

(No Model.)

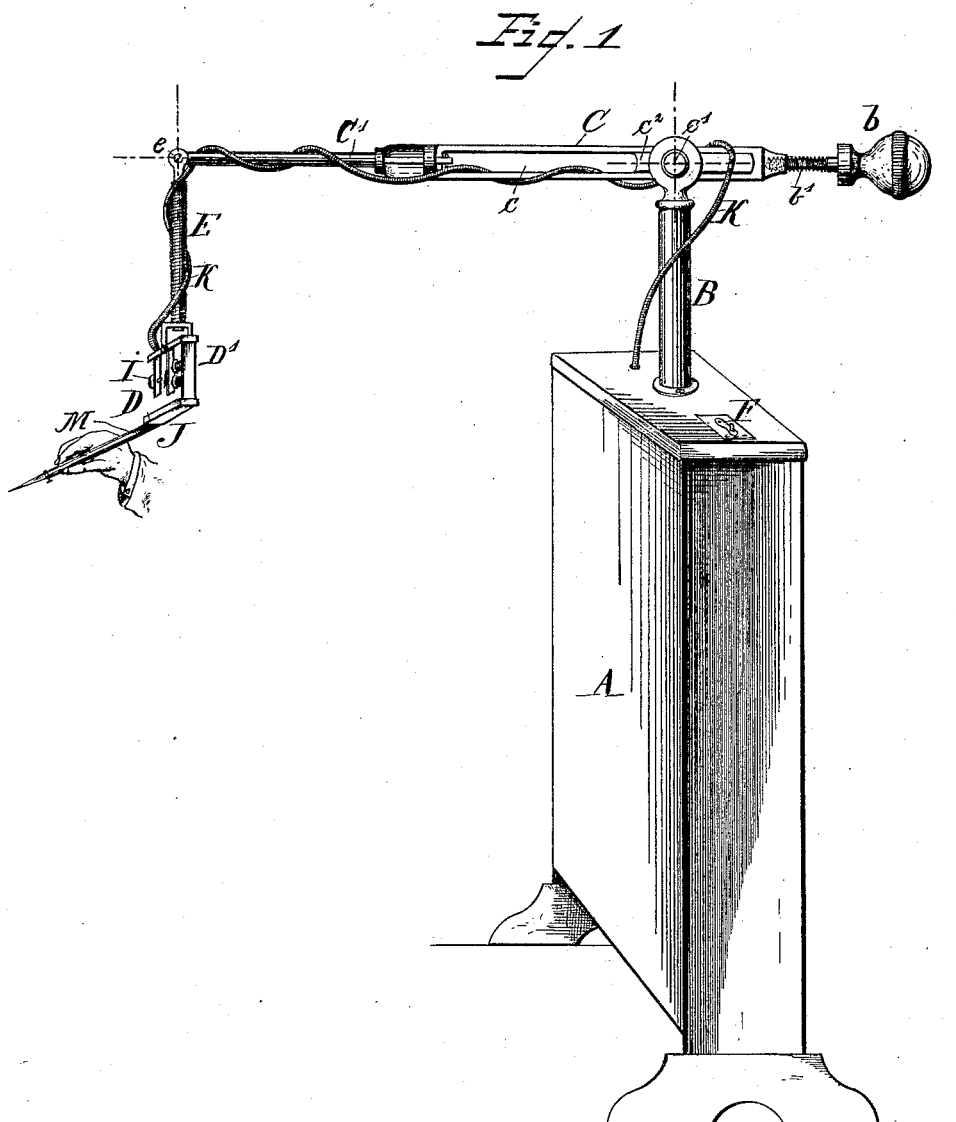
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J. F. GEESBERGEN & A. GÉRUZET.

PHOTOGRAPHER'S ELECTRIC RETOUCHING DEVICE.

No. 302,836.

Patented July 29, 1884.



Witnesses
J. W. Knotts
W. E. Boulter

Inventors
Jean F. Geesbergen
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their atty

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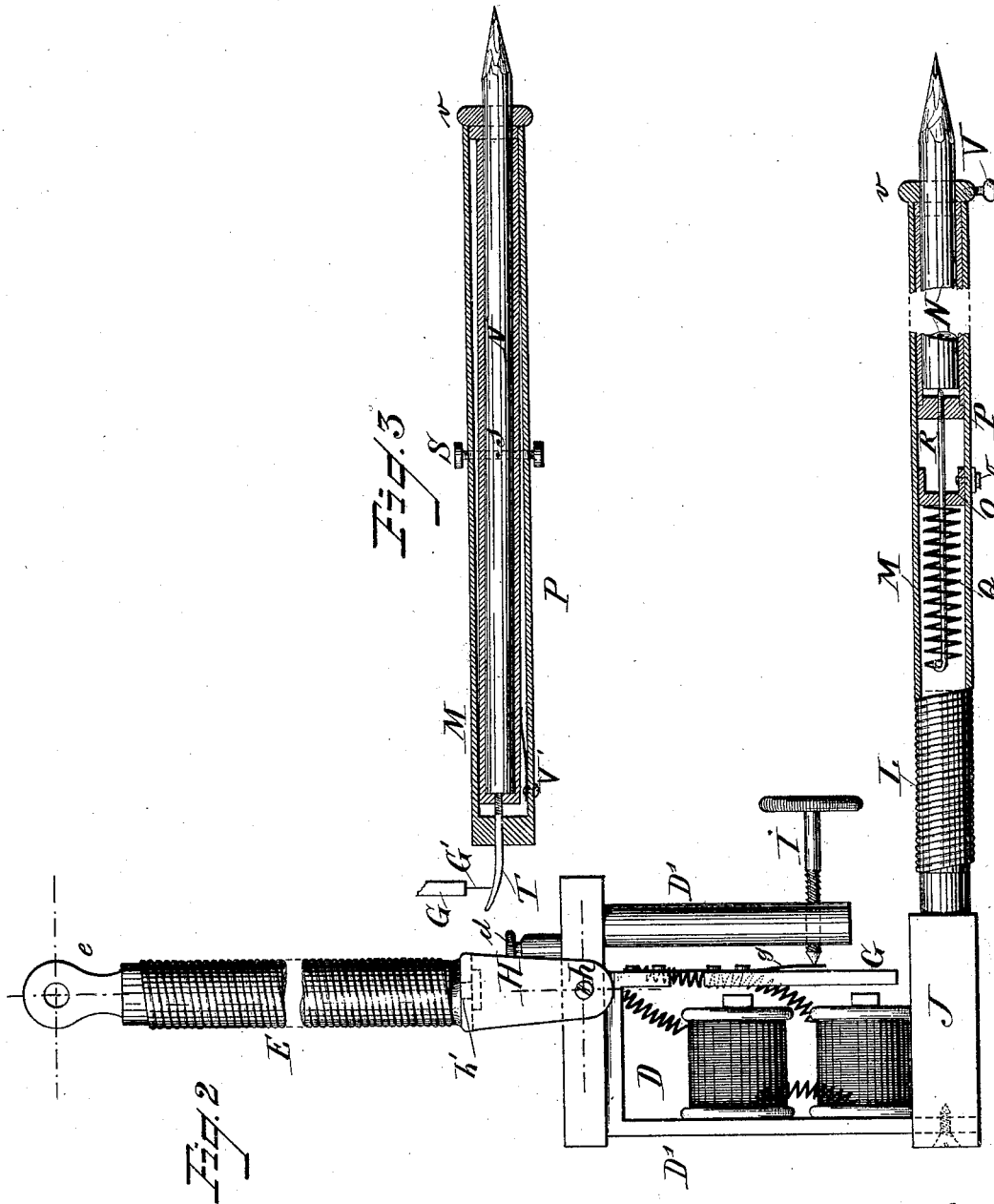
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UNITED STATES PATENT OFFICE.

JEAN FRANCOIS GEESBERGEN AND ALFRED GÉRUZET, OF BRUSSELS,
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PHOTOGRAPHER'S ELECTRIC RETOUCHING DEVICE.

SPECIFICATION forming part of Letters Patent No. 302,836, dated July 29, 1884.

Application filed October 24, 1883. (No model.) Patented in Belgium July 28, 1883, No. 62,164; in France September 19, 1883, No. 145,263; in England September 24, 1883, No. 4,557; in Germany October 9, 1883, No. 27,091; in Italy October 24, 1883, 494/16,006, and in Austria-Hungary December 26, 1883, No. 37,177 and No. 53,504.

To all whom it may concern:

Be it known that we, JEAN FRANCOIS GEESBERGEN and ALFRED GÉRUZET, both subjects of the King of Belgium, residing at Brussels, Belgium, have invented certain new and useful Improvements in Photographers' Electric Retouching Devices, of which the following is a specification.

Our invention relates to improvements in an apparatus operated electrically for retouching photographic negatives; and it has for its object to provide means whereby the retouching of photographic negatives or pictures is facilitated and the work performed in much less time than this could be done by the ordinary process of retouching.

In the accompanying drawings, Figure 1 is a perspective view of our improved electro-retoucher. Fig. 2 is a sectional view of the apparatus detached from its supports, and Fig. 3 is a sectional view of a construction of pencil-holder whereby lines instead of dots are produced.

Like letters refer to like parts throughout the specification.

A indicates a casing or stand that contains the electrical elements, either two Leclanché couples or other suitable generator, the two pole wires of which (suitably insulated) are formed into a flexible cable, K, that passes through the top of the casing to the electro-magnets, as hereinafter described. On top of casing A is also located a commutator to regulate the power of the electric current.

B is a standard secured to top of case A, in the upper end of which is pivoted a supporting-rod, C, in which is formed a longitudinal slot, *c*. The pivot-pins *c'* of the rod C are formed on or secured to a sliding block, *c''*, whereby the rod C is adapted for longitudinal adjustment on the standard B, so that the devices supported from said rod may be counterbalanced, for which purpose the rod is provided with a counter-weight, *b*, having a screw-threaded stem, *b'*, screwed in the end of the rod C. To the opposite end of rod C is secured a rod, C', to which is pivoted a helical spring, E, by means of a forked bearing,

e. The opposite end of the flexible helical spring E carries a second forked bearing, H, pivoted to the spring at *h'*, and at *h* to a frame or support, D', that carries the electro-magnet D and its armature G, said frame being provided with suitable binding-posts, *d*, Fig. 2, for the electrical conductors of cable K, connecting the electro-magnets with the generator in the usual way, as shown. The armature G is secured to a flexible spring, *g*, upon the free end of which bears an adjusting-screw, I, for regulating the extent of the vibrations or oscillations of the frame D'.

The pencil-holder M is connected by means of a flexible helical spring, L, to a head, J, secured to the frame D' by means of a screw or screws. The holder consists of an outer tube terminating in a swell or collar, *v*, in which is fitted a binding-screw, V, whereby the pencil N is held in position. Within the holder is fitted a collar, O, adjustable longitudinally by means of a set-screw, *o*, that passes through a slot in the tube M. This collar O serves as an abutment for one end of a helical spring, Q, the other end of which is secured to the outer hooked end of a rod, R, that slides freely through the collar O, and is secured to a tubular carrier, P, for the pencil N. By means of the rod R and spring Q the course of the pencil is regulated, and the tension of the spring Q is regulated by the adjustment of the collar O within the holder M, as will be readily understood.

It is evident that when an electric current passes through the electro-magnets a rapid oscillatory or vibratory movement is imparted to the frame D', and through it to the head J, holder M, and pencil N, producing a rapid stippling upon the surface acted upon.

By means of the flexible connections L *h h'* E *e* and the oscillating support C a wide range of movement is imparted to the tool, while there is sufficient rigidity of the parts to properly transmit the vibrations of the frame of the electro-magnet to the pencil.

By providing means for counterbalancing the weight of the pencil-holder and electro-magnet on their oscillating support the oper-

ator is relieved of any weight on his hand, and has therefore only to guide the pencil over the work, and by this means he is better enabled to regulate the depth of shade required with considerably less fatigue.

In retouching photographic negatives or photographic pictures, it is sometimes desirable to do this by lines instead of stippling, or by both lines and stippling.

To produce lines we employ the holder shown in Fig. 3, in which the outer tube, M, contains an inner tube or pencil-carrier, P, of nearly the same length as tube M, but of sufficiently less diameter to adapt the tube to oscillate in a direction at right angles to the longitudinal axis of the holder. To this end the carrier P is pivoted at or near its longitudinal center to a collar, S, that carries the pivot studs or screws s.

To the upper end of the tubular carrier P is secured a bent arm or plate, T, that passes through the holder M, and against which impinges a tongue or extension, G', adapted to be secured to the outer or free end of the armature G. A spring, V', secured within the tubular holder M, serves to return the carrier P to its normal position after each movement from one side of the holder M to the other on its pivots s.

It is evident that the vibration of the armature G will be communicated to the carrier P and pencil N through the actuating arm or tongue G' and bent arm T, and said pencil, instead of being reciprocated longitudinally, will be reciprocated horizontally and produce lines.

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

1. A photographer's electric retouching device, composed of a pivoted support, an electro-magnet suspended therefrom, a pencil-holder flexibly connected with said electro-magnet, and suitable electrical conductors, substantially as described, for the purposes specified.

2. A photographer's electric retouching device, composed of a pivoted support, an electro-magnet suspended therefrom, and a pencil-holder flexibly connected with said electro-magnet, in combination with appliances for counterbalancing the weight of said parts on their support, and suitable electrical conductors, substantially as described, for the purposes specified.

3. A photographer's electric retouching device, composed of a pivoted support, an electro-magnet, a flexible connection pivoted to said support and magnet, a pencil-carrier, a flexible connection between said carrier and electro-magnet, and suitable electrical conductors, substantially as described, for the purposes specified.

4. A photographer's electric retouching device, composed of a pivoted support, an electro-magnet, a flexible connection pivoted to said support and magnet, a pencil-carrier, a flexible connection between said carrier and the electro-magnet, appliances to counterbalance the weight of the pencil-carrier, electro-magnet, and connections upon their pivoted support, and suitable electrical conductors, as described, for the purposes specified.

5. The combination, with the pivoted support C, its counter-weight b, and the coiled spring E, of the frame D', carrying an electro-magnet, and a pencil carrier or holder, said parts being connected for operation, substantially as described, for the purposes specified.

6. The combination, with the rod having a longitudinal slot, c, the sliding block c', provided with pivots c', and adapted for adjustment in said slot, the adjustable counter-weight b, and the standard B, of the coiled spring E, the frame D', carrying an electro-magnet, its armature G, spring g, and a pencil holder or carrier, said parts being arranged for operation as described, for the purposes specified.

7. The combination, with the rod having a longitudinal slot, c, the sliding block c', provided with pivots c', and adapted for adjustment in said slot, the adjustable counter-weight b, and the standard B, of the coiled spring E, the frame D', carrying an electro-magnet, its armature G, and head J, the coiled spring L, and a pencil-holder, M, said parts being arranged for co-operation, substantially as described, for the purposes specified.

8. The combination, with the electro-magnet D and its spring-armature G g, the frame D', head J, and spring L, of a pencil-holder, M, composed of an outer tube, a tubular carrier, P, inclosed therein, the adjustable collar O, rod R, spring Q, and binding-screw V, said parts being arranged for co-operation, substantially as described, for the purposes specified.

9. In a photographer's electric retouching device, the combination, with an electro-magnet and suitable electric conductors, of a pencil-holder connected with said electro-magnet and its armature to vibrate a pencil-carrier contained by said holder in a direction at right angles to its longitudinal axis, substantially as described, for the purposes specified.

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