

No. 840,737.

PATENTED JAN. 8, 1907.

U. G. AUGUSTINE.  
MACHINE FOR MOLDING CORES.  
APPLICATION FILED SEPT. 25, 1905.

3 SHEETS—SHEET 1.

Fig 1

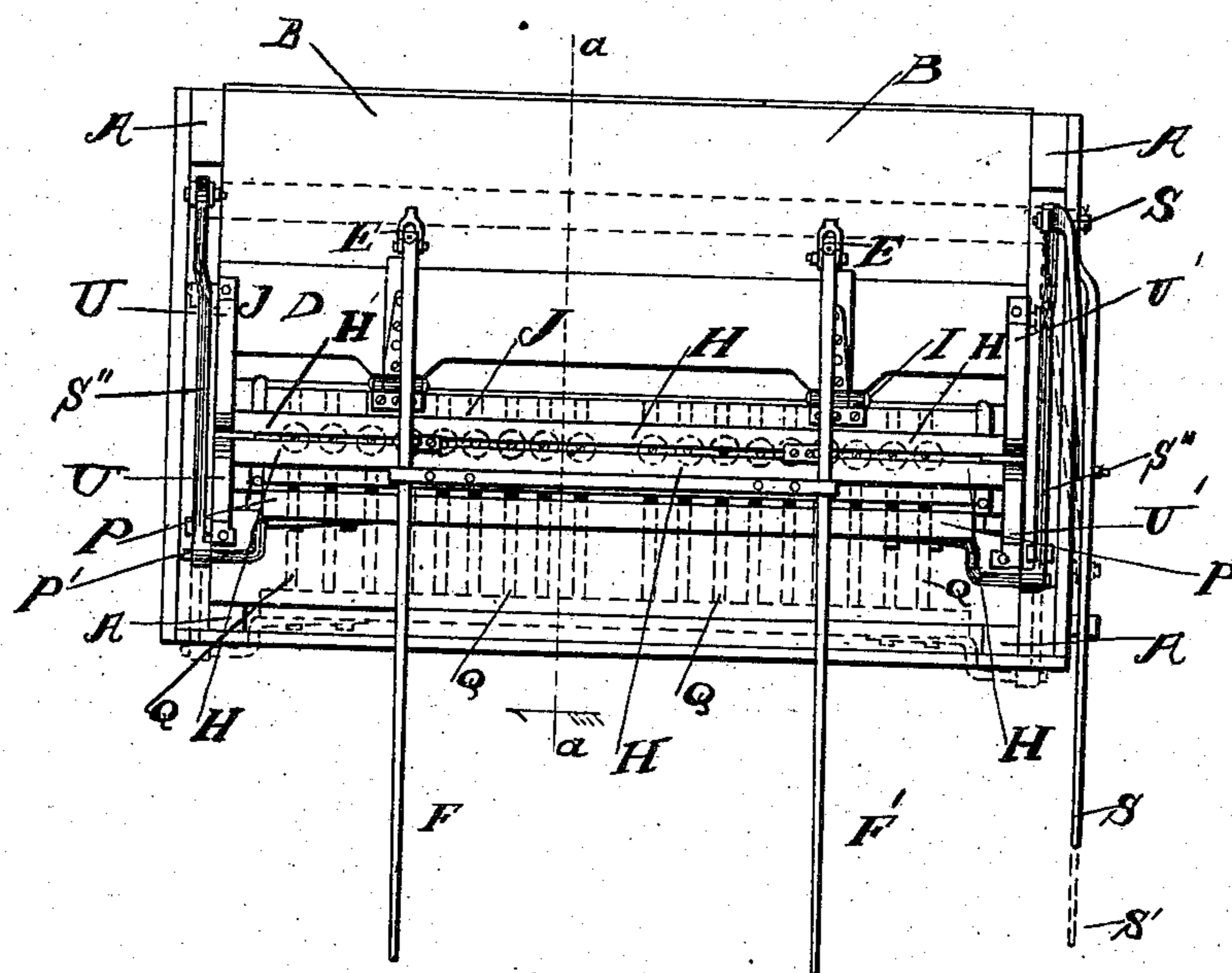
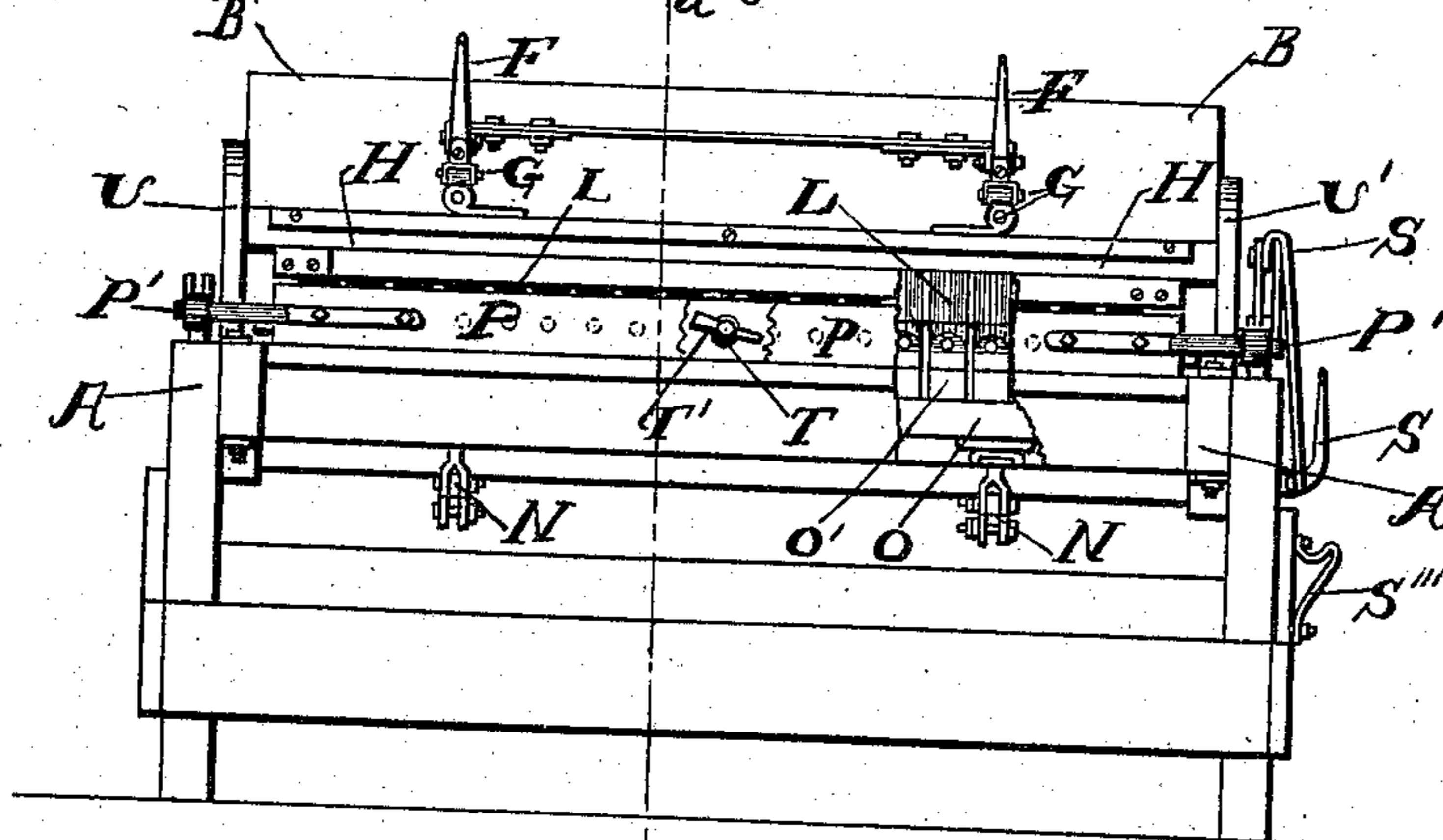


Fig 2



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Fig. 3.

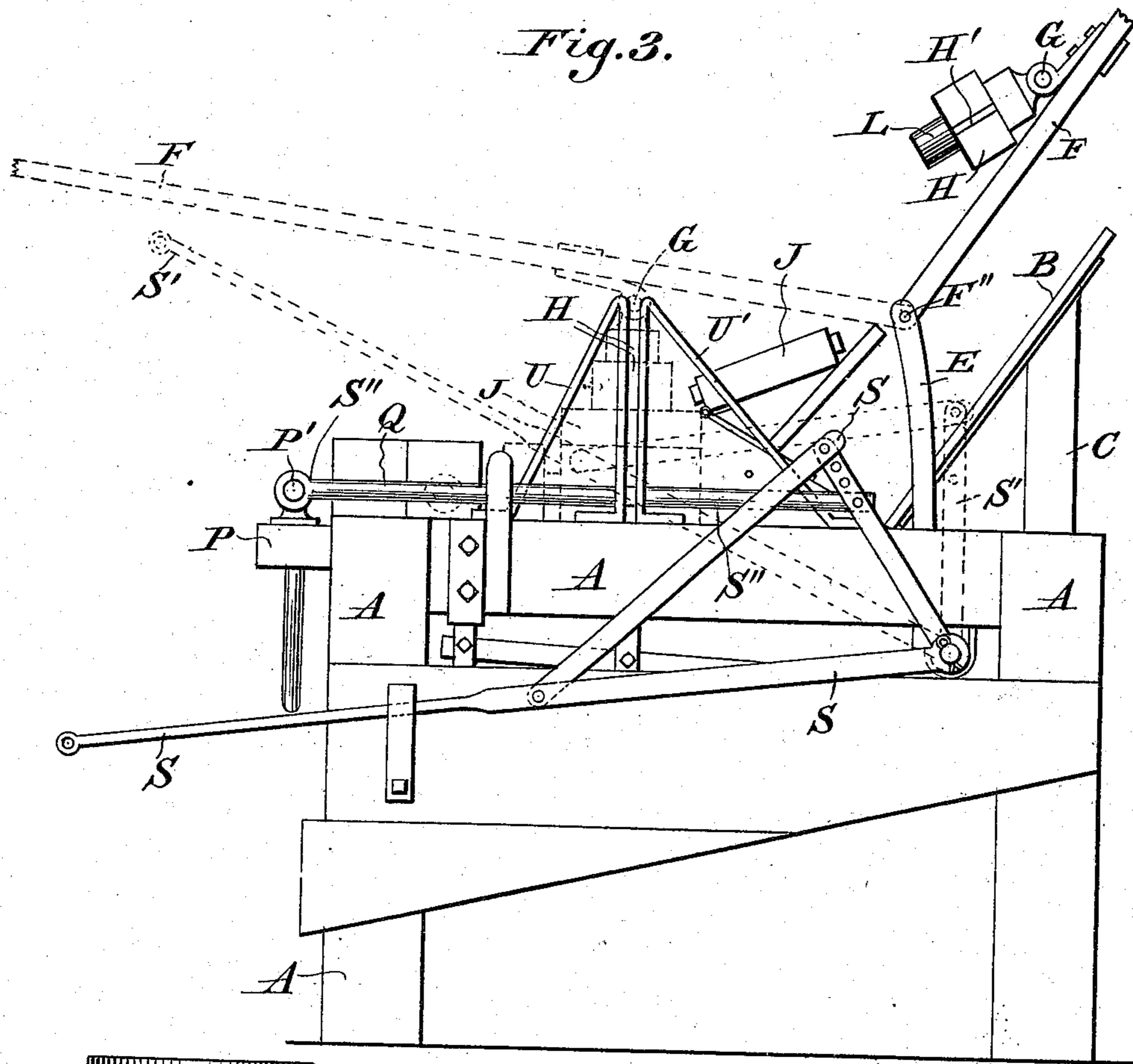
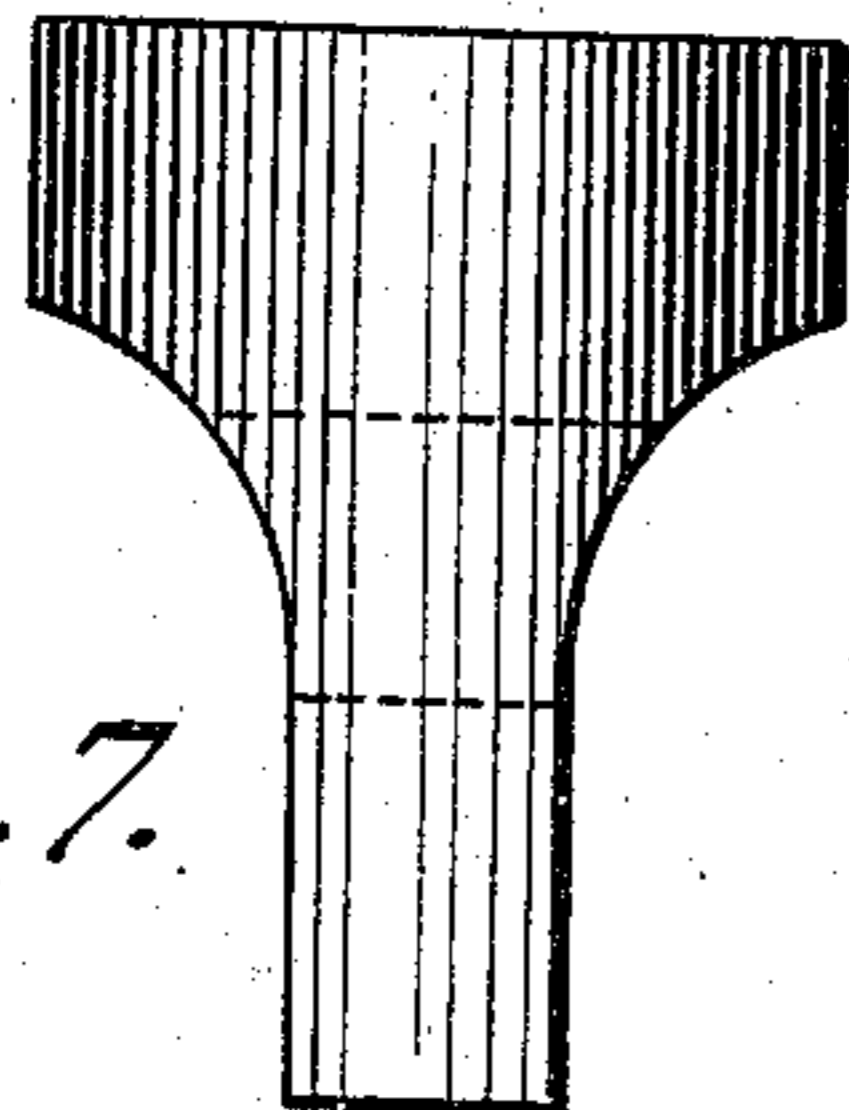


Fig. 7.



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Fig. 6.

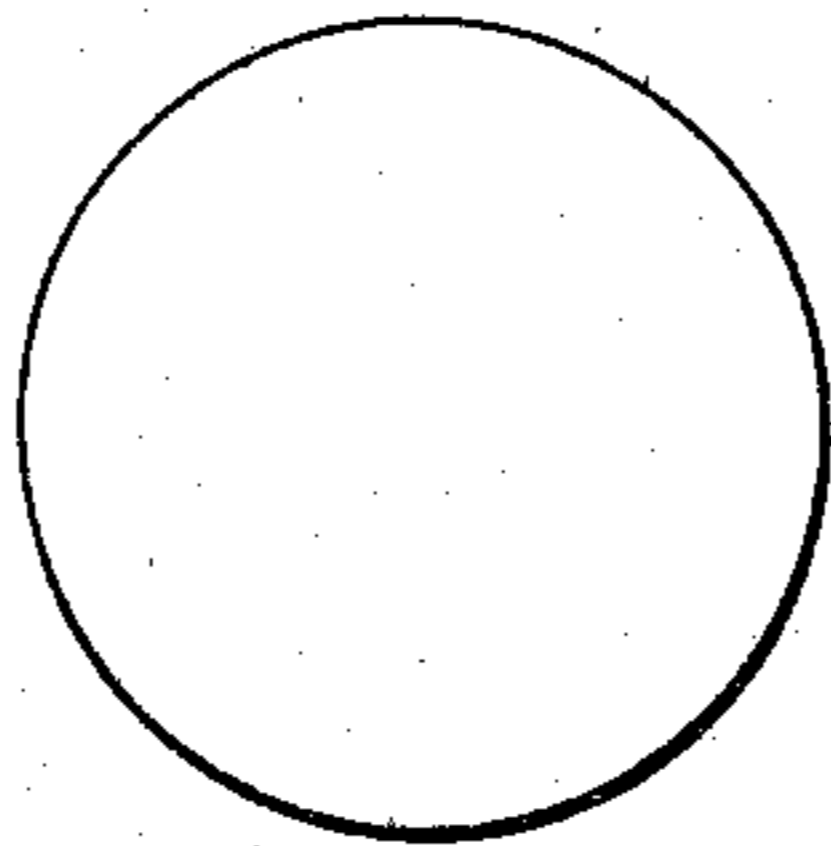
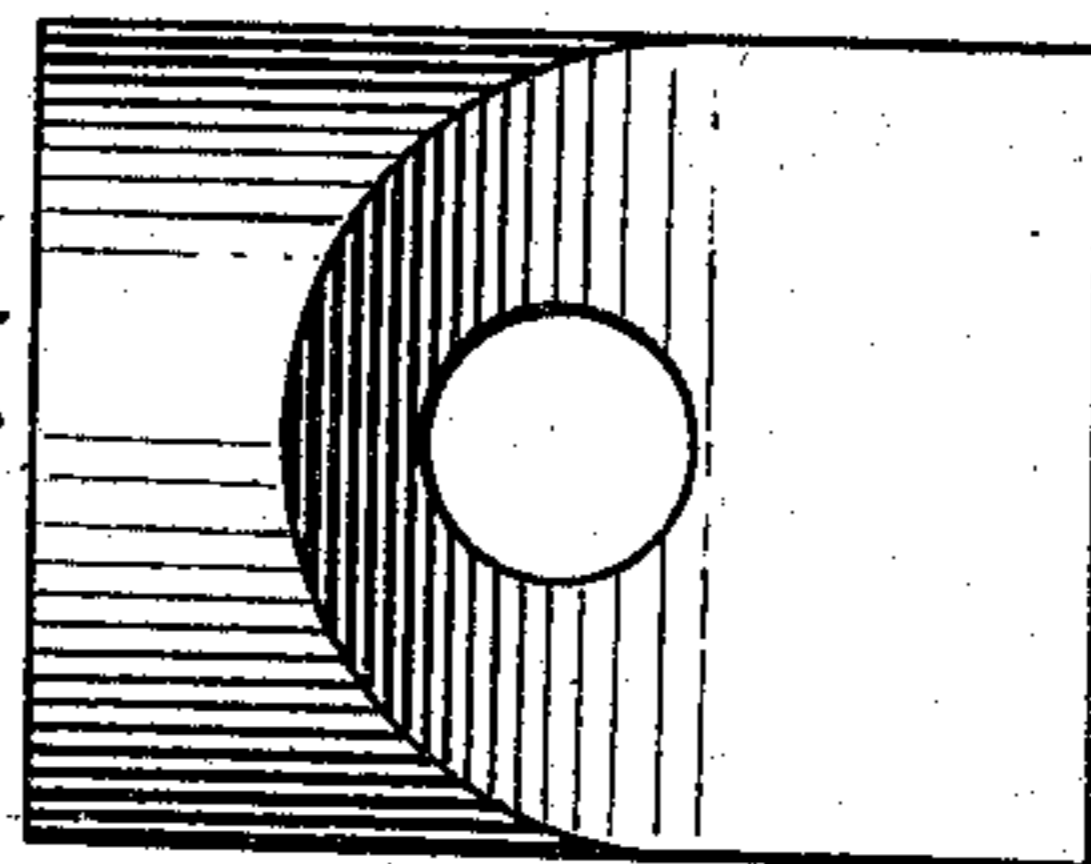


Fig. 5.



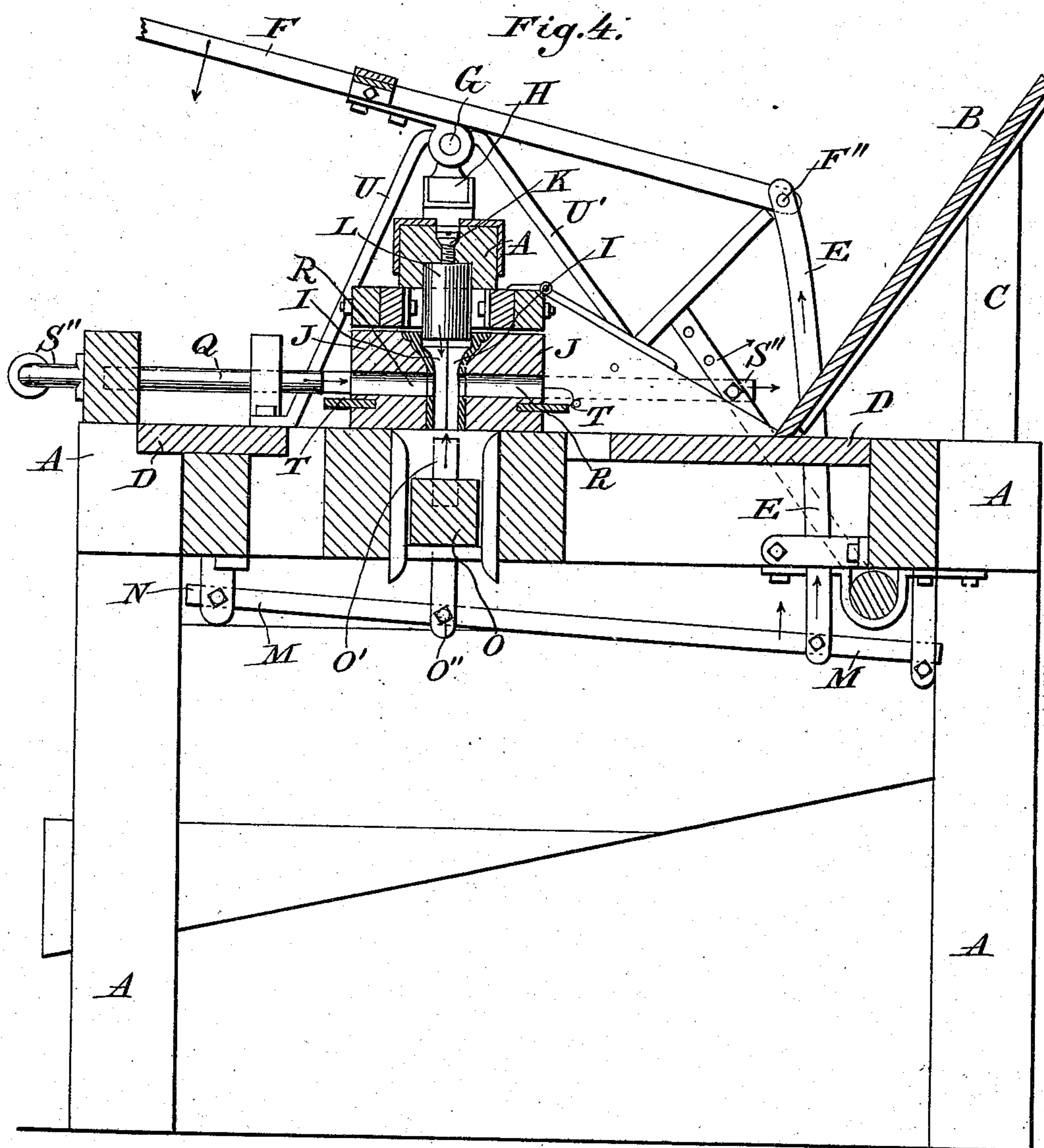
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3 SHEETS—SHEET 3.



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# UNITED STATES PATENT OFFICE.

ULYSSES GRANT AUGUSTINE, OF LOS ANGELES, CALIFORNIA.

## MACHINE FOR MOLDING CORES.

No. 840,737.

Specification of Letters Patent.

Patented Jan. 8, 1907.

Application filed September 25, 1905. Serial No. 280,180.

*To all whom it may concern:*

Be it known that I, ULYSSES GRANT AUGUSTINE, a citizen of the United States, residing at the city of Los Angeles, in the county of Los Angeles and State of California, have invented certain new or Improved Machines for Molding Cores Used in the Manufacture of Cast-Metal Window-Weights, of which the following is a full, clear, and exact description or specification, reference being had to the annexed drawings and to the letters and figures marked thereon.

The object of my said invention is to provide means whereby large numbers of cores can be molded with the expenditure of a small amount of labor and time and by cheaply-constructed means to manufacture the cores used in the molds at that end of the molds for the cores wherein the hole is cast for connecting to a sash-cords, chain, or other flexible connection to the window-sash.

As window-sash weights are manufactured and sold in very large quantities and at a very small price, it has become essential in order to make a fair and reasonable profit on the manufacture of such weights to produce the same with a minimum of labor and expense, and by means of my present invention this object is accomplished.

Upon the annexed drawings, Figure 1 is a plan of the core-molding machine constituting my present invention. Fig. 2 is a front elevation of the same machine corresponding to Fig. 1. Fig. 3 is an elevation of the right-hand end of the machine, on a larger scale, corresponding to Figs. 1 and 2. Fig. 4 is a transverse section of the said machine, also on a larger scale, on the line *a a*, Figs. 1 and 2. Fig. 5 is a side elevation (full size) of one of the cores constructed in the machine constituting my present invention. Fig. 6 is a plan of the circular end of Fig. 5; and Fig. 7 is an elevation of the same core, showing the narrow parts thereof.

In Figs. 1, 2, and 3 the main framing of the machine is marked A. At the rearward part of the upper portion of the framing A the inclined board or equivalent surface B is firmly secured and supported by means of the vertical members C and by the board D, carried on the top of the framing A. Toward each end of the machine is a link, (marked E,) to the upper end of each of which a lever F and F' is respectively attached. The lower ends of the links E are pivotally connected to the levers M, as more particularly shown at Fig. 4.

To the connecting-piece G on each lever F and F' there is hinged the bar H, as shown more especially at Figs. 1, 2, 3, and 4. When the levers F and F' are in their rearward position—namely, the position shown in full lines in Fig. 3—then the bar H rests against the levers F and F', as shown in Fig. 3, being suspended hingewise from the hinge connecting-pieces G thereon; but when the levers F and F' are drawn forward, as shown in full lines in Figs. 1 and 2 and in dotted lines in Fig. 3, then the bar H and its connected parts move into the vertical position by gravitational action and become vertically situated over the molds I I, which is formed in two portions and situated between the longitudinal portions constituting the front and rear of the molding-box J J.

To the under side of the bar H there are fastened, by means of wood-screws K, one of which is shown in Fig. 4, a series of cylindrical plugs L, which when the levers F and F' are pulled over and downward into the position shown at Figs. 1, 2, 3, and 4 enter the upper part of the corresponding molds, one-half of each of which is formed in the front and rear of the molding-box J J. By depressing and applying the weight and energy of the operator to the ends of the levers F and F' these cylindrical plugs L become depressed upon the mixture of sand and gluten or other equivalent adhesive material, which is distributed into the molds I I by the attendant; and the continued pressure of the attendant upon the levers F and F' causes the combined or mixed sand and gluten to be very tightly compressed within the molds I I, the commingled sand and gluten or its equivalent being thereby compelled to assume the form of the interior of the molds I I—namely, the form thereof shown in transverse section at Fig. 4 of the drawings and in the enlarged views, Figs. 5, 6; and 7. At the same time that the downward pressure of the levers F and F' causes the descent of the plugs L into the molds this pressure raises the links E, attached to the levers M, beneath the upper frame of the machine. The front ends of the levers M are pivoted to the centers or fixed bearings N, so that the downward pressure of the levers F and F' at their front end causes the links E at their rear to pull upward the levers M, which being attached to the under mold-bar O, as shown in Fig. 4, by the pivots O', push that mold-bar, together with the plugs O', which it carries, up against the un-

der part of the molds J J, thereby closing the bottom of the molds and finally compressing the mixture of sand and gluten or equivalent adhering material within each mold.

5 Simultaneously with the compression of the mixture of sand and gluten or equivalent adhesive material within the mold-box J J the bar P, which hangs down over the front of the machine, as shown at Fig. 3, is moved  
10 around upon its pivots P' into the position shown at Fig. 4 by the hand of the operator. The bar P contains a series of perforators Q. (Shown in Fig. 4 and in dotted lines in Figs. 1 and 2.) Each of the perforators Q is se-  
15 curely held in the horizontal moving bar P, and their front ends are immediately opposite the horizontal holes R in the mold-box J J and in such position that when the lever S is raised from its lowest position (shown in  
20 full lines in Fig. 3) to its highest position (shown by the dotted line S' in said Fig. 3) this raising of the lever S upon its pivot causes the bars S', one at each end of the machine and connected to the bar P, as  
25 shown in Figs. 1, 2, 3, and 4, to be pulled inward or in a rearward direction, so that each of the rods or fingers Q is forced through the narrow part of each core within each mold in the mold-box J J, by which action each  
30 bar or finger Q forms a cylindrical hole in each core.

After the several actions or movements of the different parts of the machine have been carried out in the manner hereinbefore de-  
35 scribed and shown upon the annexed drawings then the levers F and F' are pushed backward upon their pivots F'' into the position shown at Fig. 3. This raises the bar H and the row of plugs L out of the molding-  
40 box into the position shown in full lines at Fig. 3, and when the lever S is lowered to its lowest position, as shown at Figs. 3 and 4, the bar P, with the bars or fingers Q, is thrown backward by the attendant into the position  
45 shown at Fig. 3. Then the two halves of the mold-box J J are separated by opening the clamps T and taking out the cross-pin T', (shown at Fig. 2,) in which condition the sev-  
50 eral cores contained within the molding-box are ready for being easily removed by the hand of the attendant or otherwise and for being hardened by baking or otherwise suitably dried.

For the purpose of giving vertical guidance  
55 to the bar H and the plugs L when descending into the top of the mold-box and molds J J the ends of the framing have carried thereon two guides of triangular form, (marked U and U', respectively, in Figs. 1, 2,  
60 and 3,) the inner edges of which guides are vertical, as shown in the drawings, and at a short distance from each other, being so arranged that the narrow steel ends of the bar H may slide vertically upward and down-  
65 ward therein.

It is explained that the mold-box J J is divided longitudinally and vertically along its central plane and that the two halves J and J, respectively, are capable of being separated from each other by releasing the cen- 70 tral cross-pin T' and the clamps T, in which condition the two halves of the box J J are easily separated from each other, the molds preferably made of Babbitt metal, taken out and replaced by other molds, which may be 75 of any desired size corresponding to the diameter of sash-weight cores to be molded. The said machine constituting my invention is capable of forming molds of the character hereinbefore described of various and any 80 required diameters.

Having now described the nature of my said invention and the best system, mode, or manner I am at present acquainted with for carrying the same into practical effect, I de- 85 sire to observe in conclusion that what I consider to be novel and original, and therefore claim as the invention to be secured to me by Letters Patent, is as follows:

1. A machine for molding the cores used 90 for forming the upper ends of window-sash weights, and consisting of the mold-box containing molds held therein, means for horizontally operating the molds, pins carried in a sliding bar for producing the holes through 95 the upper and thinner part of each core while in the mold, the upper bar carrying the plugs which compress the mixture of sand and glutinous substance into the molds at the upper ends thereof, and the upwardly-moving bar 100 for compressing the mixture of sand and glutinous substance at the bottoms of the molds, the levers for operating the upper and under bars which carry the plugs on the upper molding-bar and the compressing-strip on the 105 under molding-bar, also the levers, the shaft on which said levers are carried, and the connecting-links by which the bar carrying the pins is operated, all substantially as hereinbefore described. 110

2. A machine for molding the cores used for forming the upper ends of window-sash weights, and consisting of the mold-box containing molds held therein, means for hori- 115 zontally operating the molds, pins carried in a sliding bar for producing the holes through the upper and thinner part of each core while in the mold, the upper bar carrying the plugs which compress the mixture of sand and glutinous substance into the molds at the upper 120 ends thereof, and the upwardly-moving bar for compressing the mixture of sand and glutinous substance at the bottoms of the molds, the levers for operating the upper and under bars which carry the plugs on the upper 125 molding-bar and the compressing-strip on the under molding-bar, also the levers, the shaft on which said levers are carried, and the connecting-links by which the bar carry-  
ing the pins is operated, the vertical guides 130

for receiving the ends of the upper molding-  
bar which carries the molding-plugs, and for  
guiding the said bar and the plugs vertically,  
the framing in or by which the entire mechan-  
5 ism is carried substantially as hereinbefore  
described.

In testimony whereof I, the said ULYSSES

GRANT AUGUSTINE, have hereunto set my  
hand and seal in the presence of two sub-  
scribing witnesses.

ULYSSES GRANT AUGUSTINE. [L. s.]

Witnesses:

ST. JOHN DAY,  
J. D. CORY.