Feb. 6, 1940. G. H. HUTAFF, JR 2,189,649

ERASER ATTACHMENT FOR TYPEWRITERS

Filed Jan. 28, 1938 2 Sheets-Sheet 1

Fig. 1.

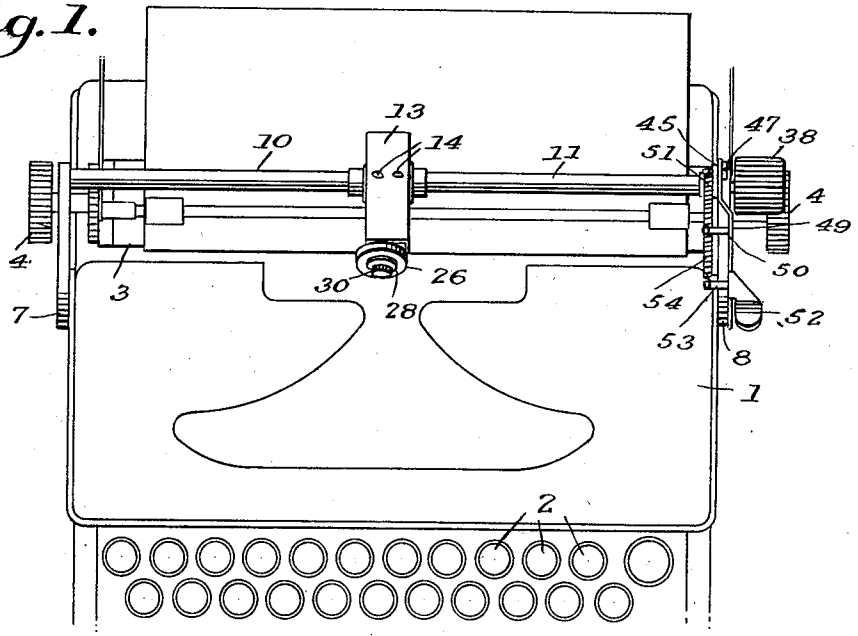


Fig. 6.

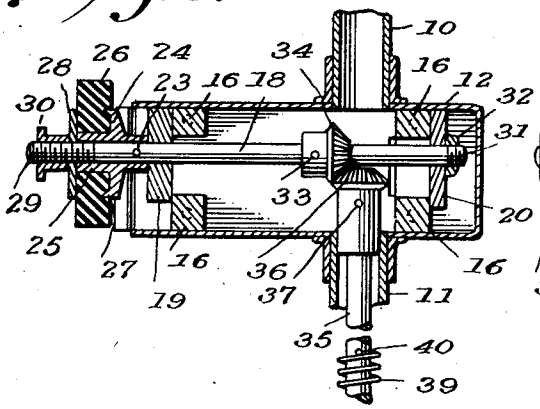


Fig. 8.

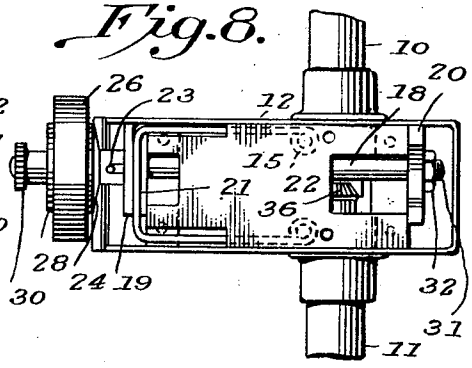
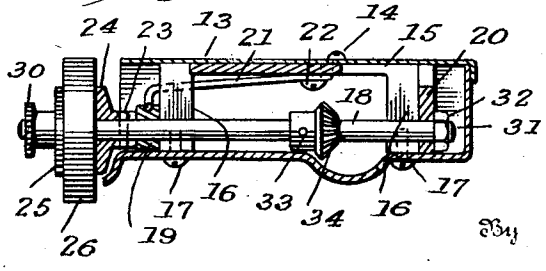


Fig. 7.



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ERASER ATTACHMENT FOR TYPEWRITERS

Filed Jan. 28, 1938 2 Sheets-Sheet 2

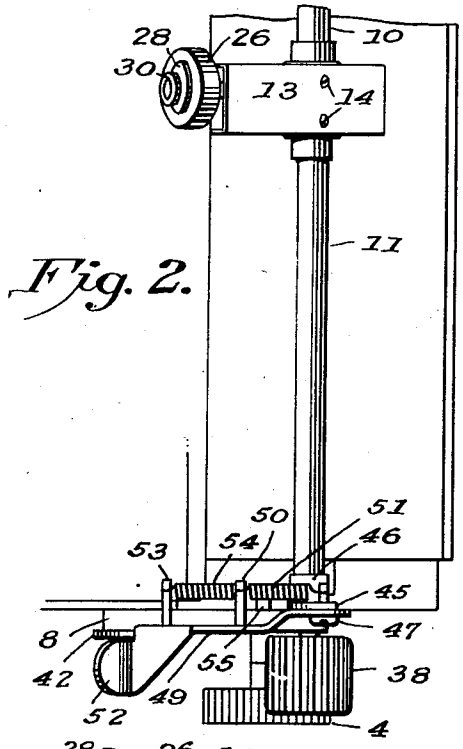


Fig. 2.

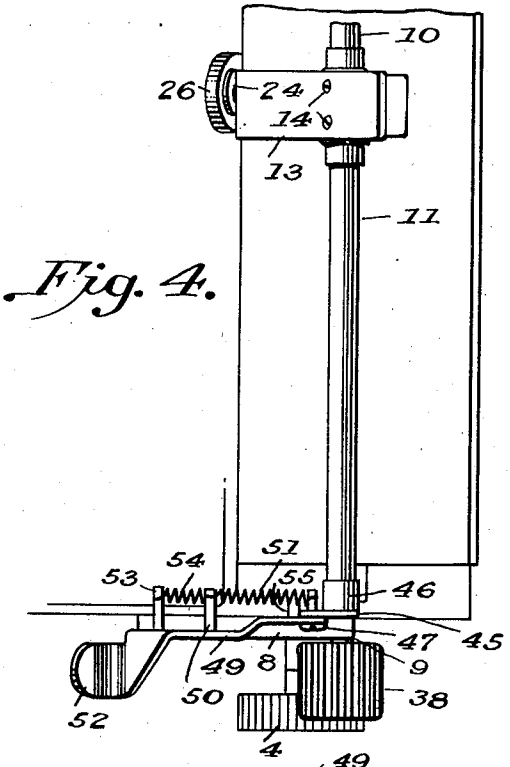


Fig. 4.

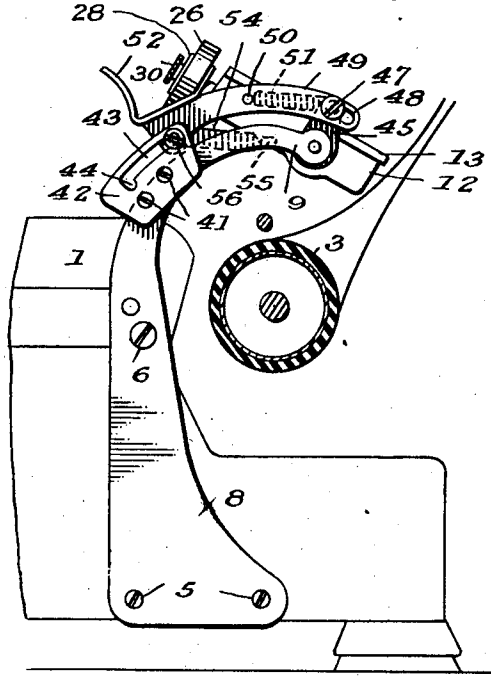


Fig. 3.

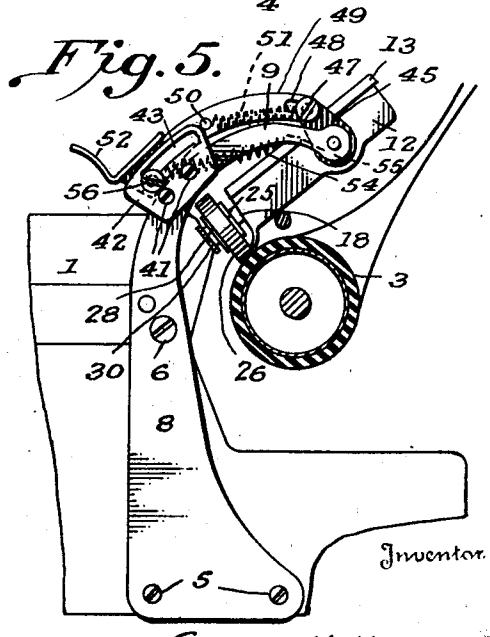


Fig. 5.

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UNITED STATES PATENT OFFICE

2,189,649

ERASER ATTACHMENT FOR TYPEWRITERS

George H. Hutaff, Jr., Wilmington, N. C.

Application January 28, 1938, Serial No. 187,520

6 Claims. (Cl. 197—181)

My invention relates to new and useful improvements in attachment for typewriters and more particularly to an eraser, the principal object of the invention residing in novel means for supporting and operating the eraser, the eraser being in the form of a disc adapted to be swung or moved into engagement with the paper surrounding the typewriter platen and rotated to make the desired erasures.

A further object of the invention resides in the provision of a housing or casing, which carries the eraser disc mounted on a rotatable shaft supported by suitable bearings, within the casing or housing, this rotatable shaft being adapted for yieldable movement in a vertical direction relative to the casing or housing or movement in a direction longitudinally of the platen.

Another object of the invention consists in novel means for normally holding the casing or housing, with its associated eraser disc, in raised position but to swing the same downwardly into operative position, when desired, means also being provided for holding the casing and associated disc in its lowermost or operative position to permit the erasing, means being provided for rotating the eraser disc while in contact with the paper around the platen and on which the letters or words have been typed.

A still further object of the invention consists in the provision of novel means compensating for erasing discs of various diameters, the means for lowering the housing or casing and associated disc being adapted for movement independent of the casing or housing and associated disc after the disc has been brought into engagement with the platen.

With the above and other objects in view, which will appear as the description proceeds, my invention consists in the novel details of construction, and arrangement of parts, described in the following specification and illustrated in the accompanying drawings, and while I have illustrated and described the preferred embodiments of the invention, as they now appear to me, it will be understood that such changes may be made as will fall within the scope of the appended claims.

In the drawings—

Fig. 1 is a top plan, a portion of the typewriter keyboard being broken away.

Fig. 2 is a fragmental top plan showing the eraser in raised position.

Fig. 3 is an end view, with the typewriter platen shown in section, showing the eraser in raised position.

Fig. 4 is a view similar to Fig. 2 showing the eraser in lowered position.

Fig. 5 is a view similar to Fig. 3 showing the eraser in lowered position.

Fig. 6 is a fragmental horizontal section through the eraser and supporting casing or housing therefor, with parts in elevation.

Fig. 7 is a longitudinal vertical section through the casing or housing with the eraser and parts within the casing or housing shown in side elevation; and

Fig. 8 is a fragmental top plan of the eraser and supporting casing or housing, the top covering of the casing or housing being removed.

As the typewriter proper forms no part of the present invention no detailed description thereof will be given, suffice to say that 1 indicates a portion of the typewriter frame, 2 a portion of the keyboard, 3 the usual platen and 4 the knobs secured to each end of the platen for rotating the same in the usual well-known manner.

Secured to opposite sides of the typewriter frame 1, by means of the screws 5 and 6 or other suitable fastenings, are the plates 7 and 8, each plate having at its upper end a rearwardly directed substantially horizontal extension 9 for rotatably supporting therebetween the horizontal sleeves 10 and 11, the outer ends of which receive hollow pins or projections (not shown) extending inwardly from the extensions 9 while the inner ends are connected by the housing or casing 12 having a removable cover 13 normally secured in closing position by the screws 14 or other suitable fastenings. The manner of connecting the inner ends of the sleeves 10 and 11, by the housing or casing 12, is more clearly illustrated in Fig. 6 of the drawings. Positioned within the casing or housing 12 is a plate 15 having at each corner a depending leg or projection 16 which engages the bottom of the casing or housing, as shown more particularly in Fig. 7 of the drawings. The plate 15 itself will be positioned, as shown, on a plane with the top edge portion of the casing or housing and the screws 14 enter threaded openings in the plate 15 to secure the top plate or cover 13 in position. Screws 17 pass through the bottom plate of the casing or housing and engage the depending legs 16 so as to hold the plate 15 and legs 16 in proper position relative to the casing or housing.

A horizontal shaft 18 is positioned within the casing or housing, as shown more particularly in Figs. 6, 7 and 8 of the drawings and this shaft is rotatably mounted in the bearing plates 19 and 20 which, as shown, engage the outer faces

of the depending legs or projections 16 at opposite ends of the plate 15. The shaft itself is positioned between the depending legs or projections at opposite ends of the plate 15 and as shown more particularly in Fig. 6 of the drawings the space between the legs or projections is sufficient to permit transverse movement of the shaft relative to the casing or housing as will presently be brought out. As will be noted, more particularly in Fig. 7 of the drawings, the bearing plate 20 is of such a height that it will engage the inner face of the bottom plate of the casing or housing and the inner face of the cover 13 and will therefore prevent vertical movement of the inner end of the shaft 18 relative to the casing or housing. The plate 19 is of less height than the space between the bottom and top of the casing or housing so that the forward end of the shaft may have vertical movement relative to the casing or housing. Normally the bearing plate 19 is held in its lowermost position, in contact with the bottom or casing of the housing by means of the spring 21 secured to the under surface of the plate 15 by the screws 22 or other suitable fastenings. As is noted the outer end of this spring engages in a notch or recess formed in the upper surface of the bearing plate 19. Secured to the shaft 18, by the pin 23, is a collar 24 having the forwardly directed sleeve portion 25 on which is received the eraser disc 26, as shown more particularly in Fig. 6 of the drawings, the outer face of the collar 24 being provided with the pointed projections 27 to engage in one face of the eraser disc. A plate or washer 28 is received on the shaft 18 and engages the outer face of the eraser disc, the outer end of the shaft being threaded as shown at 29 to receive the nut 30 which will engage the plate 28 to force the eraser disc 26 into tight engagement with the collar 27. The opposite end of the shaft is threaded as shown at 31 to receive the nut 32 which engages the outer face of the bearing plate 20. While the bearing plates 19 and 20 are held in engagement with the outer faces of the depending legs or projections 16 they nevertheless are not in such tight engagement therewith as will prevent movement of the shaft 18 in a manner which will be later brought out. Secured intermediate the ends of the shaft 18, within the casing or housing 12, by means of the pin 33 is the beveled gear 34.

Rotatably mounted in the sleeve 11 is the shaft 35 having the beveled gear 36 connected to its inner end by means of the pin 37, a knob 38 being secured to the outer end of the shaft and adapting the shaft to be rotated when the knob is turned. The beveled gear 36 meshes with the beveled gear 34, as shown more particularly in Fig. 6 of the drawings. A coiled spring 39 surrounds the shaft 35 with its inner end bearing against the pin 40 and its outer or opposite end bearing against the inwardly directed pin or projection, from the extension 9 of the plate 8, which is received in the outer end of the sleeve 11. By this arrangement the spring 39 forces the shaft 35 inwardly to hold the beveled gear 36 in proper mesh with the beveled gear 34 but permitting the shaft 35 to yield in a manner which will be later brought out. As shown more particularly in Fig. 6 of the drawings the bearing plates 19 and 20 are normally spaced from one side wall of the casing or housing 12 while in engagement with the opposite wall.

Secured to the outer face of the extension 9, of the plate 8, by means of the screws 41 or other suitable fastenings is a plate 42 having the arcuate-shaped slot 43 with the notch 44 at its forward or lower end. An arm 45 is secured to the outer end of the sleeve 11, a socket 46 being formed on the inner face of the arm to receive the end of the sleeve, and projecting outwardly from this arm is a headed pin 47 which passes through an elongated opening 48 in one end of a plate or strip 49 as shown more particularly in Figs. 3 and 5 of the drawings. A pin 50 projects inwardly from the strip or plate 49 and a coiled spring 51 has one end secured to the pin 47 and the opposite end secured to the pin 50, this coiled spring normally holding the plate or strip 49 in its rearwardmost position with the pin 47 engaging the inner end of the elongated opening 48. A finger hold or grip 52 is formed on or secured to the forward end of the strip or plate 49 and extends upwardly as clearly shown. A pin 53 projects inwardly from the strip or plate 49, as shown more particularly in Fig. 2 of the drawings, and one end of the coiled spring 54 is secured thereto. The opposite end of this coiled spring 54 is secured to a pin 55 projecting inwardly from the extension 9 of the plate 8.

Having fully described the detailed construction I will now endeavor to bring out more in detail the operation or manner of use. It will be seen that the eraser in reality becomes a part of the typewriter in position to be used at all times and it is not necessary for the typist to look around and find an eraser such as now used and which is usually placed upon the typewriter desk or in one of the drawers thereof. It can be appreciated that my improvements may be added to a typewriter as an attachment or might be made a part of the machine when manufactured. The parts are so formed as to be easily operated and will last during the life of the typewriter with the exception of the eraser disc which will be formed of the usual material and which may be readily replaced when the one in use has become worn. I have provided means for compensating for the wear of the eraser disc and such disc may be used just as long as the individual erasers now commonly used or until worn to a rather small diameter. In the figures of the drawings, with the exception of Figs. 4 and 5, I have shown the parts in their normal positions with the eraser disc raised and, of course, out of use. When the typist makes an error and it is desired to erase one or more letters, or in fact one or more words, the eraser disc is lowered into the position shown more particularly in Figs. 4 and 5 and with the disc in contact with the paper, over the letter or letters to be erased, it is rotated and the letter or letters erased. To accomplish the lowering of the eraser disc the operator will grasp the finger-hold or grip 52 and pull forwardly and downwardly thereon. This draws the plate or strip 49 forwardly and the spring 51, being of such a strength as not to be placed under tension or expansion during such movement, pulls the arm 45 forwardly and rotates the sleeves 10 and 11 to lower the housing 12 into the position shown more particularly in Fig. 5 of the drawings to engage the edge of the eraser disc with the paper on the platen 3. During this movement the pin 47 remains in engagement with the forward end of the opening 48 but when the eraser disc is engaged with the platen the plate or strip 49 may have further movement placing the spring 51 under tension or expansion and permitting the plate or strip to be moved relative to the pin 47

until the pin is engaged with the rear end of the opening 48. As shown the pin 53 is provided with the head 56 which slides along the outer face of the plate 42 and when the plate or strip 49 is moved to its forwardmost position the portion of the pin 53 between the head 56 and the face of the plate 42 drops into the notch 44 and holds the parts in their adjusted position. As the plate or strip 49 is pulled forwardly it will also be appreciated that the spring 54 will be placed under tension or expansion. With the parts in this position the operator grasps the knob 38 and rotates the same. This rotation of the knob in turn rotates the shaft 35 which through the meshing of the beveled gears 34 and 36 rotates the shaft 18 and the eraser disc 26. This rotation of the eraser disc erases the letters to be eliminated. The knob 38 can be rotated in either direction to in turn rotate the eraser disc in either direction. When the eraser disc is rotated in one direction it has a tendency to "walk" along the platen 3 and this will move the bearing plate 20 away from that wall of the casing or housing with which it is in contact towards the opposite wall, the plate 19 acting as a fulcrum. When the eraser disc is rotated in the opposite direction it has a tendency to "walk" along the platen in an opposite direction and this causes the bearing plate 19 to move away from that wall with which it is in contact towards the opposite wall, the plate 20 then acting as a fulcrum. In other words the eraser disc may have a movement laterally of the casing or housing. The movement of the shaft 18, in the movements of the eraser disc just described, is permitted due to the fact that the shaft 35 has a longitudinal yielding movement due to the tension of the spring 39. The shaft 18 and eraser disc 26 may have a vertical movement against the action of the spring 21. This is desirable due to different sizes of the eraser disc. After the erasing has been accomplished the operator pushes upwardly on the finger hold or grip 52 and this releases the pin 53 from the notch 44. The spring 54 will then draw the plate or strip 49 rearwardly into its original position and the spring 51 will contract to its original position. As the forward end of the opening 48 engages the pin 47 it will swing the arm 45 rearwardly to rotate the sleeves 10 and 11 and to swing the housing or casing 12 into its normal upward position to raise the eraser disc as shown. Of course, it will be understood that the platen will be moved longitudinally to properly position the letters or words to be erased under the eraser disc.

Having fully described my invention what I claim as new and desire to secure by Letters Patent is:

1. An eraser attachment for typewriters including a rotatably mounted support, an eraser carried by the support, an arm connected to the support, a member connected to the arm and adapted for sliding movement relative thereto, and yieldable means connecting said member and said arm, said yieldable means operating the arm on movement of the member to rotate the support and to bring the eraser into erasing position relative to the typewriter platen and permitting movement of the member relative to and independent of the arm after the eraser has been brought into erasing position.

2. An eraser attachment for typewriters including a rotably mounted support, an eraser carried by the support, an arm connected to the support, a slidable member connected to the arm and adapted for movement relative thereto and independent thereof, and a yieldable connection between the member and arm, said yieldable connection drawing on the arm to rotate the support upon operation of the slidable member to bring the eraser into erasing position relative to the typewriter platen and to permit continued movement of the member after said positioning of the eraser.

3. An eraser attachment for typewriters including a rotatably mounted support, an eraser carried by the support, an arm connected to the support, a slidable member connected to the arm and adapted for movement relative thereto and independent thereof, a yieldable connection between the member and arm, said yieldable connection drawing on the arm to rotate the support upon operation of the slidable member to bring the eraser into erasing position relative to the typewriter platen and to permit continued movement of the member after said positioning of the eraser, and means for holding the parts in their erasing position.

4. An eraser attachment for typewriters including a rotatably mounted support, an eraser carried by the support, an arm connected to the support, a slidable member connected to the arm and adapted for movement relative thereto and independent thereof, a yieldable connection between the member and arm, said yieldable connection drawing on the arm to rotate the support upon operation of the slidable member to bring the eraser into erasing position relative to the typewriter platen and to permit continued movement of the member after said positioning of the eraser, and means for returning the parts to their normal positions.

5. An eraser attachment for typewriters including a rotatably mounted support, an eraser carried by the support, an arm connected to the support, a slidable member connected to the arm and adapted for movement relative thereto and independent thereof, a yieldable connection between the member and arm, said yieldable connection drawing on the arm to rotate the support upon operation of the slidable member to bring the eraser into erasing position relative to the typewriter platen and to permit continued movement of the member after said positioning of the eraser, means for holding the parts in their erasing positions, and means for returning the parts to their normal positions.

6. An eraser attachment for typewriters including a rotatably mounted support, an eraser carried by the support, an arm connected to the support, a slidable member connected to the arm and adapted for movement relative thereto and independent thereof, a yieldable connection between the member and arm, said yieldable connection drawing on the arm to rotate the support upon operation of the slidable member to bring the eraser into erasing position relative to the typewriter platen and to permit continued movement of the member after said positioning of the eraser, a plate having an elongated opening therein and a notch formed at one end of the opening, and a member carried by the slidable member, operable in the elongated opening, and adapted to be received in the notch to hold the slidable member in erasing position.

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