

1,054,682.

4 SHEETS--SHEET 1.



Lillian Nelson

Charles Smith

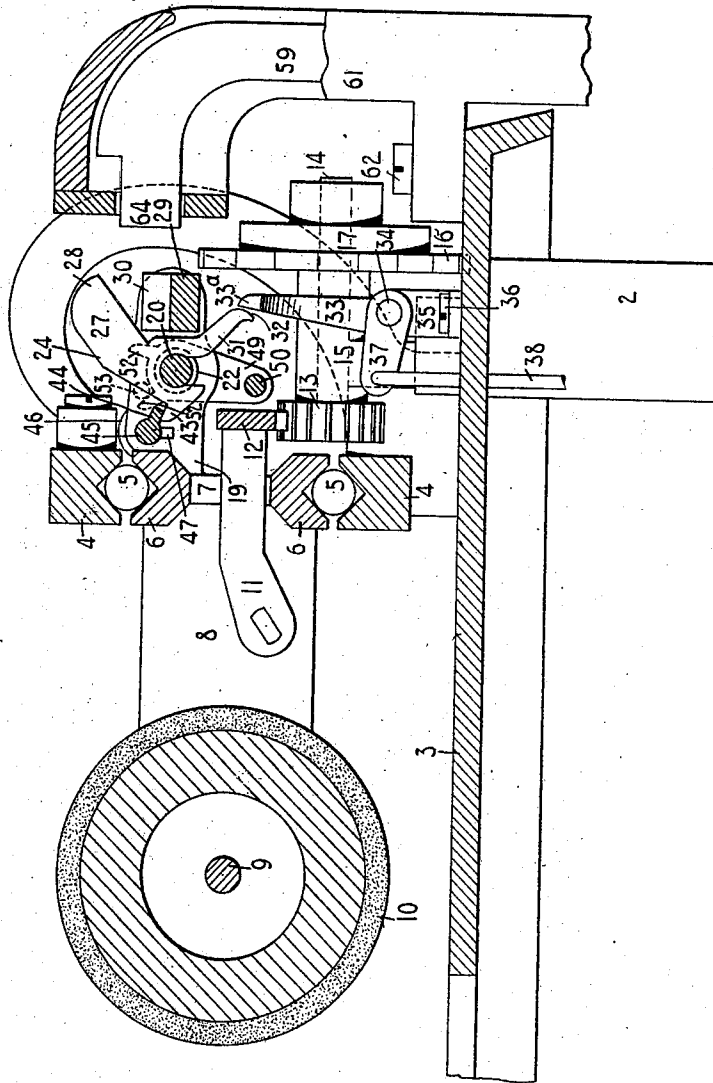
Jacob Felber

1,054,682.

Patented Mar. 4, 1913.

4 SHEETS—SHEET 2.

FIG. 2.



WITNESSES:

Lillian Nelson

Charles Smith

INVENTOR

J. Felbel

J. FELBEL.
TYPE WRITING MACHINE.
APPLICATION FILED JUNE 22, 1911.

1,054,682.

Patented Mar. 4, 1913.
4 SHEETS—SHEET 3.

FIG. 3.

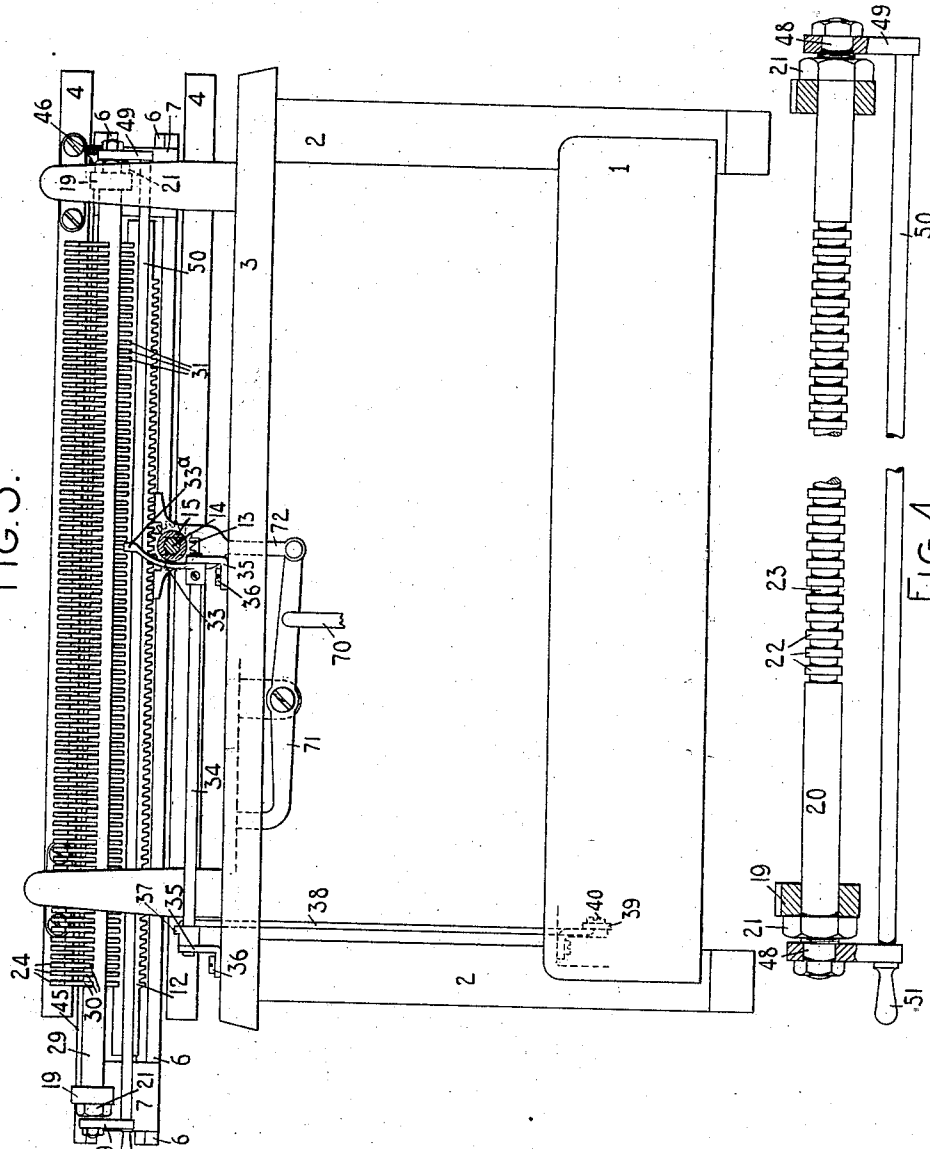


FIG. 4.

WITNESSES.

William Nelson
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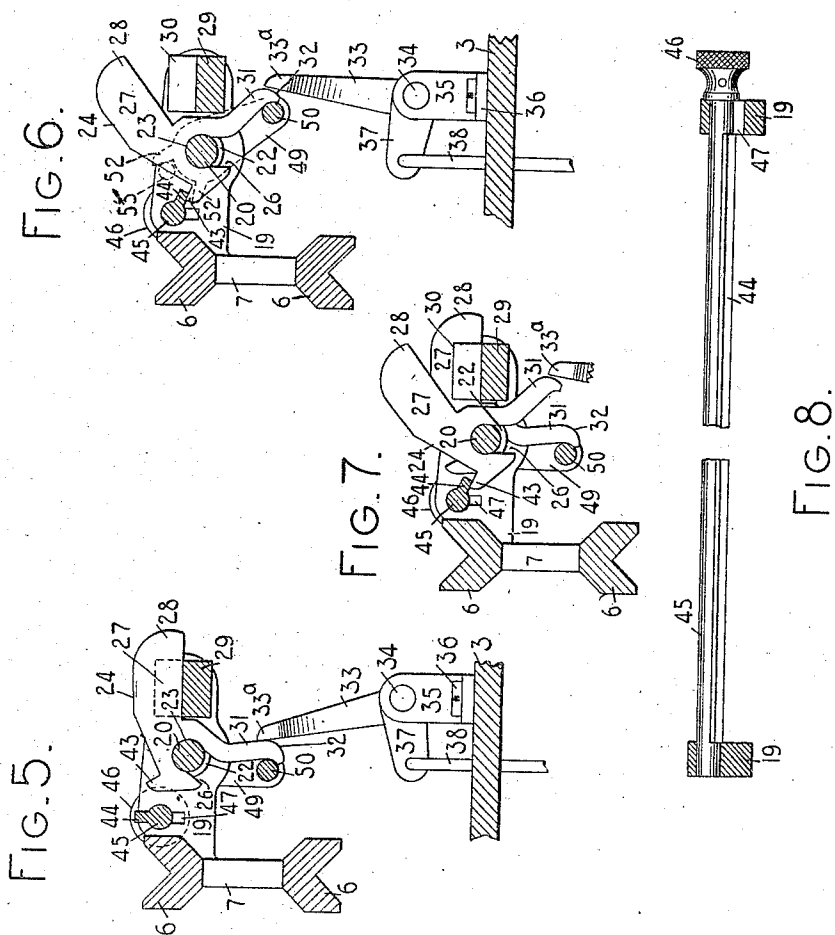
INVENTOR.

Jacob Felbel

1,054,682.

Patented Mar. 4, 1913.

4 SHEETS—SHEET 4.



WITNESSES:

William Nelson
Walter Smith

INVENTOR:

James Felbel

UNITED STATES PATENT OFFICE.

JACOB FELBEL, OF NEW YORK, N. Y., ASSIGNOR, BY MESNE ASSIGNMENTS, TO UNION TYPEWRITER COMPANY, OF JERSEY CITY, NEW JERSEY, A CORPORATION OF NEW JERSEY.

TYPE-WRITING MACHINE.

1,054,682.

Specification of Letters Patent.

Patented Mar. 4, 1913.

Application filed June 22, 1911. Serial No. 634,695.

To all whom it may concern:

Be it known that I, JACOB FELBEL, citizen of the United States, and resident of the borough of Manhattan, city of New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Type-Writing Machines, of which the following is a specification.

10 My invention relates to typewriting machines and more particularly to tabulating mechanisms and to means for quickly determining the proper positions of arrest of the carriage and for readily setting the tabulating mechanisms accordingly, and also to
15 means for readily "clearing" or resetting all of the previously set stops when the work is such as to require the use of differently arranged stops.

20 The object of my invention, generally stated, is to provide comparatively simple and efficient means of the character specified, and to these and other ends, which will hereinafter appear, my invention consists in the
25 features of construction, arrangements of parts and combinations of devices to be set forth in the following specification, and particularly pointed out in the appended claims.

In the accompanying drawings wherein
30 like reference characters indicate corresponding parts in the various views, Figure 1 is a vertical, front to rear, sectional view of one form of typewriting machine embodying my invention, only so much of said
35 machine being shown as is necessary to illustrate my invention. Fig. 2 is a like sectional view, on an enlarged scale, but showing only a portion of the machine represented in Fig. 1. Fig. 3 is a rear elevation
40 of the machine, with parts in section and parts broken away. Fig. 4 is a detail, rear elevation, with parts in section, the view illustrating the pivot rod on which the column stops are mounted and the bar for
45 resetting the stops to inoperative position. Fig. 5 is a fragmentary, side elevation, with parts in section, showing the column stops and some of the associated parts. This view illustrates a column stop as it is moved to
50 operative position by the key controlled device for moving the column stops. Fig. 6 is a view corresponding to Fig. 5 but show-

ing the column stops in the inoperative position. Fig. 7 is a view corresponding to Figs. 5 and 6, but showing certain of the
55 column stops locked in the inoperative position and others in the operative position. Fig. 8 is a detail rear elevation of the locking bar for the column stops, the bearings for said bar being shown in section.

60 I have illustrated my invention in the present instance embodied in a Monarch machine, although it should be understood that the invention may be embodied in various other styles of typewriting machines.

65 The frame of the machine comprises a base 1, corner posts 2 and top plate 3. Fixed oppositely grooved guide rails 4 are secured to the top plate of the machine in the usual manner. The grooved faces of these guide
70 rails receive anti-friction balls or rollers 5 which are likewise received in oppositely grooved guide rails 6 which form part of a guide bar 7. The bar 7 constitutes the rear
75 cross bar of the carriage and from it project forwardly extending end bars 8 provided with bearings which receive a platen shaft 9 on which a cylindrical rotative platen 10
80 is mounted. The carriage is thus supported above the top plate for movement from side to side of the machine. Rearwardly extending
85 arms 11 are pivoted to the end bars 8 of the carriage and are connected at their rear ends to a feed rack 12 which meshes with a feed pinion 13. This feed pinion is secured
90 to the front end of the shaft 14 which is mounted to turn in a bearing in a bracket 15 secured to the top plate of the machine. The rear end of the shaft is connected to an escapement wheel 16 by the usual pawl and
95 ratchet connection contained within a drum 17. The carriage receives a step-by-step feed movement under control of the escapement mechanism and by the pull applied to the carriage by the usual spring drum, not
100 shown; it being understood that the escapement mechanism is controlled from the finger keys 18 in the usual manner. The construction thus far described constitutes part of the Monarch machine and further
description thereof is deemed unnecessary.

Extending rearwardly from the cross bar 7 of the carriage, near the ends thereof, are bracket arms 19 which constitute supports

for a pivot rod 20 received in openings in the bracket arms, as shown in Fig. 4, and secured in position by nuts 21 arranged outside of the bracket arms and engaging threaded end portions on the rod. This rod is preferably cylindrical in form and is provided with cylindrical or circumferential teeth 22, with cylindrical bearings 23 formed on the rod in the spaces between said teeth. There are preferably as many of these interdental spaces as there are teeth on the feed rack 12 so as to provide a space for each letter space position of the carriage, although the number of such spaces may be varied. Column stops, each designated as a whole by the reference numeral 24, are slotted at 26 as shown in Fig. 6, to provide an open-mouthed bearing portion in each plate-like column stop for the reception of and coöperation with a bearing 23 of the pivot rod. As will be seen upon reference to Fig. 5, the throat of each slot is slightly contracted, or is of less width than the bottom or bearing portion of the slot, in order to prevent accidental displacement of the column stops from the pivot rod when they are once seated or sprung in position thereon. There is sufficient resiliency in the metal from which the column stops are made to enable each column stop to be sprung into position on the pivot rod by slightly wedging or spreading the arms on opposite sides of the slot 25 apart as a column stop is forced into position on the pivot rod. The column stops, however, do not bind or engage the pivot rod with undue pressure when in place, so that the column stops may be turned on the pivot, but there is, nevertheless, preferably sufficient friction provided between the parts to enable the stops to be retained indefinitely in either of the two positions to which they may be turned on the pivot rod; that is to say, either in the operative position shown in Fig. 5 or in the inoperative position shown in Fig. 6. The circumferential teeth 22 on the pivot rod maintain the column stops properly spaced apart at letter space intervals and prevent the column stops from moving longitudinally along the rod. The blade 27 of each stop terminates in a contact portion 28 with which the key controlled tabulator stop or stops coöperate.

A fixed toothed locking bar 29 is arranged parallel to the pivot bar 20 and in the rear thereof. This locking bar extends between and is fixed to the bracket arms 19 and has its teeth 30 upwardly directed. There are as many interdental spaces in the bar 29 as there are column stops, and these spaces are arranged to register with the column stops so that when any column stop is moved from the position shown in Fig. 6 to that represented in Fig. 5, the blade of the stop will be moved into an interdental space in the locking bar 29 and be seated therein to

hold the stop against movement relatively to and longitudinally of the locking bar. When the column stops are in the normal or inoperative position shown in Fig. 6, they are out of engagement with the locking bar and are thrown into such engagement by the movement of the column stops to operative position. By this arrangement a firm and substantial support is provided for each column stop when it is in the operative position, or in a position to be engaged by the tabulator stop or stops which coöperate therewith.

A depending arm 31 projects from each of the column stops at substantially right angles to the length thereof. The terminal portion of this arm is curved or rounded at 32 for coöperation with a device by which the column stops may be moved one at a time to operative position. Thus, an upwardly extending arm or finger 33 is arranged beneath the column stops and is fixed on the inner end of a rock shaft 34. This shaft is mounted to turn in bearings in brackets 35 secured to the top plate of the machine by screws 36. The rock shaft 34, as will be seen in Fig. 3, extends from a point near the center of the machine to the right-hand side thereof where it is provided with a forwardly extending crank arm 37 connected at its forward end to a depending link 38. The lower end of this link 38 is connected to a key lever 39 fulcrumed at 40 and provided at its forward end with a finger key 41, at the keyboard of the machine. A restoring spring 42 coöperates with the key lever to return the key lever and the parts connected therewith to normal position.

From an inspection of Fig. 3 it will be understood that the contact portion 33* of the arm 33 is arranged above the escapement wheel shaft 14 and in a vertical plane which extends fore and aft of the machine and cuts, or substantially cuts, the printing point. The depression of the key 41 is effective to rock the shaft 34 and effect a forward movement of the arm 33, thereby engaging the depending arm 31 of the particular column stop which happens to be in register with the contact portion of the arm 33. As the arm 33 moves forwardly from the position shown in Fig. 6 to that represented in Fig. 5, the engaged column stop will be turned on its pivot rod from the normal position shown in Fig. 6 to that illustrated in Fig. 5 and into engagement with the locking bar 29. The column stop is thus moved from the inoperative position to the operative position and the particular column stop which is thus moved depends on the position of the carriage in its line of travel. If, for instance, the carriage be at the point indicated at "40" on the carriage scale, and the key 41 be depressed at this

time, then the column stop which is in register with the finger 33 will be moved to operative position, and this column stop will be set to arrest the carriage at "40" on the carriage scale at subsequent tabulating operations, as will hereinafter more clearly appear. Each of the column stops is also provided with a projection 43 with which a web 44 on a locking bar 45 is adapted to cooperate when the stops are in the inoperative position, as shown in Figs. 2 and 6. This locking bar extends between the bracket arms 19 and is mounted to turn in bearing openings therein; the bar being maintained friction tight in said bearings to hold it in the position to which it may be turned by a knurled head or knob 46, secured to the locking bar at one end thereof and projecting beyond the adjacent bracket 19. The bracket 19 nearest the knob or finger piece 46 is preferably slotted, as indicated at 47 in Figs. 5, 6 and 8, in order to enable the parts to be assembled by inserting the web or flange 44 through said slot. When the locking bar is turned to the position shown in Fig. 5, with the web 44 uppermost, the projections 43 on the column stops are disengaged therefrom and the stops may be moved to operative position. When, however, the column stops, or any of them, are in the inoperative position, as shown in Fig. 6, the locking bar may be moved to the position shown in this figure to bring the web 44 into engagement with the projections 43 on the inoperative column stops, thus locking them against accidental displacement from the inoperative position. From an inspection of Fig. 7 it will be seen that this locking bar is operative on any or all of the column stops which may be in the inoperative position, to retain them against accidental displacement from such position, even though certain of the stops are maintained in the operative position.

In order to "clear" or reset all the operative stops to inoperative position, I have provided means carried by the carriage, by which all of the operative column stops may be simultaneously moved to inoperative position. Thus, from an inspection of Fig. 4, it will be seen that the pivot rod 20 is extended beyond its threaded end portions to provide reduced bearings 48 for links or arms 49. These links are connected by a cross bar 50 which extends beyond the right-hand link to provide a finger piece 51 by which the bar 50 may be swung with the links on the pivot bearings 48. It will be seen that by this arrangement the bar 50 swings on a pivotal center which is coincident with the pivotal center on which the column stops turn in their movements to and from operative position. The cross bar 50, as will be seen upon reference to Figs. 5 and 6, extends in front of the depending

arms 31 of the entire series of column stops. A rearward swinging movement transmitted to the bar 50 through the finger piece 51 is effective to turn the links 49 on their bearings, thus moving the bar 50 from the position shown in Fig. 5 to that represented in Fig. 6. This movement of the bar is effective to move all of the column stops which happen to be in the operative position shown in Fig. 5, to the inoperative position illustrated in Fig. 6. I preferably form one of the links 49 with stops or fingers 52 which are cooperative with a stop pin 53, projecting from one of the bracket arms 19 to limit the back and forth movements of the bar 50 by which the column stops are returned to inoperative position. The clearing of the stops in the manner described is of course only necessary where a resetting of the stops is required by reason of a change in the character of the tabular work to be done.

For the purpose of my present invention it is immaterial what construction of tabulating mechanism is employed to cooperate with the column stops. In the present instance I have illustrated denominational stop mechanism similar to that disclosed in my Patent No. 904,689, dated November 24th, 1908. This mechanism comprises a series of denominational keys 54 on angular key levers 55, pivoted at 56 on upwardly extending bracket arms 57. The depending arm of each angular lever cooperates with a slide rod 58 which engages at its rear end with an upwardly extending denominational stop lever 59. The levers 59 are pivoted at 60 in a stop lever frame 61 secured by screws 62 and 63 to the top plate and base of the machine, respectively. The upper and forwardly projecting ends 64 of the stop levers constitute denominational stops which are adapted to move forwardly into the path of those column stops which have been moved to operative position. A return spring 65 cooperates with each denominational stop lever to return it, and the parts connected therewith, to normal position. A universal release bail 66 is pivoted at 67 and has a contact face 68 which extends in the rear of the lower end portions of the denominational stop levers to be actuated thereby. The bail is provided with a forwardly directed arm 69, connected at its forward end to an upright link 70, which in turn is connected with a lever 71 which carries a rack lifter 72 arranged beneath and adapted to engage the feed rack. When a denominational key is depressed, the corresponding denominational stop 64 will be projected into the path of the operative column stops, and the release bail will be actuated to lift the rack lifter and effect a disengagement of the rack from the feed pinion, thus releasing the carriage to afford a free movement

thereof until arrested by the coöperation of the projected denominational stop with the first of the column stops.

In setting the column stops a work sheet
5 may be introduced into the machine. The character of this work sheet is usually such as to indicate where the columns are to appear. Thus, for instance, the work sheet may be divided by vertical lines to produce
10 several columns which may be provided with pivoted headings above each column. The column stops having all been cleared, the carriage may then be moved to a position where, say, the decimal point is to appear in the first column which it may be assumed is at "40" on the carriage scale. The
15 key 41 is then depressed and the column stop which has been brought into register with the contact portion of the arm 33 will be
20 moved to operative position. Thereafter the carriage will always be arrested in the first column at "40", when the decimal key is depressed. The stops for the remaining columns may be set in a like manner.

25 Certain of these devices may be used without others, and various other changes may be made without departing from the spirit and scope of my invention.

What I claim as new and desire to secure
30 by Letters Patent, is:—

1. In a typewriting machine, the combination of a carriage; tabulator mechanism comprising a series of column stops pivoted to turn into and out of operative position
35 and to remain indefinitely in either of such positions; a key controlled member operative on but one column stop at a time to turn it into operative position, the column stops and the said key controlled member being
40 carried one by the carriage and the other by the frame of the machine, so that the travel of the carriage will bring different successive column stops and said key controlled member into coöperative relation, and a key
45 controlled carriage arresting stop that is movable into and out of coöperative relation with the column stops which have been moved into operative position.

2. In a typewriting machine, the combination of a carriage; tabulator mechanism comprising a series of column stops pivoted to turn into and out of operative position and to remain indefinitely in either of such
50 positions; a key controlled member operative on but one column stop at a time to turn it into operative position, the column stops and the said key controlled member being
55 carried one by the carriage and the other by the frame of the machine, so that the travel of the carriage will bring different successive column stops and said key controlled member into coöperative relation; and a toothed locking bar fixed to the part
60 of the machine that carries it and with
65 which toothed bar the column stops are

thrown into engagement when they are turned on their pivots into operative position.

3. In a typewriting machine, the combination of a carriage; tabulator mechanism comprising a series of column stops pivoted to turn into and out of operative position and to remain indefinitely in either of such positions; a key controlled member operative on but one column stop at a time to turn it into operative position, the column stops and the said key controlled member being carried one by the carriage and the other by the frame of the machine, so that the travel of the carriage will bring different successive column stops and said key controlled member into coöperative relation; and a locking bar coöperative with said column stops to lock them in their inoperative position.

4. In a typewriting machine, the combination of a carriage; tabulator mechanism comprising a series of column stops pivoted to turn into and out of operative position and to remain indefinitely in either of such positions; a key controlled member operative on but one column stop at a time to turn it into operative position, the column stops and the said key controlled member being carried one by the carriage and the other by the frame of the machine, so that the travel of the carriage will bring different successive column stops and said key controlled member into coöperative relation; a bar for simultaneously turning all of the operative stops to inoperative position; and a separate bar for locking the stops in the inoperative position.

5. In a typewriting machine, the combination of a carriage; tabulator mechanism comprising a series of column stops pivoted to turn into and out of operative position and to remain indefinitely in either of such positions; a key controlled member operative on but one column stop at a time to turn it into operative position, the column stops and the said key controlled member being carried one by the carriage and the other by the frame of the machine, so that the travel of the carriage will bring different successive column stops and said key controlled member into coöperative relation; and a locking bar coöperative with those column stops which are in the inoperative position while other column stops are maintained in the operative position.

6. In a typewriting machine, the combination of a carriage, tabulator mechanism comprising a series of column stops pivoted to turn into and out of operative position and to remain indefinitely in either of such positions; and a key controlled member operative on but one column stop at a time to turn it into operative position, the column stops and the said key controlled member being carried one by the carriage and the

other by the frame of the machine, so that the travel of the carriage will bring different successive column stops and said key controlled member into coöperative relation, the column stops and the key controlled member being arranged one above the other and each of the column stops having a projection which extends at substantially right angles to the length of the stop for coöperation with said key controlled member.

7. In a typewriting machine, the combination of a carriage; and tabulating mechanism therefor comprising a toothed pivot rod with cylindrical bearing portions in the interdental spaces in said rod, and a series of column stops each having an open slot bearing, the throat whereof is smaller than the diameter of the cylindrical bearing portions of the pivot rod, so that each stop may be sprung into place on its bearing and be free to turn thereon and so that the various stops may be properly spaced apart by the teeth of the pivot rod.

8. In a typewriting machine, the combination of a carriage; tabulator mechanism comprising a series of column stops movable into and out of operative position and adapted to remain indefinitely in either the operative or inoperative position; means for moving the column stops individually to operative position; means for resetting collectively all of the column stops to inoperative position; and a locking bar separate from the resetting means for locking the stops in the inoperative position.

9. In a typewriting machine, the combination of a carriage; tabulator mechanism comprising a series of pivoted column stops movable into and out of operative position and adapted to remain indefinitely in either the operative or inoperative position to which they may be turned on their pivotal center; means for turning the column stops individually to operative position; means for turning and resetting collectively all of the column stops to inoperative position; and a locking bar separate from the resetting means for locking the stops.

10. In a typewriting machine, the combination of a carriage; tabulator mechanism comprising a series of column stops movable into and out of operative position and adapted to remain indefinitely in either the operative or inoperative position; means for moving the column stops individually to operative position; a hand actuated bar operative at will and coöperative with all of said column stops to simultaneously reset all of them to inoperative position; and a separate locking bar coöperative with the column stops for locking them in the inoperative position.

11. In a typewriting machine, the combination of a carriage; tabulator mechanism comprising a series of column stops mounted

for individual movement into and out of operative position and adapted to remain indefinitely in either of the said positions; a toothed bar with which the column stops are out of coöperation when they are in the inoperative position, the stops being received and seated in the interdental spaces in the bar when the stops are moved to operative position; and a stop setting device coöperative with the column stops when they are in the inoperative position to move them into engagement with said toothed bar.

12. In a typewriting machine, the combination of a carriage; tabulator mechanism comprising a series of pivoted column stops arranged and permanently maintained a letter space distance apart and pivoted for swinging movement into and out of operative position, a toothed locking bar, the teeth of which correspond to the spacing of the column stops and with which the column stops are out of coöperation when they are in the inoperative position, the column stops swinging into the interdental spaces in said locking bar when the stops are swung to operative position; and a stop setting device coöperative individually with the column stops when they are in the inoperative position to move them separately into engagement with said toothed bar.

13. In a typewriting machine, the combination of a carriage; tabulator mechanism comprising a series of column stops carried by the carriage and pivotally mounted thereon for movement into and out of operative position, said stops being spaced a letter space distance apart and adapted to remain indefinitely in either of the said positions to which they may be moved; a key controlled device mounted on the frame of the machine beneath the column stops and coöperative with but one of said stops at a time to move it to operative position; means carried by the carriage for simultaneously moving all of the operative stops to inoperative position; and separate means for locking the stops in the inoperative position and against accidental displacement from such position.

14. In a typewriting machine, the combination of a carriage; tabulator mechanism comprising a series of tabulator stops carried by the carriage, said stops being situated a letter space distance apart and mounted on the carriage for movement into and out of operative position and adapted to remain indefinitely in either of the said positions to which they may be moved; a depending projection extending at substantially right angles to the length of each of said stops; and a key controlled device arranged on the frame of the machine beneath said stops and coöperative with but one of the depending projections thereon at a time to move the stops to operative position.

15. In a typewriting machine, the combination of a carriage; tabulator mechanism comprising a series of tabulator stops carried by the carriage, said stops being situated a letter space distance apart and mounted on the carriage for movement into and out of operative position and adapted to remain indefinitely in either of the said positions to which they may be moved; a depending projection extending at substantially right angles to the length of each of said stops; a key controlled device arranged on the frame of the machine beneath said stops and coöperative with but one of the depending projections thereon at a time to move the stops to operative position; and means carried by the carriage for simultaneously moving all of the operative stops to inoperative position.
16. In a typewriting machine, the combination of a carriage; tabulator mechanism comprising a series of tabulator stops carried by the carriage, said stops being situated a letter space distance apart substantially throughout the effective length of the carriage and pivoted on the carriage for swinging movement into and out of operative position and adapted to remain indefinitely in either of the said positions to which they may be moved; a depending projection extending at substantially right angles to the length of each of said pivoted stops; a key controlled device arranged on the frame of the machine beneath said pivoted stops and coöperative with but one of the depending projections thereon at a time to move the stops to operative position; and means for simultaneously swinging all of the operative stops to inoperative position.
17. In a typewriting machine, the combination of a carriage; tabulator mechanism comprising a series of column stops mounted on the carriage for pivotal movement into and out of operative position and adapted to remain indefinitely in either of such positions; and a resetting bar pivoted on the same pivotal center as the stops and coöperative with the stops to simultaneously turn all of the operative stops back to inoperative position.
18. In a typewriting machine, the combination of a carriage; tabulator mechanism comprising a series of column stops mounted on the carriage for pivotal movement into and out of operative position and adapted to remain indefinitely in either of such positions; a resetting bar pivoted on the same pivotal center as the stops and coöperative with the stops to simultaneously turn all of the operative stops back to inoperative position; projections on said stops; and a locking bar movable into and out of engagement with the projections on those stops which are in the inoperative position.
19. In a typewriting machine, the combination of a carriage, a series of pivoted column stops carried thereby and movable into and out of operative position and adapted to remain indefinitely in either of such positions, said column stops being situated a letter space distance apart, a key controlled coöperative stop, a key controlled device carried on the frame of the machine and coöperative with but one of said column stops at a time to turn it on its pivot to operative position, a toothed bar with which the column stops are thrown into engagement when they are moved to operative position, a bar carried by the carriage and operable at will to simultaneously turn all of the operative column stops to inoperative position, and a locking bar operative to hold those column stops which are in the inoperative position against accidental displacement from such position.
20. In a typewriting machine and tabulating mechanism, the combination of a carriage, a rack bar fixed against movement on the part of the machine which carries it, a plurality of pivoted column stops movable into and out of engagement with said rack bar and adapted to remain indefinitely in either of such positions, a stop setter adapted to engage said column stops one at a time and move them from an inoperative position into engagement with said rack bar, and a key controlled arresting stop which is movable into and out of coöperative relation with the column stops.
21. In a typewriting machine and tabulating mechanism, the combination of a carriage, a rack bar fixed thereon, a carriage arresting stop arranged at one side of the rack bar, a plurality of pivoted column stops having their pivotal centers at the opposite side of the rack bar, the column stops being adapted to swing from an inoperative position where they are disengaged from the rack bar to an operative position where they are in engagement with the rack bar and to remain indefinitely in either of said positions, and means for swinging said plurality of column stops one at a time into engagement with said rack bar.
22. In a typewriting machine and tabulating mechanism, the combination of a carriage, a carriage arresting stop, a plurality of column stops movable into and out of operative position and adapted to remain indefinitely in either of said positions, a rack arranged between the arresting stop and the pivoted column stop and fixed against movement on the part that carries it, and a key actuated setter for swinging said column stops individually and successively into operative position and into engagement with said rack.
23. In a typewriting machine and tabulating mechanism, the combination of a carriage, a carriage arresting stop, a plurality

of pivoted column stops movable into and out of operative position and adapted to remain indefinitely in either of said positions, a rack fixed against movement on the part of the machine that carries it, said rack lying in the path of the pivotal movement of said column stops as they are moved into operative position, and a key actuated member operative to engage said stops one at a time with said rack.

24. In a typewriting machine and tabulating mechanism, the combination of a carriage, a carriage arresting stop, a rack fixed against movement on the part which carries it and arranged in front of the carriage arresting stop, a pivot rod arranged in front of said fixed rack, a plurality of column stops arranged on said pivot rod and adapted to swing into and out of engagement with said rack and to remain indefinitely in either of said positions, and means for moving said stops one at a time into engagement with said rack.

25. In a typewriting machine and tabulating mechanism, the combination of a carriage, a carriage arresting stop, a plurality of individually settable column stops movable into and out of operative position and adapted to remain indefinitely in either of said positions, a rack fixed to the part of the machine which carries it and arranged in the path of movement of said column stops, and a key actuated device for moving said stops one at a time selectively into engagement with said rack.

26. In a typewriting machine and tabulating mechanism, the combination of a carriage, a set of denominational stops, a set of pivoted column stops, a rack bar fixed against movement on the part of the machine which carries it and arranged between the two sets of stops, and a key operated device for engaging the said column stops one at a time with said rack.

27. In a typewriting machine and tabulating mechanism, the combination of a carriage; a key actuated carriage arresting stop; a rack arranged in front thereof and fixed against movement on the part of the machine which carries it; a plurality of column stops comprising each a rack engaging portion, a contact portion with which said arresting stop co-acts, and also a leg or extension; and means for engaging the leg or extension on each stop to cause the stop to engage the rack and to be moved to operative position where it will be engaged by said carriage arresting stop when the latter is actuated.

28. In a typewriting machine and tabulating mechanism, the combination of a carriage; a key actuated carriage arresting stop; a rack fixed against movement on the part of the machine which carries it; a key operated stop setting device; and a plu-

ality of column stops movable into and out of operative position and adapted to remain indefinitely in either of said positions, said column stops comprising each a portion to be engaged by said carriage arresting stop, a portion to engage said rack, and a portion to be engaged by said key operated stop setting device.

29. In a typewriting machine and tabulating mechanism, the combination of a carriage, a carriage arresting stop, a rack bar, a plurality of column stops, a locking bar for holding said stops out of engagement with said rack bar, and a key operated setting device for engaging the stops one at a time with said rack bar.

30. In a typewriting machine and tabulating mechanism, the combination of a carriage, a carriage arresting stop, a rack bar fixed against movement on the part of the machine which carries it, a pivot bar, a plurality of column stops mounted on the latter, and a locking bar for holding said column stops out of engagement with said rack bar.

31. In a typewriting machine and tabulating mechanism, the combination of a carriage, a carriage arresting stop, a plurality of individually movable column stops, a rack bar therefor, a key actuated stop setting device operative for engaging one stop at a time with said rack bar, and a movable retracting bar adapted to act on said plurality of column stops and swing them all back collectively out of engagement with said rack bar.

32. In a typewriting machine, the combination of a carriage, a series of stops carried thereby and mounted for rotative movement into and out of operative position, a rack bar which is engaged by said stops, a rotative bar for turning said stops to inoperative position, and a stop set device carried by the frame of the machine for controlling the turning movement of said stops into operative position.

33. In a typewriting machine, the combination of a carriage, a series of stops carried thereby and mounted for rotative movement into and out of operative position, a rack bar which is engaged by said stops, a portion of each stop striking said rack bar and arresting the stop in its set position, and a key controlled device mounted on the frame of the machine and operative to engage said stops one at a time to control the movements of the stops to operative position.

34. In a typewriting machine, the combination of a carriage, a key operated tabulator stop, a coöperative stop mounted for rotative movement into and out of operative position, said coöperative stop having a central bearing opening connecting with a smaller opening which extends from the

bearing opening, said coöperative stop also having a projection extending therefrom, and a key actuated stop setting device coöperative with said projection to control the stop in its rotative movement into operative position.

Signed at the borough of Manhattan,

city of New York, in the county of New York, and State of New York, this 21st day of June, A. D. 1911.

JACOB FELBEL.

Witnesses:

CHARLES E. SMITH,
E. M. WELLS.