

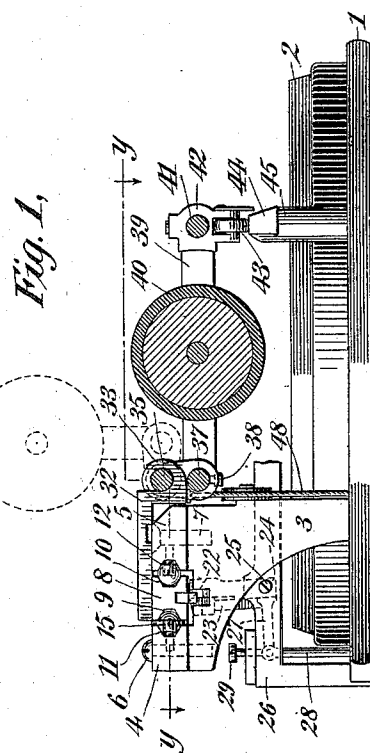
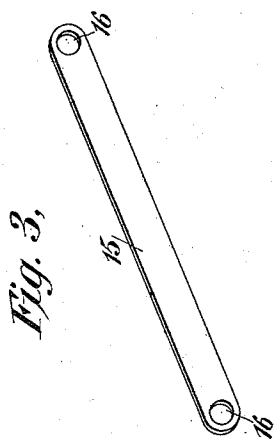
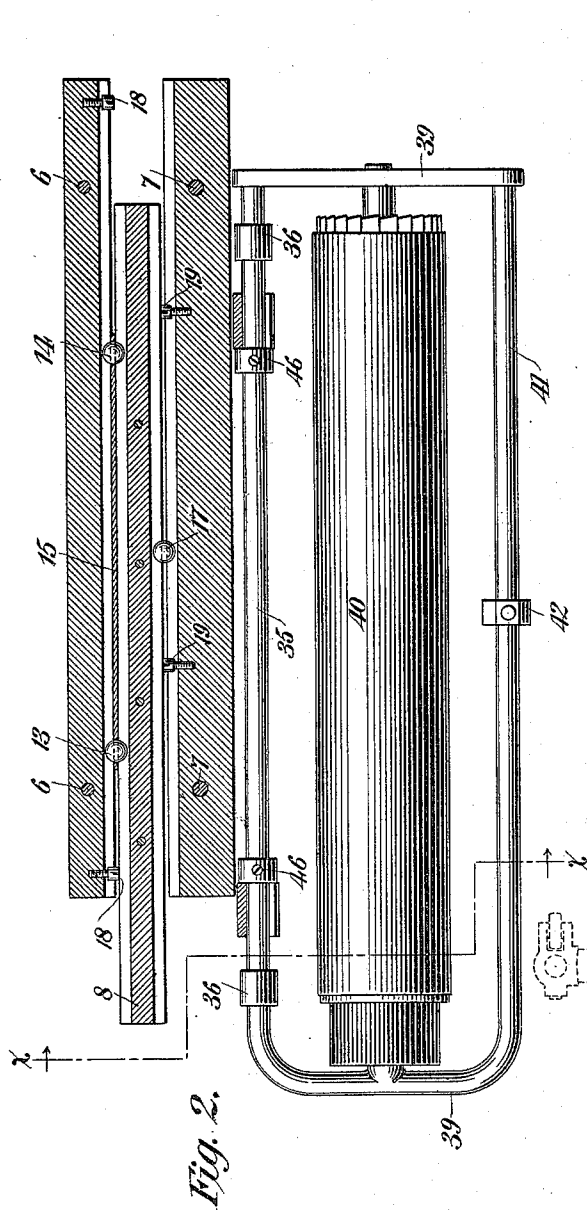
(No Model.)

2 Sheets—Sheet 1.

C. W. WALKER.
TYPE WRITING MACHINE.

No. 572,845.

Patented Dec. 8, 1896.



Witnesses
C. E. Ashley
H. W. L. Lofth.

Inventor
Chas. M. Walker
By his Attorney Jacob Felbel

(No Model.)

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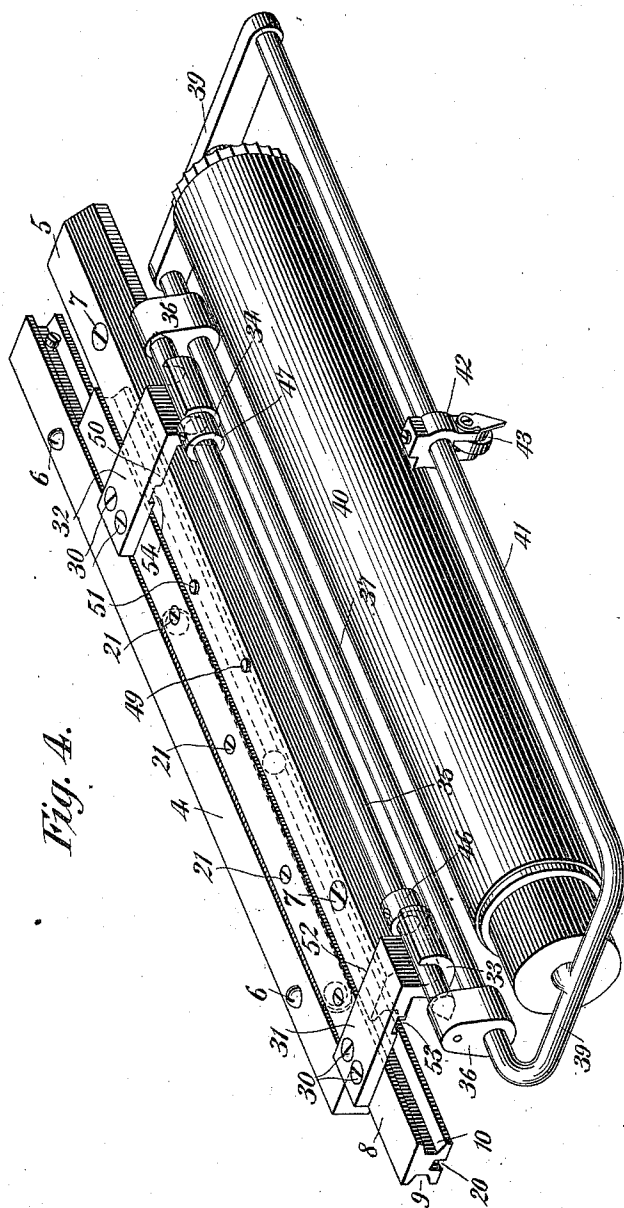


Fig. 4.

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UNITED STATES PATENT OFFICE.

CHARLES W. WALKER, OF BRIDGEPORT, CONNECTICUT, ASSIGNOR TO THE
YOST WRITING MACHINE COMPANY, OF NEW YORK, N. Y.

TYPE-WRITING MACHINE.

SPECIFICATION forming part of Letters Patent No. 572,845, dated December 8, 1896.

Application filed August 2, 1894. Serial No. 519,234. (No model.)

To all whom it may concern:

Be it known that I, CHARLES W. WALKER, a citizen of the United States, and a resident of Bridgeport, in the county of Fairfield and State of Connecticut, have invented certain new and useful Improvements in Type-Writing Machines, of which the following is a specification.

My main object is to provide a light and easy-running paper-carriage, and also one in which the platen-carrying frame may be readily detached to enable the types to be cleaned and for facilitating repairs, &c.; and my invention consists in the several 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 side elevation, partly in section, of the upper portion of a Yost type-writing machine embodying my improvements, the section being taken at the line *x x* of Fig. 2. Fig. 2 is a horizontal section at the line *y y* of Fig. 1, but omitting the framework of the machine and showing only the novel construction relating to the paper-carriage. Fig. 3 is a detail perspective view of the ball coupler or link, and Fig. 4 is a perspective view of the paper-carriage and its guides detached.

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

1 designates the top plate of a Yost type-writing machine, and 2 the annular ink-pad. At each end of the top plate and at the rear side thereof is mounted a standard or bracket 3 to horizontally support two guide-bars 4 and 5, which are respectively attached to the said brackets by means of screws 6 and 7, the said guide-bars being arranged in the same plane and parallel with each other and at a distance apart to freely admit between them a movable and parallel bar, frame, or carriage 8, which on its vertical sides is formed with V-grooves 9 and 10, the groove 9 alining with a similar groove 11 in the fixed bar 4 and the groove 10 alining with a like groove 12 in the stationary bar 5.

Between the fixed bar 4 and the movable bar 8 and working in the grooves 9 and 11 are two antifriction-balls 13 and 14, which are

coupled together and maintained always at the same distance from each other and in proper working relation to the paper-carriage by means of a link 15, formed at each end with a perforation 16 of a size to permit the ball to turn freely therein. Between the rear side of the fixed bar 5 and the front side of the movable bar 8 and working in the grooves 10 and 12 is another antifriction-ball 17.

The balls 13 and 14 are prevented from escaping from their bearings 9 11 by means of stops 18, screwed into the fixed bar 4, and the ball 17 is prevented from escaping from its bearings 10 12 by means of stops 19, screwed into the fixed bar 5.

The under side of the movable bar 8 is formed with a groove 20, in which is secured, by means of screws 21, passing down through said bar, a feed-rack 22, which depends below the under side of the bar 8 and cooperates in the usual manner with the feed-dogs 23, mounted on a trunnion or rocker 24, pivoted at 25 to an arm 26 on the framework and provided with a rocker-arm 27, which is actuated by a vertical connecting-rod 28, which, as heretofore, is connected with the universal bar forming part of the spacing mechanism, but not shown herein. The upward movements of said rocker-arm are limited by a screw-stop 29 in the aforesaid arm 26.

To the top of the movable bar 8 are firmly attached by screws 30 arms or plates 31 and 32, one near each end, which arms or plates project forwardly over and beyond the fixed bar 5 and are respectively formed at their front ends with open hooks 33 and 34, which receive a round hinge-rod 35, secured at its ends, on the outside of or beyond said hooks, in upright arms 36, through perforations at the lower ends of which passes the hind rod 37 of the platen carrier or frame, the said rod being firmly secured in said perforations against endwise movement therein by set-screws 38, passing upwardly from the under sides of the arms 36 and bearing against the said rod.

In the side bars 39 of the platen-carrier is mounted, as usual, the cylindrical platen 40, and on the front bar 41 of the platen-carrier is mounted a bracket 42, containing a roller 43 to travel upon a track or way 44, mounted

on posts 45 at each end of the top plate and at the front thereof.

The platen-carrier may be freely swung up and down for inspection of the work, owing to the hinge connection formed by the hooks 33 and 34 and the hinge-bar or continuous pintle 35, but said platen-carrier is prevented from moving endwise independently of the hooks by means of collars 46 and 47 fast on the hinge-rod 35 and abutting against the inner sides of the hooks. The platen-carrier in its normal working position is prevented from accidental detachment from the hooks by reason of the arrangement of the back rod of the platen-carrier beneath and contiguous to the backs of the hooks. The platen-carrier with its platen may, however, be readily removed from the machine by simply turning it up to the dotted-line position shown at Fig. 1 and drawing the hinge-rod 35 up and out of the open hooks. This detachment of the platen-carrier may be instantly effected and without disconnecting the carriage-driving mechanism, which is connected to the bar 35 or to its hook 34, as will be seen by referring to Fig. 1, wherein I have shown the driving-cord 48, which, as usual, proceeds from a spring-drum. (Not shown.) The platen-carrier may of course be replaced with equal facility and speed by a reverse operation.

The paper-carriage as a whole is limited in its movement toward the left by a projection 49 on the upper side of the fixed bar 5, against which the arm 32 strikes at the point 50, and the paper-carriage is limited in its movement toward the right by a similar stop projection 51 on the upper side of the said bar 5, against which the arm 31 strikes at the point 52. In order that the bar 31 may not contact with the stop 49 in the movement of the carriage toward the left, said bar is grooved or cut away on its under side, as at 53, to pass over said stop, and so that the carriage may not be arrested in its movement toward the left by the contact of the arm 32 with the stop 51 said arm is likewise grooved or cut away, as at 54, to enable it to pass over and beyond said stop, which, as will be seen, lies in a different plane from the stop 49. From this construction it will be observed that the travel of the paper-carriage is limited in both directions and that there is no liability of accidental detachment or derangement of the carriage or of any of its parts. When it may be necessary to remove the sliding bar 8, this may be readily effected by unscrewing either of the arms 31 or 32 and unhitching the driving cord or chain.

The pair of coupled antifriction-balls being arranged on one side of the movable bar 8 and the single antifriction-ball being arranged on the other side thereof and intermediate the planes of the coupled balls, three extended points of bearing are provided for the movable bar, thus insuring firm, steady, and even movements of the said movable bar and the

paper-carriage, of which it forms a part. The movable and guided bar supports through the hooked arms the rear side of the platen-carrier and the antifriction wheel or roll 43 and its track support the front side of the platen-carrier.

Various changes in detail construction and arrangement may be made without departing from the gist of my several improvements, some of which, it will be understood, may be used without others.

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

1. In a type-writing machine, the combination with fixed guide-bars having ball-bearings, of an intermediate movable bar provided with ball-bearings, a letter-spacing mechanism, part of which is carried by said movable bar, antifriction-balls, forwardly-projecting horizontal arms secured to said movable bar and provided with open hooks, and a platen-carrier detachably connected to said hooks.

2. In a type-writing machine, the combination with fixed guide-bars having ball-bearings, of an intermediate movable bar provided with ball-bearings, a letter-spacing mechanism, part of which is carried by said movable bar, antifriction-balls, arms secured to said movable bar and provided with open hooks, and a platen-carrier provided with an elevated pintle for said hooks, the rear rod of the platen-carrier being arranged to lie underneath and contiguous to the backs of said hooks.

3. In a type-writing machine, the combination with fixed guide-bars having ball-bearings, of an intermediate movable bar provided with ball-bearings, a letter-spacing mechanism, part of which is carried by said movable bar, antifriction-balls, arms on said movable bar provided with open hooks, and a platen-carrier composed of side and end bars and an independent elevated pintle-rod.

4. In a type-writing machine, the combination with fixed guide-bars having ball-bearings, of an intermediate movable bar provided with ball-bearings, a letter-spacing mechanism, part of which is carried by said movable bar, antifriction-balls, arms secured to said movable bar and provided with hooks and grooves or cut-aways, a platen-carrier hinged to said hooks, and fixed stops for said arms.

5. In a type-writing machine, the combination with fixed guide-bars having ball-bearings, of an intermediate movable bar provided with ball-bearings, antifriction-balls, a perforated link for coupling two of said balls on one side of said movable bar, and a platen-carrier connected to said movable bar.

6. In a type-writing machine, the combination with fixed guide-bars having ball-bearings, of an intermediate movable bar provided with ball-bearings, a single antifriction-ball arranged on one side of said movable bar, a pair of antifriction-balls coupled together by a link arranged on the other side of said movable bar, and a platen-carrier connected to said movable bar.

7. In a type-writing machine, the combination of a movable, guided bar provided with forwardly-projecting horizontal hooks, a platen-carrier detachably hinged to said open hooks at its rear side and supported thereby, and provided at its front side with a supporting antifriction-roller adapted to travel upon a track or way.

8. In a type-writing machine, the combination of the letter-spacing mechanism, the movable, guided bar carrying the feed-rack of the spacing mechanism and provided with ball-bearings, antifriction-balls, the forwardly-extending horizontal arms 31, 32 connected to said movable bar and provided with hooks at their front ends, and the platen-carrier provided with a hinge-rod.

9. In a type-writing machine, the combination in a paper-carriage of fixed guide-bars having ball-bearings, an intermediate movable bar having ball-bearings, a pair of antifriction-balls, connected together by a link, arranged on one side of said movable bar, and a single antifriction-ball arranged on the other side of said bar and to alternate with the pair of coupled antifriction-balls, thereby providing three points of bearing for said movable bar.

10. In a type-writing machine, the combination of a bar or carriage provided with open hooks, and a platen-carrier having side and end bars and an elevated pintle adapted to said hooks, substantially as described.

11. In a type-writing machine, the combination of a bar or carriage having slotted or grooved arms 31 and 32, fixed stops, as 49 and 51 therefor, and a platen-carrier hinged to said arms, substantially as described.

12. In a type-writing machine, the combination of a bar or carriage having ball-bearings and antifriction-balls therefor, two of which are coupled together by a link which loosely embraces said balls diametrically, so that they may project on each side of said link

and run freely in their associated bearings, substantially as described.

13. In a type-writing machine, the combination of a bar or carriage having ball-bearings and antifriction-balls, two of which are coupled together by a link which loosely embraces said balls diametrically, so that they may project on each side of said link and run freely in their associated bearings, and a platen-carrier hinged to said bar or carriage, substantially as described.

14. In a type-writing machine, the combination with fixed horizontal guide-bars having ball-bearings facing each other and fixed stops, of an intermediate movable bar or carriage having on each vertical side a ball-bearing, antifriction-balls arranged in said bearings, the ball-embracing link operating as set forth and a platen-carrier connected to said movable bar or carriage, substantially as described.

15. In a type-writing machine, the combination of a movable bar or carriage running on antifriction-balls, disposed on opposite sides of said bar or carriage, a ball-coupler which loosely embraces at least two of said balls diametrically, so that they may project on each side thereof and run freely in their associated bearings, and fixed stops for the ends of said coupler to abut against, substantially as described.

16. In a type-writing machine, the combination of a track, a carriage, ball-bearings between the track and carriage, and a bar having openings, the balls being loosely confined in said openings.

Signed at Bridgeport, in the county of Fairfield and State of Connecticut, this 20th day of July, A. D. 1894.

CHARLES W. WALKER.

Witnesses:

F. McLAREN,
A. B. PARTRICK.