

(No Model.)

G. W. N. YOST.
TYPE WRITING MACHINE.

No. 428,438.

Patented May 20, 1890.

Fig. 1.

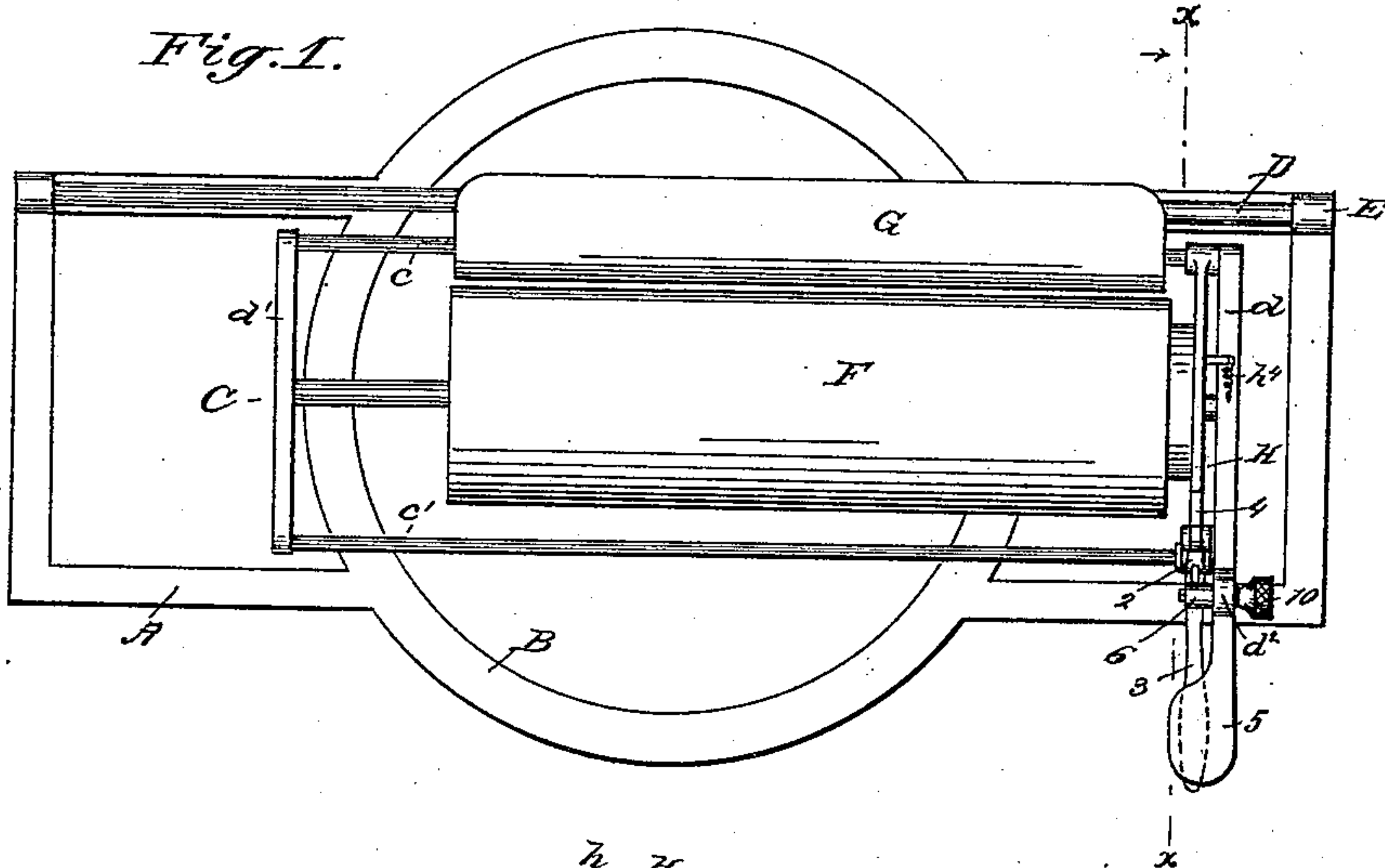


Fig. 2.

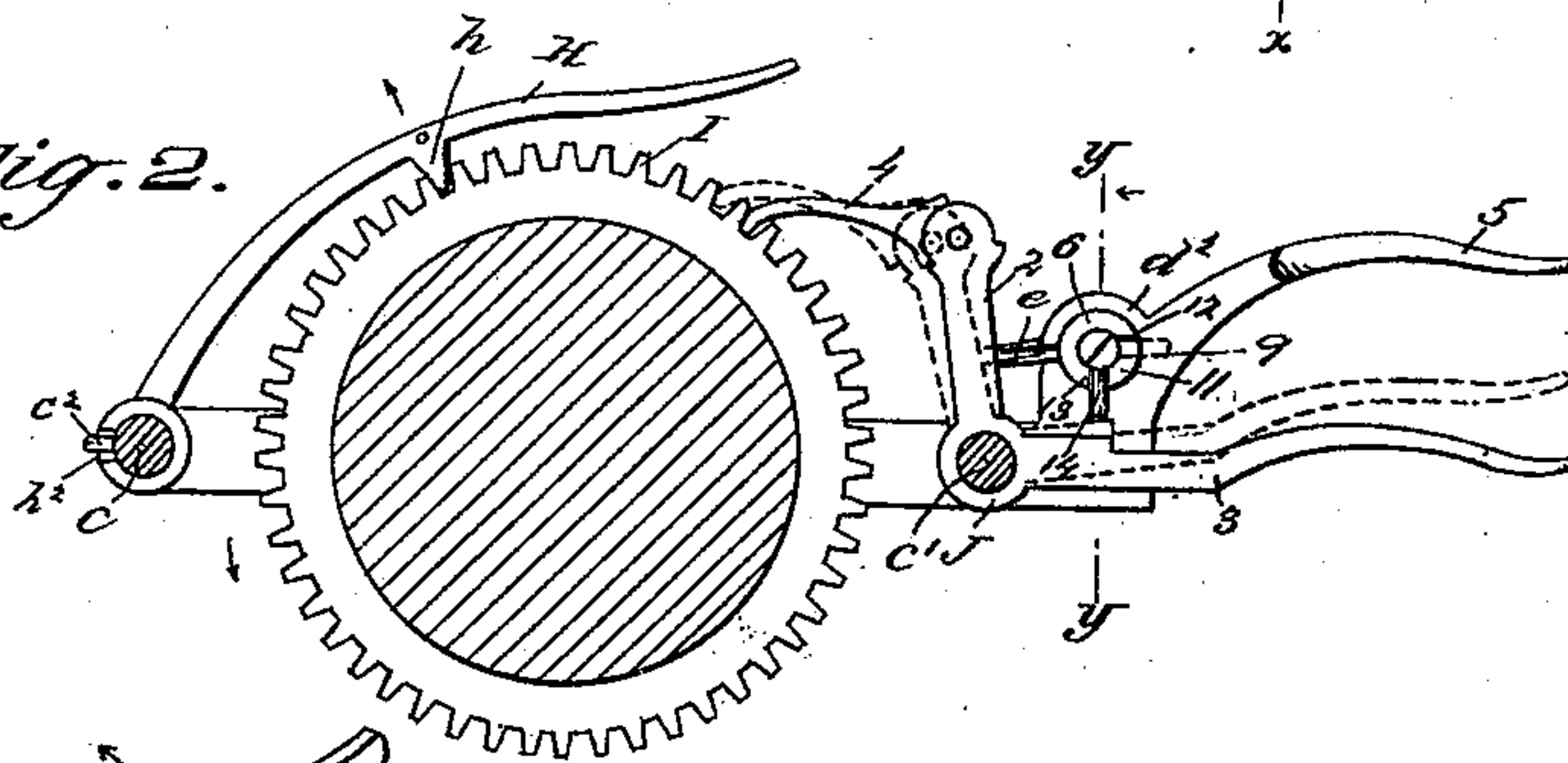


Fig. 3.

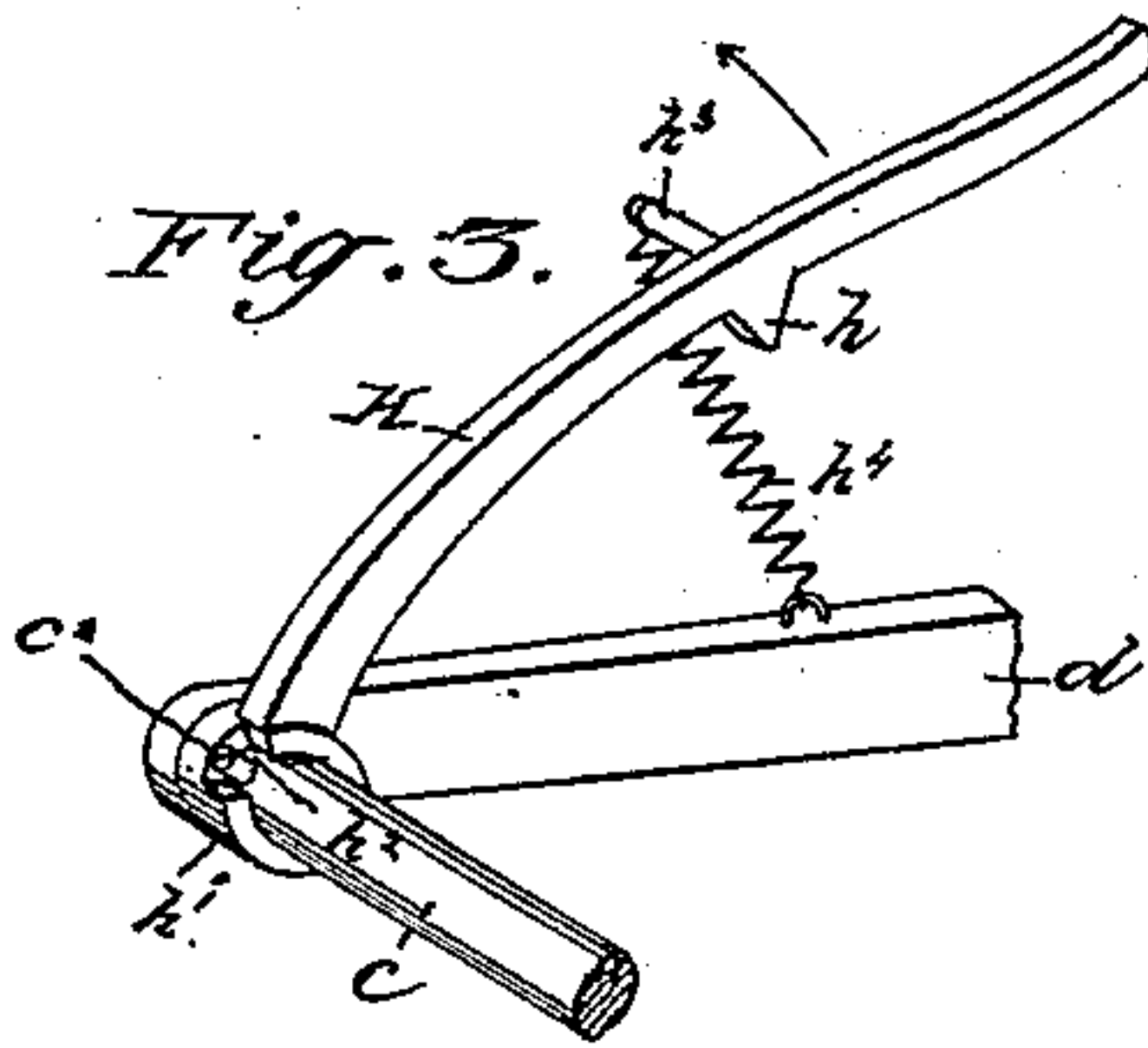
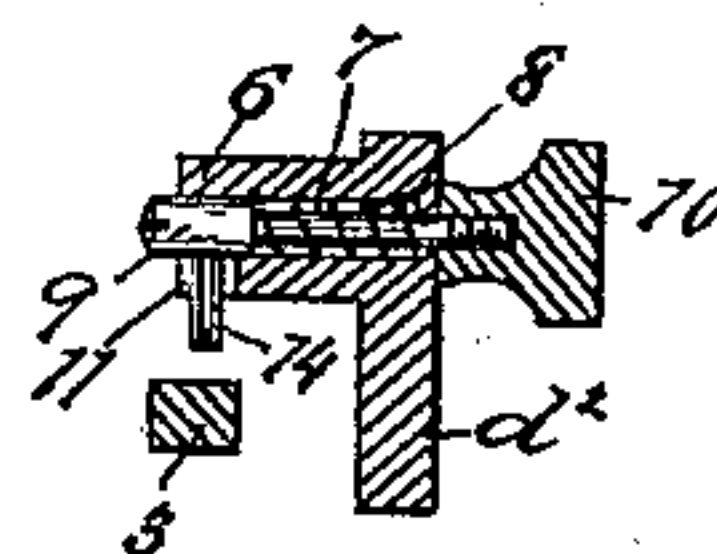


Fig. 4.



Attest

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UNITED STATES PATENT OFFICE.

GEORGE W. N. YOST, OF NEW YORK, N. Y., ASSIGNOR TO THE YOST WRIT-
ING MACHINE COMPANY, OF SAME PLACE.

TYPE-WRITING MACHINE.

SPECIFICATION forming part of Letters Patent No. 428,438, dated May 20, 1890.

Application filed July 14, 1887. Serial No. 244,298. (No model.) Patented in England March 26, 1889, No. 5,136; in France March 26, 1889, No. 196,984; in Belgium March 26, 1889, No. 85,548; in Italy March 30, 1889, No. 25,137, and in Spain May 11, 1889, No. 9,399.

To all whom it may concern:

Be it known that I, GEORGE W. N. YOST, a citizen of the United States, and a resident of New York city, in the county of New York and State of New York, have invented certain new and useful Improvements in Type-Writing Machines, of which the following is a specification.

Some of the features made the subject-matter of this application have been patented in the following foreign countries, to wit: Great Britain, March 26, 1889, No. 5,136; France, March 26, 1889, No. 196,984; Belgium, March 26, 1889, No. 85,548; Italy, March 30, 1889, No. 25,137, and Spain, May 11, 1889, No. 9,399.

My invention relates to the paper-carriages of type-writing machines, and more particularly to the line-space mechanism thereof.

In the accompanying drawings, Figure 1 is a top view of a portion of a type-writing machine having a paper-carriage involving my improvements. Fig. 2 is an enlarged vertical section taken through the carriage at the line $x x$ of Fig. 1, and looking in the direction of the arrow thereat. Fig. 3 is a perspective view of the platen, retaining-dog, its spring, and a portion of the carriage-frame. Fig. 4 is a vertical section taken at the line $y y$ of Fig. 2, and looking in the direction of the arrow thereat.

In the several views the same parts will be found designated by the same letters and numerals of reference.

One object of my invention is to provide a simple and efficient means for rotating the platen and enabling the carriage to be drawn back to the right-hand side of the machine after having been fed to or toward the opposite end of the machine, as usual during the operation of writing, and another object is to provide a simple and effective means for determining or regulating the rotation of the platen in line-space direction; and my invention consists in the various features of construction and combinations of parts herein-after to be more fully described, and particularly pointed out in the appended claims.

A represents the frame-work of a type-writ-

ing machine; B, the type-circle upon which the type-bars are mounted in the usual manner.

C represents the carriage as an entirety, which is connected, as customary, to the rail or rod D, secured in brackets or ears E, projecting upward from the main frame of the machine at each rear corner. The carriage is composed of longitudinal parallel bars $c c'$ and transverse parallel bars $d d'$, and is provided with a platen or roller F, mounted to be rotated in bearings in the side bars $d d'$.

G represents a paper-table, which is secured on the rear bar c , upon one end of which latter is mounted an arm or lever H, which is provided on its under side with a dog or tooth h , for engagement with the teeth of a ratchet-wheel I, secured at one end of the platen. This lever or arm H is formed with a hub or sleeve h' , that is slotted lengthwise for a short distance, as indicated at h^2 , and occupying this slot is a pin c^2 , secured to the rod c , which projects and limits the vibration of the arm or lever H. About midway of the lever at one side is secured a stud h^3 , to which is fastened one end of a spring h^4 , whose other end is secured to the end bar d of the carriage-frame.

Journaled or fulcrumed upon the front rod c' of the carriage is a bent lever J, one arm 2 of which extends almost vertically, while the other arm 3 extends outward in a horizontal direction and is slightly curved upward. At the free end of the arm 2 is pivoted a dog or pawl 4, which engages with the teeth of the ratchet-wheel or circular rack I, and through the vibrations of the lever J effects the rotation of the platen in the direction indicated by the arrow at Fig. 2. At the front side of the arm 2 is secured a pin or stop e , the function and operation of which will be presently referred to.

The end bar d is extended at the front beyond the rod c' , and is bent upward to form a support d^2 , and outward and over the arm 3 of the lever J to form a thumb-piece or hand-rest 5. The support or arm d^2 is formed or provided with an inwardly-extending boss or

projection 6, perforated, as at 7, for the reception of a spring 8 and a spindle 9, the end of which projects outwardly beyond the support d^2 , and is threaded to receive a button or knob 10. The boss 6 is slotted or cut away at its inner end, as indicated at 11, to form shoulders 12 and 13, to act as stops for a pin 14, secured upon the inner end of the spindle 9. The spring 8 at one end rests against a shoulder formed by the bore of the boss 6 and at the other end against a shoulder on the spindle 9, and has a tendency to draw the inner face of the button or knob 10 firmly against the outside of the support d^2 , so as to cause the knob to bear with considerable friction at all times and avoid a liability of the pin 14 accidentally being shifted from the position in which it may be set by the jar or vibration of the machine when in operation. The pin 14 acts as a stop to the vibration of the arm 3 of the lever J, and regulates according to its position the extent of the rotation of the platen.

The operation of the means above described may now be referred to. As the pin 14 is now set, the lever J can vibrate to an extent sufficient to cause the pawl 4 to turn the platen only one tooth, or what is known as a "half-line space," and this may be accomplished by the operator by lifting the outer arm 3 of the lever, as usual, until its upper face strikes against the point of the depending pin 14, as indicated by the dotted lines at Fig. 2. Upon releasing said arm of the lever the pin e , extending from the front face of the lever 2, strikes against the periphery of the boss 6, and arrests the backward movement of the lever J. When the pin 14 is turned upward against the shoulder 12, as indicated by the dotted lines at Fig. 2, the arm 3 may vibrate to a further extent, and the pawl 4 caused to push forward two teeth on the rack I and effect a "full-line-space" rotation of the platen.

It will be understood, of course, that the dog h , as usual, is lifted at each forward push of the pawl 4, and by the action of the spring h^4 is caused to descend and re-engage with the rack I at the completion of the rotation of the platen and prevent any accidental backward movement thereof.

Should the operator at any time desire to reverse the rotation of the platen, the arm H may be raised in the direction of the arrow at Fig. 2 to disengage the dog h , and the pawl 4 may be lifted out of the rack I, as in machines constructed as heretofore. By reason of the slotted sleeve h' and the pin c^2 upon the back bar c of the carriage-frame the arm H is, however, prevented from being raised too high and elongating and injuring the spiral spring h^4 , which is provided for returning it to its normal position.

It will of course be understood that the pin 14 may be turned into either of the two positions before mentioned for a half-line or a full-line space rotation of the platen by simply

turning the spindle by the button or head 10 in the proper direction and to the required extent. While I greatly prefer to make use of the spring 8 for the purpose before mentioned, the same may, however, be dispensed with without departing from the gist of my invention.

In effecting the vibrations of the lever J the operator will find it most convenient and a great aid to place the thumb over the projecting portion 5 and the fingers of the hand on the under side of the arm 3 and then raise the latter in a movement to close the hand. An important advantage is gained in the employment of the thumb-piece 5 in connection with the lever, as the downward force thereon equals the upward force upon the lever, and the tendency of the carriage to rise during the rotation of the platen is avoided.

By having the arm 3 extending out in the horizontal direction shown and there terminating, instead of being continued down about midway between the key-board and the type-circle, as in previous machines, the appearance of the type-writer is not only improved and more room afforded for the movements of the hands of the operator, but the liability of the accidental turning of the platen when the lever is grasped to return the carriage for the purpose of making corrections or underscoring on the line being written is almost wholly avoided, because the pull on the carriage occurs about on a line with its side bars and at a point nearer the fulcrum of the lever. The thumb-piece 5 may be conveniently used as a means for drawing back the carriage without touching the lever at all. When the carriage is to be drawn back and simultaneously a line-space effected, the stationary or fixed thumb-piece 5 and the arm 3 are together grasped, the thumb-piece affording a purchase for the easy vibration of the lever, and serving also to assist the operator in returning the carriage.

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

1. In a type-writing machine, the combination of a hinged paper-carriage, a cylindrical platen journaled therein and provided with a circular rack, a lever for rotating said platen, having its handle portion extending forwardly in a horizontal direction, and the fixed or rigid thumb-piece rising from the carriage and extending horizontally forward above the said handle portion and in proximity thereto, as and for the purposes set forth.

2. In a type-writing machine, the combination of the platen provided with a circular rack, the lever for rotating the same, and the line-space regulator, consisting of the boss 6, perforated, as at 7, and cut away, as at 11, the spindle 9, the button or head 10, and the pin 14, substantially as set forth.

3. In a type-writing machine, the combination of the platen provided with a circular rack, the lever for rotating the same, and the line-space regulator consisting of the boss 6,

perforated, as at 7, and cut away, as at 11, the spring 8, the spindle 9, the button or head 10, and the pin 14, substantially as set forth.

4. In a type-writing machine, the combination, in a hinged paper-carriage, of the longitudinal bars *c c'*, the transverse bars *d d'*, the platen F, journaled within said bars and provided with a circular rack, the fixed or rigid thumb-piece 5, extending horizontally outward from the bar *d* and beyond and above the plane of the bar *c'*, substantially as shown, and the lever J, having a handle portion ex-

tending horizontally outward in line with the bar *c'*, and terminating beneath the fixed or rigid thumb-piece and in proximity thereto, as and for the purposes set forth.

Signed at New York city, in the county of New York and State of New York, this 30th day of June, A. D. 1887.

G. W. N. YOST.

Witnesses:

EDWIN J. CHAPMAN,
JACOB FELBEL.