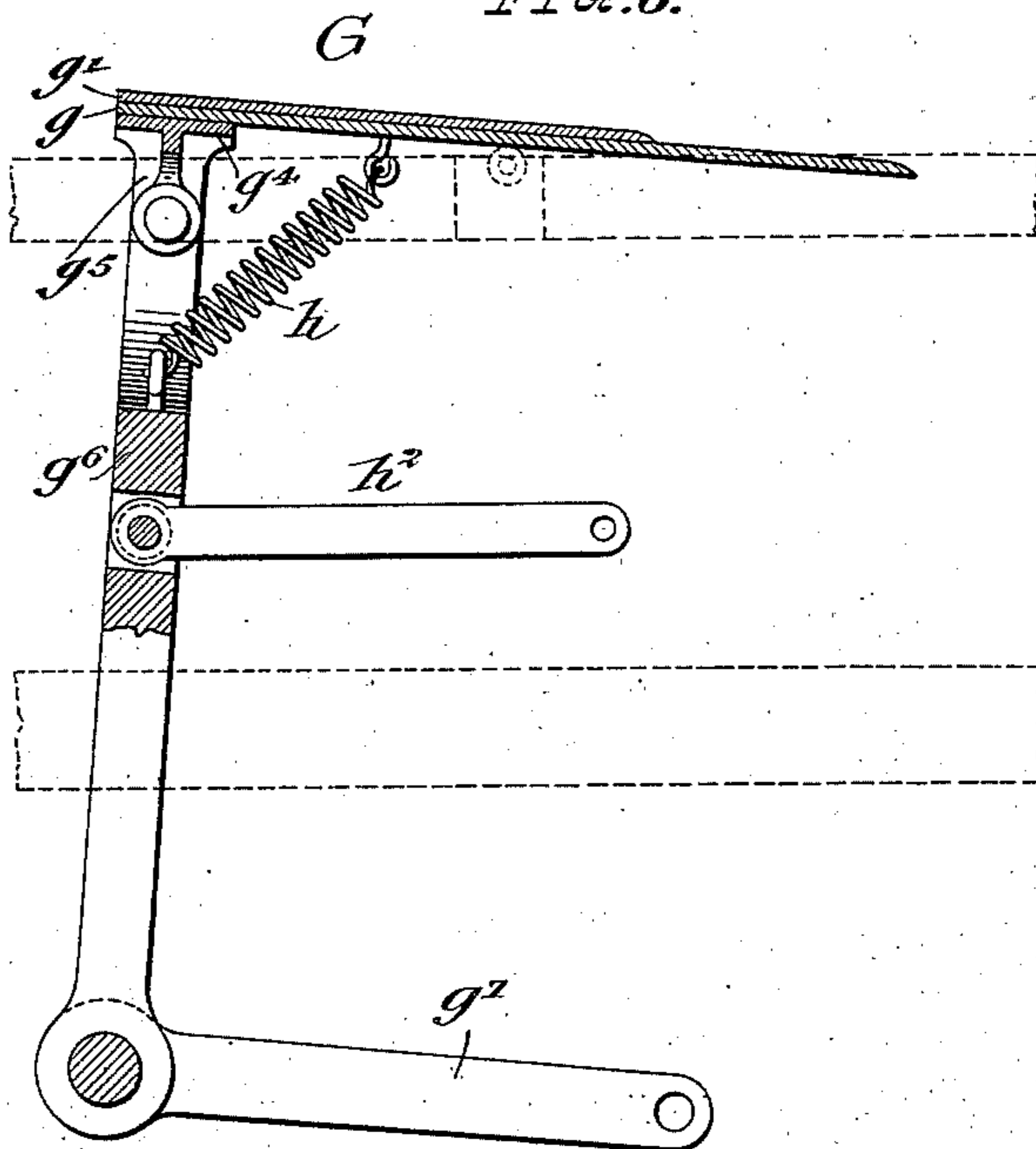


FIG. 9.

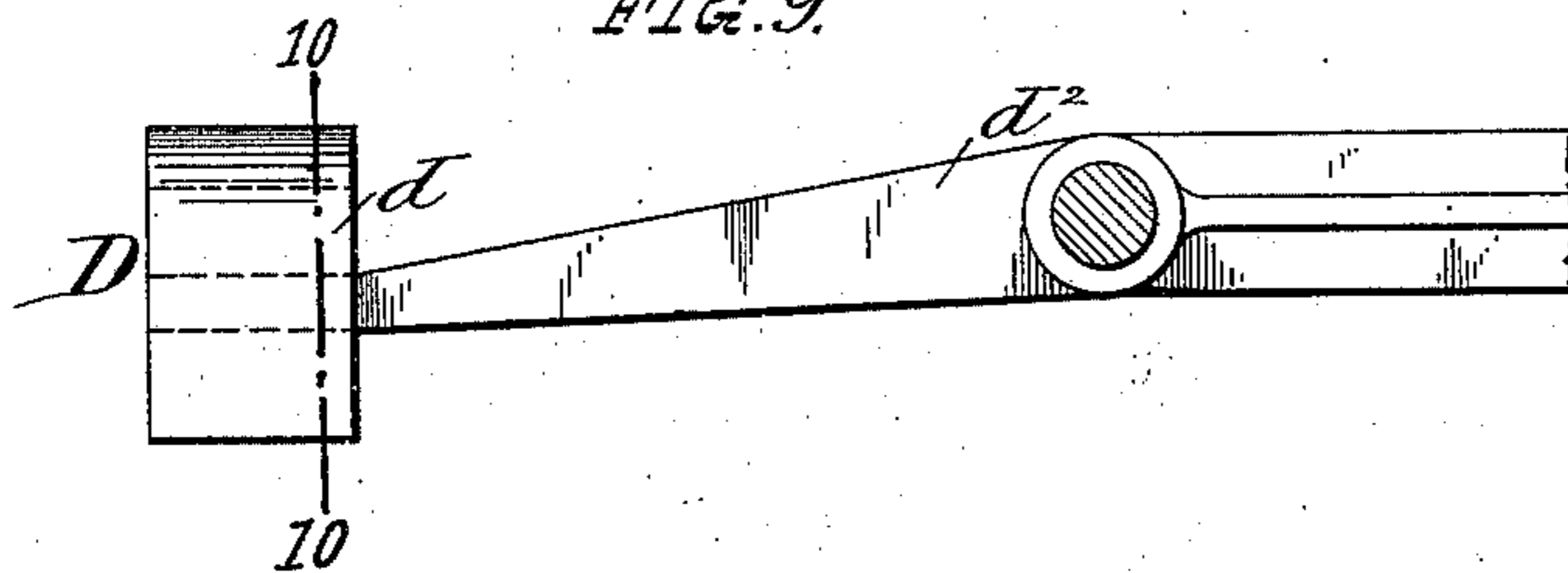


FIG. 10.

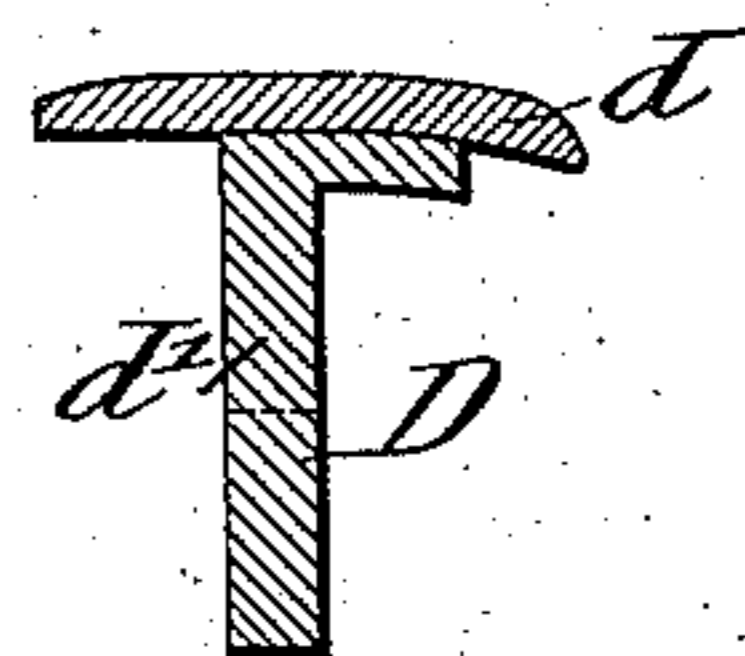


FIG. 11.

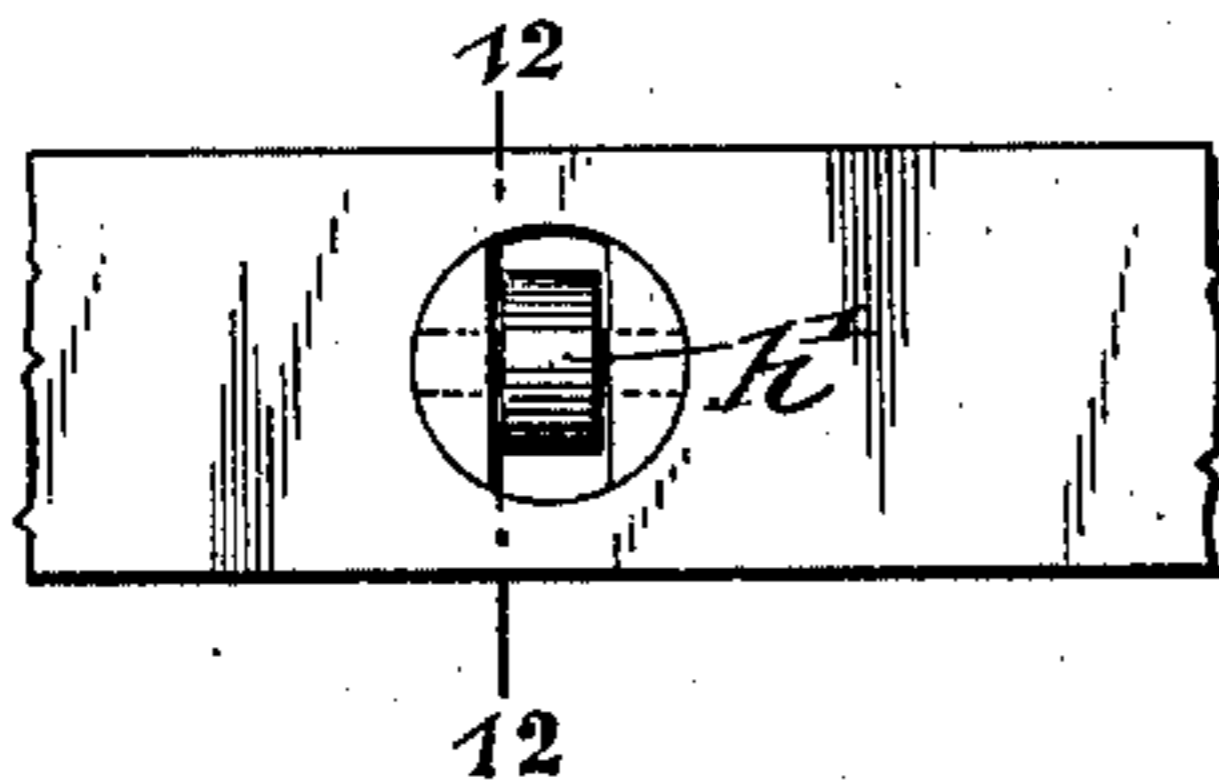
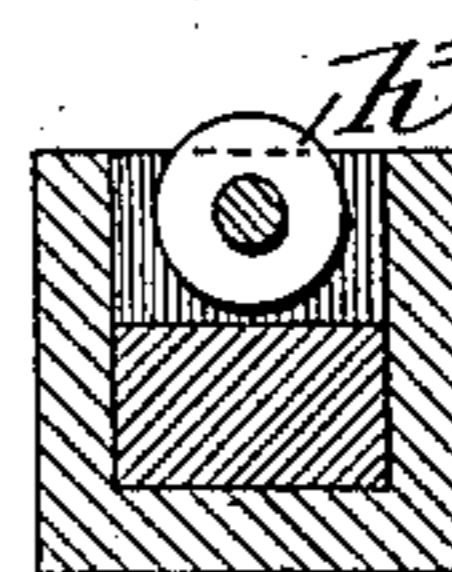


FIG. 12.



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# UNITED STATES PATENT OFFICE.

EDWARD ERMOLD, OF NEW YORK, N. Y.

## ENVELOP-MACHINE.

SPECIFICATION forming part of Letters Patent No. 692,051, dated January 28, 1902.

Application filed June 19, 1900. Serial No. 20,811. (No model.)

*To all whom it may concern:*

Be it known that I, EDWARD ERMOLD, a citizen of the United States, residing in the city of New York, borough of Manhattan, in the State of New York, have invented certain new and useful Improvements in Envelop-Machines, of which the following is a specification.

This invention relates to improvements in envelop-machines, and more especially to improvements in means for guiding the back-flap of the gummed blank into position over the creasing-box; and the invention consists in the combination, in an envelop-machine, with the gumming devices and creasing-box, of blank-carrying fingers, means for reciprocating said fingers in a straight line between the gumming devices and creasing-box, a horizontal arm pivoted to the machine at one side of said fingers and adapted to swing in a horizontal plane between said devices and box, an inclined bracket at the outer end of said arm, a convex guide-shovel mounted on said bracket in line with the gumming devices and creasing-box, a pivot-link connected with the outer end of said arm, an elbow-lever connected with said pivot-link, a cam-shaft, a cam on the same, and a connecting-rod connected with said elbow-lever and engaging said cam.

In the accompanying drawings, Figure 1 is a rear elevation of an envelop-machine, showing my improved devices for guiding the flap of the blank to the creasing-box. Fig. 2 is a side elevation of the machine, showing the connection of the front and rear guide-shovels with the cam-shaft. Fig. 3 is a plan view, partly in horizontal section, showing the front and rear shovels in their relative position toward the picker, creasing-box, and plunger. Fig. 4 is a vertical transverse section on line 4 4, Fig. 3, parts being omitted to clearly show the shovels, which are in position for receiving the blank, said figure being drawn on a larger scale. Fig. 5 is likewise a plan view, partly in horizontal section, of the machine, showing the parts in position after the blank has been transferred to the creasing-box. Fig. 6 is a detail vertical transverse section, drawn on a larger scale, on line 6 6, Fig. 5, parts being omitted. Figs. 7 and 8 are respectively a rear elevation and a vertical lon-

gitudinal section of the rear shovel for guiding the back-flap of the blank over the creasing-box, showing the construction of the same on a larger scale. Figs. 9 and 10 are respectively a detail plan view and a vertical transverse section on line 10 10 of Fig. 9 of the front guide-shovel; and Figs. 11 and 12 are respectively a detail plan view and a detail vertical transverse section on line 12 12, Fig. 11, of an antifriction-roller arranged at the rear part of the creasing-box for guiding of the rear shovel during its reciprocating motion over the same.

Similar letters of reference indicate corresponding parts.

Referring to the drawings, A represents the supporting-frame of an envelop-machine of the well-known construction. The cam-shaft S of the machine is supported in suitable bearings of the frame A, the standards of the frame being connected at their upper ends by a table B, on which are supported supplementary transverse standards B', on which the picker, gumming-rollers, clearer, and plunger are arranged and operated in the usual manner from the cam-shaft S. Below the plunger P is arranged the creasing-box C. The pickers B<sup>2</sup> are arranged in front of the creasing-box and, after having been gummed, pick up the blank B<sup>3</sup> in the usual manner. The blank is cleared from the pickers by a stripper (not shown) and transferred to horizontally-reciprocating fingers F, guided in ways at the sides of the creasing-box and constructed in the usual manner, by which the blank is transferred into its proper relative position between the creasing-box and plunger. Adjacent to the front part of the creasing-box and inclining slightly above the level of the same is arranged a front guide-shovel D, which is clearly shown in detail in Figs. 9 and 10 and formed of a preferably convex plate *d*, supported by a bracket *d'* on a horizontal arm *d*<sup>2</sup>, which is fulcrumed to the frame of the machine and connected by a pivot-link *d*<sup>3</sup> at its outer end with an elbow-lever *d*<sup>4</sup>, fulcrumed below the table B, said lever being connected by a connecting-rod *d*<sup>5</sup> with an elbow-lever *d*<sup>6</sup>, pivoted at *d*<sup>7</sup> to the frame of the machine. Upon an arm *d*<sup>8</sup> of the lever *d*<sup>6</sup> is pivoted an antifriction-roller *d*<sup>9</sup>, that moves over a cam *s* on the cam-shaft

S, by which the required oscillating motion is imparted to the front guide-shovel D. The front guide-shovel D is provided with a rounded-off front edge and is moved by the mechanism described below the gummed back-flap of the blank after the same has been dropped on the reciprocating fingers F, so that the back-flap rests on the shovel and the latter moves with the blank while it is transferred by the fingers over the front edge of the creasing-box, as shown in Fig. 3. By thus taking up the back-flap and moving with the same all interference with the same in its passage is prevented and the blank safely carried over the front edge of the creasing-box into position for creasing.

The reciprocating fingers F are operated in the usual manner by a cam on the driving-shaft S, said fingers being connected by pivot-links  $f$  with the upper ends of fulcrumed levers  $f'$ , the lower arms  $f^2$  of which are connected by adjustable rods  $f^3$  with the actuating-cam  $f^4$ , the antifriction-roller  $f^6$  being retained in contact with the circumference of the cam by a spring  $f^5$ , connecting a laterally-extending arm  $f^7$  of the rod  $f^3$  with the lower part of the supporting-frame A, as shown in Fig. 2.

Back of the creasing-box C is arranged a rear guide-shovel G, which is shown in detail in Figs. 7 and 8, said shovel being formed of a longer plate  $g$  and an upper shorter plate  $g'$ , which are riveted or otherwise secured together. The plates  $g$   $g'$  are mounted upon a cross-piece  $g^4$ , which is provided with downwardly-extending lugs  $g^5$ , pivoted, respectively, to the forked upper ends of a lever-arm  $g^6$ , which is fulcrumed in hangers attached to the table B, the lower arm  $g^7$  of the elbow-lever being connected by an adjustable rod  $g^8$  with a forked arm  $g^9$ , pivoted to the frame, and provided with an antifriction-roller  $g^{10}$ , that is engaged by a cam  $s'$  of the cam-shaft S, by which mechanism forward and backward motion is imparted to the rear shovel G. A helical spring  $h$  is connected with the under side of the shovel and with an eye on the lever  $g^6$  and serves to keep the lower plate  $g$  in contact with antifriction-rollers  $h'$ , that are arranged in the rear part of the creasing-box C. By the pivotal connection of the shovel with its forked lever and the tension of the spring acting on the same the rear guide-shovel is always kept in frictional contact with the antifriction-rollers  $h'$  and is reciprocated easily and noiselessly over the same, so as to take up the back-flap of the blank when the same is fed forward by the reciprocating fingers and move with the blank in backward direction until the same arrives in proper position on the creasing-box ready for the action of the

plunger. In the forward position of the rear guide-shovel the same inclines into the creasing-box, as shown in Fig. 6, while in its backward position the shovel is entirely removed from the box and its front edge is supported on the antifriction-rollers  $h'$ . By thus guiding the gummed back-flap of the blank over the back part of the creasing-box the abutting of the rear flap with the back part of the creasing-box is prevented and the proper position of the blank on the creasing-box, ready for the action of the plunger, secured.

The rear guide-shovel is retained in its rear-most position during the downward and return motion of the plunger, its forward motion commencing as soon as the plunger P has been raised above the creasing-box. The front and rear shovels are successively moved in backward direction with the motion of the blank as the same is moved in backward direction by the fingers F. The oscillating folder H, by which the back-flap is folded over, is pivoted to the table B and connected by a pivot-link  $h^2$  with the lever  $g^6$  of the rear shovel, as shown in Figs. 4 and 6, so that the operating mechanism by which the oscillating motion is imparted to the shovel-supporting lever operates at the same time the folder for the back-flap.

The mechanism described for operating the front shovel provides a superior means for carrying out this function. The construction is simple, has few parts, is strong and durable and easily repaired when necessary, and requires but very little power to operate.

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

The combination, in an envelop-machine, with the gumming devices and creasing-box, of blank-carrying fingers, means for reciprocating said fingers in a straight line between the gumming devices and creasing-box, a horizontal arm pivoted to the machine at one side of said fingers and adapted to swing in a horizontal plane between said devices and box, an inclined bracket at the outer end of said arm, a convex guide-shovel mounted on said bracket in line with the gumming devices and creasing-box, a pivot-link connected with the outer end of said arm, an elbow-lever connected with said pivot-link, a cam-shaft, a cam on the same, and a connecting-rod connected with said elbow-lever and engaging said cam.

In testimony that I claim the foregoing as my invention I have signed my name in presence of two subscribing witnesses.

EDWARD ERMOLD.

Witnesses:

PAUL GOEPEL,  
M. H. WURTZEL.