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1,456,302

W. A. DOBSON

TYPEWRITING MACHINE

Filed May 28, 1920

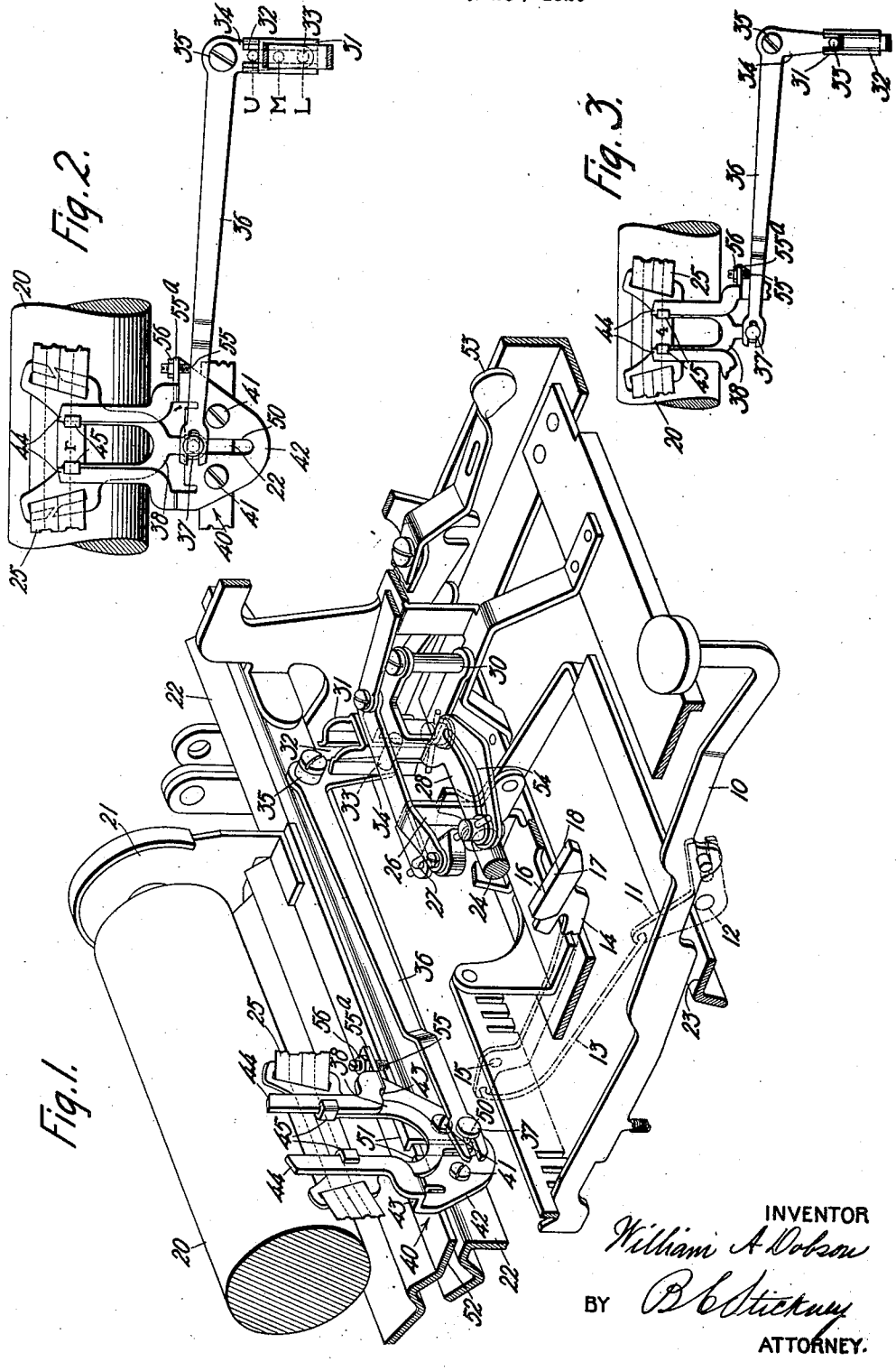


Fig. 1.

Fig. 2.

Fig. 3.

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UNITED STATES PATENT OFFICE.

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TYPEWRITING MACHINE.

Application filed May 28, 1920. Serial No. 384,863.

To all whom it may concern:

Be it known that I, WILLIAM A. DOBSON, a citizen of the United States, residing in Hartford, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements in Typewriting Machines, of which the following is a specification.

This invention relates to typewriting machines, and more particularly to ribbon-vibrating mechanism therefor.

The ribbon usually occupies a position below the printing point, and is vibrated into the path of the type-bars as they are swung toward the platen by their keys. The mechanism is usually settable, so as to vary the throw of the ribbon to expose different portions thereof to the types.

Difficulty has been experienced in ribbon-vibrating mechanism, which is due to the fact that the ribbon is overthrown when the lower part thereof is used, the overthrowing resulting from the momentum of the mechanism, which causes a partial type-impression on the work-sheet.

An object of this invention is to prevent the overthrow of the ribbon. To this end, there may be provided, in connection with the shifting frame, a stop with which the ribbon-vibrating mechanism engages when the maximum throw is imparted thereto. The relative position between the ribbon-vibrating mechanism and the stop therefor may be maintained when the platen is shifted.

Other features and advantages will hereinafter appear.

In the accompanying drawings,

Figure 1 is a perspective view of a portion of a typewriting machine, showing the invention applied thereto.

Figure 2 is a fragmentary front view, showing the lower portion of the ribbon vibrated to the printing point, the platen being in its lower-case position.

Figure 3 is a view similar to Figure 2, showing the relation of parts when the lower portion of the ribbon is vibrated to the printing point, while the platen is in its upper-case position.

The invention is herein illustrated as applied to an Underwood portable typewriting machine, in which key-levers 10, when depressed, swing bell-cranks 11 about their pivots 12, to pull forwardly on links 13 to swing type-bars 14 about a pivot 15, to cause types 16, 17 or 18 thereon to swing upwardly and rearwardly against the front side of a platen 20. The platen is supported in a carriage 21 to travel back and forth on a rail or bar 22. The key-levers operate a universal bar 23 to swing the latter about the axis of a rock-shaft 24, to operate suitable carriage-escapement mechanism (not shown). The universal bar 23 also operates ribbon-vibrating mechanism, which may be like that disclosed in the application of George W. Campbell, No. 240,000, filed June 14, 1918, (now Patent No. 1,370,281, dated March 1, 1921), to bring a ribbon 25 into the path of the operated type-bar. The universal bar 23 is provided with an upwardly-extending arm 26, which pulls a link 27 forwardly to rock an intermediate lever 28 about its pivot 30. The intermediate lever 28 is provided with a channel-shaped portion 31 forming a groove or slot 32, into which a pin 33 projects from a ribbon-vibrating lever 34, so that the latter may be swung about its pivot 35 by its intermediate lever 28, thus causing an inwardly-projecting arm 36 of said ribbon-vibrating lever to move upwardly. The arm 36 is connected to a headed stud 37, extending from a ribbon-vibrator 38, which moves upwardly with the arm 36 to bring the ribbon 25 to the printing point.

The ribbon-vibrator moves up and down on a guide 40 fastened to the rail 22 by screws 41. The guide 40 may comprise a body portion 42 having two forward extensions 43 terminating in upwardly extending arms 44 embraced by fingers 45 of the ribbon-vibrator 38.

To guide the lower end of the ribbon-vibrator 38, the stud 37 projects into a slot 50 formed in the body portion 42 of the guide 40. The guide 40 is provided with lips 51 to engage the upper surface of a cross-bar 52 of the carriage 21 to assist in holding the carriage on the rail 22.

In Figure 1, the link 27 is so connected with the intermediate lever that it will impart the minimum throw to the ribbon-vibrator when the universal bar is operated, thus bringing the upper part of the ribbon to the printing point. The link 27 is shiftable, by a finger-piece 53, to the position

indicated in dotted lines in the right-hand end of a slot 54; in other words, nearer to the fulcrum 30 of the intermediate lever 28, and consequently a greater movement is imparted to the ribbon-vibrating lever by the same depression of the universal bar; thus the lower part of the ribbon 25 is brought to the printing point. When greatest throw is imparted to the ribbon-vibrator, there is a tendency for the ribbon-vibrator to overthrow, due to the momentum of the ribbon-vibrating mechanism, and consequently cause a partial type-impression on the work-sheet around the platen.

To avoid any possible overthrow of the ribbon-vibrating mechanism, there is provided an adjustable stop which may be in the form of a set-screw 55, threaded into an ear or extension 55[a] of the extension or horizontal portion 43 of the right-hand guide-arm 44. The set-screw may be held in place by a check-nut 56 and is located to be engaged by the arm 36 of the ribbon-vibrating lever, so as to arrest the latter when the maximum throw is imparted thereto.

Each type-bar may be provided, as hereinbefore stated, with three types 16, 17 and 18, which may be lower-case characters, middle-case characters and upper-case characters, respectively. Platen-shifting mechanism, as shown in my Patent No. 1,335,956, dated April 6, 1920, may be provided, which may comprise shift-keys (not shown herein), to shift the platen 20, by means of a platen-frame 57 to which the rail 22 is secured, from lower-case position to middle-case or upper-case positions. When the platen is thus shifted, the ribbon-vibrating lever 34 and the parts associated with the arm 36 thereof are shifted upwardly, thus causing the pin 33 of the ribbon-vibrating lever to occupy any one of the positions L, M and U in the slot 32, indicated in Figure 2. Thus, it will be seen that while the platen is being shifted, the relative position of the ribbon-vibrator and connected parts remains undisturbed.

Variations may be resorted to within the scope of the invention, and portions of the improvements may be used without others.

Having thus described my invention, I claim:

1. In a typewriting machine, the combination of a platen, a forked ribbon-vibrator, a guide for said ribbon-vibrator, a transverse lever to engage said vibrator centrally and operate the same, a stop for said lever, said stop being adjustably mounted on said guide, platen-shifting means, and a support for said lever and said guide, said support being shiftable with said platen.

2. In a typewriting machine, the combination of a platen, ribbon-vibrating mechanism comprising a vibrator, a guide for said vibrator, a vibrator-actuating lever fulcrumed at one side of the machine, the throw of said lever being variable to lift the ribbon to various positions, and a stop on said guide in the path of said lever to limit the maximum throw thereof.

3. In a typewriting machine, the combination of a platen, a ribbon-vibrator, a guide for said ribbon-vibrator, said guide comprising a body portion and two arms extending therefrom, said vibrator embracing said arms, a lever to actuate the vibrator, and a stop for said lever, said stop being adjustably mounted on one of said arms.

4. In a typewriting machine, the combination of a platen, a ribbon-vibrator, a guide for said ribbon-vibrator, said guide having a body portion and two arms extending therefrom, each arm comprising a horizontal portion and a vertical portion, said vibrator embracing the vertical portions, a lever to actuate the vibrator, an extension on one of said arms, and a set-screw on said extension to stop said lever.

5. In a typewriting machine, in combination, a platen, a ribbon-vibrator, a forked ribbon-vibrator-guide midway between the sides of the machine, a vibrator-actuating arm pivoted at one side of the machine and connected at its free end with the vibrator centrally of said forked guide and at the base thereof, and an adjustable stop on the guide to engage said arm adjacent its free end.

6. In a typewriting machine, in combination, a platen, a ribbon-vibrator, a guide having a flat body portion and arms extending at right angles thereto to form overhanging portions, and then parallel to said flat body portion, said vibrator being in front of said body portion and to the rear of the portions of said arms parallel to said flat body portion, said vibrator embracing said arms, an operating lever fulcrumed at one side of the machine and having one end extending beneath said overhanging portions and connected centrally to said vibrator, and a stop for said lever adjustably supported by one of said overhanging portions.

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Witnesses:
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