

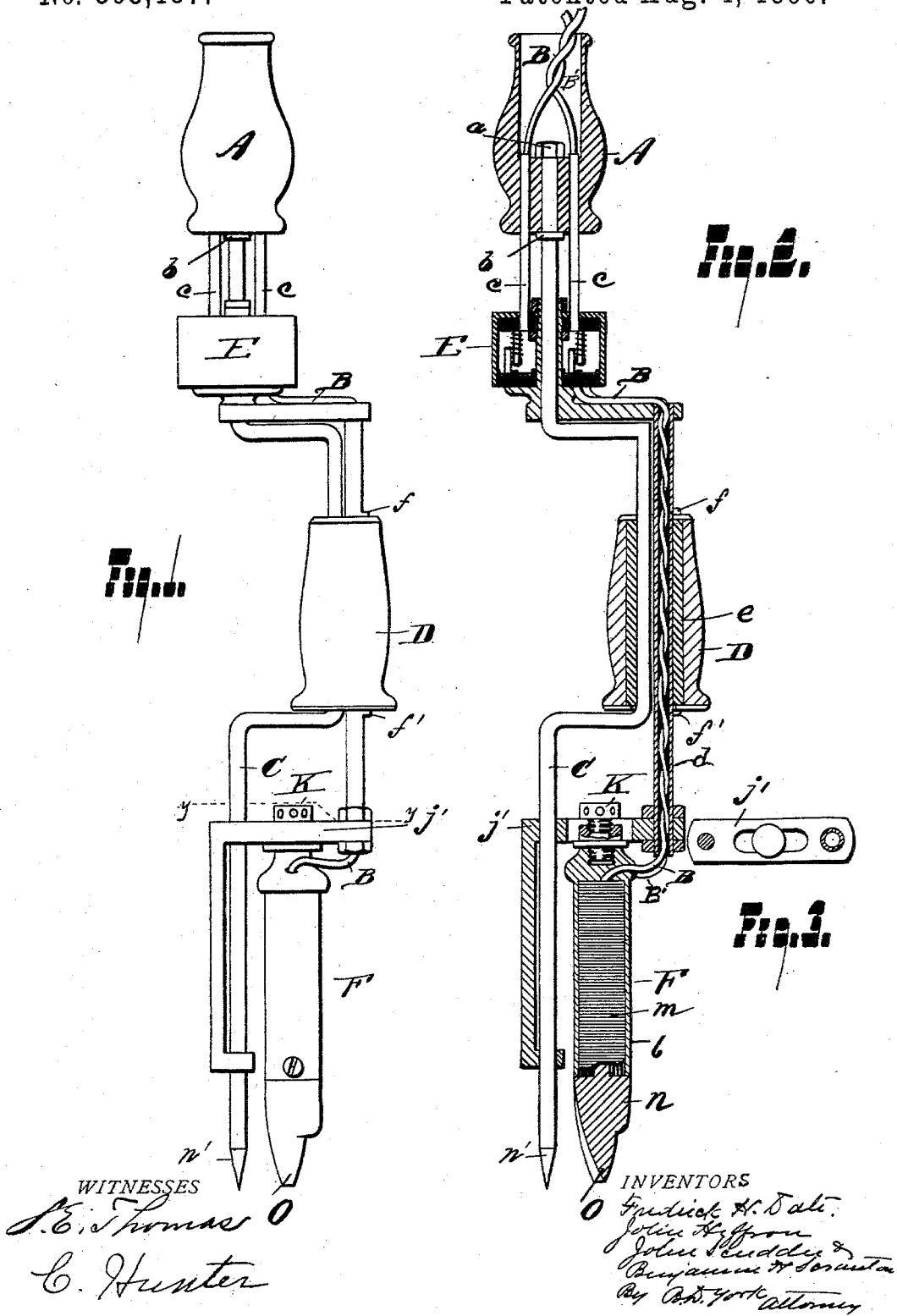
(No Model.)

2 Sheets—Sheet 1.

F. H. DATE, J. HEFFRON, J. SCUDDER & B. H. SCRANTON.
ELECTRIC SOLDERING IRON.

No. 565,137.

Patented Aug. 4, 1896.



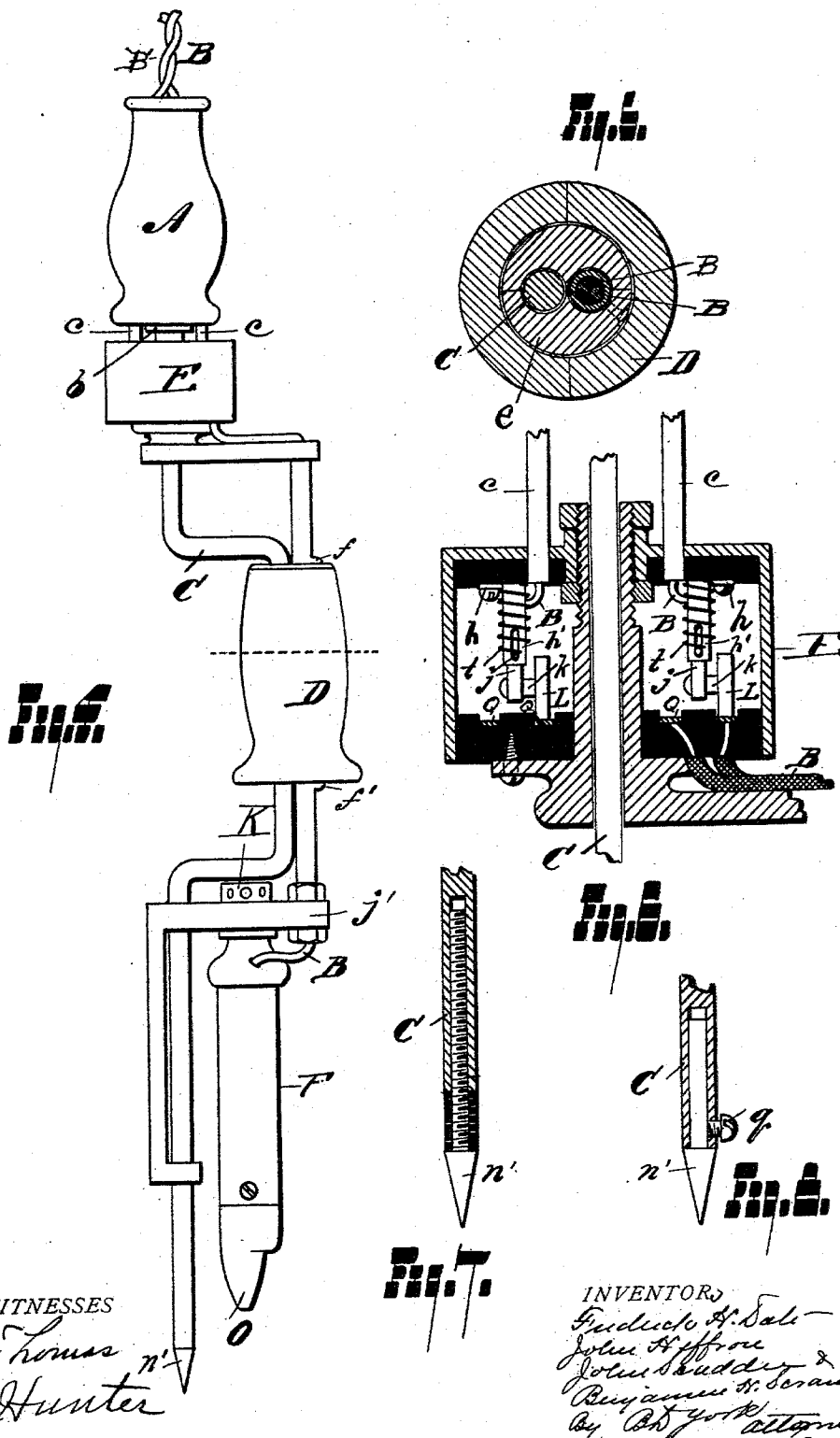
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WITNESSES

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John Heffron
John Scudder &
Benjamin H. Scranton
By [Signature] Attorney

UNITED STATES PATENT OFFICE.

FREDERICK H. DATE, JOHN HEFFRON, JOHN SCUDDER, AND BENJAMIN H. SCRANTON, OF DETROIT, MICHIGAN.

ELECTRIC SOLDERING-IRON.

SPECIFICATION forming part of Letters Patent No. 565,137, dated August 4, 1896.

Application filed July 18, 1895. Serial No. 556,314. (No model.)

To all whom it may concern:

Be it known that we, FREDERICK H. DATE, JOHN HEFFRON, JOHN SCUDDER, and BENJAMIN H. SCRANTON, citizens of the United States, residing at Detroit, in the county of Wayne and State of Michigan, have invented certain new and useful Improvements in Electric Soldering-Irons, of which the following is a specification.

Our invention relates to electric soldering-irons, and especially to that class known as "capping-irons;" and the objects of our invention are to so arrange an electrically-heated soldering-iron that it can be used as a "capper" and by its use greatly lessen the time required for capping cans, and one in which the points can be changed with little trouble, so that any desired shape or form of point can be used on the same iron, and also one that can be adjusted to caps of different size.

With these and other minor objects in view the invention consists of the construction, combination, and arrangement of parts, as described in the following specification, illustrated in the drawings, and pointed out in the appended claims.

In the accompanying drawings, Figure 1 is a view of a capping soldering-iron embodying our invention in position ready for use. Fig. 2 is a longitudinal sectional view of the same. Fig. 3 is a horizontal sectional view taken on the line *y y* of Fig. 1. Fig. 4 is a view showing our invention as it appears when the soldering-head is raised. Fig. 5 is a vertical sectional view of the contact-maker E, Fig. 4. Fig. 6 is an enlarged sectional view of the commutator. Fig. 7 is a sectional view showing arrangement of the adjustable point. Fig. 8 is a sectional view showing the arrangement of the adjustable point in a varied form.

Similar letters refer to similar parts throughout the several views.

A represents a wooden swiveled head to receive the conducting-wires B B' and the crank-shaft C, which has the lower end pointed and is used to retain the device in position when used. This crank-shaft C is retained in the head A by the nut *a* and the washer *b*, and is so mounted therein as to revolve freely,

but is prevented from upward or downward movement therein. The conducting-wires B B' pass through metal tubes *c* on either side of the upper end of the crank-shaft to the contact-maker, which will be hereinafter more fully described. Below the contact-maker the shaft C is bent in the form shown in the drawings to form a crank, and then brought back to a point perpendicular to the top and continued in that line to the pointed end *n*'.

Around the crank-shaft C and the conducting-wire tube or shell *d* is the handle D, preferably made of wood in sections with a metal lining *e*. This handle revolves freely upon said crank and wire tube, but the pins or spurs *f* and *f*', rigidly attached to the tube *d* at the top and bottom of said handle, prevent an upward or downward movement on said shaft, and by means of which the soldering-head is raised, and the device will then appear as shown in Fig. 4.

E is the contact-maker, into which the conducting-wires pass and are attached at the binding-posts *h*. Depending from the top of the commutator-shell are the sleeves *h*, around which is placed the coiled spring *t*. The pins *j* work in the sleeves and are held down by the spring *t*. To these pins *j* shafts *k* are attached, which shafts support the wheels L. These wheels travel on the track-plates Q, to which the conducting-wires are attached, and by this arrangement the electric current is maintained while the soldering-head is revolving around the crank-shaft C.

The lower end of the conducting-wire tube *d* is attached to the brace *j*'. To this brace also the soldering-head is attached by means of the set-screw K. It will be seen by Fig. 3 that we have provided an oblong aperture in the center of the brace *j*', so that the soldering-head can be adjusted as to distance from the retaining-point, thus allowing the device to be used for different sizes of caps. To the end of the brace *j*', opposite the conducting-wire tube, is an aperture through which the crank-shaft passes, and, bending at right angles, the brace continues downward along the side of the crank-shaft to near the point where it again turns and extends a short dis-

tance toward the soldering-head, and this short arm is also provided with an aperture through which the shaft passes. In these apertures in the brace the shaft works freely.

5 The soldering-head F is composed of the outside shell *l*, the spool *m*, and the detachable point *n*. Around the spool is wound a coil of conducting-wire in layers, having a layer of mica or other insulating material between

10 each layer of wire. The point *n'* is provided with the stem, which is held in place with the set-screw *q*, as shown in the modification shown in Fig. 8. The point can also be arranged as shown in Fig. 7, with a screw-

15 thread cut on the stem and screwed into the crank-shaft, and washers are used as required to make a close connection, and the length of the retaining-point can thus be adjusted.

20 The operation of the invention thus described will be readily understood from the accompanying drawings, and may be briefly described as follows: The conducting-wire having been connected with a main current

25 of electricity, the soldering-point soon becomes heated and ready for use. The point of the crank-shaft is made to rest in a dent in center of the can-cap and the soldering-head pushed down, as appears in Fig. 1, and

30 by turning the handle the soldering-head is made to rotate around the shaft-point, which should be adjusted to the proper distance from the crank-shaft. As soon as a completed circle has been described with the solder-

35 ing-head it is again raised and appears as in Fig. 4.

We do not wish to be understood as confining ourselves to the exact form of construction and arrangements of parts as herein

40 shown, but hold that minor changes may be made therein and still be within the scope of our invention.

Having fully described our invention, what we claim is—

1. In an electric soldering-iron, the combination with the crank-shaft having a swiveled head at its upper end, and pointed at its lower end, so as to center in the top of a can. of a contact-maker connected to said head by suitable tubes, conducting-wires leading 50 through said tubes, to suitable contact-making devices, a tube extending from an arm secured to the contact-maker, downward, a brace secured to the lower end of said tube, adapted to carry a soldering-tool having an electrical heating resistance-coil and electrical connections extending from said contact-maker to the heating-coil, substantially as specified.

2. The combination in an electric soldering-iron, of the crank-shaft, the contact-maker and conducting-wires, and the handle surrounding the bend of the crank-shaft and the tube connecting the contact-maker with the brace carrying the soldering-tube, whereby 55 the two may be moved simultaneously substantially as specified.

3. The combination in an electric soldering-iron, of the insulating-head, the crank-shaft to the upper end of which it is swiveled, the circuit-making casing connected to the head by suitable tubes, the sleeves secured to an insulating-plate in the upper part of said casing and carrying spring-actuated contact-wheels, the contact-ring secured in an insulating-plate in the lower part of the casing, upon which the contact-wheels are adapted to travel and conductors leading to the wheels, and contact-plates, whereby a continuous circuit is maintained as the crank-shaft is rotated, substantially as specified. 60

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BENJAMIN H. SCRANTON.

In presence of—

B. D. YORK,

C. HUNTER.