

(Model.)

3 Sheets—Sheet 1.

C. T. BROWN.

Word Counter for Type Writers.

No. 243,500.

Patented June 28, 1881.

Fig. 1.

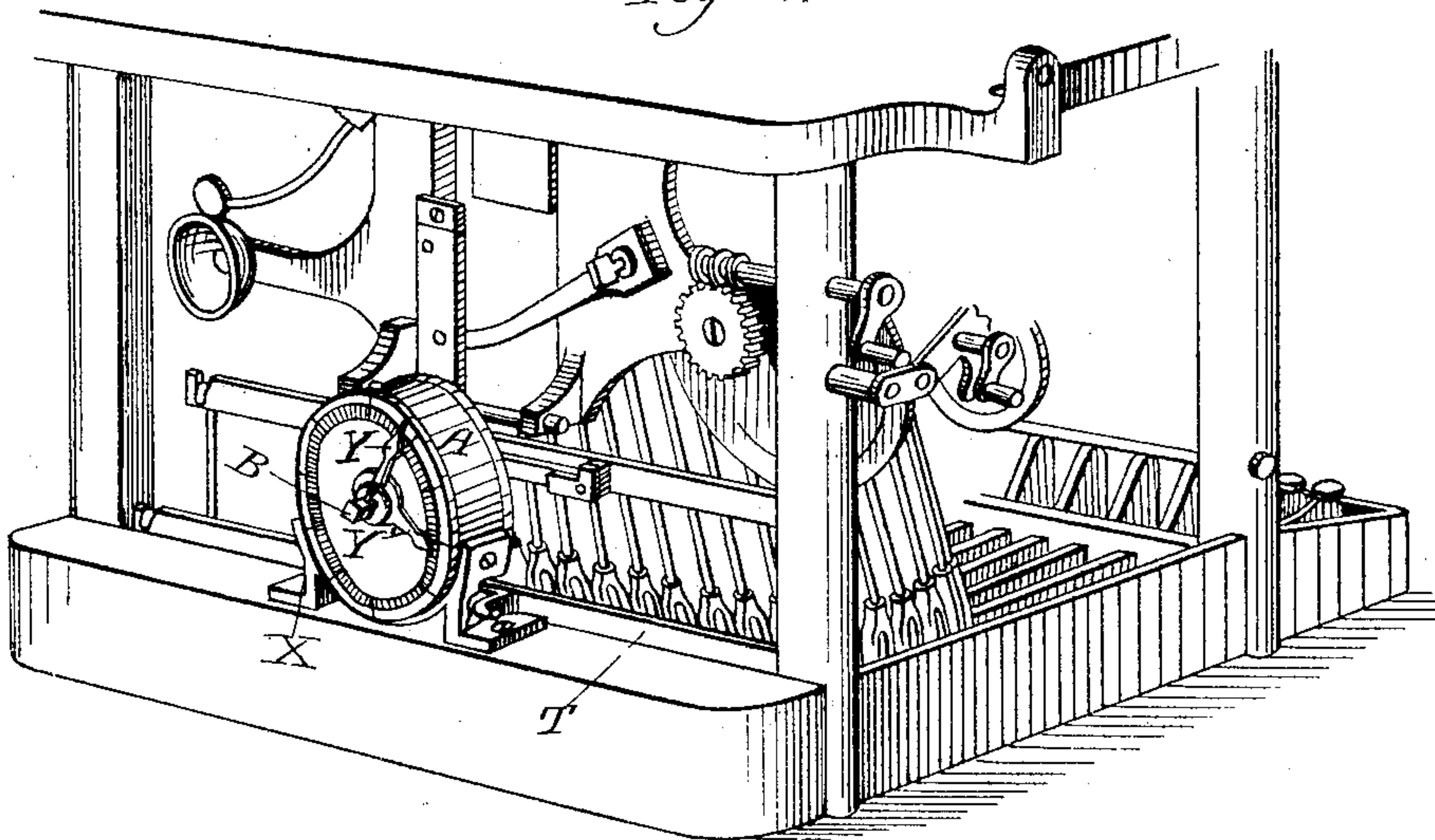
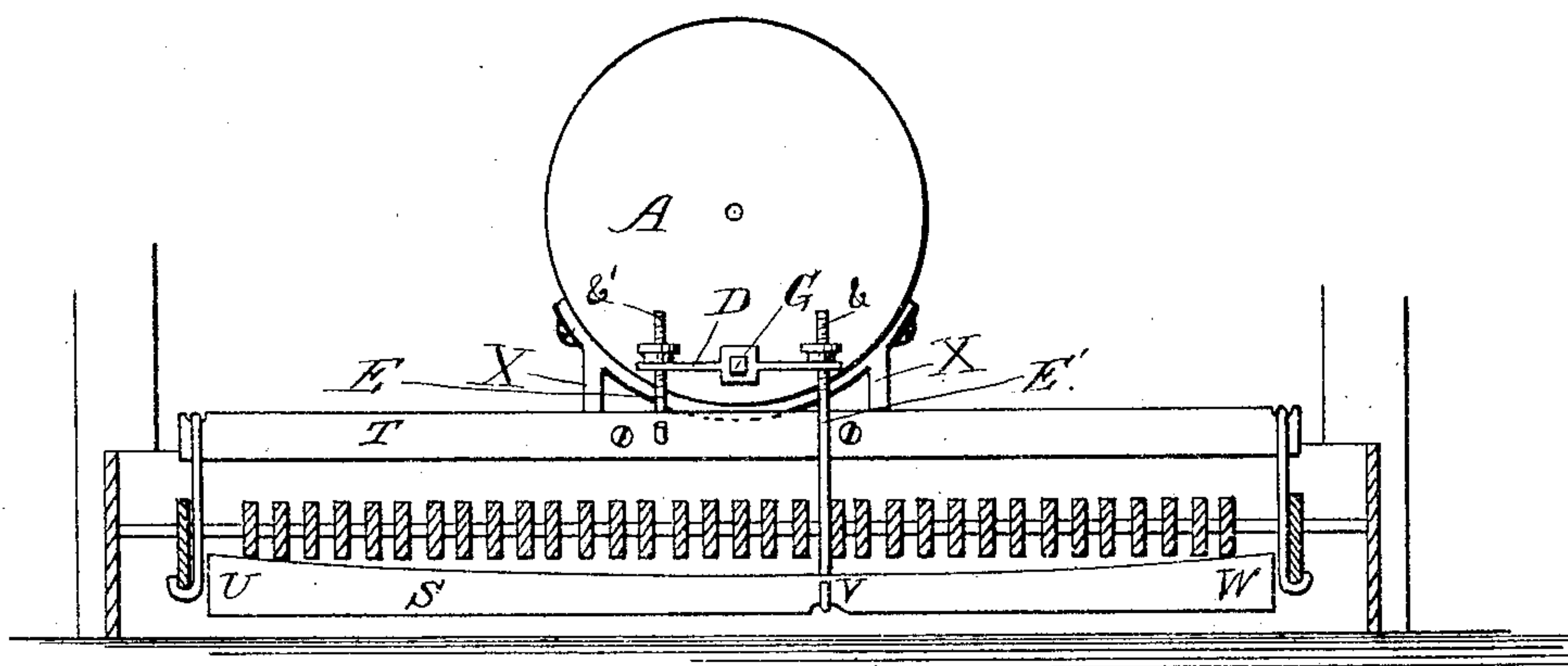


Fig. 2.



Witnesses:

L. B. Townsend

Frederick J. Goodwin

Inventor:

Charles T. Brown
By Apfield and Smith
his attorneys.

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Fig. 3.

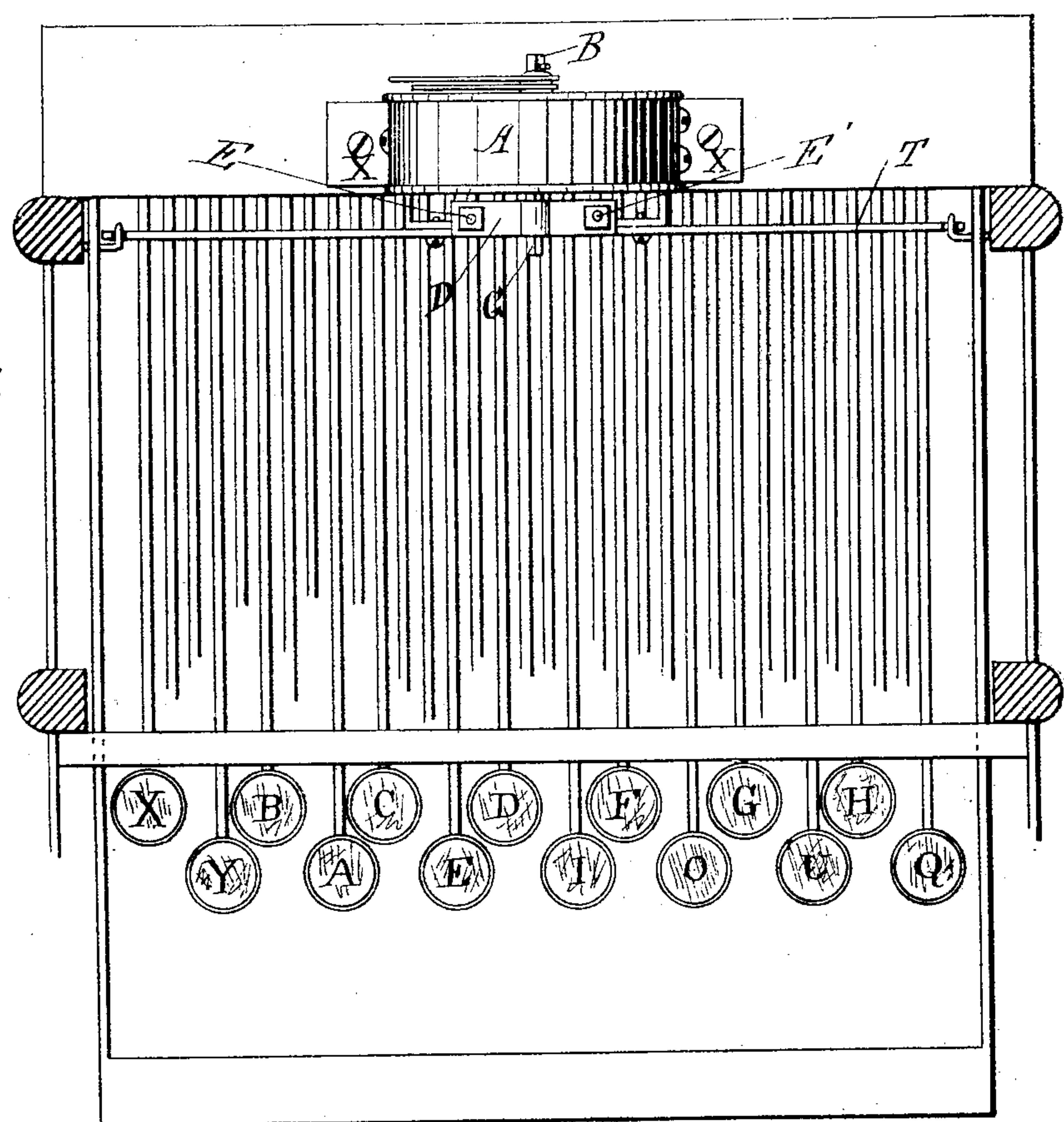
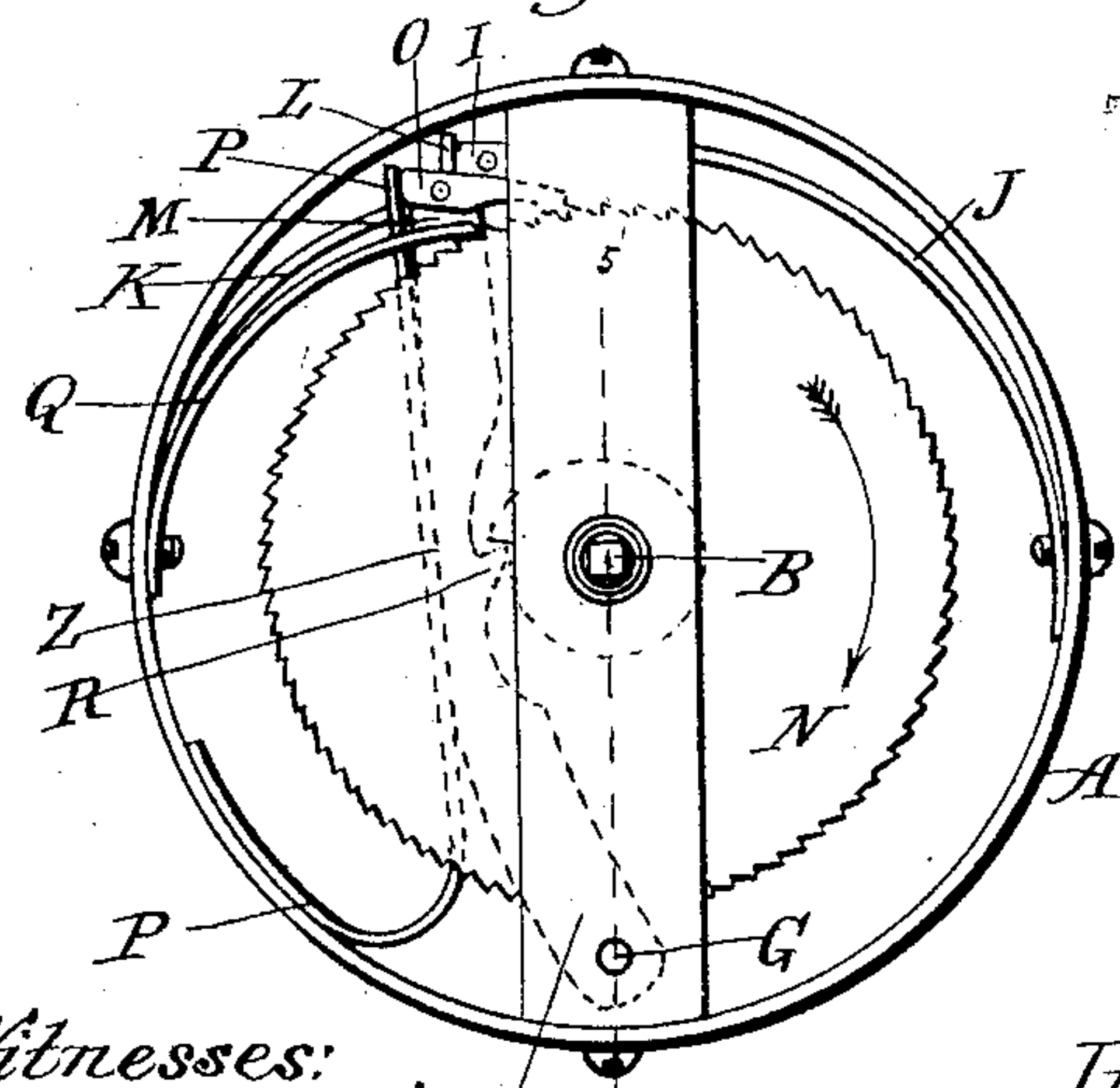
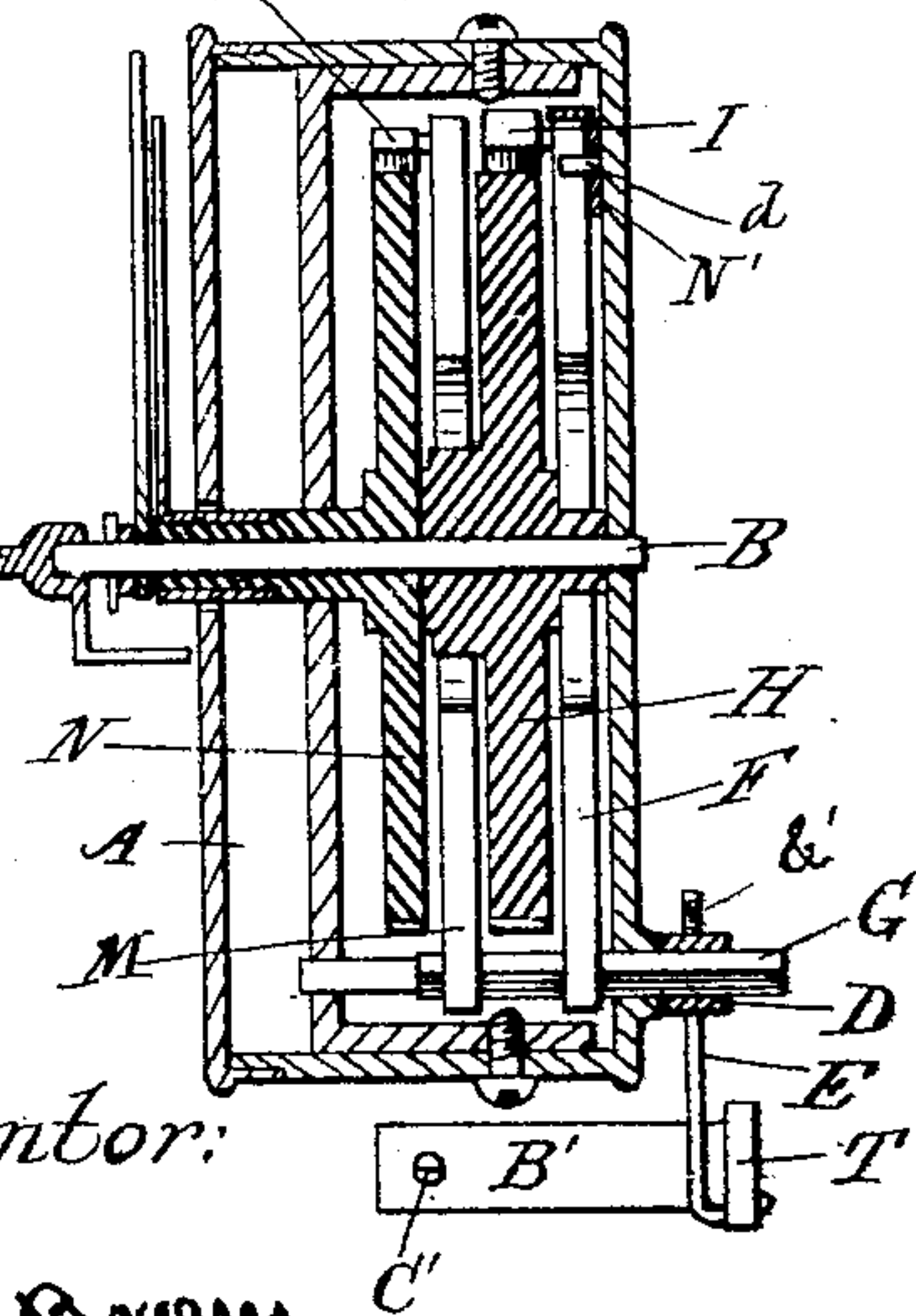


Fig. 4.



Witnesses:
F. B. Townsend
Frederick Goodwin

Fig. 5.



Inventor:

Charles T. Brown
By Offield & Co.
his attorneys,

(Model.)

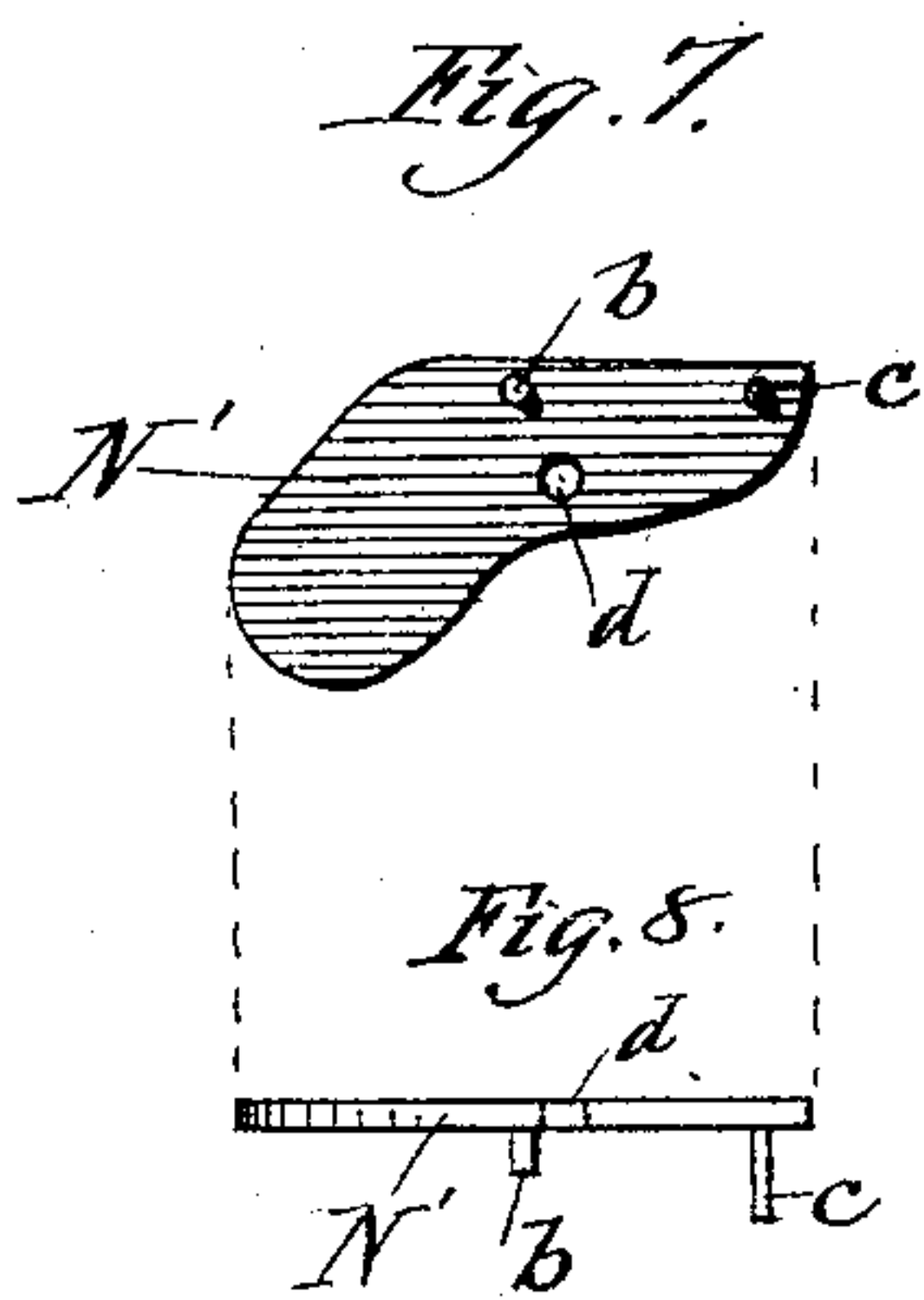
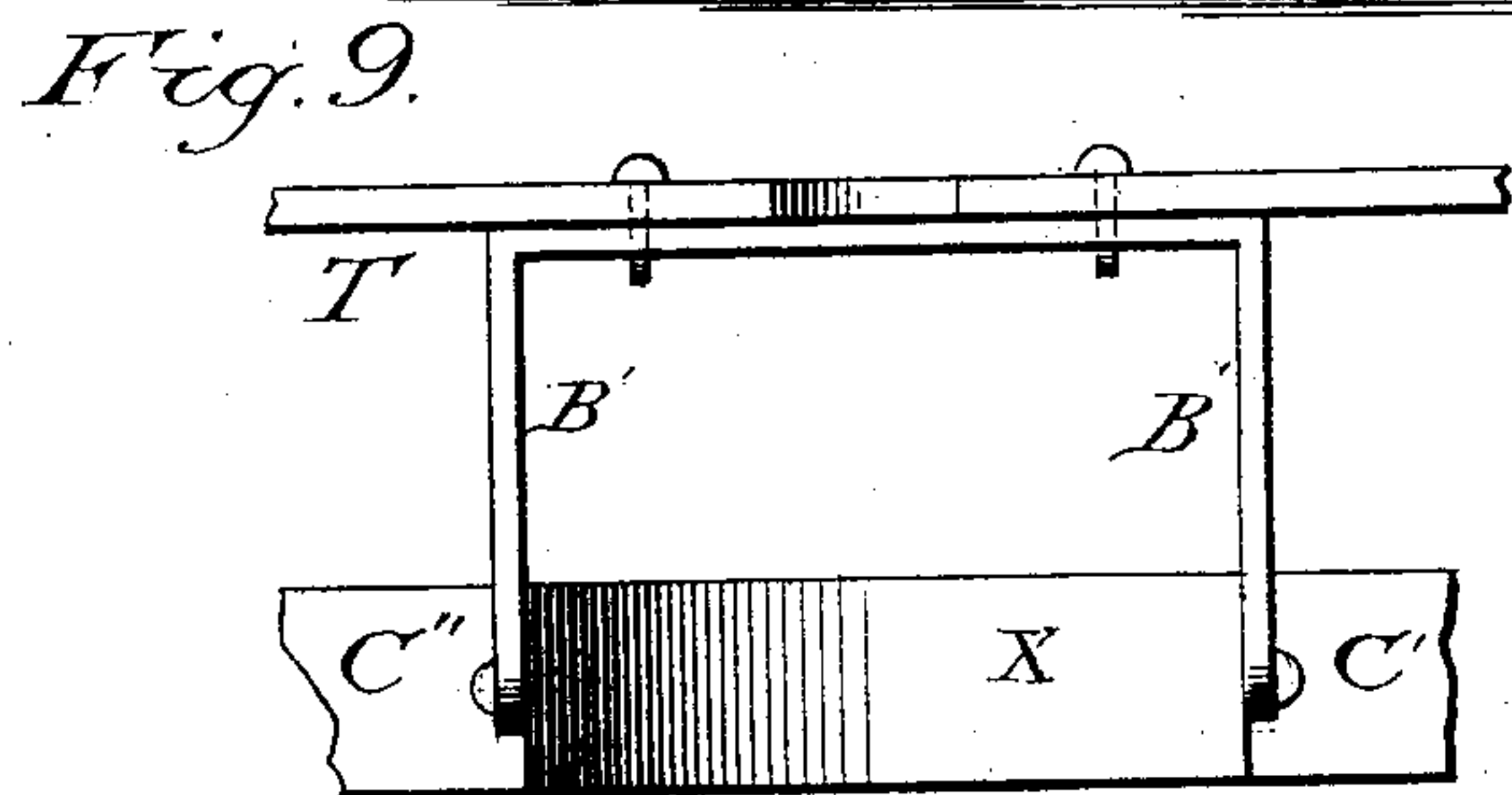
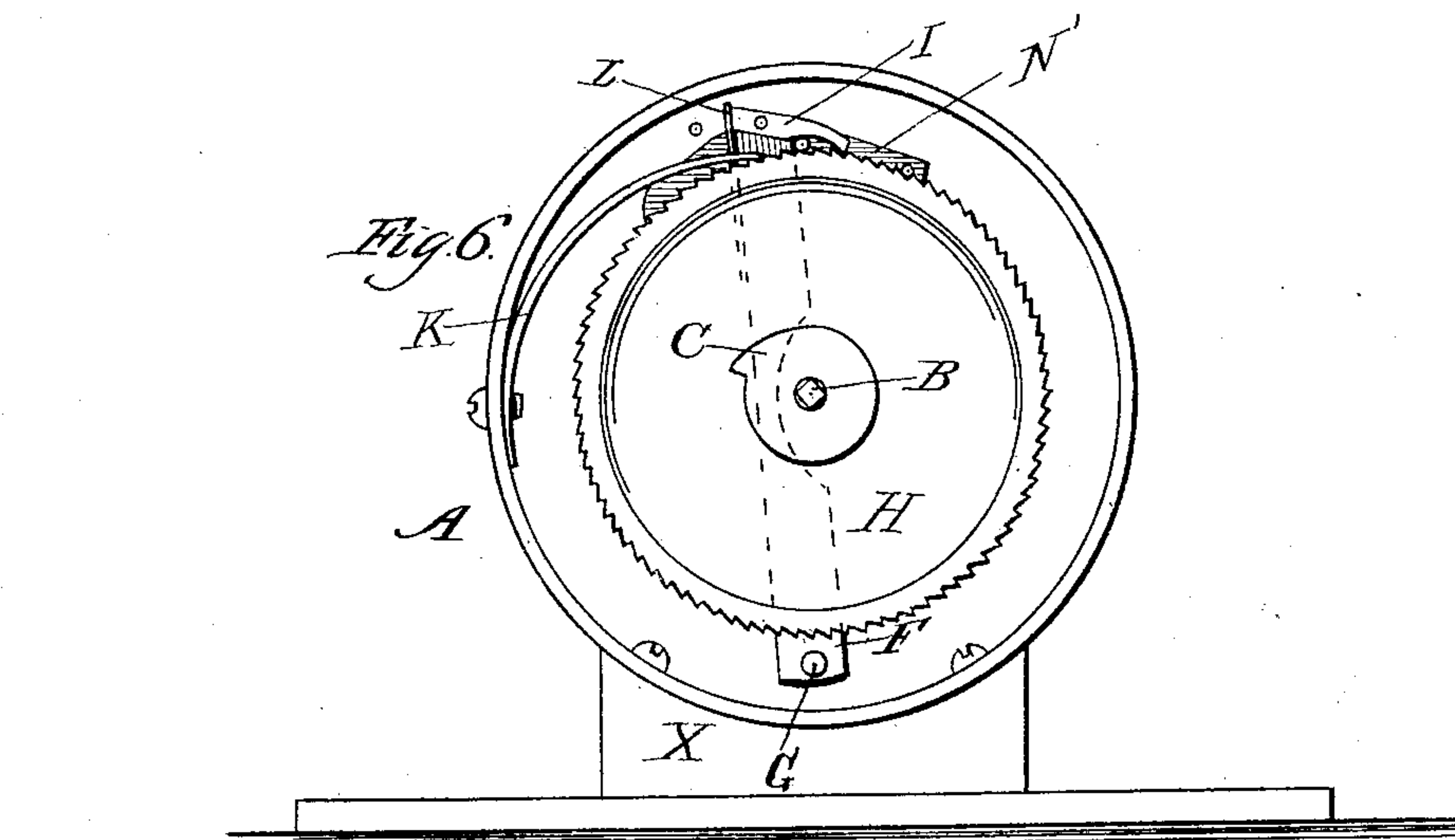
3 Sheets—Sheet 3.

C. T. BROWN.

Word Counter for Type Writers.

No. 243,500.

Patented June 28, 1881.



Witnesses:
F. B. Leonard
Frederick Goodwin

Inventor:
Charles T. Brown
By Alfred W. Smith
his attorney,

UNITED STATES PATENT OFFICE.

CHARLES T. BROWN, OF CHICAGO, ILLINOIS.

WORD-COUNTER FOR TYPE-WRITERS.

SPECIFICATION forming part of Letters Patent No. 243,500, dated June 28, 1881.

Application filed March 9, 1881. (Model.)

To all whom it may concern:

Be it known that I, CHARLES T. BROWN, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a new and useful Automatic Word-Counter, of which the following is a specification.

My invention relates to the counting of words, as they are printed or written, on machines known as "type-writers" and "printing-machines," actuated by the use of keys; and the objects of my machine are, first, to count the words correctly and automatically as the work is being done on the machine; second, the keeping of a register thereof.

The use of type-writers has increased within a few years to such an extent that any mechanism that will automatically keep an account of the number of words written or printed must have value. Much of the writing or printing by means of type-writing machines is done at an agreed price for each hundred words. As no automatic counting device has been in use, it has been necessary to count the words to arrive at the number, and in this way a considerable amount of time has been unavoidably consumed. It is almost impossible to count words in the ordinary way without making frequent errors, while my improved automatic device is so constructed that perfect accuracy in counting is insured, and the time heretofore necessarily devoted to counting is thus saved.

I am aware that numerators and registers of different forms of construction and intended for various purposes have long been in use, some of which have worked automatically; but as far as my knowledge and investigation extend, they have all differed quite materially from my form of construction, and in no instance have been capable of the use for which my invention is intended.

I attain the object of my invention by the method illustrated in the accompanying drawings, in which my automatic word-counter is represented as applied to what is known as a "Sholes and Glidden Type-Writer," No. 4.

In the drawings, Figure 1 is a perspective view of a portion of the type-writer, showing my invention attached to the rear. Fig. 2 is a cross-section of lower portion of type-writer looking toward the rear and showing the key-

arms or levers and connections of my invention to the same. Fig. 3 is a horizontal section of a type-writer, showing a top view of my register. Fig. 4 is a face view of my register, with the face-plate or dial removed. Fig. 5 is a vertical cross-section of my register. Fig. 6 is an interior view of my register with face-plate, forward lever, and forward wheel removed, so as to show the rear wheel and my double lever check device, which acts on said wheel. Figs. 7 and 8 are front and top views of my double lever check device when removed from the register. Fig. 9 represents the U-shaped casting B for supporting the operating-lever T, also its other connections.

Similar letters refer to similar parts throughout the several views.

The case A, with its standards X X, secured by means of screws or bolts to the rear portion of a type-writer, constitutes the principal framework of my invention. In the case A and near the side is placed a rock-shaft, G, passing through and extending back to the rear of the case a suitable distance to place upon it lever D, which is firmly fixed to said rock-shaft.

Inside of the case A and next to the rear plate thereof I place the upright lever F, cut away in the center so as not to interfere with the center shaft, and which is also firmly secured to said rock-shaft, and is of a length about equal to the inside diameter of said case. I also attach to the forward portion of said rock-shaft G, and near the front plate of the case a second lever, M, which is placed upon said shaft loosely, so as to admit of a partial rotation of the lever upon the shaft. I place through the center of the case A a second shaft, B, which extends through the front plate a sufficient distance to hold one of the indicating-hands Y, which is secured thereto. On this center shaft, B, and firmly attached thereto, is placed wheel H, having on its periphery one hundred ratchet-teeth. I also firmly secure on the center shaft, B, the cam C, and also place on said shaft a second wheel, N, which has on its periphery one hundred ratchet-teeth, this second wheel being placed on the forward portion of the shaft and immediately forward of lever M. The wheel N is fitted loosely to said center shaft, so as to revolve thereon, and the hub of this wheel is so made as to project

out through and beyond the front plate or dial of the case, so as to allow the attachment of a second indicating-hand, Y', which is secured thereto.

5 On the lever F is placed a pallet or pawl, I, which is pressed firmly against the ratchet-teeth on wheel H by spring L, this spring being soldered or otherwise securely attached to the edge of said lever, and has a side projection at the end which presses on the ratchet.
10 On lever M is also placed a pallet or pawl, O, which is pressed against the ratchet-teeth on wheel N by the spring P, which is soldered or otherwise secured to the lever at point Z. I prefer to make spring P of considerable length, and to have it bent as shown in the drawings, so that by pressing against the inside of the case it exerts sufficient force to hold lever M firmly against cam C. As will be seen in the
20 drawings, lever M is cut away in circular shape for a short distance in the middle, with the exception of the tooth R, which acts on the cam C, the part cut away being for the purpose of permitting the cam to work freely. I also secure to the inside of the case the ratchet-spring K, which presses into and on the teeth of wheel H and prevents the backward movement of said wheel. I likewise place inside of
25 the case a further ratchet-spring, Q, which presses upon the teeth of wheel N and prevents it from turning back, and also acts as a brake to prevent said wheel from moving forward more than one tooth at a time.

To prevent the wheel H from being thrown forward more than one tooth at a time, I use
35 the double-lever device N', which is shown in the drawings by Figs. 7 and 8. This double lever consists of a thin metal plate, which works on a pivot, d, attached to the under side and passing into the rear plate of the case.
40 On the face of this lever-plate are inserted two pins, b and c, of wire or other suitable material, which are long enough to come in contact with the lever F and the wheel H respectively.

45 When my register is in use and lever F is thrown forward it strikes on the projecting pin b, and the movement of the plate is such as to cause the pin c to pass in between the teeth of the wheel and prevent any further forward
50 movement of said wheel after the same has advanced the space of one tooth.

It will be seen that my double lever plate turns upon such an axis that the action of the lever F on the pin b in one direction causes
55 the pin c to press on the periphery of the wheel H in the direction of this axis, producing a double lever movement, which effectually locks and prevents any further revolution of said wheel. The plate of my double lever device, as will be seen by reference to the drawings,
60 is of such a shape and is pivoted to the rear plate of case A at such a point that as soon as lever F releases the pin b, the plate, of its own weight, falls back and the wheel H is relieved from the action of pin c.
65

It will be seen that by means of this locking device the use of friction brakes or springs

is done away with on wheel H, thus permitting the register to be driven by the application of very little power, the additional power
70 required in operating a type-writer with my attachment being so small as not to be felt by the operator. The adjustment of my double lever locking device is such that the varying power with which the space-bar is struck in
75 slow and rapid operating of the type-writer does not affect the accuracy of the count.

The drawings show a further spring, J, placed inside of the case on the opposite side from the ratchet-springs K and Q, so as to
80 press upon the upper end of bar F, for the purpose of holding said lever steady when my register is in use; but I do not consider this spring necessary, and do not therefore include it in my claims.
85

It will thus be readily seen that the mechanism inside of case A consists of the shafts G and B, the levers F and M, the ratchet-wheels H and N, the cam C, the pallets or
90 pawls I and O, the double lever plate N', the tooth R, the springs K, Q, and J, which together act, when my word-counter is in operation, to move the indicating-hands Y and Y' on the face-plate or dial. I have already referred to lever D, with which is connected the
95 remaining portions of my device, and by means of which the same is operated by the action of the type-writer, printing-machine, or caligraph when in use. Connected to this lever D by the rods E and E', screw-threaded at their ends,
100 are the bars S and T, bar S being attached to rod E' and bar T to rod E, the rods passing through the lever D near the ends and having nuts to hold them in place. Bar S is a straight
105 bar of wood or other light material, placed under the levers or arms of the type-writer or printing-machine that move the letters, figures, and punctuation-marks. The bar S is held in position by the rod E', which is held to the oscillating bar D by the screw-threaded end and
110 a nut, so that it is adjustable when necessary. The ends of the bar S bear upward against the key-arms, which act as fulcrums—that is to say, when a key at or near the end U is depressed the key-arm at the end W is a fulcrum, and vice versa. In order that the movement of the bar at the point V and the action of the setting device on the register may be uniform when operated by any of the keys, the top of the bar S is cut away from the ends toward the point V, so that the keys nearer to that point do not strike it until their movement is partially completed and the throw given to it by them is proportionably reduced.
120

The second bar, T, which is placed over the
125 arms or levers moved or actuated by the space-bar, is likewise made of wood or other light material, and is not in any way affected by the action of the arms that move the letters, figures, and punctuation-marks, but is alone depressed by means of the space-bar arms. Bar T is connected to and with these space-bar
130 arms by a wire or metal of other suitable form, bent so as to hook under the arms at their

lower edges, and screwed up into or through the said bar T, bar T being firmly fixed or screwed to the U-shaped casting B', of brass or other suitable material, the said casting B' turning on centers C' and C''.

The operation of my new automatic word-counter is as follows: The action of the arm in printing the first letter of a word depresses the bar S, thus turning lever D and rock-shaft G, said shaft carrying lever F and pallet or pawl I backward one tooth on wheel H, where it remains. When the letters of a word have been written or printed, and the operator bears down upon the space-bar used for the necessary spacing between the words, this action at once depresses bar T, turning lever D, rock-shaft G, and lever F, carrying pallet I forward, so that wheel H is moved around the space of one ratchet-tooth, causing the hand Y to count one word on the dial, levers F and D and pallet I remaining stationary, and not being affected by any future depressions of the space-bar until pallet I is carried back by the striking of the first letter in the next word in the manner above described. This operation is continued until one entire revolution has been made by wheel H and one hundred words counted on the face-plate. As wheel H completes an entire revolution, lever M, which in the meantime has been gradually thrown back by the action of the cam C on the tooth R, is released, and, being thrown forward by the pressure of the spring P, moves, by means of the pallet or pawl O, the wheel N the distance or space of one of the teeth on the periphery, causing the hand Y' on the dial to move forward one space, thus registering one hundred words.

My device, as shown in the drawing, with the two wheels, with one hundred teeth on the periphery of each, is capable of counting and registering ten thousand words; but it will be

readily seen that by a mere duplication of parts a third or fourth wheel could be added if desired, and the counting capacity thus increased to any required degree. Whenever the operator wishes to start a new count, the hands, by means of a key, can be readily turned forward to the zero starting-point.

The case and interior mechanism of my register may be made of brass or other suitable material, while the connections between the register and type-writer may be likewise made of brass, and the bars under and over the arms of the type-writer of either wood or metal.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The combination, for a register, of the case A, the levers F and M, the shafts G and B, the wheels H and N, the cam C, the pallets or pawls I and O, the double lever lock N', the pins *b* and *c*, the tooth R, the ratchet-springs K and Q, and the springs L and P, all arranged and operated substantially as described, and for the purpose specified.

2. The combination, in a register, of the wheel H, the lever F, and the double lever lock N' with the pins *b* and *c*, arranged and operated substantially as described.

3. The double lever lock N', turning on pivot *d*, with pins *b* and *c*, actuated by a lever, substantially as described, and for the purpose specified.

4. The combination of the rock-shaft G with the lever D, the rods E and E', and bars S and T, actuated by the pressure of the arms of a type-writer, printing-machine, or caligraph, and arranged and operated substantially as described, and for the purpose specified.

CHARLES T. BROWN.

Witnesses:

FREDERICK C. GOODWIN,
FRED. C. HALE.