



No. 886,570.

F. A. YOUNG.  
TYPE WRITING MACHINE.  
APPLICATION FILED NOV. 7, 1904.

PATENTED MAY 5, 1908.

2 SHEETS—SHEET 2.

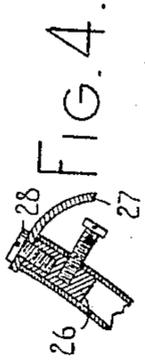


FIG. 2.

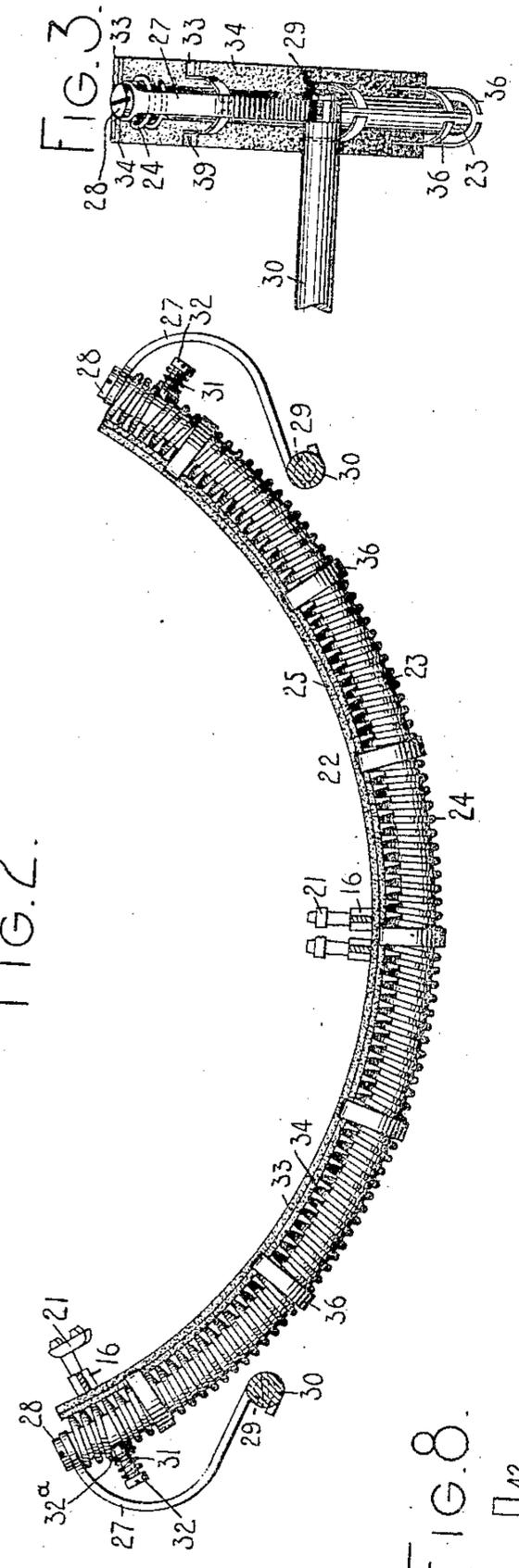


FIG. 7.

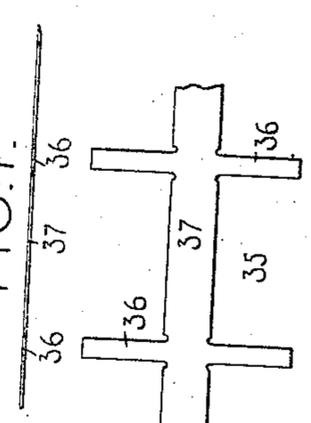


FIG. 6.

FIG. 5.

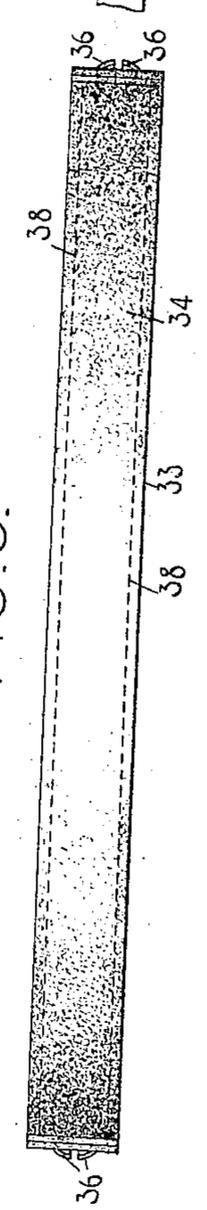
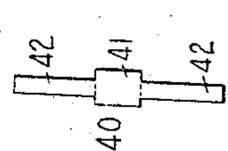


FIG. 8.



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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. 886,570.

Specification of Letters Patent.

Patented May 5, 1908.

Application filed November 7, 1904. Serial No. 231,749.

*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 has for its main object to provide an improved construction of type rest, pad or cushion.

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

In the accompanying drawings forming part of this specification, Figure 1 is a front to rear sectional view of a typewriting machine embodying my invention, parts of the machine being omitted. Fig. 2 is a view taken on the line  $x-x$  of Fig. 1, showing the type rest and its supports, and the ends of several type bars. Fig. 3 is an end view of Fig. 2. Fig. 4 is a fragmentary sectional view showing the connection between the type rest and one of its supporting brackets. Fig. 5 is a top plan view of the facing or pad of the type rest. Figs. 6 and 7 are detail views of the retaining member of the facing or pad. Fig. 8 is a view of a modified form of retaining or securing means for the facing.

This invention is illustrated herein as applied to the Monarch typewriting machine, but I desire it to be understood that it may be applied in whole or in part to other forms of writing machines.

In the drawings, 1 indicates the base of the machine sustaining corner posts 2 which support a top plate 3 upon which is mounted a carriage (not shown) carrying a platen 4 diagrammatically illustrated. Key levers 5 are notched to cooperate with a guide rod 6 and each key lever has a curved face or edge 5<sup>a</sup> that cooperates with a fulcrum plate 6<sup>a</sup> in the rear of the base of the machine, each of said key levers being also provided with a key button 7 and a restoring spring 8. Pivoted at 9 to each key lever is a sub-lever 10, the lower portion of which is formed with a slot 11 embracing a fixed fulcrum bar 12 which passes from side to side of the machine beneath the bank of key levers and is secured

in the side walls of the base. The upper end of each sub-lever is pivotally connected at 13 to the rear end of a connecting link 14, the forward end whereof is pivoted at 15 to a type bar 16. Each type bar 16 is seated in one of a series of radial slots 17 formed in a segmental support 18 and is mounted upon a pivot rod 19 which is seated in a groove cut in the top of the segmental support. Each type bar is provided with a restoring spring 20 and carries at its free end a type block 21. The series of bars at their free or forward ends are supported in normal position by a type rest 22.

The type rest as illustrated in the accompanying drawings, comprises an inner support, rod or core piece 23, a helix or coiled spring 24 having a larger internal diameter than the exterior diameter of the rod and surrounding said rod or support and a facing or pad 25 mounted upon the helix and interposed between it and the type bars so that the latter normally rest upon the pad. The support 23 is a segmental rod preferably hollow but having its ends solid, which result is obtained by securing plugs 26 therein. Abutting each end of the support 23 is a curved member or bracket 27 to which the support is fixedly secured by a headed screw 28 which passes through a perforation in the end of the bracket 27 and is screwed into a tapped hole in the top of the plug 26. The lower ends of the bracket members 27 partly embrace or surround the shanks of headed screws 29 which are readily accessible from the front of the machine. The screws 29 are screwed into the forward ends of horizontally disposed rods 30 which latter are secured to the type bar segment 18 and project forwardly from it at either side. The edges of that portion of each bracket 27 embracing the shank of the screw 29 are held in contact with the front face of the rod 30 and the under side of the head of said screw. The construction is such that the support 23 and the parts mounted thereon may be readily removed from the machine by unscrewing the headed securing screws 29, while, when the rest is in place in the machine the supporting member 23 is securely held in a fixed position relatively to the type bar segment. The helix 24 is preferably formed of spring wire and is threaded upon the support 23 before it is secured to the brackets 27, which latter serve to confine the resilient wire helix to its sup-

port. The helical wire spring 24 when mounted upon the rod 23 conforms to the curve of the latter, the coils tending to press upward against the under side of the rod 23 except near the ends of the helix where they tend to press down upon the top portion of the rod in the effort of the helix to straighten itself longitudinally. To overcome this tendency of the ends of the helix, means are employed consisting of short coiled springs 31 mounted upon headed screws 32, the latter entering the under side of the rod 23 near its ends. Each coiled spring 31 presses upward against a washer 32<sup>a</sup> and the pressure of the springs forces the washers against the under side of the coils of the helix near its ends, thereby tending to maintain the latter in contact with the under side of its supporting rod to provide a space between the helix and the rod at the upper side or at that side where the pad receives the impacts of the type bars.

The pad proper or facing 25 is preferably made of some non-resilient pliant material such as leather and, as herein shown, comprises two layers 33 and 34 between which is secured means for connecting the facing to the helix. The preferred form of connecting means is shown in detail in Figs. 6 and 7 as a member 35 consisting of a series of fingers 36 joined by a central web 37. This member 35 may be conveniently formed of an exceedingly thin strip of metal punched or cut to the shape shown. It is interposed between the layers of leather or some such suitable material which are thereafter suitably secured together as by rows of stitching 38, the under layer having previously been notched or cut away at 39 beneath the fingers 36 so that the latter may be bent down to loosely embrace or partially surround the helix 24, thereby connecting the facing with the helix so that both are free to move independently of each other.

The securing fingers may if desired be independently formed and separately connected with the facing as by inserting them between the layers of the latter. One of such fingers 40 is shown in Fig. 8 as having a central portion 41 somewhat broader than the ends 42, which latter are designed to be bent on the dotted lines at the ends of the central portion 41.

The type bar returning from the printing point after being actuated to print in a well-known manner, strikes the non-resilient facing, slightly depressing or indenting it at the point of contact and thereby drawing the portions at either side towards the indentation, causing the facing to slide or move slightly longitudinally of the helix. Where the securing means employed is that illustrated in Figs. 6 and 7, the web 37 must be sufficiently thin and pliable to allow this result to be obtained. The coils of the helix

are also slightly depressed by the type bar at the point of impact and the force of the blow is taken up or distributed both by the leather and the helix, the tension of the coils of the latter gradually increasing as they are both depressed towards the inner supporting bar 23 and also moved slightly sidewise longitudinally of the supporting bar. By this means I provide a construction which yields with a gradually increasing resistance to the returning type bar and whereby the rebound of the latter is minimized. The impact of the returning type bar having been completely taken up or absorbed, the parts of the type rest return gradually to normal position. The use of my type rest tends to prevent clashing or interference near the pad or basket of adjacent type bars when they are rapidly operated. It will be noted that I have provided a type rest comprising a curved pliant, flexible, elastic member or helix, that the elastic member is faced with a tough pliant material in the form of a leather pad; and that the flexible yielding member or helix is supported by a rigid, fixed member or core rod which constitutes a backing therefor.

Various changes may be effected in the construction, combination and arrangement of parts of my invention as herein set forth and parts of the device may be used without other parts, all within the scope of my invention.

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

1. In a typewriting machine, the combination of a series of type bars, a curved pliant elastic metal member forming a rest therefor and provided with a facing of tough pliant material, and a fixed member forming a backing for said elastic member, said elastic member surrounding or inclosing said fixed member.

2. In a typewriting machine, the combination with the ends of type bars that carry the printing characters, of a rigid support, and a rest surrounding or inclosing said rigid support, said rest comprising thin flexible metal in its construction.

3. A typewriter rest comprising in its construction thin flexible resilient metal with a rigid support cooperating therewith, the flexible metal surrounding or inclosing the rigid support.

4. A type rest comprising a rigid support, and a resilient helix mounted thereon.

5. A type rest comprising a rigid support and a resilient helix surrounding said support.

6. A type rest comprising a curved member serving as an unyielding support, and a resilient helix mounted thereon.

7. A type rest comprising a curved member serving as an unyielding support, and a resilient helix mounted thereon so as to con-

form generally to the curve of the supporting member.

8. A type rest comprising an unyielding rod, and resilient wire helix surrounding said rod.

9. A type rest comprising a curved rod and a resilient wire helix surrounding said rod, the latter serving as an unyielding support for the helix which is movable independently of said rod.

10. In a typewriting machine, the combination of a plurality of type bars and a type rest therefor, the latter comprising a rigid support, and a resilient helix so mounted on said support as to be capable of motion relatively to said support under the influence of the type bars.

11. In a typewriting machine, the combination of a plurality of type bars, and a type rest therefor, the latter comprising a rigid support and a resilient helix so mounted on said support as to be capable of motion transversely and longitudinally thereof under the influence of the type bars.

12. In a typewriting machine, the combination of a plurality of type bars, and a type rest therefor, the latter comprising a rigid support and a resilient helix surrounding said support so as to be movable independently of said support.

13. In a typewriting machine, the combination of a plurality of type bars and a type rest therefor, the latter comprising a rigid support and a resilient helix surrounding said support and so mounted on said support as to be capable of motion transversely and longitudinally thereof under the influence of the type bars.

14. In a typewriting machine, the combination of a plurality of type bars, and a type rest therefor, said type rest comprising a curved member serving as an unyielding support and a resilient helix so mounted thereon as to be capable of motion relatively to said support under the influence of the type bars.

15. In a typewriting machine, the combination of a plurality of type bars, and a type rest therefor, said type rest comprising a curved unyielding support and a resilient helix so mounted thereon as to conform to the curve of said support and so as to be capable of motion independently of said support under the influence of the type bars.

16. In a typewriting machine, the combination of a plurality of type bars, and a type rest therefor, the latter comprising an unyielding rod and a resilient wire helix surrounding said rod and capable of motion relatively to said rod under the influence of the type bars.

17. A type rest comprising a rigid support, a resilient helix mounted thereon, and a facing mounted on said helix.

18. A type rest comprising a rigid support,

a resilient helix mounted thereon, and a non-resilient facing mounted on said helix.

19. A type rest comprising a rigid support, a resilient helix surrounding said support, and a non-resilient facing mounted on said helix.

20. A type rest comprising a curved, unyielding support, a resilient helix mounted on said support so as to conform generally to the curve thereof, and a non-resilient facing mounted on said helix.

21. A type rest comprising an unyielding rod, a resilient wire helix surrounding said rod, and a non-resilient facing on said helix.

22. A type rest comprising a curved rod, a resilient wire helix surrounding said rod, and a non-resilient facing on said helix, said facing and said helix being capable of motion relatively to said rod and independently of each other.

23. In a typewriting machine, the combination of a plurality of type bars and a type rest therefor, the latter comprising a rigid support, a resilient helix on said support, and a facing on said helix, said facing and said helix being capable of motion relatively to said support and independently of each other under the influence of the type bars.

24. In a typewriting machine, the combination of a plurality of type bars and a type rest therefor, the latter comprising a rigid support, a resilient helix surrounding said support, and a non-resilient facing on said helix, said helix being freely movable on said support and said facing being freely movable on said helix under the influence of the type bars.

25. In a typewriting machine, the combination of a plurality of type bars and a type rest therefor, the latter comprising an unyielding rod, a resilient wire helix surrounding said rod, and a non-resilient facing, said helix and said facing being freely movable independently of each other and of said rod under the influence of the type bars.

26. In a typewriting machine, the combination with a series of type bars, of a type rest therefor, said type rest comprising a fixed support, and a coiled spring surrounding said support and separated therefrom at that side of the type rest that receives the impact of the type bars.

27. In a typewriting machine, the combination with a series of type bars, of a type rest therefor, said type rest comprising a rigidly supported segmental rod, and a resilient coiled spring surrounding said rod and separated therefrom at that side of the type rest that receives the impact of the type bars.

28. In a typewriting machine, the combination with a series of type bars, of a type rest therefor, said type rest comprising a rigidly supported segmental rod, a resilient coiled spring surrounding said rod and being of larger internal diameter than the external

diameter of the rod, and means cooperating with the end portion of said spring to force it into contact with the rear or bottom side of the rod and thus hold the spring yieldingly against the rod throughout the length of the spring.

29. In a typewriting machine, the combination with a series of type bars, of a type rest therefor, said type rest comprising a fixed support, a coiled spring surrounding said support and separated therefrom at that side of the type rest that receives the impact of the type bars, a facing strip, and means for connecting the facing strip to the spring.

30. In a typewriting machine, the combination with a series of type bars, of a type rest therefor, said type rest comprising a rigidly supported segmental rod, a resilient coiled spring surrounding said rod and separated therefrom at that side of the type rest that receives the impact of the type bars, a facing strip, and clamping means for connecting said strip to the spring.

31. In a typewriting machine, the combination with a series of type bars, of a type rest therefor, said type rest comprising a rigidly supported segmental rod, a resilient coiled spring surrounding said rod and being of larger internal diameter than the external diameter of the rod, and means cooperating with the end portion of said spring to force it into contact with the rear or bottom side of the rod and thus hold the spring yieldingly against the rod throughout the length of the spring, a facing strip, and metal clamping fingers that are connected to said facing strip and connect it to the spring.

32. In a typewriting machine, the combination with a series of type bars, of a type rest therefor, said type rest comprising a fixed support, a coiled spring surrounding said support and separated therefrom at that side of the type rest that receives the impact of the type bars, a facing strip, a metal strip interposed between the facing strip and spring, and means for connecting said metal facing strips to the spring.

33. In a typewriting machine, the com-

ination with a series of type bars, of a type rest therefor, said type rest comprising a rigidly supported segmental rod, a resilient coiled spring surrounding said rod and separated therefrom at that side of the type rest that receives the impact of the type bars, a pliant facing strip, a thin metal strip interposed between the facing strip and spring, and connected to the facing strip, and means for connecting said metal strip to and supporting it by said spring.

34. In a typewriting machine, the combination with a series of type bars, of a type rest therefor, said type rest comprising a rigidly supported segmental rod, a resilient coiled spring surrounding said rod and of larger internal diameter than the external diameter of the rod, means cooperating with the end portions of said spring to force it into contact with the rear or bottom side of the rod and thus hold the spring yieldingly against the rod throughout the length of the spring, a pliant facing strip, a thin metal strip interposed between the pliant facing strip and spring and movable relatively to said spring, means for connecting the pliant strip to the thin metal strip, and means for connecting the thin metal strip to the spring.

35. In a typewriting machine, the combination of a type rest, removable supporting members therefor, and means accessible from the front of the machine for connecting and disconnecting said supporting members with a part of the machine.

36. In a typewriting machine, the combination of a type bar support having projecting portions, a type rest, curved bracket members supporting said type rest, and screws connecting said bracket members with the projecting portions of said type bar support.

Signed at Syracuse, in the county of Onondaga and State of New York, this fourth day of Nov. A. D. 1904.

FRANK A. YOUNG.

Witnesses:

GEO. R. HARRINGTON,  
GEORGE W. DICHERMAN.