

Feb. 1, 1938.

G. R. O'NEAL

2,107,209

ERASER FOR TYPEWRITERS

Filed Feb. 2, 1937

2 Sheets-Sheet 1

Fig. 1.

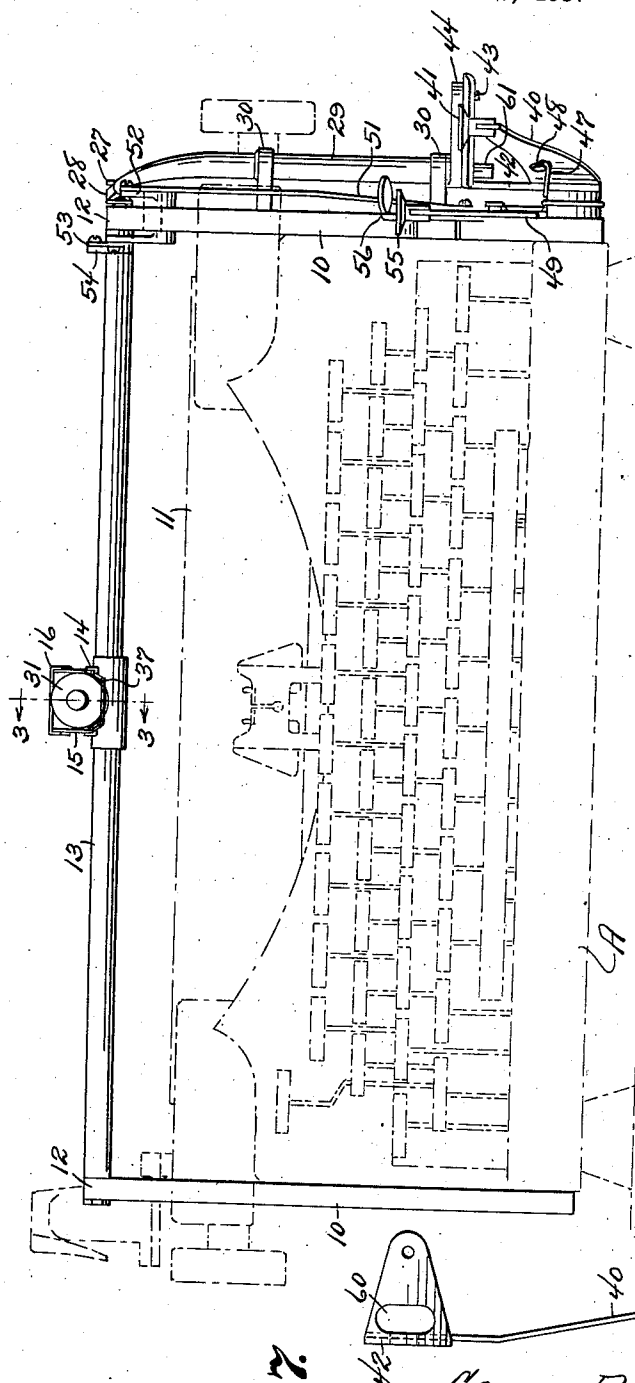


Fig. 7.

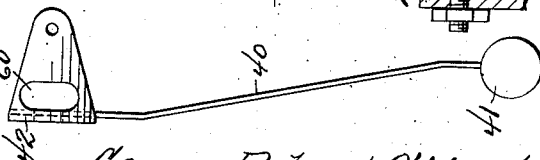


Fig. 5.

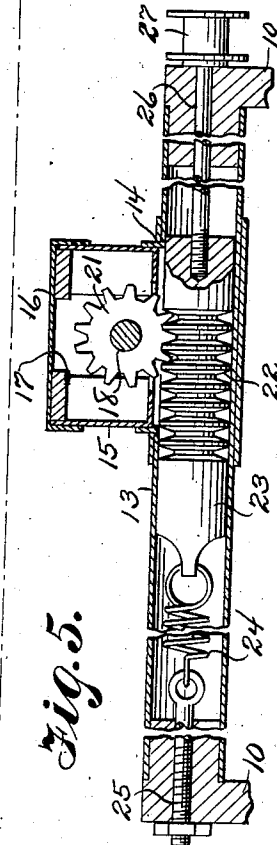
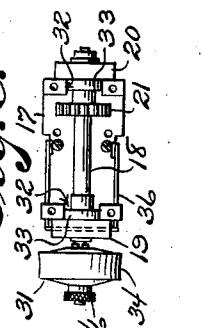


Fig. 6.



George Robert O'Neal

INVENTOR

BY Victor J. Evans & Co.

ATTORNEY

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2 Sheets-Sheet 2

Fig. 2.

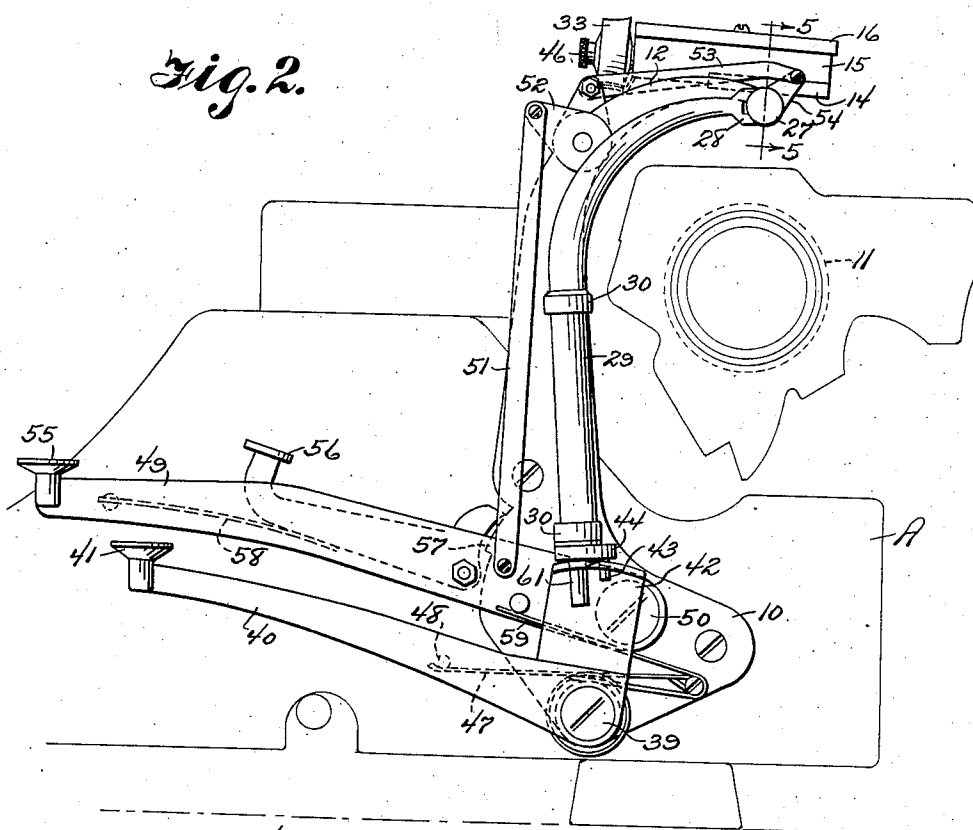


Fig. 3.

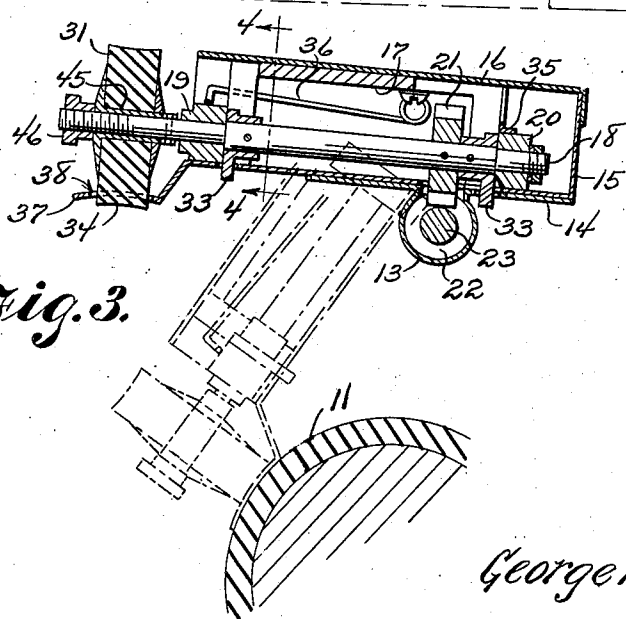
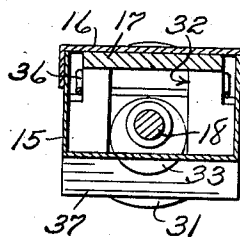


Fig. 4.



George Robert O'Neal
INVENTOR

BY Victor J. Evans & Co.

ATTORNEY

UNITED STATES PATENT OFFICE

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ERASER FOR TYPEWRITERS

George Robert O'Neal, Washington, D. C., assignor to George H. Hutaft, Jr., Wilmington, N. C.

Application February 2, 1937, Serial No. 123,687

8 Claims. (Cl. 197—181)

The invention relates to an eraser for typewriters and more especially to an eraser attachment for typewriting machines.

The primary object of the invention is the provision of an attachment of this character, wherein an abrasive roller or wheel is arranged to be swung into position relative to a platen of a typewriting machine that a character as printed thereby can be readily and conveniently eradicated from the written matter, this being had by imparting rotary and reciprocatory motion to the roller or wheel so that easy eradication of the said character can be effected, the reciprocatory motion when active in one direction being counter to the direction of rotation of the said roller or wheel and in this manner a positive erasure action is had.

Another object of the invention is the provision of an attachment of this character, wherein the use of a hand eraser may be avoided as mechanically the erasure of a printed character upon a sheet within a typewriter can be had with dispatch and without excessive labor on the part of the operator of such machine and this erasure made of any character as typed upon the sheet without liability of disturbing other characters next thereto in the writing.

The attachment is novel in construction to avoid any alteration or change in the make-up of the typewriter, being adaptable for varying standard types of typewriting machines.

A further object of the invention is the provision of an attachment of this character, wherein the eraser roller or wheel is operated for the rotation thereof and reciprocation by manipulating an auxiliary key apart from the keyboard of the typewriting machine, the said roller or wheel being shifted to working position through the use of a key and latched in this position.

A still further object of the invention is the provision of an attachment of this character, wherein the roller or wheel for service in eradicating or erasing characters from a typed sheet can be readily and easily adjusted for distributing wear upon such roller or wheel and in this manner affording a maximum service without necessitating the substitution of a new roller or wheel until it becomes unfit for service.

A still further object of the invention is the provision of an attachment of this character, wherein the parts thereof are readily accessible and the mounting therefor is exposed and in full view but such mounting does not interfere with the handling of the typed work and the operation

of the typewriter and also will not detract from the original appearance thereof.

A still further object of the invention is the provision of an attachment of this character, which is extremely simple in its construction, thoroughly reliable and efficient in its operation, strong, durable, convenient for an operator of a typewriter when mounted thereon and inexpensive to manufacture and install.

With these and other objects in view, the invention consists in the features of construction, combination and arrangement of parts as will be hereinafter more fully described, illustrated in the accompanying drawings, which disclose the preferred embodiment of the invention and pointed out in the claims hereunto appended.

In the accompanying drawings:

Figure 1 is a front elevation of the attachment constructed in accordance with the invention and associated with the typewriter.

Figure 2 is an end view.

Figure 3 is a sectional view on the line 3—3 of Figure 1 showing by full lines the normal position of the eraser with adjuncts and by dotted lines shifted position thereof.

Figure 4 is a sectional view on the line 4—4 of Figure 3 looking in the direction of the arrows.

Figure 5 is a sectional view on the line 5—5 of Figure 2 looking in the direction of the arrows.

Figure 6 is a detail plan view of the eraser roller or wheel and adjuncts removed from its housing.

Fig. 7 is a plan view of the operating key lever.

Similar reference characters indicate corresponding parts throughout the several views in the drawings.

Referring to the drawings in detail, A designates generally a typewriter, in this instance of a portable type, and in association therewith is the eraser attachment constituting the present invention and hereinafter fully described.

The eraser attachment comprises a pair of brackets 10, these being suitably fastened to opposite ends of the frame of the typewriter A so as to rise forward of the platen 11 of the latter and the upper ends 12 of these brackets are rearwardly curved for disposing a hollow rocking tubular shaft 13 in overhanging relation to the said platen 11. The shaft 13 is suitably journaled in the upper curved ends 12 of the brackets 10 to be disposed parallel with the said platen 11. Upon this shaft is made fast a bed 14 for a box-like housing 15 having a removable cover 16. Within the housing is fixed a chassis 17 for a driven arbor 18 journaled in bearing blocks 19 and 20, respectively, while upon this arbor is a toothed

rack gear 21 meshing with a rack 22 companion thereto and formed in a slidable bar 23 within the shaft 13. The bar 23 at one end thereof is connected with a tensioning spring 24 of a coiled type and joined with an adjusting screw 25 fitting one of the brackets 10 and exposed for adjustment while the other end of this bar has fixed therein the stem 26 of a peripherally grooved circular head 27, the stem 26 being slidably fitted in the other bracket 10 with the head exposed for engagement therewith of the forked end 28 of a shift arm 29 vertically supported for turning movement in bearings 30 carried by the bracket 10 next to this arm. When the arm 29 is shifted in the bearings 30 sliding movement will be imparted to the bar 23 against the tension of the spring 24 and by such sliding movement the gear 21 is rotated which in turn rotates the arbor 18. The arbor 18 projects outwardly of the housing 15 in a forward direction and has removably and adjustably fitted thereon an eraser roller or wheel 31 which on the rocking of the shaft 13 will be brought into a position with relation to a typed character upon a sheet of paper when inserted in the typewriter A so that this typed character can be eradicated or erased by the roller or wheel 31 when operated.

The chassis 17 within the housing 15 at its front and rear ends has provided therein cam slots 32 for eccentrics or cams 33 fitted upon the arbor 18 so that when the latter is rotated the said cams or eccentrics 33 will cause a reciprocation of the bearings 20 thereby shifting laterally the said arbor 18 during rotary movement of the same and thus causing the eraser roller or wheel 31 to move in a straight line parallel with the platen 11 during the rotation of said roller or wheel and in one directional movement in the straight line the said roller or wheel 31 will counter the rotary motion for a scraping effect at the peripheral working edge of said roller or wheel for a positive eradication of a printed character upon the sheet of typed matter within the typewriter and thus a more effective abrasive action is set up by the roller or wheel 31. The lateral shifting under the action of the cams or eccentrics 33 by the roller or wheel 31 assures the proper sweep of the latter for complete eradication of a typed character from the sheet. The periphery of the roller or wheel 31 is angularly dished at 34 to have the same make a broad contact with the paper when trained about the platen 11 within the typewriter A as this dished periphery 34 conforms to the circular cross sectional formation of the said platen 11 when the roller is brought into erasing position with respect thereto. The bearings 19 and 20 in the housing 15 are free for lateral sliding movement therein which takes place under the action of the cams 33 and the bearing 20 is held by a clip 35 against upward movement in the chassis 17, the said clip being made fast to the latter while the bearing 19 has playing against the same a bail spring 36, it being fitted with the chassis to overhang the said bearing 19 so that under the tension of this spring the roller or wheel 31 when moved to erasing position will be maintained in close contact with the typed sheet of paper for erasing a typed character thereon as may be required. The bearing 19 is susceptible of upward movement in the housing 15 but is resisted in this movement by the said spring 36 under the tension thereof upon said bearing.

Formed at the forward end of the housing 15

is an eraser shield 37 which protects or guards typed characters at opposite sides of a selected character to be eradicated or erased in the operation of the roller or wheel 31, the latter being adapted to work through a clearance opening 38 in said shield for the periphery of said roller or wheel having contact with the typed sheet of paper within the typewriter when in erasing position.

Below the turning arm 29 and supported for vertical swinging movement upon a pivot 39 is an actuating key lever 40 which projects forwardly of the typewriter A beyond one side thereof, in this instance the right hand side, and at the forward free end of this lever is a key button 41, the pivot 39 being fitted in the bracket 10 next to the arm 29. The key lever 40 at the pivoted end thereof has formed therewith an elbow 42 which has the pin connection 43 with a crank 44 on the arm 29. Thus it is seen that by depressing the lever 40 the arm 29 will swing to pull outwardly on the bar 23 for sliding it in one direction for the turning of the gear 21 then when downward pressure is released from the lever 40 the spring 24 becomes active for the sliding of the bar 23 under the tension of this spring in a reverse direction and in this manner the gear is mechanically rotated clockwise and counter-clockwise for the turning of the arbor 18 in operating the roller or wheel 31. The roller or wheel 31 is formed with a hub 45 for fitting upon the arbor 18 so that said roller or wheel 31 can be detached from the latter or adjusted for permitting the distribution of wear or for substituting a new eraser roller or wheel, the hub 45 being secured on the arbor through the medium of a binding nut 46 threaded on the forward end of said arbor as is clearly shown in Figure 3 of the drawings.

The lever 40 is tensioned by a wire spring 47 carried by the pivot 39 and engaging a stud 48 on said lever 40.

Next to the lever 40 is a key operated actuating lever 49 which is elevated slightly with relation to the lever 40 and turns upon a pivot 50 fitting the bracket 10 next thereto. This lever 49 projects forwardly of the typewriter A outside of its frame and in this instance beyond the right hand end of the latter while connected with this lever is a link 51 the same being also connected to one arm of a bell crank 52 journaled in the bracket 10 at the right hand end of the typewriter, the other arm of the bell crank being connected with a link 53 pivoted to a crank 54 formed on the shaft 13 so that by depressing the lever 49 the shaft 13 will be rocked to bring the eraser roller or wheel 31 into position to act upon a piece of work for eradicating or erasing a typed character thereon.

The lever 49 carries at its forward free end a key button 55 and also this lever is equipped with a finger released pivotal ratchet latch 56 engageable with a keeper 57 formed with the bracket 10 upon the right hand end of the typewriter so that the lever 49 can be locked in a depressed position to hold the eraser roller or wheel 31 in erasing position as is shown by dotted lines in Figure 3 of the drawings. Cooperating with the latch 56 is a tensioning spring 58 which assures a ratchet action and a positive locking of the latch when the lever 49 is depressed, the latch being manually released to permit of the lifting of the lever 49 under the action of the spring 58 associated therewith.

The elbow 42 has formed therein an elongated

slot 60 in which projects the lower end 61 of the arm 29 and this end engaging in the said slot 60 limits the vertical swinging movement of the lever 40 so that the throw of the said lever is limited.

In the use of the attachment when an operator of the typewriter through error has printed a wrong character upon the work sheet within the said typewriter, it being required that an erasure of the same be made, it is first necessary to turn the platen 11 by hand for shifting the typed matter a single space upwardly so that the character to be erased will be located in a position to have the eraser roller or wheel 31 confront the sheet at that point and make contact at such point. The roller or wheel 31 is brought into working position by first operating the lever 49 which causes the rocking of the shaft 13 which swings the roller or wheel 31 from the full line position shown in Figure 3 to the dotted line position in said figure of the drawings. In this position the roller or wheel 31 is in contact with the sheet within the typewriter A at the point for eradication or obliteration of the character to be erased therefrom. This lever 49 when depressed is locked in its lowermost position by the latch 56. Now by intermittently depressing the lever 40 the roller or wheel 31 is set in motion, being not only rotated but reciprocated and by these movements the character to be erased is eradicated or obliterated by said roller or wheel. When erasure takes place the latch 56 is released and the lever 49 returns to normal or raised position and the shaft 13 reversely turns bringing the roller or wheel 31 to normal lifted relation to the platen 11 of the typewriter or to that position as shown by full lines in Figure 3 of the drawings. Thereafter, the platen 11 is adjusted or turned back to bring the typed matter to the original line of writing so that the proper or correct character can be impressed or typed in this line.

The foregoing operation is repeated whenever it becomes necessary in typewriting on the operation of the typewriting machine for an erasure of a typed character in the work or writing. The roller or wheel 31 is supported within the housing 15 and the latter is located on the shaft 13 so that the said roller or wheel vertically substantially aligns with the printing point and when moved to working position this roller or wheel will make contact with the work a single space above the printing point of the typewriter so that by moving the work a single space by the turning of the platen 11 a character printed upon the work will be in position to be eradicated or erased. The attachment in its mounting upon the typewriter will not in any way interfere with the visibility of the written words or characters and an operator of the typewriter is not inconvenienced for manipulation of the attachment for erasing purposes as the levers 40 and 49, respectively, are in close reach and in proximity to the keyboard of the typewriter.

What is claimed is:

1. An eraser attachment for typewriters comprising a rotatable and shiftable eraser wheel, a swinging support for said wheel for bringing the same into confronting relation and operative position with respect to a platen of said typewriter for erasure, means manually controlled for moving the support and latching and holding the wheel in operative position, and manually controlled means for rotating the wheel and simultaneously shifting it when in operative position.

2. An eraser attachment for typewriters comprising a rotatable and shiftable eraser wheel, a swinging support for said wheel for bringing the same into confronting relation and operative position with respect to a platen of said typewriter for erasure, means manually controlled for moving the support and latching and holding the wheel in operative position, manually controlled means for rotating the wheel and simultaneously shifting it when in operative position, and means for manually releasing the first-named means.

3. An eraser attachment for typewriters comprising a rotatable and shiftable eraser wheel, a swinging support for said wheel for bringing the same into confronting relation and operative position with respect to a platen of said typewriter for erasure, means manually controlled for moving the support and latching and holding the wheel in operative position, manually controlled means for rotating the wheel and simultaneously shifting it when in operative position, means for manually releasing the first-named means, and means for exerting tension on the wheel when in operative position for close contact thereof with matter to be erased.

4. An eraser attachment for typewriters comprising a rotatable and shiftable eraser wheel, a swinging support for said wheel for bringing the same into confronting relation and operative position with respect to a platen of said typewriter for erasure, means manually controlled for moving the support and latching and holding the wheel in operative position, manually controlled means for rotating the wheel and simultaneously shifting it when in operative position, means for manually releasing the first-named means, means for exerting tension on the wheel when in operative position for close contact thereof with matter to be erased, an arbor for said wheel, a chassis for said arbor, and eccentrics on the arbor and coacting with the chassis to give shifting movement to the arbor.

5. An eraser attachment for typewriters comprising a rotatable and shiftable eraser wheel, a swinging support for said wheel for bringing the same into confronting relation and operative position with respect to a platen of said typewriter for erasure, means manually controlled for moving the support and latching and holding the wheel in operative position, manually controlled means for rotating the wheel and simultaneously shifting it when in operative position, means for manually releasing the first-named means, means for exerting tension on the wheel when in operative position for close contact thereof with matter to be erased, an arbor for said wheel, a chassis for said arbor, eccentrics on the arbor and coacting with the chassis to give shifting movement to the arbor, and means for returning the first and second-named means to normal position.

6. An eraser attachment for typewriters comprising a rotatable and shiftable eraser wheel, a swinging support for said wheel for bringing the same into confronting relation and operative position with respect to a platen of said typewriter for erasure, means manually controlled for moving the support and latching and holding the wheel in operative position, manually controlled means for rotating the wheel and simultaneously shifting it when in operative position, means for manually releasing the first-named means, means for exerting tension on the wheel when in operative position for close contact thereof with matter to be erased, an arbor for said wheel,

a chassis for said arbor, eccentrics on the arbor and coacting with the chassis to give shifting movement to the arbor, means for returning the first and second-named means to normal position, and a housing enclosing said chassis.

- 5 7. An eraser attachment for typewriters comprising a rotatable and shiftable eraser wheel, a swinging support for said wheel for bringing the same into confronting relation and operative position with respect to a platen of said typewriter
- 10 for erasure, means manually controlled for moving the support and latching and holding the wheel in operative position, manually controlled means for rotating the wheel and simultaneously
- 15 shifting it when in operative position, means for manually releasing the first-named means, means for exerting tension on the wheel when in operative position for close contact thereof
- 20 with matter to be erased, an arbor for said wheel, a chassis for said arbor, eccentrics on the arbor and coacting with the chassis to give shifting movement to the arbor, means for returning the first and second-named means to normal position,
- 25 a housing enclosing said chassis, and an eraser shield projected from said housing and

exposing only a portion of said wheel to the piece of work when confronted by the wheel.

8. An eraser attachment for typewriters comprising a rotatable and shiftable eraser wheel, a swinging support for said wheel for bringing the same into confronting relation and operative position with respect to a platen of said typewriter for erasure, means manually controlled for moving the support and latching and holding the wheel in operative position, manually controlled means for rotating the wheel and simultaneously shifting it when in operative position, means for manually releasing the first-named means, means for exerting tension on the wheel when in operative position for close contact thereof with matter to be erased, an arbor for said wheel, a chassis for said arbor, eccentrics on the arbor and coacting with the chassis to give shifting movement to the arbor, means for returning the first and second-named means to normal position, a housing enclosing said chassis, an eraser shield projected from said housing and exposing only a portion of said wheel to the piece of work when confronted by the wheel, and means for stationarily mounting the support upon the typewriter.

GEORGE ROBERT O'NEAL.