(No Model.)

G. F. CARD.

RETOUCHING DEVICE.

No. 383,436. Patented May 29, 1888.

Fig. III.

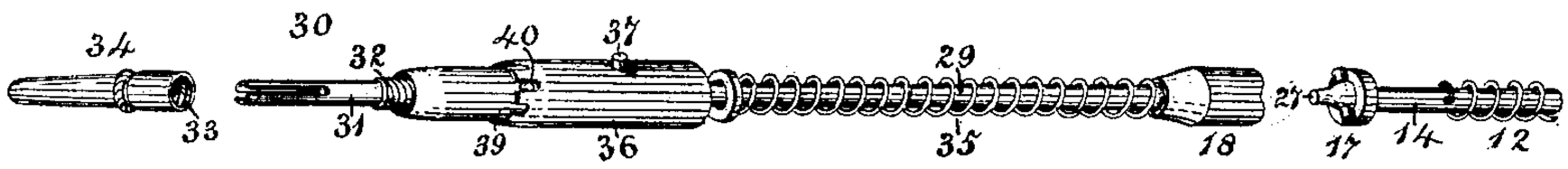

Fig. I.

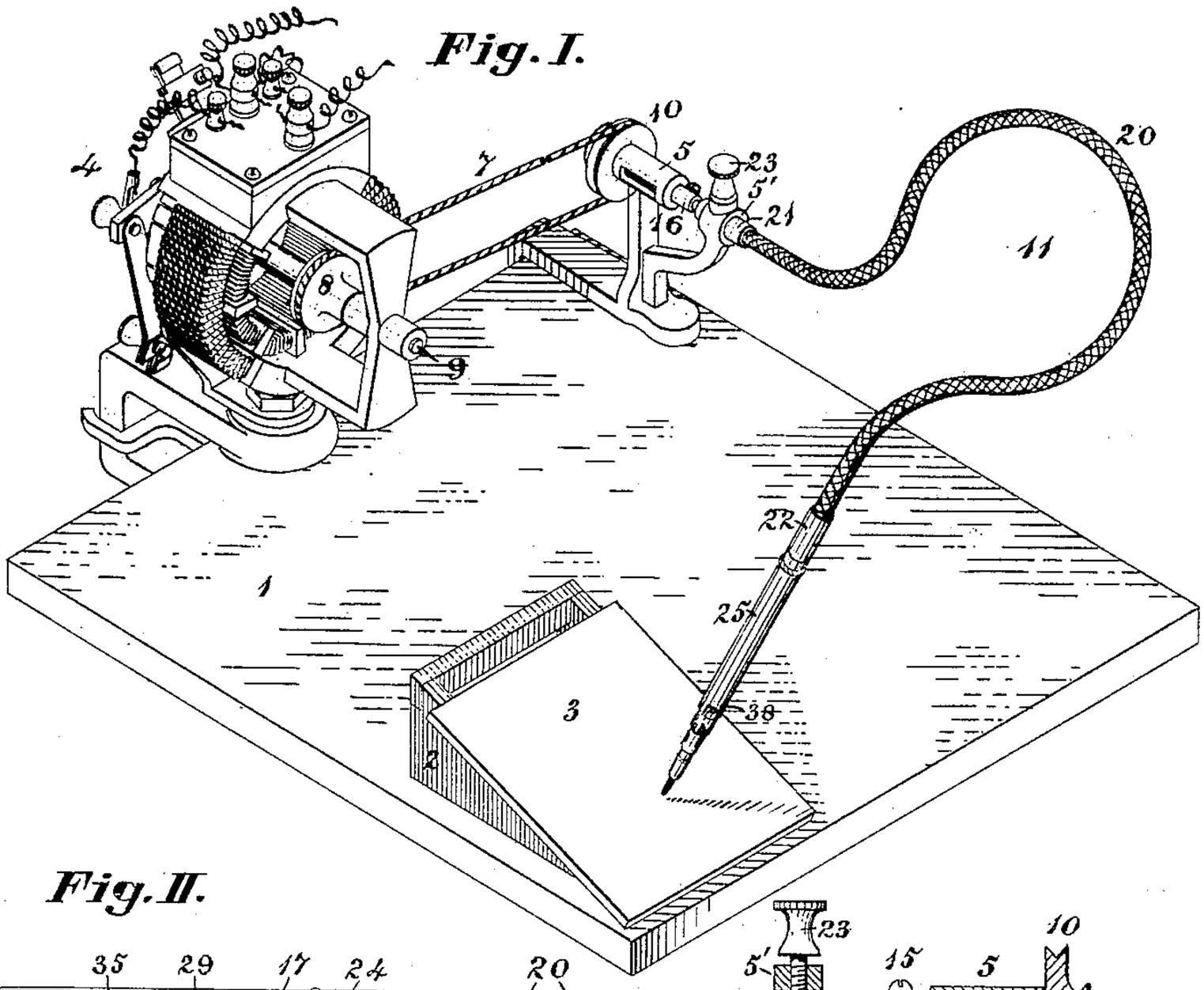

Fig. II.

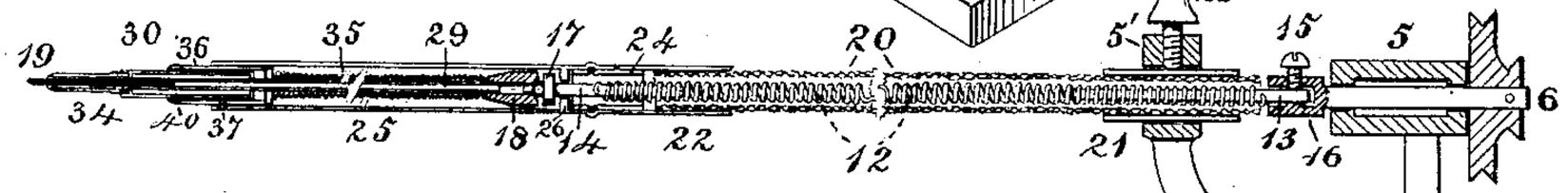

Fig. IV.

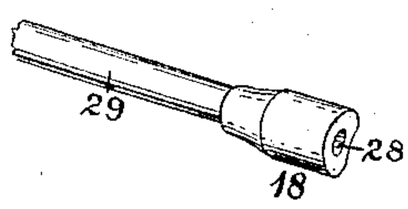

Fig. V.

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UNITED STATES PATENT OFFICE.

GEORGE F. CARD, OF COVINGTON, KENTUCKY, ASSIGNOR TO THE GEORGE F. CARD MANUFACTURING COMPANY, OF SAME PLACE.

RETOUCHING DEVICE.

SPECIFICATION forming part of Letters Patent No. 383,436, dated May 29, 1888.

Application filed October 6, 1887. Serial No. 251,630. (No model.)

To all whom it may concern:

Be it known that I, GEORGE F. CARD, of Covington, Kenton county, Kentucky, have invented a new and useful Retouching Device, of which the following is a specification.

My device is primarily designed for the use of photographic artists in "retouching" their negatives, and comprises means whereby, a rapid reciprocating movement being imparted to the crayon from a suitable exterior source of motion, preferably an electric motor, the labor of the artist is confined to simply directing the point of the retouching-instrument to the parts to be operated on.

My invention in its most complete form further comprises means for optional regulation of the stroke of the crayon.

In the accompanying drawings, Figure I is a perspective view of my retouching device. Fig. II is an axial section of the counter-shaft, the retouching-instrument proper, and portions of the flexible transmitter. Fig. III is a perspective view showing portions of the retouching-instrument. Fig. IV represents my reciprocating cam. Fig. V represents the parts of my adjustable gage.

1 may represent any suitable bench or table, and 2 any suitable support or rest for the negative 3.

The source of motion, preferably an electric motor, 4, and the journal-bearing 5 of the counter-shaft 6 may be respectively clamped or bolted to the table 1 in the manner shown. A belt, 7, transmits motion from pulley 8 on motor-shaft 9 to a pulley, 10, on the counter-shaft 6.

11 is my flexible transmitter, composed of a steel helix, 12, whose extremities are fastened to stems 13 14, of which the rear stem, 13, is secured by set-screw 15 in chuck 16 of counter-shaft 6, and whose front stem, 14, is armed with tappet 17, whose action on the cam 18 imparts the forward impulses of the reciprocating crayon 19. For convenient handling the helix 12 is inclosed in a flexible tube or sleeve, 20, whose extremities are protected by metallic bands or ferrules 21 22. The thus-protected rear extremity, 21, of the said sleeve having been adjusted longitudinally within socket 5', for a purpose presently explained, may be fixed to such adjustment by means of a set-screw, 23. The front band, 22, extends sufficiently beyond the sleeve proper to engage, as shown in Fig. II, with the heel 24 of the tubular handle 25 of the retouching-instrument proper. The stem 14 occupies a perforated stop or septum, 26, fixed in the handle 25.

The resilience of the helix 12 and its length relatively to the sleeve 20 are such as by a forward adjustment of the sleeve 20 to slightly compress the said helix in direction of its length and thus to prevent contact of the tappet 17 with the stop 26, and by so doing to sustain said tappet as on an elastic abutment or cushion and increase the force of the stroke, or by a rearward adjustment of said sleeve to slightly stretch the helix and by so doing to oppose a positive, in place of an elastic, abutment to the tappet, and at the same time to lessen the forward thrust of the tappet against the cam and decrease the force of the stroke. The tappet 17 is centered, while permitted to revolve freely with respect to the cam 18, by pivot 27, that journals in axial orifice 28 of the said cam. The stem 29 of the cam 18 terminates in front in a suitable crayon-holder, 30, which may be constructed as follows:

31 is a split tube for reception of the crayon 19. The screw-threaded neck 32 of said tube receives the correspondingly screw-threaded portion 33 of a nipple, 34, whose interior diameter is such as when it is screwed home to compress the ends of the said tube and thus tightly nip the crayon. A helical spring, 35, gives the cam 18 and its attached crayon-holder a normal tendency to press backward against the tappet 17 and thus accomplish the retractive or retrograde stroke of the crayon. The amount of this retraction, and consequently the length of the stroke of the reciprocating crayon, is made capable of regulation by the following means: The rear end of the crayon-holder is telescoped with a tube, 36, which is similarly telescoped into the handle 25. Longitudinal displacement of the tube 36 is secured by a stud, 37, that projects from the said tube, being inserted in a bayonet-groove, 38, in the handle 25. The forward edge of this tube has a number of notches, 39, of unequal depths, and one or other of these notches receives a pin,

40, that projects from the crayon-holder. The pin 40 being once entered in one of these notches is prevented from escaping therefrom by the retractile force of the spring 35. The retraction or retrograde stroke of the crayon, and consequently its forward or effective stroke, is manifestly limited by the depth of the particular notch in which the pin 40 happens to be engaged. When withdrawn from the notches 39, the stem 29, with its attached crayon-holder, can be rotated on its axis, so as to be easily presented to any one of the notches 39.

While primarily designed and here described as a retouching-instrument, the device is also applicable to the kindred uses of stippling and like artistic work.

The form here selected to illustrate my invention is manifestly susceptible of various modifications. For example, the flexible transmitter may be attached directly to the motor-shaft.

I claim as new and of my invention—

1. The combination, with rotary shiftable and normally-retracted crayon-holder 30, having the pin 40, of the diversely-notched tube 36, attached to the handle 25.

2. The combination, with the longitudinally-adjustable sleeve 21 of the helical shaft 12, of the socket 5′, and set-screw 23, as and for the purpose set forth.

3. In the described combination with an electric motor, the combination of the rotary flexible transmitter 11, the tappet 17, the circumferentially-adjustable crayon-holder 30, having the pin 40, and the diversely-notched tube 36 upon the handle 25, for the purposes set forth.

In testimony of which invention I hereunto set my hand.

GEORGE F. CARD.

Attest:

GEO. H. KNIGHT, Jr.,

L. C. BLACK.