

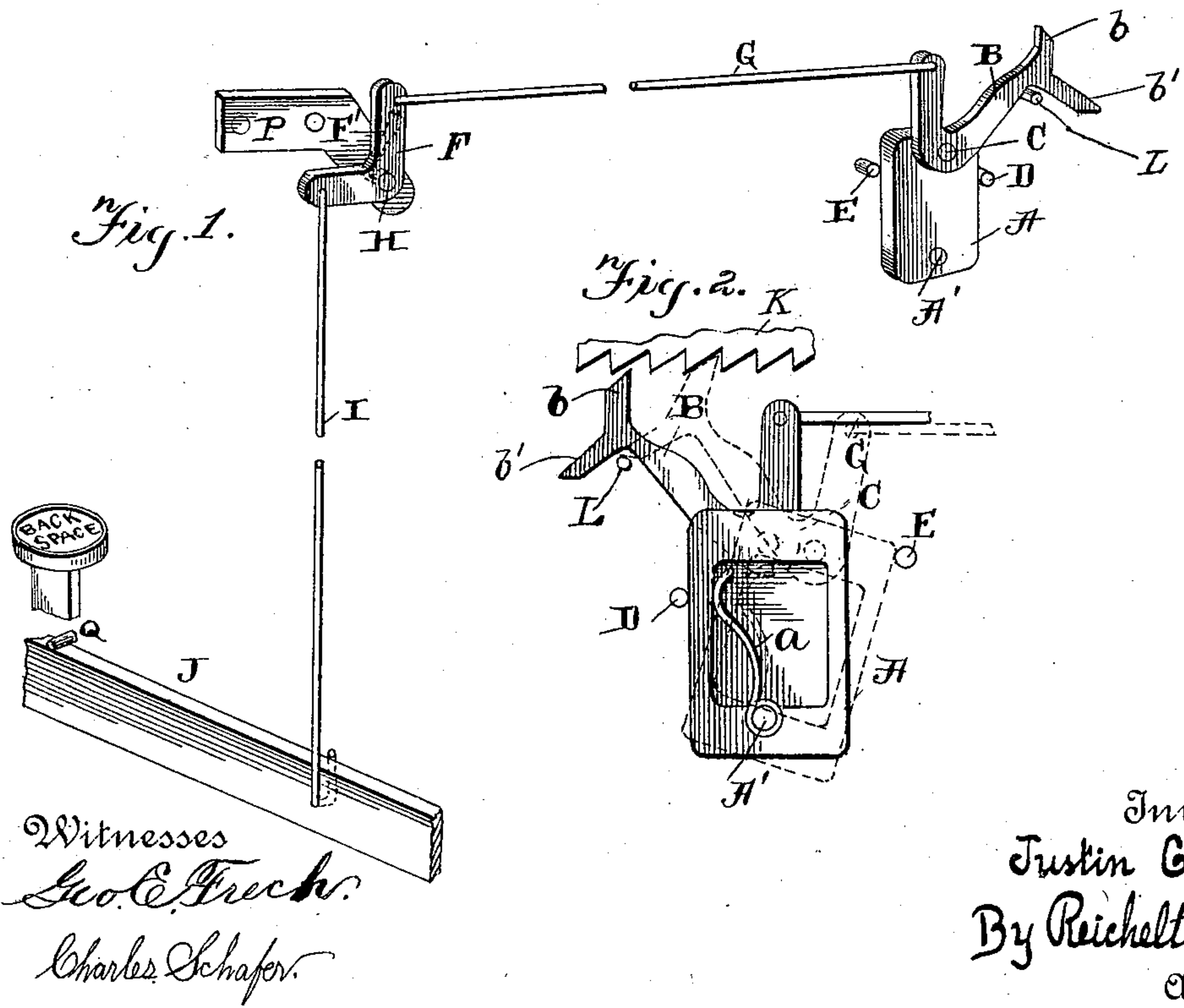
(No Model.)

2 Sheets—Sheet 1.

J. GILBERT.  
TYPE WRITER.

No. 589,387.

Patented Aug. 31, 1897.



Inventor  
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Attorneys.

(No Model.)

2 Sheets—Sheet 2.

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Fig. 3.

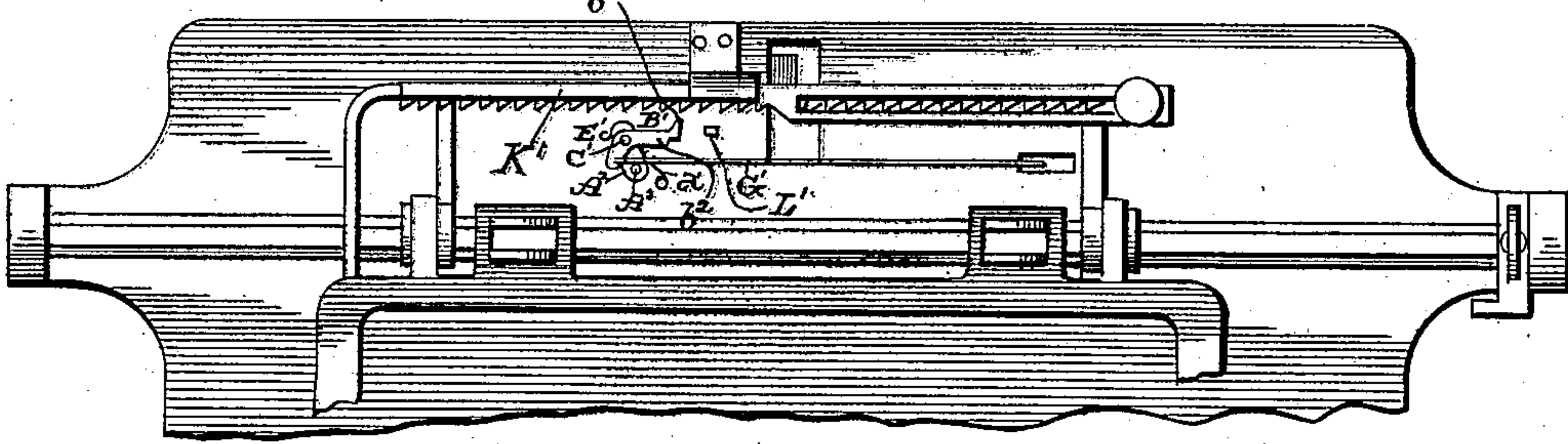


Fig. 4.

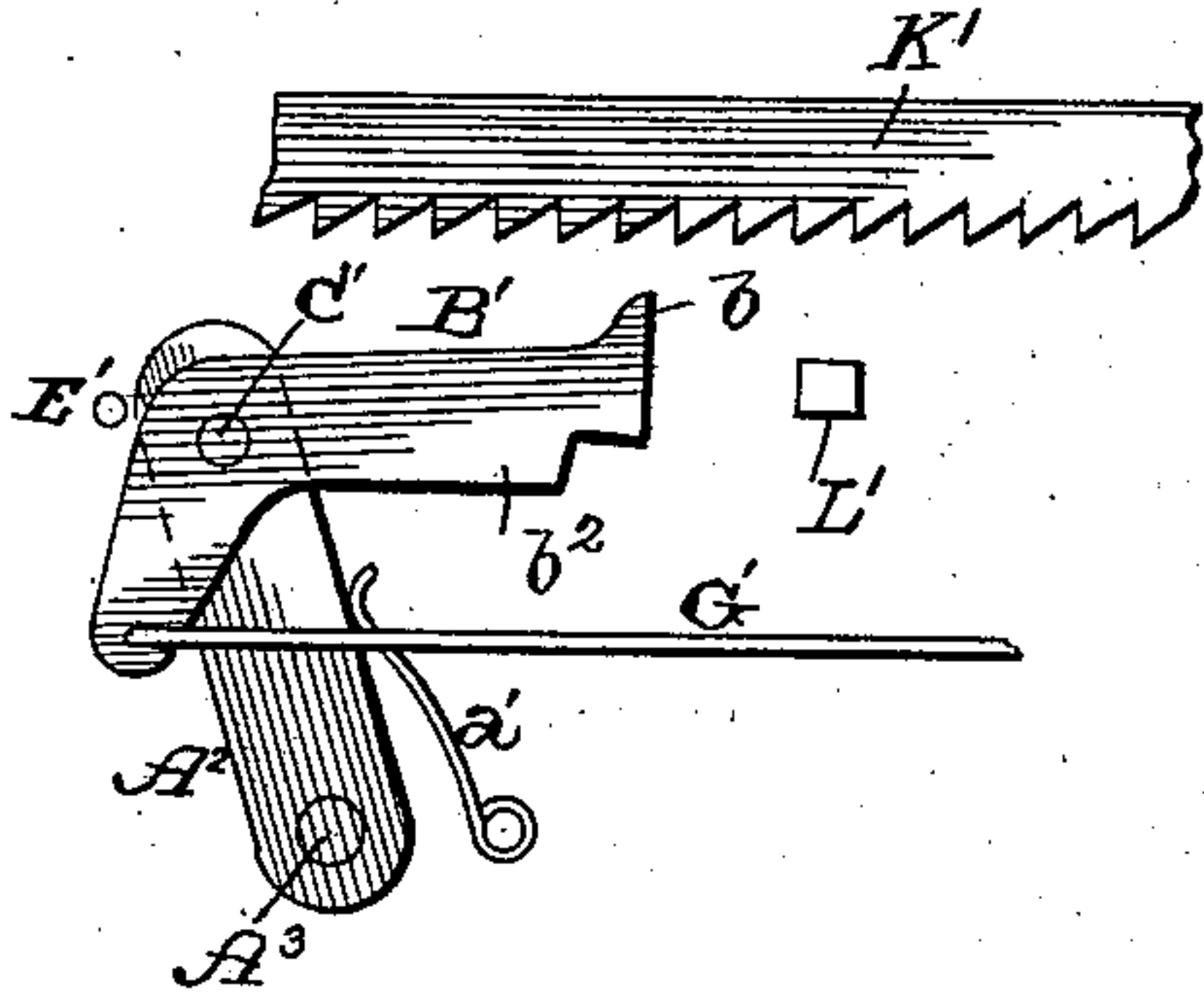


Fig. 5.

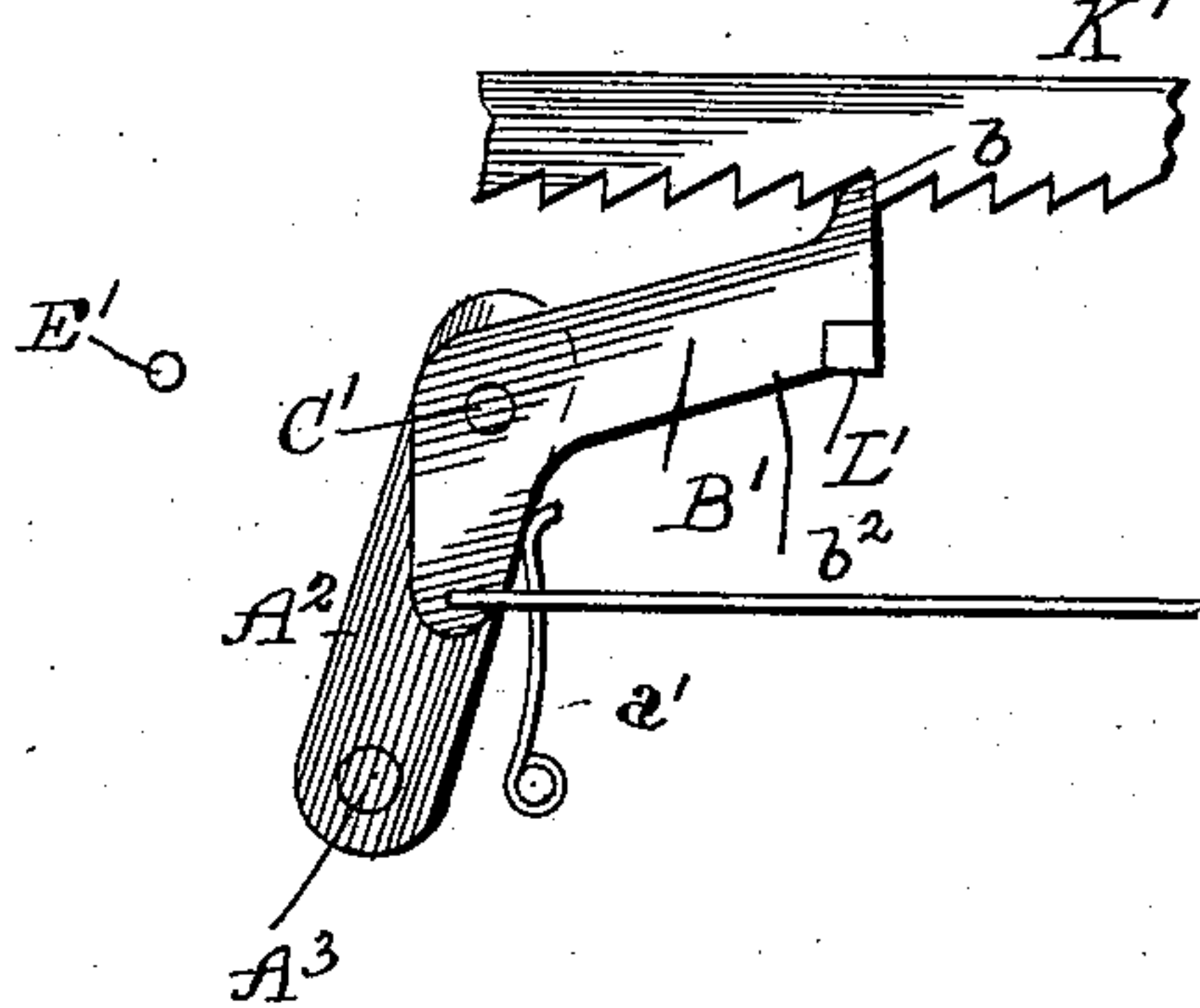


Fig. 6.

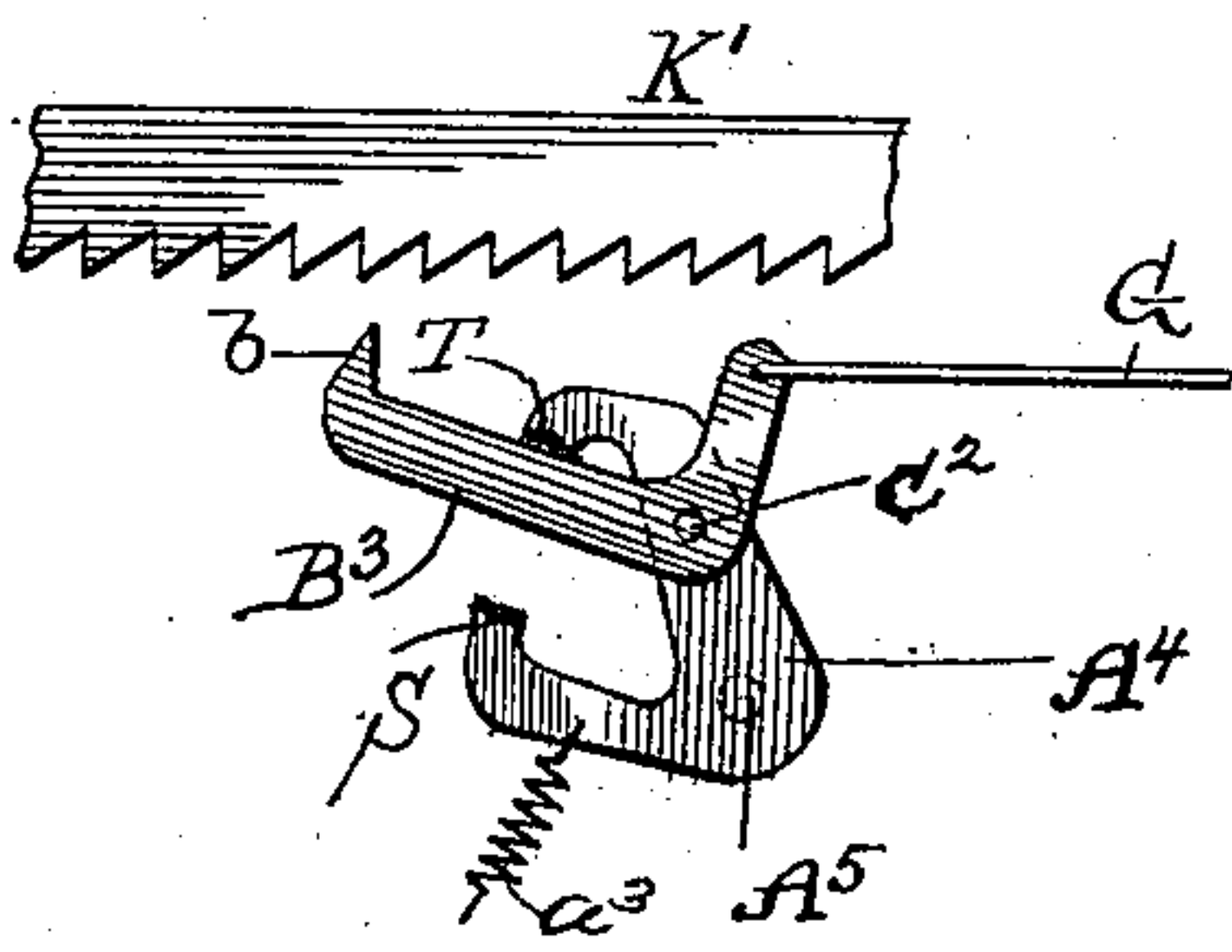


Fig. 7.

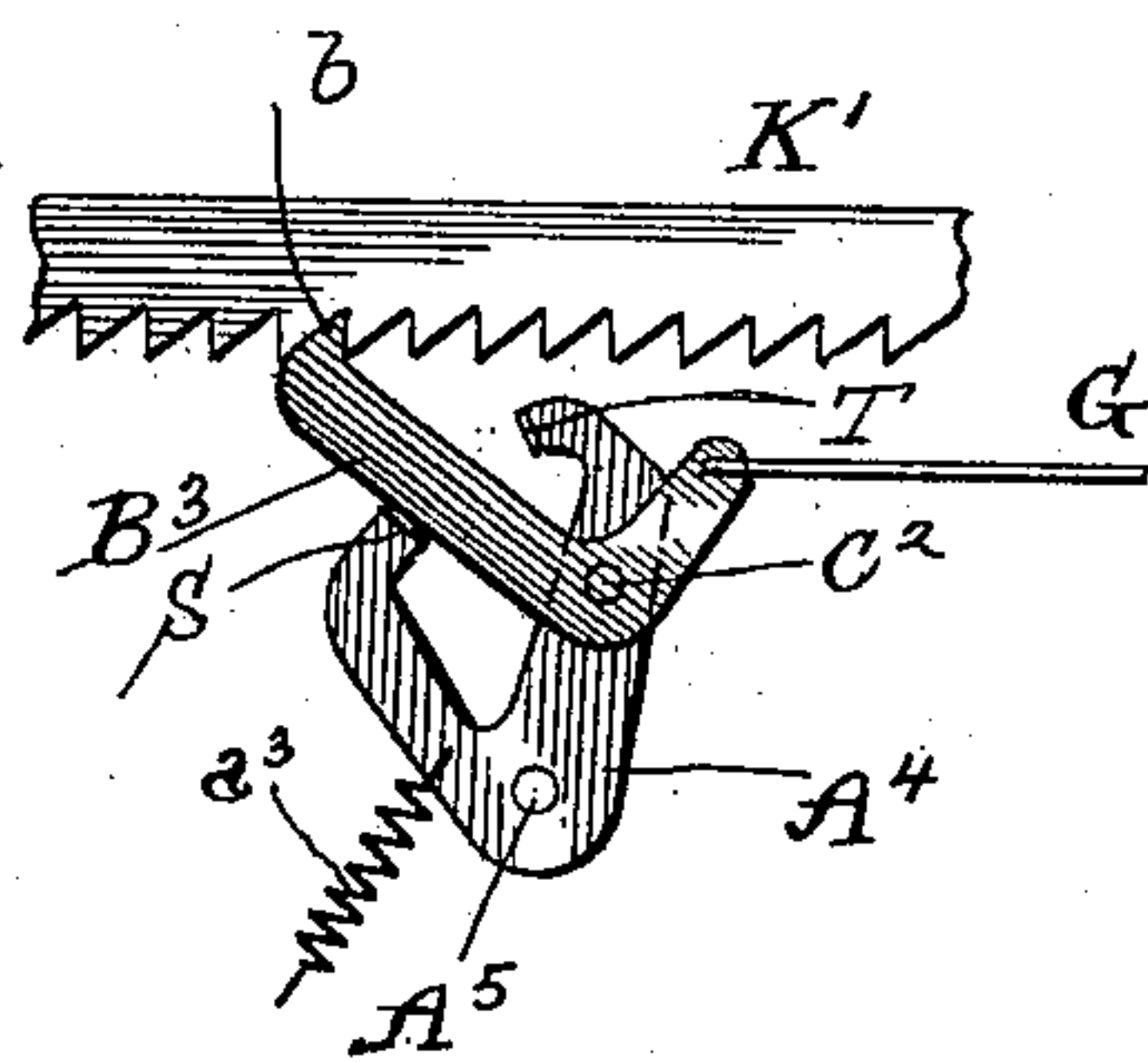
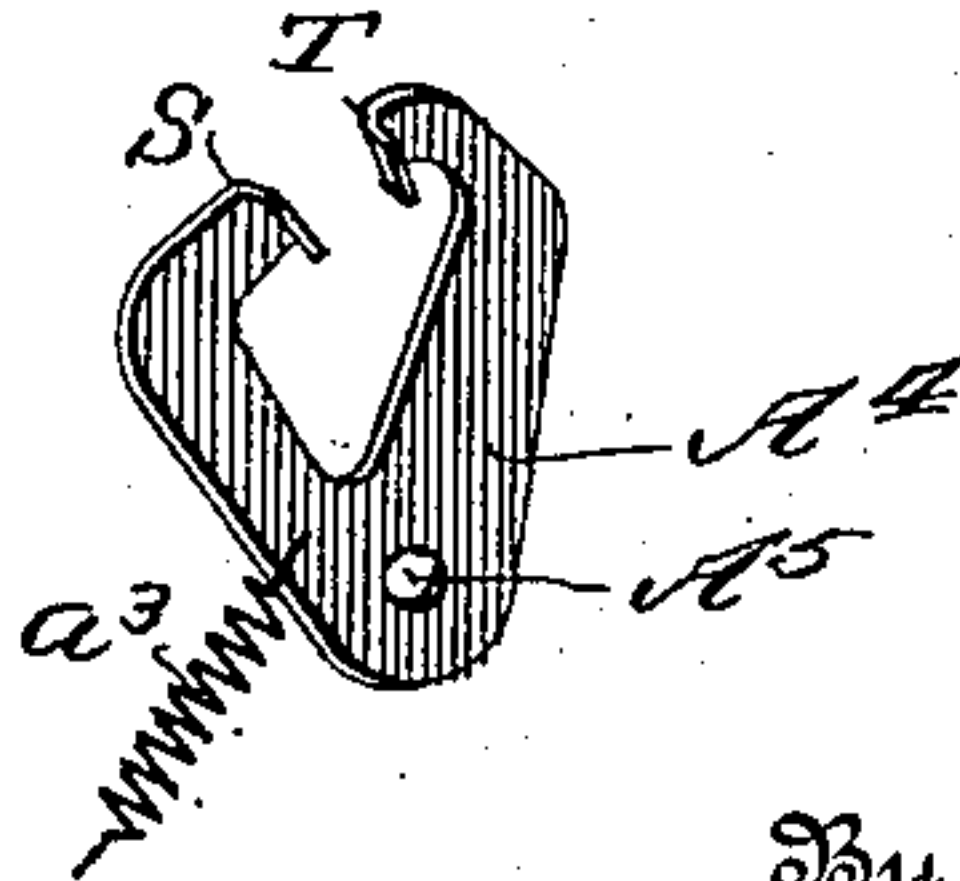


Fig. 8.



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# UNITED STATES PATENT OFFICE.

JUSTIN GILBERT, OF VICTORIA, CANADA.

## TYPE-WRITER.

SPECIFICATION forming part of Letters Patent No. 589,387, dated August 31, 1897.

Application filed January 24, 1895. Serial No. 536,112. (No model.)

*To all whom it may concern:*

Be it known that I, JUSTIN GILBERT, a citizen of the United States of America, and a resident of Victoria, British Columbia, Canada, have invented certain new and useful Improvements in Type-Writing Machines, of which the following is a specification.

My invention relates more particularly to an attachment for type-writing machines for moving the carriage backward step by step one-letter space at a time with absolute precision at any desired speed, so that such back-spacing may be perfectly accomplished as rapidly as the ordinary or front spacing or as the letters of the machine may be struck by the expert operator, or it may be perfectly accomplished slowly by a slow operator; and it consists, essentially, of a dog pivoted to a movable dog-carrying plate and connected with a key-lever, so that when the key is depressed the dog is moved into engagement with a rack-bar attached to the paper-carriage of the machine or with the escapement rack-bar itself, as the case may, and draws the paper-carriage backward the required distance to allow the escapement-dogs of the machine to spring into engagement with the next preceding tooth of the escapement rack-bar, at which point the carriage is at once abruptly and forcibly stopped by means of the apparatus, thus limiting the movement of the carriage backward with invariable accuracy, and at the same time by overcoming the inertia of the backward movement of the carriage instantaneously making it rebound back in the normal direction again until stopped by the escapement-dogs, which have assumed their normal position again, so that by means of such carriage-locking device the whole operation may be done in a very small fraction of a second and repeated many times in a second, and all liability of moving the carriage backward more than one space at a time is overcome.

My invention is applicable to type-writing machines having their carriage under constant stress tending to move it from right to left, as in the Densmore, Remington, Smith Premier, Caligraph, Yost, and other similar class of machines.

My invention also consists in certain details of construction that will be hereinafter fully

described, and specifically pointed out in the claims.

In order that my invention may be fully understood, I will proceed to describe it with reference to the accompanying drawings, in which—

Figure 1 is a view showing one form of my invention. Fig. 2 is an enlarged inside view of the dog and movable dog-carrying plate of this form, the operative position of the parts being shown in dotted lines. Fig. 3 is a detail top view of a type-writing machine having applied thereto another form of my device. Figs. 4 and 5 are detail views of this form showing the device in and out of engagement with the rack-bar. Figs. 6, 7, and 8 show still another form of my invention in two positions.

In the said drawings, and referring more particularly to Figs. 1 and 2, A is a movable dog-carrying plate in the form of a rectangular frame, and it has pivoted thereto at C the heel of a dog B, which is shown in the form of a bell-crank lever. One end of this lever is connected by a rod G to an arm of a bell-crank lever F, pivoted by its heel at H to a bracket P, and the other arm of the bell-crank lever F is connected to a key-lever J by means of a rod I. F' represents a spring for returning the lever F to normal position after being depressed by the key-lever J, and this spring also necessarily returns all the other parts of the device with the exception of the plate A to their normal position, where they are all stopped by the key-lever having gone as far upward as it will go. The plate A is returned to normal position against the stop D by the spring a. The springs F' and a also aid each other more or less. The operation of this form of the device is as follows: The parts are normally in the position shown in Figs. 1 and 2 with the tooth b of the dog B resting in close proximity to the rack-bar K, but not close enough to touch the rack-bar while the rack-bar is moving in actual writing, and it is held in this position by the rod G, which will not permit it to go against the rack-bar until the rod G is operated upon, the plate A being held in position against the stop D by the spring a. The key-lever is then depressed, moving the rod G to the right of the machine and turning the dog B on its



pivot C until its tooth  $b$  strikes between the teeth of the rack-bar and can go no farther in that direction. Then the plate A turns on its pivot A' and the rack-bar is pulled back-  
 5 ward until the escapement-dogs of the type-writer have engaged the next tooth in rear to the one they held before. The distance which the rack-bar must be pulled is necessarily greater than the space of one rack-bar tooth  
 10 in order to admit of the escapement-dogs thus engaging the next tooth, the distance differing with the different forms of the escapement-dogs on the different makes of type-writing machines and ranging generally from  
 15 about two to about four or five rack-bar-tooth spaces. As soon as the rack-bar has been carried far enough for the escapement-dogs to have engaged the next rack-bar tooth, as  
 20 aforesaid, the plate A strikes against the stop E, which arrests any further movement of the device in that direction. However, the momentum given to the machine-carriage in the movement just explained would cause it to go on beyond the desired point unless its mo-  
 25 tion were also arrested by a positive stop. Such positive carriage stop is effected by means of the dog itself being held by its pendent lug  $b'$  climbing onto and resting on the stop L and preventing withdrawal of the tooth  
 30  $b$  from the rack-bar, the rack-bar not admitting of any movement away from the dog. The slanting side of the rack-bar notch thus strikes against the tooth of the dog, which effectually locks the carriage and starts it back  
 35 in the opposite direction again. The two springs above referred to return the apparatus to its normal position, the carriage returning forward at the same time until it rests in its normal position against the escapement-  
 40 dogs, which have engaged the next rack-bar tooth in the rear, as aforesaid, and the carriage then stands one notch backward from where it stood before the operation. By means of this carriage stop the quicker the  
 45 movement of the back-spacing apparatus the quicker is the carriage thrown back into position, as aforesaid, so that the speed with which it may be operated is practically unlimited, and at the same time it may be op-  
 50 erated slowly and any uncertainty as to the distance spaced is rendered impossible.

Referring to Figs. 3 to 5, inclusive, in which I have shown the device applied to a type-writing machine having the rack-bar K' in a  
 55 horizontal position on the carriage, B' represents the dog, which is, as in the other case, in the form of a bell-crank lever, and A<sup>2</sup> the movable plate, which is pivoted at A<sup>3</sup>. The plate is here shown as a short and flat strip, against which the spring  $a'$  bears for holding  
 60 it in the position shown in Fig. 5. E' and L' represent the two stops corresponding with the stops D and E, respectively, above mentioned, and L accomplishes also in addition  
 65 the work accomplished by the stop L, above referred to. The operation of this form is the same as in the one above described. The

tooth  $b$  of the dog fills up the space between the stop L' and the rack-bar at the end of the movement, as in the former case, so that the  
 70 rack-bar cannot pass any farther, the dog locking it instantly, with the lug  $b^2$  bearing on the stop L and preventing it from going too far and starting it back again in the op-  
 75 posite direction, as before explained.

Referring to Figs. 6, 7, and 8, which is my preferred form, B<sup>3</sup> represents a bell-crank or approximately L-shaped dog which is piv-  
 80 oted on the movable plate A<sup>4</sup> by its heel at C<sup>2</sup>, the movable plate being pivoted at A<sup>5</sup> to the frame of the machine. The movable plate is approximately C-shaped, and the re-  
 85 spective ends S and T serve as the stops, performing exactly the same office as the three stops mentioned in the first instance and the  
 90 two in the second instance. These ends S and T are turned up and flanged so as to strike against the dog. The toothed end  $b$  of the dog is also bent up so that it engages  
 95 the rack-bar teeth when in use, while at the opposite end thereof the rod G and the movable support at the end T are free to pass on one side of the rack-bar without touching the  
 100 same. The spring  $a^3$  keeps the end T normally in position against the dog, so that any movement of the dog when disengaged with  
 105 the rack-bar turns the plate A<sup>4</sup> upon its pivot A<sup>5</sup>. The rod G therefore holds the dog in position close to and ready to engage the rack-bar when operated, as in the former  
 110 cases. When the rod G is operated upon, as before explained, the plate A<sup>4</sup> turns on its pivot A<sup>5</sup>, and the tooth of the dog comes in contact with the rack-bar in one of the  
 115 notches. Then the dog turns on its pivot C<sup>2</sup>, the plate A<sup>4</sup> continuing to turn on its pivot, and the rack-bar is drawn backward the required distance, as aforesaid, when the end  
 120 S strikes against the dog and instantly arrests all further movement in that direction of both the apparatus and the carriage itself,  
 125 as shown in Fig. 7, for the rack-bar not admitting of any but lateral motion cannot pass over the dog, and the returning movement of the carriage and the apparatus then takes  
 130 place, as in the other cases, giving the desired speed and accuracy in back-spacing.

Having thus described my invention, the following is what I claim as new therein and  
 135 desire to secure by Letters Patent:

1. A back-spacing attachment comprising a pivoted dog-carrying plate, a dog having a tooth adapted to engage the rack-bar of a paper-carriage, and pivoted to the said dog-carrying plate, a stop limiting the rearward  
 140 movement of the dog-carrying plate and means whereby the dog is actuated to first insert its tooth into a rack-bar space and then to move the carriage and to positively lock the dog, dog-carrying plate and carriage  
 145 together from further movement until released; substantially as described.

2. A back-spacing attachment comprising a pivoted dog-carrying plate, a dog having a



tooth adapted to engage the rack-bar of a paper-carriage, and pivoted to the said dog-carrying plate, a stop limiting the rearward movement of the dog-carrying plate, a key-lever, and connections between the said dog and the said key-lever whereby the dog is actuated to first insert its tooth into a rack-bar space and then to move the carriage and to positively lock the dog, dog-carrying plate and carriage together from further movement until released; substantially as described.

3. A back-spacing attachment comprising a pivoted dog-carrying plate, a dog having a tooth adapted to engage the rack-bar of a paper-carriage and pivoted to the said dog-carrying plate, a stop limiting the rearward movement of the dog-carrying plate, means whereby the dog is actuated to first insert its tooth into a rack-bar space and then to move the carriage and to positively lock the dog, dog-carrying plate and carriage together from further movement until released, a spring returning the dog-carrying plate and a stop limiting the forward movement of the dog-carrying plate; substantially as described.

4. A back-spacing attachment comprising a pivoted dog-carrying plate, a dog having a tooth adapted to engage the rack-bar of a paper-carriage and pivoted to the said dog-carrying plate, a stop limiting the rearward movement of the dog-carrying plate, a key-lever, connections between the said dog and the said key-lever whereby the dog is actuated to first insert its tooth into a rack-bar space and then to move the carriage and to positively lock the dog, dog-carrying plate and

carriage together from further movement until released, a spring returning the dog-carrying plate, and a stop limiting the forward movement of the dog-carrying plate; substantially as described.

5. The back-spacing attachment comprising an approximately C-shaped and pivoted dog-carrying plate, having stops, an approximately L-shaped dog having a tooth and pivoted to the dog-carrying plate and working between the stops, means for swinging the dog and dog-carrying plate, and a spring for returning the dog-carrying plate; substantially as described.

6. A back-spacing attachment comprising a pivoted dog-carrying plate, a dog having a tooth adapted to engage the rack-bar of a paper-carriage and pivoted to the said dog-carrying plate, a stop limiting the rearward movement of the dog-carrying plate, a spring returning the dog-carrying plate, a stop limiting the forward movement of the dog-carrying plate, a bell-crank lever, a horizontal rod connecting the bell-crank lever to the dog, a key-lever and a vertical rod connecting the key-lever to the bell-crank lever; substantially as described.

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

JUSTIN GILBERT.

Witnesses:

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H. G. L. HERBERMAN,  
GEORGE OLTSCH,  
CHARLES SCHAFER.