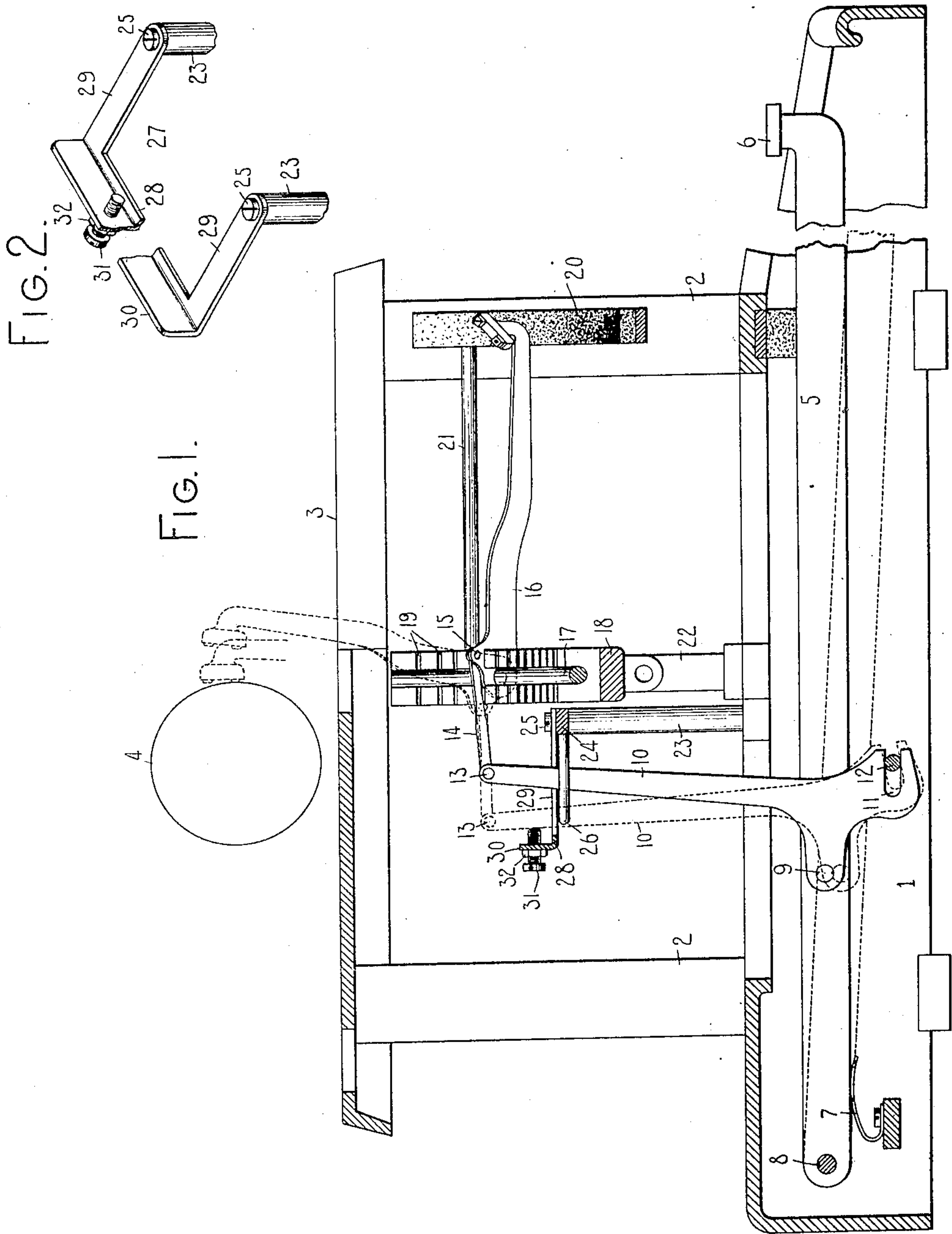


No. 882,042.

PATENTED MAR. 17, 1908.

F. A. YOUNG.  
TYPE WRITING MACHINE.  
APPLICATION FILED JULY 22, 1904.



WITNESSES:

E. M. Wells.  
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INVENTOR:

Frank A. Young  
By atty  
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# UNITED STATES PATENT OFFICE.

FRANK A. YOUNG, OF SYRACUSE, NEW YORK, ASSIGNOR TO THE MONARCH TYPEWRITER COMPANY, OF SYRACUSE, NEW YORK, A CORPORATION OF NEW YORK.

## TYPE-WRITING MACHINE.

No. 882,042.

Specification of Letters Patent.

Patented March 17, 1908.

Application filed July 22, 1904. Serial No. 217,607.

*To all whom it may concern:*

Be it known that I, FRANK A. YOUNG, citizen of the United States, and resident of Syracuse, in the county of Onondaga and State of New York, have invented certain new and useful Improvements in Type-Writing Machines, of which the following is a specification.

This invention relates to typewriting machines and more particularly to the type actuating mechanism of such machines.

It sometimes occurs in typewriting machines of the type bar class that the types are caused to impinge against the ribbon or paper with such force as to cut or puncture them, besides indenting the platen. These results are the more pronounced in the case of the types of small area of printing surface, such as the period and comma.

The main object of my invention is to provide a construction which will obviate these and similar defects.

To this and other ends which will subsequently appear, my invention consists in certain features of construction, arrangements of parts and combinations of devices to be hereinafter more fully described and particularly pointed out in the concluding claims.

In the accompanying drawings forming part of the specification, Figure 1 is a vertical longitudinal sectional elevation of a typewriting machine showing my invention embodied therein. Fig. 2 is a perspective view of the stop and stop-plate or bar and its supports.

The base 1 of the machine supports corner posts 2 which in turn sustain a top plate 3. The top plate supports a carriage (not shown) of any desired construction, said carriage being provided with a platen 4, diagrammatically illustrated.

The reference numeral 5 indicates one of a series of key levers each having a key-cap or button 6 and a restoring spring 7, said key levers being pivoted on a transverse fulcrum rod 8 in the rear of the base of the machine. Pivoted at 9 to each key lever is a sub-lever 10 formed at its lower end with a slot 11 which co-operates with a fixed fulcrum rod 12 extending from side to side of the machine beneath the key levers. The upper end of each sub-lever 10 is pivotally connected at 13 to the rear end of an actuating link 14, which at its forward end is pivoted at 15 to a type bar 16.

The type bar, as shown herein, is pivotally mounted upon a continuous fulcrum wire 17, which is seated in a groove in the concave face of the upright type-bar support or segment 18, the latter being slotted transversely and radially as at 19 for the accommodation of the pivot ends or hubs of the type bars. But, of course, the type bars may be otherwise pivotally mounted, as is common in this art. The type bars are supported at their type ends upon a segmental rest or pad 20, which is sustained by several horizontal arms, one of which, 21, is shown, extending forwardly from the type bar segment 19. For the purposes of this invention it is immaterial whether the segment or support 19 be fixedly or movably connected with its brackets or guides of which only the right-hand one, 22, is illustrated in the drawing.

Secured to the top of the base at each side of the machine and slightly in the rear of the segment, is a vertical post or standard 23. A horizontally disposed comb-plate 24 is suitably secured, as by headed screws 25, to the top of the posts 23, said comb-plate extending longitudinally of and behind the type bar segment, and being formed with rearwardly projecting teeth or pins 26, which serve to guide the sub-levers 10. Secured above the comb-plate upon the posts 23 is a stop holder preferably made in the form of a U-shaped stop bar or plate 27. The stop-plate comprises a cross bar 28 and side bars or arms 29 extending forwardly from the ends of the cross bar and provided with perforations through which pass the screws 25, the latter securing the stop-plate in position in the machine. The rear portion of the cross-bar 28 is bent upward vertically at right angles to the forward part of the cross-bar and forms a lip 30 extending transversely of the sub-levers and in rear of the same somewhat below their tops. The lip or flange 30 is so disposed that the limit of the rearward travel or throw of said sub-lever is somewhat forward of it, as indicated by the dotted line position of said sub-lever in Fig. 1.

The type bar shown in the drawing is the one commonly known as the "period" bar; that is, it is the bar or one of the bars provided with a "period" type. In the drawing the parts are shown in dotted lines as they appear when in position to print the period. Behind the sub-lever connected with this "period bar," the vertical lip 30 is tapped to



receive a stop-screw 31, which is provided with a binding nut 32, and is so situated that when the screw is properly adjusted the rear edge of the sub-lever 10 will contact with its inner end just before the type reaches the paper.

If the finger key 6 be adequately depressed, the type bar 16, through the sub-lever 10 and link 14, is actuated towards the printing point, as is well understood. When the contact between the sub-lever and the limiting screw 31 occurs, the parts will be in about the position indicated by the dotted lines in Fig. 1. The type bar, it will be noted, is still some distance from the printing point (as illustrated by the forward dotted lines, showing the complete bar) when the contact of the sub-lever with its stop 31 takes place. The momentum that has been acquired by the bar during its movement to this point, however, impels it to the printing point (as indicated by the fragmentary dotted line position of the type end of the bar). This further or additional movement of the bar is permitted by the elasticity or spring of the parts comprised in the type actuating mechanism and the looseness of their connections. The screw stop 31 may be adjusted to stop or limit the throw of the sub-lever in such position that the type bar, when actuated by a touch on the finger key of substantially the same character as is applied to the other keys of the keyboard, will contact with the paper on the platen with such force as to cause the period to print uniformly with the remainder of the types. By this construction I have found in practice that the period and like sharp types may be printed lightly and without puncturing the paper, which is a desideratum.

While I have illustrated the stop in connection with the type action of the period bar, it is to be understood, of course, that it may be employed equally well in connection with the "comma" type bar; with any other type bar carrying type or types of small area; and, if desirable, with any or all the type bars in the machine. It is further to be understood that while I have illustrated my invention as applied to a machine having the general characteristics of the Monarch typewriter, the said invention may be applied to other forms of writing machines.

Various changes of form, construction and combination of the parts hereinbefore described may be effected within the scope of the invention.

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

1. In a typewriting machine, the combination of a type bar support, a type bar mounted thereon, a key lever, a sub-lever movable independently of said type bar support and connected with said type bar and with said key lever, and means for limiting the throw

of said sub-lever, all the recited parts of the type action being at all times positively connected together, and movement of the type bar after the sub-lever is stopped being permitted by the spring or give of the parts and the looseness in their connections.

2. In a typewriting machine, the combination of a type bar support, a type bar mounted thereon, a key lever, a sub-lever movable independently of said type bar support and connected with said type bar and with said key lever, and a stop for positively limiting the throw of said sub-lever, all the recited parts of the type action being at all times positively connected together and movement of the type bar after the sub-lever is stopped being permitted by the spring or give of the parts and the looseness in their connections.

3. In a typewriting machine, the combination of a type bar support, a type bar mounted thereon, a key lever, a sub-lever movable independently of said type bar support and connected with said type bar and with said key lever, and an adjustable stop by which the movement of travel of said sub-lever may be varied, all the recited parts of the type action being at all times positively connected together and movement of the type bar after the sub-lever is stopped being permitted by the spring or give of the parts and the looseness in their connections.

4. In a typewriting machine, the combination of a type bar, a key lever, a vertically disposed sub-lever connected with said type bar and said key lever, and a stop arranged behind said sub-lever and adapted to limit the rearward travel of said sub-lever, all the said parts of the type action being at all times positively connected together, and movement of the type bar after the sub-lever is stopped being permitted by the spring or give of the parts and the looseness in their connections.

5. In a typewriting machine, the combination of a type bar, a key lever, a vertically disposed sub-lever connected with said type bar and said key lever, and an adjustable stop arranged behind said sub-lever and adapted to vary the limit of the rearward travel of said sub-lever, all the said parts of the type action being at all times positively connected together, and movement of the type bar after the sub-lever is stopped being permitted by the spring or give of the parts and the looseness in their connections.

6. In a typewriting machine, the combination of a type bar support, a type bar mounted thereon, a key lever, a sub-lever movable independently of said type bar support and connected with said type bar and with said key lever, a stop support, and a stop mounted on said support and adapted to limit the throw of said sub-lever, all the recited parts of the type action being at all times positively connected together and movement of



the type bar after the sub-lever is stopped being permitted by the spring or give of the parts and the looseness in their connections.

7. In a typewriting machine, the combination of a type bar, a key lever, a sub-lever connected with said type-bar and said key lever, a stop support and a stop adjustably mounted on said support and adapted to vary the limit of travel of said sub-lever, all the said parts of the type action being at all times positively connected together, and movement of the type bar after the sub-lever is stopped being permitted by the spring or give of the parts and the looseness in their connections.

8. In a typewriting machine, the combination of a type bar, a key lever, a sub-lever connected with said type bar and said key lever, posts secured upon a fixed part of the machine, a U-shaped stop-bar mounted upon said posts, and a screw stop mounted upon said stop-bar in the path of travel of said sub-lever.

9. In a typewriting machine, the combination of a type bar, a key lever, a sub-lever connected with said type bar and said key lever, relatively fixed supports, a guide comb mounted upon said supports, a stop support also mounted upon said supports, and a stop mounted upon said stop support in the path of travel of said sub-lever.

10. In a typewriting machine, the combination of a type bar, a key lever, a sub-lever connected with said type bar and said key lever, relatively fixed supports, a guide comb mounted upon said supports, a U-shaped stop bar having a vertical lip also mounted upon said supports, and a screw-

stop adjustably mounted in the vertical lip of said U-shaped stop bar.

11. In a typewriting machine, the combination of a type bar, a key lever, a sub-lever connected with said type bar and with said key lever, a support fixed to the machine, a stop holder on said support, and a stop on said holder, said stop being adapted to contact with said sub-lever when the latter is operated, all the said parts of the type action being at all times positively connected together, and movement of the type bar after the sub-lever is stopped being permitted by the spring or give of the parts and the looseness in their connections.

12. In a typewriting machine, the combination of a type bar, a key lever, a sub-lever connected with said type bar and with said key lever, a support fixed to the machine, a bar provided with an arm secured to said support, and an adjustable stop on said holder, said stop being adapted to contact with said sub-lever when the latter is operated, all the said parts of the type action being at all times positively connected together, and movement of the type bar after the sub-lever is stopped being permitted by the spring or give of the parts and the looseness in their connections.

Signed at Syracuse, in the county of Onondaga and State of New York, this 19th day of July A. D. 1904.

FRANK A. YOUNG.

Witnesses:

WALTON CECIL COOK,  
EARL DAVID CRAMER.