

(No Model.)

J. N. CHOATE.
PHOTOGRAPHIC RETOUCHER.

No. 549,058.

Patented Oct. 29, 1895.

Fig. 1.

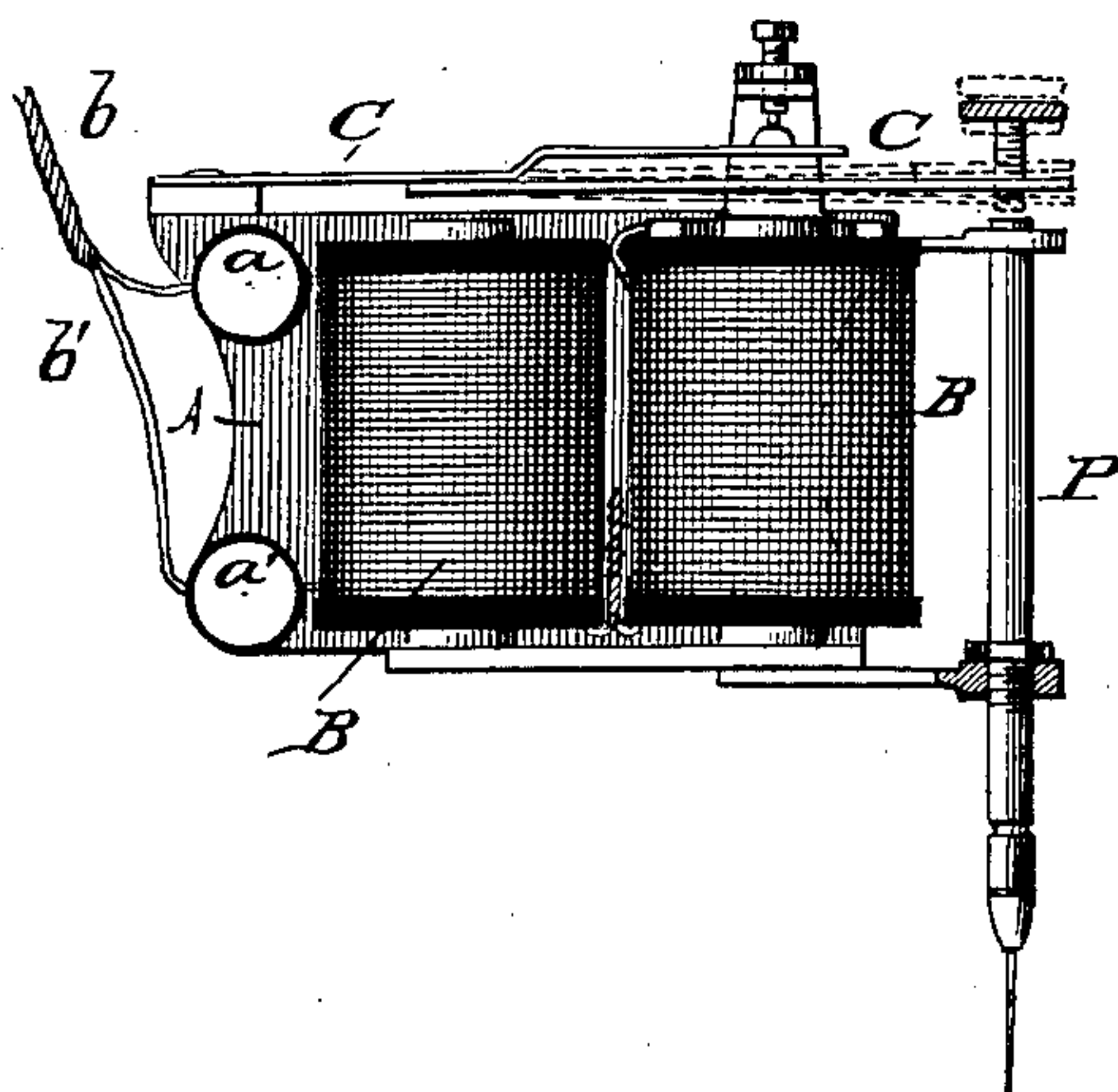
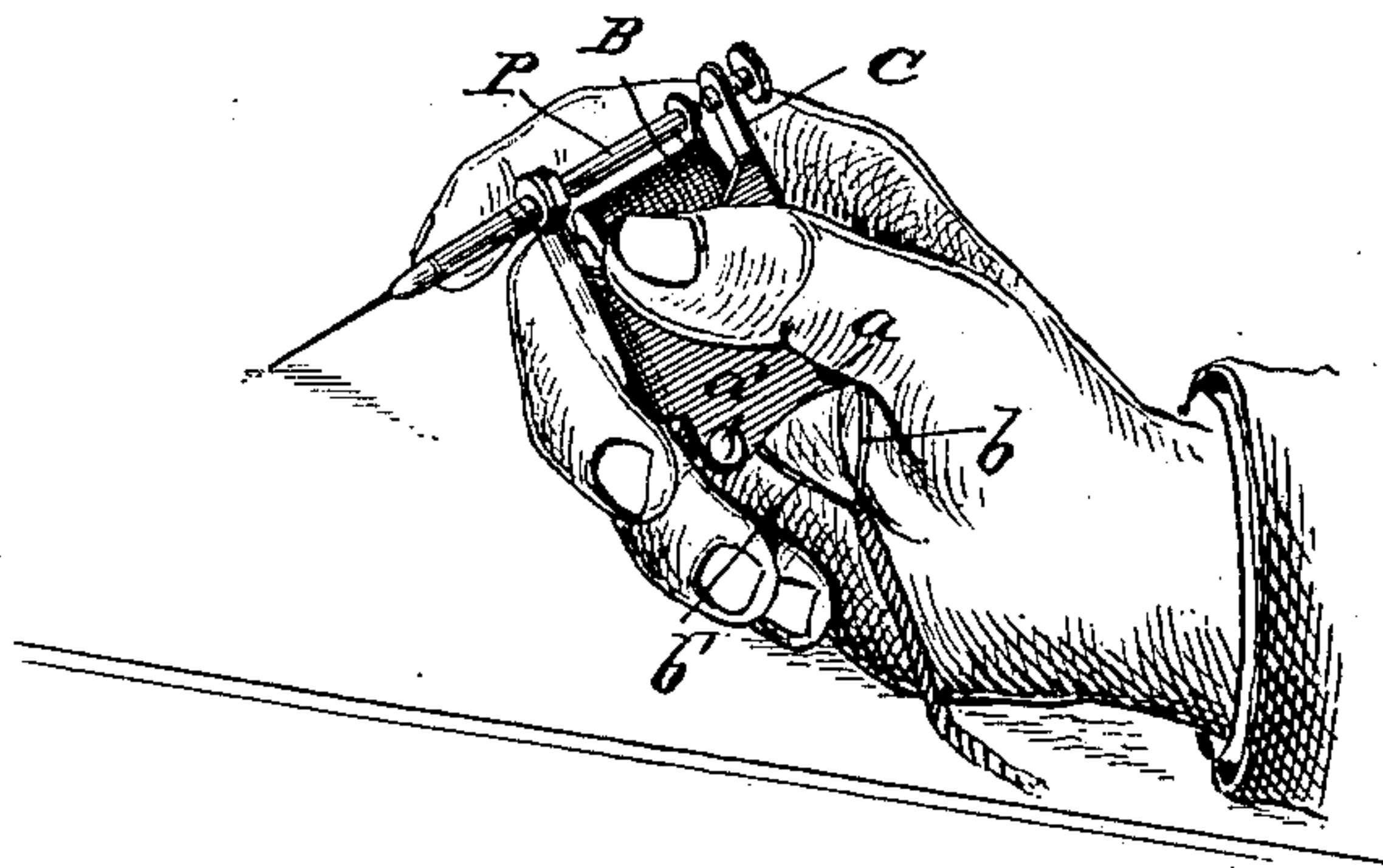


Fig. 2.



WITNESSES:

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PHOTOGRAPHIC RETOUCHER.

SPECIFICATION forming part of Letters Patent No. 549,058, dated October 29, 1895.

Application filed November 7, 1894. Serial No. 528,158. (No model.)

To all whom it may concern:

Be it known that I, JOHN N. CHOATE, of Carlisle, in the county of Cumberland and State of Pennsylvania, have invented a new and useful Improvement in Apparatus for Retouching Photographic Negatives, of which the following is a specification.

It is the object of my invention to provide an improved hand instrument for retouching photographic negatives. Heretofore one means for performing this work has been a retouching-pencil or stylus arranged to reciprocate in guides and actuated by the blows of a hammer fixed to the vibrating armature of a small electric motor, which practically constitutes the handpiece, and another means has consisted of a retouching-pencil and an electric motor having a flexible connection formed of a helical spring.

In my invention I secure the retouching-pencil to the frame of the handpiece or motor, so that it forms an inflexible immovable part of the instrument while in use, and the armature of the motor is so arranged that no part of it can touch the pencil or any portion of the frame of the motor, so that it vibrates entirely free, and thus imparts a tremulous movement or vibration to the motor and the hand of the operator in which it is held, whereby the pencil-point is caused to make a rapidly-recurring but very slight impact on the negative, and thus produce the most delicate retouching effect possible.

In accompanying drawings, Figure 1 is a side view of my electromagnetic retouching apparatus, and Fig. 2 is a perspective view showing the apparatus held in the hand as required in practice.

A represents the iron framework, which carries the electromagnets B. This framework is so constructed as to form a convenient handpiece or handle adapted to be grasped and held in the hand, as shown in Fig. 2, the body of the instrument lying next the upper portion of the palm and the index finger extending alongside of and resting upon the pencil P for the purpose of guiding and directing the same with the required precision.

The pencil is held rigidly or as an immovable inflexible part of the instrument when in use, and thus makes every movement of

the motor proper. As shown, it is arranged at one side or end of the framework of the latter.

The framework is provided with two binding-posts *a a'*, with which circuit-wires *b b'* connect in the usual way, and in practice extend thence to a battery. (Not shown.) The spring-armature *c* is weighted at its free or outer end and placed parallel to the ends of the magnet-cores, being arranged so far similarly to the armatures of bell and other alarm or annunciator electromagnetic apparatus; but, unlike such armatures, it is not arranged nor adapted to strike upon any portion of the apparatus, but vibrates free without touching the framework or pencil. This operation is provided for and assured by making the spring of a certain thickness or stiffness, (having, of course, due reference to the ordinary normal or maximum strength of the battery employed,) also by duly weighting the free end of the spring, and by arranging for ample space for free vibration of the same above the magnet-cores and the pencil, so that it shall be incapable of striking on the same. Thus when the electric current is applied the armature *c* swings or vibrates free and evenly without striking or other contact with pencil or adjacent portion of the frame A, and thus imparts a slight tremor or secondary vibration to the instrument and the operator's hand which incloses it, so that the pencil-point makes a correspondingly slight vibratory movement or an even and light rebounding touch or stroke, as distinguished from one in which a sudden and heavy jarring stroke is produced by imparting a sudden blow or impulse to the pencil. The result is a delicate retouching effect on the negative, which was previously unattained. It will be seen that as a summary of the foregoing such result is due to two factors—namely, the before-described rigid attachment of the pencil to the framework of the instrument and the gentle and even vibration imparted to the instrument, including the pencil.

The set-screw held in the outer end of the armature *c* serves as an additional weight for the same. When it is desired to cause the pencil P to make heavy strokes in putting in

"high lights" and drapery, &c., the screw may be adjusted to cause it to strike upon the head of the pencil.

What I claim is—

- 5 1. The improved hand instrument for re-touching negatives, which consists of a rigid framework adapted to be held in the hand, a retouching pencil which is an inflexible, im-
movable attachment of one end of said frame-
10 work, a vibrating device which forms part of said instrument the same being arranged as shown and described, whereby it is adapted to vibrate free or without contact with the pencil or adjacent portion of the framework,
15 as shown and described.

2. The improved magneto-electric instru-
ment or motor for retouching photographic

negatives, which consists of a rigid frame-
work adapted to be held in the operator's
hand and provided with electro magnets and 20
binding posts for the circuit wires, a weighted
spring armature which is constructed and
arranged as specified, whereby it vibrates
free or without contact with the pencil, or
adjacent portion of the framework, and a re- 25
touching pencil which is inflexibly and im-
movably attached to said framework, and
thus makes every movement of the latter, as
specified.

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Witnesses:

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