

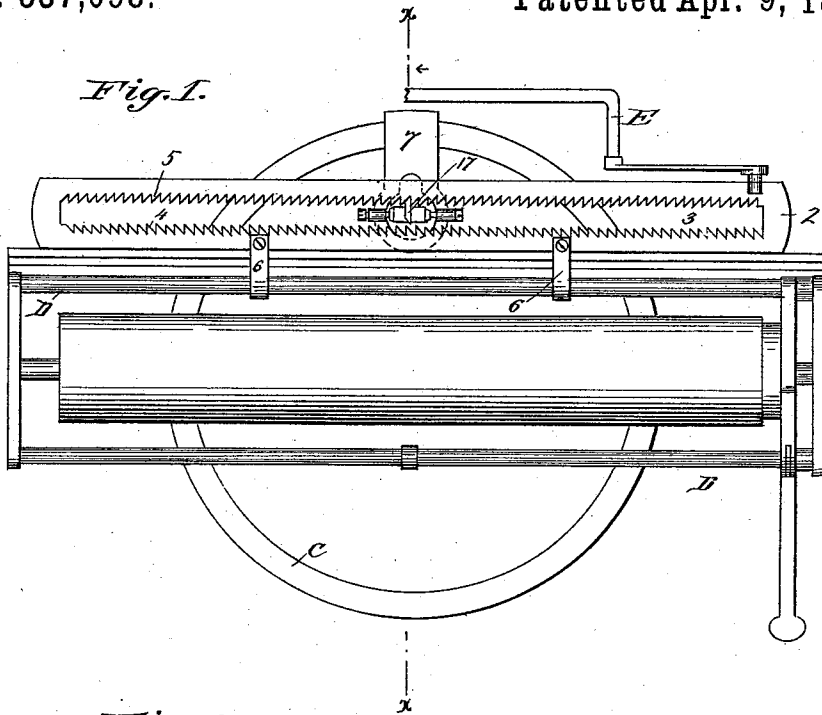
(No Model.)

2 Sheets—Sheet 1.

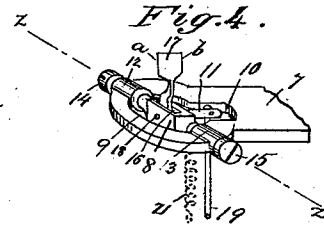
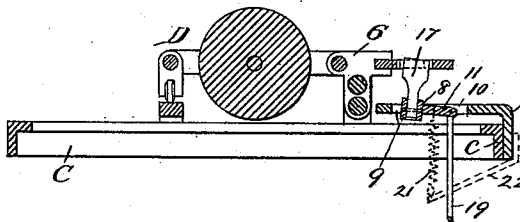
# G. W. N. YOST. TYPE WRITING MACHINE.

No. 537,098.

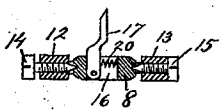
Patented Apr. 9, 1895.



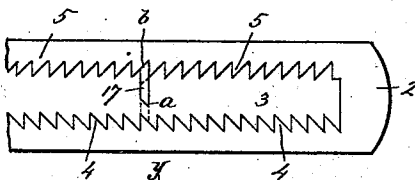
*Fig. 2.*



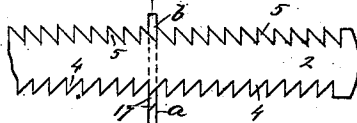
*Fig. 9.*



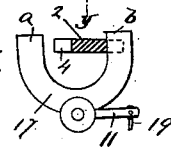
*Fig. 5.*



*Fig. 6.*



*Fig. 7.*



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 Atty

(No Model.)

2 Sheets—Sheet 2.

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

No. 537,098.

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Fig. 3.

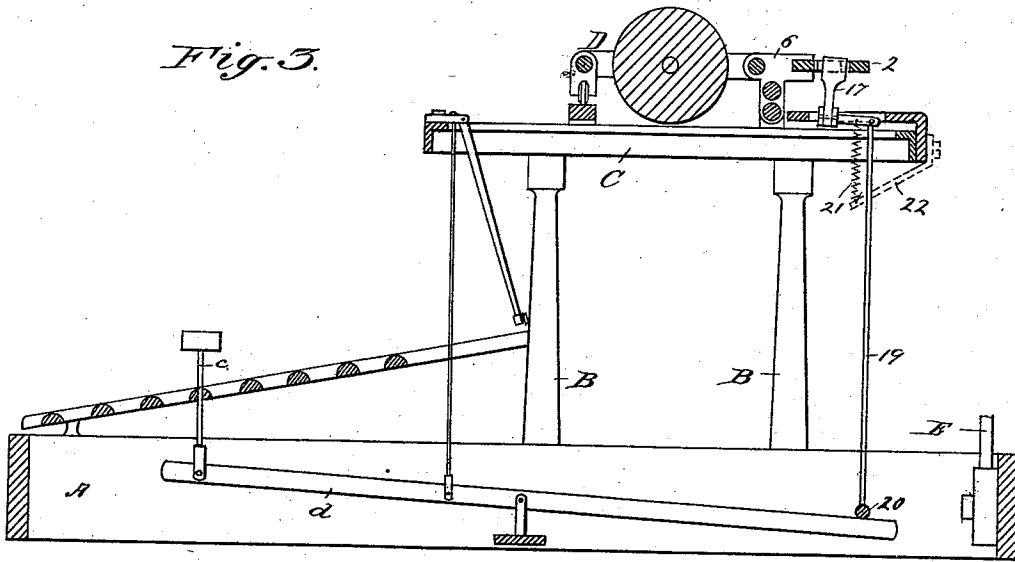


Fig. 8.

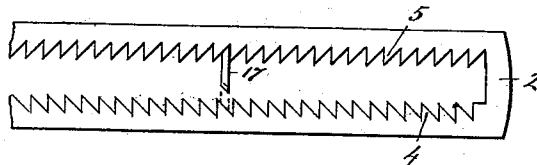
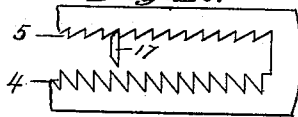


Fig. 10.



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# 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. 537,098, dated April 9, 1895.

Application filed March 31, 1888. Serial No. 269,066. (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 particularly to the letter-spacing mechanism of type writing machines, and has for its main objects to produce a simple and desirable construction.

To these main ends and objects my invention consists in the features of construction and combinations of parts hereinafter more fully described and particularly pointed out in the appended claims.

In the drawings which accompany this specification, Figure 1, is a top view of a portion of a type-writing machine involving my improvements. Fig. 2, is a vertical section taken at the line *x, x*, of Fig. 1. Fig. 3, is a similar section to show more of the machine. Fig. 4, is a perspective view of the dog-holder enlarged. Fig. 5, is an enlarged partial plan of the duplex feed-rack and the dog, ratchet or pawl. Fig. 6, is a similar view of a modification of my invention. Fig. 7, is a vertical section taken at the line *y, y*, of Fig. 6. Fig. 8, is a partial plan view of still another modification of my invention; Fig. 9, a vertical section at line *z, z*, of Fig. 4, and Fig. 10 shows a further modification.

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

A is the bed-plate or base of the machine.

B are posts for supporting the type-ring or top-plate C.

D is the hinged paper-carriage adapted to travel back and forth transversely of the machine in the usual manner.

E represents the carriage driving mechanism which may be of any known or suitable construction.

Referring now more particularly to Figs. 1, 2, 3, 4 and 5, the numeral 2, designates a bar or plate slotted interiorly, as at 3, and provided with a rack or row of ratchet teeth on each side of the slot. The forward rack is marked with the numeral 4 and the rearward

rack with the numeral 5. A peculiarity of construction of this duplex rack is that the teeth 4 and 5 are cut or arranged alternately instead of coincidently. An inspection of Fig. 5 will show that the point of one tooth 4 stands not opposite the point of a tooth 5 but midway between the points of two of such teeth.

The rack-bar is attached to the carriage-frame by yokes 6, and the driving-mechanism is connected to the rack-bar at its rear right-hand corner, after the fashion of well-known writing machines.

7 represents a plate or bracket in which the dog-holder 8 is supported. The plate or bracket is attached to the type-ring and projects inwardly on a line with the center of the ring. The said plate is provided with an opening 9, for the dog-holder, and with a connecting opening 10, for the dog-holder rocker-arm 11, and is formed with two oppositely arranged threaded sockets 12, 13, which accommodate two conically-pointed supporting and adjusting screws 14 and 15, which take into conical seats or bearings in the ends of the dog-holder.

The dog-holder is slotted out longitudinally at 16 for accommodation of the shank of the dog 17, which is pivoted therein by a transverse pin 18. The dog, although made solid and in one piece is practically duplex, one side *a* acting as one dog and the other *b*, as another.

To the rear end of the rocker-arm or stud 11, is connected a rod or frame 19 that in turn is connected to a universal-bar 20, which is adapted to be actuated every time a key of the machine is depressed. One end of a spring 21, is also connected to the rocker-arm and its other end is attached to some fixed part of the machine as a bracket 22.

*d* represents a key-lever beneath the universal-bar, and provided at its forward end with a finger-key *c*.

In the normal position of the feeding-mechanism, the side *b* of the dog 17 stands between two of the teeth 5, and the side *a* opposite a point midway between the working faces of two of the teeth 4.

The operation will be understood to be as follows: As the rocker-arm 11 is thrown up-

wardly, through the intervention of the finger-key *c*, key-lever *d*, and universal-bar devices, the dog-holder is rocked on the conical journals of the screws 14 and 15, and the dog or pawl 17 thrown forward. When the pressure upon the finger-key is released, the spring 21 draws the rocker-arm, the dog-holder and the dog back to their first positions. When the dog is vibrated forwardly from between two teeth 5 its opposite edge or side *a* enters between two teeth 4 midway of their points or working-faces, as shown at Fig. 5, and the carriage, under the influence of the driving-mechanism is moved to the left until the face of the tooth on the right strikes against the pawl. The carriage will then have moved a half letter-space. When the dog is vibrated backwardly from between the teeth 4, it enters the next notch on the right midway between the working faces of the teeth 5, and the carriage is propelled forward until the face of the tooth on the right comes against the side *b* of the dog. The carriage will then have moved the remaining half of the letter-space. This half-and-half letter-space movement of the carriage continues thus during the whole of its travel to the left, one half-space being fed on the depression, and the other half on the release of the finger-key. The printing is of course done when the carriage comes to stop on the first half stroke.

In lieu of having the teeth 4 and 5 arranged to give the carriage a half-and-half letter-space travel, they may be so disposed that the feed will be one-third on the depression and two-thirds on the release of the finger-key, as shown at Fig. 8; or the letter space movement may be otherwise divided.

The bar 2 instead of being made with a slot as 3 and with the ratchet-teeth on each side thereof, may be constructed as shown at Fig. 6, where the bar is solid and the teeth are cut on the outer opposite edges. In this modification the teeth are relatively arranged to give the half-and-half feed, and in this form of rack-bar the dog 17 is bifurcated and the portions *a* and *b* located exteriorly of the bar.

By dividing the feed, the successive movements of the carriage are shortened, the momentum lessened and the machine made more durable. Besides this the operation of the feed-mechanism is almost noiseless.

As the journals or the bearings of the dog-holder wear away, the latter may be adjusted to correct position by the screws 14 and 15. In practice I prefer to turn the screws 15 entirely home at the outset, and effect the adjustments by the screw 14.

The dog 17 may be provided with a spring 20 to maintain it in an upright position, and at the end of the travel of the carriage to the left the dog may be swung down to permit the

carriage and rack to be drawn back to the right hand side of the machine.

In the modification shown at Fig. 10, the teeth 4 and 5 are of different lengths, the latter being the shorter. By this construction of duplex rack the carriage feed, while divided into two movements for each letter-space, may be so governed or controlled relatively to the depression of the finger-key and elevation of the type-bar that the carriage will move a half letter-space and come positively to rest before the printing-type can reach the platen and effect an impression, thus avoiding the possibility of any blurring of the work during extremely rapid writing. In this construction, the parts are so proportioned and arranged that the pawl 17 leaves the teeth 5, when the type-bar is about one-third of its way up to the platen and moves over midway of two teeth 4, thus allowing the carriage to feed a half letter-space while the type-bar is traveling the remaining two-thirds of its stroke. This will give the carriage ample time to feed forward and come to a state of rest before the type-face strikes to effect the printing. On releasing the finger-key and type-bar the pawl will be vibrated backwardly, and the carriage will feed the remaining half of the letter-space, as before explained.

If desired, of course a rack not constructed to afford a divided feed may be employed in connection with the dog, dog-holder, dog-holder support, and dog-holder actuating means.

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

1. In a type-writing machine, the combination of a carriage, a rack, a dog, a dog-holder, a rocker-arm projecting therefrom, a connecting-rod, a universal-bar, a key-lever, and a dog-holder support attached to the top-plate of the machine and provided with the connected openings 9 and 10 for the dog-holder and rocker-arm.

2. In a type-writing machine the combination of a carriage, a rack, a dog, a slotted oscillatory dog-holder, having conical bearing surfaces and a rocker-arm, a support for the dog-holder attached to the top-plate of the machine and projecting inwardly and having openings 9 and 10 and also threaded sockets, the supporting and adjusting screws provided with conical points, and means substantially as described attached to the rocker-arm for oscillating said dog-holder.

Signed at New York city, in the county of New York and State of New York, this 30th day of March, A. D. 1888.

G. W. N. YOST.

Witnesses:

GEORGE FENN,  
JACOB FELBEL.