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S. A. HACKMYER

2,908,372

ERASING ATTACHMENT FOR TYPEWRITERS

Filed April 1, 1958

3 Sheets-Sheet 1

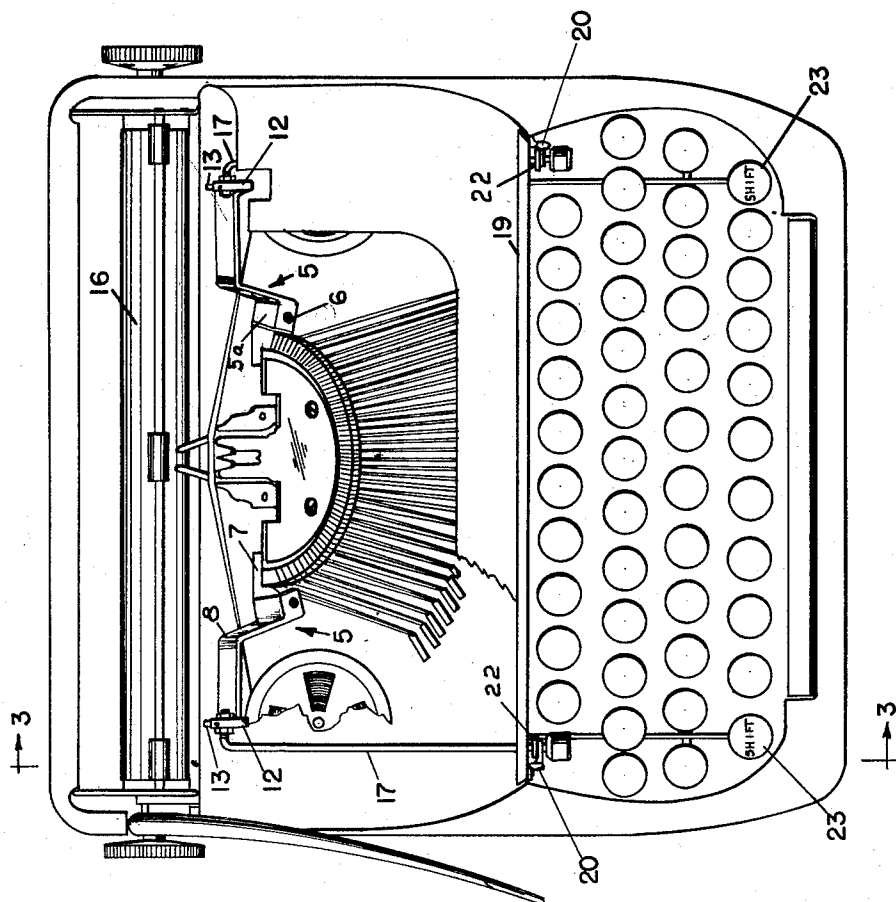


FIG. 1.

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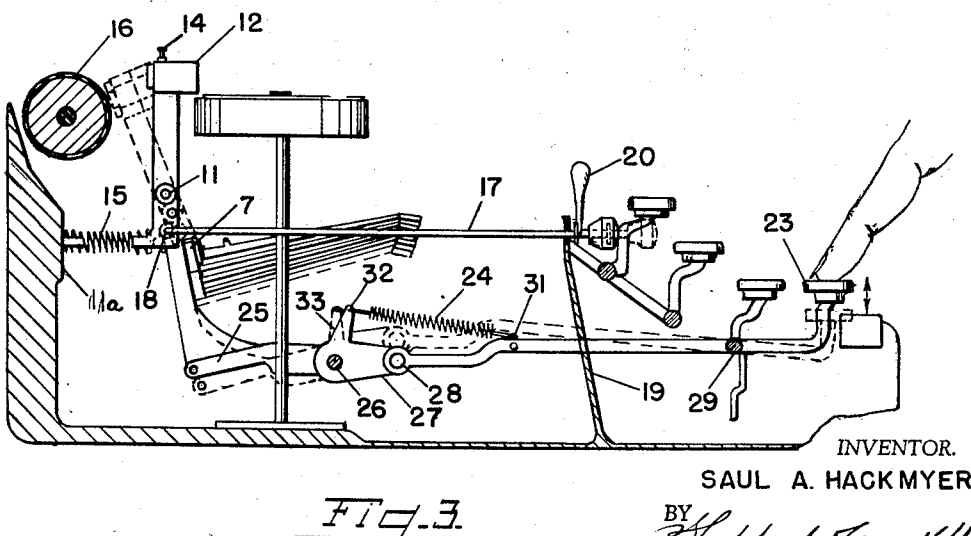
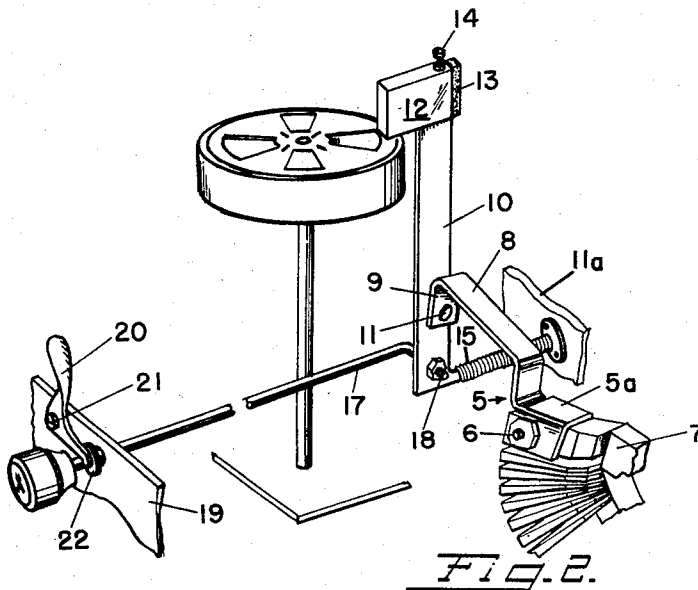
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3 Sheets-Sheet 2



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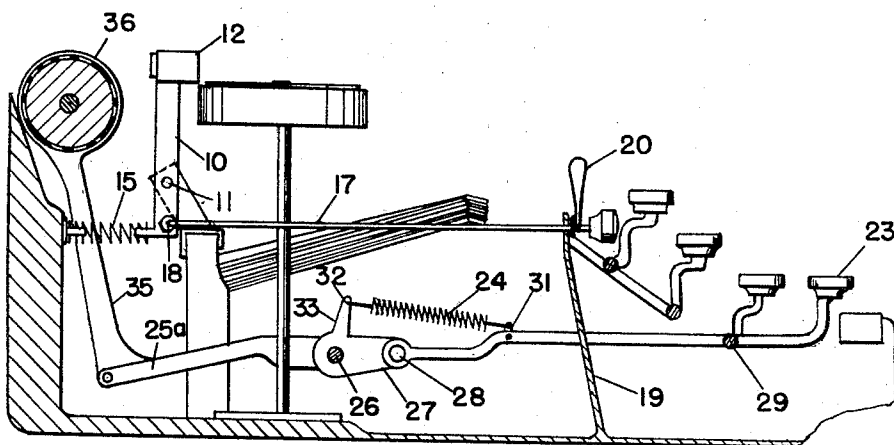
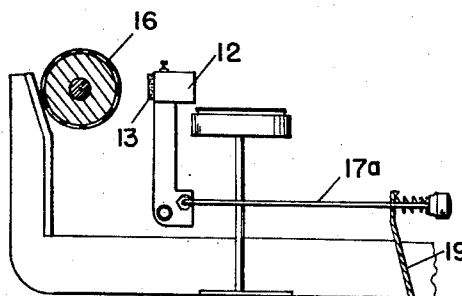
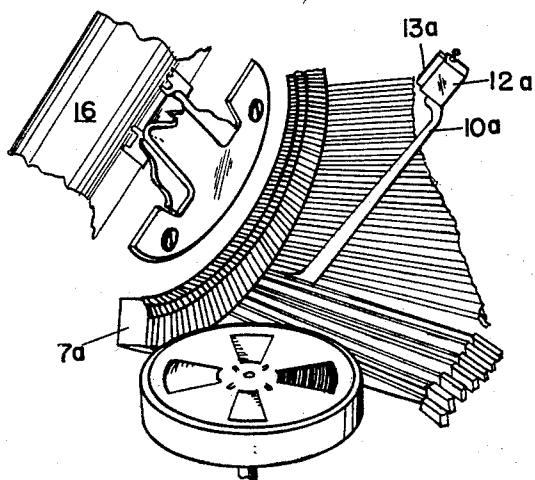
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ERASING ATTACHMENT FOR TYPEWRITERS

Filed April 1, 1958

3 Sheets-Sheet 3



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2,908,372

ERASING ATTACHMENT FOR TYPEWRITERS

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Application April 1, 1958, Serial No. 725,612

9 Claims. (Cl. 197—181)

This invention relates to an erasing attachment for typewriters. Its object is to provide a simple and inexpensive device adapted to be incorporated in typewriters of conventional form, through means involving very little change in the typewriters as at present constructed.

Broadly stated, the invention contemplates the utilization of the conventional shift key and the vertically reciprocatory type bar carrying segment that is actuated by the shift key, as the means through which repeated reciprocations are imparted to an eraser carrier that is mounted upon and moves bodily with said segment.

The invention also contemplates the utilization of the movement of the shift key as means for effecting the desired erasures, in typewriters of the character in which the platen moves vertically in establishing upper and lower case positioning of the platen with respect to the type upon the type bars.

This application is a continuation-in-part of application Serial No. 600,672, filed July 30, 1956, Method of Erasing Typewritten Matter.

The accompanying drawings illustrate means for carrying out the objects of the invention, it being understood that said drawings are illustrative only and that the invention is not limited to the particular constructions shown therein.

In the drawings, wherein like numerals designate corresponding parts throughout the several views:

Fig. 1 is a plan view of pertinent portions only of a conventional typewriter, having the attachment of my invention applied thereto;

Fig. 2 is a perspective view of one of the erasing devices, showing the manner of its attachment to the type bar segment of the typewriter;

Fig. 3 is a vertical sectional view upon line 3—3 of Fig. 1;

Fig. 4 is a fragmentary perspective view showing the eraser mounted upon a bar that is like one of the type bars of the typewriter and which effects the erasing action at what is, normally, the printing position of the type upon the several bars;

Fig. 5 is a view illustrating a form of eraser and carrier therefor in which the carrier is thrust manually to the erasing position, as hereinafter described; and

Fig. 6 is a diagrammatic view of a form of the invention in which the platen of the typewriter is vertically shifted in effecting shift from upper to lower case printing.

One form of the erasing attachment of my invention is illustrated in Figs. 1 to 3. It comprises a bracket 5, a portion 5a of which is secured by a screw 6 to the upper outer corner of the arcuate type bar carrying segment 7 of a conventional typewriter. An arm 8 of the bracket has a downturned end 9 upon which an upstanding bar 10 is pivoted at 11. Bar 10 and a receptacle 12 upon its upper end constitute a carrier for an eraser 13. Screw 14 provides means for securing the eraser in the receptacle and provides means for the feeding forward of the eraser as it wears.

A spring 15 bears between the lower end of bar 10

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and the rear wall 11a of the casing of a conventional typewriter to which the attachment is applied. This spring acts to thrust the eraser toward erasing position, to wit, to a position where it will contact matter to be erased from a paper sheet, not shown, on platen 16 of the typewriter. A rod 17 is pivotally connected to bar 10 at 18 and provides means accessible from outside the front wall 19 of the casing by which the eraser may be moved away from the platen. A detent latch 20 is pivoted at 21 and when swung in front of a collar 22 on rod 17 holds the eraser away from the platen against the tension of spring 15.

By referring to Fig. 1 it will be seen that two of the erasing attachments are employed and that these, being mounted upon the upper outer corners of the segment lie wholly outside the plane of movement of the typewriter ribbon and do not interfere therewith.

The vertical movement of the segment 7 in its movement from upper to lower case and vice versa is effected in one direction by a conventional shift key 23 and in the other direction by a spring 24 (Fig. 3) the said segment being supported by arms 25, which extend from a rock shaft 26 and are swung downwardly to move the segment to upper case position. The rock shaft carries a crank arm 27 to which the inner end of the shift key 23 is pivoted at 28. The shift key is, in turn, pivoted at 29 so that when the outer end of the key is manually depressed its inner end is raised, to rock the rock shaft counter clockwise and thereby move the segment downwardly. When the shift key is released a tension spring 24, which is connected at 31 to the shift key and at 32 to a tail 33 of crank arm 27, acts to restore the parts to the full line position of Fig. 3, to wit, the lower case position of the segment. Thus it will be seen that several depressions of the shift key in succession will vertically reciprocate the segment and move the eraser in vertical reciprocation across matter to be erased, if the eraser has previously been permitted to move into erasing position by release of detent 20 and if the platen has been moved endwise to dispose the matter to be erased in the path of movement of the eraser.

In Fig. 5 it is diagrammatically shown that the movement of the eraser to erasing position is under the direct inward thrust of a headed rod 17a, the eraser being then manually pressed toward the platen by one hand of the operator, while the shift key is manipulated to effect vertical reciprocation of the eraser, with the other hand.

In some types of conventional typewriters the shift from upper to lower case writing is effected by vertical shifting of the platen, the key bar segment remaining stationary. In Fig. 6 I have shown how my simple erasing attachment may be applied to typewriters of the character described and be operated by the conventional shift key. Here the rock shaft and its connections with the shift key are like those shown in Fig. 3 but the arms 25a, which project from the rock shaft, carry the bearing supports 35 of the conventional platen 36.

Fig. 4 illustrates how an eraser, actuated by the shift key may be mounted upon a bar, like those which carry the printing type and may be caused to execute an erasing function at the usual printing position of the types. When this structure is resorted to the ribbon is shifted to stencil cutting position, at which time it does not cover the printing position and my erasing device may be utilized at said printing point.

In Fig. 4 the eraser 13a is mounted in a receptacle 12a that is carried at the outer end of a bar 10a. This bar is shaped like the associated type carrying bars and like said carrying bars is carried by and partakes of the vertical reciprocation of the segment 7a. The operation is like that previously described with respect to the structure of Fig. 5. That is, the bar 10a is swung in the same

way as any other of the type bars, to bring the eraser into paper contacting position and is manually held in such contacting position with one hand of the operator while with the other hand the operator vertically reciprocates the eraser by repeated operations of the shift key.

It is to be understood that the invention is not limited to the precise construction set forth but that it includes within its purview whatever changes fairly fall within either the terms or the spirit of the appended claims.

I claim:

1. The combination with a typewriter having a paper receiving platen, a vertically reciprocatory type bar carrying segment, and a conventional shift key for actuating the segment, of an eraser carrying member mounted upon and partaking of the vertical movement of the segment, an eraser non-rotatively carried by said eraser carrying member and means for moving said member toward the platen to bring the eraser into contacting and erasing position with respect to matter to be erased, whereby the desired erasure may be effected solely by repeated reciprocation of the segment by the actuation of the conventional shift key.

2. The combination with a conventional typewriter of the class comprising a paper receiving platen, a type bar carrying segment, a shift key, and means actuated by the shift key for effecting relative vertical positioning of platen and segment to establish relative upper and lower case positions of the platen and segment, of an eraser carrying element, an eraser non-rotatively carried by said eraser carrying element and means for moving the eraser toward the platen and into contacting position with respect to material to be erased, whereby erasure of the desired material may be effected solely by repeated actuations of the shift key in effecting the relative changes of position between platen and segment from upper case to lower case, and vice versa.

3. In combination with a conventional typewriter having a paper receiving platen, a vertically reciprocatory type bar carrying segment, a shift key and elements controlled thereby for actuating the segment to move it to upper and lower case positions; a pair of eraser and eraser carrying elements mounted upon and partaking of the bodily vertical movement of the segment and mounted thereon at points upon opposite sides of the center of the typewriter and far enough outwardly of said center as to be free of interference with the typewriter ribbon, the erasers being mounted for movement into engagement with a paper sheet upon the platen.

4. A structure as recited in claim 3, in combination with means tending to move the erasers into engagement with said sheet and means for holding said erasers out of engagement with said sheet.

5. A structure as recited in claim 3, in combination with spring means engaged with the eraser carrying elements which tend to move the erasers toward the sheet and

means for holding said elements against movement toward said sheet.

6. In combination with a conventional typewriter having a paper receiving platen, a vertically reciprocatory type bar carrying segment, a conventional shift key and elements controlled thereby for actuating the segment to move it to upper and lower case positions, an eraser carrying member mounted upon and partaking of the vertical movement of the segment, an eraser non-rotatively carried by the eraser carrying member and means for moving said member toward the platen, whereby to bring the eraser into contacting and erasing position with respect to letters to be erased, the erasing of such letters being effected wholly by imparting to the eraser a sufficient number of vertical reciprocations under the influence of the shift key to complete erasure of the letters to be erased.

7. In combination with a conventional typewriter having a paper receiving platen, a vertically reciprocatory type bar carrying segment, a conventional shift key and elements controlled thereby for actuating the segment to move it to upper and lower case positions, an eraser carrying member mounted upon and partaking of the vertical movement of the segment, an eraser non-rotatively carried by said eraser carrying member and means for moving said member toward the platen, whereby to bring the eraser into contacting and erasing position with respect to letters to be erased, the vertical movement of the eraser with the segment being of such amplitude as to carry the eraser across the entire height of letters to be erased, whereby the erasing is effected wholly by the vertical reciprocation of the eraser under the action of the shift key.

8. A structure as recited in claim 6 wherein the eraser carrying member comprises a bar pivoted between its ends for swinging movement and carrying said eraser at its upper end, wherein the means for moving said member toward the platen comprises a spring engaged with the bar at that side of its pivot opposite to the eraser, which spring tends to move the eraser toward erasing position, and a manually releasable latching means acting upon the bar to hold the eraser out of erasing position and against the tension of said spring.

9. A structure as recited in claim 6 wherein the eraser carrying member comprises a bar pivoted between its ends for swinging movement and carrying said eraser at its upper end, and wherein the means for moving said member toward the platen comprises a spring engaged with the bar at that side of its pivot opposite to the eraser, which spring tends to move the eraser toward erasing position.

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