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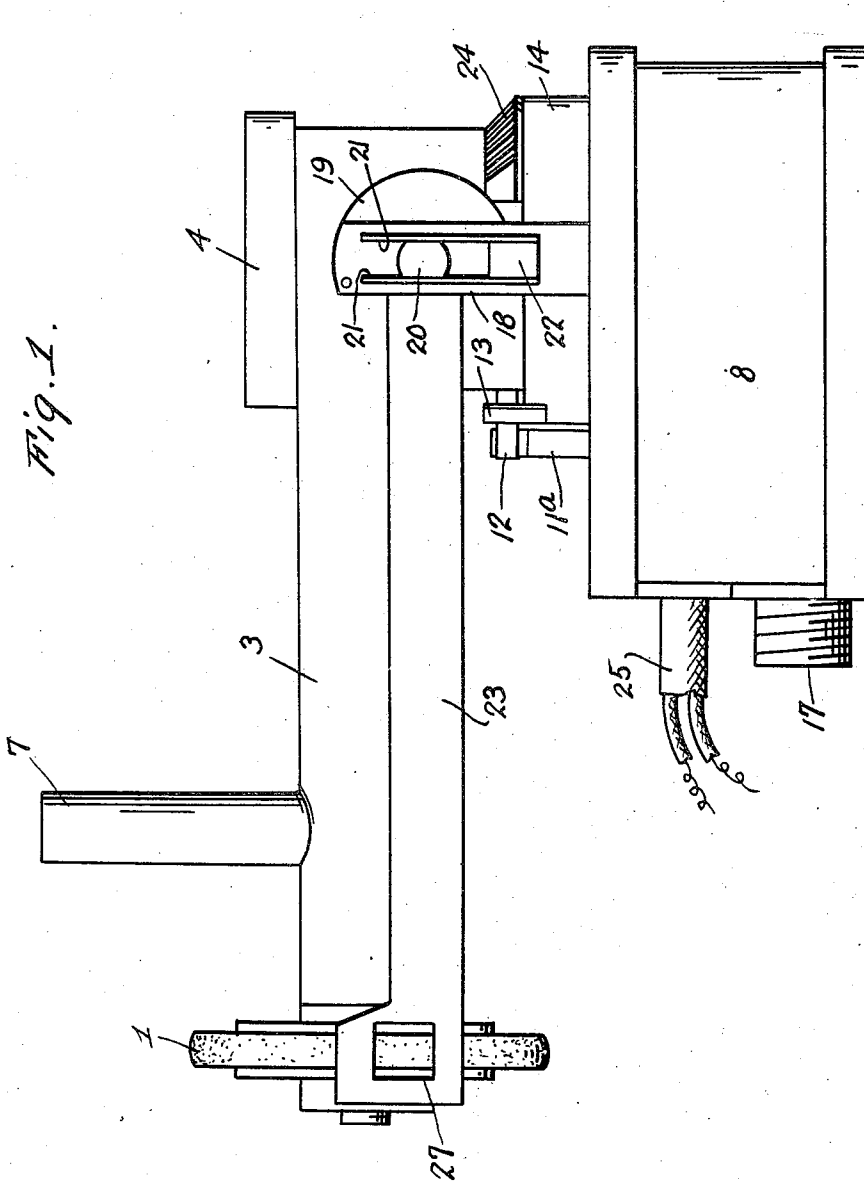
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POWER DRIVEN ERASER FOR TYPEWRITERS

Filed April 23, 1934

3 Sheets-Sheet 1



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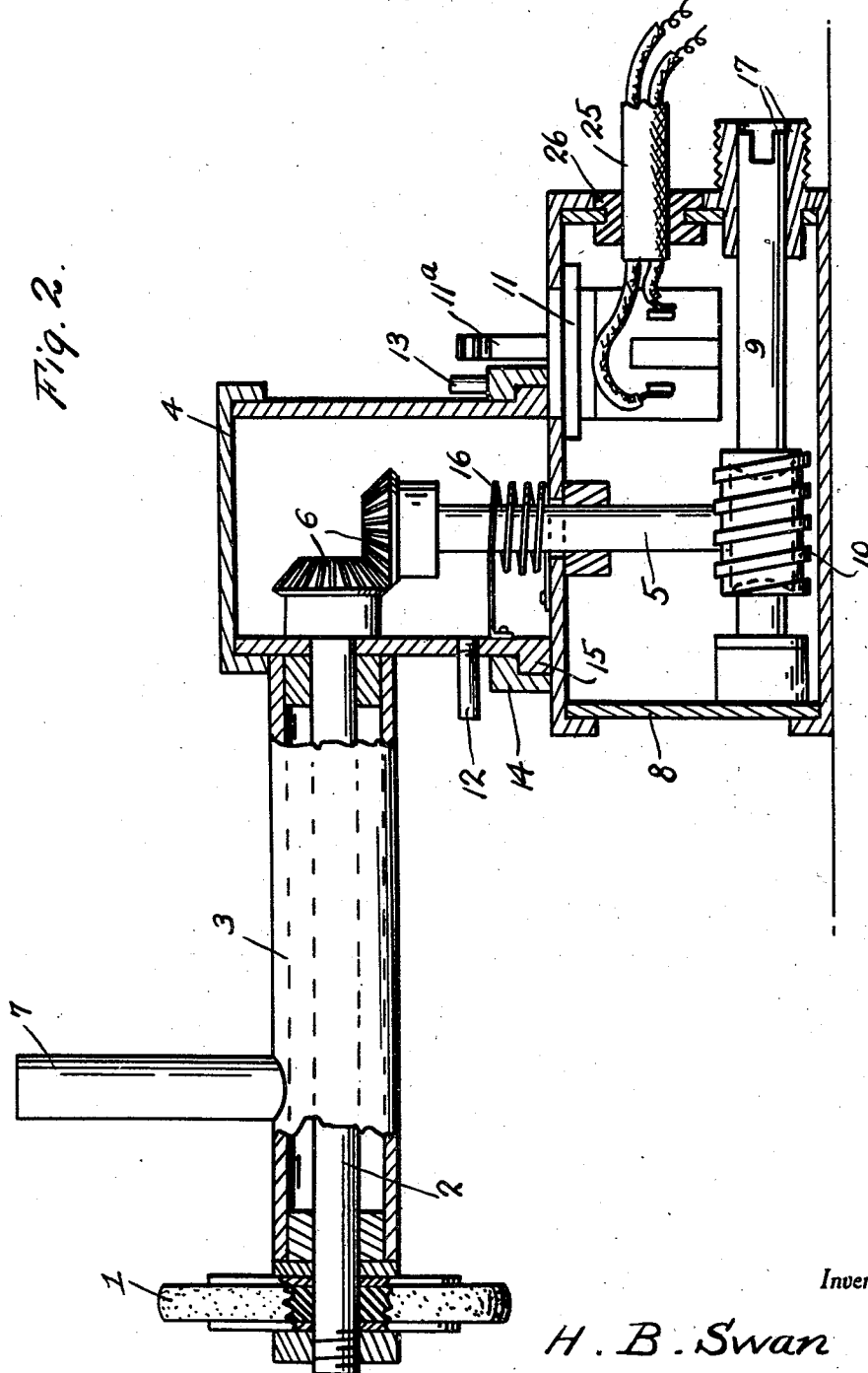
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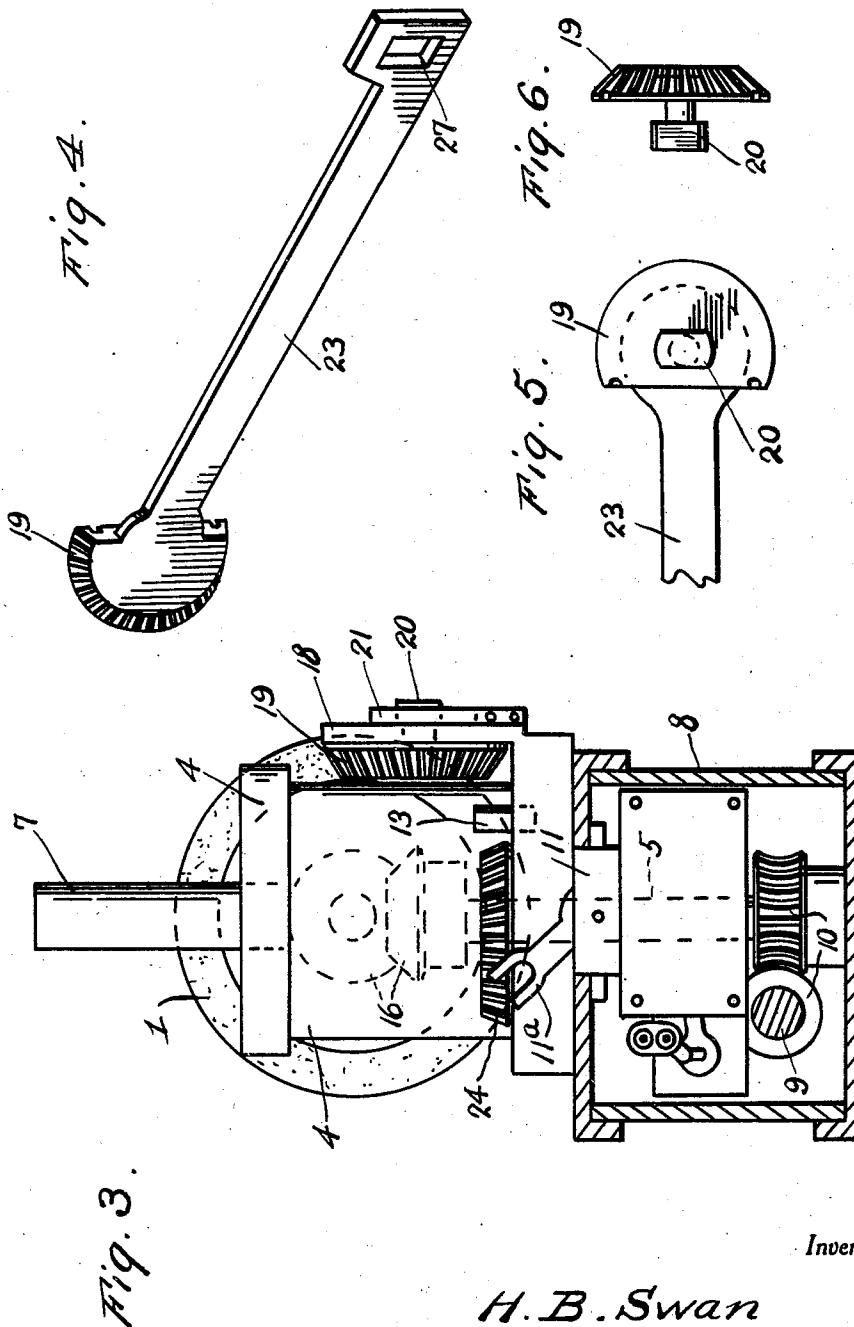
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POWER DRIVEN ERASER FOR TYPEWRITERS

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UNITED STATES PATENT OFFICE

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POWER DRIVEN ERASER FOR
TYPEWRITERS

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9 Claims. (Cl. 197—181)

This device has reference to attachments for typewriters and has as its object the provision of a power driven device for use on typewriters for the purpose of applying a revolving, disk shaped eraser at a predetermined position upon the paper being typewritten upon for the purpose of erasure to the end that any symbol or symbols desired may be removed from the paper.

An object of the invention is to provide a power driven eraser that may be readily used in conjunction with a typewriter to facilitate the making of required erasures.

The invention together with its objects and advantages will be best understood from a study of the following description taken in connection with the accompanying drawings wherein:

Figure 1 is a rear side elevational view of the eraser.

Figure 2 is an enlarged view thereof with certain parts omitted, and other parts broken away, and still other parts shown in section.

Figure 3 is an end view with certain parts broken away and shown in section.

Figure 4 is a perspective view of an arm equipped at one end with a gear, and at a relatively opposite end with an erasure guide.

Figure 5 is an elevational view of a gear hereinafter more fully referred to, and

Figure 6 is a view taken at right angles to Figure 5.

Referring to the drawings by reference numerals it will be seen that there is provided a disk shaped eraser 1 suitably mounted on a horizontal shaft 2 which is carried in an arm 3 projecting from a vertical turret 4 rising from a hollow base member 8. The arm 2 is driven through the medium of suitable gearing 6 from a vertical shaft 5 that extends upwardly from the base 8 into the turret 4.

The shaft 5 is in turn driven from a horizontal shaft 9 through the medium of reduction gearing 10. The shaft 9 is suitably provided at one end as at 17 for connection with a flexible shaft, and through such a shaft to a motor suitably provided to furnish power for the device.

Suitably mounted within the base 8 is a toggle switch 11 and the operating member or lever of the switch, and indicated by the reference numeral 11a operates in a suitable slot in the top of the base 8 and is arranged in position to be engaged and operated by a pin 12 carried by the turret 4 for throwing the switch 11. The turret 4 is mounted on the base 8 to rotate about a vertical axis through the medium of a collar 14 secured to the top of the base in any suitable

manner and having a flange overlying and engaging a flange 15 provided at the base of the turret 4 as clearly shown in Figure 2. The turret 4 is normally urged to rotate in one direction through the medium of a coil spring 16 disposed about the shaft 5 and anchored at one end to the top of the base 8 and at a relatively opposite end to the turret 4 in a manner clearly shown in Figure 2. Rotative movement of the turret 4 is limited, on the one hand, by the engagement of the eraser 1 with the paper, and on the other hand by engagement of the pin 12 with a fixed pin 13 rising from the flanged upper end of the collar 14.

On the side of the collar 14 nearest to the carriage of the typewriter is mounted a vertical standard 18 and a beveled gear 19 of suitable shape has projecting from the center thereof, and from one side thereof a headed stud 20 that is engaged in a suitable aperture provided therefor in the standard 18, and engaging opposite sides of the head of the stud 20 are springs 21 that are suitably anchored at one end to a block 22 located adjacent the lower end of the standard 18. A mutilated or section of beveled gear 24 is provided at the base of the turret immediately above the collar 14 and is provided with a smaller number of teeth than the gear 19. The gear 24 is located on the side of the turret opposite to the arm 3 and is adapted to engage the gear 19 when the turret is oscillated.

The gear 19 is formed on one end of an arm 23 which extends parallel to the arm 3, and on its free end the arm 23 is provided with an enlarged apertured head forming an eraser guide 27. The arm 23 is normally held in a horizontal position by reason of the engagement of the springs 21 with the flattened sides of the stub shaft or stud 20.

The electric cord for the switch 11 is indicated by the reference numeral 25, and as shown leaves the base through the insulating washer 26 to connect to the motor furnishing the power, and may be fastened to the cover of the flexible shaft connecting the motor to the device, thus making a neat appearance. In this connection it may be mentioned that the motor connected to the shaft 19 (which motor is not shown) would be attached to the rear of the typewriter by a clamp or in any other suitable manner to facilitate moving the typewriter.

In actual practice it is intended that the device forming the subject of the invention be mounted on the top plate of the typewriter on either side of the center of the typewriter be-

tween the spools carrying the ribbon and the carriage so that the eraser will touch any portion of a line desired by moving the carriage.

When not in use the arm 3 carrying the eraser 1 is left parallel with the carriage of the typewriter, with the eraser 1 at the outside edge of the typewriter.

To place in operation the handle 7 is grasped and moved in an arc toward the operator and the center of the typewriter.

As the turret 4 commences to move, the pin 12 engages the operating lever of the switch 11, and as the turret continues to move, swings the lever 11a of the switch in a manner to close the switch, and thus complete the circuit to the motor (not shown) for furnishing power from the motor to the shafts 9, 5 and 2 for revolving the eraser 1.

As the turret 4 moves through its arc, in the swinging of the arm 3 toward the platen of the typewriter, the gear 24 mounted on the turret engages the gear 19 initiating movement of the arm 23, causing the same to swing to a portion of the 180 degree arc necessary to move said arm 23 into effective position, the springs 21 then operating to complete the movement of said arm. During reverse movement of the arm 3 under the influence of spring 16 the operation of the gears 19 and 24 and springs 21 is reversed.

It will be understood that the arm 3 is swung until the eraser touches the paper and held there a moment, then by releasing slightly the paper may be viewed while the guide remains in position, for the purpose of ascertaining whether a second application of the eraser is necessary to completely remove the symbol. An entire line of symbols may be erased by moving the carriage of the typewriter while the eraser is in contact with the paper.

If the handle 7 is released at any time when the device is in use the spring 16 will return the arm 3 to the normal out of the way or rest position, during which movement the lever 11a of the switch is returned to its normal or switch opening position by engagement of the pin 12, as the pin returns to its normal position against the stop pin 13 thus limiting the movement of the arm 3 on its return.

The return of the arm 23 to the rest or normal position is effected by a return of the gear 24 and a reversal of the operation above described.

Having thus described my invention, what I claim as new is:

1. An eraser attachment for typewriters comprising a turret mounted to rotate about a vertical axis, an arm extending laterally from the turret, a shaft extending through the arm and mounted to rotate relative to the arm, an eraser on one end of the shaft, and means for driving said shaft including gearing arranged within the turret.

2. A typewriter attachment comprising a base, a turret mounted on the base to rotate about a vertical axis, a shaft extending upwardly through the base to terminate within the turret, an arm extending laterally from the turret, an eraser mounted at one end of the arm to rotate about an axis extending longitudinally through said arm, a driving connection between the axis of the eraser and said shaft, and arranged within said turret, and driving means for the shaft arranged within said base.

3. A typewriter attachment comprising a base, a turret mounted on the base to rotate about a vertical axis, a shaft extending upwardly through

the base to terminate within the turret, an arm extending laterally from the turret, an eraser mounted at one end of the arm to rotate about an axis extending longitudinally through said arm, a driving connection between the axis of the eraser and said shaft, and arranged within said turret, and driving means for the shaft arranged within said base, said driving means including a control switch mounted in the base and having a throw lever extending upwardly through a slot in the top of the base, and a pin projecting from the turret and engageable with the throw lever for tripping the switch.

4. A typewriter attachment comprising a base, a turret mounted on the base to rotate about a vertical axis, a shaft extending upwardly through the base to terminate within the turret, an arm extending laterally from the turret, an eraser mounted at one end of the arm to rotate about an axis extending longitudinally through said arm, a driving connection between the axis of the eraser and said shaft, and arranged within said turret, and driving means for the shaft arranged within said base, said driving means including a control switch mounted in the base and having a throw lever extending upwardly through a slot in the top of the base, and a pin projecting from the turret and engageable with the throw lever for tripping the switch, spring means engaged with the base and the turret in a manner to normally cause the turret to rotate in one direction, and a fixed stop pin in the path of the first named pin for limiting movement of the turret.

5. An eraser attachment for typewriters comprising a revolvably mounted turret, an arm extending laterally from the turret, an eraser mounted adjacent the free end of the arm to rotate about an axis extending longitudinally of the arm, means for driving the eraser, a fixed standard paralleling said turret, a stub-shaft supported by said standard, a mutilated gear on one end of the stub-shaft, an arm extending from said gear and provided at its free end with an apertured head forming an eraser guide, spring means engaged with the stub-shaft in a manner to resiliently retain the last named arm in a substantially horizontal position, and a mutilated gear on the turret engageable with the first named mutilated gear for causing said arm to swing vertically.

6. An eraser attachment for typewriters comprising a revolvably mounted turret, an arm extending laterally from the turret, an eraser mounted adjacent the free end of the arms to rotate about an axis extending longitudinally of the arm, means for driving the eraser, a fixed standard paralleling said turret, a stub-shaft supported by said standard, a mutilated gear on one end of the stub-shaft, an arm extending from said gear and provided at its free end with an apertured head forming an eraser guide, spring means engaged with the stub-shaft in a manner to resiliently retain the last named arm in a substantially horizontal position, and a mutilated gear on the turret engageable with the first named mutilated gear for causing said arm to swing vertically, a handle carried by the first named arm to facilitate manual rotation of the turret, spring means normally urging the turret to rotate in one direction, stop means for limiting movement of the turret in said one direction.

7. An eraser attachment for typewriters comprising a revolvably mounted turret, an arm extending laterally from the turret, an eraser mounted adjacent the free end of the arms to rotate about an axis extending longitudinally of

the arm, a fixed standard paralleling said turret, a stub-shaft supported by said standard, a mutilated gear on one end of the stub-shaft, an arm extending from said gear and provided at its free end with an apertured head forming an eraser guide, spring means engaged with the stub-shaft in a manner to resiliently retain the last named arm in a substantially horizontal position, and a mutilated gear on the turret engageable with the first named mutilated gear for causing said arm to swing vertically, a handle carried by the first named arm to facilitate manual rotation of the turret, spring means normally urging the turret to rotate in one direction, stop means for limiting movement of the turret in said one direction, and electrically operated means for driving the eraser including a switch having an operating lever, and means for throwing said switch incidental to a rotation of the turret.

8. In a device of the class described, an arm pivotally mounted to swing in a horizontal plane, an eraser rotatably mounted at one end of the arm, means to rotate the eraser, a second arm

pivotally mounted to swing in a vertical plane, normally paralleling the first arm, an eraser guide on one end of the second arm, and mechanism connecting the arms for swinging the second arm to place the eraser guide in effective position relative to the eraser incidental to the swinging of the first arm to move the eraser to erasing position.

9. In a mechanical eraser, a rotatably mounted erasing member, supporting means for the eraser swingable in a horizontal plane, means for driving the eraser member, a guide member positioned adjacent to the peripheral edge of the eraser member, and normally out of effective position relative to the eraser, vertically swingable supporting means for the guide member, and mechanism connecting the eraser supporting means with the guide supporting means for moving the guide member into effective position relative to the eraser incidental to a movement of the eraser to erasing position.

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