J. ALEXANDER.

TYPE WRITING MACHINE KEY AND TYPE BAR OPERATING MECHANISM.

APPLICATION FILED FEB. 16, 1911.

1,046,710.

Patented Dec. 10, 1912.

2 SHEETS—SHEET 1.

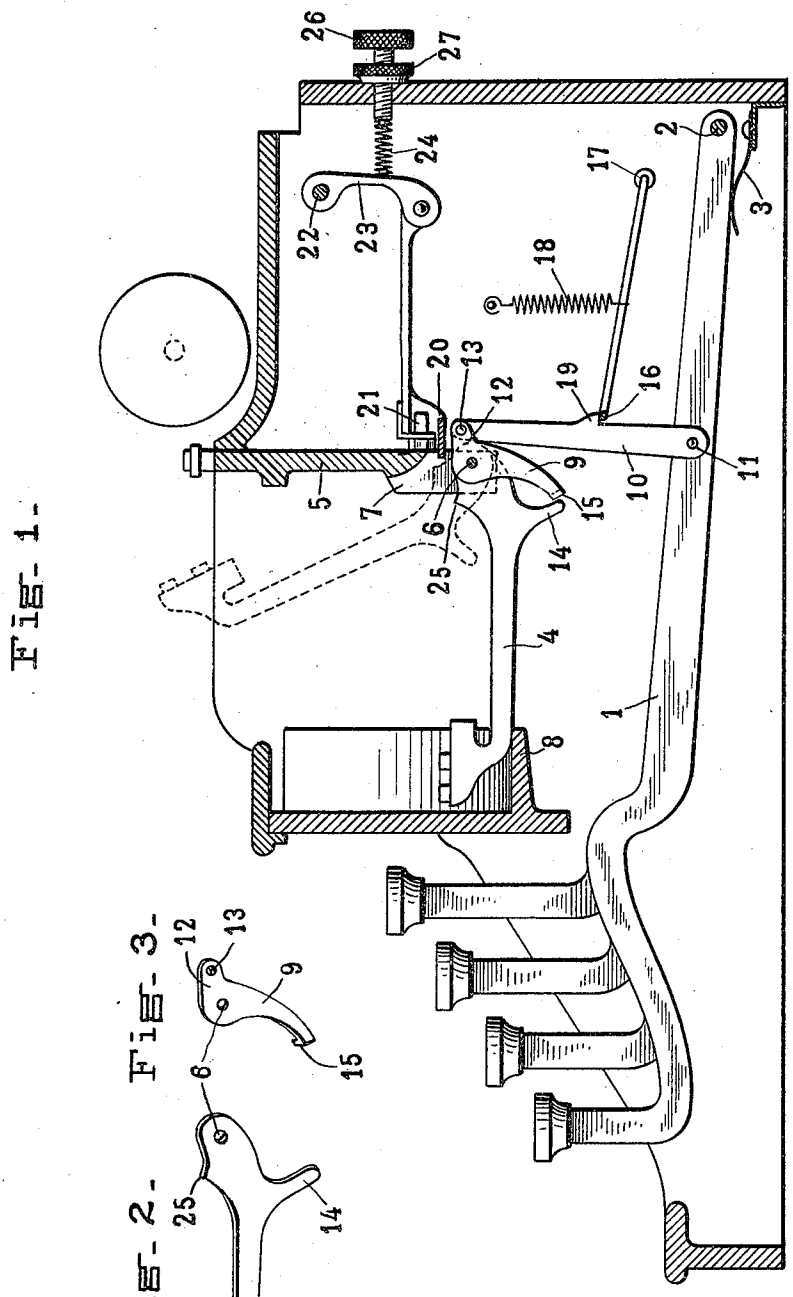

Fig. 1.

Fig. 3.

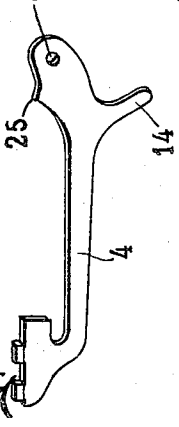

Fig. 2.

WITNESSES

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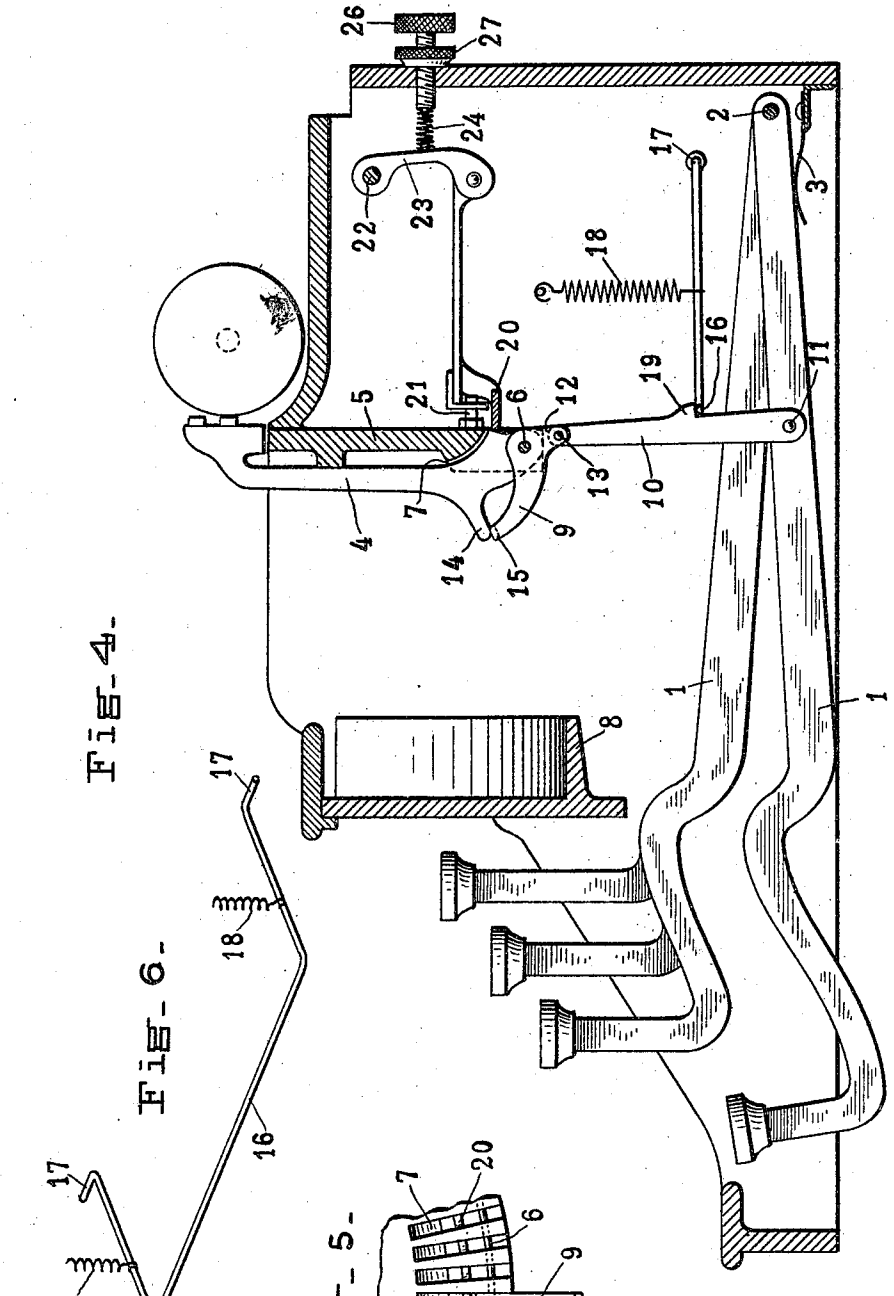

Fig. 4.

Fig. 6.

Fig. 5.

WITNESSES

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UNITED STATES PATENT OFFICE.

JESSE ALEXANDER, OF NEW YORK, N. Y., ASSIGNOR OF SIXTY-TWO ONE-HUNDREDTHS TO F. M. DA COSTA, OF ROCKVILLE CENTER, NEW YORK.

TYPE-WRITING-MACHINE KEY AND TYPE-BAR OPERATING MECHANISM.

1,046,710. Specification of Letters Patent. **Patented Dec. 10, 1912.**

Application filed February 16, 1911. Serial No. 608,928.

To all whom it may concern:

Be it known that I, JESSE ALEXANDER, a citizen of the United States, and resident of New York, in the county of Kings and State of New York, have invented certain new and useful Improvements in Type-Writing-Machine Key and Type-Bar Operating Mechanism, of which the following is a specification.

My invention relates to improvements in what are commonly termed typewriters and particularly key and type bar operating mechanism.

The object of my invention is to construct a key and type bar operating mechanism of a simple, strong and durable character that will operate very rapidly and permanently and will afford great ease in operation with an extremely light touch of the finger levers and is especially adapted to the front stroke visible writing machine.

In the form illustrated the type bars are carried by a segmental type bar plate and may be operated by sub-levers connected to the key levers by intermediate links. The key levers are maintained in a normal position by means of springs. The connecting links are sustained by a spring pressed frame and the type bars are adapted to engage a spring pressed universal bar.

The principles of the invention as applied to a front stroke writing machine are illustrated in the accompanying two sheets of drawings.

Figure 1, is a longitudinal section of a machine showing one unit of the key and type bar mechanism in full lines in the normal position of rest and showing a type bar dotted in a position intermediate the writing and rest position. Fig. 2, is a perspective view of a type bar of my invention. Fig. 3, is a perspective view of a sub-lever or type bar actuator. Fig. 4, is a view similar to Fig. 1 but showing the parts in the printing or writing position. Fig. 5, is a fragmental front view showing the method of supporting a type bar. Fig. 6, is a perspective view of the retaining frame for the connecting links.

The arrangement and shape of the key levers may be as desired. Each key lever 1 is pivoted at 2 to the frame of the machine and is normally held in its upward or raised position by means of a suitable form of spring such as 3.

Each type bar 4 is pivoted in the segmental type bar carrying plate 5 for instance, on a pivot 6, its pivoted end being located in a slot 7. The front ends of the type bars are supported on a shelf 8 in a suitable manner when in the normal position of rest.

In the same slot with each type bar is located a sub-lever or actuator 9 pivoted on the same pivot 6 with the type bar. A substantially vertical link 10 connects the actuator 9 with the key lever 1 being connected to the key lever by the pivot 11 and to the rear arm 12 of the actuator 9 by the pivot 13. Each type bar has a lug 14 adapted to be engaged by the end 15 of the actuator. This end 15 is preferably turned substantially at right angles to the body of the actuator 9 so as to afford a broad bearing surface. This is particularly desirable inasmuch as the type bars and actuators may be made of quite thin metal.

Each link is preferably connected to the actuator on the same face as the type bar 4 so as to afford a more direct pull.

The connecting links are all pressed upward or retained by means of a pivoted spring pressed frame having a cross bar 16, pivoted at 17 and pressed upwardly by one or more springs such as 18. The cross bar engages beneath the rearwardly extending lugs 19 of the connecting links.

The universal bar 20 is preferably curved and extends back of all the type bars. Its front end is guided horizontally for instance, by means of a pin 21 and its rear end is supported from the pivot 22 by means of a link 23. The latter is normally pressed forward by a spring 24 so as to hold the universal bar 20 in its forward position. Each type bar is provided with the shoulder 25 adapted to engage the universal bar 20 in the striking or printing position as shown in Fig. 4 so as to force the universal bar to the rear. This gives additional compression to the spring 24 so as to tend to throw the type bar downward as soon as it is raised. The spring 24 may be adjusted by the adjusting screw 26 and clamped by the set nut 27. By this construction the key levers are all held yieldingly in place by means of independent springs and the connected links are held yieldingly in place by a spring pressed frame. The type bars when in their normal position of rest are simply supported at the

opposite ends and are not operatively connected with the key lever and operating mechanism. The actuator is normally not connected with the type bar as shown in Fig. 1. The result is that when the key lever is depressed the parts of the key lever, connecting link and actuator have an appreciable time in which to act by momentum before the actuator strikes the lug 14 of the type bar. The sudden blow upon the type bar carries the type bar quickly to the printing position. When at the end of this printing stroke, the type bar has acquired considerable momentum it engages the universal bar so as to accomplish the operations usually accomplished by the universal bar in such constructions. The universal bar has its pressure tending to return the type bars. The result of this construction is that a very slight touch upon the key lever is sufficient to throw the type bar to the printing position without requiring a full downward stroke of the lever, the type bar being free to move to the printing position when given sufficient momentum so that the actuator 9, connecting link and key lever may be on its way back to the normal position before the type bar reaches the printing position. The independent movement of the type bar is suggested by the dotted outline of Fig. 1.

The advantages of this construction will be apparent to those skilled in the art.

It should also be understood that changes in detail of construction may be made without departing from the spirit or scope of my invention.

What I claim is:—

1. In a typewriter key and type bar operating mechanism, a pivoted type bar, an actuator having a limited movement unconnected with said type bar, a spring pressed universal bar adapted to return the type bar, a spring for returning said actuator independently of said type bar and a key lever connected to said actuator.

2. In a typewriting key and type bar operating mechanism, a pivoted type bar, an actuator pivoted therewith but normally disengaged therefrom, a spring pressed universal bar adapted to return the type bar, a key lever and a spring pressed connecting link between said lever and said actuator.

3. In a key and type bar operating mechanism, a pivoted type bar, an actuator pivoted therewith but normally disengaged therefrom, a spring pressed key lever and a spring pressed connecting link between said lever and said actuator.

4. In a key and type bar operating mechanism, a pivoted type bar having a projecting lug, an actuator pivoted therewith but normally disengaged therefrom and having an offset end for engaging said lug, a key lever and a connecting link between said lever and said actuator.

5. In a key and type bar operating mechanism, a pivoted type bar, a pivoted actuator having an off-set shoulder for engaging said type bar and having a limited movement unconnected with said type bar and a key lever connected to said actuator and means for returning said actuator independently of said type bar.

6. In a key and type bar operating mechanism, a slotted plate, a type bar and an actuator having a limited movement unconnected with said type bar and both pivotally carried by said plate and a key lever connected to said actuator and means for returning said actuator independently of said type bar.

7. In a key and type bar operating mechanism, a type bar, an actuator, a common pivot for said bar and actuator, a key lever and a connection between said lever and said actuator.

JESSE ALEXANDER.

Witnesses
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F. M. DA COSTA.