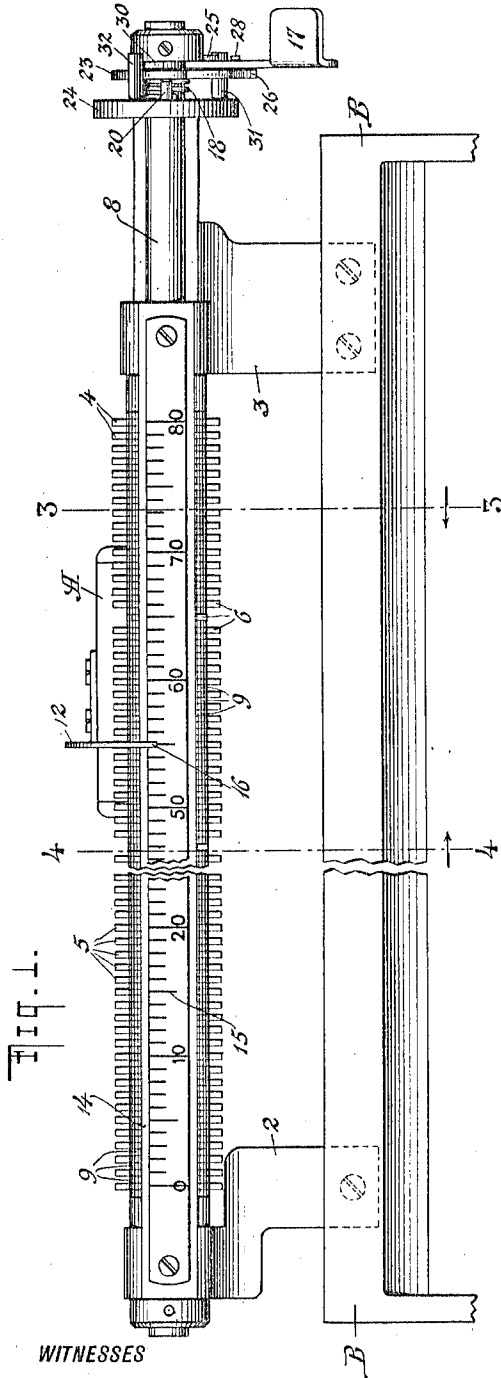


M. H. LOCKWOOD.
TYPE WRITING MACHINE.
APPLICATION FILED SEPT. 16, 1912.

1,082,033.

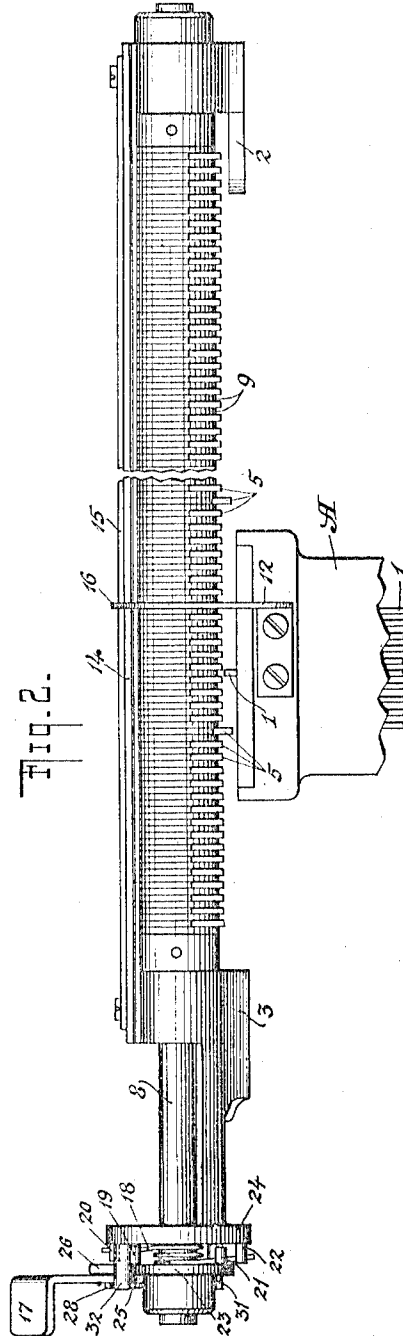
Patented Dec. 23, 1913.

2 SHEETS—SHEET 1.



WITNESSES

G. V. Rasmussen
John A. Kellenbeck



INVENTOR

MARQUIS H. LOCKWOOD

BY

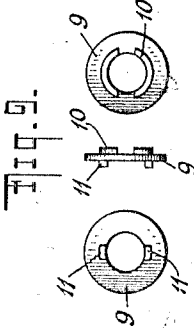
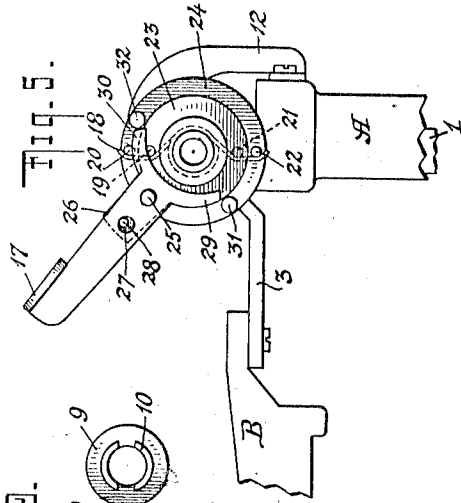
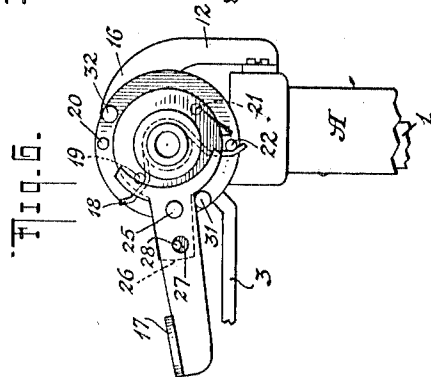
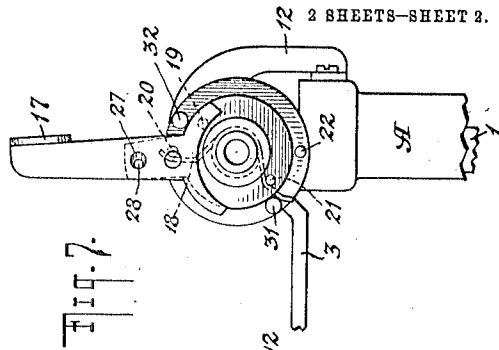
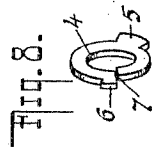
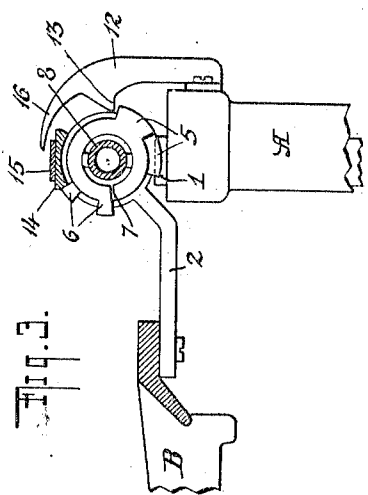
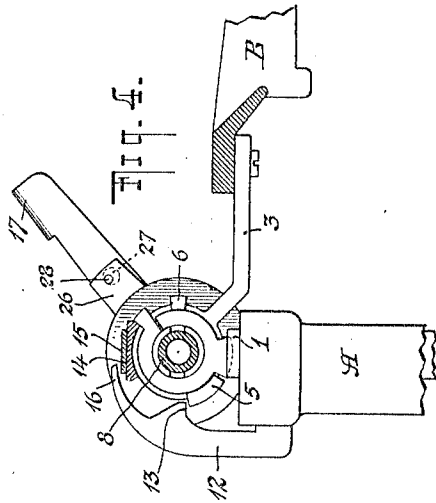
Biese & Knauth
ATTORNEYS

1,082,033.

M. H. LOCKWOOD.
TYPE WRITING MACHINE.
APPLICATION FILED SEPT. 16, 1912.

Patented Dec. 23, 1913.

2 SHEETS—SHEET 2.



WITNESSES

G. V. Rasmussen.
John A. Ahlbeck.

INVENTOR

MARQUIS H. LOCKWOOD

BY

Brice Knott
ATTORNEYS

UNITED STATES PATENT OFFICE.

MARQUIS H. LOCKWOOD, OF NEW YORK, N. Y., ASSIGNOR TO UNDERWOOD TYPE-WRITER COMPANY, OF NEW YORK, N. Y., A CORPORATION OF DELAWARE.

TYPE-WRITING MACHINE.

1,082,033.

Specification of Letter's Patent. Patented Dec. 23, 1913.

Application filed September 16, 1912. Serial No. 720,493.

To all whom it may concern:

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

My invention relates more particularly to tabulating stop setting devices wherein a plurality of tappet stops, a letter space distance apart, is mounted on the typewriter carriage and one or more of said stops may be turned or moved into position to cooperate with the usual key actuated tabulator stops.

The object of my invention is to simplify the construction and embody the device in compact form. Most of the mechanism is carried by the typewriter carriage, only the setting finger, a single piece, is mounted on a fixed part of the machine. This arrangement simplifies the movements necessary to set the tappet stops in the various columnar positions desired, and permits resetting the stops to their inoperative position by a single movement of a lever without any manipulation whatever of the typewriter carriage. These and other objects will be more readily apparent from the following description taken in connection with the accompanying drawings in which—

Figure 1 is a top plan view of my device; Fig. 2 is a rear view of the same; Fig. 3 represents a section at 3—3 of Fig. 1; Fig. 4 is a similar section at 4—4 of Fig. 1; Fig. 5 is a view showing the operating lever end of the device; Fig. 6 shows an end view when the lever is operated for setting a stop and Fig. 7 shows the lever when operated for eliminating or restoring set stops to inoperative position; Fig. 8 is a view of one of the stops and Fig. 9 represents the construction of the spacing elements.

The form of the device shown is adapted to be attached to the well known Underwood typewriting machine provided with a denominational tabulator but it will be understood that the device may be attached to any standard typewriting machine and used in connection with any of the usual forms of tabulating devices. Only fragmentary portions of the typewriter carriage and key actuated tabulator stops are here shown,

since the construction and operation of these parts are well understood.

In the drawings, A represents the bracket or case supporting the usual key actuated denominational stops 1.

B represents a portion of the typewriter carriage to which the tappet stop bar is attached by means of brackets 2 and 3. In the present instance, the stop bar is provided with a plurality of stops 4, each of which, as indicated in Figs. 3, 4 and 8, is provided with two radially extending lugs or projections 5 and 6 integral with a split ring which forms the body of the stop. The ring is split at 7 and the ends thereof sprung apart laterally so as to act as a friction spring washer to hold the stop in either of two positions as more fully hereinafter explained. The stops are mounted on a shaft 8 which is mounted to turn in the bracket supports 2 and 3 and spaced apart by means of any suitable spacing elements such as that indicated in Fig. 9 of the drawings. The disk like spacing elements 9 are preferably provided with hub-like projections 10 and 11 on each side, which are arranged to interlock with adjacent spacing elements so as to leave a space between the elements of substantially the thickness of the stops 4 which are placed therebetween. This construction is clearly indicated in Figs. 1, 2, 3 and 4. The spacing elements at each end of the series are shown as of greater thickness and are pinned or otherwise secured to the shaft 8, hence it will be seen that the interlocking arrangement of the spacing elements will prevent these elements from turning independently of the shaft 8, which latter, in this case is shown as tubular, the tubular construction being merely for the purpose of reducing the weight. The stops and spacing elements are mounted alternately on the shaft 8 and a sufficient number of stops is employed to cover the entire width of the tabulating field, the stops being a letter space distance apart. From this arrangement it will be seen that the split ring or washer portion of the stop 4 will rub against adjacent spacing elements and frictionally control the movement of the stop when the shaft 8 is rocked or moved in either direction as explained later. The shaft 8 is mounted in the brackets 2 and 3 so as to bring the stops 5 in proximity to

the key actuated tabulator stops 1. In the normal position, however, the stop lugs 5 stand in the position indicated by the first stop in Fig. 3, that is, with the stop lug 5 out of the field or path of the key actuated stops 1.

Attached to the fixed frame A of the tabulator stops or to other fixed part of the machine is a finger bracket 12 which is secured in such position that the projecting lug or finger 13 stands over the stop lugs 5 of the series of tappet stops. This finger 13 is only of sufficient width or thickness to engage one of the stops 5 when it is desired to set the same into position to cooperate with the key-actuated stops 1. Extending parallel with the shaft 8 and over the series of stops 4 is a bar 14 which has one edge thereof located in a substantially radial plane, passing through the axis of the shaft 8; this edge of the bar or plate 14 being adapted to contact with the lugs 6 of the stops when the stops are to be reset or moved to inoperative position as hereinafter explained. A scale 15 may be secured to or mounted upon the bar 14 in any suitable manner and so located as to indicate the letter space position of the stops with relation to the setting finger 13; an extension or pointer 16, secured to said finger and extending over the scale 15, being adapted to facilitate reading the position.

As previously indicated, the shaft 8 is adapted to be rotated a limited amount in either direction and to carry with it the frictionally mounted stops 4-5. A lever 17 is connected to the end of this shaft for the purpose of rotating the same a limited extent in either direction. The normal position of the shaft and the lever is indicated in Fig. 5 which position is maintained by a spring 18 which is coiled about the hub of the lever. Both ends of the spring 18 are active, one end passing back of pins 19 and 20, and the other end back of pins 21 and 22. Adjacent to the hub 23 of the lever 17 is a disk 24 or other suitable support attached to the bracket 3 which supports one end of the shaft 8. The pins 20 and 22 are secured to and project outward from the disk 24 into the path of the ends of the spring 18. The pins 19 and 21 are secured to the disk-like portion of the hub 23 and project inward into the path of the ends of the spring 18, the arrangement being such that in normal position the four pins 19 and 20, 21 and 22 are substantially in radial lines passing through the center of the shaft 8 as indicated in Fig. 5 of the drawings. The object of this arrangement is to have the single spring act to hold the shaft 8 with the stops in the normal position indicated in Fig. 5, and at the same time permit a movement of the shaft in either direction, the spring acting to restore the shaft

to the normal position when the lever 17 is released. It will be readily understood that this function of the spring and the various pins may be performed by springs and devices otherwise arranged, and I do not wish to be limited to the particular structure shown. Since the spring 18 not only acts to hold the shaft in the normal position, but is used to move the shaft from either direction back to normal position after having been displaced by the lever 17, it will readily be understood that when the lever is released and the shaft and associated parts returned to normal position under the action of the spring 18, there will be some tendency for the shaft to overthrow or go beyond the normal position. To prevent this overthrow, when the shaft is returning to normal position under the action of either end of the spring 18, the lever 17 is not secured directly to shaft 8, but is pivotally secured at 25 to an arm 26 extending from the hub 23, which as previously indicated, is secured to the end of the shaft 8. The lever 17 is provided with an enlarged or elongated hole 27 through which a pin 28, projecting from the outer end of the arm 26, extends. This pin and slot connection between the lever 17 and the hub 23 permits of a limited amount of lost motion of the lever in either direction before it can move the shaft 8 against the spring 18. This lost motion is provided for the purpose of rocking the arms 29 and 30 out of or into the field of the respective pins 31 and 32 which extend from the fixed disk-like bracket 24 into the path of the arms 29 and 30. The arms 29 and 30 are so arranged with relation to pins 31 and 32 that when the lever 17 is pushed downward, the arm 29 will clear the pin 31 and the rock-shaft 8 can be turned a limited amount as indicated by the position of the lever in Fig. 6 of the drawings. When in this position, it will be seen that the arm 30 is in the path of the pin 32 so that when the lever 17 is released and, under the influence of the spring 18, the shaft is returned to normal position, the arm 30 will strike the pin 32 and prevent overthrow of the shaft 8. Likewise when the lever 17 is moved in the opposite direction as indicated in Fig. 7, the lost motion thereof will permit the arm 30 to clear the pin 32, while the arm 29 will be brought into the field of the pin 31, so that when the lever is released and the shaft and arms are rotated back to normal position by the spring 18, the arm 29 will contact with the pin 31 and prevent overthrow in this direction. It will readily be apparent that other suitable means for preventing overthrow of the shaft may be employed.

The operation of the device may be readily understood from the foregoing description, but it will be well to indicate the gen-

eral plan of operating the device in connection with the typewriter. With the stops all in normal position, which as previously stated, would be the position of the first stop shown in Fig. 3 of the drawings, the carriage of the typewriter is moved by hand to the desired columnar position as indicated by the front or regular scale and pointer of the typewriter. In this position, the lever 17 is pressed down to the position represented in Fig. 6 of the drawings. This will rotate or rock the shaft 8 together with all of the stops 4 except the one standing in the plane of the stop setting finger 12-13 which will be prevented from rotating with the shaft by contact of the lug 5 with the projection 13. Thus the individual stop 4 in contact with the setting finger 13 is rotated to operative position with relation to the shaft 8. When the lever 17 is released, the spring 18 will restore the shaft to the normal position indicated in Fig. 5, which movement will carry the stop projection 5 of the stop which has been acted on by the stop finger 13 into the path of the key actuated tabulator stops 1 as indicated by the front stop in the section in Fig. 4 of the drawings. This operation may be repeated by moving the typewriter carriage to other columnar positions as required, after which the key actuated tabulator stops 1 may be operated in the usual manner. When it is desired to change the columnar arrangement of the stops in use, or in other words, to set up a different combination of stops, all the set stops or stops in operative position may be restored to normal inoperative position by rocking the shaft 8 in the opposite direction. The lever 17 is then lifted to the position indicated in Fig. 7, thereby bringing the lugs 6 of all stops set in operative position into contact with the edge of the bar or plate 14 which serves to hold these stops from movement, as the shaft 8 turns thus turning or bringing all the stops back to the normal inoperative position with all the lugs 5 out of the field of the key actuated stops 1. After restoring the stops to normal inoperative position, a new combination of columnar stops may be set in the manner described and restored to normal inoperative position, the operation being repeated as frequently as desired. The friction between the shaft 8 and the stops 4 is only sufficient to prevent the stops from being displaced during the normal operation of the typewriter.

Various modifications may be made within the scope of the claims without departing from the spirit of my invention.

I claim:—

1. In a typewriter the combination with key actuated tabulator stops of a plurality of tappet stops a letter space distance apart, each independently movable into operative

position to cooperate with said key actuated stops, a rock shaft supporting said tappet stops means adapted, when rocking said shaft in one direction, to move the tappet stops individually into the operative position, means adapted, when rocking said shaft in the other direction, to restore any stops in operative position to inoperative position and means for rocking said shaft in either direction.

2. In a typewriter the combination with key actuated tabulator stops of a plurality of tappet stops a letter space distance apart, each independently movable into operative position to cooperate with said key actuated stops, a rock shaft supporting said tappet stops, a fixed finger adjacent to said key actuated stops and adapted to cooperate with said tappet stops individually in moving the same to operative position, a universal restoring bar operative on all of said stops and means for rocking said shaft in one direction to move said tappet stops, when in cooperative relation with said finger, into operative position and in the other direction to cooperate with said bar and restore any stops in operative position to inoperative position.

3. In a typewriter the combination with key actuated tabulator stops of a plurality of tappet stops a letter space distance apart, each independently movable into operative position to cooperate with said key actuated stops, a rock shaft supporting said tappet stops, means for rocking said shaft in either direction from its normal position and resilient means for returning said shaft to normal position after the same has been rocked in either direction.

4. In a typewriter the combination with key actuated tabulator stops of a plurality of tappet stops a letter space distance apart, each independently movable into operative position to cooperate with said key actuated stops, a rock shaft supporting said tappet stops, means for rocking said shaft in either direction from its normal position, resilient means for returning said shaft to normal position after the same has been rocked in either direction, and means for preventing overthrow of said shaft when the same is being returned to normal position by said resilient means.

5. In a typewriter the combination with key actuated tabulator stops of a plurality of tappet stops a letter space distance apart, each independently movable into operative position to cooperate with said key actuated stops, a rock shaft supporting said tappet stops, and movable in either direction from a normal position, means for holding the tappet stops to turn with said shaft, independent means for holding individual tappet stops from turning with said shaft in order to position the stops to cooperate with said

key actuated stops, means for simultaneously holding any stops in operative position from turning with said shaft in order to restore used stops to inoperative position and means for rocking said shaft in one direction to set the tappet stops to operative position and in the other direction to restore any set stops to inoperative position.

6. In a typewriter the combination with key actuated tabulator stops of a plurality of tappet stops a letter space distance apart, each independently movable into operative position to cooperate with said key actuated stops, a rock shaft supporting said tappet stops and movable in either direction from a normal position, means for holding the tappet stops to turn with said shaft, independent means for holding individual tappet stops from turning with said shaft in order to position the stops to cooperate with said key actuated stops, means for simultaneously holding any stops in operative position from turning with said shaft in order to restore the same to inoperative position and resilient means for moving said rock shaft from either direction back to normal position.

7. In a typewriter the combination with key actuated tabulator stops of a plurality of tappet stops a letter space distance apart, each independently movable into operative position to cooperate with said key actuated stops, a rock shaft supporting said tappet stops and movable in either direction from a normal position, means for holding the tappet stops to turn with said shaft, independent means for holding individual tappet stops from turning with said shaft in order to position the stops to cooperate with said key actuated stops, means for simultaneously holding any stops in operative position from turning with said shaft in order to restore the same to inoperative position, resilient means for returning said rock shaft to normal position and holding it there and means for preventing overthrow of the shaft when returned from either direction to normal position by said resilient means.

8. In a typewriter the combination with key actuated tabulator stops of a plurality of tappet stops a letter space distance apart, each independently movable into operative position to cooperate with said key actuated stops, a rock shaft supporting said tappet stops, spacing members on said shaft separating said stops and permitting independent movement thereof, said tappet stops be-

ing frictionally held between said spacing members so as to move with said rock shaft or to be moved independently relatively thereto, a fixed finger adapted to hold the individual tappet stops while the same are being positioned for cooperation with said key actuated stops and means for holding all positioned stops from movement when the shaft is turned to restore said stops to normal position out of cooperative relation with said key actuated stops.

9. In a typewriter the combination with key actuated tabulator stops of a plurality of tappet stops a letter space distance apart, each independently movable into operative position to cooperate with said key actuated stops, a rock shaft supporting said tappet stops, spacing members carried by said shaft, separating and frictionally engaging said tappet stops, means for rocking said shaft in either direction from its normal position and resilient means for returning said shaft to normal position after movement in either direction.

10. In a typewriter the combination with key actuated tabulator stops of a plurality of tappet stops a letter space distance apart, each independently movable into operative position to cooperate with said key actuated stops, a rock shaft supporting said tappet stops, spacing members on said shaft separating said tappet stops, frictional engaging means connecting said tappet stops to move with said shaft, an independently mounted fixed finger adapted to hold individual tappet stops when said shaft is moved in one direction to position stops for cooperation with said key actuated stops, a bar extending parallel to said shaft and adapted to hold any stops in operative position from movement when said shaft is moved in the other direction, to restore positioned tappet stops to inoperative position, means for moving said rock shaft in either direction as desired, a letter space scale adjacent to and parallel with said shaft for indicating the position of said tappet stops and a pointer extending from said fixed finger adapted to cooperate with said scale.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

MARQUIS H. LOCKWOOD.

Witnesses:

JOHN A. KEHLENBECK,
G. V. RASMUSSEN.