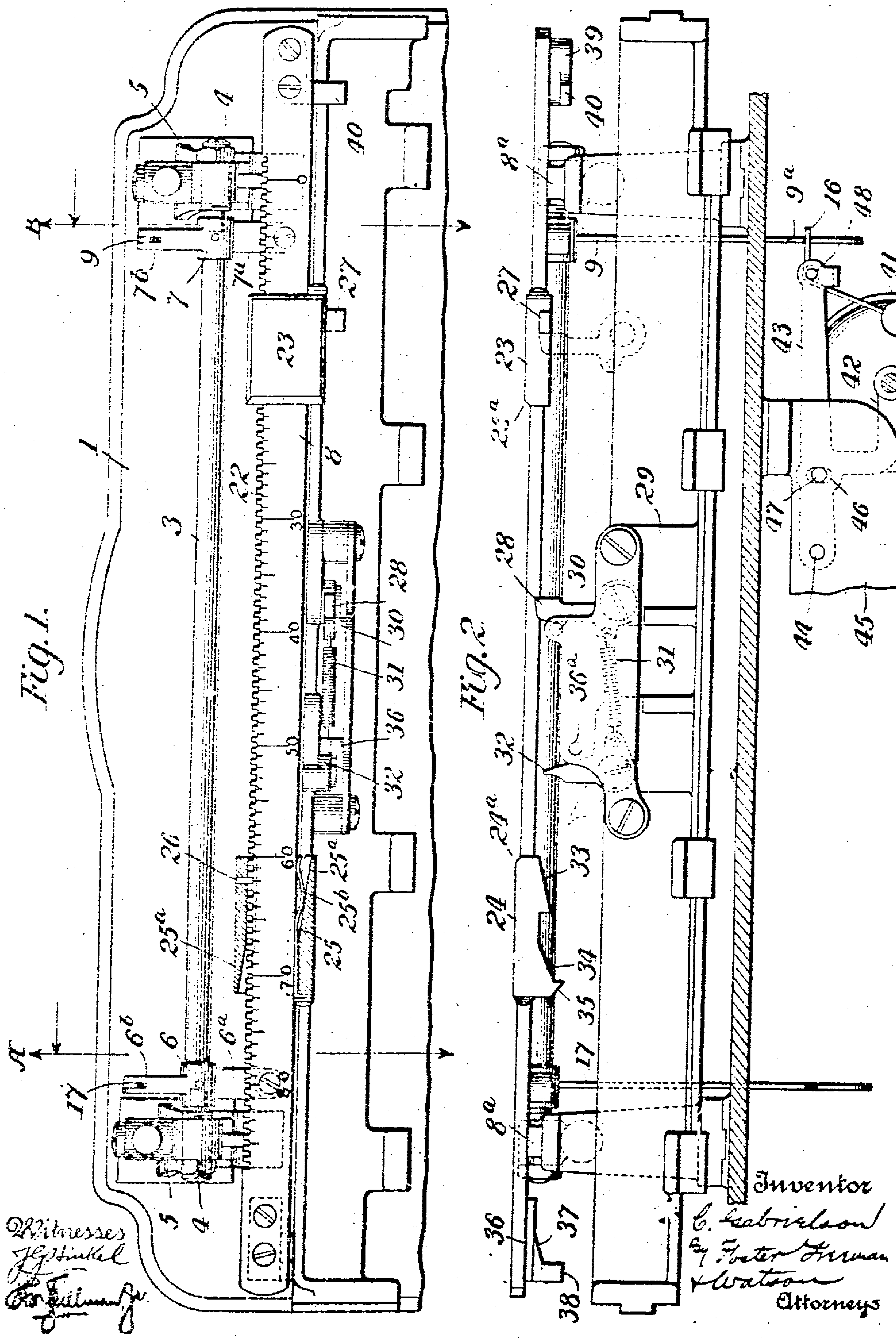
C. GABRIELSON.

TYPE WRITING MACHINE.

APPLICATION FILED APR. 30, 1904.

967,180. Patented Aug. 16, 1910

2 SHEETS—SHEET 1.



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2 SHEETS—SHEET 2.

Fig. 4.

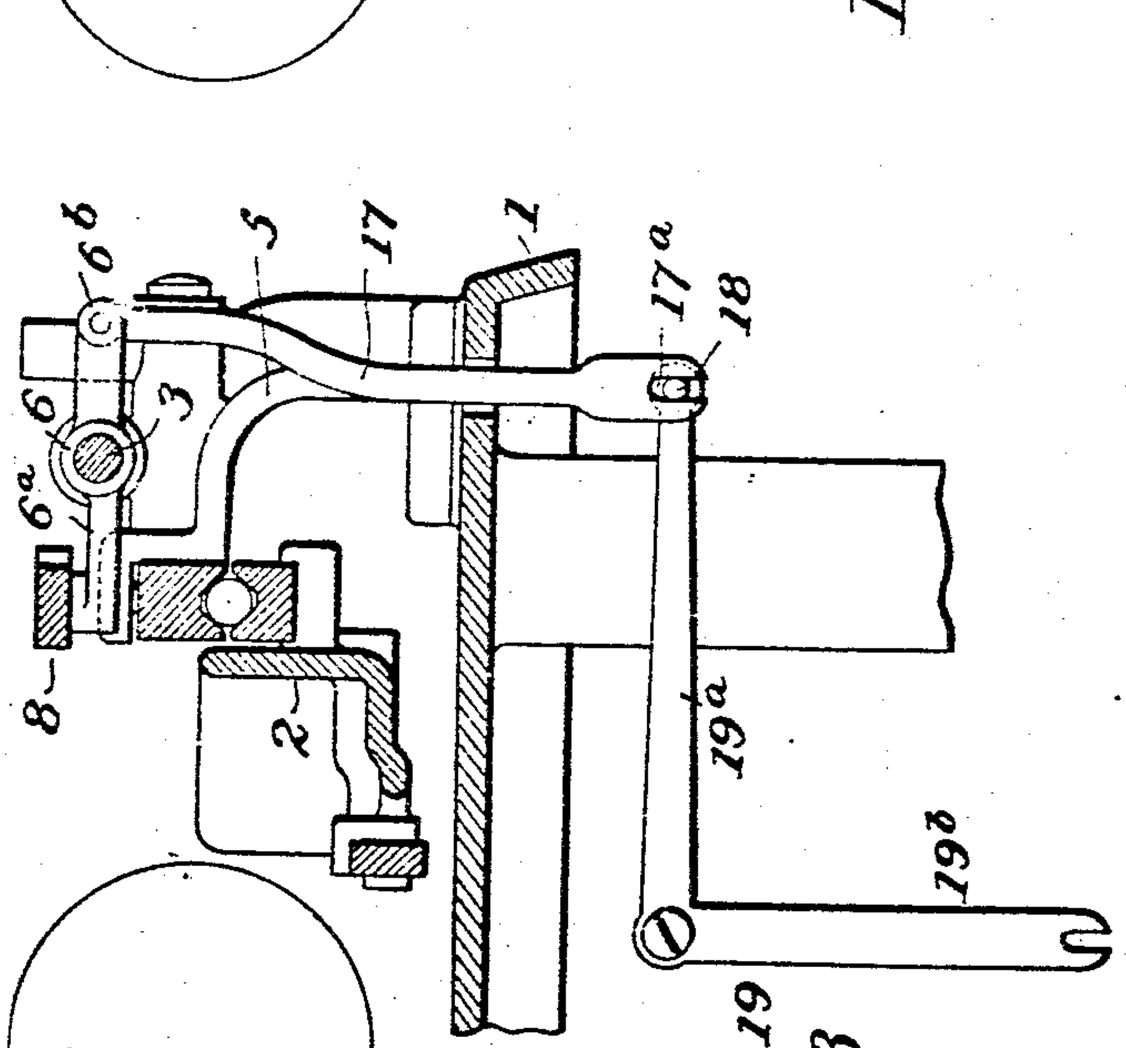

Fig. 3

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UNITED STATES PATENT OFFICE.

CARL GABRIELSON, OF SYRACUSE, NEW YORK, ASSIGNOR TO L. C. SMITH AND BROS. TYPEWRITER COMPANY, OF SYRACUSE, NEW YORK, A CORPORATION OF NEW YORK.

TYPE-WRITING MACHINE.

967,180. Specification of Letters Patent. Patented Aug. 16, 1910.

Application filed April 30, 1904. Serial No. 205,718.

To all whom it may concern:

Be it known that I, CARL GABRIELSON, a citizen of the United States, residing at Syracuse, in the county of Onondaga and State of New York, have invented certain new and useful Improvements in Type-Writing Machines, of which the following is a specification.

This invention comprises various improvements in the carriage stops and margin release devices of typewriting machines.

The invention will be described in detail hereinafter reference being had to the accompanying drawing, in which,

Figure 1 is a top plan view, partly in section, of the margin rack, margin and carriage stops, and connected parts; Fig. 2 is a front elevation of the same; Fig. 3 is a sectional view on the line A—A of Fig. 1, showing the connections from the margin rack to the line locking mechanism, and Fig. 4 is a section on the line B—B of Fig. 1, showing the connections for operating the bell and for releasing the carriage from the margin stops.

Referring to the drawing, 1 indicates the rear portion of the top plate of the machine frame, and 2 indicates the back bar of the carriage frame. A rock shaft 3 is journaled upon adjustable pivot screws 4 arranged in bearings 5 which are secured to the top plate of the machine at its right and left-hand ends. Levers 6 and 7 are secured to the rock shaft 3 near its ends, and a margin rack bar 8 is secured to the forwardly projecting arms 6^a and 7^a of said levers. The levers 6 and 7, and the rack bar, normally rest in a horizontal position, as shown in Figs. 3 and 4, being supported on fixed points 8^a. A rod or link 9 is pivotally connected to the rear arm 7^b of the lever 7 and to the free end of a sub-lever 10, which is pivoted upon a stud 11 secured in a bracket 12 depending from the top plate of the machine. This sub-lever is connected at a point intermediate of its ends to the upper end of a link 13, whose lower end is connected to a margin release key lever 14, arranged at the right side of the machine and normally held in its raised position against a suitable stop by a spring 15. The link 13 has a threaded joint 13^a, by means of which the relation of the key lever 14 to the margin rack bar may be regulated, and the link 9 has a projection 9^a, which, when the link is depressed, bears upon the end of the bell hammer 16 and moves the hammer into position to ring the bell when the link 9 is released and moves upward. The bell 41 is mounted on an arm 42 of an adjustable lever 43 which is pivoted at 44 to a bracket 45 of the main frame. The lever 43 has a slot 46 through which passes a clamping screw 47. The bell hammer 16 is pivoted at 48 in the free end of lever 43 and is preferably provided with a light spring 49 to throw it against the bell. It will be seen that the slot and screw 46 and 47 provide means for adjusting the bell hammer or lever with relation to its operating means 9^a without disturbing the relation of the bell hammer pivot to the bell. The stroke of the bell hammer may thus be very conveniently adjusted.

A rod or link 17 has its upper end pivoted to the rear arm 6^b of the lever 6, and the lower end of this rod has a longitudinal slot 17^a engaging a pin 18 upon the horizontal arm 19^a of a bell crank lever 19 which is pivoted upon a stud 20 secured in a hanger 21 depending from the top plate 1. The vertical arm 19^b of said bell crank lever is arranged to operate the line lock mechanism, more particularly described in a companion application. The slot 17^a permits lost motion between the rod 17 and the bell crank lever 19, so that the margin rack may be raised a sufficient distance to sound the bell without operating the line lock mechanism, and when the rack is further elevated the line lock mechanism is operated by the movement of the bell crank lever 19, which is then operatively engaged by the rod 17.

The margin rack 8 is graduated, as shown, to correspond with the letter spacing of the machine, and is provided, on its rear edge, with notches 22 arranged one letter space apart. A margin stop 23 is provided upon the right-hand portion of the rack for regulating the left-hand margin of the page of printed matter, and a stop 24 is arranged upon the left-hand portion of the rack to regulate the right-hand margin. This latter stop when engaged by a stop upon the carriage, also causes the operation of the bell and the line locking mechanism. As shown, each margin stop has a longitudinal slot or groove 25 through which the margin rack extends, and the lateral walls of this groove flare outwardly in opposite directions from the central portion of the groove, as indi-

cated by the reference character 25ª, so that th stops may be rocked to a limited extent in a pivotal manner upon the margin rack bar. Each stop is provided with a tooth 26 adapted to engage the notches in the bar, and a spring 25ᵇ arranged within the flaring portion of the groove opposite said tooth, normally holds the tooth in one of the notches in the rack bar. It will be evident that by rocking the stop, so as to compress the spring, the tooth 26 may be released and the stop moved to any desired portion of the bar. The ends 23ª and 24ª of the margin stops are beveled, as shown, and by adjusting these beveled edges to the points on the scale of the margin rack, the carriage will be stopped at the corresponding points on the letter scale of the machine.

The right margin stop 23 is provided with a forward projection 27 which normally lies in the path of a dog 28, which is pivoted to a bracket 29 upon the back bar of the carriage frame and normally held against a stop pin 30 by a spring 31. It will be seen that when the carriage is moved to the right, the dog 28 will strike the projection 27, as indicated in dotted lines in Fig. 2, and thus limit the movement of the carriage to regulate the left-hand margin of the print. When, however, it is desired to print outside of the left-hand margin, the margin release key lever 14 may be depressed, thus rocking the margin rack and raising the projection 27 and permitting the dog 28 to pass the projection 27. In moving to the left, the dog 28 may turn upon its pivot and pass under the projection 27. A second dog 32 is also pivoted to the bracket 29 and normally held yieldingly in the position shown in Fig. 2. As shown, the spring 31 which is connected to the dogs 28 and 32, serves to hold both stops in their normal positions. The margin stop 24 has an inclined portion or cam 33 depending from its forward side, and when, during the movement of the carriage to the left, the dog 32 engages the cam surface 33, the margin rack bar is rocked upwardly, causing a sufficient depression of the link 9 to lift the bell hammer and allow the bell to ring when the dog 32 passes off of the inclined surface 33 and allows the margin rack bar to drop. The stop 24 is also provided with a depending cam projection 34, which is deeper than the surface 33, and after the bell has been operated and the carriage has moved several spaces to the left, the dog 32, bearing upon the cam surface 34, tilts the margin rack bar to a sufficient extent to cause the rod 17 to rock the bell crank lever 19, and thus set the line lock mechanism and prevent further printing. At the left-hand end of the incline 34 is an abrupt shoulder or stop 35 which engages the end of the dog 32 and rocks the latter against an abutment or stop pin 32ª, and further movement of the carriage to the left is prevented. When it is desired to print beyond the right end of the line, the margin release key is operated to raise the shoulder 35 out of engagement with the dog 32. When this is done, the spring 31 rocks the dog 32 so that its upper end swings to the left of the shoulder 35. The carriage may then move farther to the left until the carriage stop engages a stop 36, which is fixed to the left end of the margin rack bar. This stop 36 has in inclined surface 37, which is first engaged by the dog 32 to set the line lock mechanism, and it is provided with a depending toe 38 which engages the dog 32 and prevents further movement of the carriage. This toe or projection 38 extends downwardly to such distance that the tilting of the margin release bar will not raise the projection out of the path of the carriage dog 32, and the carriage, therefore, can never pass beyond the projection 38. In order to positively limit the distance to which the carriage may be pulled to the right, a stop 39 is fixed to the right-hand end of the margin rack bar and has a projection 40 at such distance below the bar, that it will always be in the path of the dog 28, whether the margin rack bar be raised or lowered.

The operation of the invention will be evident from the foregoing description, without further explanation.

It will be evident that the mechanism described may be varied more or less without departing from the spirit of the invention.

Therefore, without limiting myself to the precise construction and arrangement of parts illustrated and described, I claim;

1. In a typewriting machine, the combination with a frame, carriage, and signal bell, of a rack mounted on the frame and adapted to be moved in a direction extending transversely of its length, a bell-striking device connected to said rack, a margin-stop adjustable on said rack, and a dog upon the carriage coöperating with the stop, said stop being provided with two inclined or cam surfaces, for coöperating with the dog to effect the ringing of the bell and the locking of the key levers successively, and with an abutment to positively intercept the dog and stop the carriage.

2. In a typewriting machine, the combination with a rock shaft, of a margin release key connected to said rock shaft, a margin stop bar carried by arms on said shaft, adjustable margin stops on said bar, fixed terminal stops on said bar, and dogs upon the carriage coöperating with said stops, the said margin stops being adapted to over-ride the dogs when the margin release key is operated, and the said terminal stops being always in the path of said dogs.

3. In a typewriting machine, the combina-

tion with a rock shaft, two arms projecting forwardly from the shaft, and a margin bar carried by said arms, of a margin stop adjustable on said bar, a bell ringing device adapted to be operated by the rocking of said bar, and a dog pivotally mounted in the carriage to swing in a vertical plane and adapted to coöperate with said margin stop to effect the rocking of the margin bar and the ringing of the bell.

4. In a typewriting machine, the combination with a margin bar arranged to rock about an axis, of an adjustable margin stop on said bar, a carriage, and a dog pivotally mounted on the carriage and adapted to cooperate with said margin stop to rock the margin bar, said dog being normally free to move in either direction, and a stop on the carriage to limit the movement of the dog in one direction.

5. In a typewriting machine, the combination with a rock shaft and a margin bar carried by said shaft, of an adjustable margin stop on said bar, a carriage, and a dog pivotally mounted on the carriage and adapted to coöperate with said margin stop, said dog being normally free to move in either direction, a stop on the carriage to limit the movement of the dog in one direction, and a spring for holding said dog in said normal position.

6. In a typewriting machine, the combination of a margin bar, adjustable margin stops thereon, a rock shaft having arms upon which said bar is mounted, a link depending from an arm on said shaft, devices connected with said link for ringing the bell, a margin release key, and connections from said key to said link for rocking the shaft to release the carriage.

7. In a typewriting machine, the combination with the frame, of a rock shaft, a margin bar carried by arms on said shaft, a depending link 9 connected to said shaft to rock the same, a sub-lever 10 having a pin and slot connection with said link, a bell ringing device adapted to be operated by said link, the margin release key, and the connection between said carriage release key and the sub-lever.

8. In a typewriting machine, the combination with a margin bar having one edge provided with notches and its opposite edge plain, of a margin stop provided near one end with a fixed tooth adapted to engage with the teeth of the margin bar and with a spring adapted to bear on the plain edge of said bar opposite said tooth and normally draw said tooth into engagement with the teeth of the bar, opposite walls of said stop being constructed to flare outwardly in opposite directions from the central portion thereof to permit the tooth to be withdrawn from the rack.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

CARL GABRIELSON.

Witnesses:
C. M. Stevens,
C. F. Parsons.