Jan. 1, 1924 1,479,468

W. F. HELMOND

TYPEWRITING MACHINE

Filed Dec. 8, 1921

Fig. 1.

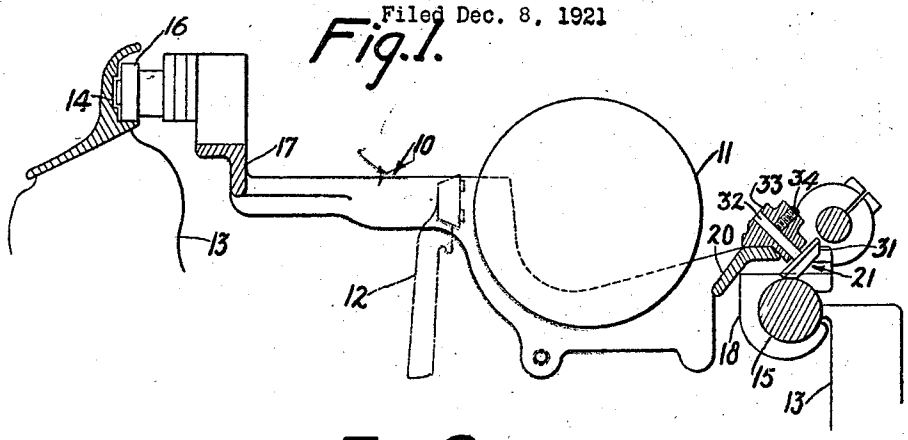


Fig. 2.

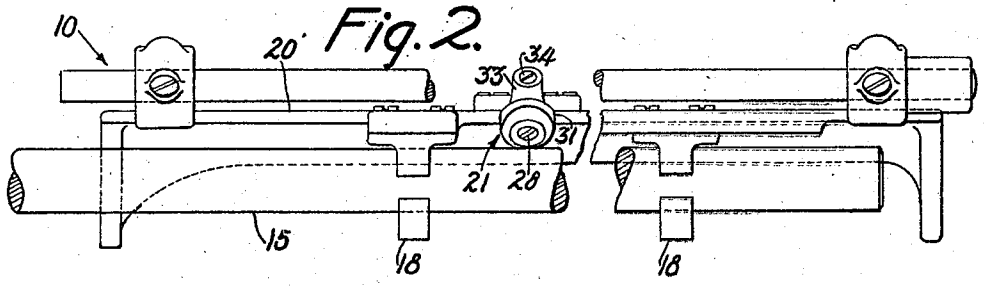
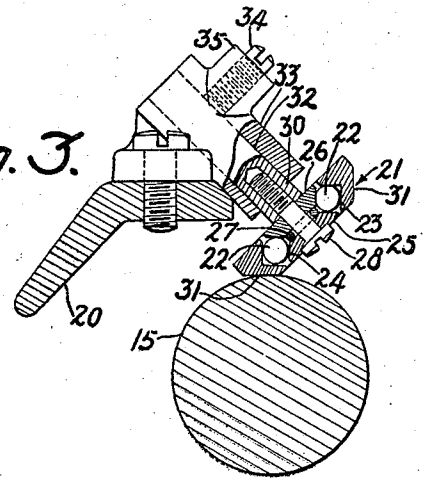


Fig. 3.



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UNITED STATES PATENT OFFICE.

WILLIAM F. HELMOND, OF HARTFORD, CONNECTICUT, ASSIGNOR TO UNDERWOOD TYPEWRITER COMPANY, OF NEW YORK, N. Y., A CORPORATION OF DELAWARE.

TYPEWRITING MACHINE.

Application filed December 8, 1921. Serial No. 520,830.

To all whom it may concern:

Be it known that I, WILLIAM F. HELMOND, a citizen of the United States, residing in Hartford, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements in Typewriting Machines, of which the following is a specification.

This invention relates to improved means for guiding lengthy carriages of typewriting machines.

Heretofore short carriages of machines, the Underwood typewriting machines, for example, have been provided with lugs or collars, to embrace a rod or bar secured to the main frame of the machine. These collars guided the carriage at the rear. The front of the carriage is usually provided with a roller to bear on a front rail. To use the guiding collars for a long carriage machine has heretofore been found objectionable, due to excess friction of the collars on the guide-rod. Instead of collars, rollers have been resorted to for this purpose in long carriage machines. In some instances this roller construction has been found objectionable, since the carriage vibrates slightly endwise when arrested.

An object of the invention is to overcome the above-mentioned objections in connection with long carriage machines. To this end, the long carriage is provided with guide-collars, one at each end of said carriage, and there is provided one anti-friction roller located near one of the guide-collars, so as to relieve the one guide-collar of the weight of the carriage. The other collar bears directly on the guide-rod. Thus, with a collar bearing directly on the rod at one end of the carriage and an anti-friction roller bearing on the rod at the other end, the carriage feeds with sufficient freedom, and the objectionable vibration above mentioned is avoided.

Other features and advantages will hereinafter appear.

In the accompanying drawings,

Figure 1 is a sectional side view of an Underwood typewriter carriage, showing the invention applied thereto.

Figure 2 is a rear view of the carriage, showing the location of the anti-friction roller relatively to the guide-collar at the right-hand end of the carriage.

Figure 3 is a detail sectional side view, showing the construction of the anti-friction roller and the adjustment thereof.

In a typewriter carriage 10 is revolubly mounted a platen 11, against which typebars 12 strike. The carriage is fed from right to left by the usual escapement mechanism (not shown). To guide the carriage there are provided on the main frame 13 a front rail 14 and a rear rail or rod 15. The carriage is supported on the front rail by rollers 16 suitably mounted on the front bar 17 of the carriage. The guiding means at the rear of the carriage comprises the rear rail 15, which is embraced by two lugs or collars 18, one fixed upon each end of the rear bar 20 of the carriage. It has been found that, when this construction is used on a long carriage, the friction of the collars is so great as to hinder the feeding movement of the carriage. To eliminate this objection, there is provided an anti-friction roller 21, which may be located near the right-hand collar 18, so as to prevent it from bearing directly on the guide-rod. Since the weight of the carriage is supported at this end by the roller 21, the right-hand collar serves merely as a guide, not being a support for the carriage weight, and not resting upon the top of the rail.

The anti-friction roller 21 is provided with ball-bearings 22 contained within a V-shaped groove 23 within the roller, and a V-shaped groove 24 formed by two cones 25 and 26, which are adjustable relatively to each other to take up looseness. The cones may be separated from each other by a ring 27 of copper or other soft wire, which may readily be squeezed during the adjustment of the cones 25 and 26 by tightening a screw 28 threaded into a shank 30.

The roller 21 is provided with a cone-face 31, and the roller is angularly disposed relatively to the guide-rod 15, so that the engaging portion of the face 31 bears substantially horizontally on said guide-rod. The shank 30 extends perpendicularly from the roller 21, and consequently is inclined in opposite direction, thus enabling the roller to be adjusted to bear properly on the guide-rod. To facilitate the adjustment of the roller 21, the shank 30 of said roller is received in a hole 32 in a bracket 33 suitably secured to the rear bar 20 of the carriage, the shank

30 being held in place when adjusted by a set-screw 34 threaded into a boss 35 of said bracket.

With this arrangement, the construction for guiding a long carriage is considerably simplified, and permits feeding with the requisite freedom of movement without chattering or endwise vibration at the arrest of the carriage, this improvement being of special value in tabulating, and also advantageous during the letter-feeding movements of the carriage.

Variations may be resorted to within the scope of the invention, and portions of the improvements may be used without others.

Having thus described my invention, I claim:

1. In a typewriting machine, the combination of a carriage, and guiding means for said carriage, said guiding means comprising a rail, carriage-supporting devices to slide on the top of said rail, and a distant carriage-supporting device to roll on the top of said rail, said sliding device and said distant rolling device forming the entire support of said carriage upon said rail.

2. In a typewriting machine, the combination of a carriage, and guiding means for said carriage, said guiding means comprising a rod, a plurality of guide-collars secured to said carriage to embrace said rod, and a carriage-supporting roller mounted on said carriage to roll on the top of said rod, said roller adjacent to one of said collars, to relieve it from the weight of the carriage, while leaving the other collar supporting the carriage weight.

3. In a typewriting machine, the combination of a carriage, and supporting and guiding means for said carriage, said supporting and guiding means comprising a rail, two guide-collars secured to said carriage to embrace said rail, a roller mounted on said carriage to roll on said rail, near one collar, and adjustable means co-operative with the roller to relieve the neighboring collar of the weight of the carriage, the other collar bearing on the top of the rail and constituting a partial support for the weight of the carriage.

4. In a typewriting machine, the combination of a carriage, and supporting and guiding means for said carriage, said supporting and guiding means comprising a rail, two guide-collars secured to said carriage to embrace said rail, a roller mounted on said carriage to roll on said rail, near one collar, and adjustable means co-operative with the roller to relieve the neighboring collar of the weight of the carriage, the other collar bearing on the top of the rail and constituting a partial support for the weight of the carriage, said roller being angularly disposed relatively to said rail, so that an adjustment lengthwise of its axis causes the roller to bear properly on the rail.

5. In a typewriting machine, the combination of a carriage, and guiding means for said carriage, said guiding means comprising a rail, two guide-collars secured to said carriage to slide on said rail, one of said collars affording a support for the weight of the carriage, a roller mounted on said carriage to roll on said rail, near the other of said collars, said roller being inclined and having a beveled face to bear on said rail, the effective portion of the bearing face being substantially horizontal, a bearing shank for said roller, said shank being adjustable to effect an adjustment of said roller relatively to said rail, and means to secure said shank in its adjusted position.

6. In a typewriting machine, the combination of a carriage, and guiding means for said carriage, said guiding means comprising a fixed rail, two guide-collars, one at each end of said carriage to embrace said rail, and a roller mounted on said carriage in close proximity to the right-hand guide-collar to prevent the latter from bearing on said rail in the traveling movement of said carriage, the left-hand collar co-operating with said roller to constitute the entire support of the carriage upon said rail.

7. In a typewriting machine, the combination of a carriage, and guiding means for said carriage, said guiding means comprising a fixed rail, two guide-collars, one at each end of said carriage to embrace said rail, and a roller mounted on said carriage in close proximity to the right-hand guide-collar to prevent the latter from bearing on said rail in the traveling movement of said carriage, the left-hand collar co-operating with said roller to constitute the entire support of the carriage upon said rail, and rollers at the front of the carriage to assist in guiding the latter.

WILLIAM F. HELMOND.

Witnesses:
EDWARD AMERMAN,
WILLIAM P. SMITH.