

- [54] **TYPING ERROR CORRECTION SYSTEM**
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Related U.S. Application Data

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 [58] **Field of Search** ... **117/2 R, 2 TC, 2, 38, 104 R; 239/350, 288; 222/182, 402 B, 571**

References Cited

UNITED STATES PATENTS

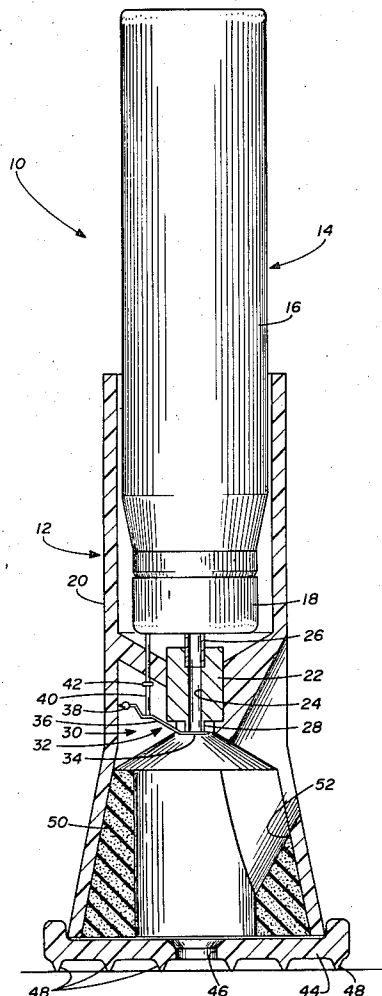
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|-----------|---------|----------------|----------|
| 3,276,870 | 10/1966 | Bitting et al. | 117/2 TC |
| 3,459,127 | 8/1969 | Barouh | 117/2 TC |
| 3,572,591 | 3/1971 | Brown | 239/337 |

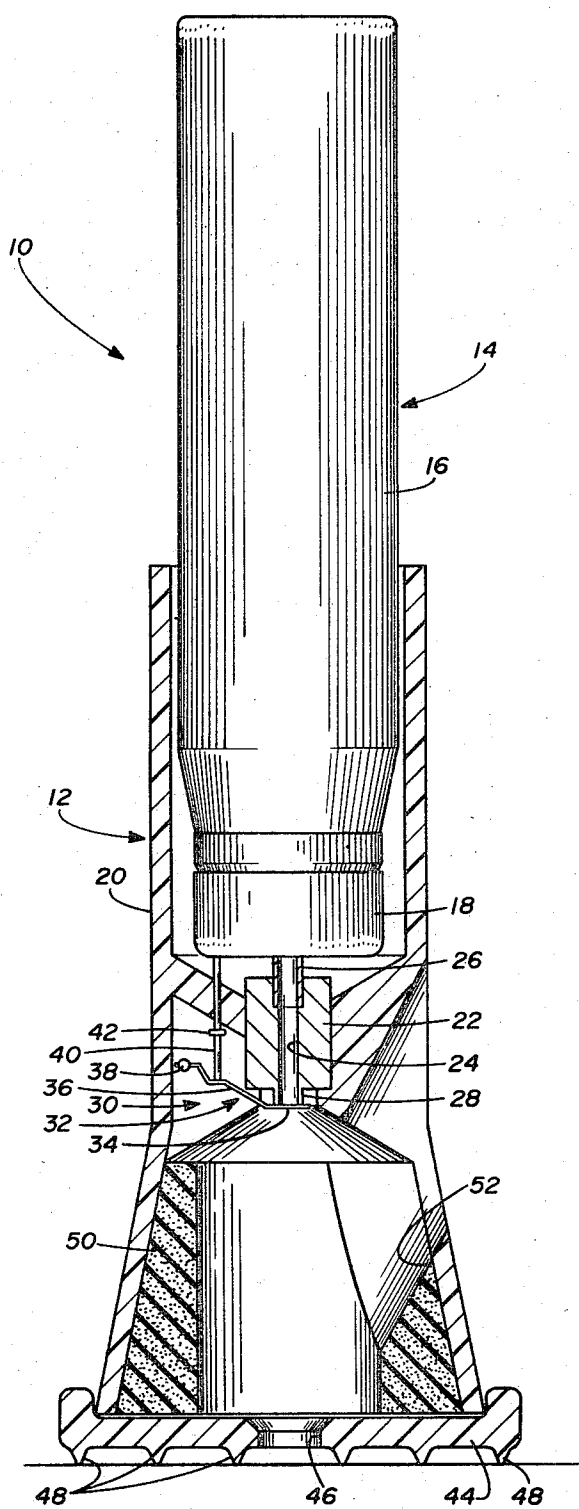
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[57] **ABSTRACT**

In a typing error correction system, typing error correction fluid is sprayed from an aerosol spray assembly through an aperture in a mask and onto a typing error. The mask comprises a portion of a spray discharge assembly that receives and supports the aerosol spray assembly. A discharge head mounted in the spray discharge assembly actuates the aerosol spray assembly upon movement of the aerosol spray assembly into the spray discharge assembly, and includes a normally sealed spray discharge passageway which is opened to permit discharge of the spray. A reticular foam collar mounted in the spray discharge assembly absorbs spurious spray, and a viewing port formed through the spray discharge assembly facilitates alignment of the aperture in the mask with a typing error.

5 Claims, 1 Drawing Figure





TYPING ERROR CORRECTION SYSTEM

This application is a division of application Ser. No. 054,368, filed July 13th, 1970, now U.S. Pat. No. 3,756,514, granted Sept. 4th, 1973.

This invention relates to a typing error correction system, and more particularly to a system for spraying typing error correction fluid onto typing errors.

At the present time, a variety of typing error correction systems are in use. Perhaps the oldest system is the conventional eraser, which operates to remove the error. More recently, systems for covering typing errors have been developed.

In accordance with one error correction system in which errors are covered, a white film is applied to one side of a length of plastic tape. The tape is positioned over a typing error and the key corresponding to the error is struck. As the type pallet strikes the tape, the error is covered by film from the tape.

Another error correction system of the error covering type comprises a small container of typing error correction fluid. Fluid from the container is applied to typing errors by means of a small brush. Presently available systems of this type are less than wholly satisfactory because the brush does not provide adequate control over either the amount of fluid applied or the area of application, and often leaves a brush streaked finish. Also, typing error correction fluid tends to thicken and it is often necessary to add a solvent to the fluid in order to restore its original consistency.

The present invention comprises a typing error correction system in which typing error correction fluid is applied in spray form. The system includes an aerosol spray assembly that delivers a measured amount of typing error correction fluid. The fluid is applied to a typing error through an aperture that corresponds in size and shape to a typed character. Thus, both the quantity of fluid applied and the area of application are optimized, and the correction has a superior appearance. Also, because the typing error correction fluid is stored in an aerosol assembly, the use of the invention eliminates the problem of fluid thickening.

A more complete understanding of the invention may be had by referring to the following detailed description when taken in conjunction with the drawing, which comprises a partial sectional view of a typing error correction system employing the invention.

Referring now to the drawing, a typing error correction system 10 employing the present invention is shown. The correction system 10 includes a spray discharge assembly 12 and an aerosol spray assembly 14. The aerosol spray assembly 14 includes a can 16 of the type commonly employed in aerosol spray containers, and a valve assembly 18.

The can 16 of the aerosol spray assembly 14 contains approximately equal quantities by weight of a typing error correction fluid and an aerosol propellant. The typing error correction fluid preferably comprises one of the commercially available varieties. For example, a suitable typing error correction fluid is identified as Federal Specification O-C-00650 and is formed by mixing 11.7 pounds titanium dioxide pigment, 23.8 pounds acrylic resin of the type sold by the Rohm and Hass Company and identified as "ACRYLOID B-82," 4.8 pounds nitrocellulose of the type sold by the Hercules Company and identified as "SS NITROCELLULOSE ½ Sec.," 2 pounds plasticiser of the type sold by the Monsanto Chemical Company and identified as "SAN-

TICIZER 140," 23.3 pounds isopropyl acetate and 23.5 pounds toluol. Similarly, the aerosol propellant preferably comprises one of the commercially available aerosol propellants. For example, the propellant may comprise "FREON 12," a mixture of "FREON 11" and "FREON 12" or a mixture of FREON 12" and "FREON 114," all of which are sold by E. I. duPont deNemours and Co., Inc. In accordance with conventional aerosol propellant formulating practices, the propellant may further include nitrogen, butane and/or propane, if desired. The can 16 may also contain one of the commercially available aerosol paints. For example, the aerosol paint manufactured by the Illinois Bronze Powder & Paint Co., of Lake Zurich, Illinois and identified as No. 150 Soft White may be employed in the practice of the invention.

The valve assembly 18 of the aerosol spray assembly 14 is also conventional in design. Preferably, the valve assembly 18 comprises one of the commercially available metering valve assemblies, and therefore discharges a predetermined quantity of typing error correction fluid and propellant upon each actuation of the aerosol spray assembly 14. For example, a metering valve assembly similar to the valve assembly sold by the Valve Corporation of America and identified as Model B18F may be employed in the aerosol spray assembly 14. When the above-identified aerosol paint is contained in the can 16, the valve assembly 18 is so constructed that approximately 50 milligrams of aerosol paint is discharged upon each actuation of the aerosol spray assembly 14.

The spray discharge assembly 12 includes a cylindrical housing 20 which receives, supports and retains the aerosol spray assembly 14. A discharge head 22 is mounted in the housing 20 adjacent the valve assembly 18 of the aerosol spray assembly 14. A discharge passageway 24 is formed through the discharge head 22, and extends from a valve actuating tube 26 mounted on the lower end of the valve assembly 18 to a closure nipple 28 formed at the lower end of the head 22. The passageway 24 may include an expansion chamber for modifying the spray pattern of the aerosol spray assembly 14. The tube 26 comprises an actuating linkage for the valve assembly 18 of the aerosol spray assembly 14 and, accordingly, whenever the assembly 14 is moved into the housing 20, the tube 26 actuates the aerosol spray assembly 14, whereupon a predetermined quantity of typing error correction fluid and propellant is discharged through the passageway 24.

The closure nipple 28 of the discharge head 22 is normally sealed by the closure assembly 30. The assembly 30 includes an integral spring and closure member 32, including a cover portion 34 that cooperates with the nipple 28 to seal the passageway 24, and a spring portion 36. The closure member 32 is supported in the housing 20 by a pin 38 that is fixed against rotation relative to the housing 20. An actuator pin 40 is slidably supported in the housing 20 and is retained by a collar 42. The pin 40 is positioned in the path of the aerosol spray container 14 as the assembly 14 is moved into the housing 20. Thus, upon actuation of the aerosol spray assembly 14 to discharge spray therefrom, the pin 40 engages the closure member 32 and moves the cover portion 34 out of engagement with the closure nipple 28 against the action of the spring portion 36. Because of the closure assembly 30, typing error correction

fluid does not dry within the discharge passageway 34, and the passageway does not become clogged.

The housing 20 of the spray discharge assembly 12 extends to a mask 44 having an aperture 46 formed through it. In accordance with the preferred embodiment of the invention, the aperture 46 is rectangular in shape and has dimensions corresponding to the maximum dimensions of a typed character. However, apertures of other shapes and having greater or lesser dimensions can be employed in the practice of the invention, if desired. The mask 44 is preferably detachably mounted on the housing 20 to permit the use of apertures 46 of various configurations. Also, the mask is preferably provided with pointed projections 48 on its lower surface to assure the production of a connection having a feathered edge.

The aperture 46 is positioned to receive spray discharged through the passageway 21 of the discharge head 22. A reticular foam liner 50 is mounted within the housing 20 to receive and retain any spurious spray. Also, a viewing port 52 is formed through the housing 20 and through the foam liner 28 to facilitate the positioning of the aperture 46 in alignment with a typing error to be corrected.

In the use of the typing error correction system 10, the aperture 46 in the mask 44 is aligned with a typing error to be corrected by observing the error through the viewing port 52 and the aperture 46. When the aperture 46 is properly aligned, the aerosol spray assembly 14 is depressed relative to the spray discharge assembly 12. As the aerosol spray assembly 14 moves into the housing 20, the pin 40 is engaged and moved downwardly. The pin 40 engages the closure member 32 and thereby moves the cover portion 34 out of alignment with the nipple 28, against the action of the spring portion 36.

Upon further movement of the aerosol spray assembly 14 into the housing 20, the valve actuating tube 26 of the discharge head 22 actuates the valve assembly 18, whereupon a measured quantity of typing error correction fluid and propellant is discharged from the can through the passageway 24 and through the aperture 46 onto the typing error to be corrected. The valve 18 and the aperture 46 cooperate to deliver exactly the right quantity of typing error correction fluid to exactly the right location. Also, because the typing error correction fluid is applied as a spray, and because of the construction of the mask 44, the resulting correction is characterized by a smooth finish and feathered edges.

Due to the construction of the valve 18, the same quantity of typing error correction fluid is discharged regardless of how long the aerosol spray assembly 14 is held depressed. When the assembly 14 is released, the spring portion 36 of the closure member 32 returns the cover portion 34 into engagement with the closure nipple 28. The cover portion 34 and the closure nipple 28 cooperate to seal the interior of the passageway 24. This prevents typing error correction fluid from drying within the passageway 24, and thereby prevents clogging of the passageway 24 due to dry fluid.

From the foregoing, it will be understood that the present invention comprises a typing error correction system including an aerosol spray assembly for discharging a predetermined quantity of typing error correction fluid and a spray discharge assembly for directing fluid onto a typing error. The use of the system is

advantageous over the prior art in that it assures the application of the proper quantity of typing error correction fluid, in that it controls the application of the fluid to a desired area, and in that it results in corrections having a smooth surface and feathered edges. The use of the system is further advantageous in that the storage of the typing error correction fluid in the aerosol spray assembly and the sealing of the discharge passageway when the system is not in use eliminate problems caused by drying and thickening of the fluid.

The present invention has been described in conjunction with the correction of typing errors. It will be understood, however, that the invention is adapted to other uses. For example, errors in written materials produced other than by typing, such as by printing, xerography, lettering, etc., can be corrected by means of the present invention. Also, changes not strictly classified as errors, such as numberings, editing, address changes, and the like can be accomplished expediently when the present invention is used.

Although a single embodiment of the invention has been illustrated in the drawing and described herein, it will be understood that the invention is not limited to the embodiment disclosed, but is capable of rearrangement, modification and substitution of parts and elements without departing from the spirit of the invention.

What is claimed is:

1. A method of applying a predetermined amount of material comprising a correction fluid to a predetermined area of a surface having a typing error contained therein and thereby correcting the error which comprises:

positioning an aperture formed through a mask in alignment with the predetermined area of the surface having the typing error contained therein; thereafter discharging a metered quantity of the material comprising a correction fluid from an aerosol container thereof across an open space separating the container and the mask toward the aperture in the mask so that the predetermined amount of the material passes through the aperture and onto the predetermined area and the remainder of the metered quantity of the material is retained; and thereafter drying the material to form an opaque layer covering the error and characterized by a smooth surface finish.

2. The method of applying a predetermined amount of material according to claim 1 further characterized by the step of collecting overspray in a body of foam material encircling the aperture in the mask.

3. The method of applying a predetermined amount of material according to claim 1 further characterized by discharging the material from the aerosol container through a discharge passageway and by normally sealing the end of the discharge passageway remote from the aerosol container except during the discharge of material therethrough.

4. The method of applying a predetermined amount of material according to claim 1 wherein the mask further comprises a housing which receives the aerosol container, and wherein the step of discharging a metered quantity of the material is carried out in response to relative movement of the aerosol container with respect to the housing.

5. A method of correcting typing errors comprising:

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positioning an aperture in a mask in alignment with an error to be corrected;
thereafter discharging a metered quantity of a correction fluid comprising an opaque liquid from an aerosol container thereof toward the mask so that a predetermined amount of correction fluid passes through the aperture in the mask and onto the

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error to be corrected, thereby covering the error; and
thereafter drying the material to form an opaque layer covering the error and characterized by a smooth surface finish.

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