

(No Model.)

2 Sheets—Sheet 1.

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

No. 474,937.

Patented May 17, 1892.

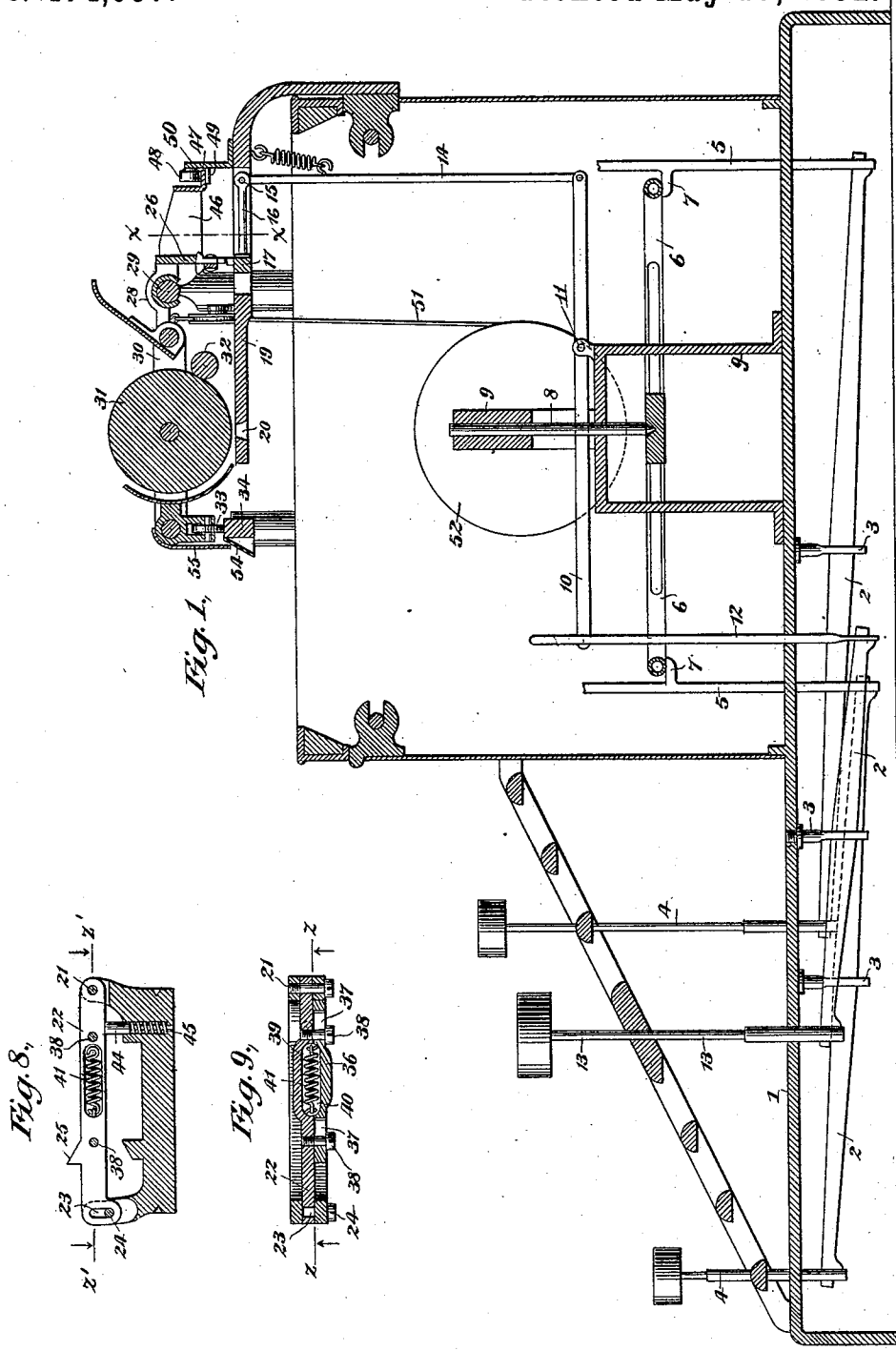


Fig. 8.

Fig. 9.

Witnesses
C. E. Ashley
H. W. Lloyd.

Inventor
George W. N. Yost
By his Attorney
Jacob Feltel.

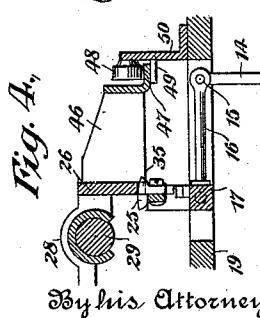
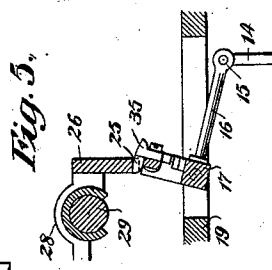
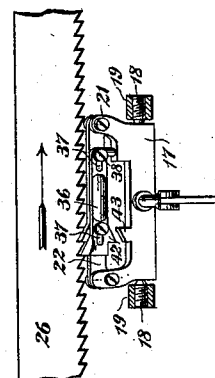
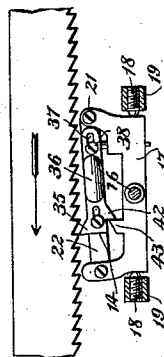
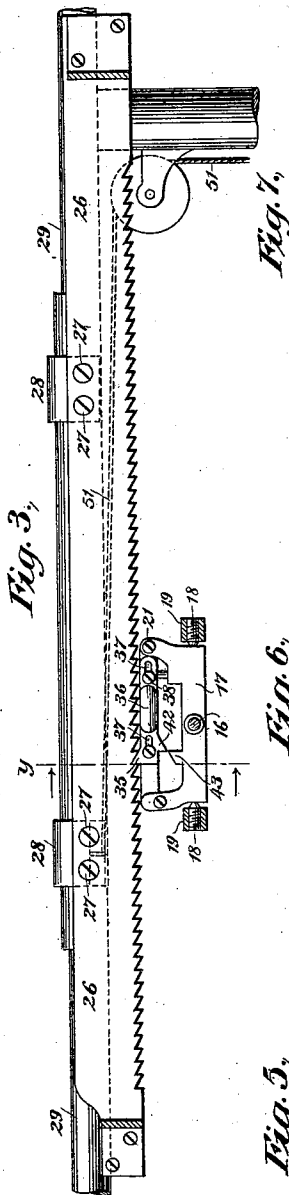
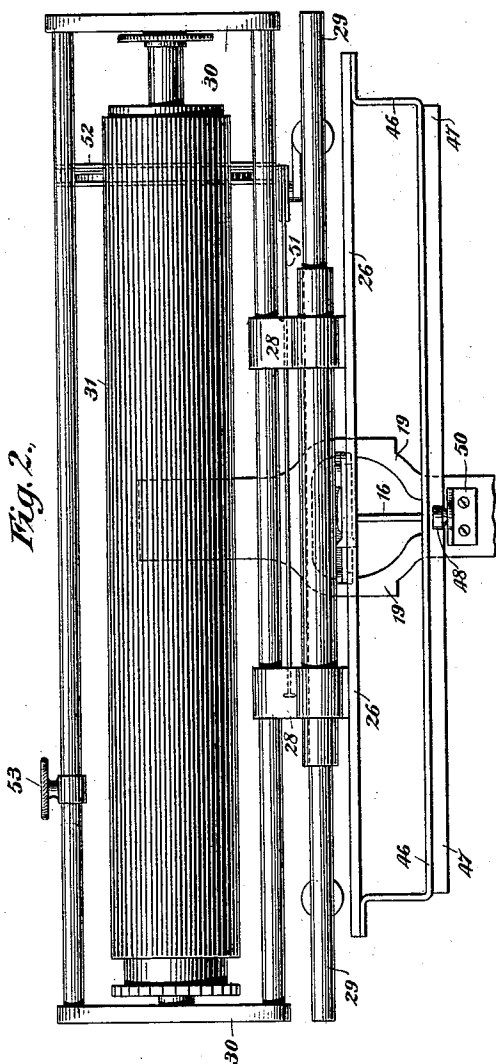
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2 Sheets—Sheet 2.

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Witnesses
C. E. Ashley
14 W. Lloyd.

Inventor
George W. N. Yost.
By his Attorney
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UNITED STATES PATENT OFFICE.

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

TYPE-WRITING MACHINE.

SPECIFICATION forming part of Letters Patent No. 474,937, dated May 17, 1892.

Application filed July 8, 1891. Serial No. 398,773. (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 relates to the letter-space feeding or carriage-escapement devices, and has for its main object to provide a construction whereby the paper-carriage may be arrested instantly and positively at any locality which it may be moved to by the hand of the operator. The construction of the escapement devices heretofore has generally been such that when the carriage is moved by hand to any point and released it will move one or more letter-spaces to the left until the limber or pivoted dog straightens up before coming to a standstill, and for this reason operators are obliged to move the carriage one or more letter-spaces to the right of the one they desire to stop at, which is confusing and otherwise objectionable.

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 accompanying drawings, Figure 1 is a central vertical section of a type-writing machine embodying my improvements. Fig. 2 is a top plan view of a portion of the machine, shown at Fig. 1. Fig. 3 is an enlarged section taken at the line *xx* of Fig. 1. Fig. 4 is a vertical cross-section taken at the line *yy* of Fig. 3. Fig. 5 is a similar section with the dogs in their unusual positions. Fig. 6 is a rear elevation of the same. Fig. 7 is a rear elevation showing the dogs depressed, the loose dog locked, and the carriage as being moved from left to right. Fig. 8 is a vertical section taken at the line *zz* of Fig. 9, and Fig. 9 is a horizontal section taken at the line *z'z'* of Fig. 8.

In the several views the same part will be found designated by the same numeral of reference.

The machine shown herein is that known in the market as the "Yost type-writer;" but

my present improvements may be applied to other forms or constructions of type-writing machines.

At Figs. 1 and 2 I have omitted many of the necessary parts of the Yost type-writer for the purpose of simplifying the drawings as much as possible. The parts omitted are clearly shown and described in British Letters Patent No. 5,136, granted to me March 26, 1889, for improvements in type-writing machines.

1 designates the bed or base plate of the machine; 2, the key-levers; 3, the fulcrum-posts of the key-levers; 4, the finger-keys; 5, the connecting-rods, which are shown broken away above the universal bar or wheel 6, but which in practice are extended up and coupled to the type movement or levers. (Not shown.) The connecting-rods are provided with offsets or projections 7, upon which the universal bar or wheel rests. At the center of the universal wheel is stepped a spindle 8, which is guided in a bracket 9 and which is perforated for the passage of a horizontal lever 10, fulcrumed at 11 in said bracket. The front end of said lever is connected to an upright rod 12, which at its lower end is coupled to the rear end of the key-lever, which bears at its front end a space-key 13. The rear end of the lever 10 is pivoted to the lower end of a long link 14, whose upper end is pivoted at 15 to an arm 16, projecting rearwardly from a trunnion or frame 17, supported by centers or pivots 18 in an arm or bracket 19, which at its forward end may be constructed to provide a center guide or directrix 20.

At 21 in the trunnion or frame is pivoted one end of an arm 22, whose opposite end is formed with a slot 23, which embraces a fixed pin 24 in the trunnion that serves to limit the upward and downward movements of the arm 22. Upon said arm is formed or affixed a dog 25, adapted to engage with the teeth of a vertically-arranged feed-rack 26, connected to the paper-carriage, preferably by screws 27 passing into a yoke 28, arranged to slide on a guide-rail 29, mounted on posts at the sides of the machine. To the front end of said yoke is hinged a paper-carriage 30, having a cylindrical platen 31 and pressure-roller 32

and provided with a small wheel or roller 33, adapted to travel on a track or way 34 at the front of the machine.

35 designates another dog or tooth, which is arranged at one end of a bar or shank 36, provided with two slots 37 37. Through said slots are passed two screws 38 38, which are engaged at their points with threaded holes in the bar 22. The bar 22 is formed with a depression or cavity 39, and the bar or shank 36 is formed with a similar depression 40 to provide a housing for a spiral spring 41, which at one end is connected to the bar 22 and at the other end to the bar or shank 36. On the under side of the bar or shank 36 is a projection 42, adapted to engage with a spur or stop 43 on the trunnion or frame 17 when the arm 22 is depressed for the purpose of preventing the spring 41 from moving the dog 35 toward the right. The arm 22 is provided with a pin 44 on its under side, which passes through a perforation in the trunnion and is surrounded by a spiral spring 45, to return said arm and its appendages after having been depressed about its horizontal pivot 21. The rack-bar 26 is preferably provided with a frame 46, having a flange 47, which travels between guides 48 49 on a bracket 50, arranged centrally widthwise and at the rear of the machine.

The carriage, as usual, is provided with a driving-power, which may be of any suitable construction. The cord or chain 51 and spring-drum 52 of the Yost machine may be employed, if desired. The carriage may be provided with an adjustable margin-stop 53, adapted to contact with a projection on the way or track 34, as heretofore, and the machine may be provided with a fixed scale-bar 54 and a traveling pointer 55, as customary.

In the normal condition of the machine the loose spring-propelled dog or tooth 35 stands in engagement with the teeth of the rack, as shown at Figs. 1, 3, and 4. When the trunnion is rocked by the finger-keys or space-key through the intermediate devices shown and described, the loose spring-propelled dog is withdrawn from the rack, as shown at Fig. 5, and the rigid dog 25 is pulled over into engagement with said rack to hold the same and the paper-carriage stationary at this time. Immediately the loose dog is withdrawn from the rack the spring 41 is free to act and shoot or propel said dog to the right a distance of one notch or tooth or letter-space, as shown at Fig. 6, the dog being guided in its movement by the slots 37 and pins 38. When the pressure upon the finger-key or space-key is released, the parts will return to their first positions and the holding-dog 25 is rocked out of the rack and the loose feeding-dog 35 is rocked back into the rack again, but in engagement with a tooth in rear of the one it engaged with immediately before. As soon as the loose feeding-dog is returned to the rack the driving-power of the carriage pulls said carriage and rack toward the left, and

with it the dog 35, against the tension of the weaker spring 41 until the right-hand ends of the slots 37 strike against the pins or stops 38, as illustrated at Fig. 3. As the writing is continued the dogs 25 and 35 thus alternately engage the rack to effect the letter-spacing of the carriage.

In returning the carriage to the right, as illustrated at Fig. 7, the teeth of the rack slide over the dog 35 and depress the same and the pivoted arm 22, to which it is connected, the dog 35 bobbing in and out of the spaces between the teeth of the rack until the pull on the carriage has been released. When the dog 35 is depressed in this manner, the projection 42 is forced behind the stop 43 and the spiral spring 41 is prevented from shooting or propelling the dog 35 toward the right, (viewed from the front of the machine.)

The construction and arrangement are such that before the dog 35 can be entirely freed from the rack the projection 42 comes into contact with the stop 43 to effectually prevent any endwise movement of the dog 35, such as is provided for during the ordinary letter-spacing, which takes place during the time of writing, and the construction and arrangement are also such that the projection 42 and stop 43 cannot wholly part company until the dog 35 has re-engaged the rack 26. Hence it will be seen that the moment the pull on the carriage is released the dog 35 is caused to immediately engage with said rack and arrest the paper-carriage at once, for it will be observed that the dog 35 at this time stands at the limit of its movement toward the left, and therefore when the dog and the rack come into engagement the carriage is instantly stopped, instead of moving on toward the left one or two notches, as hereinbefore explained.

In another application, filed by me simultaneously with this, Serial No. 398,774, I have shown in connection with the paper-carriage feeding devices, made the subject-matter of this application, a release-key adapted to depress the dog 35 to free it from the rack to permit the carriage to travel rapidly toward the left under the influence of the driving-power, and when said depression of the dog 35 is thus effected by the release-key, instead of by the rack, during the backward pull of the carriage, as illustrated by Fig. 7, the projection 42 and stop 43 coact, in the manner hereinbefore explained, to prevent any independent movement of the dog 35 by the coiled spring 41, and, hence when the pressure upon the release-key is removed the dog 35 will enter between the teeth of the rack 26, as hereinbefore explained, and in a manner to arrest the paper-carriage instantaneously.

In lieu of the release-key shown in my other application the release-key shown in the patent granted to Andrew W. Steiger June 23, 1891, No. 464,668, or any other suitable release-key may be employed to depress the dog 35.

Instead of the means herein shown for rock-

ing the frame or trunnion 17 any other known or suitable means may be employed.

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

5 1. The combination, with a power-driven paper-carriage having a vertical feed-rack, of a trunnion arranged below said feed-rack and pivoted to rock in a plane at right angles to the path of travel of the feed-rack, an arm
10 pivoted to said rocking trunnion to move in and out of the plane of the feed-rack and to also move up and down on said trunnion, a holding-dog arranged on said arm, and a spring-propelled feeding-dog mounted on said
15 pivoted arm so as to be depressible by the feed-rack on its return movements.

2. The combination, with a power-driven paper-carriage having a feed-rack, of a rocking frame or trunnion, an arm pivoted thereto
20 at one end and provided at its other end with means to limit its vibratory movements, a holding-dog arranged on said arm, and a loose spring-actuated feeding-dog also mounted on said arm, substantially as set forth.

25 3. The combination, with a power-driven paper-carriage having a feed-rack, of a rocking frame or trunnion, an arm pivoted thereto and provided with a holding-dog and with a cavity or depression, a loose feeding-dog having a bar or shank connected to said arm by
30 means of slots and screws and provided with a cavity or depression, and a spring for moving said loose dog, arranged within the housing formed by said cavities and connected at
35 one end to said arm and at the other end to the bar or shank of said loose feeding-dog, substantially as described.

4. The combination, with a power-driven paper-carriage having a feed-rack, of a rocking frame or trunnion, an arm pivoted at one
40 end to said frame and provided at the other end with a slot embracing a pin in said frame or trunnion, a holding-dog on said arm, a spring for returning said arm, a cavity in said arm, a loose feeding-dog having a bar or shank
45 provided with slots and with a cavity, screws passing through said slots to connect said dog to said arm, and a spring arranged within the housing formed by said cavities and con-
50 nected at one end to said arm and at the other end to said bar or shank, substantially as described.

5. The combination, with a power-driven

paper-carriage having a rack, of a pivoted holding-dog, a sliding spring-propelled feed- 55 ing-dog connected to said pivoted holding-dog, and means, substantially as described, for preventing endwise movement of the feeding-dog when the latter is depressed or moved down out of engagement with the feed-rack, sub- 60 stantially as described.

6. The combination, with a power-driven paper-carriage, of a pivoted holding-dog, a sliding spring-propelled feeding-dog con- 65 nected to said pivoted holding-dog and provided with a projection, and a stop for engaging said projection when said dog is depressed or moved down out of engagement with said rack, substantially as described.

7. The combination, with a power-driven 70 paper-carriage having a feed-rack, of a rocking frame or trunnion having a stop or abutment, an arm carrying a holding-dog and pivoted to said rocking frame or trunnion, and a loose spring-actuated feeding-dog connected 75 to said arm and provided with a projection to engage said stop or abutment when said feeding-dog is depressed, substantially as described.

8. The combination, with a power-driven 80 paper-carriage having a feed-rack, a rocking frame or trunnion having a stop or abutment, a spring-actuated arm having a holding-dog and pivoted to said rocking frame or trunnion, and a loose spring-propelled feeding- 85 dog having a bar or shank and connected by slots and screws to said arm and provided with a projection to engage said stop or abutment when said feeding-dog is depressed, sub- 90 stantially as described.

9. The combination, with a power-driven paper-carriage, a feed-rack, a holding-dog, and a reciprocatory feeding-dog, of a stop to prevent an independent letter-space movement 95 of the feeding-dog when the carriage is moved to the right or when the carriage is freed or released from both said dogs, substantially as set forth.

Signed at New York city, in the county of New York and State of New York, this 7th day 100 of July, A. D. 1891.

G. W. N. YOST.

Witnesses:

SAMUEL D. OSBORNE,
JACOB FELBEL.