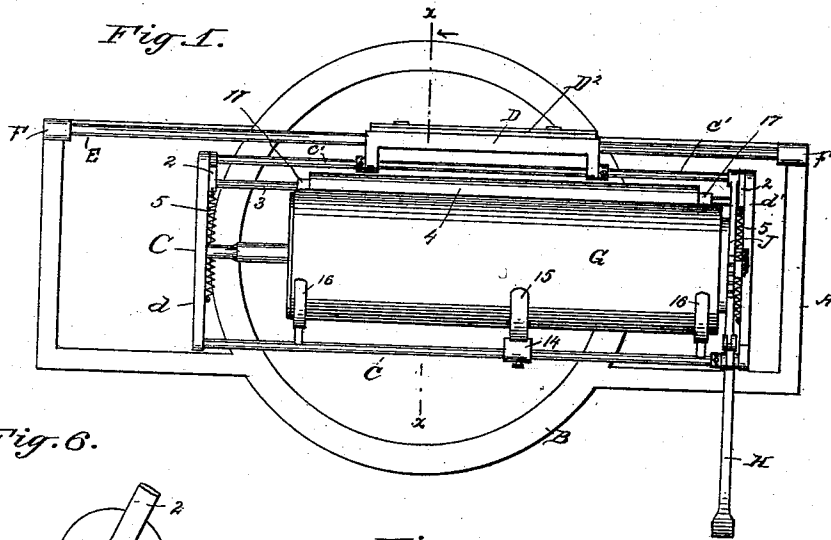


(No Model.)

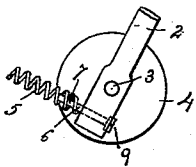
G. W. N. YOST.  
TYPE WRITING MACHINE.

No. 474,936.

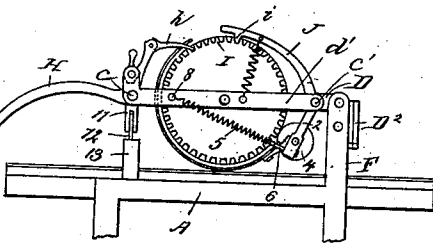
Patented May 17, 1892.



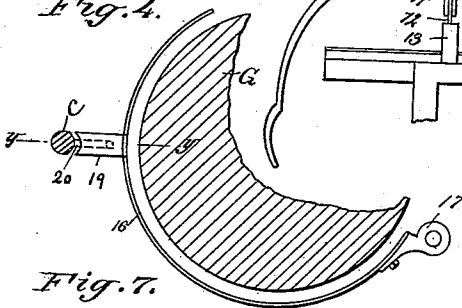
*Fig. 6.*



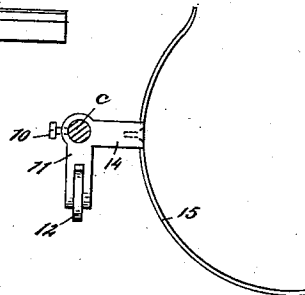
*Fig. 2.*



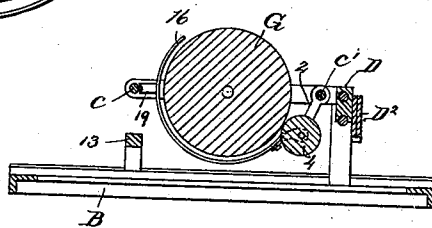
*Fig. 4.*



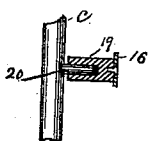
*Fig. 5.*



*Fig. 5.*



*Fig. 7.*



Attest:

*Andrew W. Yost,*

*George B. Wilton*

Inventor:

*George W. N. Yost*

*By Jacob Felbel*

*Atty:*

# UNITED STATES PATENT OFFICE.

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

## TYPE-WRITING MACHINE.

SPECIFICATION forming part of Letters Patent No. 474,936, dated May 17, 1892.

Application filed July 14, 1887. Serial No. 244,296. (No model.)

*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.

My invention has reference to the paper-carriages of type-writing machines, and more especially to the pressure-roller and paper-guides thereof, and has for its main object to provide a simple and efficient means for supporting these devices in position and for regulating the force of the pressure-roller.

My invention consists in the features of construction and combinations of devices hereinafter more fully described, and particularly pointed out in the appended claims.

In the drawings which accompany this specification and form a part thereof, Figure 1 is a top view of a portion of a type-writing machine containing my improvements. Fig. 2 is an elevation thereof, taken at the right-hand end of the machine. Fig. 3 is a vertical section taken at the line *x x* of Fig. 1 and looking in the direction of the arrow. Fig. 4 is an enlarged sectional elevation of the platen, one of the end paper-guides, and the devices employed for securing it in place. Fig. 5 is an enlarged side elevation of the central paper-guide and the carriage-roller. Fig. 6 is an enlarged end elevation of the pressure-roller, its support, and the devices for increasing and diminishing the force of the roller. Fig. 7 is a horizontal section taken at the line *y y* of Fig. 4.

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

A represents the main frame of the upper portion of a type-writing machine, and B the top plate or type-circle, upon which, as usual, the type-bars are to be mounted.

The paper-carriage is represented by the letter C, the frame-work of which is composed of the front bar or rod *c*, the rear bar *c'*, and the side or end bars *d* and *d'*. A yoke D, carrying a feed-rack D<sup>2</sup>, is connected rigidly at its front to the back-bar *c'*, and at its rear to slide upon a guide-rail E, secured in brack-

ets or ears F, projecting upwardly from the main frame, all about as customary heretofore.

G represents the paper platen or cylinder, which is provided with journals that turn in bearings in the side bars *d* and *d'* of the carriage-frame. Upon the back bar *c'* at each end is journaled or fulcrumed a depending arm 2, provided with a seat or bearing at its lower end for the journal or axle 3 of a pressure-roller 4. The arms 2 2 preferably extend below the center of the pressure-roller and are connected by coiled springs 5 to the side bars *d* and *d'* of the carriage-frame. The springs 5 operate to draw the arms 2 2 and the pressure-roller carried thereby toward the platen or cylinder, and the relative arrangement is such that during the non-use of the machine the pressure-roller rests against the periphery of the platen. During the use of the machine, however, the pressure-roller comes in contact with the face of the paper and holds it against the platen while the printing is being done and while the platen is being rotated to feed the paper onward.

In practice the platen is covered with rubber or some other suitable material and the pressure-roller is preferably constructed of rubber or provided with a rubber covering or sheath. The pressure of the roller 4 may be increased or decreased by the employment of the following means. In each arm 2 is formed a perforation or seat for the accommodation of a peg 6, which is provided at its inner end with a cross-pin 7, that enters between the convolutions of the spring 5 and holds the latter at one end, the other end being attached by a screw or pin 8 to the side bar of the carriage-frame. The peg is preferably formed with a nick or slot 9, after the fashion of an ordinary screw, for the introduction of a screw-driver or other suitable tool to effect its rotation. As the peg is turned to the right the coils of the spring are by means of the cross-pin drawn upon the body or shank of the peg, and the tension of the spring and the pressure of the roller thus increased, and as the peg is turned to the left the coils are forced off therefrom by the cross-pin, thus lengthening the spring and decreasing its power and diminishing the force of contact

of the pressure-roller. Of course during the regulation of the tension of the springs both pegs should be turned to the proper extent to have the roller press equally at both ends; otherwise the feed of the paper might not be uniform at both edges.

Instead of placing the pegs 6 upon the arms 2 it will be understood that the same effect may be gained by locating them upon the side bars *dd'* and securing the opposite ends of the springs directly to the arms 2, and so far as the main feature of this part of my invention is concerned the slots in the ends of the pegs may be omitted and heads, buttons, or other devices provided for facilitating the turning of the pegs.

Upon the front rod *c* of the carriage-frame is secured by means of a set-screw 10 a bracket, in the depended bifurcated arm 11 of which is fitted an anti-friction roller 12, which travels upon a transverse track or way 13 in about the usual manner. Projecting rearwardly of the bracket is an arm 14, to which is secured a curved device 15, that acts to guide the paper about centrally of the platen.

Opposite each end of the platen and bent or curved to correspond or approximately correspond with the periphery thereof is an additional paper-guide 16. These guides 16 extend from the pressure-roller at the rear of the platen around to the front of the latter and preferably above the rod *c*, making them semi-cylindrical in shape. Both of said guides are provided at their rear ends with perforated lugs 17, that are sleeved upon the journals or shaft of the pressure-roller. The front portions of said guides are provided with sleeves, tubes, or sockets 19, which project forwardly to receive and be supported by pins 20, projecting rearwardly from the front bar *c* of the carriage-frame near the ends of the platen. The outer extremities of the sockets are preferably hollowed out or concaved to match the periphery of the cylindrical carriage-bar *c*. By providing the sockets 19 and the pins 20 the forward portions of the guides are not only supported and free to move toward and from the platen, according as the pressure-roller is vibrated, but the guides themselves are thus held in position against movements longitudinally of the carriage-frame.

I have omitted the usually-employed paper-table to conduce to clearness in the drawings.

The line-space feeding mechanism shown is that now in common use and consists of a bent lever *H*, which is fulcrumed upon the bar *c* and provided at its inner end with a push-pawl *h* for engaging with the teeth of a circular rack *I*, secured at one end of the platen, a retaining-dog *i* at the side of a spring-held arm *J*, journaled on the bar *c'*, being employed to prevent the platen from moving backward accidentally.

The use and operation of the machine illustrated and above described will be readily un-

derstood by those skilled in the art, and little further need here be said.

The paper to be written upon is passed between the pressure-roller and the platen, and as the latter is turned the former turns with it by friction and the paper is caused to move to the same extent as the platen. The forward end of the paper immediately after passing between the platen and the pressure-roller encounters the guides 16, which turn it in the proper direction to enable it to receive the impression of the type, and as the platen is rotated by the line-space mechanism in the operation of printing the guides 16 and 15 support the paper and direct it circumferentially of the front portion of the platen.

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

1. In a type-writing machine, the combination of an open hinged frame having side bars, the platen journaled within said open frame, arms pivoted to said frame and depending within the opening therein, the pressure-roller journaled at its ends in said depending pivoted arms, and spring connected to the free ends of said arms and to the side bars of the open frame, as set forth.

2. In a type-writing machine, the combination of an open hinged frame composed of a front rail, a hind rail, and side bars, all rigidly connected together, a platen journaled in said side bars with said open frame, arms pivoted to said hind rail and depending within the opening in said frame, the pressure-roller journaled at its ends in said depending arms, and a spring attached to each of said arms and to each of the side bars of said open frame, as set forth.

3. In a type-writing machine, the combination of the paper-carriage, the platen journaled therein, the depending arms pivoted to the hind rail of the carriage-frame, the pressure-roller journaled at its ends in said pivoted arms, the coiled springs attached to the said arms and the carriage-frame, and the pegs formed or provided with cross-pins, whereby the pressure of the roller against the platen or the paper thereon may be increased or diminished at pleasure, as set forth.

4. In a type-writing machine, the combination of the paper-carriage, the platen journaled in the carriage-frame, the arms depending from the rear side of the carriage-frame, the pressure-roller journaled in said depending arms and arranged in rear of the platen, and the paper-guides 16, connected at their rear ends to the pressure-roller shaft or axis and extending forward beneath and to the front of the platen, substantially as set forth.

5. In a type-writing machine, the combination of the paper-carriage, the platen, the arms depending from the carriage-frame, the pressure-roller journaled therein, and the paper-guides 16, connected at their rear ends to the pressure-roller shaft or axis and at their front portions to slide upon a pin projecting

from the front rail of the carriage-frame, as set forth.

6. In a type-writing machine, the combination of the paper-carriage, the platen journaled in the carriage-frame, consisting of the bars *c c' d d'*, the depending arms, the pressure-roller journaled in said arms, and the paper-guides 16, connected at their front portions to the bar *c* and at their rear portions to

the shaft or axis of the pressure-roller, as 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.