

No. 865,459.

PATENTED SEPT. 10, 1907.

J. B. VIDAL.

KEYBOARD FOR TYPE WRITING AND OTHER MACHINES ON WHICH
A KEYBOARD IS USED.

APPLICATION FILED JAN. 24, 1907.

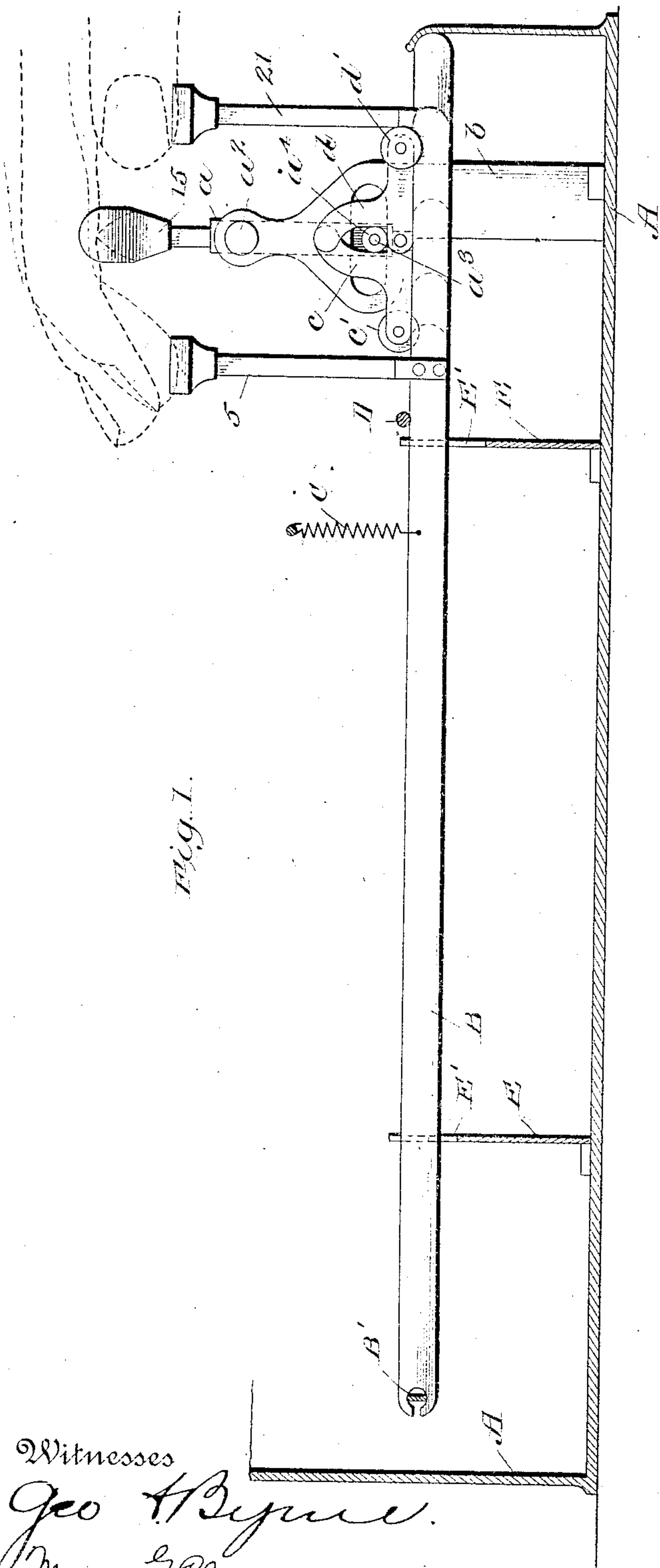


Fig. 1.

Witnesses
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Myron G. Clear.

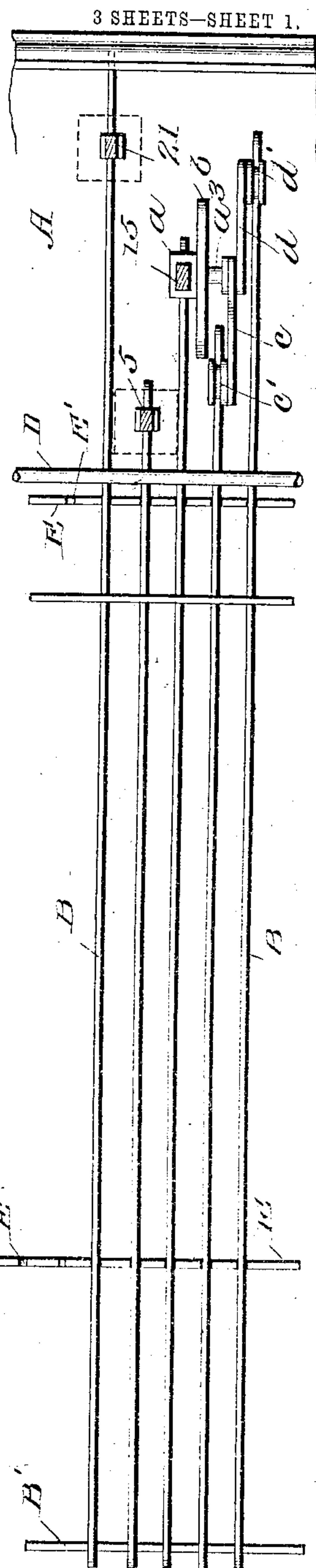


Fig. 2.

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SHEETS—SHEET 2.

Fig. 3.

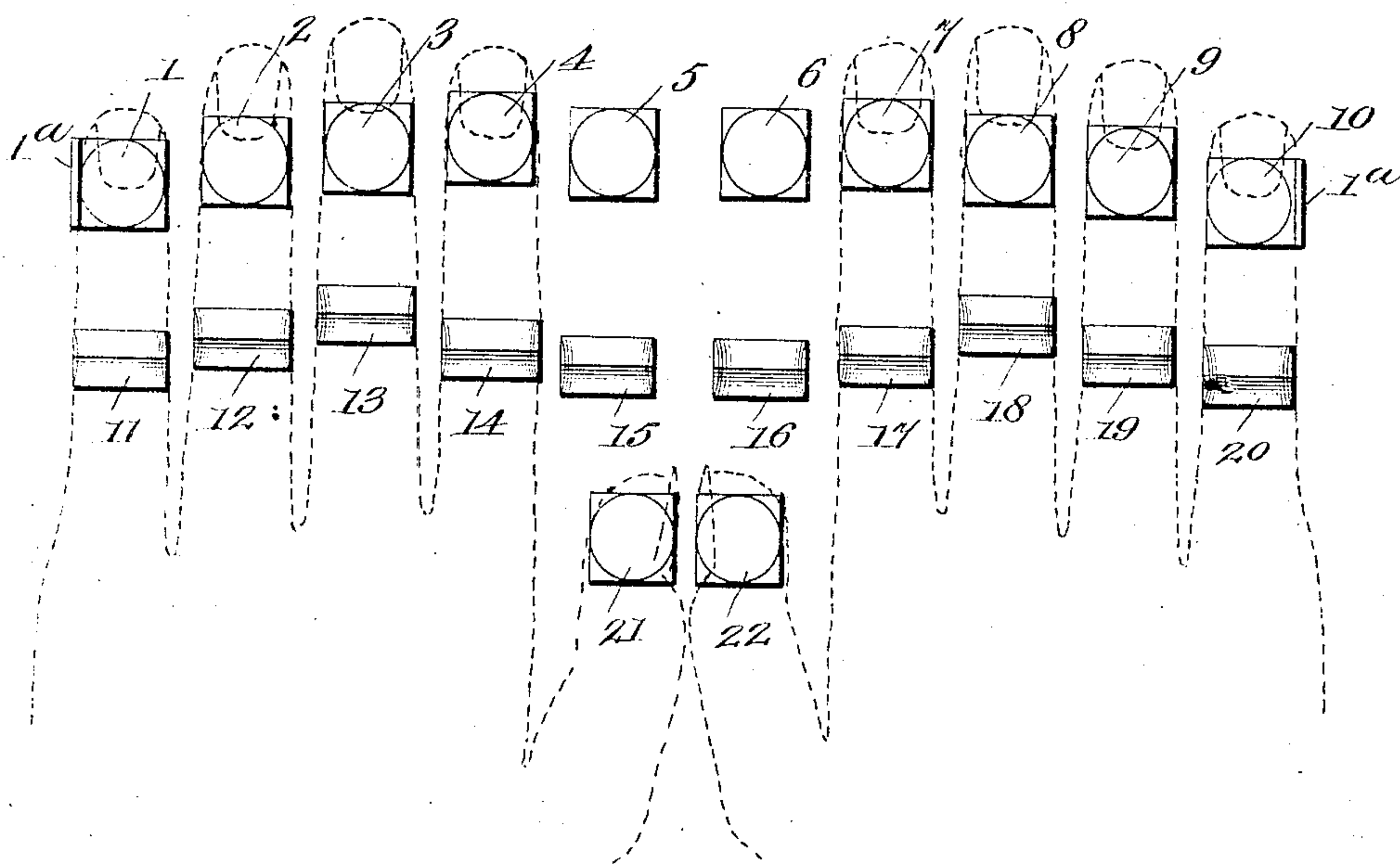


Fig. 4.

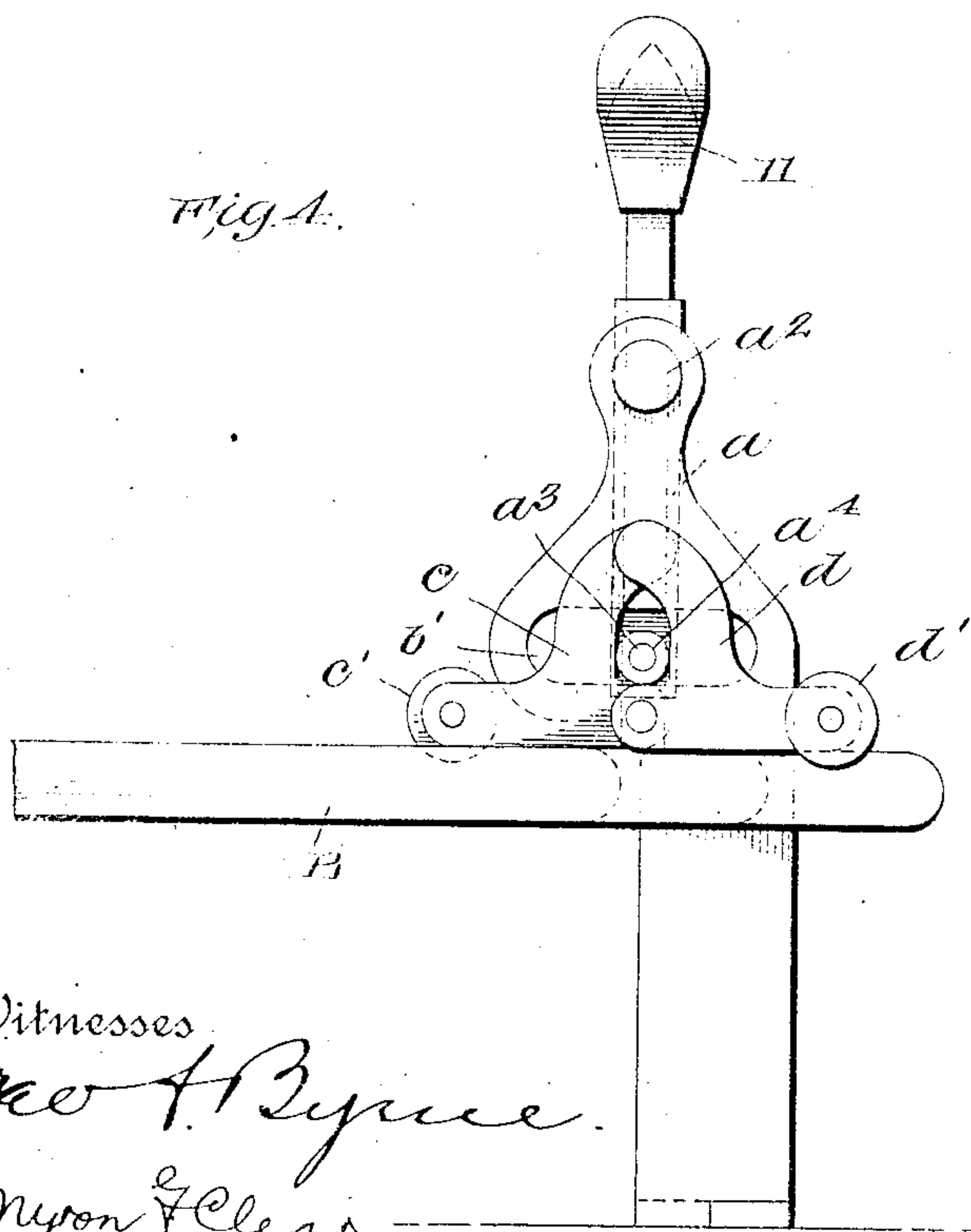
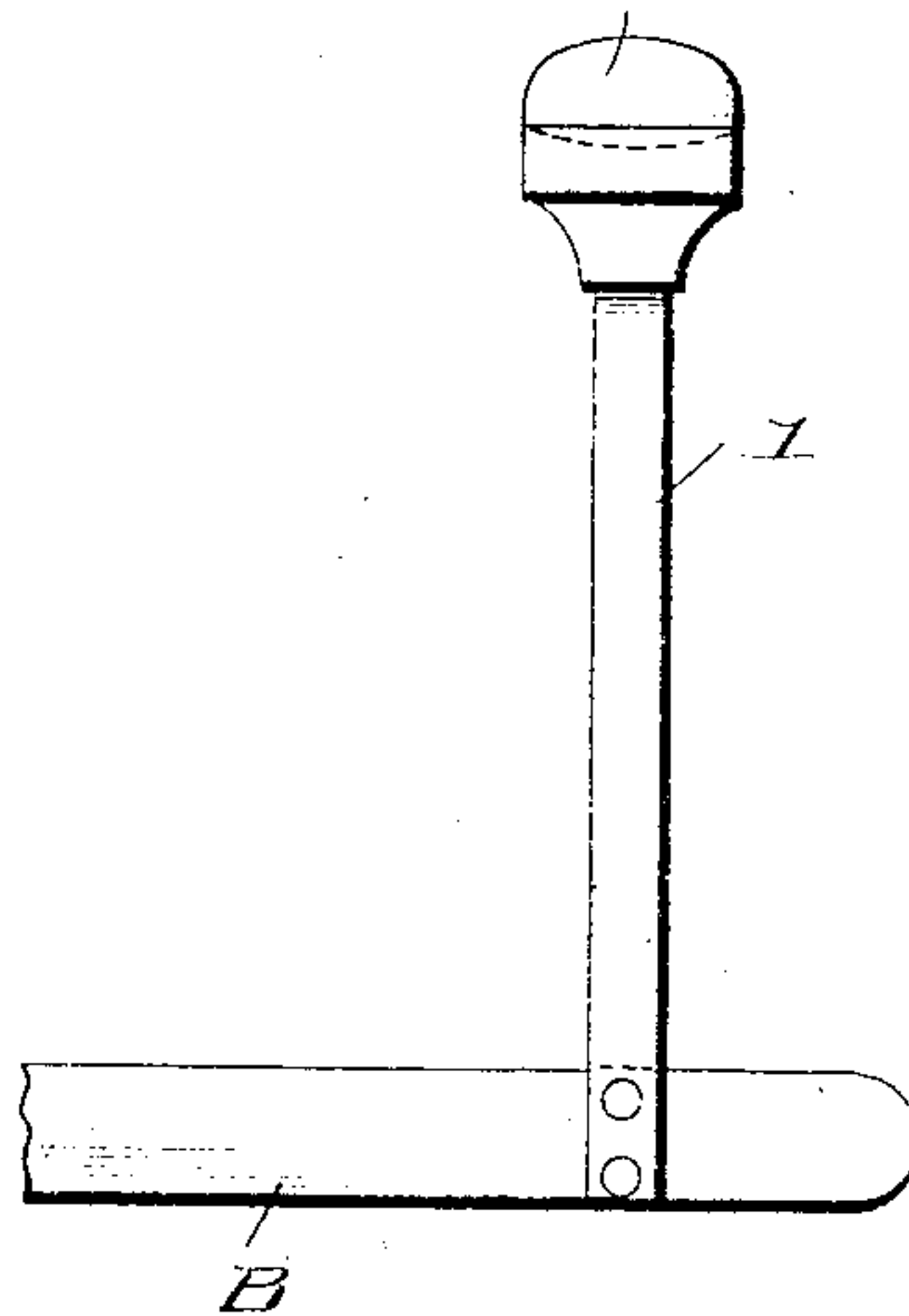


Fig. 5.
1a



Witnesses

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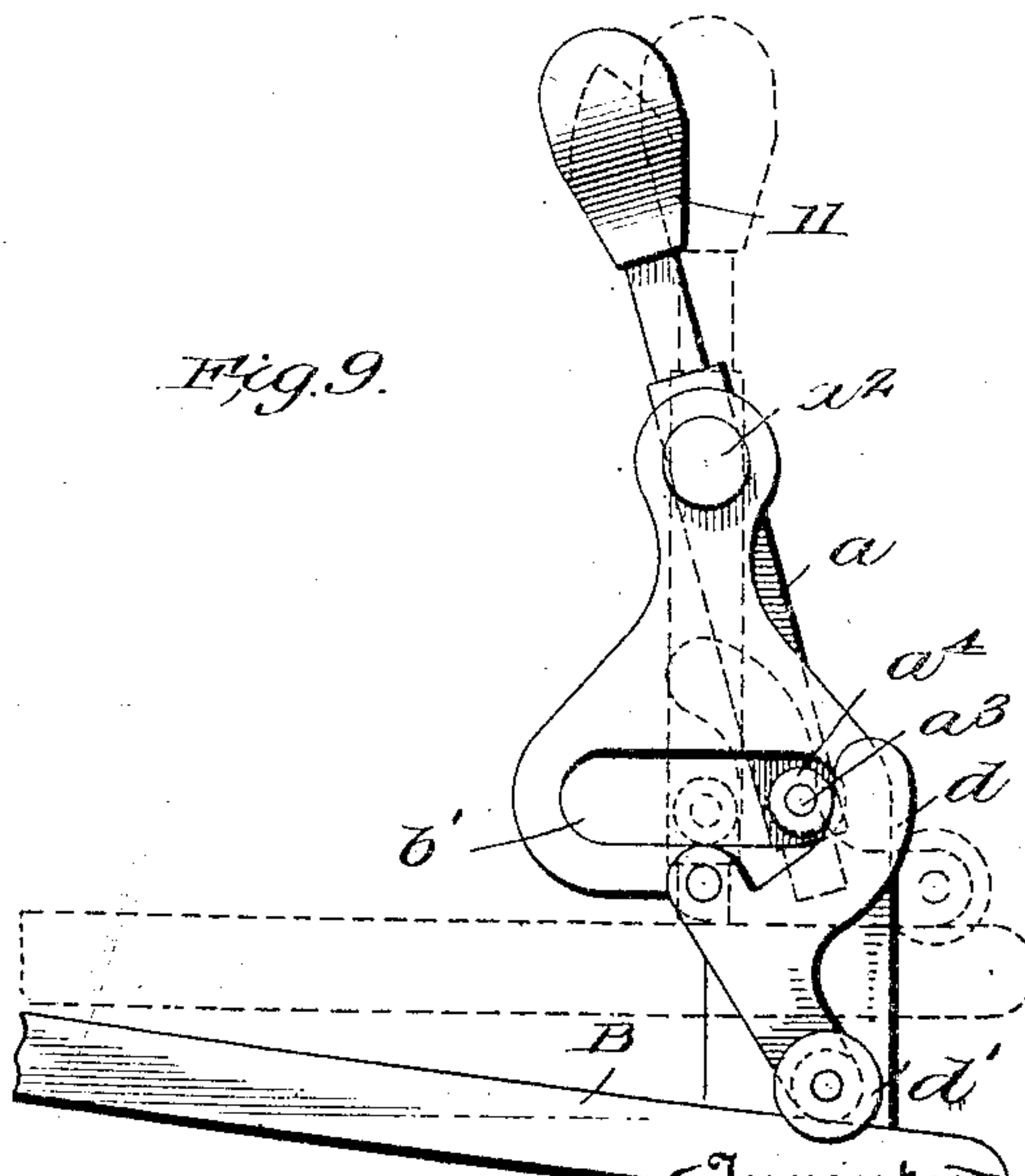
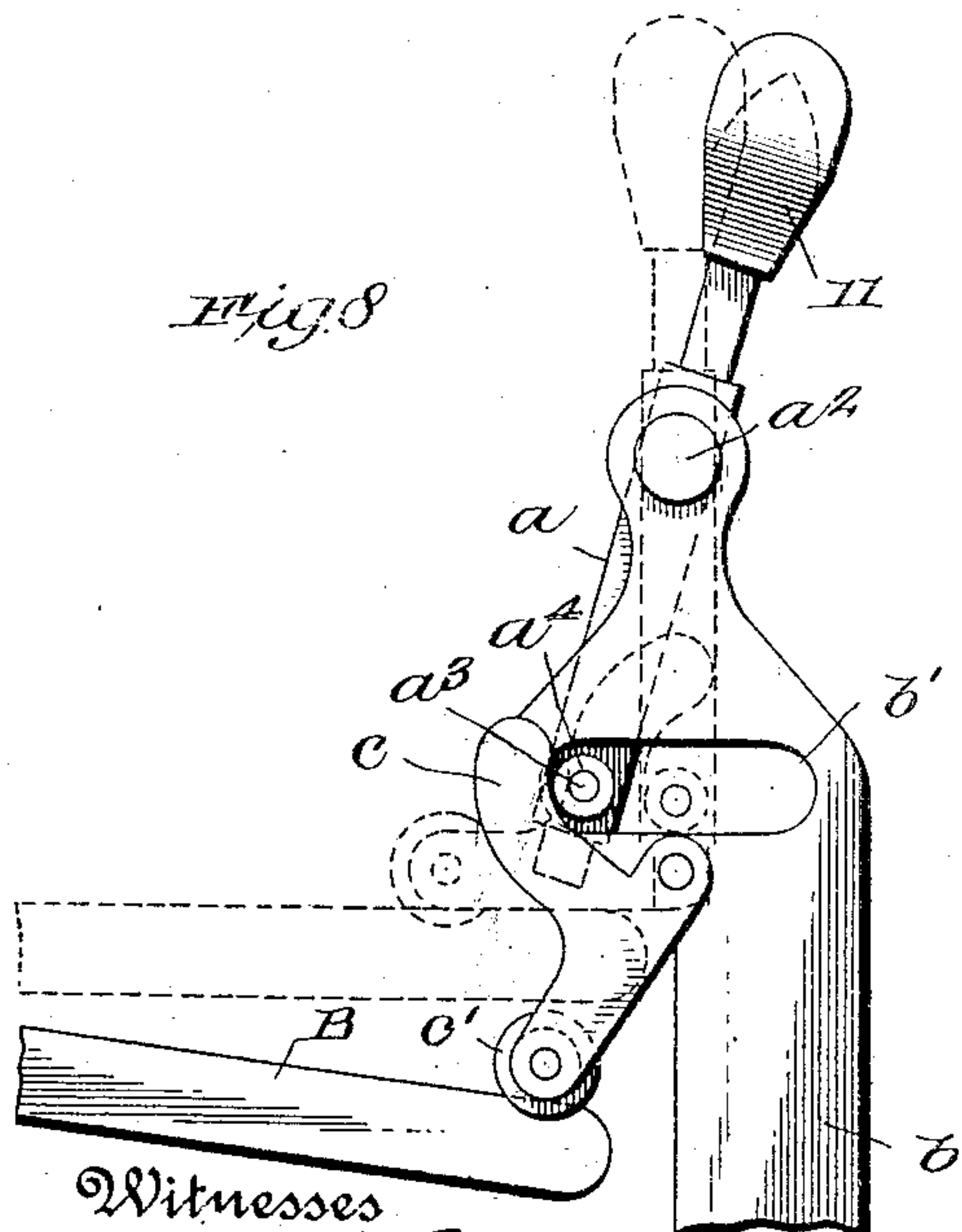
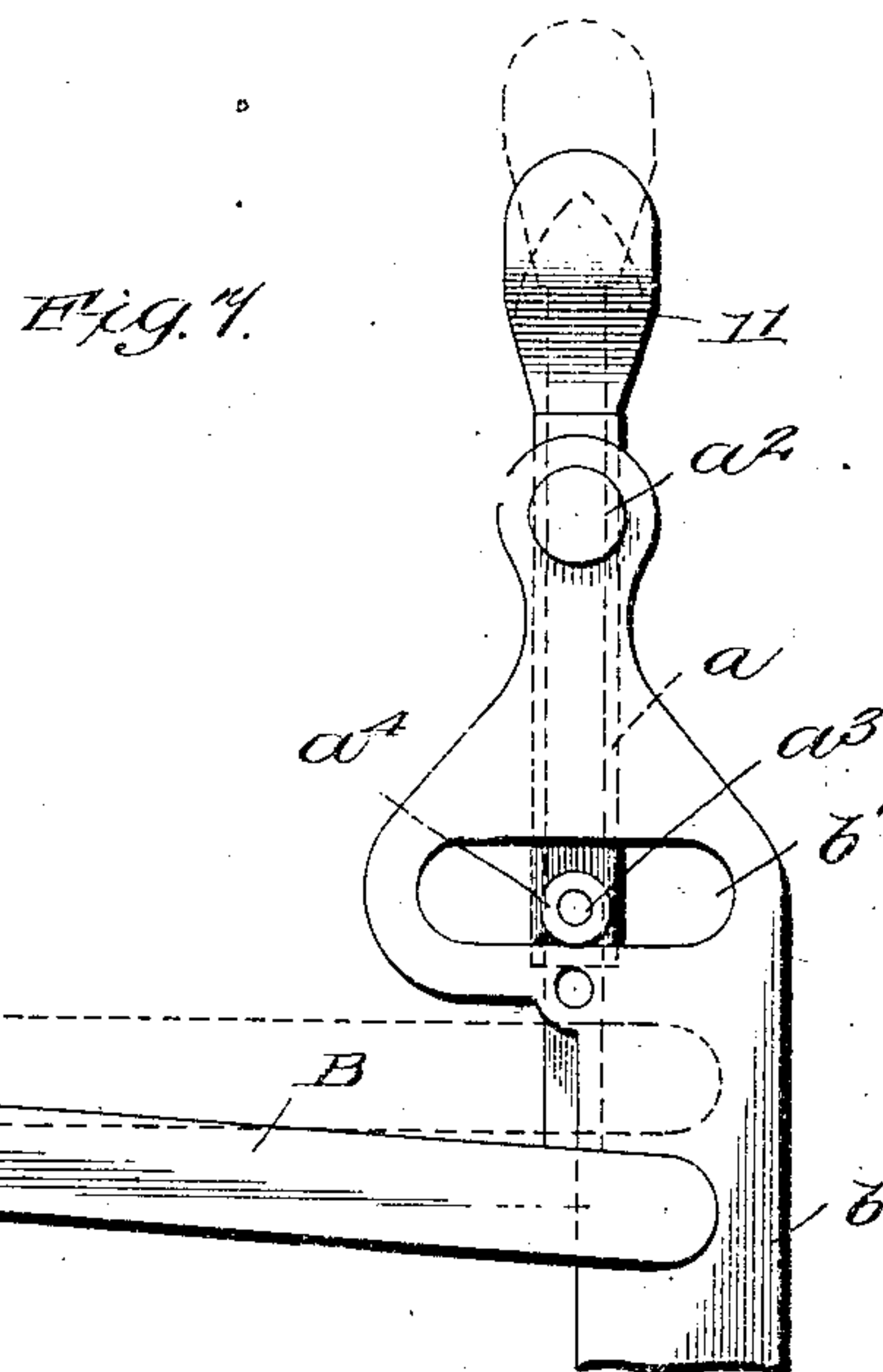
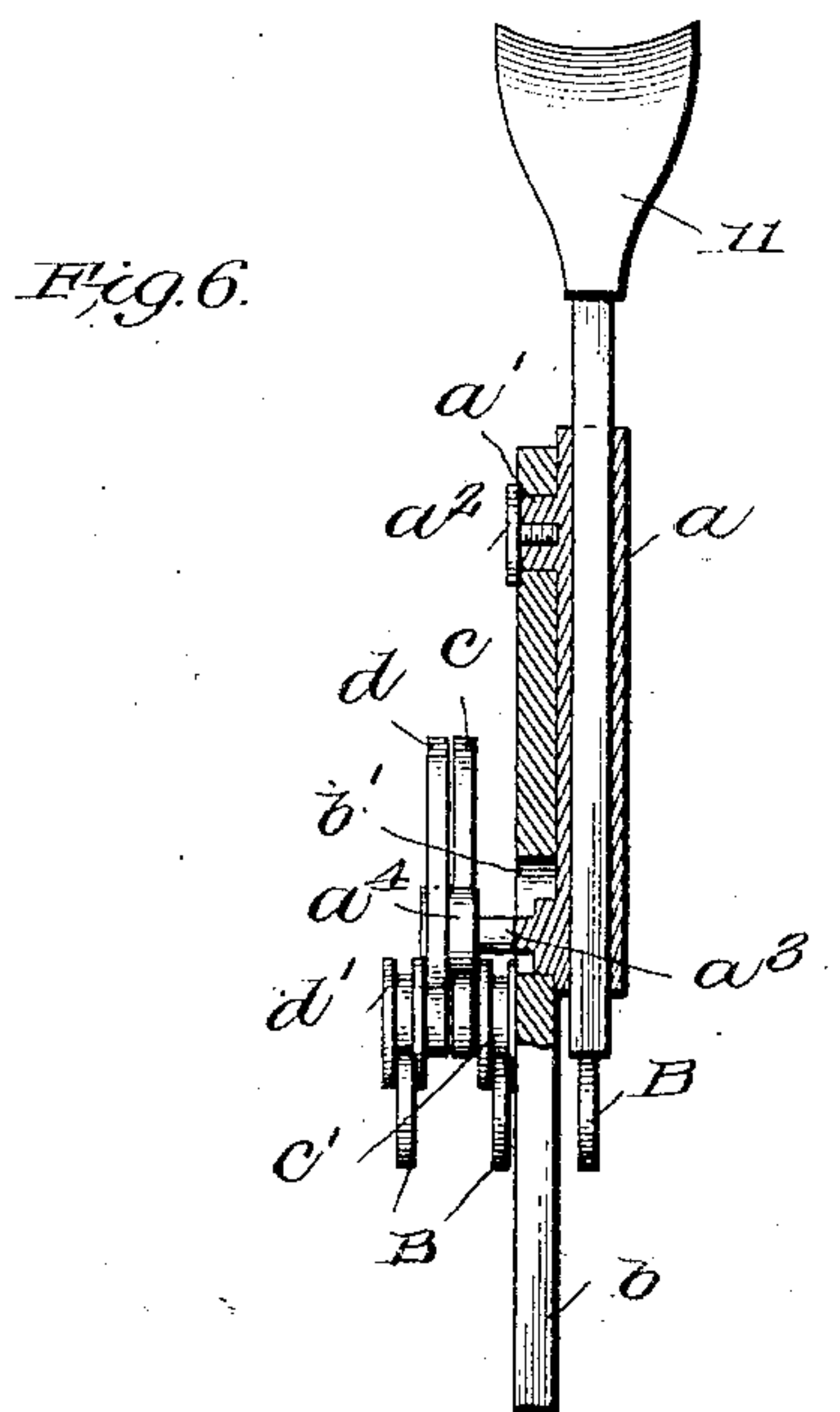
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3 SHEETS—SHEET 3.



Witnesses

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UNITED STATES PATENT OFFICE.

JUAN BAUTISTA VIDAL, OF HABANA, CUBA.

KEYBOARD FOR TYPE-WRITING AND OTHER MACHINES ON WHICH A KEYBOARD IS USED.

No. 865,459.

Specification of Letters Patent.

Patented Sept. 10, 1907.

Application filed January 24, 1907. Serial No. 353,808.

To all whom it may concern:

Be it known that JUAN BAUTISTA VIDAL, of the Republic of Cuba, residing at Concordia street, (153rd,) in the city of Habana and Island of Cuba, has invented certain new and useful Improvements in Keyboards for Type-Writing and other Machines on which a Keyboard is Used; and he does hereby 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.

My invention relates to typewriters and more particularly to the keys thereof, and has for its objects to provide an arrangement of keys which will enable the operator to readily find the keys and to operate them quickly and with a very slight movement of the fingers.

Reference is had to the accompanying drawings, in which the same parts are indicated by the same letters and numerals throughout the several views.

Figure 1 is a sectional elevation of my improved keyboard. Fig. 2 is a plan view of a portion thereof, the keys being broken away. Fig. 3 is a plan view of the keys, the scheme of operating same being shown in dotted lines. Fig. 4 is an elevation on an enlarged scale of the multiple operation key. Fig. 5 is an elevation on an enlarged scale of the key operated by the little finger. Fig. 6 is a sectional front elevation, enlarged, of the multiple operation key. Fig. 7 is an enlarged detail of the same, illustrating the first operation. Fig. 8 is an enlarged detail of the same showing the second operation, and Fig. 9 is an enlarged detail of the same showing the third operation.

In the operation of my invention, I provide a suitable number of keys shown in the drawings as 22, and I actuate, through the same, the usual number of key levers (42) and I so place the said keys that the operator's hand may rest thereon and may, with only a slight movement, be able to reach any one of the keys desired, as shown plainly in Figs. 1 and 3.

A represents a suitable frame within which are arranged the key levers B pivotally secured at B'. Springs C are arranged to return the levers to their normal position, the limit of which is determined by a transverse bar or rod D. Guide frames E are disposed within the frame A and are provided with a plurality of vertical slots E', in which the key levers B work. These key levers B are adapted to operate the typewriter impression mechanism in any suitable manner, but as such means are very well known and as they form no part of this invention, they will not be further described.

The keyboard comprises three sets of keys in all. Of these the first set comprises a series of vertically

depressible keys indicated respectively by the numerals 1 to 10. The second set comprises a series of keys indicated by numerals 11 to 20, and so constructed that they may be operated in three different ways to actuate as many key levers. The third set comprises two single operation, vertically depressible, keys, numbered 21 and 22, and arranged convenient to the thumbs. The method of operating the 22 keys in the quickest and most convenient manner is shown plainly in Figs. 1 and 3, where it will be seen that the first series are adapted to be operated by the tips of the fingers, the second series by the second phalanges of the fingers, and the third series by the thumbs, as stated. It will also be seen that I arrange the position of the keys according to the length of the fingers, and that I provide an upstanding portion 1^a on the keys 1 and 10 of the first series to act as a guide for the little fingers.

I will now describe the construction of the keys comprising the second series, the same being capable of three operations. Each of this series of keys 11 to 20 is slidably mounted through a sleeve a, having a trunnion a' projecting into an opening in the upper portion of the key standard b. A set screw a² is then screwed into said trunnion a', thus pivotally mounting the entire key, while allowing the same to be independently depressed through the sleeve a. The standard b is provided with a transversely extending opening b' through which extends a pin a³, integral with the sleeve a, and provided with a roller a⁴ on its outer end. Beneath the opening b' of standard b are mounted a pair of oppositely disposed bell-crank levers c and d respectively, the lower arms of which normally extend at right angles from the standard b, and are provided at the extremities with rollers c' and d' respectively, each of which is mounted on its respective key lever B. The vertically extending arms of levers c and d are preferably concaved on their adjacent faces to allow of better sliding engagement when the key is swung forward or backward, riding roller a⁴ against levers c or d to operate the key lever desired. It will then be seen that as the key itself is mounted above its corresponding key lever, either a depression of the same, a push or a pull will tend to actuate a different key lever and consequently make a different impression on the machine. The tops of the key levers 11 to 20 are preferably dishd to conform to the contour of the finger.

It will be seen that although I have shown and described my improvement as operating 42 key levers by means of 22 keys, the number of keys may be greater or less without materially affecting the invention.

Having thus described my invention, what I claim is:—

1. In a typewriter keyboard, the combination with the key levers, of a series of multiple operation keys compris-

100

105

ing a supporting standard, a sleeve pivotally mounted on said standard, said key being slidably mounted through said sleeve and alined with one of said key levers, a pair of levers pivoted on said standard and each arranged on one of said key levers and means for actuating said levers to depress their corresponding key lever on the forward or backward movement of said keys, substantially as described.

2. In a typewriter key board, the combination with the key levers, of a series of multiple operation keys comprising a vertical support to which the key is slidably attached above one of said key levers, a pair of levers mounted adjacent said key and each arranged on one of said key levers, and means for actuating said levers to depress their corresponding key lever on the forward or backward movement of said keys, substantially as described.

3. In a typewriter key board, the combination with the key levers, of a series of keys arranged to be operated by the fingers, a second series of keys adapted to be operated by the thumbs, and a series of keys, each capable of more than one operation, comprising a vertical support to which the key is slidably and movably mounted above one of said key levers, a pair of levers mounted adjacent said key and each arranged on one of said key levers, and means for actuating said levers to depress their corresponding key lever on the forward or backward movement of said key, substantially as described.

4. In a typewriter key board, the combination with the key levers, of a series of keys arranged to be operated by the fingers, a second series of keys adapted to be operated by the thumbs, and a series of keys arranged between said

first two series, each key of said last named series being capable of operating three of said key levers and comprising a vertical support, a sleeve pivotally mounted on said support, said key being slidably mounted through said sleeve and alined with one of said key levers, a pair of levers pivoted on said standard and each arranged on one of said key levers and means for actuating said levers to depress their corresponding key lever, on the forward or backward movement of said keys, substantially as described.

5. In a typewriter key board, the combination with the key levers of a series of keys each capable of actuating three of said levers, comprising a vertical support, a sleeve pivotally mounted on said support, said key being slidably mounted through said sleeve and alined over one of said key levers, said vertical support being provided with a transverse slot, a pair of oppositely disposed bell-crank levers pivoted beneath said slot, having their vertical arms adjacent one another and their horizontal arms each arranged on one of said key levers, said key sleeve being provided with a pin extending through said slot and between said bell-crank levers and adapted to actuate said levers to depress their corresponding key lever on the forward or backward movement of the key, substantially as described.

In testimony whereof, your petitioner affixes his signature, in presence of two witnesses.

JUAN BAUTISTA VIDAL.

Witnesses:

JACQUES BOISSE,

CHARLES A. CONLON.