

(No Model.)

H. C. JOHNSON.  
TYPE WRITING MACHINE.

No. 477,054.

Patented June 14, 1892.

Fig. 1.

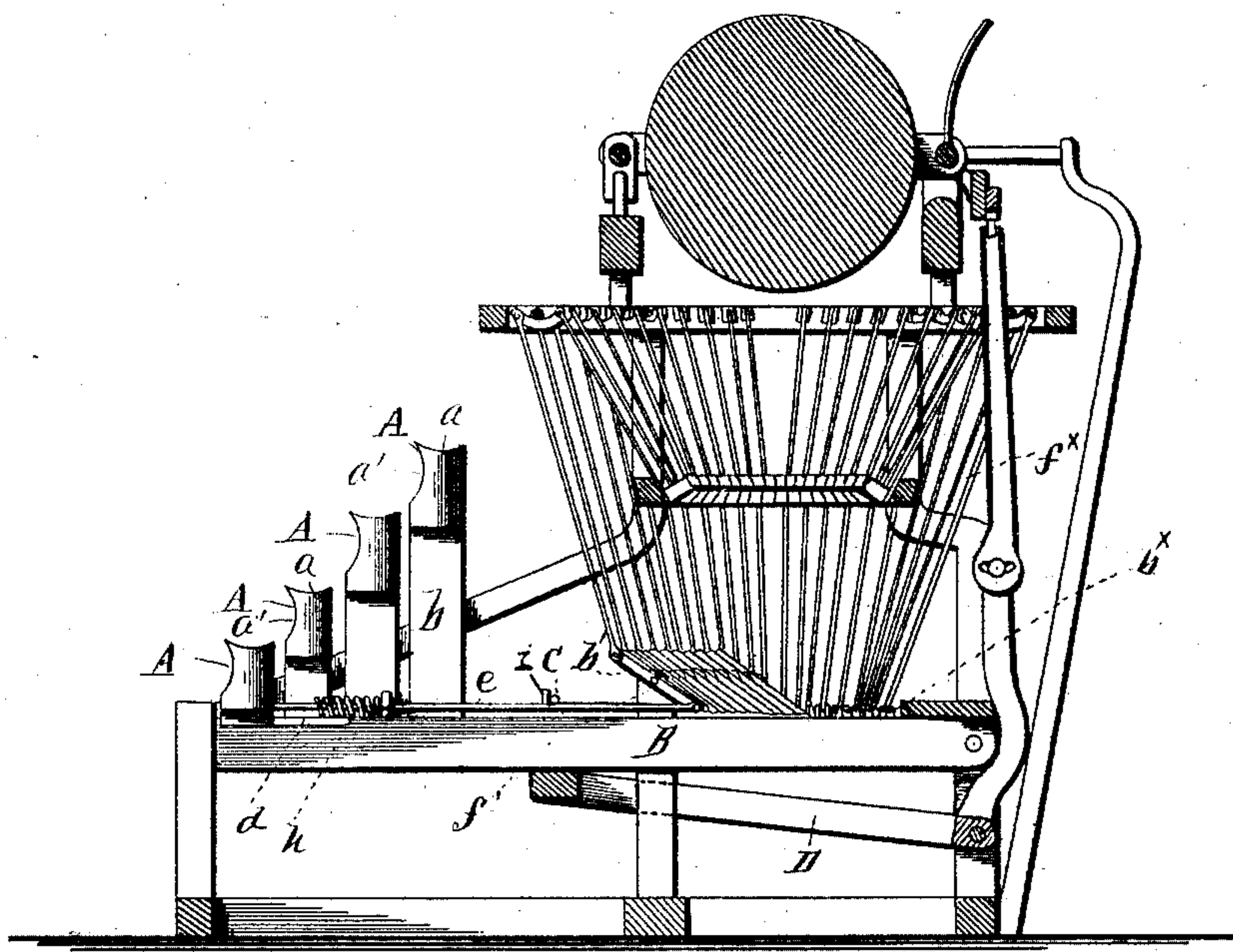


Fig. 3.

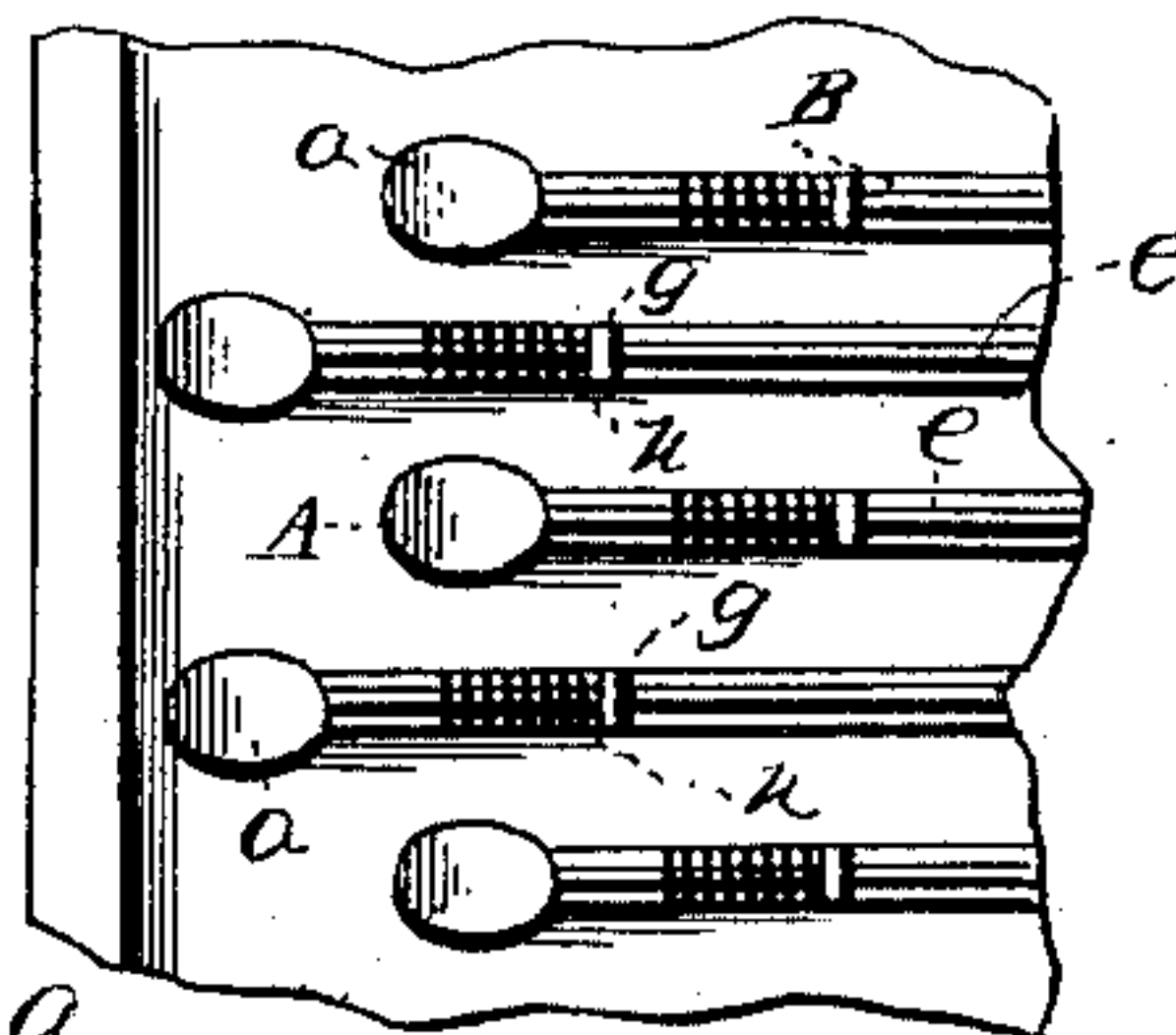
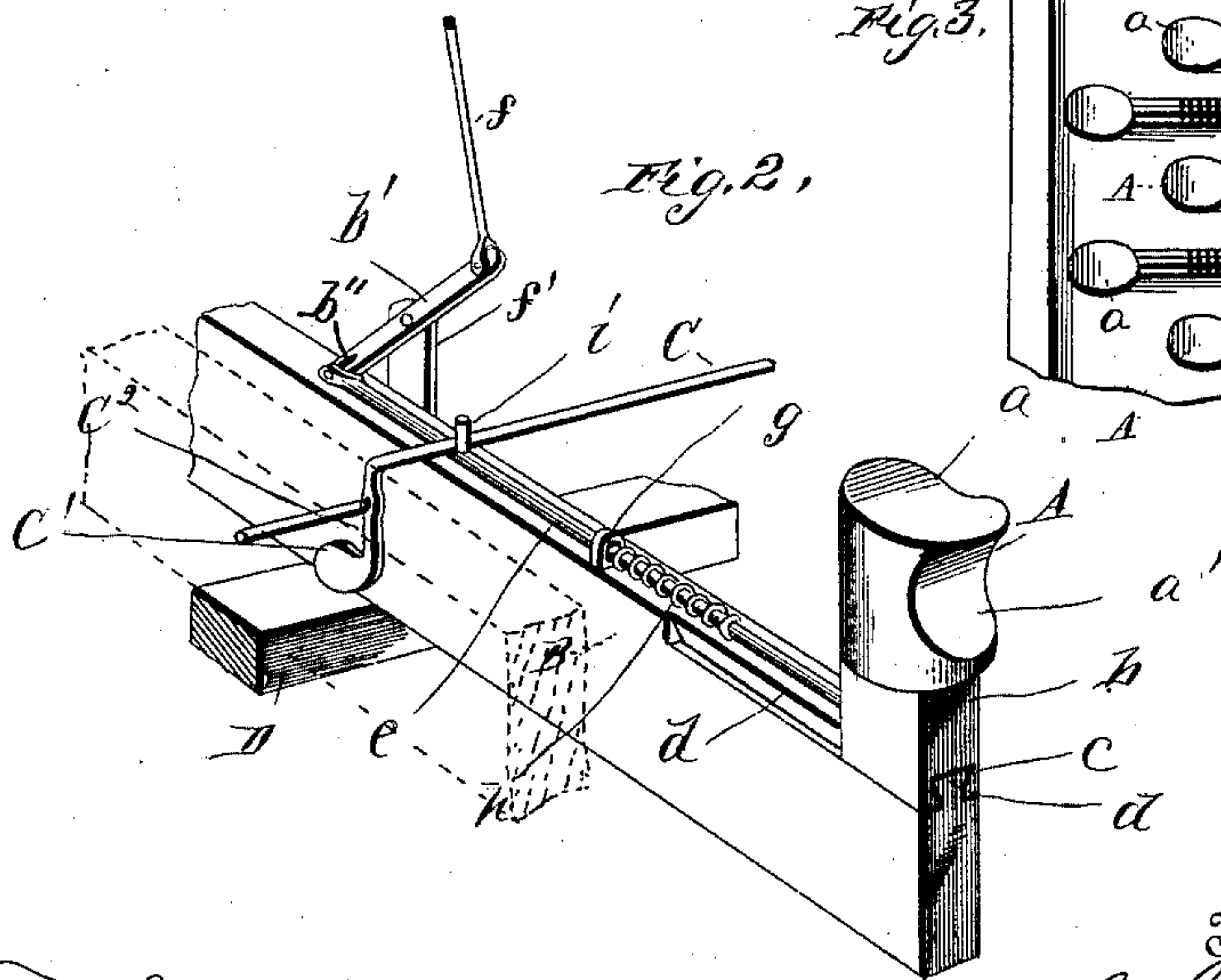


Fig. 2.



Witnesses

C. L. Taylor  
Samuel D. Smith

Inventor

H. C. Johnson

By his Attorney

J. M. Wister



# UNITED STATES PATENT OFFICE.

HARRY C. JOHNSON, OF WASHINGTON, DISTRICT OF COLUMBIA.

## TYPE-WRITING MACHINE.

SPECIFICATION forming part of Letters Patent No. 477,054, dated June 14, 1892.

Application filed August 22, 1889. Serial No. 321,570. (No model.)

*To all whom it may concern:*

Be it known that I, HARRY C. JOHNSON, a citizen of the United States, residing at Washington, in the District of Columbia, have invented certain new and useful Improvements in Type-Writing Machines; and I do 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.

This invention has for its object to provide for actuating both the capitals and small letters of a type-writer by the agency of one set of keys without the intermediate manipulation of additional mechanism in making the change from the capital to the small letter; and to these ends the invention consists of a key having two independent movements and which is capable of actuation by pressure upon the upper or upon the front face thereof without any stoppage or interruption in the operation; and it consists, further, of the combination, with such a key, of the particular or detailed mechanism to carry into effect this purpose, as will fully appear from the following description.

In the accompanying drawings, Figure 1 is a sectional elevation of a type-writer embodying my improvement. Fig. 2 is an enlarged detailed perspective view of the key, showing the manner of supporting the same upon the key-lever and showing in dotted lines a portion of the frame-work of the machine. Fig. 3 is a detail plan view of a portion of the keyboard, showing the arrangement by which the forward movement of the keys can be accomplished.

In accordance with my invention I employ a key A, which by preference has a slightly-concave upper surface *a*, as also a like front surface *a'*, the concavity of which latter, however, may be somewhat deeper. This is for convenience in striking the key with the finger, more especially after the manner peculiar to my improvement, as will be more fully seen hereinafter. This key is applied or connected to the ordinary key-lever B so as to have movement independent of the movement required to actuate the small letters. This application or connection of the key A to the key-lever B is effected by forming or providing the key,

preferably, with a contracted downward extension *b*, being just the width of the key-lever to prevent interference with the fellow key-levers, and providing said extension upon its under side with a dovetailed groove *c* and the key-lever upon its upper side or edge with a correspondingly-shaped rib or way *d*, which fits into the groove *c*. The rib or way *d* extends along the key-lever B a sufficient distance to permit the key A to have the requisite movement as it is struck at *a'* to actuate the desired capital. This rib or way *d* is formed—it may be—by making an under-cut groove in each side of the key-lever B at its upper corner edges, the inner wall or side of each groove extending downward and inward, while the bottom surface thereof is horizontal.

The key A has connection with its capital letter by means of a rod *e*, connected at one end to the extension *b* and at its other end to lever *b'* by means of a pivot passing through slot *b''*, which lever is in turn pivotally connected to the type-bar-actuating rod *f* of said capital letter. The lever *b'* is pivoted to a stud *f'*, which is secured at its lower end to the frame-work of the machine and projects up between the key-levers. The rod *e* passes through a slotted guide-stud *g* on the key-lever B, and is automatically thrown forward or outward after removal of pressure from the key by the action of a spring *h*, preferably encircling the rod and having one end connected to said rod and its other end bearing against said stud. The lower end of lever *b'* and also the guide-stud *g* are slotted in order to provide for the movement of rod *e* when the lever B is depressed.

The rod *e* has a projection or stud *i*, which engages and operates the spacing-bar lever C, having a cam *C'*, acting upon the spacing-bar D, arranged, as usual, below and transversely of the key-levers B. Said spacing-lever C has a bearing upon a pivot *C<sup>2</sup>*, which is secured to the frame-work of the machine. The key-levers B are pivotally connected, as at *b<sup>x</sup>*, to the small-letter-actuating bars *f<sup>x</sup>*. It will be seen that while the key A, when struck by the finger upon its upper surface to actuate the key-lever for operating the small letter will receive the required movement, carrying with it the key-rod *e*, yet



the type-bar-actuating rods of the capitals will not be disturbed, the said movement of parts not being in the direction to affect the said type bars of the capitals. Also, in operating the same key to actuate the type-bars of the capitals, to effect which, as already intimated, the finger is presented to and pressed against the surface or front part *a'* of the key, it will be seen that the key-levers which, as above noted, operate the small letters will not be moved, only the key-rods *e* being actuated, together with the connected type-bar-actuating rods of the capitals. At the same time the required spacing-bar lever *C* will be acted upon by the stud *i*, causing its cam end *C'* to strike and actuate the spacing-bar *D*. These movements of the aforesaid parts, too, are produced, as will have been seen, without any intermediate manipulation of parts or mechanism as heretofore and now practiced in the class of type-writing machines employing but a single set of keys. Consequently no interruption or stoppage in making the change from small letters to capitals will be experienced in the use of my machine.

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

1. In a type-writer, a key-lever, and a key secured thereto having a movement independent of that of the key-lever, in combination with two types, and connections between the same and the key and the lever, substantially as described.
2. In a type-writer, the combination, with the type-bars and the key-lever having the usual movement whereby it may be depressed to actuate one of said type-bars, of the key arranged upon and having an independent sliding movement on said key-lever, and mechanism whereby said key may actuate a second type-bar, substantially as set forth.
3. In a type-writer, a key mounted and sliding upon a support, said key having secured

thereto a key-rod, in combination with a type-bar provided with an actuating-rod, and a lever connecting said actuating-rod with the key-rod by a pin on said key-rod engaging a slot in said lever, substantially as described.

4. In a type-writer, the combination, with a key mounted and sliding upon a support, of the rod connected to said key and to a lever by a pin on said key-rod engaging a slot in said lever, said lever connecting with the type-bar-actuating rod, and a spring adapted to automatically return the said key to its normal position, substantially as described.

5. In a type-writer, the combination, with the key and its rod having a stud and the spacing-bar, of the spacing-bar-operating lever provided with a cam engaging said spacing-bar, said stud engaging said spacing-bar-operating lever, substantially as described.

6. In a type-writer, the combination, with the key, its rod, and means to actuate the type-bar, of the key-lever having in the upper corner edges of its sides undercut grooves forming a dovetail rib or way which enters a correspondingly-shaped groove in the under side of said key and upon which the key slides, substantially as set forth.

7. In a type-writer, the combination, with the type-bars and the key-lever, having the usual movement whereby it may be depressed to actuate one of said type-bars, of the key arranged upon and having an independent sliding movement on said key-lever, mechanism whereby said key by its sliding movement may actuate a second type-bar, means for simultaneously actuating the spacing-bar, and a spring to return said key to its normal position, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

HARRY C. JOHNSON.

Witnesses:

MYER COHEN,

CHAS. F. ROBERTS.