E. F. WHITE & P. W. SNYDER.

Device for Retouching Photographic Negatives.

No. 222,616. Patented Dec. 16, 1879.

Fig. 2.

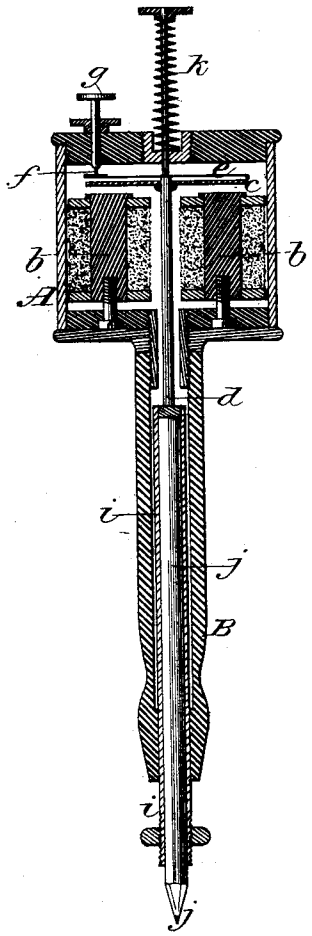
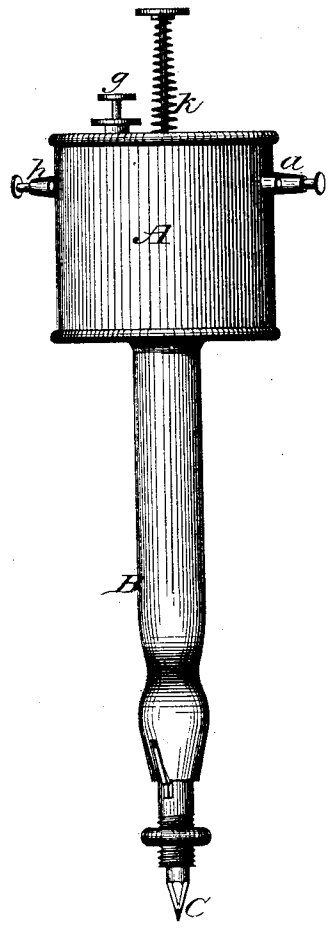


Fig. 1.



Witnesses:

E. A. McFadden

J. L. McCahan

Inventors.

Edwin F. White

Plymouth W Snyder

per A. H. Snyder, atty.

N. PETERS, PHOTO-LITHOGRAPHER, WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

EDWIN F. WHITE AND PLYMOUTH W. SNYDER, OF HOLLIDAYSBURG, PA.

IMPROVEMENT IN DEVICES FOR RETOUCHING PHOTOGRAPHIC NEGATIVES.

Specification forming part of Letters Patent No. **222,616**, dated December 16, 1879; application filed July 31, 1879.

To all whom it may concern:

Be it known that we, EDWIN F. WHITE and PLYMOUTH W. SNYDER, of Hollidaysburg, in the county of Blair and State of Pennsylvania, have jointly invented a new and useful Improvement for Rapidly Retouching Photograph-Negatives, which improvement is fully set forth in the following specification, reference being had to the accompanying drawings.

The object of the invention is an instrument or device for the rapid retouching of photograph-negatives by means of a graphite or lead pencil operated by an armature vibrated with great rapidity, and acting, in conjunction with a spring, to open and close the electro-magnetic circuit which continues the vibration of the said armature. We employ a regulating adjustable screw to vary the speed of vibration and increase or lessen the stroke and power, and the whole we inclose in a circular-shaped tight case, with a close-fitting lid or top, having attached an elongated tubular shaft made substantially without openings, the whole case being manufactured of hard rubber.

The retouching device is illustrated in perspective in Figure 1, and in detail in the vertical sectional view, Fig. 2, in which latter the mechanism and combination are also fully illustrated.

The brass tube *i i*, to which is attached the graphite or lead pencil *j j*, is made fast to the rod *d*, which passes between the magnetic coils *b b* and up through the conical spiral spring *k*. The electric current enters the case at *a*, and, passing over the coils *b b*, is communicated to the armature *c* by means of the rod *d*. The said armature is provided with a spring, *e*, having a platinum point, *f*, which is set under a regulating-screw, *g*. The current is reconducted to the battery through the connection at *h*. The armature *c* is made fast to the rod *d*, and has attached to it the spring *e*, which opens and closes the circuit at the point *f* under the regulating-screw *g*. The electric current thus magnetizing the coils *b b* attracts the armature *c* to them, and breaks the contact or opens the circuit at the platinum point *f*, and the armature *c* is again drawn up by the conical spiral spring *k*, thus closing the circuit.

The spring *e* is attached to the armature *c*, having a platinum point, *f*, which opens and closes the circuit between said point *f* and the regulating-screw *g*.

The speed of vibration of the armature *c* and its length of stroke and power are lessened or increased by means of the regulating-screw *g*, set over the platinum point *f* at the end of spring *e*. By elevating the screw *g* the stroke of the armature *c* is lengthened, and by lowering it the stroke is shortened, the power increased, and the vibrations are more rapid.

The armature *c* is made fast to the rod *d*, at the upper end of which is attached the conical spiral spring *k*, by which means the circuit is opened and closed at the point *f*, and the flexibility of the spring gives such freedom of motion to the armature *c*, to which is attached the rod *d* and the pencil *j j*, that a small one-cell battery only need be employed.

We claim as our invention—

1. In a retouching device for photograph-negatives, the combination of the electro-magnet *b*, the armature *c*, having spring *e* placed over and attached to said armature, the adjustable regulating-screw *g*, the rod *d*, attached to armature *c* and to pencil-receiving tube *i*, and the spring *k*, substantially as and for the purpose set forth.

2. A retouching device for photographic negatives, consisting of electro-magnet *b*, armature *c*, having spring *e* placed over and attached thereto, regulating-screw *g*, rod *d*, attached to armature *c* and to pencil-receiving tube *i*, and passing through the top of inclosing-case A, spring *k*, and rubber inclosing-case A, all constructed and adapted to operate as set forth.

EDWIN F. WHITE.
PLYMOUTH W. SNYDER.

Witnesses:
E. A. MCFADDEN,
J. C. MCCAHAN.