July 16, 1946. E. L. JOHNSON 2,404,134

RETOUCHING APPARATUS

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Fig. 1.

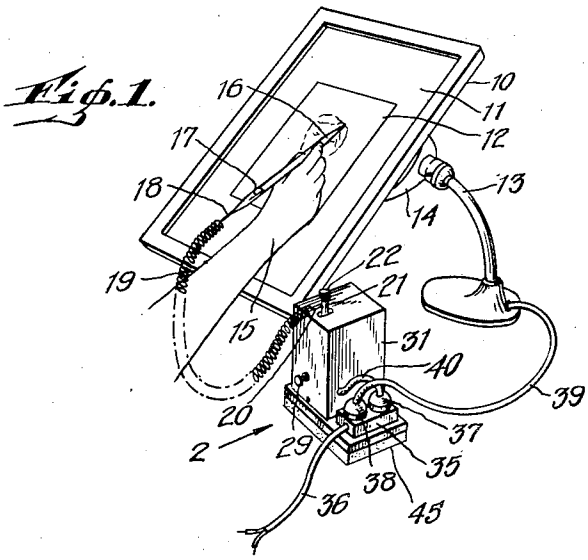


Fig. 2.

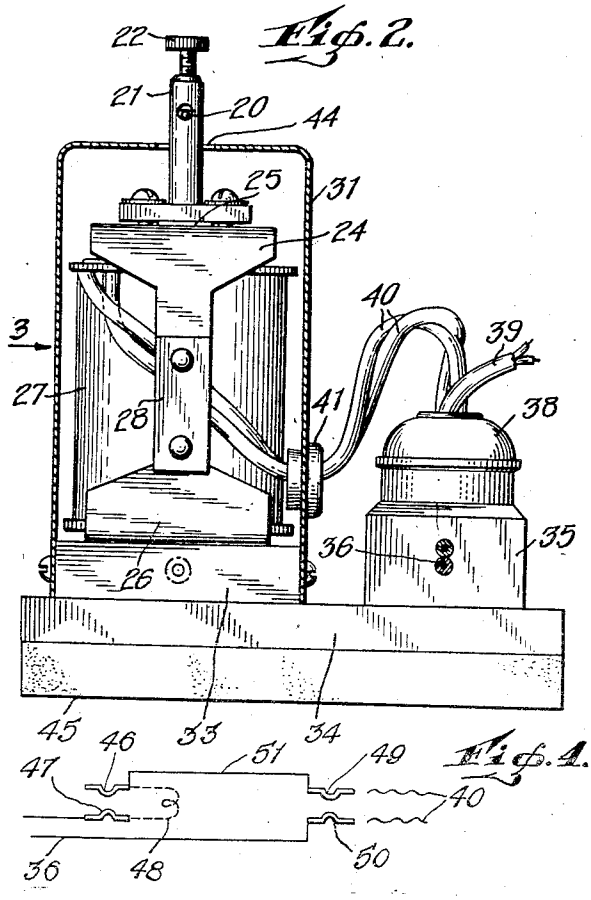


Fig. 3.

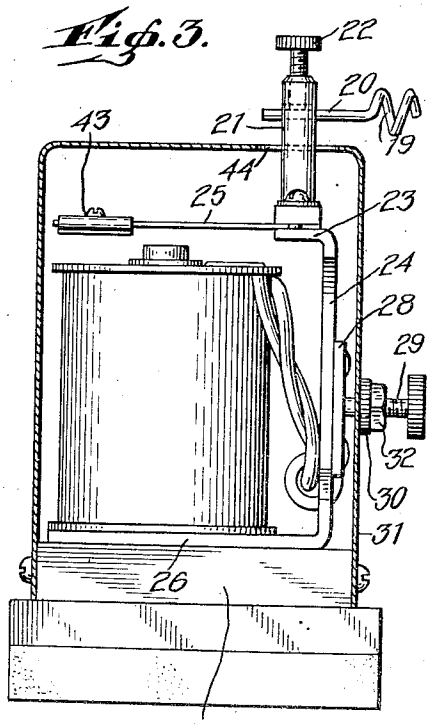


Fig. 4.

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RETOUCHING APPARATUS

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4 Claims. (Cl. 95—103)

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This invention relates to apparatus for use in retouching photograph negatives or positives. More particularly, the invention relates to an apparatus of this kind wherein a single unit is employed having means placing not only the vibrator mechanism of the apparatus, but also the negative lighting means in communication with a single source of electric supply. Further, the invention comprises the use of a shock absorbing flexible medium for placing the retouching implement in operative engagement with the vibratory arm of an impulse relay, whereby vibrations in the neighborhood of thirty-five hundred per minute may be transmitted to the retouching tool or implement for transmission to the work sheet in a very delicate manner, and still further in the provision of means for adjustably controlling the vibratory impulses of the relay or vibratory arm. The novel features of the invention will be best understood from the following description when taken together with the accompanying drawing in which certain embodiments of the invention are disclosed, and in which the separate parts are designated by suitable reference characters in each of the views; and in which:

Fig. 1 is a perspective view diagrammatically illustrating a use of the apparatus.

Fig. 2 is a view looking in the direction of the arrow 2 of Fig. 1, showing only the vibrator device including its base, with part of the case of the apparatus in section.

Fig. 3 is a view looking in the direction of the arrow 3 of Fig. 2, also showing the case in section; and

Fig. 4 is a diagram of the wiring in the plug socket.

In the art of photography, retouching has, for the most part, been performed by highly skilled retouchers. Primarily in professional photography and in portrait work this has been a highly skilled art, particularly in that good retouching has required more or less the skill of the masters in this art, and has usually been performed by marks or lines carefully drawn and arranged upon the film or negative. In some instances, this type of work has been applied directly to the finished prints.

The purpose of my invention is to provide a simple and inexpensive apparatus by means of which the average amateur photographer can, after a little training and experience, perform retouching work on negatives or plates equally as good, if not better than the skill of the best professional retoucher, thus giving to the amateur a medium by which portrait type of photography can be improved in the same manner as practised by professionals in this art.

In Fig. 1 of the drawing I have diagrammatically shown the use of my improved apparatus.

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In this figure, 10 represents a suitable frame having a glass or other transparent panel 11 therein, masked out to receive a film or plate, as indicated at 12, to render the film or plate transparent or translucent by arranging an electric lamp 13 at the rear of the frame, with the reflector 14 of the lamp directly behind the film or plate 12. A suitable means will be provided, but is not shown, for supporting the frame 10 in an inclined position, as indicated, so that the hand 15 of an operator may rest upon the frame in guiding the sharply pointed pencil or other retouching tool or implement 16 over the surface of the plate or film in doing retouching work.

The tool or implement 16 is detachably supported in a tubular holder 17, which may be in the form of a split tube, and secured to this tube is one end 18 of a coiled and preferably cotton wrapped spring 19.

The other end 20 of the spring 19 is adapted to be clamped in a vertical post 21, by a clamp screw 22. The post 21 is attached to the upper wide and flanged end 23 of the vertical arm 24 of a vibrator to which the horizontal arm 25 of the vibrator is also attached. The lower end of the arm 25 terminates in a wide and horizontally arranged base plate 26 upon which the coil 27 of the electrical magnet is arranged.

Supported on the outer face of the arm 24 is an insulating bearing strip 28 against which an adjustment screw 29 is adapted to bear in controlling the vibrations of said arm. The screw 29 is in threaded engagement with a bearing portion 30 on the cover or case 31 of the vibratory unit, and a lock nut 32 is provided to retain the screw 29 in different positions of adjustment. The case is secured to an insulated base 33, which is arranged upon and forms part of a wider base 34, the latter also forming the support for an electric socket 35 in which wires 36 extend to a source of electric supply. The socket 35 is of the type adapted to receive two outlet plugs 37 and 38, the plug 38 having wires 39 extending to the lamp 13, and the plug 37 having wires 40 extending through an insulator 41 in the casing 31 into said casing, and connected with the electrical magnet 27.

The pole end 42 of the electrical magnet 27 is arranged upwardly and beneath the vibratory arm 25 and on the free end of this arm is an adjustable balance weight 43 movable along the arm to control and minimize the vibrations of the arm.

The post 21 extends upwardly through an elongated aperture 44 in the top of the case 31 to provide for free vibration or oscillation of the post in the high speed vibration of the arm 25.

In the construction shown, a flexible connection is established between the post 21 and implement 16 by way of the coil spring previously

described, but any suitable flexible transmitter of this type and kind can be used, provided sufficient rigidity is employed in this flexible element to transmit the vibrations to the implement, while at the same time softening or minimizing the shock of the impulse so as to produce at the end of the implement what might be termed delicate vibratory impulses which would produce on the resulting film or plate a series of fine dots in movement of the implement over a section or area to be retouched.

The base 34 is arranged upon a cushioning pad 45 of rubber or similar material in order to cushion the vibratory action of the device as a whole.

In Fig. 4 of the drawing is shown diagrammatically the wiring of the socket 35. In this diagram 46 and 47 represent one pair of spring contacts which receive the plug 38, which extends to the lamp diagrammatically at 48, and which is arranged in the reflector 14. At 49 and 50 are shown the other pair of contacts with which the plug 37 couples to extend to the wires 40. The wires 36 from a source of electric supply are coupled with the contact 47 and the contact 50, whereas the contacts 46 and 49 are bridged by the connector 51. It will thus be seen that the circuit passes through the bulb 48. The wattage of this bulb would produce the required resistance for proper operation of the vibrator unit, a hundred to a hundred and fifty watt light lamp bulb can be used.

In the use of the apparatus or device, the primary skill to be obtained by the user, is in the light grasping or support of the implement in the hand, and in rendering the hand free for transmission of the impulses through the implement by simply using the hand as a means to guide the implement over the surface to be retouched and in gauging or controlling movement of the implement toward and from the film or plate. The only further skill required, is to be able to properly guide the implement over the area requiring retouching and to gauge the amount of retouching at the section or area by repeated passes of the implement thereover in increasing the shade applied to the area. The operator will also have to judge adjustment of the screw 29 to govern and regulate the vibratory action of the arm 25, and accordingly the impulses transmitted at the operating end of the implement. In the operation of the retoucher, the cushioning pad 45 also cushions the action of the vibrator so that the impulses are transmitted only through the vibratory arm and to the transmitting element 19.

In addition to using the apparatus or device as a retoucher, the same may be used for operating implements of various kinds and classes where it is desirable to transmit a multiplicity of impulses onto a surface of any kind or class to mark or characterize the surface in any manner. It may be used to apply perforations by using a sharply pointed implement. It may further be used to shade drawings or to apply stippling thereto.

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

1. An apparatus for delivering high frequency impulses to an implement manually guided over a worksheet, said apparatus comprising a base, an electrical magnet on said base, an L-shaped vibrator arm comprising an upstanding part on the base, a horizontal part arranged angularly to the first named part, and over one end of said

electrical magnet, a post on the arm at the intersection of said parts, a flexible member having one end secured to said post, means for supporting an implement in connection with the other end of said member whereby high frequency impulse vibrations of said arm are transmitted to an implement through said flexible member, and manually adjustable means cooperating with the first named part of said arm for controlling the vibration properties of said arm.

2. An apparatus for delivering high frequency impulses to an implement manually guided over a worksheet, said apparatus comprising a base, an electrical magnet on said base, an L-shaped vibrator arm comprising an upstanding part on the base, a horizontal part arranged angularly to the first named part, and over one end of said electrical magnet, a post on the arm at the intersection of said parts, a flexible member having one end secured to said post, means for supporting an implement in connection with the other end of said member whereby high frequency impulse vibrations of said arm are transmitted to an implement through said flexible member, manually adjustable means cooperating with the first named part of said arm for controlling the vibrator properties of said arm, and adjustable counter-balance means on the second named part of said arm.

3. An apparatus for delivering high frequency impulses to an implement manually guided over a worksheet, said apparatus comprising a base, an electrical magnet on said base, an L-shaped vibrator arm comprising an upstanding part on the base, a horizontal part arranged angularly to the first named part, and over one end of said electrical magnet, a post on the arm at the intersection of said parts, a flexible member having one end secured to said post, means for supporting an implement in connection with the other end of said member whereby high frequency impulse vibrations of said arm are transmitted to an implement through said flexible member, manually adjustable means cooperating with the first named part of said arm for controlling the vibrator properties of said arm, adjustable counter-balance means on the second named part of said arm, and means on the base cushioning the support of the base on a surface.

4. An apparatus for delivering high frequency impulses to an implement manually guided over a worksheet, said apparatus comprising a base, an electrical magnet on said base, an L-shaped vibrator arm comprising an upstanding part on the base, a horizontal part arranged angularly to the first named part, and over one end of said electrical magnet, a post on the arm at the intersection of said parts, a flexible member having one end secured to said post, means for supporting an implement in connection with the other end of said member whereby high frequency impulse vibrations of said arm are transmitted to an implement through said flexible member, manually adjustable means cooperating with the first named part of said arm for controlling the vibrator properties of said arm, adjustable counter-balance means on the second named part of said arm, means on the base cushioning the support of the base on a surface, and means comprising a two-way electric socket for placing said magnet in circuit with a source of electric supply and for introducing resistance in said circuit

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