

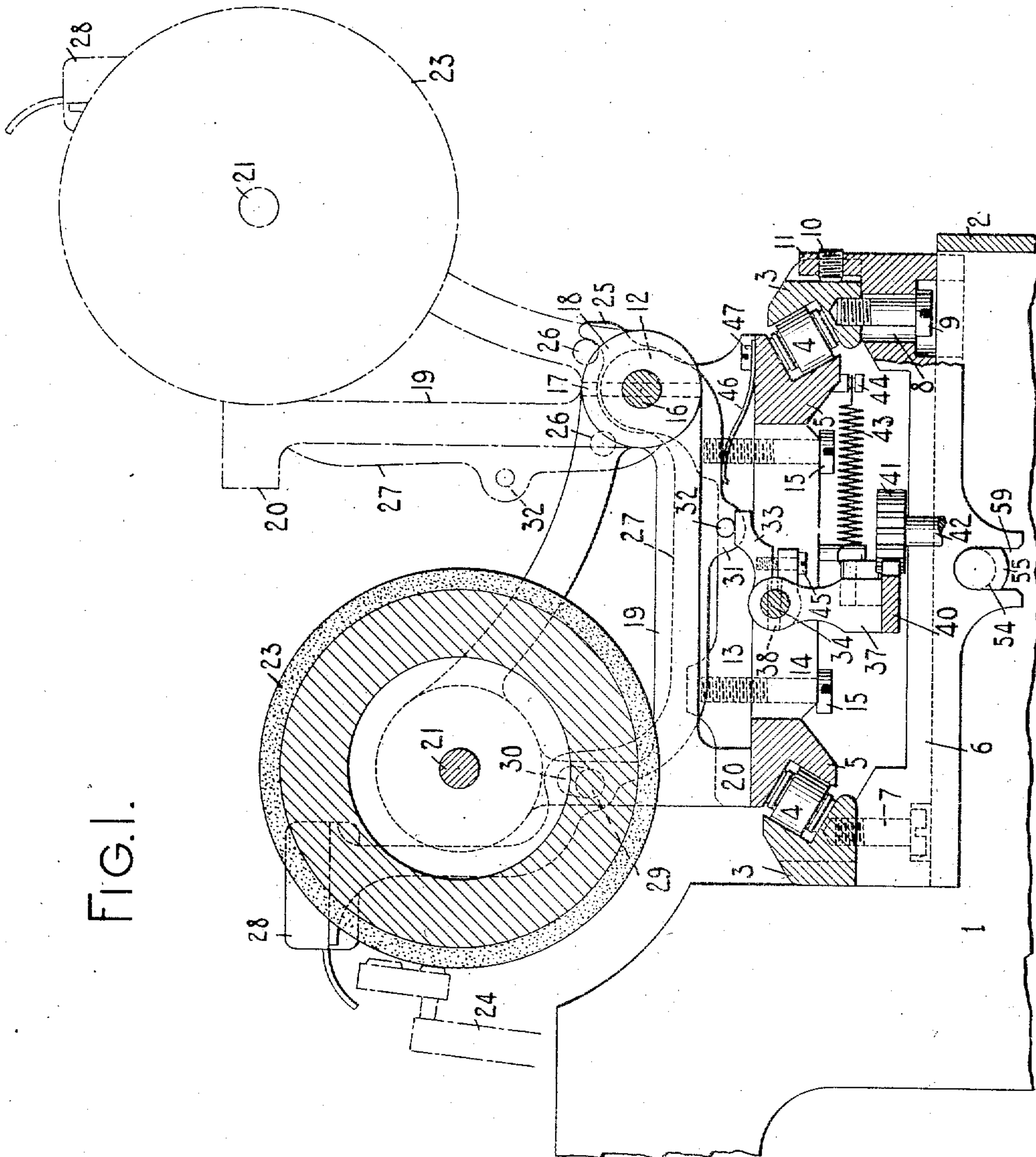
C. B. YAW.
TYPE WRITING MACHINE.
APPLICATION FILED NOV. 19, 1909.

975,101.

Patented Nov. 8, 1910.

3 SHEETS—SHEET 1.

FIG. 1.



WITNESSES:

E. M. Wells

Charles E. Smith

INVENTOR:

Clis B. Yaw

By Jacob F. Hill

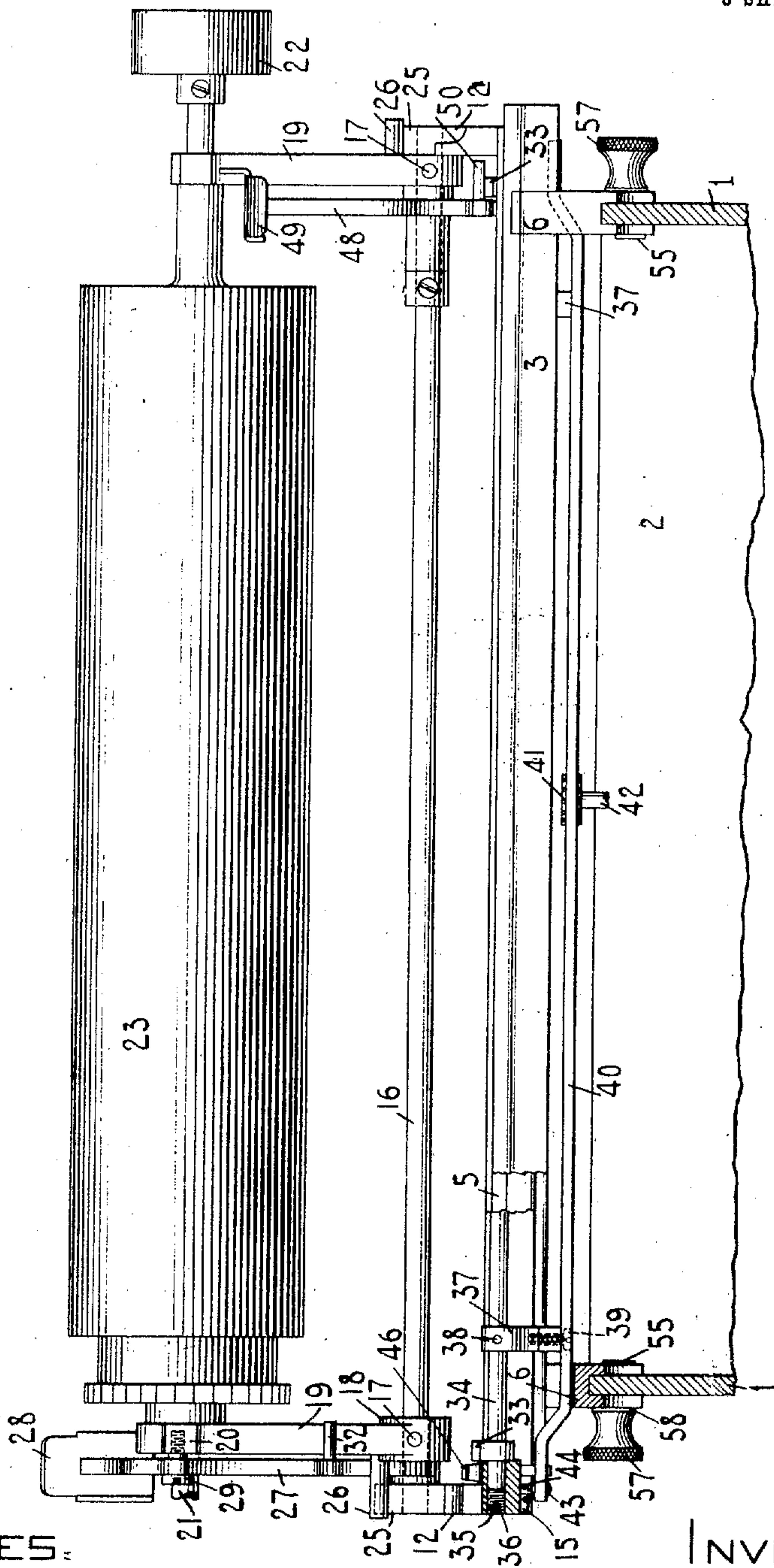
HIS ATTORNEY

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3 SHEETS—SHEET 2.

FIG. 2.



WITNESSES:

E. M. Wells

Charles Smith

INVENTOR:

C. B. Yaw

By Jacob F. Bell

HIS ATTORNEY

UNITED STATES PATENT OFFICE.

CLIO B. YAW, OF ARLINGTON, NEW JERSEY, ASSIGNOR TO REMINGTON TYPEWRITER COMPANY, OF ILION, NEW YORK, A CORPORATION OF NEW YORK.

TYPE-WRITING MACHINE.

975,101.

Specification of Letters Patent.

Patented Nov. 8, 1910.

Application filed November 19, 1909. Serial No. 528,964.

To all whom it may concern:

Be it known that I, CLIO B. YAW, citizen of the United States, and resident of Arlington, in the county of Hudson and State of New Jersey, have invented certain new and useful Improvements in Type-Writing Machines, of which the following is a specification.

My invention relates to typewriting machines and more particularly to the carriages of such machines.

One object of my invention is to provide simple and efficient means whereby the carriage may be readily detached from the machine when desired and a carriage of one character substituted for one of a different character, or whereby the carriage may be removed to give access to the parts beneath the carriage for the purpose of repairing them.

Another object of my invention is to provide simple and efficient carriage releasing means.

A still further object of my invention is to provide a simple and efficient construction in a front-strike machine whereby the platen may be swung back to an inoperative position to give access to the parts on the carriage situated below the platen.

To the above and other ends which will hereinafter appear, my invention consists in the features of construction, arrangements of parts and combinations of devices to be hereinafter described and particularly pointed out in the appended claims.

In the accompanying drawings wherein like reference characters indicate corresponding parts in the various views, Figure 1 is an enlarged detail fore and aft vertical sectional view showing the upper portion of a machine embodying my invention. Fig. 2 is a front view of the same with parts in section and with the platen shown in its swung-back position. Fig. 3 is a detail end view of the carriage and feed pinion, the finger wheel of the platen being sectioned away. Fig. 4 is a detail transverse sectional view showing the locking means at one side of the machine for securing the carriage to the main frame. Fig. 5 is a view corresponding to Fig. 4 with some of the parts shown in Fig. 4 omitted.

I have illustrated my invention in the present instance applied to a front-strike

typewriting machine but from certain aspects of the invention various features may be embodied in other styles of machines.

The frame of the machine comprises side plates 1 united by a rear cross plate 2 and connected by other transverse connecting means (not shown). Grooved parallel carriage-supporting rails 3 receive crossed anti-friction rollers 4 which likewise cooperate and interlock with oppositely grooved carriage rails 5 on the carriage truck, thus connecting the carriage supporting rails and truck against detachment one from the other but affording a traveling movement of the truck on the rails. The grooved rails 3 are connected by cross bars or connecting devices 6 which unite the carriage supporting rails 3 near the ends thereof. These cross bars 6 are apertured near the front ends thereof to receive screws 7. The rear end portions of the cross bars have slots 8 therein for the reception of headed screws 9. The screws 9 are received at their threaded ends in tapped openings in the rear carriage rail 3, whereas the threaded ends of the screws 7 are received in tapped openings in the forward carriage supporting rail 3. The construction by which the rear carriage rail is connected to the cross bars 6 near each end of the carriage supporting rail provides individual means for effecting an adjustment of the rear carriage supporting rail near each end thereof so that the rear carriage rail 3 may be brought into parallelism with the forward carriage supporting rail. Set screws 10 are received in tapped openings in flanges 11 which extend upwardly from the connecting bars 6 and bear at their forward ends against the rear side of the rear carriage supporting rail 3. The screws 10 thus afford means for effecting a minute adjustment of the rear carriage rail at each end thereof to bring the carriage supporting rails into parallelism and at the same time provide means which offer a resistance to the displacement of the rear carriage rail from its adjusted position. The headed screws 9 likewise operate to clamp the rail to the cross connections 6 and thus afford additional security against the displacement of the rear carriage rail from its adjusted position.

Upwardly extending lugs 12 are formed on flanges 13 which extend upwardly from

and are secured to cross-pieces 14 which are preferably cast or formed in one piece with the carriage rails 5 at the ends thereof. Screws 15 extend freely through openings 5 in the cross-pieces 14 and are received at their threaded ends in their flanges 13 in order to rigidly connect the flanges to the cross-connections 14 and to the carriage rails 5. A rod 16 is received and turns in bearing openings in the upwardly extending lugs 12. Pins 17 pass through hub-like portions 13 formed on the end plates 19 of the platen frame and through openings in the rod 16 so that the rod and platen frame are fixed to turn together. The platen frame is provided at the forward ends of the side plates 19 thereof with depending feet 20 which rest upon the forward carriage rail 5 adjacent to the flanges 13, thus supporting the platen frame at the forward side thereof. The end plates 19 of the platen frame are also provided with bearing openings through which a platen shaft 21 extends, the shafts being provided with finger wheels 22 at the ends thereof. The platen shaft supports a cylindrical platen 23, against the front face of which types on the upwardly and rearwardly moving type bars 24 strike. The carriage rails 5, cross-pieces 14 and flanges 13 constitute a carriage truck. Upwardly extending stops or projections 25 project from the lugs 12 on the flanges 13. The end plates of the platen frame are provided with outwardly extending pins 26 which are adapted to cooperate with the stops 25 as indicated in dotted lines in Fig. 1 to arrest the movement of the platen frame and platen when they are swung back to the inoperative position shown in dotted lines.

At the left-hand side of the carriage, adjacent to the left-hand plate 19 of the platen frame, is a release lever 27 pivoted on the rod 16 and extending upwardly and forwardly and provided at its free end with a finger piece 28 by which the lever may be actuated. A pin or headed screw 29 projects outwardly from the left-hand end plate of the platen frame and extends through a slot 30 formed in the carriage release lever 27. A depending lug 31 is provided on the carriage release lever and an inwardly extending pin 32 is carried by the lug and co-acts with a crank arm 33 fixed to a rock shaft 34 received at its ends in bearing openings 35 (see Fig. 2) in the cross-bars 14 of the carriage truck. Screws 36 are likewise received in tapped portions of the openings 35 and bear at their inner ends against the ends of the rock shaft 34 to adjust the rock shaft longitudinally and maintain it against longitudinal displacement in its bearing openings. Depending arms 37 are secured to the rock shaft 34 by pins 38 and are connected at their lower ends by screws 39 with a feed rack 40. The feed

rack is thus mounted to swing horizontally into and out of engagement with a feed pinion 41 connected to a shaft 42 and operatively connected with the escapement mechanism (not shown). A coiled contractile spring 43 is connected at one end to a pin 44 secured to the rear carriage rail 5 and at its forward end to the carriage feed rack. The crank arms 33 are preferably secured to the rock shaft 34 near the ends thereof by screws 45, each of which passes freely through an opening in one member of a bifurcated portion of the crank arm. The screw is received at its threaded end in a tapped opening in the other member of said bifurcated portion, so as to clamp the split hub-like portion of the crank arm to the rock shaft, thus affording adjustable means whereby the crank arms may be set in different angular positions on the rock shaft. A leaf spring 46 is secured at one end by a screw 47 to the rear carriage rail 5 and bears at its free end upwardly against the carriage release lever 27, thus tending ordinarily to maintain the release lever in the elevated position. A depression of the finger piece 28 of the release lever is effective, however, to press said lever against the pressure of the spring 46, thus rocking the shaft 34 and carrying the feed rack 40 out of engagement with its feed pinion in order to disconnect the carriage from the escapement mechanism. It will be observed, however, that a swinging movement of the platen frame to carry the platen to the inoperative position shown in dotted lines in Fig. 1 is effective to carry the release lever 27 with it to a corresponding position at which time the release lever is inoperative to release the carriage. In order that the carriage may be released at this time if desired, I have provided at the right-hand side of the machine a second release lever 48 which corresponds to the first mentioned release lever except that there is no connection between the platen frame and the lever 48. This release lever 48 is provided with a finger piece 49 and is mounted to turn on the rock shaft or rod 16 and likewise has an outwardly extending pin 50 which cooperates with the right-hand crank arm 33 on the rock shaft 34. From an inspection of Fig. 2 it will be seen that when the platen frame and platen are swung back to the inoperative position the release lever 48 will remain in operative position on the carriage truck and a depression of the finger piece 49 is effective to rock the shaft 34 and thus release the carriage. The lever 48 has a foot piece 51 which is adapted to contact with the forward rail 5 of the carriage to limit its downward movement. A like movement of the release lever 27 is limited by the pin and slot connection 29 and 30. A restoring spring 52, which corresponds to the spring 46, is mounted in

a similar manner for coöperation with the release lever 48.

Each of the cross bars 6 is slotted or bifurcated throughout the length thereof as indicated at 53 in Fig. 5. The position of the slots 53 is such that they may receive the side plates 1 of the main frame of the machine as indicated in Fig. 4, thus firmly seating the auxiliary frame, comprising the carriage supporting rails 3 and the cross bars 6 which connect them, with the main frame of the machine. Each side plate of the machine is provided with a positioning pin 54 which extends from opposite sides of the plate as shown in Fig. 4 and has an elongated head 55 at one end where it extends beyond the side plate 1 of the machine. The opposite end portion of each positioning pin is threaded at 56 for coöperation with a thumb nut, 57 provided with a conical locking portion 58. It will be seen that each positioning pin 54 extends at right angles to the slots 53 and is received in transverse slots 59 formed in each of the cross pieces 6 and that the slots 59 extend at right angles to the slots 53. Adjacent to the slots 59 is a locking depression 60 formed in each of the cross bars 6. The shape of each locking recess 60 corresponds to the shape of the locking portion 58 on the associated thumb nut 57.

From the foregoing description it will be understood that when the auxiliary carriage-supporting frame is properly seated on the main frame of the machine said auxiliary frame is properly positioned and is held against movement both fore and aft and transversely of the machine, whereas when the thumb nuts are screwed in the locking portions thereof are received in the locking recesses 60 and prevent a displacement or detachment of the auxiliary frame, and the carriage supported thereby, from the machine.

By mounting the platen frame in the manner described so that the platen and platen frame may be swung back to the inoperative position shown in dotted lines in Fig. 1 access may be given to the parts situated below the platen for the purpose of adjustment or repair. Moreover, the platen may by these means be swung back to a position where they are clear of the ribbon mechanism ordinarily employed in front-strike machines, to facilitate an erasure without displacing the carriage from its position after the imprint of a letter in order to effect an erasure at the printing point.

Certain of the features shown herein are shown and in some instances are claimed in connection with other features, in the following applications filed by me, Serial Nos. 510,405; 510,404; and 507,920. The claims herein are directed to features not claimed in my said previously filed applications.

Various changes may be made without departing from the spirit and scope of my invention.

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

1. In a front-strike typewriting machine, the combination of a truck, a platen, a platen frame carrying said platen and pivoted to said truck to afford a swinging movement of the platen frame back to inoperative position, and a carriage release key that remains fixed against swinging movement when the platen frame is swung back and which at that time is operative to release the carriage. 70
2. In a front-strike typewriting machine, the combination of a truck, a platen, a platen frame carrying said platen and pivoted to said truck to afford a swinging movement of the platen back to inoperative position, a carriage release key that remains fixed against swinging movement when the platen is swung back and which at that time is operative to release the carriage, and a second carriage release key that swings with the platen frame. 80
3. In a front-strike typewriting machine, the combination of a carriage truck, a platen, a platen frame which carries said platen and which is pivoted to the truck to afford a swinging movement of the platen back to inoperative position, a carriage release key pivoted on said truck and disconnected from the platen frame, whereby when the platen frame is swung back the said release key remains at rest and is effective to release the carriage. 85
4. In a typewriting machine, the combination of a carriage truck, a platen, a platen frame which carries said platen and which is pivoted to afford a swinging movement of the platen to inoperative position, a feed rack, a rock shaft carried by said truck and carrying said feed rack, and a release key carried by said truck and disconnected from the platen frame for turning said rock shaft to release the carriage. 90
5. In a typewriting machine, the combination of a carriage truck, a platen, a platen frame which carries said platen and which is pivoted to afford a swinging movement of the platen to inoperative position, a feed rack, a rock shaft carried by said truck and carrying said feed rack, crank arms on said rock shaft, two carriage release keys one of which swings with the platen frame when the latter is swung back and the other of which remains at rest at that time and both of which are coöperative with said crank arms to rock the shaft and to release the carriage. 95
6. In a typewriting machine, the combination of a main frame, an auxiliary frame, one of said frames being slotted in two directions at right angles to each other, correspondingly disposed engaging mem- 100

bers on the other frame, said engaging members being received in said slots, locking means for detachably connecting the auxiliary frame with said main frame, and a carriage carried by the auxiliary frame.

7. In a typewriting machine, the combination of a main frame, an auxiliary frame, one of said frames being slotted in two directions at right angles to each other, correspondingly disposed engaging members on the other frame, said engaging members being received in said slots, one of said engaging members being in the nature of a screw fixed to the frame that carries it, a thumb nut cooperative with said screw and received in a locking recess in the slotted frame to detachably lock the two frames together, and a carriage carried by said auxiliary frame.

8. In a typewriting machine, the combination of a main frame, an auxiliary frame with bifurcated portions to straddle the side plates of the main frame, fastening devices for detachably securing the auxiliary frame to the main frame, said fastening devices comprising thumb nuts carried by one of said frames, said thumb nuts having engaging members which are adapted to be received in locking recesses in the other frame, and a carriage carried by and removable as an entirety with the auxiliary frame.

9. In a typewriting machine, the combination of a main frame, carriage rails,

cross connections which unite said carriage rails, said cross connections being slotted to receive the side plates of the main frame and slotted crosswise of the first mentioned slots, screws received in said last mentioned slots, thumb nuts threaded onto said screws, said thumb nuts having locking portions that are adapted to be received in locking recesses in said cross-connections to detachably lock the cross-connections and said rails against removal from the main frame, and a carriage supported on said rails.

10. In a front-strike typewriting machine, the combination of a platen, a truck arranged beneath the platen, a printing instrumentality which strikes against the front face of the platen, and a platen frame which carries said platen and which is pivoted at the rear of said truck and is supported at the front of the truck, the platen frame being free to be swung back at any point in the travel of the carriage in order to move the platen transversely of the length thereof out of cooperative relation with the printing instrumentality.

Signed at the borough of Manhattan, city of New York in the county of New York and State of New York this 18th day of Nov. A. D. 1909.

CLIO B. YAW.

Witnesses:

CHARLES E. SMITH,
E. M. WELLS.