W. S. OVERLIN.

MEANS FOR ELECTRICALLY MARKING UPON METALS.

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1,350,734. Patented Aug. 24, 1920.

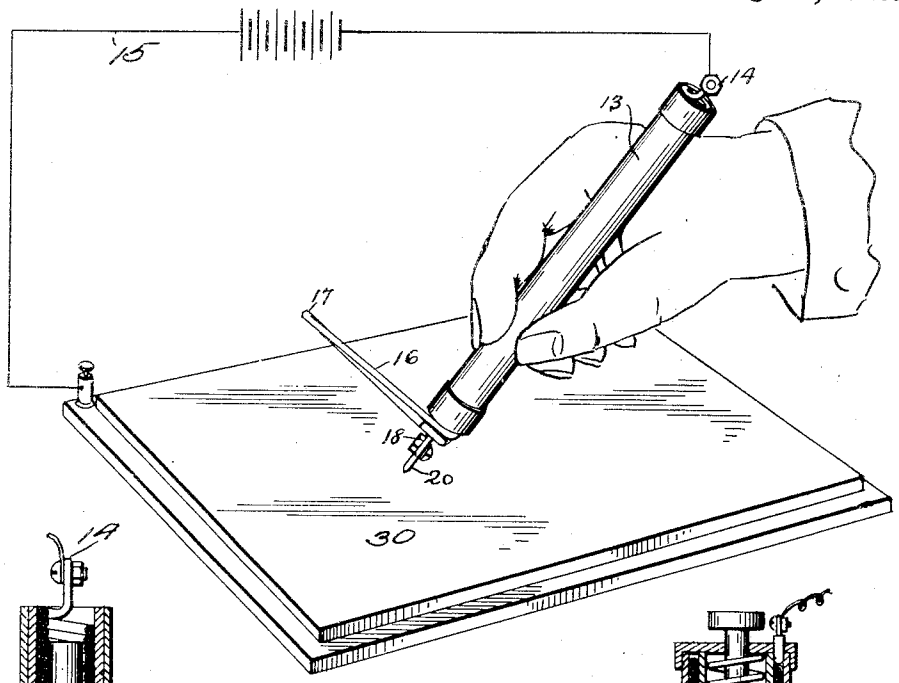


Fig. 1.

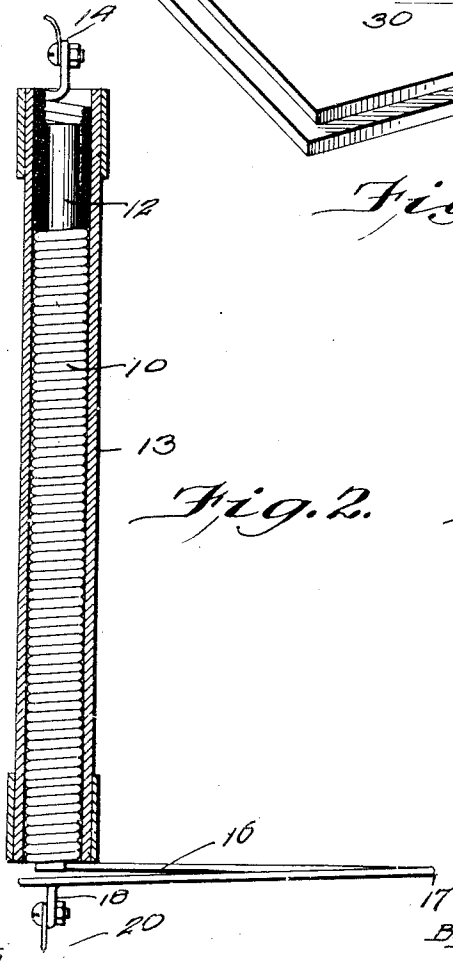


Fig. 2.

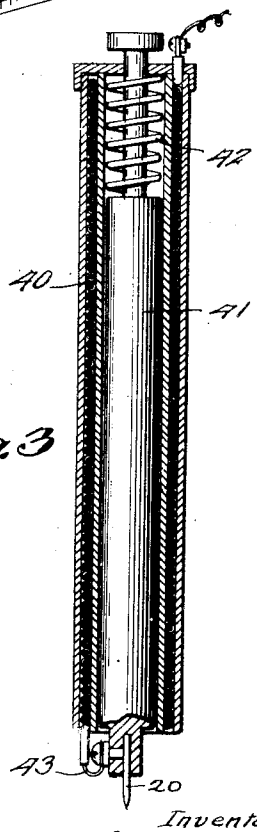


Fig. 3

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MEANS FOR ELECTRICALLY MARKING UPON METALS.

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To all whom it may concern:

Be it known that I, WILLIAM S. OVERLIN, a citizen of the United States, residing at Portland, in the county of Multnomah and State of Oregon, have invented new and useful Improvements in Means for Electrically Marking Upon Metals, of which the following is a specification.

This invention relates to means for writing or marking upon metal by the aid of the electric current, and consists broadly in the combination of an electro-magnet having a spring armature carrying the pen or marking point, and an electric circuit which includes the coil of the magnet, the marking point, and the metal to be inscribed.

A convenient way of constructing the implement is to form the spring armature of an extension from the wire of the coil itself, so that the marking point is in series with said coil; the work may be directly connected in the circuit or simply laid on a block of metal which is in the circuit.

Instead of the electro-magnet, a solenoid may be used, the core of which carries the marking point; the core may be moved in one direction by a spring or the solenoid may be double so as to alternately attract the core in opposite directions. In all cases, the marking point must be in the circuit, so as to rapidly make and break the contact between it and the work, or metal to be inscribed.

I am aware that I am not the first to devise means for marking upon metal electrically, but I believe that I have devised a much simpler and more practical means for that purpose.

As I at present construct it, my device is known as the electric-pen and is especially intended for the use of mechanics in machine shops and garages in marking for identification their tools and parts of machines.

In the accompanying drawing I have illustrated my invention as embodied in this electric pen, although I do not intend to necessarily limit its use to such embodiment.

Figure 1 is a perspective view of the pen in use;

Fig. 2 is a central longitudinal section of the pen, and

Fig. 3 is a central longitudinal section of a modified form.

The pen of Figs. 1 and 2 consists essentially of a coil of wire 10, the convolutions of which are suitably insulated from each other and from the core 12, while they are inclosed in a suitable sheath 13 by means of which the pen is held in the hand when in use.

The upper end of the wire has a terminal 14, by which it is connected to the circuit 15, while the lower end is extended laterally at 16, is bent upon itself at 17, and brought back into the axis of the coil where it is connected to the holder 18 for the marking point 20.

The coil can be made of comparatively heavy wire and can be insulated by immersion in shellac, the core being insulated in the same way, while the marking point may be of copper or, if desired, of a harder and more durable metal, such as platinum.

30 represents the piece of metal to be written upon or marked; it is included in the circuit, either by connecting the wire to it or by laying it on a block of metal which is in the circuit. The other terminal of the circuit, which includes a battery of about six cells, or other suitable source of electricity, is connected to the terminal 14 of the coil.

In operation, as soon as the point touches the metal piece 30, the circuit is closed, the coil becomes energized and attracts the armature, whereby the circuit is broken again and, the operation repeating itself continuously, a constant rapid sequence of sparks is formed at the point of contact which have the effect, when the pen is moved over the metal surface, as in writing of tracing a practically continuous line.

Fig. 3 shows a solenoid 40, the core 41 of which carries the marking point and is projected outward from the coil by a spring 42, suitably secured within the coil. Wire

43 connects the coil to the marking point. Other means of reciprocating the marking point will readily suggest themselves, but the simplest and preferred form is that first described, and shown in Figs. 1 and 2.

Having thus described my invention, what I claim is:

An electric pen, comprising a core, a wire coiled around said core, means to connect one end of said wire to an electric circuit, the other end of said wire being bent out and back to form a spring, and a marking point carried by the end of said spring portion of the wire.

In testimony whereof I have hereunto set my hand.

WILLIAM S. OVERLIN.