C. SPIRO.

INTERCHANGEABLE CARRIER.

APPLICATION FILED FEB. 14, 1920.

1,383,578.

Patented July 5, 1921.

2 SHEETS—SHEET 1.

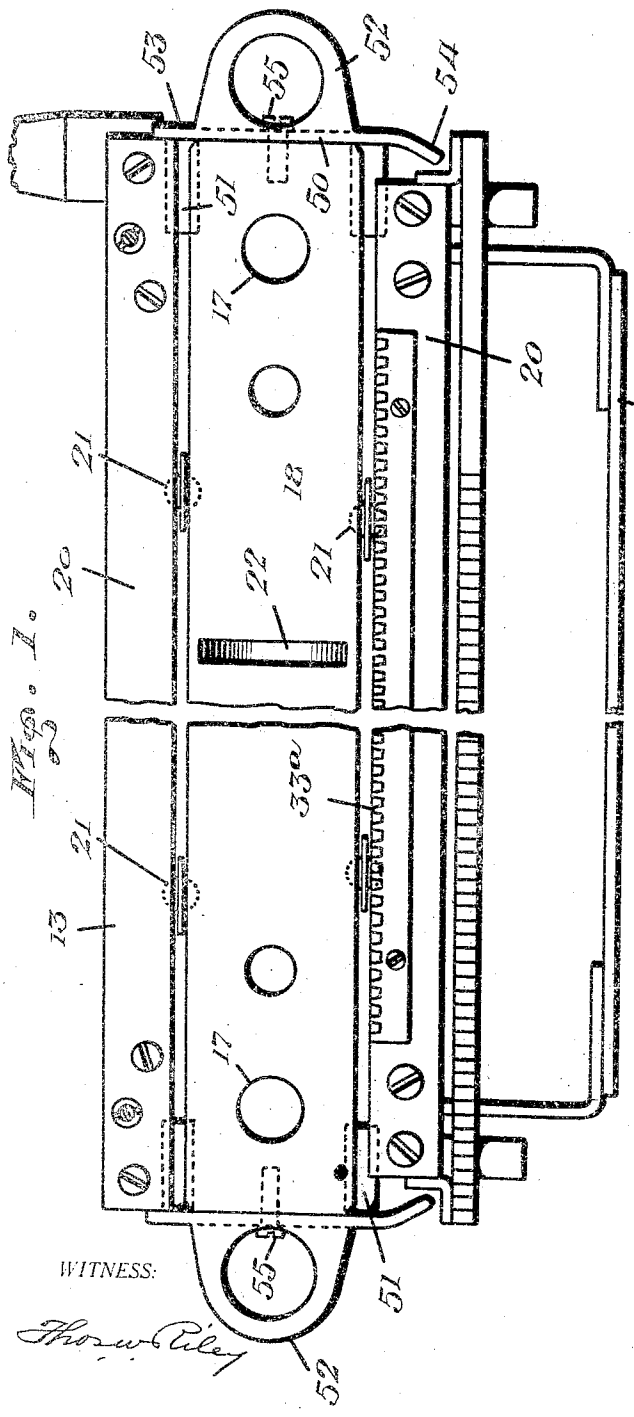


Fig. 1.

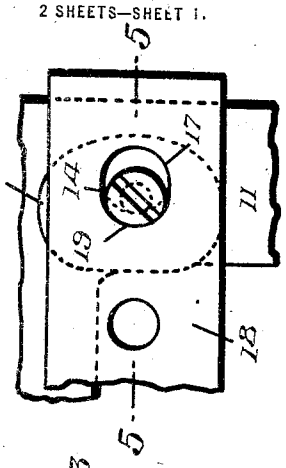


Fig. 4.

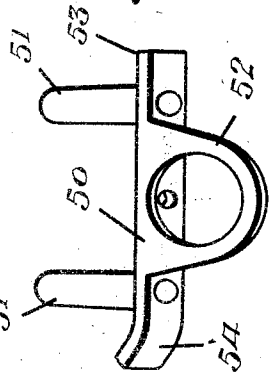


Fig. 6.

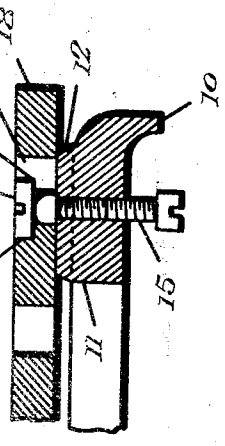


Fig. 5.

WITNESS:

Thos. W. Riley

INVENTOR.

CHARLES SPIRO

BY

Alfred T. Gage

ATTORNEY.

C. SPIRO.

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2 SHEETS—SHEET 2.

Fig. 2.

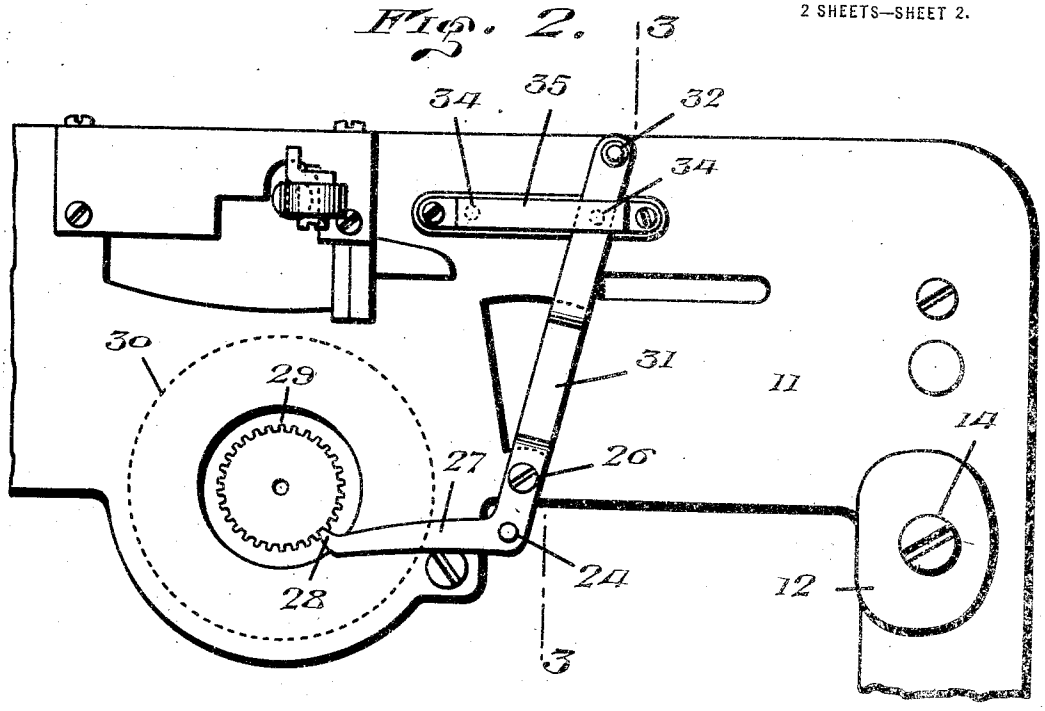
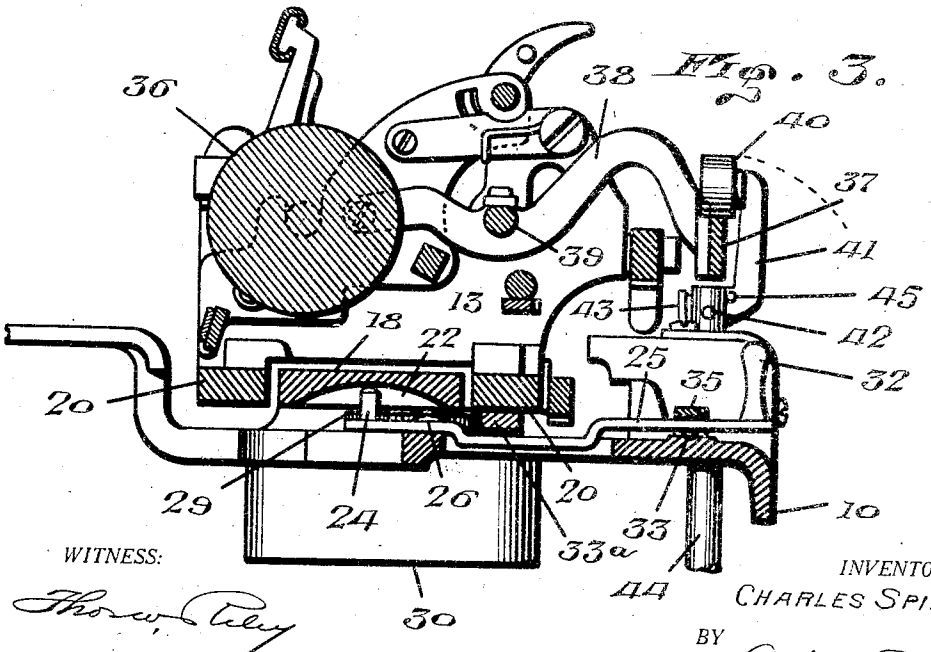


Fig. 3.



WITNESS:

Thomas Riley

INVENTOR.

CHARLES SPIRO

BY

Alfred T. Gage

ATTORNEY.

UNITED STATES PATENT OFFICE.

CHARLES SPIRO, OF NEW YORK, N. Y., ASSIGNOR TO FEDERAL ADDING MACHINE CORPORATION, OF NEW YORK, N. Y., A CORPORATION OF NEW JERSEY.

INTERCHANGEABLE CARRIAGE.

BEST AVAILABLE COPY

1,383,578. Specification of Letters Patent. Patented July 5, 1921.

Application filed February 14, 1920. Serial No. 358,594.

To all whom it may concern:

Be it known that I, CHARLES SPIRO, citizen of the United States, residing at New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Interchangeable Carriages, of which the following is a specification.

This invention relates to an interchangeable carriage construction for typewriting machines and particularly to a form thereof by which carriages of different lengths or sizes may be conveniently applied to a single frame containing the printing mechanism.

The invention has for an object, to provide an interlocked connection between the carriage base and the typewriter frame provided with the printing elements, which connection is controlled by a unitary member, which in the releasing action for the carriage simultaneously locks the escapement mechanism.

Another and further object of the invention is to provide a shiftable member mounted upon the typewriter frame and connected to effect the longitudinal travel of the carriage base relative to coöperating locking members upon said frame.

Another object of the invention is to provide an improved construction of controlling lever disposed to engage and lock the escapement when the carriage is released from the frame and to simultaneously engage and shift the carriage in such releasing action.

A further object of the invention is to provide an improved construction of plug plate having means to enter the race-ways of the carriage base, and provided with finger-holds by which the carriage may be handled for removal or replacement.

Other and further objects and advantages of the invention will be hereinafter set forth and the novel features thereof defined by the appended claims.

In the drawings:—

Figure 1 is a bottom plan of a typewriter carriage having the invention applied thereto.

Fig. 2 is a similar view at the right end of the top plate of the typewriter frame.

Fig. 3 is a vertical section on line 3—3 of Fig. 2.

Fig. 4 is a detail plan of the carriage base and locking post, connected.

Fig. 5 is a section on line 5—5 of Fig. 4, and

Fig. 6, a detail perspective of the retaining plug.

Like numerals refer to like parts in the several figures of the drawings.

The numeral 10 designates the frame of a typewriter, which may be of any desired construction or configuration, and the top plate 11 thereof is provided at opposite ends with seats 12 upon which the carriage 13 rests when in operative position. These seats are each provided with locking posts 14, which may be of any desired character but, for the purpose of their adjustment, are preferably formed as screw threaded into the top plate 11 and locked in adjusted position by a set-screw 15 threaded upward from the under face of said top plate to engage and hold the threaded end of the post 14 by pressure thereon, as shown in Fig. 5. In this form of the invention, the posts are formed with a head 16 adapted to pass through an aperture 17 in the base plate 18 of the carriage. The lower portion of this aperture is of substantially the diameter of the head 16, but the upper portion of the aperture is provided with a shoulder 19 adapted to pass beneath said head for the purpose of locking the base plate in position when given a longitudinal movement upon the seat 12, as shown in Figs. 4 and 5.

The base plate of the carriage is disposed between the side rails 20 thereof, and intermediate of these parts are the usual race-ways for the ball carriers 21, so that the carriage may be free to reciprocate upon the base plate when secured to the frame.

The carriage base 18 is also provided intermediate of its ends with a lateral seat or recess 22, preferably of graduated depth as shown in Fig. 3, and adapted to receive means for shifting the carriage base into locking position.

These means may be of any preferred character, a desirable form thereof being pin 24 carried by the shifting and locking lever 25, which is pivoted at 26 and formed at its inner end with an angular portion 27, having a tooth 28 disposed to engage and lock the feeding pinion 29, carried by the spring drum of the escapement mechanism, as indicated by dotted lines at 30

in Fig. 2. This gear coöperates with a feed rack 33ª upon the carriage base, in the usual manner. The lock and release lever 25 may be provided with a depressed portion 31 intermediate of its ends, to allow for the passage of members carried by the carriage in its travel, and the outer end thereof is provided with an operating handle 32, and also with a holding stud 33 formed thereon and adapted to seat in either recess 34, in the top plate. If desired, a keeper 35 may be disposed above this lever, as shown in Figs. 2 and 3.

When it is desired to remove the carriage from the frame, the shifting mechanism for the platen 36 thereon is disconnected from its coöperating shift rail 37, which, carried by the arms 38 pivoted at 39, lifts the platen in the usual manner. For this purpose the roller 40, mounted upon the shift rail 37, is carried by an arm 41, pivoted at 42 and is normally held in upright position by a spring 43, bearing against an extended end of the arm. The arm pivot is carried by the reciprocating shift member 44, and its swinging movement limited by a stop 45.

When the machine is to be transported or the carriage stored, it is desirable to secure the base and side members of the ball race against relative movement, and for this purpose the plug plate 50 is used and has pins 51 entering the opposite ends of the race-ways for the bearing balls. The plate is provided with the finger holds 52, by which the carriage may be conveniently handled, and the ends thereof are extended as at 53 and 54, to contact with the ends of the side rails of the carriage base. These plug plates may be secured in position in any desired manner, for instance, by screws 55 entering the ends of the carriage base 18, and the pins 51 are of sufficiently larger diameter than the balls to separate the walls of the race-way when inserted, so that the pressure is relieved from the ball-bearings and the part rigidly held to prevent all injury thereto or relative movements of the parts.

The operation of the invention will be apparent from the foregoing description, from which it will be seen that the locking and releasing of the carriage is effected by a unitary member which simultaneously shifts the carriage relative to the fixed locking posts, and engages and locks the driving mechanism when the carriage is in unlocked position, as shown in Fig. 2.

The construction of the interlocking means between the carriage and top plate provides for a secure retention of the parts in close contact with a minimum of reciprocating movement, and avoids all vibration between the parts. The connection between the locking and release lever and the carriage base also permits this shifting of the base without binding action or tendency to lateral movement as the pin from the lever travels in the curved recess, and compensates for the reciprocating movement of the base. The retaining plug forms a very convenient and readily applied device for retaining the parts against injury, as the carriages are shipped or stored.

The invention presents a simple, efficient and economically constructed mechanism by which carriages of different sizes may be conveniently applied to the typewriting mechanism carried by the frame of the machine, and without the necessity for mechanical skill in changing the parts. Details of this invention have been specifically shown and described, still it is not confined thereto, as will be seen from the following claims.

I claim:—

1. In a typewriter, a frame, a carriage base adapted to be mounted thereon, interlocking means between said base and frame, feeding mechanism for controlling the travel of said carriage, and a unitary device for controlling the interlocking means and said feeding mechanism.

2. In a typewriter, a frame, a carriage base adapted to be mounted thereon, interlocking means between said base and frame, feeding mechanism for controlling the travel of said carriage, and a shiftable member mounted to engage said carriage and feeding mechanism.

3. In a typewriter, a frame, a carriage base adapted to be mounted thereon, interlocking means between said base and frame, and a shiftable member disposed to impart a longitudinal movement to said carriage to control said interlocking means.

4. In a typewriter, a frame, a carriage base adapted to be mounted thereon, interlocking means between said base and frame, and a shift lever having pivotal contact with the base of said carriage for shifting the same longitudinally.

5. In a typewriter, a frame, a carriage base adapted to be mounted thereon, interlocking means between said base and frame, feeding mechanism for controlling the travel of said carriage, and a shift lever having pivotal contact with the base of said carriage for shifting the same longitudinally and having a member to engage said feeding mechanism when the carriage is released from the frame.

6. In a typewriter, a frame, a locking post disposed thereon, a carriage base having an aperture to receive said post and a portion to pass beneath the head thereof, a pivoted shift lever upon the frame, and a pin from said lever entering a lateral recess in the carriage base to shift the same longitudinally.

7. In a typewriter, a frame, a locking post disposed thereon, a carriage base having an aperture to receive said post and a portion

to pass beneath the head thereof, a pivoted shift lever upon the frame, a connection between said lever and carriage base, and a member extended from said lever to control the carriage feeding mechanism when in one position.

8. In a typewriter, a frame, a locking post disposed thereon, a carriage base having an aperture to receive said post and a portion to pass beneath the head thereof, a pivoted shift lever upon the frame, a pin from said lever entering a lateral recess in the carriage base, and an angular arm extended from said lever and provided with a tooth to retain a member of the carriage feeding mechanism.

9. In a typewriter, a frame, a locking post disposed thereon, a carriage base having an aperture to receive said post and a portion to pass beneath the head thereof, a pivoted shift lever upon the frame, a pin from said lever entering a lateral recess in the carriage base, an angular arm extended from said lever and provided with a tooth to retain a member of the carriage feeding mechanism, and means engaging said lever at its operated end to retain it in shifted position.

10. In a typewriter, a frame having seats upon the top plate thereof, a locking post threaded into said seats, a carriage base plate having an aperture to receive said post and a shoulder at one side of said aperture to pass beneath the head of the post, and a shifting member mounted upon the top plate and having a part engaging the carriage base to reciprocate the same.

11. In a typewriter, a frame having seats upon the top plate thereof, a locking post threaded into said seats, a carriage base plate having an aperture to receive said post and a shoulder at one side of said aperture to pass beneath the head of the post, a shifting member mounted upon the top plate and having a part engaging the carriage base to reciprocate the same, and a retaining screw threaded into the top plate to engage said post and lock the same in adjusted position.

12. In a typewriter, a frame provided with securing posts upon its top plate, a carriage base constructed to interlock with said posts, a shifting and locking lever pivoted upon the top plate, and a pin extending laterally from said lever and disposed within a lateral vertical segmental recess in said base plate.

13. In a typewriter, a frame provided with securing posts upon its top plate, a carriage base constructed to interlock with said posts, a shifting and locking lever pivoted upon the top plate, a pin extending laterally from said lever and disposed within a lateral vertical segmental recess in said base plate, and an angularly disposed pawl arm carried by said shift lever and adapted to engage a feed member for the carriage.

14. In a typewriter, a frame provided with securing posts upon its top plate, a carriage base constructed to interlock with said posts, a shifting and locking lever pivoted upon the top plate, a pin extending laterally from said lever and disposed within a lateral vertical segmental recess in said base plate, a handle carried by the outer end of said lever, a keeper beneath which said end of the lever travels, and a projection carried by the lever to engage and retain it in opposite shifted positions.

15. In a typewriter, a plug plate secured to the carriage base at one end and having pins entering the race-ways thereof, and a finger-hold extended from said plate beyond the said base.

16. In a typewriter, a plug plate secured to the carriage base at one end and having pins entering the race-ways thereof, and a finger-hold extended from said plate beyond the said base, said plate having extended portions at each end to engage the side rails of the carriage base.

17. A plug plate provided with parallel pins extended in one direction therefrom, an apertured hold extended in an opposite direction, and ends projected beyond said pins.

In testimony whereof I affix my signature.

CHARLES SPIRO.