

No. 841,352.

PATENTED JAN. 15, 1907.

G. SWENSON.
TYPE WRITING MACHINE.
APPLICATION FILED NOV. 14, 1906.

FIG. 1.

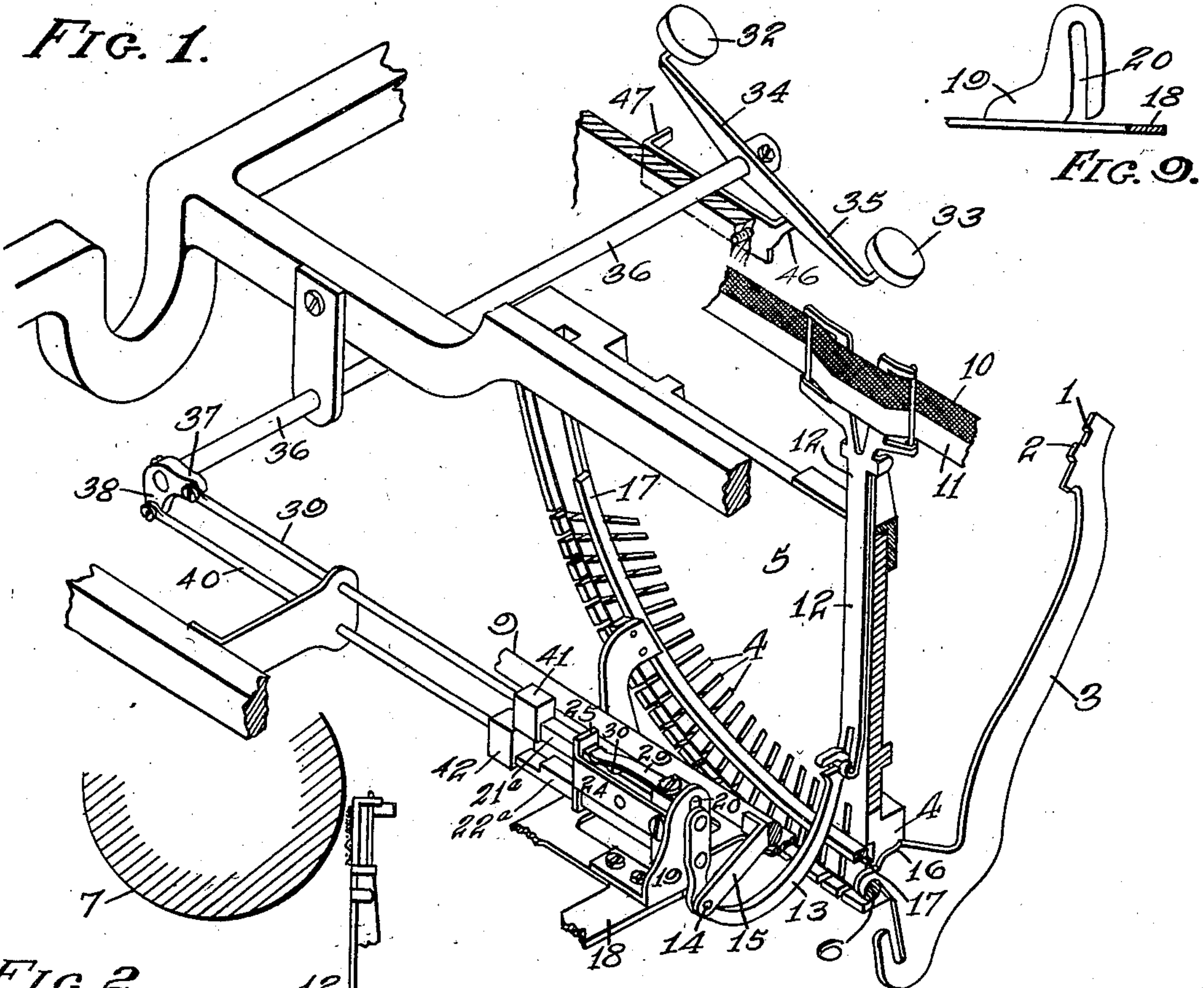


FIG. 9.

FIG. 2.

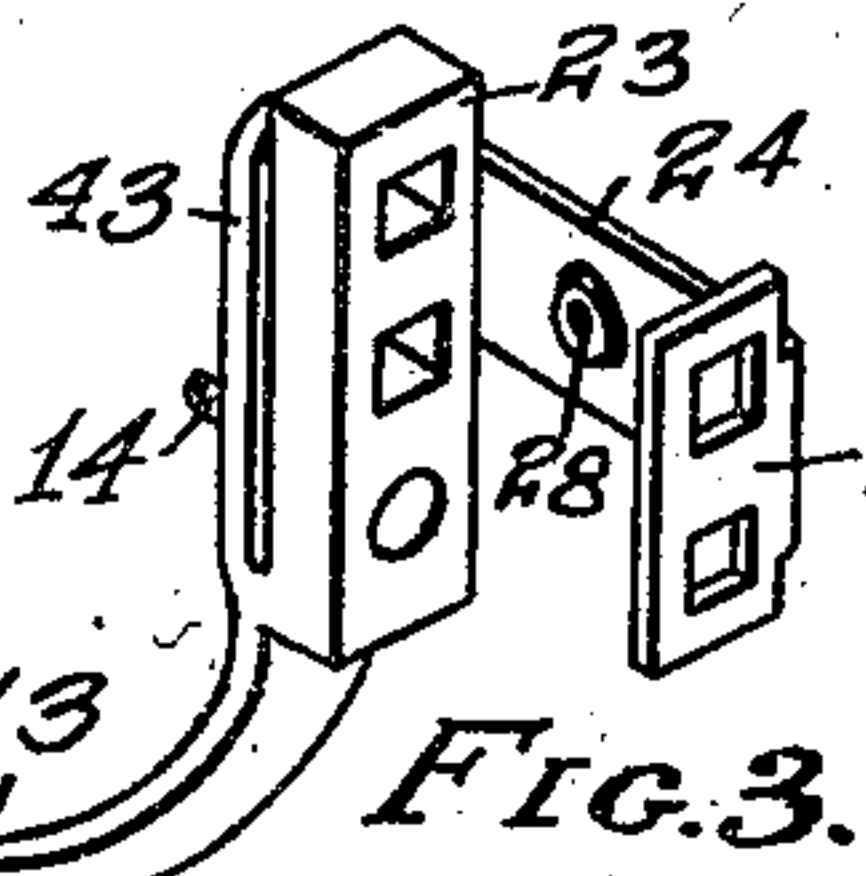
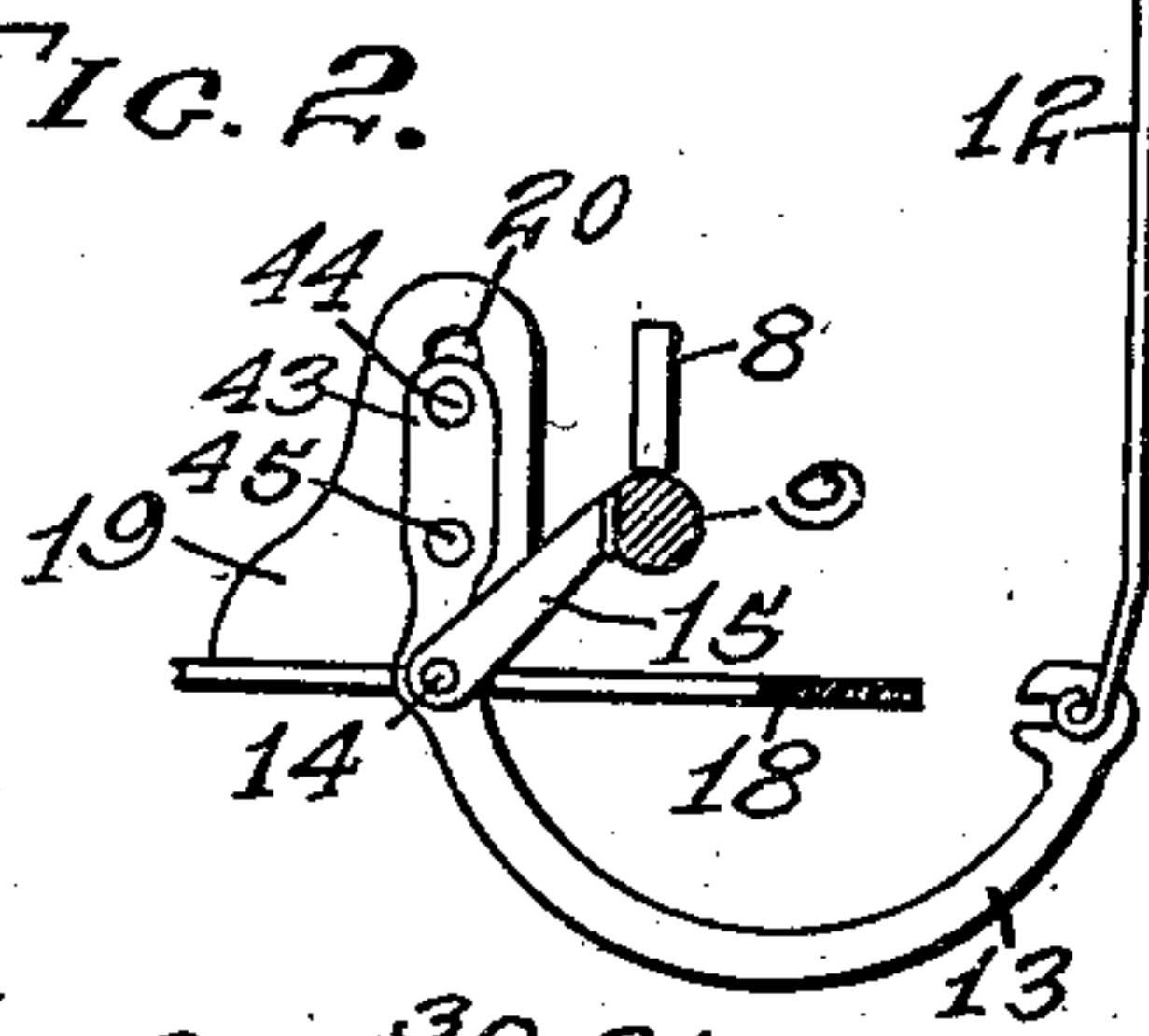


FIG. 4.

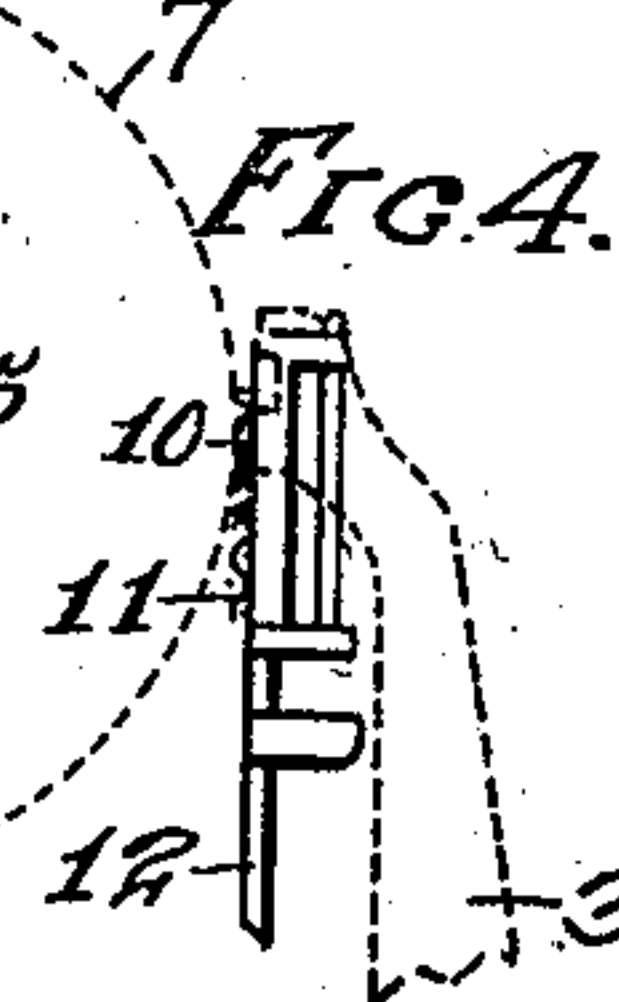


FIG. 5.

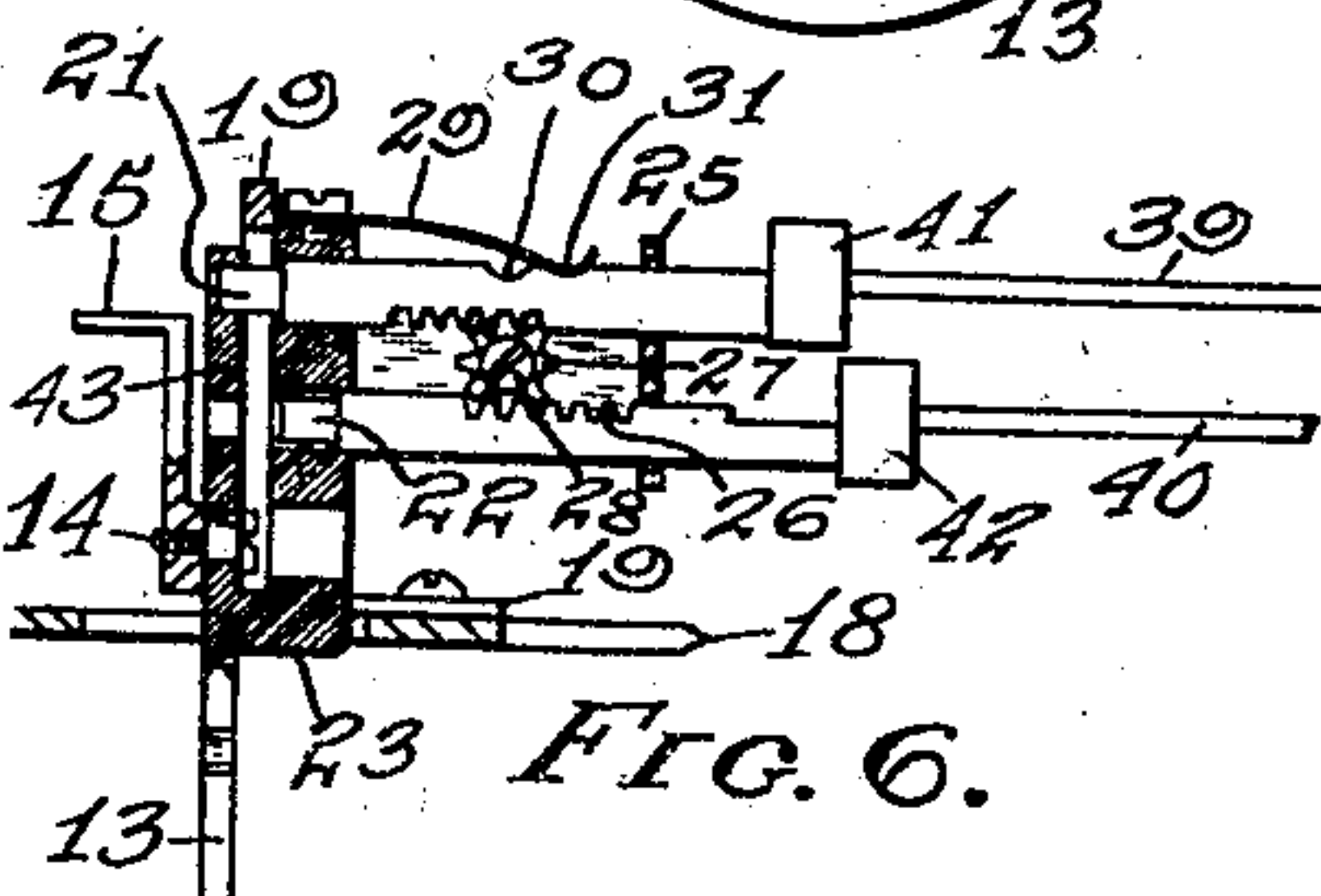
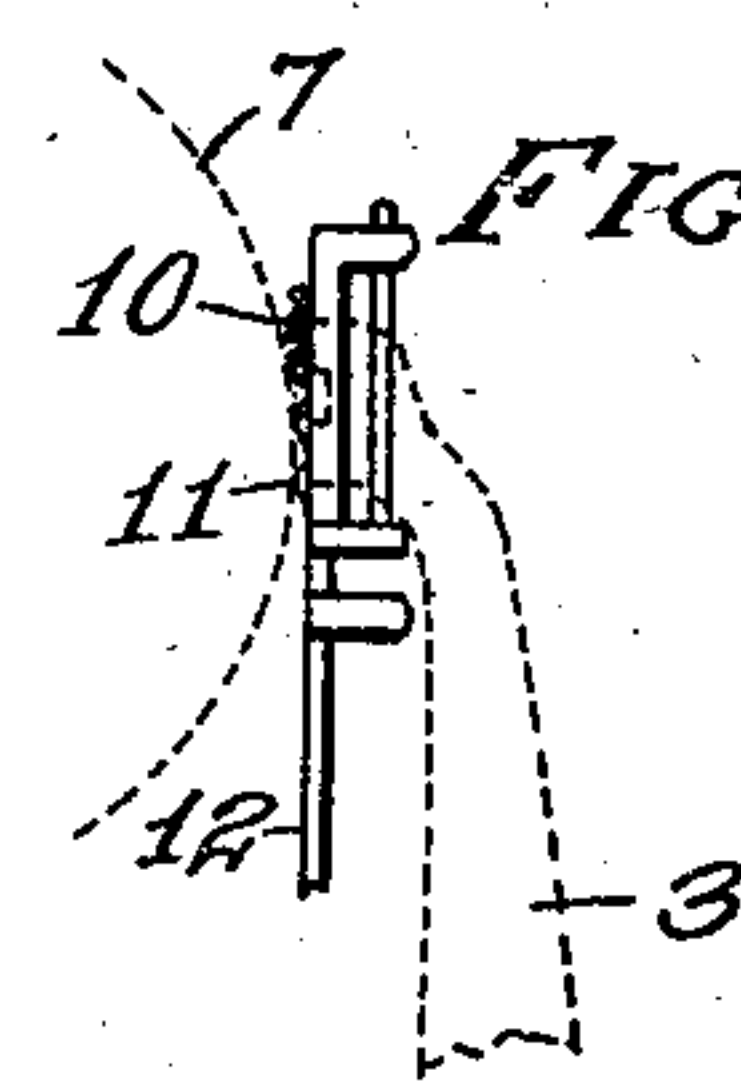


FIG. 6.

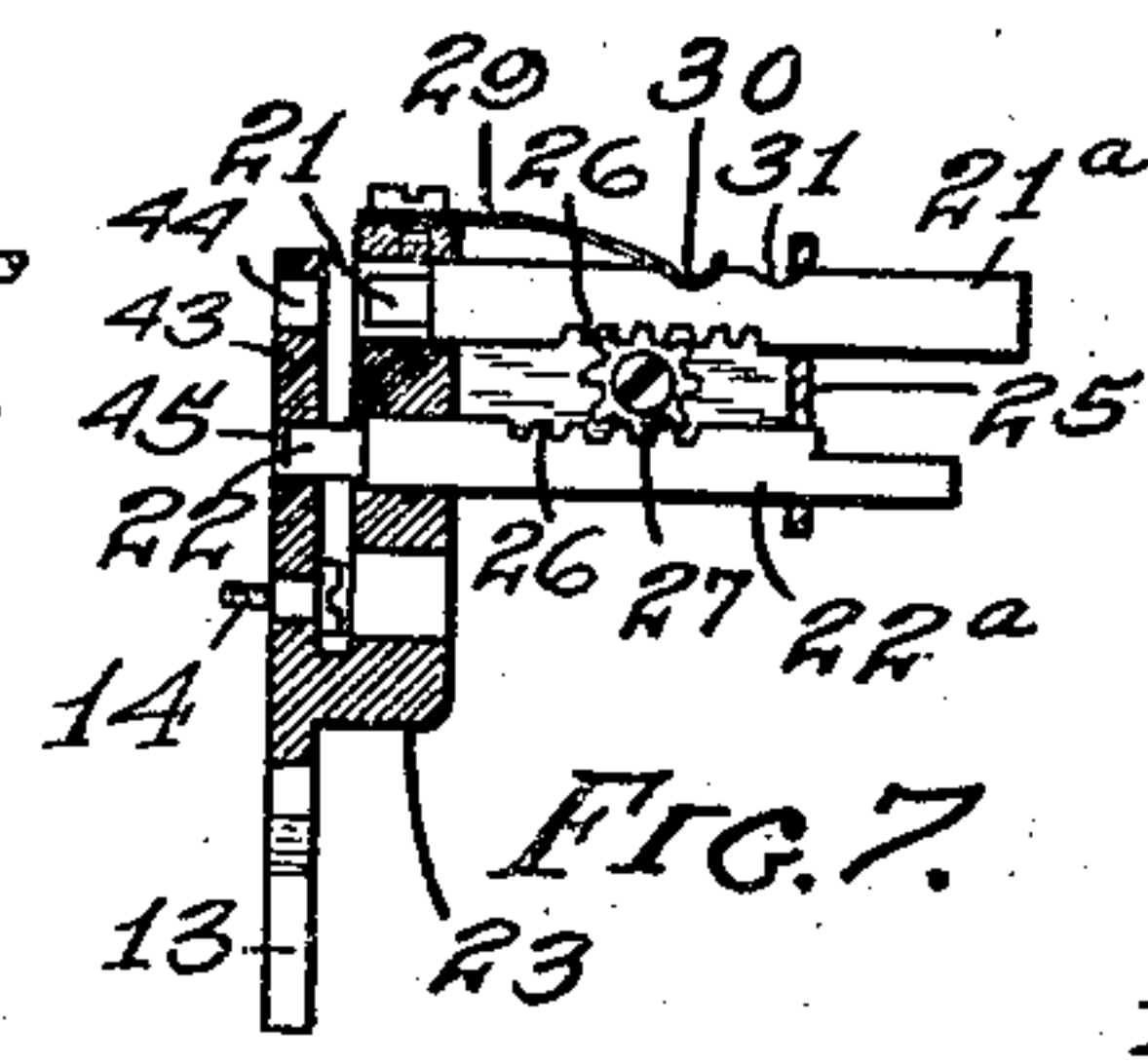


FIG. 7.

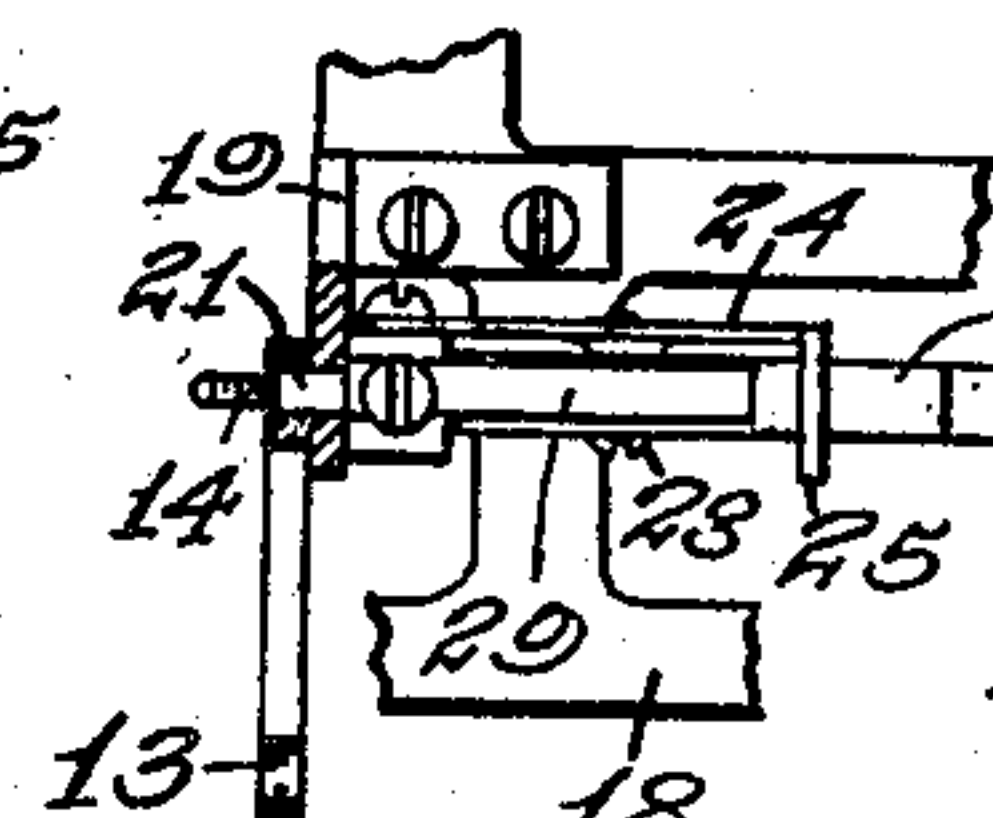


FIG. 8.

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GUSTAF SWENSON, OF PITTSBURG, PENNSYLVANIA, ASSIGNOR TO
UNDERWOOD TYPEWRITER COMPANY, OF NEW YORK, N. Y., A
CORPORATION OF NEW JERSEY.

TYPE-WRITING MACHINE.

No. 841,352.

Specification of Letters Patent.

Patented Jan. 15, 1907.

Application filed November 14, 1906. Serial No. 343,380.

To all whom it may concern:

Be it known that I, GUSTAF SWENSON, a citizen of the United States, residing in Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Type-Writing Machines, of which the following is a specification.

This invention relates to the ribbon-vibrating mechanism of type-writing machines, and especially to those in which the ribbon is vibrated different distances at the type-strokes at the will of the operator to bring different color-bands of the ribbon into use or to cause a single color-ribbon to be used along either edge.

In the Underwood type-writing machine it is usual to cause type-bars to reciprocate a curved universal bar, the latter being mounted on a frame, and an actuator fixed upon said frame usually engages a wrist provided upon a ribbon-vibrating lever to throw the ribbon at each type-stroke.

In order to throw the ribbon different distances from normal position, I provide two wrists which are axially slidable and adapted to work in a vertical slot provided upon said actuator. I connect said wrists so that they must shift in opposite directions simultaneously, whereby when either wrist is brought into use the other is silenced, or, in other words, when either wrist is projected to effect a connection between said lever and said slotted actuator the other wrist is simultaneously withdrawn.

Other features and advantages will hereinafter appear.

My improvements are applicable also to other makes of type-writing machines in which the ribbon is vibrated at the type-strokes to cover the printing-point.

In the accompanying drawings, Figure 1 is a rear perspective view of a portion of an "Underwood" front-strike type-writing machine with my improvements applied thereto, the parts being so adjusted as to cause the upper color-band on the ribbon to cover the printing-point at the type-strokes. Fig. 2 is a sectional side elevation showing the platen and the ribbon-vibrating lever, the latter in normal position. Fig. 3 is a front perspective view of the ribbon-vibrating lever. Fig. 4 is a diagram similar to Fig. 2,

but showing the ribbon-vibrator elevated at the type-stroke, so that the upper color-band thereof covers the printing-point. Fig. 5 is a view similar to Fig. 4 and showing the ribbon-vibrator still more elevated, so that the lower color-band covers the printing-point. Fig. 6 is a sectional front elevation of the ribbon-vibrating lever, the actuator, and the wrists, the upper wrist being shown in use and the lower wrist silenced to correspond with Figs. 1 and 4. Fig. 7 is a view similar to Fig. 6, but showing the upper wrist silenced and the lower one in use, whereby the ribbon-vibrating lever is given a maximum stroke to bring up the lower color-band, as at Fig. 5. Fig. 8 is a sectional plan of the actuator, the wrists, and the lever, the upper wrist being shown in use, as at Fig. 6. Fig. 9 is a side elevation of the ribbon-actuator, showing the slot therein so shaped that the shifting of the wrists may be readily effected, whether the platen and ribbon are in lower-case or in upper-case position.

Upper and lower case types 1 2 are mounted upon the front ends of type-bars 3, mounted in slots 4 in a segment 5 and provided at their rear ends upon a fulcrum-rod 6 to strike rearwardly against the front side of a platen 7. The latter is mounted upon a carriage (not shown) having a roll 8 to run upon a rail 9, and the latter is shiftable up and down together with the carriage and the platen to enable the different types 1 2 to print.

A ribbon having upper and lower color-bands 10 11 is threaded through a vibrator 12 in front of the platen, which is mounted upon the front end of a lever-arm 13 and vibrated up and down, thereby to cause the ribbon to cover the printing-point. Said lever is pivoted at 14 upon a bracket 15, secured to the shifting rail 9, so that the vibrator 12 and the lever 13 are shifted up and down with the platen.

Heels 16 upon the type-bars press rearwardly a curved universal bar 17, fixed upon a horizontal table or frame 18 in the well-known manner. Upon said frame is erected an actuator 19, having a vertical slot 20 to engage either of two wrists 21 22, provided upon the lever at different distances from the fulcrum 14 thereof. The actuator 19 moves backwardly and forwardly uniform distances

at the type-strokes; and different throws are thereby imparted to the lever, ribbon-vibrator, and ribbon; according to which of the wrists is in use. Said lever has an offset arm 23 standing up at one side of the actuator 19 and having perforations to fit and guide bars 21^a and 22^a upon the ends of which said wrists 21 22 are formed. A bracket 24 projects horizontally from said lever-arm 23 and terminates in a flange 25, having openings to fit and guide the outer ends of said bars 21^a 22^a, which always vibrate and shift with the lever. Said bars are formed on their adjacent edges with rack-teeth 26, and a pinion 27 in engagement with both racks is pivoted between the racks upon a screw 28, which is threaded into the arm 24. By this means when either wrist moves in the other must move out, and hence only one wrist can be in engagement at any time with the slot 20 in the actuator 19. A yielding detent 29 may engage either of a pair of notches 30 31 in the wrist or wrist-bar 21^a to hold both wrists where adjusted or shifted.

At the front part of the machine two keys 32 33 are provided upon the ends of arms 34 35, which extend in opposite directions from the rock-shaft 36, the latter extending rearwardly from the keys and having at its rear end oppositely-extending frames or cranks 37 38. Upon the ends of the latter are pivoted rods 39 40, extending inwardly toward the wrist-bars 21^a 22^a and carrying upon their inner ends cheek-pieces 41 42 in position to engage the outer ends of said wrist-bars.

When the key 33 is depressed, Fig. 1, the rod 39 is thrust inwardly, together with the cheek-piece 41, and the latter forces the wrist 21 inwardly to engage the slot 20 in the actuator 19, and during such movement of the wrist the pinion 27 is rotated and withdraws the wrist 22 from engagement with said actuator. At the same time the cheek-piece 42 is withdrawn by the arm 38 on the shaft 36. Said wrist 21 is the more remote from the pivot 14 of the lever, and hence the latter is given a minimum vibration at the type-strokes, so that the upper color-band 10 of the ribbon is brought up to cover the printing-point. When the other key 32 is depressed, the rod 40 and cheek-piece 42 thrust the lower wrist 22 into engagement with the actuator 20, and at the same time the wrist 21 and the cheek-piece 41 are withdrawn, so that the wrist 22, which is near the pivot 14 of the lever, gives the latter a maximum stroke, and hence the ribbon is thrust up to cause the lower color-band 11 thereof to cover the printing-point, Figs. 5 and 7.

While the actuator 19 is illustrated as confined between the offset arm 23 and an extension 43 of the lever 13, said extension having perforations 44 45 to receive the wrists 21 22, Figs. 6 and 7, still it is obvious that said extension 43 may be omitted and the

wrists 21 22 project only enough to engage said slot 20 in the actuator, the extent of such projection being determined by stops 46 47, provided upon the framework.

When the platen and the shift-rail 9 are elevated, the lever is elevated therewith, together with the wrist-bars 21^a 22^a, and the cheek-pieces 41 42 have sufficient area to engage the outer ends of said wrist-bars at the positions of the latter, whether caused by the shifting of the rail 9 or the reciprocation of the actuator 19. Provision may be made for a slight play or free movement of the cheek-pieces 41 42, so that the latter may not be constantly rubbed by the ends of the wrist-bars during the movements of the ribbon-vibrating lever.

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

Having thus described my invention, I claim—

1. In a type-writing machine having type-operating keys and a universal bar reciprocated by said keys, the combination of an actuator connected to said universal bar and having a slot, a ribbon-vibrating lever, a pair of wrists at different distances from the fulcrum of said lever, means being provided upon said lever for guiding said wrists for axial movements, said wrists being mounted to work in said slot and being movable axially to connect said lever with said actuator, and means connecting said wrists to cause either wrist to shift to effective position and the other wrist to become silenced by means of a movement thereof in the opposite direction.

2. In a type-writing machine having type-operating keys and a universal bar reciprocated by said keys, the combination of an actuator connected to said universal bar and having a slot, a ribbon-vibrating lever, a pair of wrists at different distances from the fulcrum of said lever, means being provided upon said lever for guiding said wrists for axial movements, said wrists being mounted to work in said slot and being movable axially to connect said lever with said actuator, and means connecting said wrists to enable either wrist, when shifted to effective position, to silence the other wrist, said connecting means including racks provided upon the wrists, a pinion between said racks and meshing therewith, and means supporting said pinion.

3. In a type-writing machine having type-operating keys and a universal bar reciprocated by said keys, the combination of an actuator connected to said universal bar, a ribbon-vibrating lever, a pair of wrists at different distances from the fulcrum of said lever, and means for moving said wrists simultaneously in opposite directions to silence either thereof, and cause the other to connect said lever to said actuator.

4. In a type-writing machine having type-operating keys and a universal bar reciprocated by said keys, the combination with a ribbon vibrator or carrier, of shiftable means
5 for enabling said universal bar to vibrate said carrier different distances at the type-strokes, said vibrating means including a lever between the universal bar and the carrier, a pair of wrists mounted at different distances
10 from the fulcrum of said lever, movement-transmitting means cooperating with said lever and said wrists, and means for shifting said wrists axially in opposite directions at the same time, to bring either into use and
15 silence the other.

5. In a type-writing machine having type-operating keys and a universal bar reciprocated by said keys, the combination with a ribbon vibrator or carrier, of shiftable means
20 for enabling said universal bar to vibrate said carrier different distances at the type-strokes, said vibrating means including a lever between the universal bar and the carrier, a pair of wrists mounted at different distances
25 from the fulcrum of said lever, movement-transmitting means cooperating with said lever and said wrists, a device pivoted between said wrists and extending in opposite directions from its pivot to engage said
30 wrists, and a finger-piece having means for shifting said wrists in axial direction, to bring either into use and silence the other.

6. In a type-writing machine having type-operating keys and a universal bar reciprocated by said keys, the combination with a ribbon vibrator or carrier, of shiftable means
35 for enabling said universal bar to vibrate said carrier different distances at the type-strokes, said vibrating means including a lever between the universal bar and the carrier, a pair of wrists mounted at different distances
40 from the fulcrum of said lever, movement-transmitting means cooperating with said lever and said wrists, means for shifting said wrists axially in opposite directions at the same time, to bring either into use and
45 silence the other, and yielding means for detaining the wrists where adjusted.

7. In a type-writing machine having type-operating keys and a universal bar reciprocated by said keys, the combination with a ribbon vibrator or carrier, of shiftable means
50 for enabling said universal bar to vibrate said carrier different distances at the type-strokes, said vibrating means including a lever between the universal bar and the carrier, a pair of wrists mounted at different distances
55 from the fulcrum of said lever, movement-transmitting means cooperating with said lever and said wrists, a finger-piece, and a pair of cheek-pieces controlled by said finger-piece, and mounted upon the framework
60 for shifting said wrists axially, to bring either into use and silence the other.

8. In a type-writing machine having a platen shiftable up and down, type-operating keys and a universal bar reciprocated by said keys, the combination with a ribbon vibrator or carrier, of shiftable means for enabling
65 said universal bar to vibrate said carrier different distances at the type-strokes, said vibrating means including a lever between the universal bar and the carrier, a pair of wrists mounted at different distances from the fulcrum
70 of said lever, movement-transmitting means cooperating with said lever and said wrists, a finger-piece, and a pair of cheek-pieces controlled by said finger-piece, and mounted upon the framework for shifting
75 said wrists axially, to bring either into use and silence the other; said lever shiftable up and down with said platen, and said cheek-piece of sufficient area to engage said wrists in all positions of the lever.

9. In a type-writing machine having type-operating keys and a universal bar reciprocated by said keys, the combination with a ribbon vibrator or carrier, of shiftable means
85 for enabling said universal bar to vibrate said carrier different distances at the type-strokes, said vibrating means including a lever between the universal bar and the carrier, a pair of wrists mounted at different distances from the fulcrum
90 of said lever, movement-transmitting means cooperating with said lever and said wrists, a device pivoted between said wrists and extending in opposite directions from its pivot to engage said wrists, a pair of cheek-pieces mounted upon the framework in position
95 to engage said wrists, and a finger-piece having means for moving said cheek-pieces simultaneously in opposite directions.

10. In a type-writing machine having type-operating keys and a universal bar reciprocated by said keys, the combination with a ribbon vibrator or carrier, of shiftable means
105 for enabling said universal bar to vibrate said carrier different distances at the type-strokes, said vibrating means including a lever between the universal bar and the carrier, a pair of wrists mounted at different distances
110 from the fulcrum of said lever, movement-transmitting means cooperating with said lever and said wrists, a device pivoted between said wrists and extending in opposite directions from its pivot to engage said wrists, a pair of cheek-pieces mounted upon the framework in position to engage said wrists, and a rock-shaft having opposite
115 arms, rods extending from said arms to said cheek-pieces and a finger-piece for turning said rock-shaft; means being provided upon the framework for guiding said cheek-pieces.

GUSTAF SWENSON.

Witnesses:

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GEORGE BENDER.