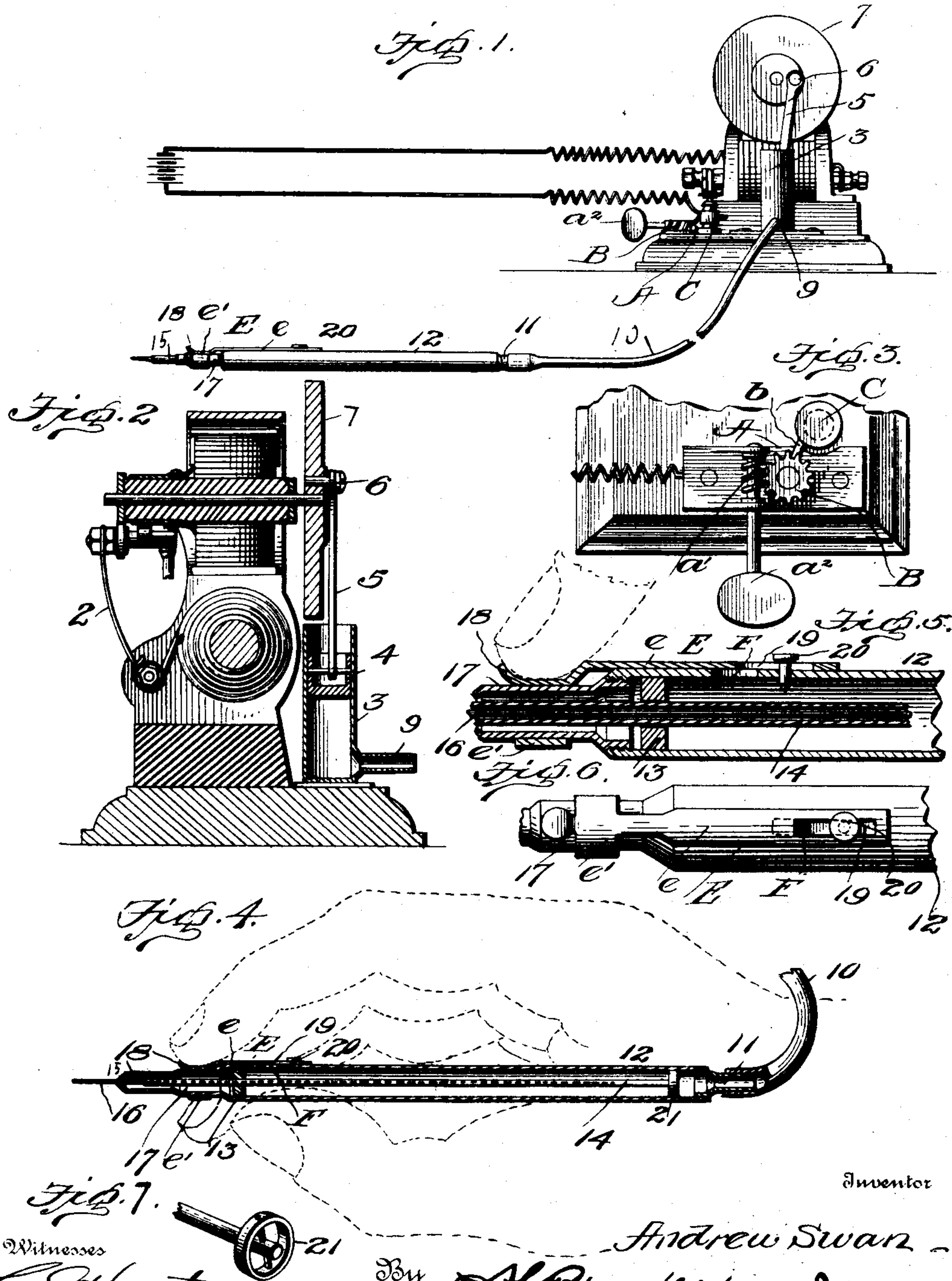


A. SWAN.
PHOTOGRAPHIC RETOUCHER.

(Application filed May 20, 1901.)

(No Model.)



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UNITED STATES PATENT OFFICE.

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PHOTOGRAPHIC RETOUCHER.

SPECIFICATION forming part of Letters Patent No. 683,351, dated September 24, 1901.

Application filed May 20, 1901. Serial No. 61,109. (No model.)

To all whom it may concern:

Be it known that I, ANDREW SWAN, a citizen of the United States, residing at Rhineland, in the county of Oneida and State of Wisconsin, have invented certain new and useful Improvements in Photographic Retouchers; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

The invention relates to photographic retouchers.

The objects of the invention are to provide means for reciprocating a pencil of lead, so as to obtain a stipple effect, with great rapidity of execution, to provide means for varying the rapidity of the stroke, and, finally, to provide means for varying the pressure of the stroke instantly without removing the hand from the tool or retoucher proper. The means employed comprise a small electric motor for propelling an air-pump, which produces a pulsating action on a body or column of air in the chamber or barrel of the retoucher proper to cause the reciprocation therein of a piston, which is provided with a hollow piston-rod constructed to hold a pencil-lead, whereby a rapid, short, and light blow may be delivered to the negative, thus depositing a series of small dots or stipples of lead on the negative, which produces the beautiful stipple effect so much admired.

In the accompanying drawings, Figure 1 is an elevation showing apparatus embodying my invention. Fig. 2 is a section taken through the motor, crank-disk or fly-wheel, and air-pump. Fig. 3 is a top elevation of the switch. Fig. 4 is a longitudinal section taken through the barrel of the retoucher, showing it held in the hand to illustrate the simplicity with which the air-valve may be operated by the forefinger by moving the finger backward or forward. Fig. 5 is a fragmentary longitudinal section of the retoucher-tool on an enlarged scale. Fig. 6 is a top plan view of the same, and Fig. 7 is a detail perspective view of the guide-spider.

As shown in the drawings, I preferably employ a small electric motor 2 for driving a small air-pump, by which the retoucher-pencil is operated. The air-pump consists of a

short cylinder 3, a piston 4, adapted to work therein and from which the connecting-rod 5 extends, and a crank-pin 6, provided with a crank or crank-disk 7, which is fixed to the armature-shaft of the motor. From the nipple 9 at the bottom of the cylinder a flexible pipe 10 leads to an attachment 11 on the upper end of the hollow handle, holder, or barrel 12 of the retoucher proper. This barrel is about the size and length of an ordinary pencil and owing to the lightness of the material which is used in making the same is very little heavier than a pencil.

13 denotes a piston which fits nicely in the smooth-bored lower end of the barrel, the joints between the parts being air-tight. From the piston a piston-rod 14 extends down through the center guide 15, provided in the lower end of the barrel. The upper end of the piston-rod is fixed to a spider-ring 21, which guides the piston in its movement. The greater part of the piston-rod is hollow, so as to receive a long lead 16, the lower end of which is nicely sharpened.

To control the rapidity of the strokes, I provide a switch A, which consists of a suitably-mounted worm a' , having a thumb-piece a^2 for rotating it, and a worm-wheel B, having a finger b , which is adapted to be brought into engagement with the binding-posts C and held in electrical contact therewith by the worm. This contact may be poor, thus decreasing the speed of rotation of the armature-shaft, or if the finger is moved tightly against said post to insure a good electrical contact of the finger with the post the speed of the motor will be correspondingly increased, thus giving me perfect control of the rapidity of movement of said lead.

In order that I may vary the force of the stroke of the lead, I employ an air-valve E, which consists of a metal strip e , mounted with sliding engagement on the lower or outer end of the barrel and adapted to open or close an aperture F formed in the barrel, thus permitting me to increase or diminish the suction and compression of air within said barrel to vary the stroke of the lead. The strip e is preferably provided at one end with a collar e' , which embraces a nipple 17, screwed onto the extreme outer end of the barrel, and is formed with a finger-lip 18 for the tip of

the forefinger to rest upon, and is also provided with an aperture 19, which is made to register with or close the opening F in the barrel. A set-screw 20 may be employed for locking the valve in its adjusted position after the valve has been adjusted to give the desired stroke to the lead. This set-screw preferably works through the aperture in the strip and into a screw-threaded aperture in the barrel. It will thus be seen that not only have I produced a retouching device the movement of whose lead is simply controlled, but I have produced also a device the stroke of whose lead may be varied at will and without the necessity of stopping the motor or of moving the hand from the retoucher-tool proper, the only act required being to slightly move the forefinger to vary the size of the aperture in the barrel or entirely close the same.

From the foregoing description, taken in connection with the accompanying drawings, the construction, mode of operation, and advantages of my invention will be readily understood without requiring a more extended explanation.

Various changes in the form, proportion, and details of construction may be made within the scope of the invention without depart-

ing from the spirit or sacrificing any of the advantages thereof.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

In a photographic retoucher, the combination with a barrel, of a piston having secured to it so as to reciprocate therewith a hollow piston-rod to receive the lead, means for creating an air pressure and suction in alternation to reciprocate the piston and its attached pencil-carrying rod, said barrel being provided near its lower end with an air-vent, a valve to open and close the air-vent, and a collar connected to the valve and embracing the barrel and provided with a finger-lip whereby the valve may be operated to open and close the vent and thus regulate the air pressure and suction within the barrel for varying the pressure of stroke of the pencil-carrying rod, substantially as set forth.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

ANDREW SWAN.

Witnesses:

CARL KRUEGER,
A. W. SHELTON.