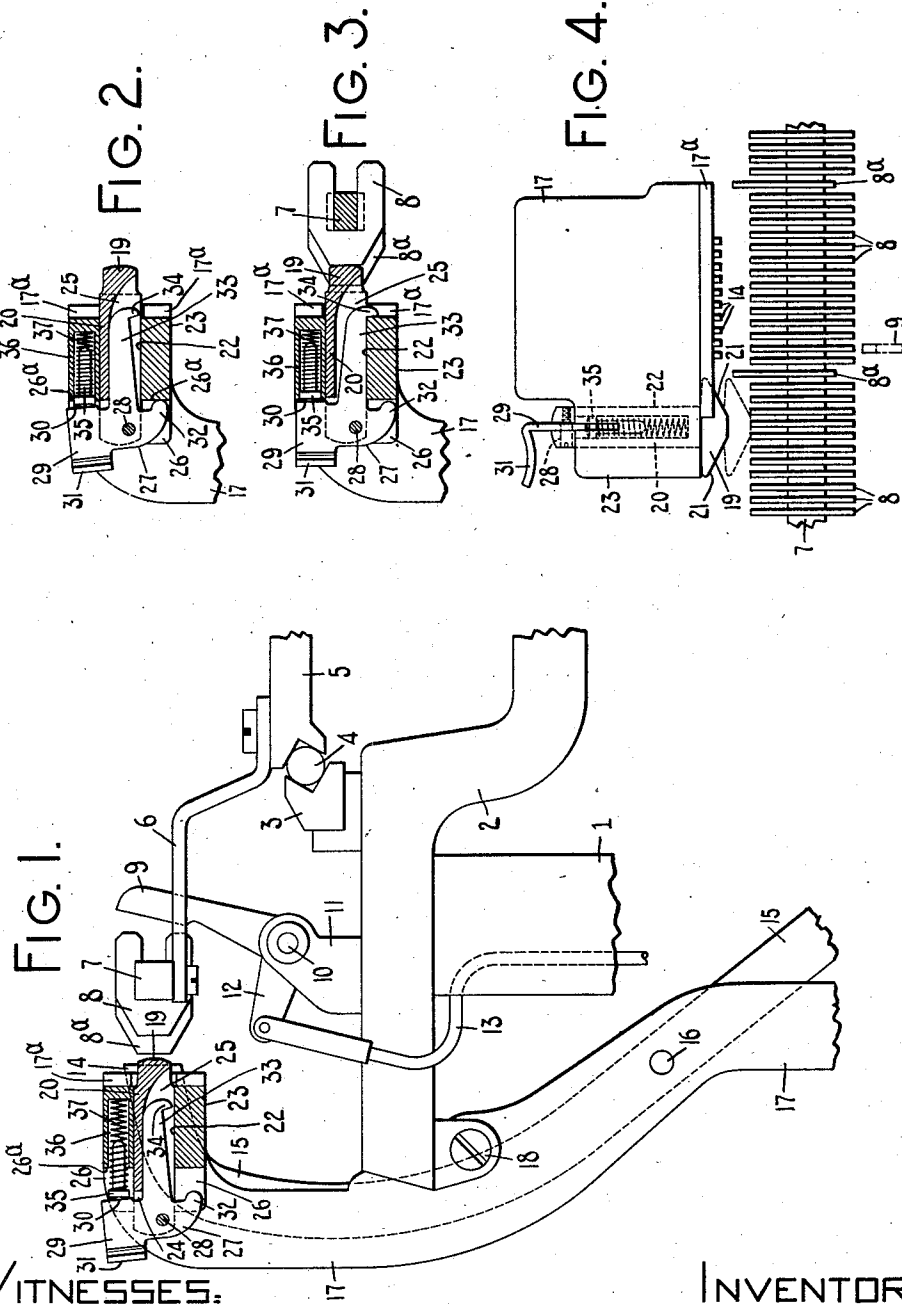


O. WOODWARD.
TYPE WRITING MACHINE.
APPLICATION FILED OCT. 21, 1911.

1,021,395.

Patented Mar. 26, 1912.



WITNESSES:

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UNITED STATES PATENT OFFICE.

OSCAR WOODWARD, OF MONTCLAIR, NEW JERSEY, ASSIGNOR, BY MESNE ASSIGNMENTS, TO UNION TYPEWRITER COMPANY, OF JERSEY CITY, NEW JERSEY, A CORPORATION OF NEW JERSEY.

TYPE-WRITING MACHINE.

1,021,395.

Specification of Letters Patent.

Patented Mar. 26, 1912.

Application filed October 21, 1911. Serial No. 655,974.

To all whom it may concern:

Be it known that I, OSCAR WOODWARD, citizen of the United States, and resident of Montclair, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Type-Writing Machines, of which the following is a specification.

My invention relates to tabulating mechanism for typewriting machines and has for its principal object the provision of new and improved means for resetting one or more set tabulating stops, or as herein exemplified for restoring such stops to normal or inoperative positions from projected or operative positions.

To the above and other ends my invention consists in the features of construction, combinations of devices and arrangements of parts hereinafter described and particularly pointed out in the claims.

The specific object of my invention is to simplify and improve restoring or resetting devices for tabulator stops of the character disclosed in Patent No. 971,953, granted to me on October 4, 1910, to which patent reference may be had for a more extended description than follows of the tabulating mechanism in general.

While my invention may be embodied in various styles of writing machines I have preferred to show it herein applied to a No. 11 Remington typewriting machine and the tabulating mechanism ordinarily associated with said machine.

In carrying out my invention in the present instance I provide the slidably, hand-actuated restoring or resetting device or wiper of prior constructions with a pivoted hook-like latch which is adapted to receive the backward pressure from the tabulator stops as they are being restored or reset, said latch also operating to prevent rotation of said device.

In the drawings, Figure 1 is a fragmentary side elevation partly in section showing the upper rear portion of a No. 11 Remington machine embodying my invention. Fig. 2 is a vertical longitudinal sectional view of the resetting devices, the view also illustrating the mounting of said devices. Fig. 3 is a view corresponding with Fig. 2 but showing the resetting device latched forward in operative position and

coöperating with one of the tabulator column stops. Fig. 4 is a top plan view of the resetting device and associate tabulator stops.

As appears from Fig. 1 the main frame of the machine comprises posts, one of which is shown and designated by the numeral 1, the posts supporting a top plate 2 on which are mounted fixed track ways, the rear track way 3 being shown, said track ways coöperating through anti-friction balls 4 with a traveling element or carriage 5, a fragment of which appears in the drawing. Secured to said carriage are brackets or arms 6 supporting a toothed stop bar 7, said stop bar being provided with notches at letter space intervals in which are arranged column stops 8, said column stops being mounted to slide rearward and forward on the bar 7 to different set positions as described in my prior patent aforesaid. The normal or inoperative position of the column stops is illustrated in Fig. 4 by the stops marked 8 and said column stops are adapted to be projected or slid rearward as illustrated by the two stops marked 8^a in position to coöperate with the denominational stops on the frame of the machine. This rearward projection of the column stops is effected preferably by devices comprising a projector or arm 9 carried by and extending upward from a rock shaft 10 having bearings 11 fixed to the top plate. A crank arm 12 extends rearward from the rock shaft and is connected by a link 13 with a key lever (not shown), said key lever being provided with a key at the forward end and said key operating when actuated to pull down the link 13, turn the rock shaft 10 and swing the arm 9 rearward to engage one of the column stops and slide the same rearward to operative position, that is, in position to co-act with one of the frame or denominational stops when the tabulator is operated. The carriage may be moved endwise to bring selected column stops in register with the projector 9, so that the latter may operate thereon when actuated.

The series of denomination stops, designated by the numeral 14, are maintained a letter space distance apart as shown in Fig. 4 by vertical slotted guide plates 17^a secured to the upper forward end of the frame 17.

As appears from Fig. 1, the stops 14 extend forward from the tops of denominational levers 15 fulcrumed at 16 on a frame 17 secured at its upper end portion by screws 18 to the top plate 2, the lower part of said frame and the securing devices therefor being omitted from the drawing. Associated with the stop levers 15 are key-operated devices not herein shown which are effective to project desired denominational stops 14 forward into the path of such column stops 8^a as have been rearwardly projected on their support 7, said key operated devices being also effective to release the carriage 15 and bring the cooperating stops into engagement.

Means are provided for at will restoring or resetting the projecting or operative column stops to inoperative position, said means operating during a single endwise movement of the carriage to move all of such projected stops forward on the column stop bar or support 7, resetting such stops in the position occupied by the stops 8 in Fig. 4. The restoring or resetting means comprise a restoring or resetting device in the form of a double wiper cam consisting of a head 19 and a cylindrical body portion 20. The front of the head is provided with oppositely and rearwardly inclined vertical faces 21 at its right and left-hand sides; and the cylindrical body portion 20 bears slidably in a round opening 22 drilled horizontally through a bearing lug or extension 23 integral with the frame 17 and projecting leftward from the top portion thereof. The wiper or slide 19, 20 is provided with a vertical slot or kerf 24 at its rear end and is further provided with an under-slot or channel 25 which joins the slot 24, the two slots or cut-outs 24 and 25 forming a continuous kerf or slot-way. The rear end portion of the lug 23 is formed with a vertical slot or kerf 26 which registers with the slot 24, 25.

Vertically mounted in the slot 24, 25 is a retaining or catching device or latch designated as a whole by the numeral 27. Said device is plate-like in form, being preferably made of sheet metal, and is pivoted on a horizontal shouldered screw 28 supported in the rear end of the body portion 20, said screw bridging the slot 24. The device 27 comprises an upward extension 29 formed at its front with an engaging face 30 and at its rear with a laterally bent and curved portion or finger piece 31 which is slightly cupped to accommodate the finger of the operator. Below the pivot 28 the device 27 terminates in a forwardly turned nose 32 which is adapted to cooperate with the vertical closed end 26^a of the lower part of the slot 26 as hereinafter described. The portions of the member 27 above and below its pivot are housed in and adapted to move in

and be guided by the vertical slot or kerf 26 in the frame. The device 27 further comprises an extension or arm 33 extending forward from the pivot 28, said extension being housed in the under-cut 25 and terminating in a downwardly extending hook 34 which is adapted to cooperate with the front face of the lug 23 below the bearing opening 22 therein when the wiper cam is projected forward. The device or latch 27 is maintained in the normal position shown in Fig. 1 by a headed pin or plunger 35 which is seated in a horizontal depression 36 formed in the lug 23 above the opening 22, the head of said plunger or pin being kept in contact with the face 30 by a coiled spring 37 arranged in the depression 36 behind the plunger. Said spring presses the plunger outward and tends constantly to turn the upper portion of the member 27 rearward on its pivot, maintaining the upper edge of the hook-like extension 33, 34 in contact normally with the top of the under-cut 25 as shown in Fig. 1 and operating through the member 27 to maintain the wiper in normal inoperative position with its head in contact with the front face of the lug 23 as shown clearly in Fig. 4, said head being partly disposed between the left-hand end portions of the upper and lower guide plates 17^a. From Figs. 1 and 4 it will be observed that the wiper cam is substantially of the same elevation with the rearwardly projected column stops but is not normally in the path thereof, so that said stops will not normally engage said cam during to and fro movements of the carriage.

When it is desired to reset the projected column stops in normal position preliminary to a new projection thereof by the projector 9 for a different character of tabulating work, the operator pulls or presses forward against the finger piece 31. The spring 37 is preferably strong enough to resist relative turning movement of the member 27 on its pivot 28 at this time so that the pressure or pull will be transmitted from the finger piece 31 to the wiper 19, 20 which will be slid forward in its bearings in the direction of the pressure or pull until the nose 32 contacts with the stationary face 26^a, as shown in Fig. 2. From this figure it will be observed that the plunger 35 has been forced forward into the depression 36, compressing the spring 37 and that the hook 34 has cleared the bearing opening 22. Consequently, further pressure or pull on the finger piece 31 will cause the device 27 to fulcrum at the point of contact between the nose 32 and face 26^a, with the result that said member will swing forward and downward on its pivot until the hook 34 engages with the front face of the lug 23 below the bearing opening 22. The forward or advance movement of the wiper and the latch

will be limited by the engagement of the face 30 with the upper portion of the closed end 26^a of the slot 26. It will be understood that by the operation above described the wiper or double faced cam 19, 20 has been slid forward into the path of the rearwardly projected column stops 8^a, this position corresponding to the dotted line position of Fig. 4. It will also be understood that the device or latch 27 will be effective to maintain the wiper latched or locked forward in operated position so long as the operator maintains a sufficient forward pull or pressure on the finger piece 31. If with the latch and wiper set or latched forward the carriage be moved to the full distance of its travel in either direction, the operative or rearwardly projecting column stops will be brought successively into contact with one or another of the inclined or cam faces 21 of the restoring or resetting device and will thereby be forced to slide forward successively to inoperative position, the result being that all of the projected column stops will have been "cleared" or restored to the normal inoperative position. Fig. 3 shows the position of the parts just after one of the column stops 8 has been slid forward to inoperative position by the wiper. The reaction of the stop on the wiper operates to press the hook 34 slightly back from its foremost position and into engagement with the front face of the lug 23, as shown in Fig. 3. It will be apparent that during the resetting of the column stops the backward re-action or pressure from said stops received by the head 19 will be transmitted to the latch 27 and more particularly to the hook 34 which will be pressed against the front face of the lug 23, these parts receiving the pressure which otherwise would be transmitted to the finger of the operator. As a consequence the operator need only maintain sufficient pressure or pull on the finger piece 31 to maintain the latch tilted or turned into the engaging position shown in Fig. 3.

When the column stops have all been "cleared" as explained, the operator may release the finger piece 31 and the device 27 will be tilted back to the Fig. 2 position by the spring 37 which spring will further operate to restore the parts from the Fig. 2 to the Fig. 1 position where the wiper is inoperative so that the mechanism is then ready for a new stop setting operation through the operation of the projecting device 9. It will be seen that the pressure of the restoring spring is in the same direction, that is, a rearward horizontal direction, as is the return movement of the wiper.

It will be observed that my present improvements comprise stop restoring or resetting devices which consist of few parts and which are easy to make and assemble, are cheap to manufacture and yet provide a

mechanism which is efficient and certain in operation.

Various changes may be made without departing from the spirit and scope of my invention.

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

1. In a typewriting machine and in tabulating mechanism, the combination of a settable tabulator stop, a coöperative tabulator stop, and means for restoring said settable stop from said position, said means comprising a wiper and a finger piece pivoted to said wiper for controlling the same.

2. In a typewriting machine and in tabulating mechanism, the combination of a plurality of settable tabulator stops movable into and out of set position, a coöperative tabulator stop, and restoring means for said plurality of stops, said means comprising a wiper, a latch, and a finger piece operative first to move said wiper to operative position and thereafter to move said latch relatively to said wiper to latch the same in operative position.

3. In a typewriting machine and in tabulating mechanism, the combination of a plurality of settable tabulator stops movable into and out of set position, a coöperative tabulator stop, and restoring means for said plurality of stops, said means comprising a wiper, a latch, and a finger piece operative first to move said wiper to operative position and thereafter to cause said latch to engage a relatively fixed part to latch said wiper in operative position.

4. In a typewriting machine and in tabulating mechanism, the combination of a plurality of settable tabulator stops movable into and out of set position, a coöperative tabulator stop, and restoring means for said plurality of stops, said means comprising a wiper, a latch pivoted to said wiper and provided with a finger piece operative to move said wiper to operative position and set said latch.

5. In a typewriting machine and in tabulating mechanism, the combination of a plurality of tabulator stops movable relatively to their supports into and out of set positions, a coöperative tabulator stop, and restoring or resetting means for said plurality of stops, said means comprising a wiper and a spring-pressed latch pivoted to said wiper and provided with a finger piece, said finger piece being operative first to move said wiper to operative position and thereafter to swing said latch on its pivot to latching position.

6. In a typewriting machine and in tabulating mechanism, the combination of a plurality of tabulator stops movable relatively to their supports into and out of set positions, a coöperative tabulator stop, and restoring or resetting means for said plurality of stops, said means comprising a wiper, a

catch or latching device therefor, and a finger piece for moving said wiper and operating said device, said finger piece being movable in the direction of movement of said wiper.

7. In a typewriting machine and in tabulating mechanism, the combination of a plurality of tabulator stops movable relatively to their supports into and out of set positions, a cooperative tabulator stop, and restoring or resetting means for said plurality of stops, said means comprising a wiper, a catch or latching device, and a restoring spring for said wiper and said device, said restoring spring expanding in the same direction as that in which the wiper moves.

8. In a typewriting machine and in tabulating mechanism, the combination of a plurality of tabulator stops movable relatively to their supports into and out of set positions; a cooperative tabulator stop; and restoring or resetting means for said plurality of stops, said means comprising a slidable cam operative to restore said plurality of stops, a latch member pivoted thereto and provided with a finger piece, a latching hook and an engaging nose, and a restoring spring operative on said latch and said slidable cam, said finger piece being operative to slide said cam to operative position and to cause said nose to engage with a fixed part after which pressure on the finger piece tilts the latching hook into operative position.

9. In a typewriting machine and a tabulating mechanism, the combination of a plurality of tabulator stops movable relatively to their supports into and out of set positions, a cooperative tabulator stop, and restoring or resetting means for said plurality of stops, said means comprising a slidable wiper comprising a camming head and a

cylindrical body portion, and a latch member comprising a hook-like latch housed within said body portion, and a finger piece outside said body portion.

10. In a typewriting machine and in tabulating mechanism, the combination of a plurality of tabulator stops movable relatively to their supports into and out of set positions, a cooperative tabulator stop, and restoring or resetting means for said plurality of stops, said means comprising a wiper having a bearing portion, and a plate-like latch supported on said wiper and tiltable to lock the same in operative position, said latch operating to prevent rotary movements of said wiper.

11. In a typewriting machine, the combination of a projective tabulator frame stop, a traveling carriage, a toothed stop bar thereon, a series of column stops slidable on said bar into and out of position for cooperation with said frame stop when projected, a horizontally slidable wiper comprising a head provided with a double cam operative to restore the operatively set column stops, and a cylindrical body portion; a vertically disposed plate-like latch pivoted on said wiper and comprising a latching hook housed within said wiper and also comprising a laterally extending finger piece, and a spring restoring plunger operative directly on said latch member and through it on said wiper.

Signed at the borough of Manhattan, city of New York, in the county of New York, and State of New York, this 20th day of October, A. D. 1911.

OSCAR WOODWARD.

Witnesses:

CHARLES E. SMITH,
E. M. WELLS.