Aug. 1, 1950 KARL-AXEL GUSTAVSSON ET AL 2,517,306

TABULATOR FOR TYPEWRITERS OR THE LIKE

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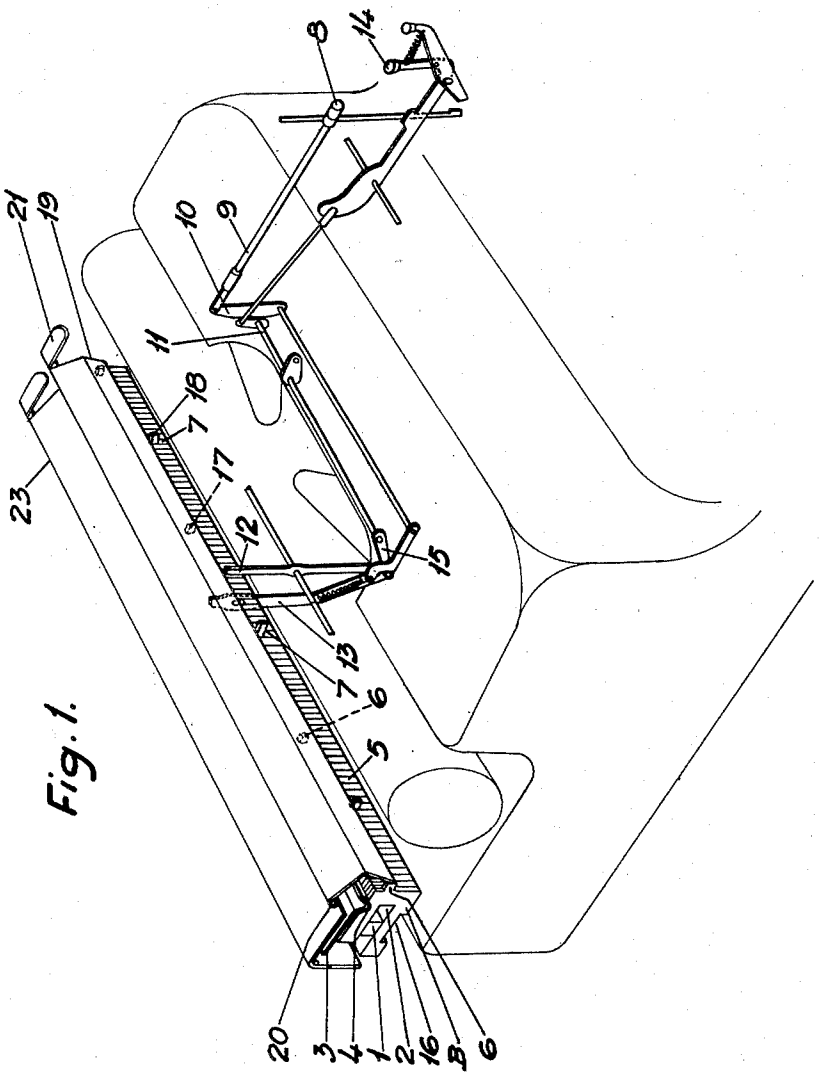


Fig. 1.

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Fig. 2.

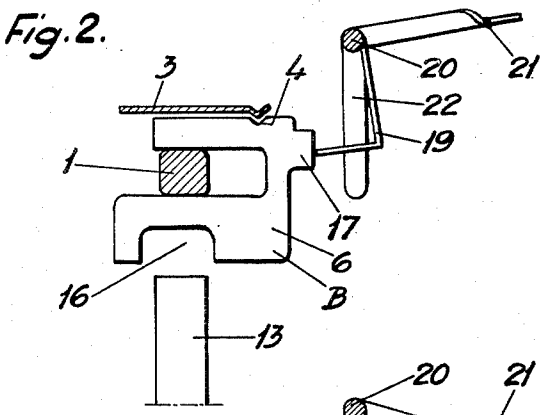


Fig. 3.

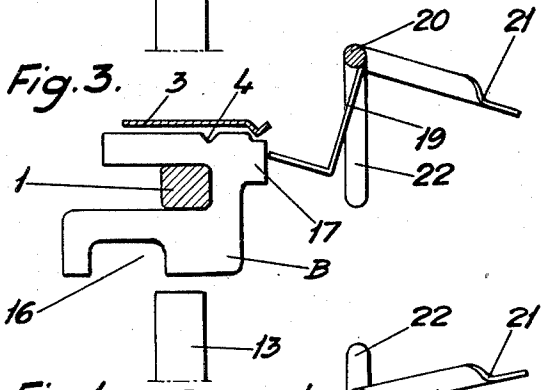


Fig. 4.

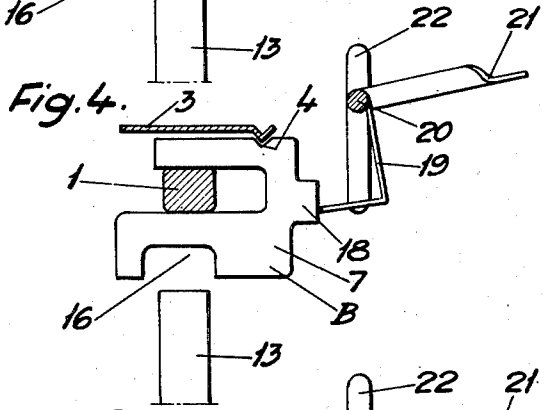
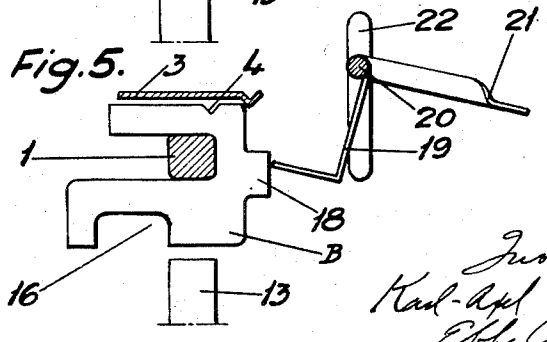


Fig. 5.



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Fig. 6.

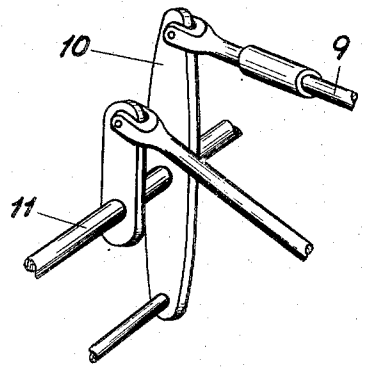


Fig. 7.

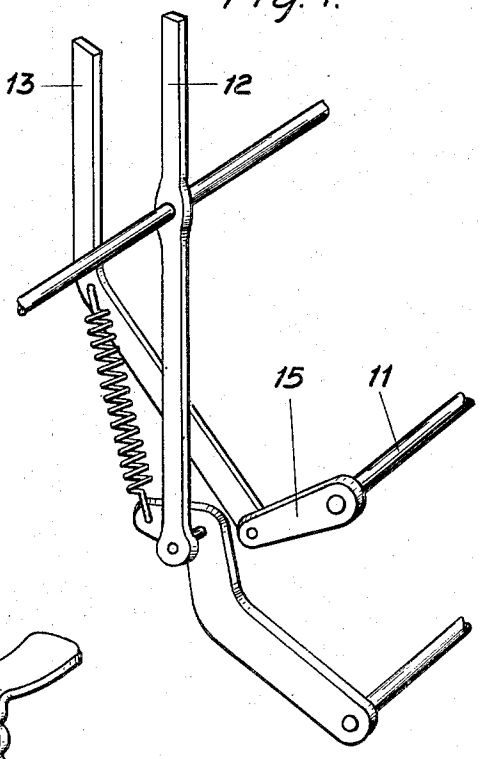


Fig. 8.

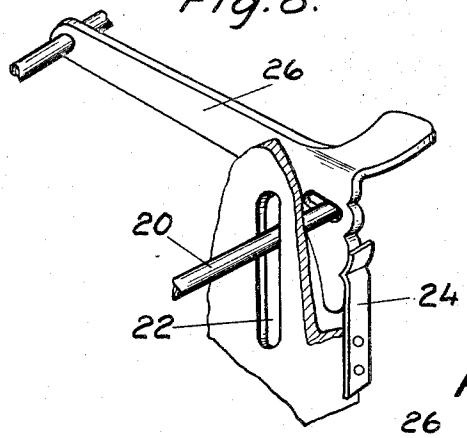
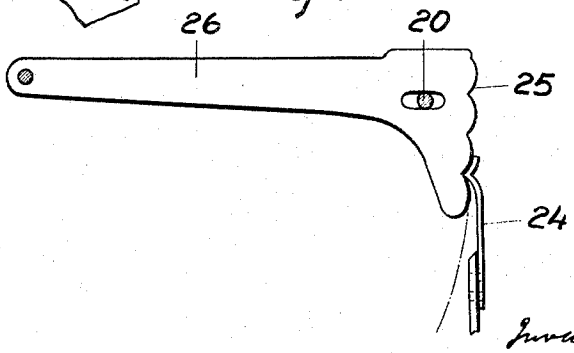


Fig. 9.



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UNITED STATES PATENT OFFICE

2,517,306

TABULATOR FOR TYPEWRITERS OR THE LIKE

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Section 1, Public Law 690, August 8, 1946
Patent expires June 7, 1964

1 Claim. (Cl. 197—179)

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The present invention relates to tabulator mechanisms for typewriters or similar machines and the main object of the invention is to provide an improved tabulating mechanism that will greatly facilitate the tabulating operation.

Another object of the invention is to provide a construction in which it is possible to make an individual setting of the tabulator for example by means of a so-called key-set tabulator as well as a rapid setting of the standard tabulator, the last mentioned adjustment being performed by a single operation by which either all special column stops or only all special column stops of a group are moved forwardly. Thus, the setting of the standard tabulator or one of several alternative settings of the tabulator can be effected by one single operation, and nevertheless the key-set tabulator can be used in the ordinary way.

Another object of the invention is to create a tabulating mechanism, which has only one single column stop for each tabulator step, thus making the typewriter carriage lighter and the manufacture of the machine cheaper in comparison with the constructions hitherto used, which have their ordinary individual tabulators with stops, and in addition a set of special stops for the additional tabulator. Because the typewriter carriages thus heretofore carried double sets of stops very considerable disadvantages arose. Thus, the carriage becomes heavy and slow to accelerate, and does not follow the step-shifting correctly, when a fast operator uses the machine. A heavy carriage easily causes the types to strike against each other and to be placed at incorrect uneven distances from each other, when the operator writes rapidly.

The invention is described below and is illustrated in the accompanying drawings of which:

Fig. 1 shows a perspective view of an embodiment of the invention. Figs. 2–5 show a detail (a side view partly in section) of a tabulator mechanism for typewriters according to the present invention, the device being shown in different positions in the different figures. Figs. 6 and 7 show details of parts of Fig. 1 on a larger scale. Figs. 8 and 9 show a perspective and a side view respectively, of a detail of the special tabulator mechanism.

Referring now to the drawings. Fig. 1 shows a set of column stops B applied side by side on a bar 1 extending along the typewriter carriage. The distances between said stops correspond to the width of the types. The bar 1 is located in horizontal recesses 2 in the column stops B, said

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recesses being of greater depth than the width of the bar, the stops being horizontally movable in the transverse direction of the bar 1 from the positions shown in Figs. 2 and 4 respectively to those shown in Figs. 3 and 5. The column stops are held in the first mentioned positions by a stop spring plate 3 engaging with recesses 4 on the top of the stops B. Some of the stops are of a normal type (normal stops 5) while others are of one or more special types (special stops 6 and 7).

All column stops are individually settable by means of a so-called key-set tabulator which may be of the well-known construction shown in Fig. 1. When the typist depresses a button 8, a rod 9 actuates the upper end of a plate 10 in a rearward direction. As the plate is centrally mounted on a rod 11, the lower end of the plate 10 moves forwardly thereby forcing the upper end of a tabulating arm 12 to swing rearwardly and press a column stop to its stopping position.

The tabulator stop member consists of a plate bar 13 being movable in a vertical direction by the well-known device shown in Fig. 1. By pressing the button 14 one forces the rod 11 to turn clockwise, this movement causing a downwardly directed plate 15 also to move clockwise thereby causing the plate bar 13 to move upwardly into recesses 16 in the bottoms of the column stops B.

In the embodiment shown in the drawings, two standard tabulating sets can be set by the use of two types of special stops 6 and 7. The first mentioned type is shown in Figs. 2 and 3, the last mentioned in Figs. 4 and 5. Both types have projections 17 and 18, respectively, said projections being arranged on different levels. If the first mentioned tabulating setting is wanted, that is the setting effected by means of the column stops 6 with the projections 17, the typist has only to turn a push member 19 formed like an angle steel bar on its pivot shaft 20 by means of a handle 21 from the position shown in Fig. 2 to the position according to Fig. 3. Hereby all stops with the projections 17 are brought into operating positions. When, on the contrary, the pivot shaft or axle 20 is first moved in the slot 22 to the position shown in Fig. 4, the bar 19 then being turned in the same manner as before, only the stops 7 with the projections 18 will be set thereby to operating positions. If a column stop is to be used in both tabulating sets, it is provided with a projection 17 as well as with a projection 18.

Except for the above mentioned special stops

6 and 7, the tabulator device also comprises normal stops 5. These stops have no projections 17 and 18 and are therefore not actuated when the bar 19 is turned for setting the special stops. The normal stops as well as the special stops are individually settable to operating positions for example by means of the key-set tabulator mechanism, as mentioned above. Furthermore the special stops 6 and 7, but not the normal stops 5, are settable in groups—jointly and simultaneously—by the bar 19 to their operating positions.

The device shown on the drawings can obviously be modified in such a way that more than two, for example three, standard tabulating sets of special column stops can be set by the turning and the displacement of the bar 19. For this purpose it is only necessary to provide another set of special stops with projections on another level than those of the projections 17 and 18. Figs. 8 and 9 show the device used for setting the bar 20 to different positions in the slots 22. The bar 20 is prevented from gravitating to the bottom of the slots 22 by means of a flat spring 24, said spring engaging recesses 25 in a lever 26. This lever 26 can be set manually to three different special tabulating positions and thus the bar 20 is brought to the selected position.

The clearing of the stops can be effected by turning an angle steel bar 23 of well-known construction.

Though the device according to the invention has been described when being used on tabulating column stops of an embodiment known per se, these stops having recesses on their bottoms for the tabulator stop member and side recesses for the tabulator bar and being movable on said bar in its transverse direction, it is understood, that the device according to the invention can also be used with tabulators of another construction and with the tabulator column stops arranged in another way. Besides, the invention

can be practically realized in many other ways than those described and shown on the drawings.

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

A typewriting machine provided with tabulating mechanism, said tabulating mechanism including a series of column stops mounted at intervals each of one letter-space, each stop being adapted for movement into and out of operative position independently of the others, certain of said stops constituting special stops having a special profile differing from that of the other and standard stops, all the stops being provided with recesses, a bar located in said recesses, said recesses being of greater depth than the width of the bar, all the stops being movable from operative to inoperative position in the transverse direction of the bar, said special stops being provided with projections and arranged in groups with the projections on the stops of one group being located in different positions than the projections on the stops of another group, and a swingable bar settable to different positions in the machine and engageable in such positions with the projections on the respective groups of stops to set said groups of stops selectively to operative position.

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OLOV HÅKAN INGMAR TÅNGEBERG.

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