

(No Model.)

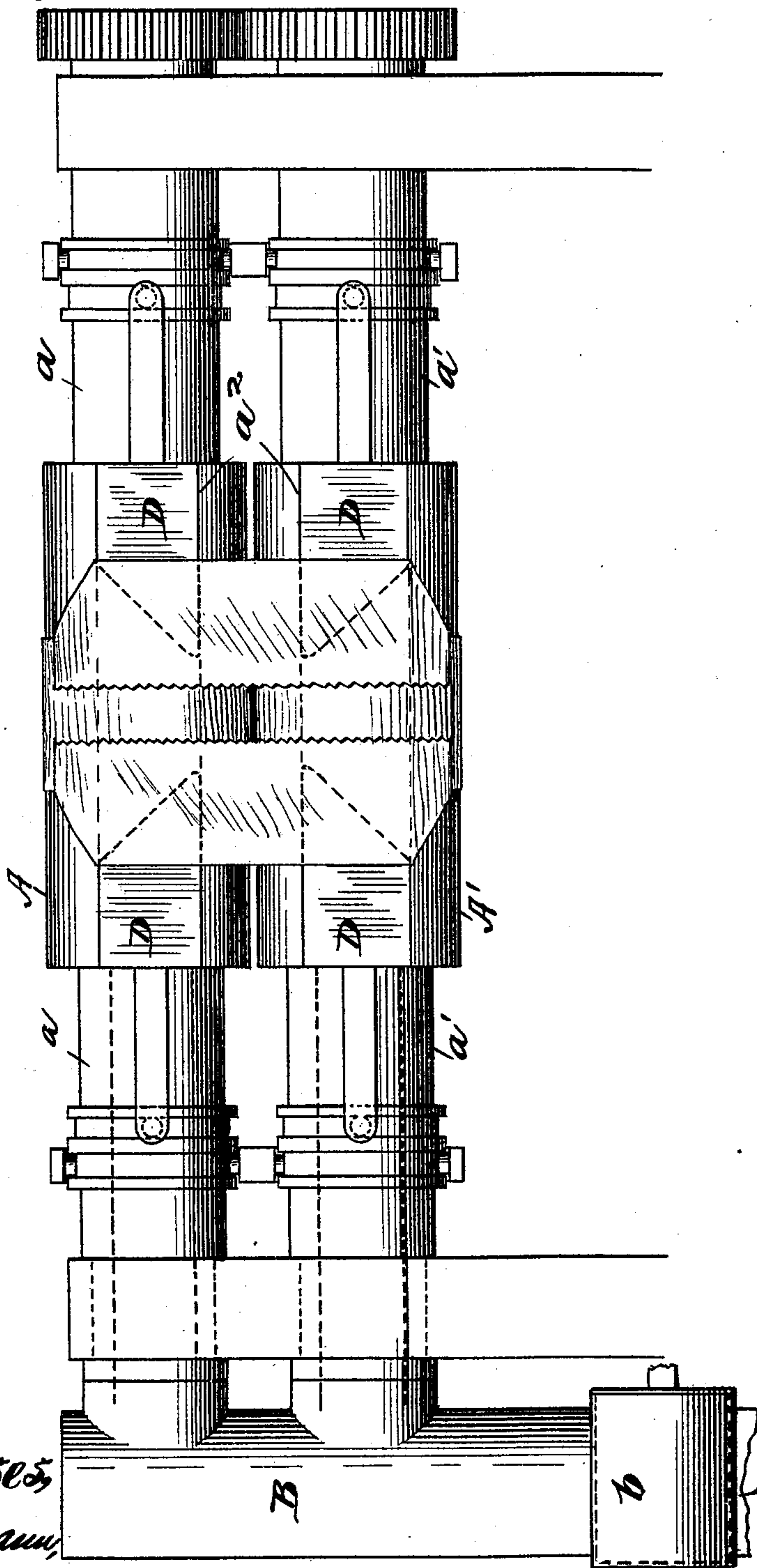
2 Sheets—Sheet 2.

S. T. MURCHIE.  
PAPER BAG MACHINE.

No. 587,135.

Patented July 27, 1897.

Fig. 6.



Witnesses,  
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Inventor,  
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By Alfred P. Lenthicum  
Att'y.



# UNITED STATES PATENT OFFICE.

SYLVANUS T. MURCHIE, OF BATAVIA, ILLINOIS, ASSIGNOR TO THE  
WESTERN PAPER BAG COMPANY, OF SAME PLACE.

## PAPER-BAG MACHINE.

SPECIFICATION forming part of Letters Patent No. 587,135, dated July 27, 1897.

Application filed May 14, 1897. Serial No. 636,460. (No model.)

*To all whom it may concern:*

Be it known that I, SYLVANUS T. MURCHIE, of Batavia, Illinois, have invented certain new and useful Improvements in Paper-Bag Machines, of which the following is a specification.

This invention relates to a paper-bag machine for making satchel-bottom bags from flat tubes having tucked-in or bellows-fold sides, and more particularly to that class of machines which employ suction for the purpose of opening the leading end of the bag.

My invention consists in a novel construction of the suction devices.

In my pending application, Serial No. 609,312, filed October 19, 1896, I have described, shown, and claimed as a means for opening the leading end of the paper tube hollow rotary suction-formers having perforated portions with means for exhausting the interior of said formers for the purpose of separating the sides of the tube and thereby opening its leading end, and in conjunction with said hollow rotary formers I have described laterally-reciprocating blades or holders adapted to impinge the sides of the tube and define the corners thereof.

In my present improvement the suction-formers consist of rotary perforated cylinders, said cylinders being flattened in portions of their peripheries and so mounted that the flattened portions are presented in parallelism and in opposition to each other, while their interiors are exhausted, so that the sides of the tube adhering to said flat surfaces are separated from each other to permit the easy entrance of the blades or holders which define the corners. By means of this construction the capacity of the bag-machine is very much increased and the cross-fold is defined by the drawing of the tube over the shoulder between the curved and the flat surfaces.

In the accompanying drawings, Figure 1 is a broken elevation of the rotary suction-formers with their flat surfaces opposing each other. Fig. 2 is a perspective view showing the leading end of the tube partially opened with the blades or holders thrust into the bellows sides thereof. Figs. 3, 4, and 5 show the several stages in the operation of forming the bottom folds, and Fig. 6 is a front elevation

of the parts in a position corresponding to that shown in section in Fig. 5.

In the drawings let A A' represent a pair of rotary suction-formers, which are metal cylinders having their ends reduced to form journal or bearing portions *a a'*. The interiors of the cylinders and the journals at one end thereof are hollow and may be connected with a suction-pipe B, as shown in Fig. 6, and said pipe will have a suitable valve, as *b*, therein, which is operated in some convenient way so as to cut off and restore the suction periodically. The cylinders A A' have flattened portions C C' and transverse perforations *c*. Said perforations are so located as to cover the bag-bottom at that stage in the formation thereof prior to the last two folds. Said perforations extend circumferentially of the cylinder through a little less than one-half its surface and longitudinally of the cylinder a distance corresponding to the width of the tube. The axial portions *a a'* are also flattened in line with the flattened portions of the cylinders and are provided with ways *d*, within which slide the stems of the blades or holders D. Said blades or holders have triangular or pointed ends, the long sides being adjacent to the shoulders *a*<sup>2</sup>. Said blades are reciprocated at regular intervals by some convenient mechanism not necessary to be described.

The blank F is fed in by rolls in the usual manner, its leading end being slitted to define the flaps *ff*. The end of the blank is impinged between the perforated surfaces of the cylinders A A', which will then be exhausted, so as to cause the flaps *ff* to adhere to the surfaces of the cylinders above said perforation. As the cylinders rotate to the position shown in Fig. 4 the bellows fold is opened and the blades D are then thrust in. As the cylinders rotate to the position shown in Fig. 5 the blank is drawn taut, its leading end is fully opened, the diamond folds are completed, and the cross-folds are sharply defined over the shoulders *a*<sup>2</sup>. At this point while the flattened surfaces of the cylinders stand in the same plane covered by the folded end of the bag the blades are withdrawn, the upper pair slightly in advance of the lower, and the suction being then cut off the blank

(No Model.)

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Fig. 1.

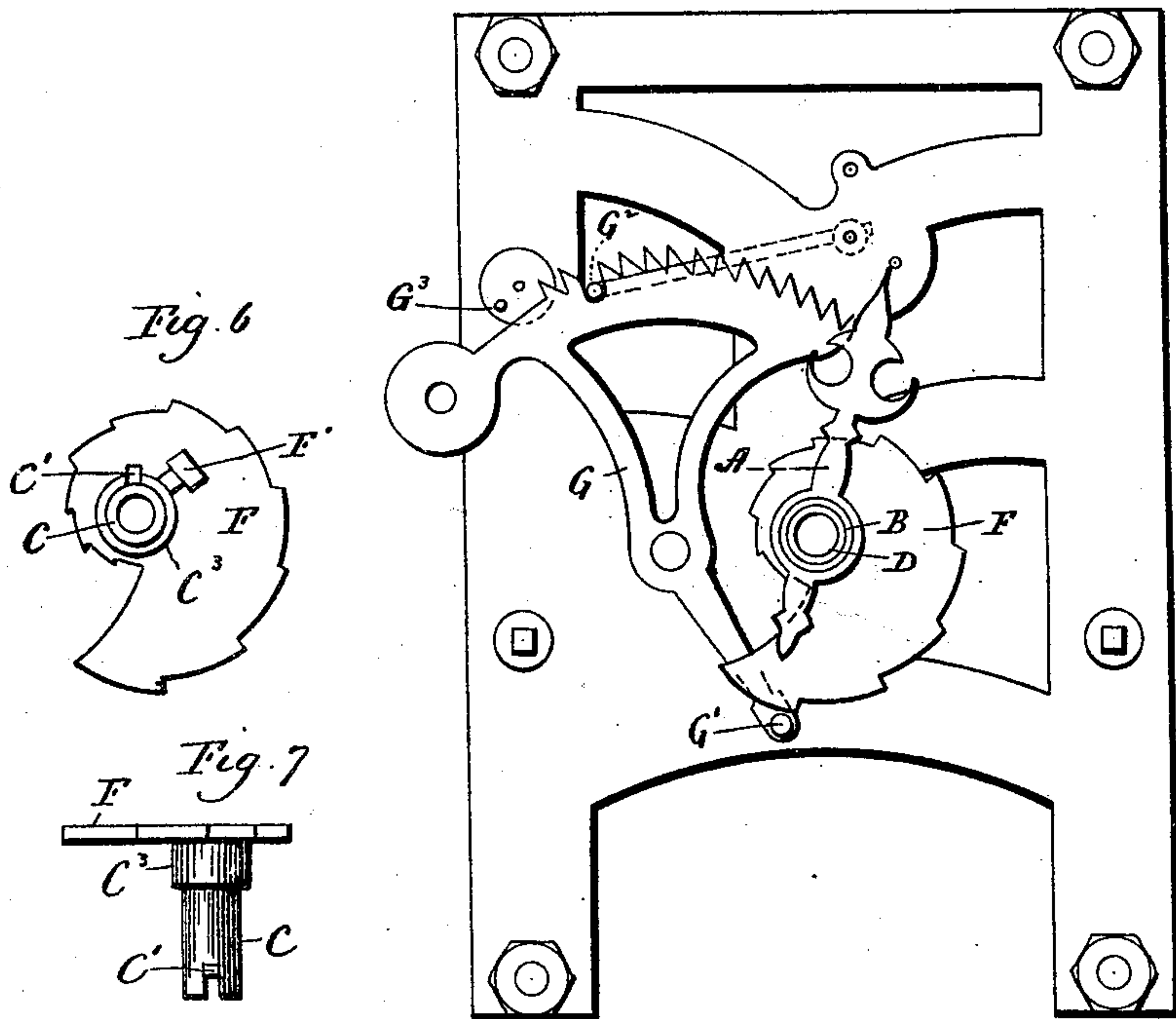


Fig. 6

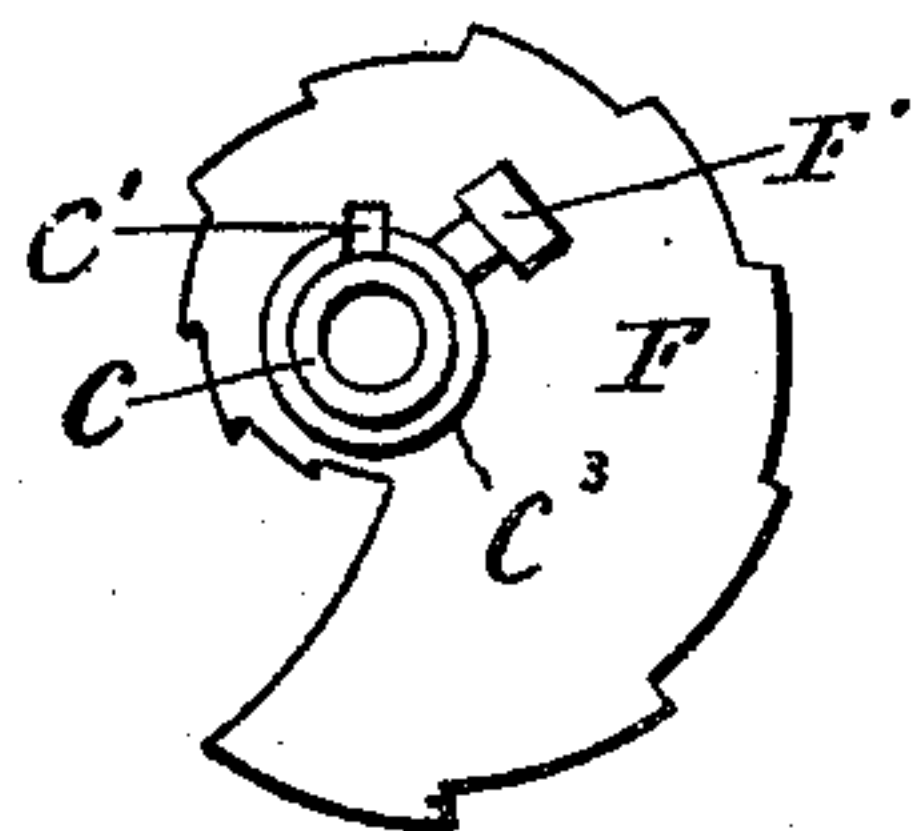


Fig. 7

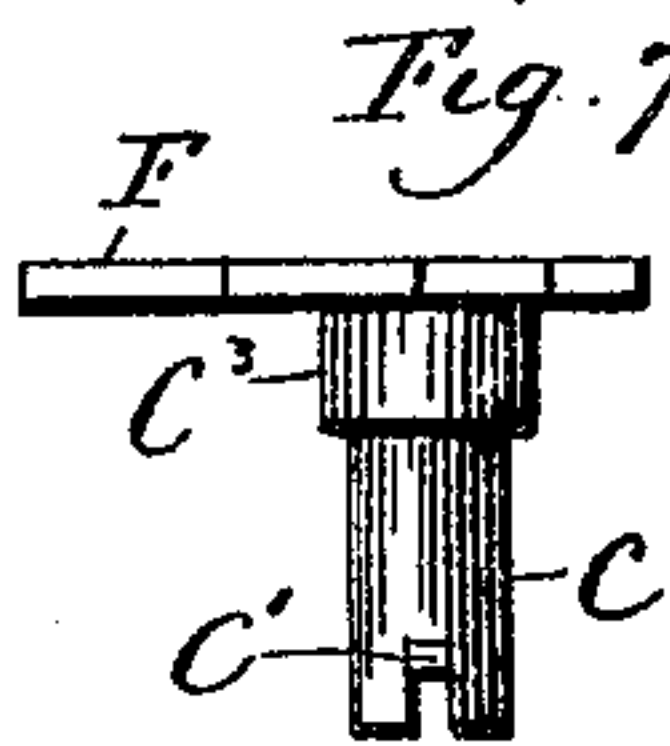


Fig. 2

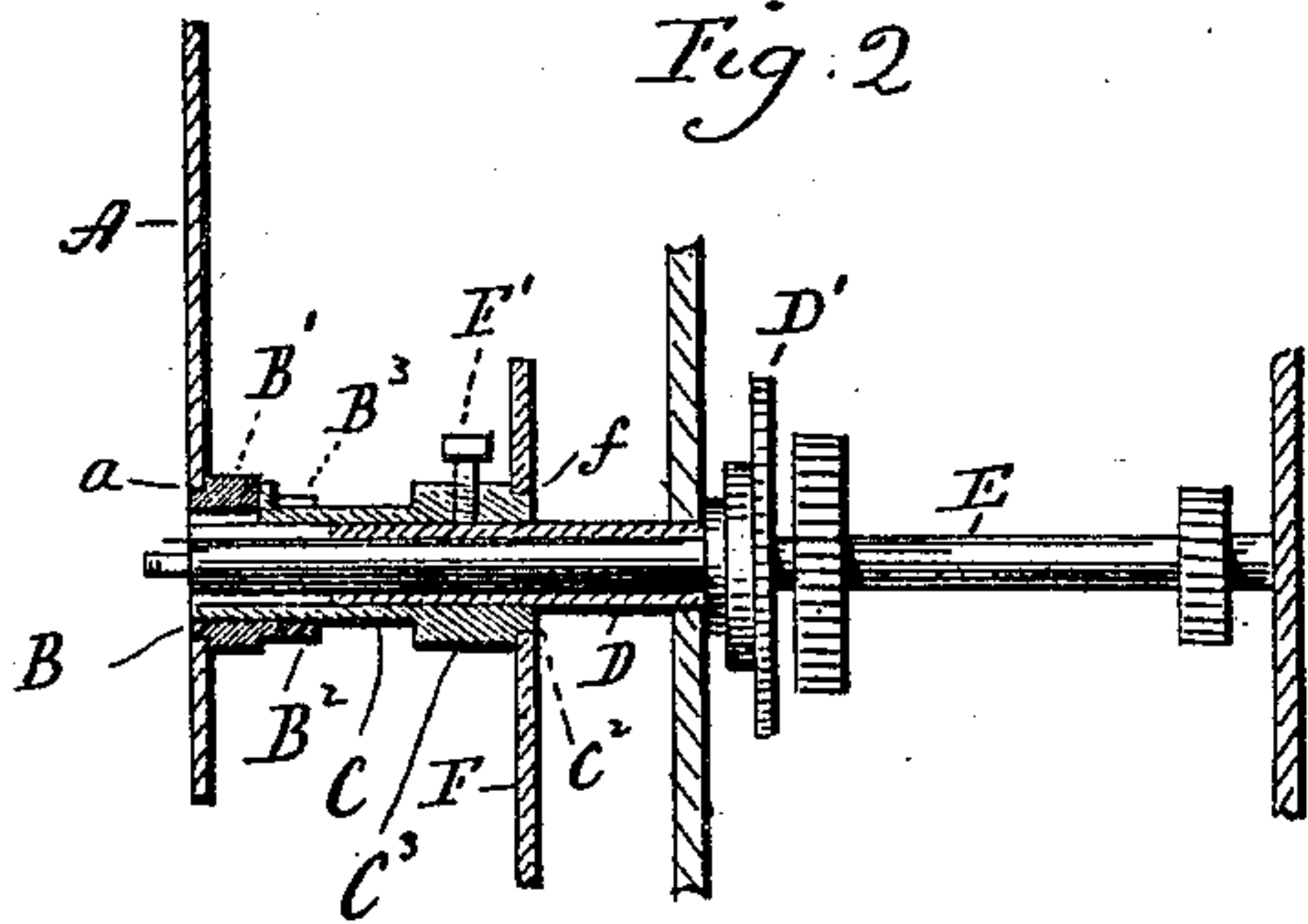


Fig. 3



Fig. 4

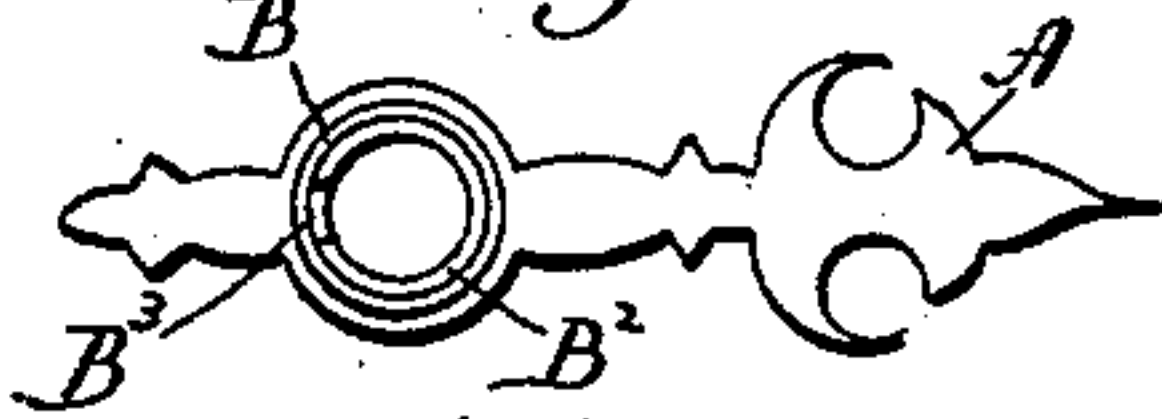
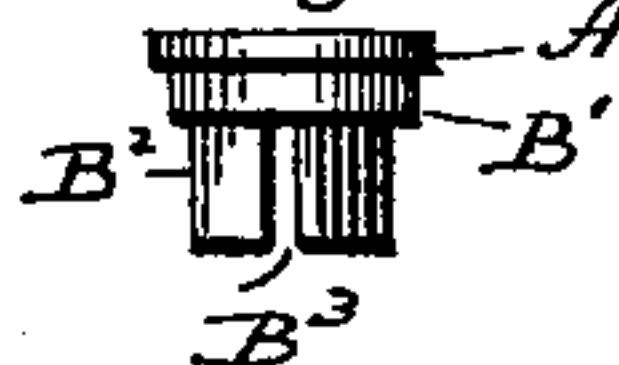


Fig. 5



Witnesses.

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