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ERASING DEVICE

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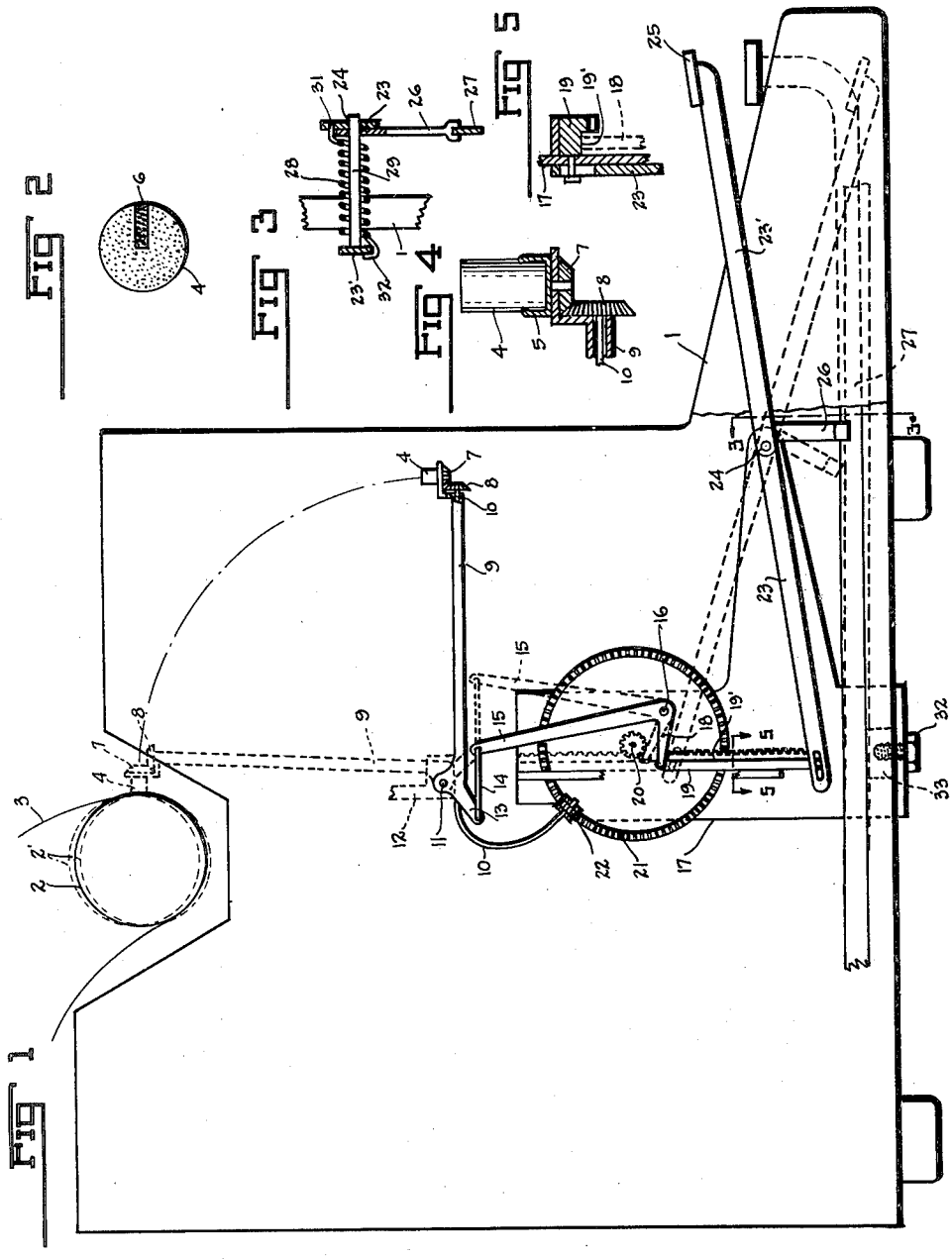


Fig 1

Fig 2

Fig 3

Fig 4

Fig 5

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ERASING DEVICE

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6 Claims. (Cl. 197—181)

This invention relates in general to an erasing device and in particular to a revolvable eraser for use in typewriters and similar machines.

The objects of the invention are, first; to provide as an auxiliary attachment or as a component part of a typewriter or similar device, an erasing device operative in as simple and expeditious a manner as the typing keys on the machine.

Second; to provide in an eraser of the class described, means for moving the eraser into erasing position and means for revolving said eraser at a relatively high speed to perform the erasing function.

Third; to provide an erasing means as herein described use of which will not necessitate changing position of the paper on the platen or the platen itself, the erasing means contacting the paper at the same spot in which the letters meet the paper.

Fourth; to provide means for "rocking" the platen during the erasing procedure.

Fifth; to provide an eraser having a segmental portion thereof composed of bristles or other suitable material to brush the eraser dust or particles from the paper.

Further objects and advantages will be apparent by reference to the following description in connection with the accompanying drawing in which:

Fig. 1 is a side view of a typewriter showing my erasing device applied thereto, parts being shown in section.

Fig. 2 is an enlarged end view of the eraser, showing the brushing portion thereof.

Fig. 3 is a vertical cross sectional view on the line 3—3 of Fig. 1.

Fig. 4 is a fragmentary sectional view through the eraser and holder therefor, also showing the drive gears.

Fig. 5 is a fragmentary, sectional view on the line 5—5 of Fig. 1.

Referring now to the drawing by numerals of reference 1 designates a typewriter frame of usual construction having a platen 2 adapted to hold paper 3. The eraser 4, preferably cylindrical in shape, may be held by any suitable means, a cup shaped retainer 5 being shown. A portion of the eraser is composed of bristle 6 or other suitable material to brush loose particles from the paper during the erasing operation.

The eraser is rotated by means of gears 7 and 8, suitably supported at the end of the eraser arm 9, preferably hollow in construction to accommodate the cable or shaft 10 affixed to gear 8 and adapted to rotate same. The eraser arm 9 is pivoted at 11 to the type bar pivot segment 12 or at any other suitable position. A short lever arm 13 extends from erasing arm 9 and pivotally carries link 14 in pivotal engagement with end of eraser actuating member or lever 15. Lever 15 is pivoted at 16 to auxiliary frame 17 and has a short arm 18 adapted to be contacted by rack 19, suitably guided for vertical movement in frame 17. Rack 19 is adapted to contact and rotate pinion 20 which is integral with large gear 21, in mesh with pinion 22, said gears being suitably supported in auxiliary frame 17. Pinion 22 rotatably carries the end of cable or flexible shaft 10, which rotates the eraser as hereinbefore described.

Movement of rack 19 is provided by lever arm 23 in sliding engagement with said rack and suitably pivoted at 24 to extension 17' of frame 17. The arm 23 may be offset as shown in Fig. 3 to bring portion 23' of arm 23 outside the typewriter frame 1, a finger key 25 being provided at the end of arm 23'.

Adjacent the pivotal axis 24 and integral with arm 23 is a depending portion or transverse extension 26 adapted to saddle shift key lever 27 and agitate or rock same during manipulation of the eraser key as will be hereinafter shown.

A coil spring 28 is suitably positioned about shaft 29 and has one end 30 secured to the lever 23' and the other end 31 secured to the extension 17' of frame 17, whereby a tension is exerted on the lever arm 23 to retain it in starting position when not in operation and to return it to starting position when the key 25 has been depressed and released.

It will be seen that depressing the lever arm 23 will cause rack 19 to rise vertically, bringing the eraser 4 into engagement with the paper 3, through the medium of arm 18, lever 15, link 14, arm 13 and eraser arm 9. Rack 19 need be moved only a very short distance to accomplish this function, the end of short arm 18 riding against the surface 19' during further vertical movement of the rack 19. Continued depression of the key 25 will cause rack 19 to engage pinion 20 rotating same and consequently rotating gear 21 which is integral therewith. The large gear 21 will rotate pinion 22 to motivate the cable 10 and gears 8 and 7 and the eraser 4 which prior to rotation thereof was in contact with the paper. The speed of rotation of the eraser is multiplied considerably by the gear ratios and it is apparent that the small up and down movement

of lever arm 23 will cause the eraser to rotate at a relatively high speed.

I have found that by raising and lowering the platen during the erasing operation the eraser 4 will better perform its eradicating function. This "rocking" action is provided by the extension 26 riding on the shift key lever 27. By locating said extension 26 close to the pivotal point 24 sufficient actuation is imparted to the shift key lever 27 to raise and lower the platen 2 as shown by dotted lines 2'.

It will also be seen that the eraser 4 will strike the paper at the same spot that the type keys strike, obviating the necessity of shifting the paper or platen when it is necessary to make an erasure. The only movement necessary, of course, will be to back space to the beginning of the error, a procedure which is necessary with the present day machines. It has been found that operating the lever 23 once or twice will be sufficient to erase any letter, having the paper in good condition.

The mechanism and operation of my device is relatively simple, the normal functions of the typewriter or other device on which attached not being interfered with in any manner. The auxiliary frame 17 may be attached to the frame 1 of the typewriter by a set screw 32 engaging boss or other suitable threaded portion 33 normally provided for packing of the machines during shipment. A clamp or other suitable fastening means may be provided, the erasing device thereby forming an auxiliary attachment which will not interfere with the normal functions of the typewriter.

Changes in form, proportion and details of construction may be resorted to without departing from the spirit of my invention and I reserve the right to such equivalents of construction as fall within the scope of my invention and the principles as herein disclosed and claimed.

What I claim as new and desire to secure by Letters Patent is:

1. An erasing device comprising an eraser carrying arm, arm operating means including a lever, a rack engageable with said lever to motivate the arm operating means, gear means for rotating the eraser, said rack being adapted to motivate said gear means, and lever means for actuating said rack.

2. The structure as specified in claim 1, including spring means for returning the second mentioned lever means to starting position when said lever is released.

3. In an erasing device of the class described, an eraser, means for moving the eraser into erasing position, means for rotating the eraser, and a lever operated means in permanent actuable engagement with the first mentioned means and in intermittent actuable engagement with the second mentioned means and adapted to actuate the second mentioned means after the first mentioned means has positioned the eraser in erasing position.

4. In an erasing device of the class described for use on a typewriter having a platen raising mechanism, an eraser carrying arm, arm operating means including a lever, a rack engageable with said lever to motivate the arm operating means, gear means for rotating the eraser, said rack being adapted to motivate said gear means, lever means for actuating said rack, and means between the lever and the platen raising mechanism for agitating said platen raising mechanism during the rotation of the eraser.

5. In an erasing device of the class described for use on a typewriter having a platen raising mechanism, a rotatable eraser, means for moving the eraser into erasing position, means for rotating the eraser to perform its eradicating function, and means connected to and operable with said last mentioned means for contacting the platen raising mechanism to agitate the platen during the erasing operation.

6. The structure as specified in claim 5, and a common operating means, including a lever, to actuate the eraser positioning means, the eraser rotating means and the platen agitating means.

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