

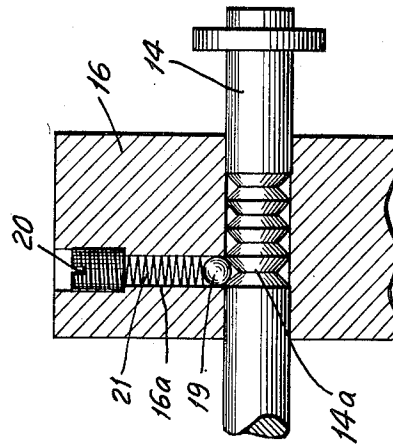
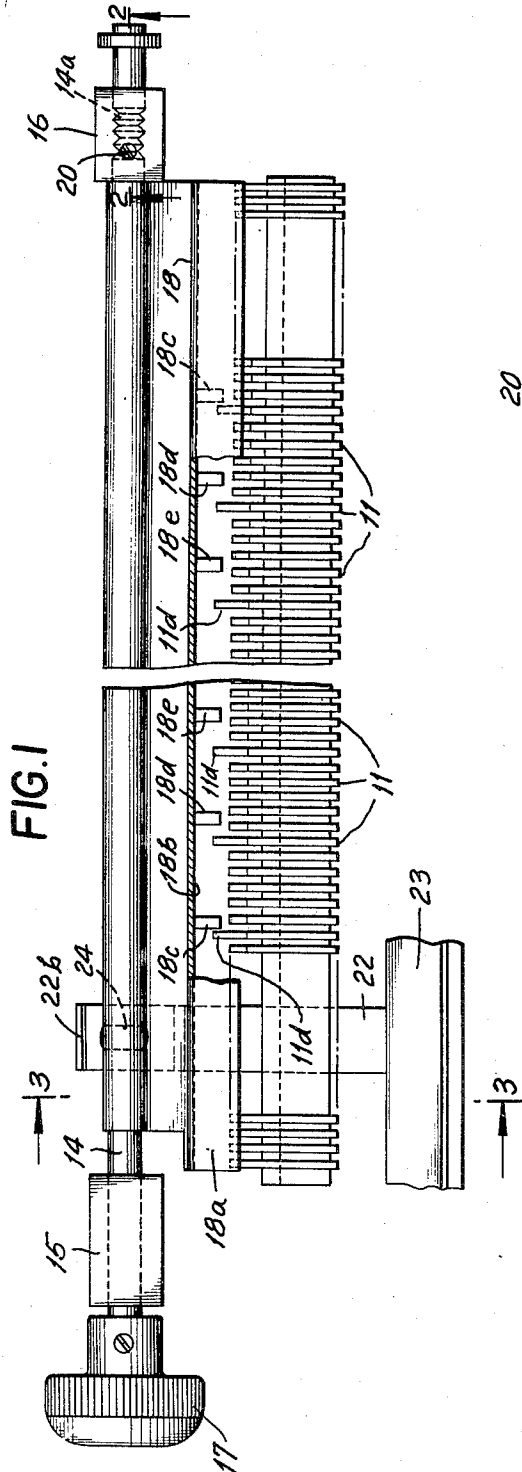
April 3, 1951

C. W. CRUMRINE
CARRIAGE POSITIONING MECHANISM

2,547,443

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2 Sheets-Sheet 1



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FIG. 3

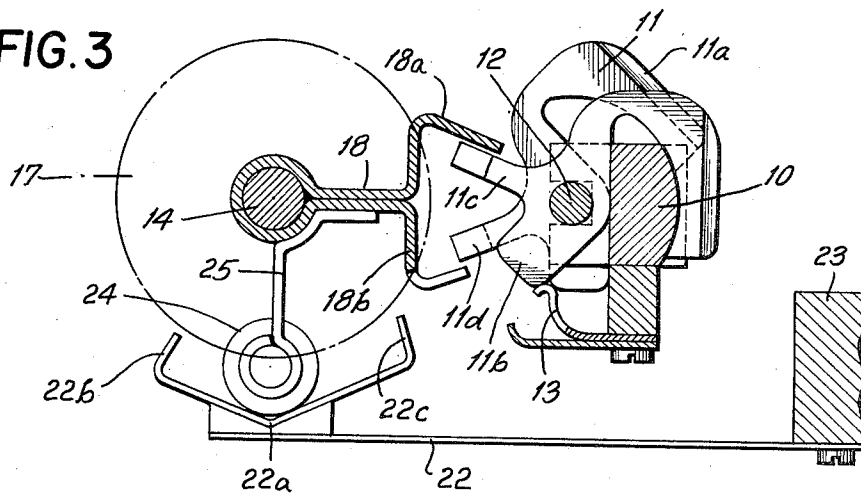


FIG. 4

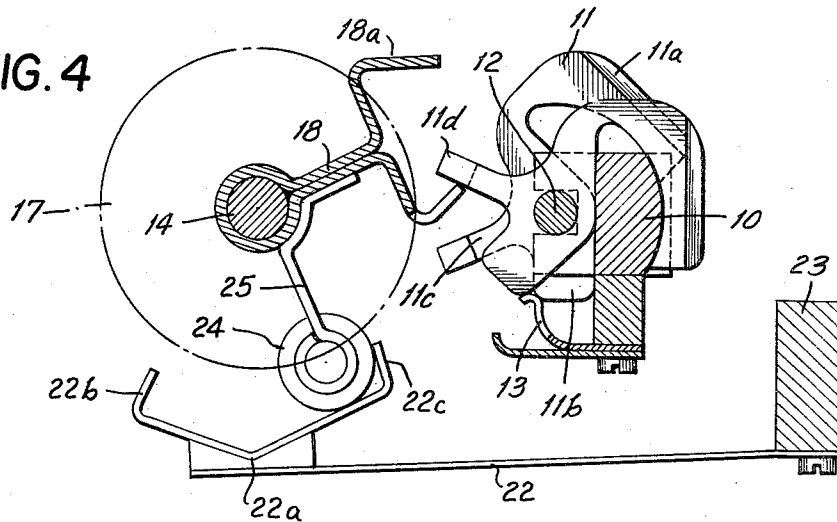
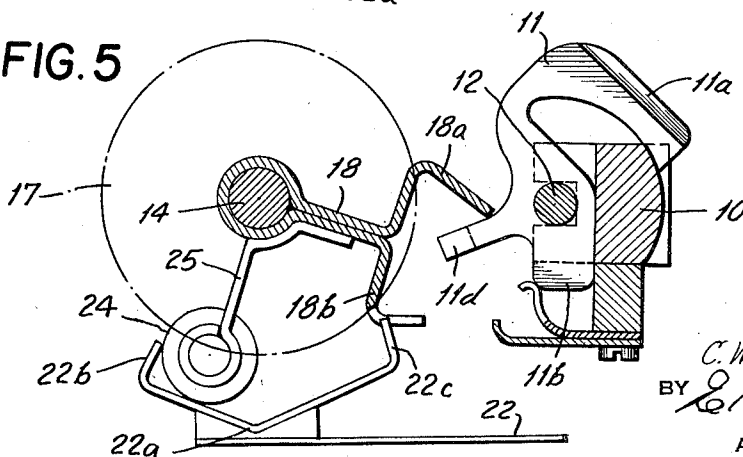


FIG. 5



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CARRIAGE POSITIONING MECHANISM

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10 Claims. (Cl. 197—179)

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This invention relates to typewriting machines and the like.

The principal object of the present invention is to provide an improved means of setting carriage controlling position stops, such as column stops or marginal stops.

An object is to provide a stop setting mechanism which enables the column stops to be set up in certain combinations which are required when multi-column forms, such as invoices and the like, are to be typed.

An object is to provide a stop setting mechanism which may be operated to set up a plurality of column stops at a time that has provisions for selecting the column stops which are to be set.

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

In the drawings:

Fig. 1 is a plan view of the stop setting mechanism.

Fig. 2 is a vertical section on the line 2—2 in Fig. 1, showing the means of holding the stop setting mechanism in various selective positions.

Fig. 3 is a vertical section on the line 3—3 in Fig. 1 and shows the stop setting member in neutral position.

Fig. 4 is a view similar to Fig. 3 showing the stop setting member in stop setting position.

Fig. 5 is a view similar to Fig. 3 but showing the stop setting member in stop restoring position.

The invention may be applied to any conventional column stop mechanism in which a plurality of column stops are provided, one for each space position of a typewriter carriage and selectively set from an inactive to an active position to determine columnar stopping positions or marginal positions of the carriage. In some machines the column stops are supported by the carriage and moved relative to a central counter stop when the carriage is set in the desired columnar position. In other machines the column stops are supported on the main frame work and the counter stop which coacts with the counter stops is carried by the carriage. The present invention is suitable for use in either of these types.

In the drawings the stop bar 10 may be of the general type disclosed in Patent 2,157,053 in which a series of individual column stops 11, one for each space position of the typewriter carriage, may be rocked from an inactive position, as indicated by the restored stop 11 in Fig. 5, to a po-

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sition in which the stop portion 11a is vertical as in Figs. 3 and 4. The stops are pivotally supported on a rod 12 which is secured in a longitudinal slot formed in the bar 10 and the latter is transversely slotted along both its front and rear edges to guide the column stops 11 and space them apart.

The column stops 11 are formed with tail pieces 11b which cooperate with the prongs of a comb spring 13 to hold the stops in either their inactive position as in Fig. 5 in which the tail piece 11b points straight downwardly or in their set position as in Figs. 3 and 4. The stop portions 11a when set as in Figs. 3 and 4 cooperate with a suitable counter stop, as disclosed in the aforesaid patent, to determine various columnar positions of the carriage.

Separate means, not shown, may be provided for setting and restoring the stops individually when necessary, according to the teachings of the aforesaid patent. This part of the mechanism, however, is of no importance herein and is not disclosed.

It will be understood that in the present case the stop bar 10 is supported in the carriage but in other situations it might be supported on the main frame work.

For the purpose of setting the stops 11 in predetermined combinations there is provided setting mechanism which is mounted directly in the rear of the stop bar 10 and parallel therewith. This setting mechanism includes a shaft 14 which extends parallel with the bar 10 and is rotatably slidably mounted in the bearings 15, 16 which may be suitably mounted in the carriage in the present case. At its left-hand end (Fig. 1) the shaft 14 has a setting knob 17 by means of which the shaft may be rotated or moved axially a limited amount in the bearings 15 and 16. Fixed to the shaft 14 is a flanged member 18 which is folded around the shaft 14 (Figs. 3 to 5) and secured thereto. The member 18 is formed with a resetting flange 18a and a setting flange 18b and the resetting flange 18a is long enough to extend over the top edges of all the lugs 11c formed as extensions of the stops 11.

By rotating shaft 14 in a clockwise direction by means of the knob 17 from the position of Fig. 3 to the position of Fig. 5, the resetting flange 18a will engage and rock all of the set stops 11 counterclockwise back to the position of Fig. 5 in which the stop portions 11a are out of cooperation with the usual counter stop (not shown). This operation may be effected in any position of the shaft 14.

It will be noted by reference to Fig. 1 that the setting flange 18b is provided with a plurality of pairs of setting lugs designated 18c, 18d, 18e, there being two of these lugs for each of these designations and the lugs which are correspondingly designated are symmetrically located with respect to the center line of the machine. It will be understood that this is purely an illustrative setup as the lugs may be placed in any desired positions depending upon where it is desired column stops may be set to accommodate a specific group of forms.

Certain of the column stops 11 have longer lugs 11c than the others and these longer lugs are designated 11d. With the shaft 14 in the position of Fig. 1 it is apparent that rotation thereof in a counterclockwise direction (Fig. 3) to the position of Fig. 4 will have no effect since none of the setting lugs 18c, 18d, 18e is in the plane of any of the longer lugs 11d. It is apparent, however, that if the shaft 14 is moved to the left in Fig. 1 it will bring the lugs 18c in the plane of the outer pair of longer lugs 11d whereby rotation of the shaft 14 from the position of Fig. 3 to the position of Fig. 4 will set the two outermost stops having the longer lugs 11d to the operative position. The lugs 18c, 18d, 18e are so disposed that one increment of movement of the shaft 14 to the left in Fig. 1 positions the outermost pair of lugs 18c to set the outermost stops 11 having the longer lugs 11d. Another increment of movement of the shaft 14 will render the lugs 18d operative with respect to the intermediate pair of stops 11, while a third increment of movement will render the lugs 18e effective to set the innermost pair of stops 11.

It is apparent that each rotation of the shaft 14 in any one of the three selected positions sets a pair of stops 11 which, in the illustrative disclosure of the invention, are spaced at intervals of six stops.

It will be understood, however, that the arrangement of the stops shown in Fig. 1 is purely for the purpose of illustrating the invention and that within reasonable limits any number of stops may be set at a time and in any desired grouping arrangement limited only by the necessity for avoiding interference of the lugs 18c, 18d, 18e with lugs 11d which they are not supposed to operate.

It will be understood that the stop bar 10 will be made up with the stops having the longer lugs 11d in certain desired positions whereby the stops may be set up in accordance with a predetermined form or forms which are frequently used. Under certain circumstances it may be desirable to mount lugs 18c, 18d, 18e adjustably on the flange 18b, thus making it necessary only to replace the stop bar assembly when it is desired to substitute a different arrangement of column stops 11.

For the purpose of retaining the shaft 14 in its longitudinally selectively set positions, the right-hand bearing 16 (Figs. 1 and 2) is provided with a vertical bore 16a in which is retained a ball 19 coacting with any one of four circumferential grooves 14a in the right-hand end of shaft 14. The upper end of the bore 16a is closed with a set screw 20 and a spring 21 interposed between the set screw and the ball 19 yieldingly forces the latter into a groove 14a.

For the purpose of retaining the shaft 14 in its normal position of Fig. 3, there is provided a spring detent 22, the right-hand end (Fig. 3) being secured to the carriage rail 23. The spring

detent 22 is provided with a V-shaped portion 22a which yieldingly engages a roller 24 carried by an arm 25 fixed to the member 18. The spring detent 22 also is formed with two stop lugs 22b, 22c which limit clockwise and counterclockwise movement, respectively, of the shaft 14 by coacting with roller 24 as shown in Figs. 4 and 5. Owing to the camming action of the V-shaped portion 22a on the roller 24 the arm 25 will always be forced back to the position of Fig. 3 when the knob 17 is released after moving the member 18 to either of the positions of Figs. 4 and 5.

While there have been shown and described and pointed out the fundamental novel features of the invention as applied to a preferred embodiment, it will be understood that various omissions and substitutions and changes in the form and details of the apparatus illustrated and in its operation may be made by those skilled in the art, without departing from the spirit of the invention. It is the intention, therefore, to be limited only as indicated by the scope of the following claims.

What is claimed is:

1. In combination, a column stop bar, a row of column stops mounted on said bar for movement from an inactive to an active position, and a setting member extending parallel with said stop bar and slidably mounted for movement to any one of a plurality of stop selecting positions and rotatably mounted to actuate the selected stops to active position, said setting member having a portion thereof effective, upon rotation of said member in a direction opposite its stop actuating movement, to restore the set stops to inactive position.

2. In combination, a stop bar, a row of column stops mounted on said bar for movement from an inactive position to an active position, certain stops having extensions for moving said stops to an active position independently of the other stops, and a stop setting member having stop setting projections disposed on said member for selective positioning opposite said extensions by selective axial movement of said member, said member being rotatably mounted to engage said extensions with the selected projections to thereby actuate selected stops to active position, said member having a portion thereof effective, upon rotation of said member in a direction opposite the stop actuating movement, to restore the set stops to inactive position.

3. In combination, a stop bar having a row of column stops pivotally mounted thereon for forward rotation from an inactive position to an active position, certain of said stops having projections, and a setting member having at least one setting extension and selectively movable longitudinally to position said extension opposite a selected one of said projections, said member also being rotatable in a given direction to effect forward rotation of the stop associated with the selected projection, said member having a portion thereof effective upon reverse rotation of said member to restore the actively set stop.

4. In combination, a stop supporting member having a series of column stops grouped to represent a plurality of combinations of carriage stopping positions and movable from inactive positions to active positions determining different carriage positions, and a setting member rotatably mounted parallel with said supporting member and movable parallel with said supporting member, said setting member being provided with a series of radial extensions which may be selec-

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tively brought into cooperation with different ones of said series of stops by different extents of parallel movement of said setting member to set the selected stops to active position upon rotation of said setting member, said member being shaped so as to be effective upon rotation in a direction counter to its stop setting movement to restore the selected stops to inactive position.

5. In combination with a row of column stops, each settable from an inactive to a carriage stopping position, a setting member initially movable a preselected distance parallel with said row to select a stop and also movable at right angles to said initial movement to set the selected stop to carriage stopping position, said setting member being also shaped so as to be effective, when moved at right angles to said selecting movement, to restore the selected stops.

6. In combination with a row of column stops each settable from an inactive to a carriage stopping position, a setting member movable parallel with said row variable distances to place said setting member in setting relation to different ones of said stops, said setting member also being movable at right angles to its selecting movement to set the selected stops to carriage stopping position, said setting member having a resetting portion effective upon movement of said member at right angles to said selecting movement to restore the selected stops.

7. In combination with a row of column stops, each pivotally mounted for rotation from an inactive to a carriage stopping position, a setting member rotatably slidably mounted to enable an initial stop selecting movement relative to said row and a final movement at right angles to said initial movement to rotate selected stops to carriage stopping position, said member being shaped so as to be effective, when moved reversely to said final movement, to restore the set stops.

8. In combination with a row of column stops, each movable from an inactive position to an active carriage stopping position, a setting mem-

ber mounted for movement parallel with said row to select any one of a plurality of said stops in different combinations and also movable at right angles to said selecting movement to set the selected stops to active position, and also having a restoring portion effective upon movement of said member transversely of said row to restore the active stops to inactive position.

9. In combination with a row of carriage position determining stops, each movable from an inactive position to a carriage stopping position, a setting member rotatably slidably mounted on an axis parallel with said row and having a flange formed with a plurality of stop actuating fingers disposed so that selective axial movements of said member locate said fingers in different stop setting positions whereby subsequent rotation of said member sets different selected stops to carriage stopping position.

10. In combination with a row of carriage position determining stops, each movable from an inactive position to a carriage stopping position, a setting member rotatably slidably mounted on an axis parallel with said row and having a flange formed with a plurality of stop actuating fingers disposed so that selective axial movements of said member position said fingers in different stop setting positions whereby subsequent rotation of said member sets different selected stops to carriage stopping position, said member also having a second flange operative, when said member is rotated reversely, to restore the set stops to inactive position.

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