No. 852,427. PATENTED MAY 7, 1907.

W. R. FOX & G. J. BARRETT.

CARRIAGE STOP MECHANISM FOR TYPE WRITING MACHINES.

APPLICATION FILED DEC. 6, 1902.

2 SHEETS—SHEET 1.

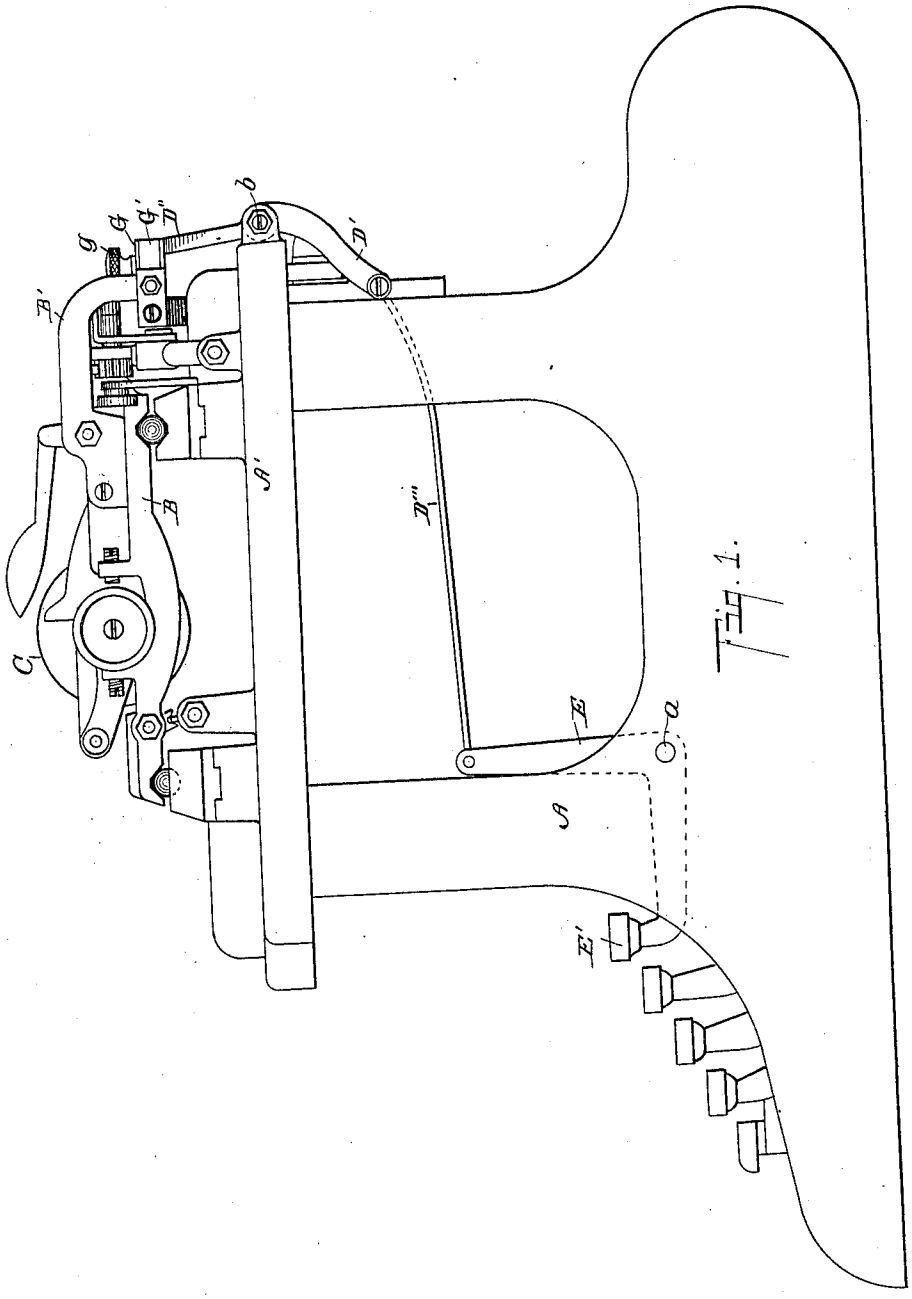


Fig. 1.

Witnesses:

Ethel A. Teller

Otis A. Earl

Inventors

Wm. R. Fox & Glenn J. Barrett

By Fred L. Chappell

Att'y.

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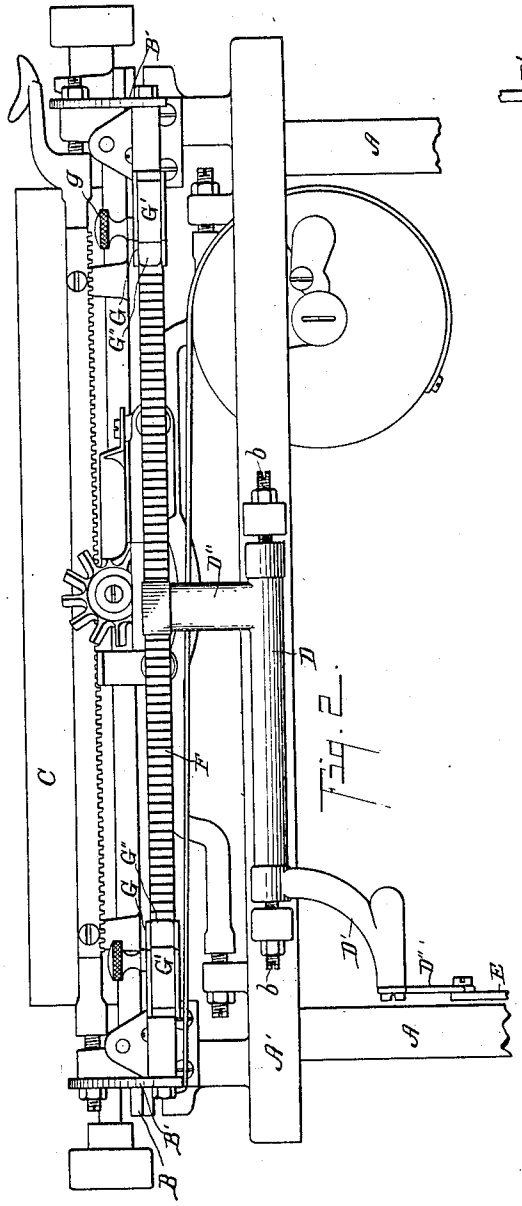


Fig. 2.

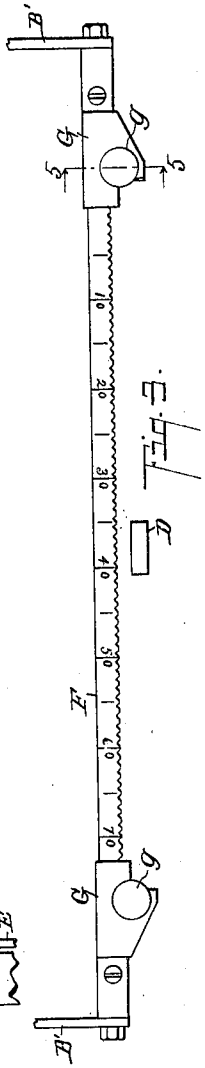


Fig. 3.

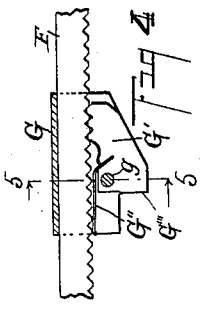


Fig. 4.

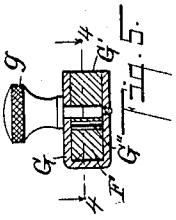


Fig. 5.

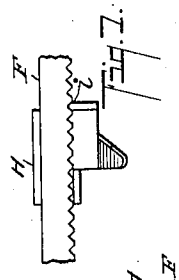


Fig. 7.

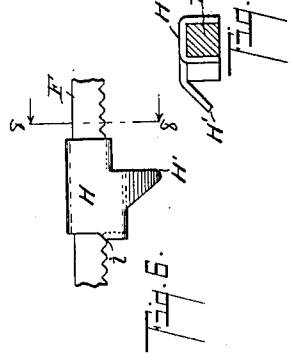


Fig. 8.

Fig. 9.

Witnesses:

Ethel A. Teller

Otis A. Earl

Inventors

W. R. Fox & G. J. Barrett

By Fred L. Chappell

Att'y.

UNITED STATES PATENT OFFICE.

WILLIAM R. FOX AND GLENN J. BARRETT, OF GRAND RAPIDS, MICHIGAN, ASSIGNORS TO FOX TYPEWRITER CO. LTD., OF GRAND RAPIDS, MICHIGAN.

CARRIAGE-STOP MECHANISM FOR TYPE-WRITING MACHINES.

No. 852,427. Specification of Letters Patent. Patented May 7, 1907.

Application filed December 6, 1902. Serial No. 134,109.

To all whom it may concern:

Be it known that we, WILLIAM R. FOX and GLENN J. BARRETT, citizens of the United States, residing at the city of Grand Rapids, in the county of Kent and State of Michigan, have invented certain new and useful Improvements in Carriage-Stop Mechanism for Type-Writing Machines, of which the following is a specification.

This invention relates to improvements in typewriting machines, and it relates more particularly to the margin stop and releasing means therefor.

The objects of the invention are: First, to provide improved means for releasing the line stop mechanism. Second, to provide a stop mechanism for controlling the position of the carriage on the machine. Third, to provide an improved detachable line stop for use in a typewriting machine which can be readily applied or removed as desired. Fourth, to provide an improved adjustable stop.

Further objects relating to details will definitely appear in the detailed description to follow.

We accomplish the objects of our invention by the devices and means described in this specification.

The invention is clearly defined and pointed out in the claims.

A structure embodying the features of our invention is fully illustrated in the accompanying drawing forming a part of this specification, in which—

Figure 1 is a side elevation of a part of a typewriting machine with our invention in position, showing the general relation of the parts. Fig. 2 is a rear elevation view of the parts appearing in Fig. 1. Fig. 3 is a plan view of the rear scale of the machine with the adjustable stops thereon, the position of the line stop also being indicated. Fig. 4 is a detail sectional view of the principal adjustable line stops, taken on a line corresponding to line 4—4 of Fig. 5. Fig. 5 is an enlarged detail transverse sectional view taken on a line corresponding to line 5—5 of Figs. 3 and 4. Fig. 6 is a plan view of one of the detachable stops. Fig. 7 is an inverted plan view of the same. Fig. 8 is a sectional view on a line corresponding to line 8—8 of Fig. 6, showing the manner in which the removable stops embrace the graduated margin rack F.

In the drawing all of the sectional views are taken looking in the direction of the little arrows at the ends of the section lines, and similar letters of reference refer to similar parts throughout the several views.

Referring to the drawing, A is the main frame of the machine, and A′ is the top on which rests the carriage B which supports the platen C, all of which are described in the principal application, from which portions of this case have been divided out, namely the application filed December 11, 1901, No. 85,433.

Arms B′ extend to the rear from the carriage B, and secured to the said arms is a graduated margin rack F, which is parallel to the rack of the escapement mechanism. On this graduated margin rack F are mounted two adjustable slides. Fig. 4 shows a sectional detail of one of these slides, F being the rack, G the sheet metal frame or shell which carries the pawl or dog G′. This pawl G′ is pivoted in the shell at *g*, as shown in Fig. 3, the upper portion of which pivot is in the form of a thumb piece or handle, as shown in Fig. 5. The portion of the pawl or dog G′ which engages the rack F, is provided with teeth which mesh with the teeth in the rack F.

G″ is a spring attached to the pawl G′, tending to hold the teeth of the same normally in mesh with those of the rack F.

G‴ is a stopping portion of the dog or pawl G′ which is extended slightly beyond the balance of the pawl for receiving the blow between the pawl and the stop arm D″ pivoted upon the machine. This pawl G′ when so pivoted forms a bell crank, and the blows which may be received at G‴ only tend to drive the teeth of the pawl farther into the rack F; at the same time when the shell or finger piece is grasped by the hand, the teeth of the pawl G′ slide freely over those of the rack F in either direction, thus enabling the adjustable slide to be instantly placed at any point upon the rack.

At the rear of the top plate of the machine is pivoted a rock shaft D, between pivot points *b b*. This rock shaft is provided with an upwardly extending stop D″ which serves to limit the movement of the carriage, acting

as a stop for the dog or pawl G'. Extending from the rock shaft D downward is another arm D'. By reference to Fig. 1 will be seen the bell crank E shown mostly in dotted lines pivoted in the right side of the machine at *a*. From the upper extremity of this bell crank lever is a wire D''' connecting with the arm D' of the rock shaft D. The forward end of the bell crank lever E bears a finger button E' which is part of the keyboard of the machine. When this finger button E' is depressed, the upwardly extending arm D'' of the rock shaft D is swung backward, moving the stop arm D'' out of the line of travel of the dogs G'. It will be observed that the rock shaft with its arms and connections constitutes a stop means.

The operation of the marginal adjusting device is as follows: When the margin of say ten spaces is desired at the left edge of the sheet, the left thumb piece *g* of the shell G, (see Fig. 2,) is grasped and the shell moved along upon the rack F until the inside edge of the shell alines with the point in the graduation marked "10." When the carriage is moved to the right the projecting portion of the pawl G' strikes the arm D'' when the pointer alines with the "10" graduation upon the carriage scale. When it is desired to write in the margin so provided for, the finger button E' is depressed, thus swinging the arm D'' back out of the way and the carriage is then free to be moved to the limit of its travel. The back side of the shell being beveled as shown, does not engage the arm D'' which simply swings back until the dog G' passes it, and then falls back into normal position, and the machine will again stop at "10" when the carriage is returned in the regular manner. The margin on the right side of the sheet is set in the same manner, and the rack being graduated from left to right the same as the carriage scale covering the entire number of characters of the printing line, it is possible to set either margin anywhere upon the scale. In other words, it is possible to set the carriage to start at, say "5," and lock at "15," or to start at "55" and lock at "75." When the margin is set for the right hand side of the printed page, the bell and its trip are such that it is thus set to ring eight or more spaces before the end of the line is reached. Also on this graduated margin rack, we place removable stops H. Each stop is struck up from a piece of sheet metal, a portion being folded down over the rack F, as clearly appears in Fig. 8, to properly embrace the same; a finger H' is turned outward, which is square on the side toward the stop arm on the machine frame and beveled on the back side therefrom. A portion *i* is turned down at right angles to the margin rack F, and the edge of this projects so that it engages the teeth in the edge or little notches of this rack F, so that by picking up the stop H it can be lifted off the rack and set down upon it at any desired point, thus securing the effect of a series of adjustable stops, enabling the operator to begin at any desired point on the line and continue until a stop is reached, and then release the stop and write over another space, until another stop is reached which may be in like manner released, and so on, as many spaces as may be desired or required in the particular work in hand. This enables tabulating or the placing of a matter in columns of figures, or dividing of the sheet into columns, like a newspaper. It is obvious that it would not be desirable to place a number of sliding margin stops on this graduated margin rack, for they would consume too much space on the rack, making it unnecessarily long, so that it is desirable that in connection with the adjustable stops on the rack, detachable stops be provided.

Having thus described our invention what we claim as new and desire to secure by Letters Patent is,

1. In a typewriting machine, a marginal adjusting device consisting of the combination of the rack F having teeth or notches upon one side and bearing a graduated scale, supported at the rear of the typewriter carriage and parallel with the line of travel thereof; a plurality of slidable stops mounted upon said rack F, consisting of the shells G formed of sheet metal to fit said rack F, pawls or dogs G' pivotally mounted in said shells having a projection or stopping portion G''' at one end, and at the other teeth adapted to fit the teeth or notches in said rack F, springs attached to said pawls G' to hold the same normally in engagement with said rack; finger pieces *g* the lower extremity of which acts as the pivot for the said dogs G'; the rock shaft D mounted upon the top-plate of the typewriting machine; having an upwardly projecting portion D'' which is normally in the line of travel of the said projection G''', said portion D'' being adapted to swing out of the line of travel of the said dogs G'; and connection between said rock shaft D and a bell crank E carrying the finger button E' and pivoted to the side of the typewriter frame, all coacting for the purpose specified and substantially as specified.

2. In a typewriting machine, a marginal adjusting device consisting of the combination of a rack having teeth or notches and bearing a graduated scale, supported at the rear of the typewriter carriage parallel with the line of travel thereof; and having a plurality of slidable stops thereon consisting of shells made of sheet metal formed to fit said rack; pawls or dogs pivotally mounted in said shells such pawls having a projection or stopping portion at one end, and at the other, teeth adapted to fit the teeth or notches in said rack and a spring attached to said pawls or dogs to hold same normally in engagement

with said rack; a suitable finger piece for said slidable stop the lower extremity of which acts as a pivot for said pawls or dogs, in the said shell; a pivoted stop means mounted upon the top-plate of the typewriting machine, said stop means having an upwardly projecting portion which is normally in the line of travel of the said slidable stops, and adapted to swing back out of the line of travel of said slidable stops, and connections between said pivoted stop means and a bell crank carrying a finger button at one extremity, said bell crank being pivoted to the side of the typewriter frame, all coacting for the purpose specified and substantially as described.

3. In a typewriting machine, a marginal adjusting device consisting of the combination of a rack having teeth or notches, supported at the rear of the typewriter carriage parallel with the line of travel thereof and having a plurality of slidable stops thereon consisting of shells made of sheet metal formed to fit said rack; pawls or dogs pivotally mounted in said shells, such pawls having a projection or stopping portion at one end, and at the other teeth adapted to fit the teeth or notches in said rack and a spring attached to said pawls or dogs to hold the same normally in engagement with said rack; a suitable finger piece for said slidable stops, the lower extremity of which acts as a pivot for the said pawls or dogs, in the said shell; a pivoted stop means mounted upon the top-plate of the typewriting machine, said stop means having an upwardly projecting portion which is normally in the line of travel of the said slidable stops and adapted to swing back out of the line of travel of said slidable stops, and connections between said pivoted stop means and a bell crank carrying a finger button at one extremity said bell crank being pivoted to the side of the typewriter frame, all coacting for the purpose specified, and substantially as described.

4. In a typewriting machine, a marginal adjusting device consisting of the combination of a rack having teeth or notches supported at the rear of the typewriter carriage parallel with the line of travel thereof and having a plurality of slidable stops thereon, consisting of shells made of sheet metal formed to fit said rack; pawls or dogs pivotally mounted in said shells, such pawls having a projection or stopping portion at one end, and at the other teeth adapted to fit the teeth or notches in said rack; a suitable finger piece for said slidable stops the lower extremity of which acts as a pivot for the said pawls or dogs, in the said shell; a pivoted stop means mounted upon the top-plate of the typewriting machine, said stop means having an upwardly projecting portion which is normally in the line of travel of the said slidable stops, and adapted to swing back out of the line of travel of the said slidable stops, and connections between said pivoted stop means and a bell crank carrying a finger button at one extremity said bell crank being pivoted to the side of the typewriter frame, all coacting for the purpose specified and substantially as described.

5. In a typewriting machine a marginal adjusting device consisting of the combination of a rack having teeth or notches, supported at the rear of the typewriter carriage parallel with the line of travel thereof and having a plurality of slidable stops thereon, consisting of shells made of sheet metal formed to fit said rack; pawls or dogs pivotally mounted in said shells; a suitable finger piece for said slidable stops, the lower extremity of which acts as a pivot for the said pawls or dogs, in the said shell; a pivoted stop means mounted upon the top plate of the typewriting machine, said stop means having an upwardly projecting portion which is normally in the line of travel of the said slidable stops, and adapted to swing back out of the line of travel of said slidable stops, and connections between said pivoted stop means and a bell crank carrying a finger button at one extremity said bell crank being pivoted at one side of the typewriter frame, all coacting for the purpose specified and substantially as described.

6. In a typewriting machine, a marginal adjusting device consisting of the combination of a rack having teeth or notches supported at the rear of the typewriter carriage parallel with the line of travel thereof and having a plurality of slidable stops thereon; a suitable finger piece for said slidable stops, the lower extremity of which acts as a pivot for the said pawls or dogs, in the said shell; a pivoted stop means mounted upon the top-plate of the typewriting machine, said stop means having an upwardly projecting portion which is normally in the line of travel of the said slidable stops, and adapted to swing back out of the line of travel of the said slidable stops, and connections between said pivoted stop means and a bell crank carrying a finger button at one extremity said bell crank being pivoted to the side of the typewriter frame, all coacting for the purpose specified, and substantially as described.

7. In a typewriting machine, a marginal adjusting device consisting of the combination of a rack having teeth or notches supported at the rear of the typewriter carriage parallel with the line of travel thereof and having a plurality of slidable stops thereon; a suitable finger piece for each of said slidable stops; a pivoted stop means mounted upon the top-plate of the typewriting machine, its axis of rotation being parallel with said rack; said stop means having an upwardly projecting portion which is normally in the line of travel of the said slidable stops, and adapted

to swing back out of the line of travel of said slidable stops, and connections between said pivotal stop means and a bell crank carrying a finger button at one extremity, said bell crank being pivoted to the side of the typewriter frame, all coacting for the purpose specified and substantially as described.

8. In a typewriting machine, a marginal adjusting device consisting of the combination of a rack having teeth or notches and supported at the rear of the typewriter carriage parallel with the line of travel thereof, a plurality of slidable stops mounted upon said rack, a suitable finger piece for said slidable stops; a pivoted stop means mounted upon the top-plate of a typewriting machine, its axis of rotation being parallel with said rack; said stop means having an upwardly projecting portion which is normally in the line of travel of said slidable stops, and means for throwing said upwardly projecting portion of said pivoted stop means back out of the line of travel of said slidable stops, substantially as described.

9. In a typewriting machine, a marginal adjusting device consisting of the combination of a rack having teeth or notches and supported at the rear of the typewriter carriage parallel with the line of travel thereof, a plurality of slidable stops mounted upon said rack; a pivoted stop means mounted upon the top-plate of a typewriting machine its axis of rotation being parallel with said rack; said stop means having an upwardly projecting portion which is normally in the line of travel of said slidable stops, and means for throwing said upwardly projecting portion of said pivoted stop means back out of the line of travel of said slidable stops, substantially as described.

10. In a typewriting machine, a marginal adjusting device consisting of the combination of a rack having teeth or notches and supported at the rear of the typewriter carriage parallel with the line of travel thereof, a plurality of slidable stops mounted upon said rack; a stop means mounted upon the top-plate of a typewriting machine its axis of rotation being parallel with said rack; said stop means having an upwardly projecting portion which is normally in the line of travel of said slidable stops, and means for throwing said upwardly projecting portion of said pivoted stop means back out of the line of travel of said slidable stops, substantially as described.

11. In a typewriting machine, a marginal adjusting device consisting of the combination of a rack having teeth or notches and supported at the rear of the typewriter carriage parallel with the line of travel thereof, a plurality of slidable stops mounted upon said rack; a stop means mounted upon the top-plate of a typewriting machine its axis of rotation being parallel with said rack; said stop means having a projecting portion which is normally in the line of travel of said slidable stops, and means for throwing said projecting portion of said pivoted stop means out of the line of travel of said slidable stops, substantially as described.

12. In a typewriting machine, a marginal adjusting device consisting of the combination of a rack having teeth or notches and supported at the rear of the typewriter carriage parallel with the line of travel thereof, a plurality of slidable stops mounted upon said rack, a rock shaft D parallel with said rack and supported at the back of the frame of the machine, adjusting pivot screws *b b* at each end of said rock shaft, whereby the same can be adjusted longitudinally, a stop on said rock shaft arranged to project normally into engagement with the said adjustable stops, and connections to a key lever for actuating the rock shaft to release the stop mechanism.

13. In a typewriting machine, a marginal adjusting device consisting of the combination of a rack having teeth or notches and supported at the rear of the typewriter carriage parallel with the line of travel thereof, a slidable stop mounted upon said rack, a rock shaft D parallel with said rack and supported at the back of the frame of the machine by longitudinally adjustable bearings, a stop on said rock shaft arranged to project normally into engagement with the said adjustable stop, and means for actuating the rock shaft to release the stop mechanism.

14. In a typewriting machine, a margin adjusting slide consisting of the combination of a shell G of sheet metal formed in U-shape, the dog or pawl G′ pivotally mounted in said shell, said dog having a stopping portion G‴ at one end and a point, or series of points, at the other, a spring G″ for holding said dog or pawl in normal position, and a finger piece attached to said dog, and projecting beyond the shell, the lower portion of which serves as a pivot for the said dog, or pawl, substantially as described.

15. In a typewriting machine, a margin adjusting slide consisting of the combination of the shell of sheet metal formed in U-shape, a dog or pawl pivotally mounted in said shell said dog or pawl having a stopping portion at one end, and a point or series of points at the other, a spring for holding said dog or pawl normally in position, and a finger piece attached to said dog and projecting beyond said shell substantially as described.

16. In a typewriting machine, a margin adjusting slide consisting of the combination of a shell in U-shape, a dog or pawl pivotally mounted in said shell, said dog or pawl having a stopping portion at one end, and a point or series of points at the other, a spring for holding said dog or pawl normally in position, and a finger piece attached to said dog

and projecting beyond said shell substantially as described.

17. In a typewriting machine a margin adjusting slide consisting of the combination of a shell in U-shape, a dog or pawl mounted in said shell, said dog or pawl having a stopping portion at one end, and a point or series of points at the other, a spring for holding said dog or pawl normally in position, and a finger piece attached to said dog and projecting beyond said shell, substantially as described.

18. In a typewriting machine, a margin adjusting slide consisting of the combination of a shell in U-shape, a dog or pawl mounted in said shell, said dog or pawl having a stopping portion at one end, and a point or series of points at the other, a spring for holding said dog or pawl normally in position, substantially as described.

19. In a typewriting machine, the combination of a rack or bar; a slide mounted thereon carrying a stopping dog or pawl for engaging said rack pivotally mounted in said slide at a point out of line with the portion of said dog or pawl which stop the carriage, and the rack engaging portion thereof, substantially as described.

20. In a margin stop for typewriters, the combination with a notched bar or rack, of a stop consisting of a piece of sheet metal folded to conform to the said bar with a projecting portion to form the stop, a portion of the plate being turned at substantially right angles to the said rack and projecting to engage the teeth or notches whereby the stop can be readily attached or detached by crowding it onto the rack, as specified.

In witness whereof, we have hereunto set our hands and seals in the presence of two witnesses.

WILLIAM R. FOX. [L. S.]
GLENN J. BARRETT. [L. S.]

Witnesses:
EDWARD G. MATTER,
GEO. K. MCMULLEN.