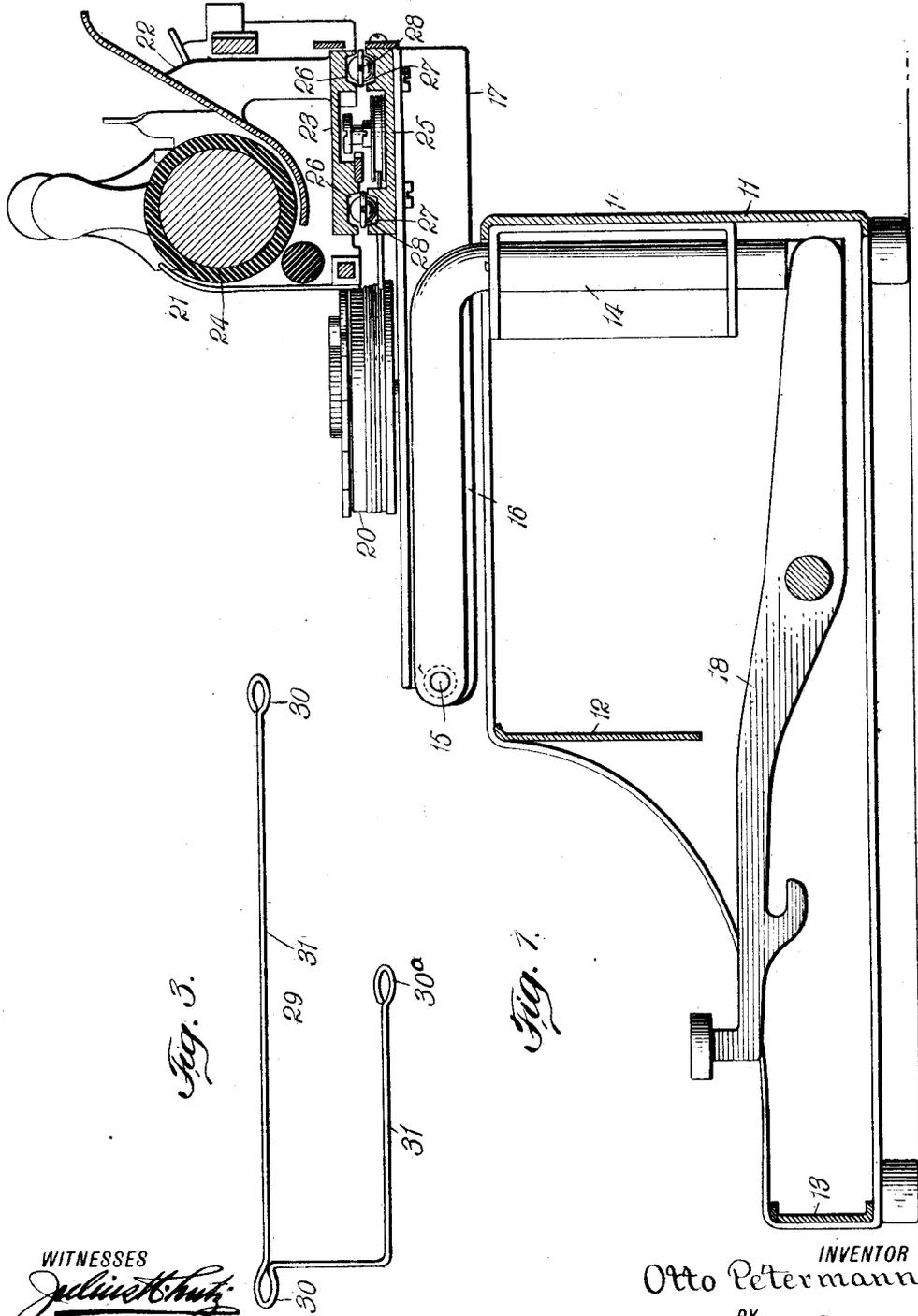


O. PETERMANN.
CARRIAGE FOR TYPE WRITING MACHINES.
APPLICATION FILED JUNE 16, 1909.

1,088,924.

Patented Mar. 3, 1914.

2 SHEETS—SHEET 1.



WITNESSES
Julius H. ...
C. Bartels

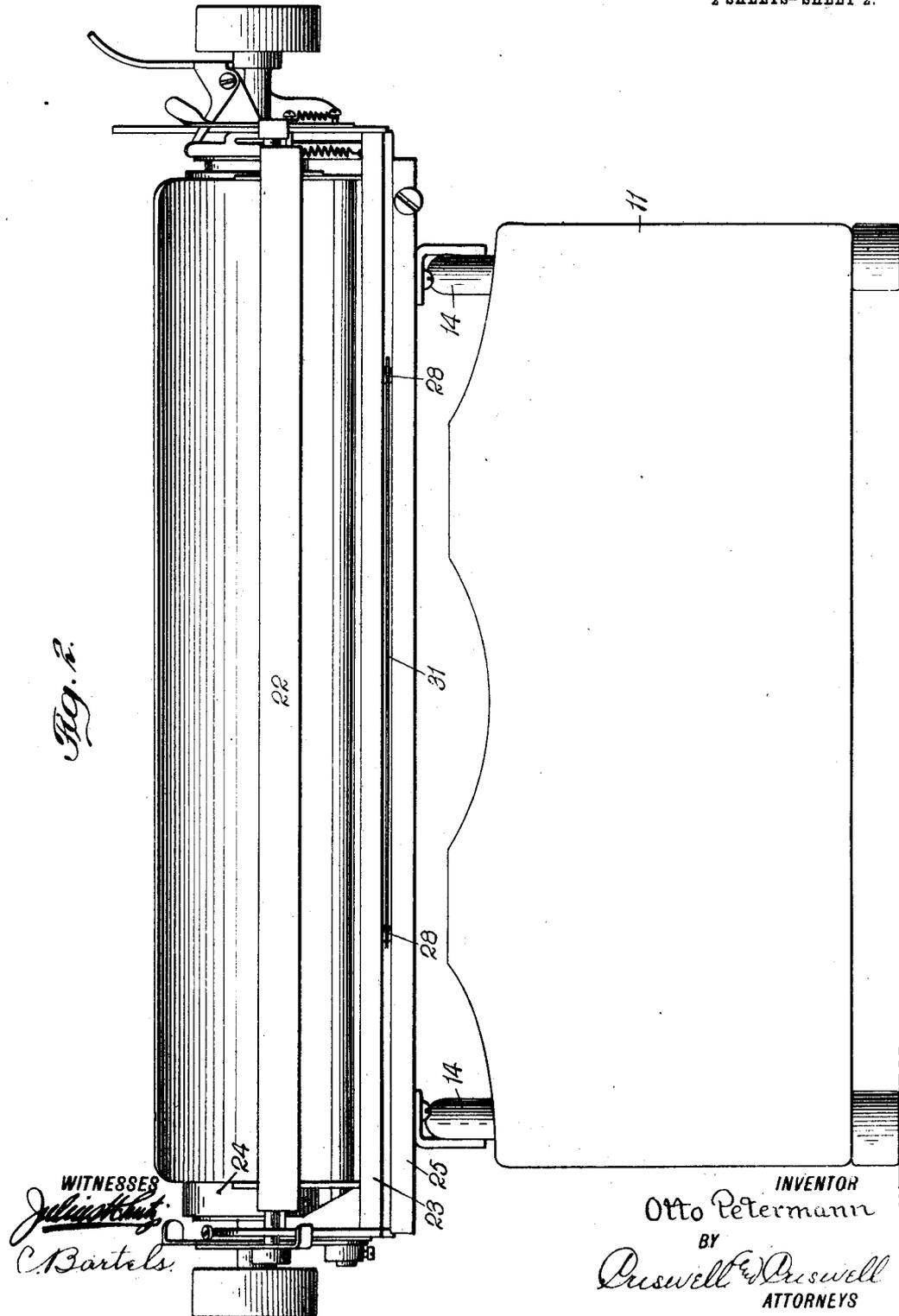
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UNITED STATES PATENT OFFICE.

OTTO PETERMANN, OF NEW YORK, N. Y., ASSIGNOR, BY MESNE ASSIGNMENTS, TO
STANDARD TYPEWRITER COMPANY, A CORPORATION OF NEW YORK.

CARRIAGE FOR TYPE-WRITING MACHINES.

1,088,924.

Specification of Letters Patent.

Patented Mar. 3, 1914.

Application filed June 16, 1909. Serial No. 502,631.

To all whom it may concern:

Be it known that I, OTTO PETERMANN, a citizen of the Republic of Switzerland, and a resident of New York, county and State of New York, have invented certain new and useful Improvements in Carriages for Type-Writing Machines, of which the following is a full, clear, and exact description.

This invention relates more particularly to carriages of foldable front strike or visible typewriting machines.

The primary object of the invention is to provide simple and efficient means serving as a ball bearing connection between the carriage and its support, so that the latter may move freely in either direction along the support; to provide means which will so hold the carriage that it will be substantially rigid and cause the platen mounted thereon to properly take the impact of the type against its surface, and to provide a simple and efficient connection between the balls so that the said balls may move in unison and be held properly spaced apart.

Another object of the invention is to provide a simple and efficient carriage which may be used for different forms of typewriting machines, and which will be properly guided during its movement along its support.

A further object of the invention is to provide a simple and efficient machine in which the carriage and support or frame may be elevated to different heights, and which is adapted to be folded over above the keyboard of the machine.

With these and other objects in view, the invention will be hereinafter more particularly described with reference to the accompanying drawings, which form a part of this specification, and will then be pointed out in the claims at the end of the description.

In the drawings, Figure 1 is a longitudinal section, partly in elevation, of one form of machine embodying my invention. Fig. 2 is a rear elevation; and Fig. 3 is a detail perspective view of the guide forming a part of the ball bearing for the carriage.

The machine hereinafter set forth is of the type shown in the patent to Frank S. Rose, Serial No. 754,242, patented March 8th, 1904, in which the carriage is adapted to be folded over above the keys, and while in the present invention the carriage and

platen and their operating mechanism are adapted to be raised and lowered on the frame of the machine and to be folded over above the keys of the key levers and in which the type-bars have a front strike for visible writing, it is to be understood that the features of this invention may be used in connection with other classes of machines.

The metallic frame 10 of the machine is constructed and arranged in any suitable manner and may consist of side members and an integral back member 11. An intermediate transverse horizontal bar or plate 12 is suitably fastened to the side members of the frame and serves as a brace therefor, and at the front of the machine is a second transverse bar 13, the whole frame being constructed of sheet metal with rounded edges or otherwise for the purpose of making the frame light and strong.

A slide 14 is hinged at 15 to an extension 16 of the frame or support 17, there being a slide and an extension at each side of the machine. The machine is provided with key-levers and with one or more shift levers 18 for elevating the slides 14. A flexible connection 19 leads from a spring drum 20 and serves to force the carriage along the bed in the usual way. The drum is mounted upon the support 17 and forms a part of the carriage feed mechanism, the escapement mechanism not being shown, and this mechanism as well as certain other features together with mechanism for the line and letter spacing is of any suitable construction.

The carriage 21 is provided with a suitable frame 22, and this frame has a longitudinally-extending member 23, and mounted on the carriage is a suitable platen 24 and operating mechanism for said platen. A second fixed member or bed 25 is held to the support 17, and extending transversely of the machine are suitable guiding means for the carriage. These members 23 and 25 are cut away to provide grooves on their opposed surfaces on each side of the longitudinal center of said members. As shown the member 23 is provided with a groove 26 on each side thereof and these grooves are opposed to the grooves 27 formed in the upper face of the stationary and supporting member or bed 25. These grooves are located in the same horizontal plane and may be slightly tapered vertically and form

two race or track-ways, and in the outer race-way are a plurality of balls or other anti-friction objects 27 and in the inner race-way a single ball or anti-friction object. The balls are connected by a device 29, and said device may be made of a single piece of wire having guides 30 in the form of loops for the balls 28 of the outer race-way. The guides 30 pass around the balls in which the latter are loosely mounted, and said guides are connected by the body portion or part 31, as shown best in Figs. 2 and 3. This device 29 has a single loop 30^a which is connected at one end of the device adjacent to one of the guides by an integral angular body portion 31^a. The guides 30 and 30^a are located in the same horizontal plane, the part or guide 30^a being adapted to hold loosely a single ball 28 which is positioned substantially central of the two guides 30 of the outer race-way. The device 29 serves to hold the balls 27 spaced apart to move in unison, and the balls serve to form a proper bearing for the carriage so that the latter may be properly guided in its movement across the machine.

In this application I do not claim the escapement mechanism, and certain other features of a complete machine as the same are clearly set forth and claimed in other pending applications filed by me.

From the foregoing it will be seen that simple and efficient means are provided whereby a ball bearing connection may be made between the carriage and its support so that the latter may move properly transversely of the machine; that said bearing is so connected that the parts thereof may move together, and that the parts of the carriage are so mounted that the same may be elevated to various positions and also to be folded over above the keys when not in use.

Having thus described my invention, I claim as new and desire to secure by Letters Patent:—

1. In a typewriting machine, the combination of a carriage bed provided with grooves along its upper surface lengthwise of the carriage on opposite sides of the longitudinal center thereof, a carriage adapted to move along said bed and having a plate portion located above the bed and having grooves on its under surface lengthwise thereof opposed to the grooves of the bed and forming therewith two parallel and horizontally arranged race-ways, a plurality of balls arranged in one of the race-ways, a single ball arranged in the other race-way, and a tie device loosely holding the balls to cause them to move in unison.

2. In a typewriting machine, the combination of a vertically movable carriage bed provided with grooves along its upper sur-

face lengthwise of the carriage on opposite sides of the longitudinal center thereof, a carriage adapted to move along said bed and having a plate portion located above the bed and having grooves lengthwise thereof opposed to the grooves of the bed and forming therewith two parallel and horizontally arranged race-ways, a plurality of anti-friction objects arranged in one of the race-ways, a single anti-friction object arranged in the other race-way and a horizontally arranged integral wire tie device loosely holding the objects to cause them to move in unison.

3. In a typewriting machine, the combination with a bed provided with horizontally arranged grooves along the upper surface thereof, of a carriage having a plate opposed to the bed and also having grooves opposed to the grooves of the bed and forming therewith race-ways located on opposite sides of the longitudinal center of the carriage, a plurality of balls arranged in one of the race-ways, a single ball arranged in one of the race-ways, and an integral wire device having a plurality of guides in the form of loops adapted to fit loosely about the balls in one of the race-ways and having an angular portion extending from one of the guides at one end of the device and formed into a single guide at the end of said angular portion which is located substantially central of the first-mentioned guides and in the same plane therewith.

4. In a typewriting machine, the combination of a bed provided with horizontally arranged grooves along the upper surface thereof, a carriage having a plate opposed to the bed and also having grooves opposed to the grooves of the bed and forming therewith race-ways located on opposite sides of the longitudinal center of the carriage, a plurality of balls arranged in one of the race-ways, a single ball arranged in the other race-way, and a device having a plurality of guides in the form of loops adapted to fit loosely about the balls in one of the race-ways and having a guide for the single ball located substantially central of the first-mentioned guides and in the same plane therewith.

5. In a typewriting machine, the combination with a bed provided with horizontally arranged grooves along the upper surface thereof, of a carriage having a plate opposed to the bed and also having horizontally arranged grooves opposed to the grooves of the bed and forming therewith race-ways located on opposite sides of the longitudinal center of the carriage, two balls arranged in one of the race-ways, a single ball arranged in the other race-way and a device having two end guides in the form of loops adapted to fit loosely about

the balls in one of the race-ways and hav-
ing an angular portion extending from one
of the guides at one end of the device and
formed into a guide at the end of said angu-
lar portion substantially central of the two
5 first-mentioned guides and in the same plane
therewith.

This specification signed and witnessed
this 4th day of June, A. D. 1909.

OTTO PETERMANN.

Witnesses:

WM. A. TOWNER, Jr.,
C. BARTELS.
