April 13, 1954 E. H. SARGATZ 2,675,111

VISIBLE INDICATOR FOR CONCEALED TYPEWRITER MARGIN STOPS

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Fig. 1.

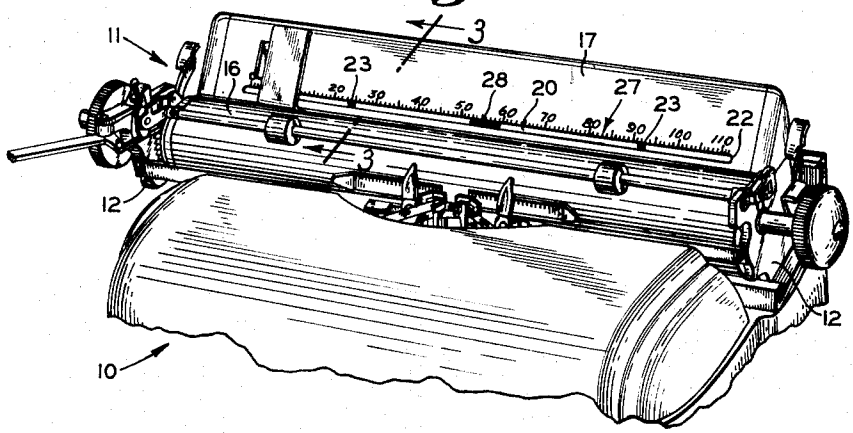


Fig. 2.

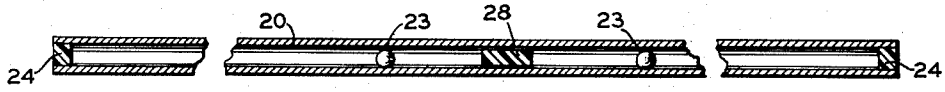


Fig. 3.

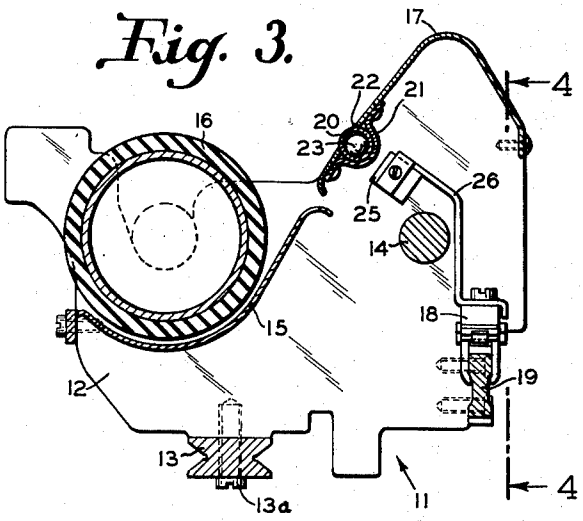
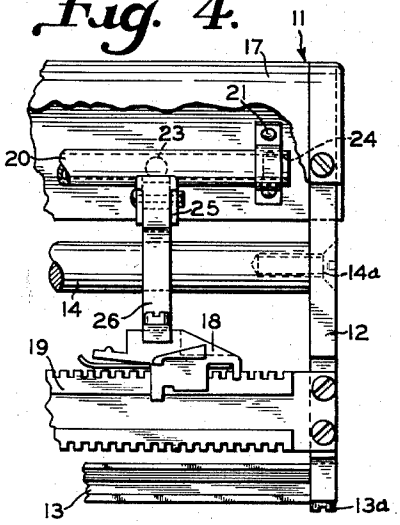


Fig. 4.



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VISIBLE INDICATOR FOR CONCEALED TYPEWRITER MARGIN STOPS

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5 Claims. (Cl. 197—63)

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This invention relates to an improved indicator for visibly determining the set positions of concealed margin stops of the kind used upon typewriters or like business machines to arrest or limit the paper carriage movements in letter-spacing or return directions.

The recent trend in the manufacture of modern typewriters, and other business machines, has been toward key-set margin stops rather than stops set by direct manipulation. This has eliminated the necessity of direct access to the stops by the operator, and as a result, margin stops on modern machines are now no longer accessible and are completely concealed from the operator's view which results in certain disadvantages. For example, when an operator desires to know the exact positions to which the concealed margin stops are set, it is necessary to shift the paper carriage until its movement is arrested by engagement of the stops with the conventional center post, and then only by a comparison of the carriage scale relative to the printing zone. Such procedure is not only inconvenient but consumes an unwarranted amount of the operator's time.

The present invention therefore contemplates the provision of new and novel means for visibly determining the locations or set positions of concealed margin stops.

More specifically, the invention contemplates the provision of margin stop indicating elements that are visible through a slot in the carriage paper table and moved through magnetic attraction in accordance with movements imparted to the margin stops; and mechanism of the character referred to which is of simple construction, automatic in its operation, readily installed upon existing business machines and certain in its action in correctly indicating the set positions or locations of concealed margin stops.

Other objects and advantages of the invention will be pointed out in the following description and claims, and illustrated in the accompanying drawing, which discloses, by way of example only, the principle of the invention and the best mode, which has been contemplated, of applying that principle.

In the drawing:

Fig. 1 is a fragmentary front perspective view of a typewriter embodying the present invention.

Fig. 2 is a detail view of the margin stop indicator elements and their supporting tube which is shown in longitudinal section.

Fig. 3 is a transverse vertical sectional view of the typewriter carriage taken along the line 3—3 of Fig. 1 and showing only the parts immediately concerned with the present invention, and,

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Fig. 4 is a fragmentary rear elevational view partly in section along the line 4—4 of Fig. 3 to illustrate the indicator magnet and its supporting arm for the left-hand selectively settable margin stop.

The invention, as illustrated, is embodied in a Remington typewriter and the drawing shows only such conventional parts of the typewriter as are deemed necessary to make clear the manner of applying the margin stop indicators to typewriters generally.

Referring now to Fig. 1 of the drawing, reference numeral 10 indicates a typewriter and 11 the typewriter paper carriage. The paper carriage includes end plates 12 rigidly supported in spaced relation relative to one another by rail 13 and cross bar 14. The bar 14 is attached to end plates 12 by screws 14a and the rail 13 is attached to said plates by screws 13a. A paper trough 15, suitably supported by the carriage extends under and upwardly to the rear of platen 16 as clearly illustrated in the sectional view Fig. 3. All parts thus far described may be of any well known or conventional constrution, as they form no part of the instant invention.

Right and left-hand margin stops 18 (Figs. 3 and 4) are slidably mounted upon the conventional toothed supporting rack 19 and are selectively positioned along said rack in the usual manner by a keyboard control key not shown. A one-piece paper table 17, fastened to the end plates 12, completely conceals the margin stops 18 as will be apparent from a study of Figs. 1 and 3. The visible indicator for the concealed margin stops will now be described in detail.

Transparent tube 20, attached to the underside of paper table 17 by suitable means such as straps 21, projects through a longitudinal slot 22 in paper table 17, as clearly illustrated in Fig. 3. Two indicator elements, such as balls 23 formed of magnetic material and preferably colored for contrast against the paper table, are confined for longitudinal movement within tube 20 by end plugs 24. The indicator elements are prevented from contacting one another by a sliding separator or insulator 28 formed of non-magnetic material for reasons presently disclosed.

Right and left-hand margin stops 18 are each provided with an upwardly and forwardly projecting arm 26, and each arm supports a magnet 25 in close proximity to tube 20. Therefore, the construction is such that any movement imparted to the stops 18, when changing their positions upon

the toothed rack 19, causes the balls or indicators 23, confined within tube 20, to accurately follow the stops entirely through magnetic attraction of magnets 25. Thus, the positions of the concealed stops upon the toothed rack beneath the paper table can be visibly determined by merely observing the locations of the colored indicator elements 23 relative to the scale 27. As shown in Fig. 1 this scale may be directly imprinted upon the paper table 17 adjacent slot 22 or otherwise suitably attached to said table.

The circumference of balls 23 is slightly smaller than the inside diameter of tube 20 in order to permit free movement of the balls within said tube through the magnetic attraction of magnets 25 during movement of the stops 18 along rack 19. The circumference of cylindrical separator 28 is also made slightly smaller than the inside diameter of tube 20 so that it too is permitted to slide freely within said tube. The purpose of separator 28 is to preclude any possibility of balls 23 becoming magnetically attracted to the same magnet, or to each other, when margin stops 18 are shifted or moved into close proximity to one another.

From the above detailed description, taken in connection with the drawing, it is believed that operation of the visible indicator for concealed typewriter margin stops will now be apparent. For example, by reference to Fig. 1 it will be observed that left-hand margin stop 18 has been set at 25 and that right-hand margin stop 18 has been set at 92. This can be visibly determined by merely glancing at the positions or locations of the indicator elements or balls 23 relative to the scale 27 even though the margin stops 18 are concealed from view by the paper table 17. It will be further noted that the only connection between the balls 23 and the concealed margin stops 18 is through the magnetic attraction existing between the balls and magnets 25, and since the balls are free to travel longitudinally within tube 20 they will accurately follow any and all movement that is imparted to their respective margin stops along toothed rack 19.

Although but one particular embodiment of the invention has been shown and described, it will be apparent to those skilled in the typewriter art that numerous variations and modifications may be made in the particular construction without departing from the underlying principles of the invention. It is therefore desired, by the following claims, to include within the scope of the invention, all such variations and modifications whereby substantially the results of the invention may be obtained by the use of substantially the same or equivalent means.

The invention claimed is:

1. In a typewriter or like machine wherein the paper carriage movements are limited in letter-spacing and return directions by key-set margin stops that are concealed from view, apparatus for visibly indicating the location of such concealed stops comprising, magnetic means mounted for movement with each of said stops; a paper table having a slot-like aperture extending longitudinally thereof; a scale located adjacent said aperture; and indicating elements visible through said slot and movable longitudinally of said paper table in response to magnetic attraction of their associated magnetic means when said stops are moved.

2. In a typewriter or like machine wherein the paper carriage movements are limited in letter-spacing and return directions by adjustable margin stops that are concealed from view and inaccessible for direct manual manipulation, apparatus for visibly indicating the set positions of said stops comprising, magnetic means carried by and movable with each of said stops; a paper table mounted on the carriage and provided with a slot-like aperture extending longitudinally thereof; scale graduations on said table adjacent said aperture; and indicating elements co-operable with said scale, visible through said aperture, and adapted to move in unison with their respective stops through magnetic attraction of said magnetic means.

3. In a structure for visibly indicating the set positions of concealed margin stops used on typewriters or like machines, the combination comprising a carriage; a paper table supported by the carriage and having a slot-like aperture extending longitudinally thereof; a toothed supporting rack mounted within said carriage and beneath said table; a selectively settable margin stop mounted for sliding movement along said rack; magnetic means carried by and movable with said stop; scale graduations on said table adjacent said aperture; and an indicator element visible through said aperture and adapted to follow the movement of said stop through magnetic attraction of said magnetic means.

4. In a typewriter or like machine in which the movements of the paper carriage are limited by key-set margin stops that are concealed from an operator's view, apparatus for visibly indicating the locations of said stops comprising, in combination, a permanent magnet carried by and movable with each stop; a paper table having a slot-like aperture extending longitudinally thereof; scale graduations on said table adjacent said aperture; a transparent tube mounted beneath said table and partially projecting through said aperture; magnetic indicator elements freely movable within said tube and visible through said aperture; and a nonmagnetic separator slidable within said tube and disposed between said indicator elements characterized by the fact that said indicator elements are caused to move in unison with their respective stops through magnetic attraction of their respective magnets.

5. In a typewriter or like business machine of the type having right and left-hand margin stops concealed from view beneath the paper table, apparatus for visibly indicating the exact positions of said concealed stops comprising, a transparent tube attached to said paper table and visible from the front of said machine; a pair of indicating elements formed of magnetic material and freely movable within said tube; a separator of nonmagnetic material mounted for sliding movement within said tube and disposed between said indicating elements to prevent them from contacting one another; means to retain said indicating elements and separator within said tube; a magnet carried by and movable with said right-hand margin stop to effectively move its associated indicating element through magnetic attraction; and a second magnet carried by and movable with said left-hand margin stop to effectively move its associated indicating element through magnetic attraction.

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