No. 607,405. Patented July 12, 1898.

E. A. BRIGHAM.

TYPE WRITING MACHINE.

(Application filed June 24, 1895.)

(No Model.)

Fig. 1.

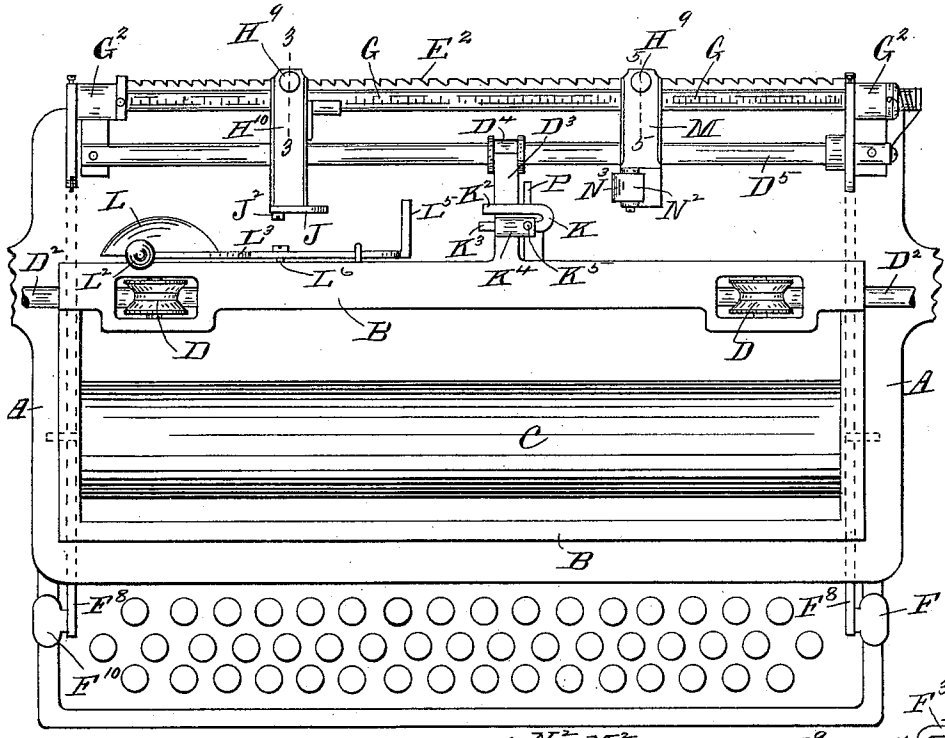


Fig. 4.

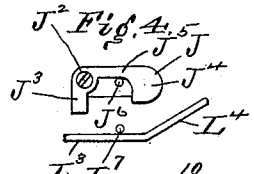


Fig. 6

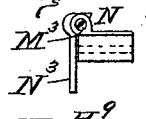


Fig. 5.

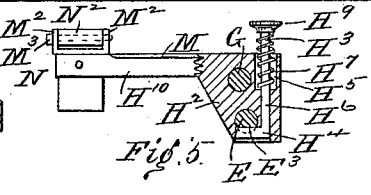


Fig. 3.

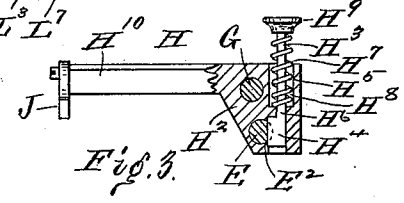


Fig. 2.

Witnesses.

Wm. Ed. Jones

K. Smith

Inventor.

Ernest A. Brigham

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

ERNEST A. BRIGHAM, OF CINCINNATI, OHIO, ASSIGNOR TO THE WYCKOFF, SEAMANS & BENEDICT, OF NEW YORK.

TYPE-WRITING MACHINE.

SPECIFICATION forming part of Letters Patent No. 607,405, dated July 12, 1898.

Application filed June 24, 1895. Serial No. 553,854. (No model.)

To all whom it may concern:

Be it known that I, ERNEST A. BRIGHAM, a citizen of the United States, and a resident of the city of Cincinnati, in the county of Hamilton and State of Ohio, have invented a certain new and useful Margin Stop and Release for Type-Writing Machines, of which the following is a specification.

The object of my invention is to provide simple and effective marginal stop contrivances and also releasing mechanism therefor; and to this end my improvements consist in the several features of construction and combinations of devices hereinafter more fully described, and particularly pointed in the appended claims.

In the accompanying drawings, making a part of this application, and in which similar letters of reference indicate corresponding parts, Figure 1 is a plan view of my invention as applied to one description or style of type-writing machines. Only those parts of the type-writing machine which are essential to the understanding of my invention and its operation are shown. Fig. 2 is a side elevation of the mechanism for effecting at the keyboard the release of the marginal stop. Fig. 3 is a view, partly in elevation and partly in section, of the adjustable margin stop for stopping the carriage when traveling from right to left, the sectional part of said figure being taken at the dotted line 3 3 of Fig. 1. Fig. 4 is a front end view of the adjustable stop shown in Fig. 3 and a side elevation of the free end portion of the lever operating the bell hammer or clapper and stop employed in connection with the said lever. Fig. 5 is a view, partly in elevation and partly in section, taken similarly to that of Fig. 3 and illustrating the construction of the adjustable margin stop for stopping the carriage when traveling from left to right, the section being taken on the dotted line 5 5. Fig. 6 is a front end view of the device shown in Fig. 5.

My device is applicable to various type-writing machines; but for the purpose of illustration I have shown it applied to the Remington type-writer.

In the drawings, A indicates the frame of the machine.

B indicates the frame of the carriage, in which the platen C is mounted.

D D are the wheels of the carriage, running upon tram-rail D^2. The carriage is further steadied in its horizontal reciprocatory movement by means of an arm D^3, having an eye D^4, engaging stationary rail D^5, fixed to the frame A of the machine. I provide a rod E, in the present illustrative instance being a separate rod from the one indicated by D^5 and located in the rear of the latter. This rod is notched at intervals corresponding to the distance of the letter-spacing. There are two rows of such notches. In the present illustrative instance one row of said notches E^2 is at the side thereof and the other row E^3 at the bottom thereof. This rod E is suspended in the arm F^2 of the crank-arm F. The crank arm or lever F has a horizontal arm F^3 and a vertical arm F^4, whose free end is pivoted at F^5 to the upper end of a vertical connecting-rod F^6, the lower end of the latter being pivoted at F^7 to the rear end of lever F^8, horizontal, or nearly so, pivotally fulcrumed at F^9 to the frame of the machine and at its other or forward end provided with a vertical finger-key F^{10}. The crank F is fulcrumed on a rod G, rotatable in bearings G^2 at the respective ends of the machine, the crank capable of being adjustably set at a desired point along the rod G by means of set-screw F^{12}. Depression of the key F^{10} operates to vibrate the rod E laterally forward, and as soon as the pressure upon the key F^{10} is released the rod E will return to its first position. This return of the rod E is accomplished not only by the weight of the connecting-rod F^6, but by the weight of other parts hereinafter described.

Located on the rods E and G is the adjustable margin stop H for stopping the carriage in its movement toward the left, thereby determining the stopping-point at the right-hand side of a sheet. This adjustable stop consists as follows: It has a portion H^2, through which pass the rods G and E. In this same portion H^2 is located a ratchet latch or pawl H^3, whose tooth or projection H^4 is arranged to engage one of the rows of notches. The preferred mode of releasing the tooth H^4

from the notch consists in the means shown—to wit, a vertical reciprocatory bar H^5, playing through a bearing H^6 of the portion H^2 of the stop and also through a spring H^7, one end of which lies in and bears against the bottom of the opening H^8 of the portion H^2, while the top portion of said spring bears against the thumb or push button H^9 of the bar H^5. By depressing the button H^9 the operator of the type-writer releases the tooth H^4 from engagement with its adjacent notch, thereby releasing the stop H and enabling the stop to be moved along the rods G and E to any desired point thereon. The portion H^2 carries the arm H^{10}, and at the free end of this arm is an angulated arm J, pivoted at J^2 to the free end of arm H^{10} and having a vertical arm J^3 at the left-hand end of the arm or lever J and a weighted portion J^4 at the right-hand end of the arm J.

Beneath the central portion J^5 of the lever is a stop J^6, which prevents the portion J^4 J^5 from being depressed beyond the line of the stop, and consequently prevents the arm J^3 from yielding when its right-hand edge is struck; but this stop J^6 obviously does not prevent the arm J^3 from yielding when its left-hand edge is struck.

Near the central portion of the carriage, at its rear side, is located a stop K of any suitable form. One description of such stop of my invention is that shown, and consists of the U-shaped bar having two limbs, respectively marked K^2 K^3. The arm K^3 passes through a sleeve K^4 of the carriage-frame B, while the arm K^2 constitutes the stop proper and is in alinement with the reciprocatory oscillatory arm J, hereinbefore described. In the sleeve K^4 is a set-screw K^5, arranged to impinge against the arm K^3 of the stop. By this set-screw the stop K can be adjusted, so that the arm J^3 will be struck by the stop somewhat sooner or later, according as the stop K is adjusted. Thus the stop K is adjustable, so that whenever the adjustable stop H is in any given notch it will be struck by the stop K when a letter-space has been completed.

I will now describe the functions and operation of the stop H.

Upon the rod G is a scale corresponding to the notches of the lower rod E and also to the letter-spacing of the type-writer. The operator, by means of the latch arrangement H^9, &c., releases the stop H and moves it along the rod G, so that it will stop the carriage at the desired point upon the scale, thereby enabling the type-writing to stop at the same point upon the page and make an even margin of the lines at the right-hand end thereof. As the carriage moves from right to left the stop K^2 passes under the part J^4 and strikes against the right-hand side of the vertical arm J^3. This arm J^3 immediately stops further movement of the carriage from right to left. This stop J is also arranged to operate the bell mechanism and give the alarm before the carriage has reached the limit of its movement toward the left.

A bell L is located in the carriage, preferably low down, as shown. In connection with the same is a clapper L^2, operated by an arm L^3, having a bent portion L^4 and a horizontal arm L^5 and extending out into the path of the angulated arm J. This arm L^3 is pivoted at L^6 to the frame of the carriage and is also provided with a stop L^7. The purpose of the stop L^7 is well known—viz., to prevent the clapper from resting directly upon the bell and yet allow the latter to be so near the bell that when the arm L^3 is depressed and released the weight of the clapper will be sufficient, through the elastic nature of the arm L^3, to carry the said clapper down against the bell and ring the same.

In operation, as the carriage moves from right to left the arm L^5 of the bell-lever passes under the part J^4 and strikes against the arm J^3, and the latter, unyielding in the direction in which it is pushed by the arm L^5, depresses the latter. After the arm L^5 has passed beyond the arm J^3 the arm L^5 is free to rise and the clapper L^2 falls and rings the bell. When the carriage is moved from left to right in order to begin another line, the arm L^5 strikes the rear side of the arm J^3 of the lever J and forces it from left to right, thus enabling the arm L^5 to pass by the stop J H and be in position to again ring the bell.

The adjustable margin stop for stopping the carriage on its return or right-hand travel is constructed as follows: I have indicated this stop generally by the letter M, and it has a portion H^2 similar to the stop H and an arm H^{10} similar to the arm H^{10} of the preceding stop. The part H^2 is supported by and is capable of being slid on the rods G and E just as part H^2 of the stop H is. This stop is provided with mechanism for latching and unlatching it similar in all respects to the mechanism shown in connection with the stop H, with the single exception that while the stop H employs one of the rows of notches on the bar E stop M employs the other row of these notches in connection with its own latch. It is immaterial which row of notches the one stop has as distinguished from the other stop. For instance, the stop H might employ the lower row of notches, while the stop M might employ the side row of notches. In the present instance the latch of the stop H employs the side row of notches E^2 and that of the stop M employs the under row of notches E^3, for which purpose the latch H^4 extends underneath bar E, substantially as shown in Fig. 5.

By the construction and arrangement of the catches or fastening devices the marginal stops H and M may be vibrated without separating or disengaging the catches or fastening devices or freeing or unlocking said marginal stops, thus avoiding any accidental disturbance of their adjusted positions and the possibility of failure to relock or reëngage on

the returning vibratory movements of said marginal stop.

The free end of the stop M is provided with a pivotal stopping device N, substantially as follows: Portion N carries the end bearings M^2 M^2. Pivot M^3, supported in these bearings or uprights, carries sleeve N^2, located between bearings M^2 M^2. This sleeve and bearings are connected to a suspensory stop-piece N^3. This suspensory stop-piece rests against the edge of the arm H^{10} and is prevented from oscillating from left to right, and its free end is as obviously free to oscillate from right to left and away from the arm H^{10}.

The functions and operation are as follows: The operator by means of the push-button H^9 releases the stop and sets it by means of the scale on the rod G and the notches and latching mechanism aforedescribed at the desired point upon the scale, so as to regulate the distance from the left-hand edge of the page at which the printing shall begin. The operator then moves the carriage from left to right until a stop, as P, fixed to the carriage-frame, impinges against the suspensory stop-piece N^3. The carriage will then be stopped and the machine is in readiness for the operator to begin the line to be written.

I have described the functions of these two stops H and M so far as their limitations of the movement of the carriage are concerned after they have been set and without being disturbed by human agency. It often occurs that the operator desires to increase the length of a line previously determined by the setting of the adjustable stops. In such event should the operator desire to diminish the blank margin of paper at the beginning of the line—in other words, to begin the line earlier than the regular margin of printed work—he depresses the key F^{10}. This operates to throw the rod E forward and as a result lifts the free end of the lever M, with its suspensory stop, upward and out of the way of the path of the stop P, and thereupon the operator can move to the right of stop P as much as he desires. The suspensory stop-piece N^3 will not interfere with the movement of the carriage from right to left, because when the stop P strikes against the right-hand side of the suspensory stop-piece N^3 it is free to yield, and its yielding will allow the stop P to pass under it without detention.

In case the operator desires to extend the line beyond the established right-hand margin of the printed column as determined by the stop H J, he depresses the key F^{10}, and thus raises the free end of the stop H J out of the path of the stop K^2 and allows the latter to pass under the arm J^3. When the carriage is again moved from left to right to begin another line, the angulated arm J^3 J^4 J^5 will yield, the part J^3 being pushed from left to right and the part J^4 returning the part J^3 to its normal position after the stop or contact device on carriage has passed by the combined carriage-stop and bell-trip J^3.

The rod G preferably rotates in bearings, although of course it may be fixed or stationary and the lever F turn thereupon instead of therewith. The said rod G acts as a fulcrum for the lever-like stops or margin-regulators H and M when the vibratory rod E is actuated to swing said stops. The stops H and M may be vibrated about said rod G by direct application of the hand to said stops.

Among the various advantages not hereinbefore already mentioned may be specified the following: The margin stop can be released at the keyboard by the depression of either of the keys F^{10}. This capacity of use is a great advantage in rapid writing and will be appreciated by experts in the art. Heretofore the operator in releasing the margin stops in use has been compelled to lift his hands from the vicinity of the keys and up over the machine. By my invention such labored and tardy work is entirely obviated. It is as easy to release the margin stop as to print a letter.

What I claim as new and of my invention, and desire to secure by Letters Patent, is—

1. In a type-writing machine, the combination of a rod or bar, a vibratory adjustable marginal stop provided with an oscillatory suspensory stop and with means for holding the marginal stop in a fixed position relatively to said bar or rod both while said stop is in its normal working position and while it is in its vibrated or non-working position, and a stop or contact on the carriage; substantially as and for the purposes specified.

2. In a type-writing machine, the combination of a rod or bar, a vibratory adjustable marginal stop provided with an angulated pivoted arm having portion J^3 and portion J^4 and stationary stop J^6, a fastening device for holding said marginal stop in its adjusted position, means for vibrating said marginal stop and its pivoted arm without disturbing said fastening device, and a stop or contact on the carriage; substantially as and for the purposes specified.

3. In a type-writing machine, a scale, an adjustable right-hand margin stop, riding on a rod, and carrying the angulated pivoted arm having stop-arm J^3, and portion J^4 and stationary stop J^6, in combination with an adjustable stop consisting of the U-shaped piece K having stop-arm K^2, and arm K^3, the latter located in the sleeve K^4 of the carriage and set-screws K^5, substantially as and for the purposes specified.

4. In a type-writing machine, a scale, an adjustable right-hand margin stop, riding on a rod, and carrying the angulated pivoted arm having stop-arm J^3, and portion J^4, and stationary stop J^6, in combination with the bell affixed to the carriage, clapper L^2 clapper-rod L^3 and arm L^5 with stationary stop L^7, substantially as and for the purposes specified.

5. In a type-writing machine, a scale, an adjustable right-hand margin stop, riding on a rod, and carrying the angulated pivoted arm

having stop-arm J^3, and portion J^4 and stationary stop J^6, in combination with an adjustable stop consisting of the U-shaped piece K having stop-arm K^2, and arm K^3, the latter located in the sleeve K^4 of the carriage, and set-screws K^5, and the bell of the carriage, bell-clapper with rod and operating-arm, substantially as and for the purposes specified.

6. In a type-writing machine, in combination with an adjustable marginal stop, the two rods E and G, the stop being mounted on the rods, one of the rods being movable laterally to change the position of the stop, substantially as and for the purposes specified.

7. In a type-writing machine, in combination with an adjustable marginal stop, the two rods E and G, the stop being mounted on the rods, and mechanism for moving the rod E laterally to change the position of the stop, substantially as and for the purposes specified.

8. In a type-writing machine, the combination of two rods or bars E and G, a vibratory marginal stop adjustably mounted on said rods or bars, a key-lever at the keyboard, and an intermediate connection whereby said rod or bar E may be vibrated and the said stop moved out of the plane of a stop or contact on the carriage; substantially as and for the purposes specified.

9. In a type-writing machine, the combination of the rods or bars G and E, a vibratory marginal stop adjustable thereupon, keys arranged at each end of the keyboard, and mechanism connecting said keys and said rod E whereby a depression of either of said keys will swing the rod E and effect a vertical vibration of said stop and move it out of the path of the stop or contact on the carriage; substantially as and for the purposes specified.

10. In a type-writing machine, the combination of a vibratory marginal stop, the rod G, the laterally-movable rod E, on both of which said marginal stop rides, a key at the keyboard, and intermediate means for vibrating said rod E to swing the stop out of the path of the stop or contact on the carriage; substantially as and for the purposes specified.

11. In a type-writing machine, the combination of a marginal stop, a rod G, a swinging rod E, a lever F connected to the latter, a connecting-rod F^6, and a key-lever F^8; substantially as and for the purposes specified.

12. In a type-writing machine, a marginal stop, rod G, and shiftable rod E, and a lever-shifter for shifting the rod E laterally to change the position of the stop, consisting of the arm F^2 whose free end carries the rod E, and fulcrumed on rod G, and having the angulated arm F^3, F^4, connecting-rod F^6, lever F^8 and key F^{10}, substantially as and for the purposes specified.

13. In a type-writing machine, the combination of the vibratory rod E, a rod G, an adjustable stop having the front movable piece N^2, N^3, and the angulated arm F, connecting-rod F^6, lever F^8 and key F^{10}, and counter-stop on carriage, substantially as and for the purposes specified.

14. In a type-writing machine, the combination of the vibratory rod, as E, a rod G, an adjustable stop having an end J^3, J^4, counter-stop on carriage, and angulated arm F, connecting-rod F^6, lever F^8, key F^{10}, substantially as and for the purposes specified.

15. In a type-writing machine, the combination of an adjustable margin stop, and the rods E and G, the former vibratory and notched or serrated, and mechanism on the stop for engaging said stop with said notches, and for disengaging the stop therefrom, and mechanism for enabling the operator to vibrate the rod E, and release the stop, substantially as and for the purposes specified.

16. In a type-writing machine, the combination of a rod G, and a laterally-vibratory rod E, having two longitudinal rows of notches, and two margin stops on said rods, and mechanism for enabling each stop to be engaged with its respective line of notches, and be disengaged therefrom, substantially as and for the purposes specified.

17. In a type-writing machine, the combination of the rods G and E, the latter having two parallel longitudinal rows of notches, and the adjustable marginal stops, each having a resilient push-button and latch for engaging a given notch in its respective row of notches, substantially as and for the purposes specified.

18. In a type-writing machine, the combination of the rods G and E, the latter having two parallel longitudinal rows of notches and the adjustable marginal stops, each having a resilient push-button and latch for engaging a given notch in its respective row of notches, the latch on one stop being at the side of the bar and in conjunction with one line of notches as E^2, and the latch on the other stop being at the bottom of the bar, and in conjunction with that line of notches there located, substantially as and for the purposes specified.

19. In a type-writing machine, the combination of a carriage having a stop or contact, a vibratory adjustable margin stop provided with a pivoted or yielding contact portion adapted, when in normal position, to arrest the carriage, and adapted to be moved out of the way of the carriage stop or contact when the marginal stop is vibrated to permit the carriage to pass beyond the said pivoted or yielding contact portion, and the latter being also adapted to vibrate or yield to permit the carriage to move in the opposite direction after the said vibratory stop has returned to its normal position, a fastening device for holding said marginal stop in its adjusted position, and means for vibrating said stop without causing a disengagement of said fastening device; substantially as set forth.

20. In a type-writing machine, the combina-

tion of a carriage having a stop or contact piece, a rod G, an arm or lever fulcrumed on said rod and provided with a pivoted contact-piece and a catch or fastening device which maintains its holding or locking engagement when said arm is swung or vibrated about said rod; substantially as set forth.

21. In a type-writing machine, the combination of a carriage having a stop or contact piece, a rod G, an arm or lever fulcrumed thereon, and provided with a pivoted contact-piece, a second parallel rod E, and means for securing said arm or lever at any desired locality thereupon; substantially as set forth.

ERNEST A. BRIGHAM.

Attest:

WM. E. JONES,

K. SMITH.