(No Model.)

H. GREEN.

ELECTRIC SEARING PEN.

No. 597,373. Patented Jan. 11, 1898.

Fig. 1.

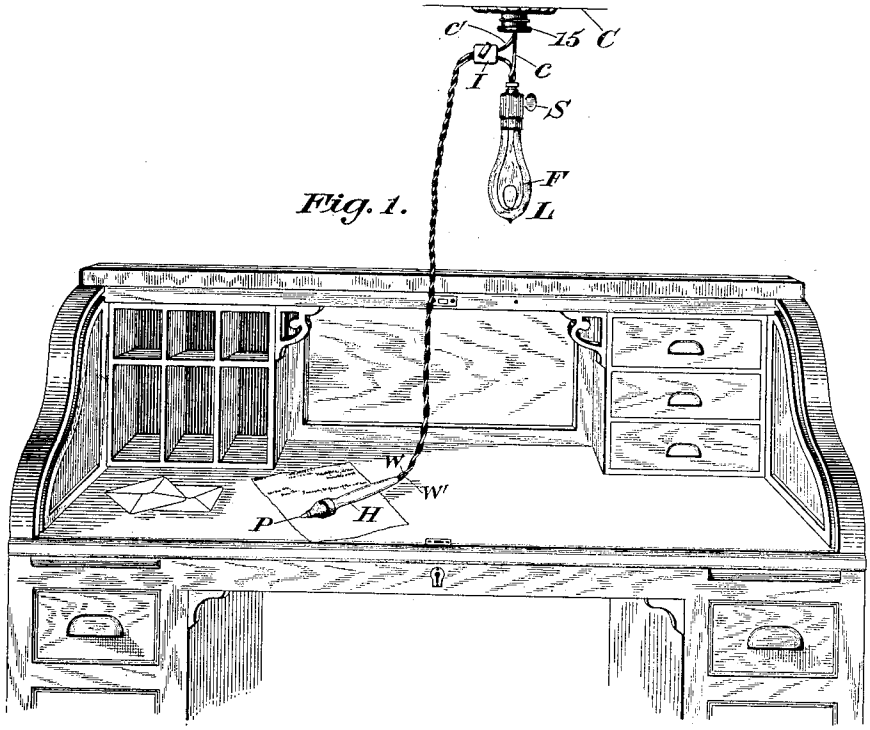


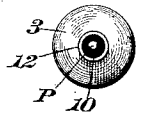
Fig. 2.



Fig. 3.



Fig. 4.



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UNITED STATES PATENT OFFICE.

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ELECTRIC SEARING-PEN.

SPECIFICATION forming part of Letters Patent No. 597,373, dated January 11, 1898.

Application filed April 16, 1897. Serial No. 632,431. (No model.)

To all whom it may concern:

Be it known that I, HENRY GREEN, a citizen of the United States, residing in Hartford, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements in Electric Searing-Pens, of which the following is a specification.

This invention relates to writing implements, it being in the nature of an improvement upon the searing-pen covered by my contemporaneously-pending application, Serial No. 629,328, filed March 26, 1897, the main object being to provide a simple and durable device of this kind which can be readily connected with an incandescent light, storage battery, or similar circuit to furnish the necessary current for heating the pen or marker to a sufficient temperature to burn or sear characters in paper or analogous material, so that such characters cannot be erased or obliterated.

My improved writing implement comprises a handle or stock, a resistance medium, a searing pen or marker in contact with or embedded in the resistance medium, and electric conductors connected, respectively, with said resistance medium and pen, whereby the resistance medium can be brought to a temperature sufficient to heat by radiation the pen or marker, and these several parts may be of any suitable kind or construction.

In the drawings accompanying and forming part of this specification and illustrating the preferred form of my device, Figure 1 is a perspective view thereof, showing the manner of using the same and its connection with an incandescent-light circuit. Fig. 2 is a side elevation. Fig. 3 is a longitudinal central section, and Fig. 4 is an end view of said device.

Similar characters designate like parts in all the figures of the drawings.

The handle of my improved device may be of any convenient shape which can be easily held and will preferably be made entirely of non-conducting material—such, for instance, as slate, hard rubber, or any of the well-known non-conducting materials or compositions.

The handle is designated by H, and it consists in the present case of a tube, the bore of which is indicated by 2 and through which the electric conductors that supply the current to the pen or marker can pass, the current, however, first traversing a resistance medium of some highly refractory substance—such, for example, as comminuted carbon—with which the searing pen or marker is in contact.

The resistance medium of the implement preferably consists of carbon or its equivalent, which may be in any form suitable for the purpose, it being represented in a comminuted or pulverized condition. Said carbon resistance is designated by R, and it is disposed or packed in a suitable shell or cap, such as 3, of suitable material, said shell or cap having along its inner end the annular flange 4, which bears against the disk 5 of insulating material. The inside face of the insulating packing or disk 5, which is disposed between the cap 3 and handle H, preferably fits tightly against the flat face of the shoulder 6 on the end of the handle H, and it may be made of any suitable non-conducting material—such as asbestos, mica, or slate, the first-mentioned composition being preferable, as it prevents the heat generated or given out by the carbon resistance R from affecting the handle H.

The searing pen or marker may be of any suitable construction or form, it being represented herein as an elongated pin, preferably of iron, rounded or tapered, as at 7, at its working end to form a writing-point and being cylindrical in shape.

The pen or marker P passes entirely through the carbon resistance R, so that it can be quickly heated by radiation therefrom, and at its inner end projects through an aperture 8 in the packing or insulating disk 5 and also through a hub or projection 9, formed on the inside face of the disk and which is frictionally held within the bore 2 of the handle H. The opposite end of the pen extends through the insulated plug 10, which is held in the reduced end 12 of the cap or shell 3. The pen P is frictionally held in the disk and plug, respectively, so that it can be easily removed for any purpose, such as for the substitution of a pen or marker of different shape than that shown.

While the disk 5, the pen P, and the plug 10 have been described as respectively fric-

tionally held in place, whereby the cap or shell R can be retained in proper position against the disk or packing 5, it is evident that some other means could readily be substituted for this purpose without departing from the spirit of the invention.

The carbon resistance R and the pen or marker P are connected with a suitable source of electric generation—such, for example, as an ordinary incandescent-light circuit, as shown, or to a secondary battery—so that when the current enters the carbon it promptly heats the same, the pen or marker being heated by radiation from or contact with the carbon, and to such a temperature that it can ineffaceably or indelibly mark or imprint a suitable character or symbol on paper or similar material.

My improved writing implement is particularly adapted for commercial and bank use in drawing checks or drafts and other negotiable instruments or for filling in numbers therein which cannot be raised or altered.

The conductors in the present case for conveying the current to the carbon and to the pen for heating these parts consist of the wires W and W′, which are insulated for the greater part of their length to protect the hand of the user and which pass through the bore 2, and the wire W is inserted in an aperture 13 in the butt of the pen P, the other wire passing through an aperture, as 14, in the insulated disk 5 and being in contact with the annular flange 4 on the carbon-retaining shell or cap 3.

For the purpose of modifying or weakening the current to such an extent as to preclude the pen or marker P from unduly scorching the paper I interpose in the circuit a resistance of some suitable kind, such as the filament F of the ordinary incandescent lamp L, said filament so tempering the current before it reaches the carbon resistance R as to accomplish the object sought.

The incandescent lamp L is suspended from the usual plug 15, attached to the ceiling C, the wires leading from the plug to the lamp being designated by *c* and *c′*, the two wires W and W′ respectively forming a branch of the leading-in wire *c* and being intersected or bridged by a suitable circuit-controller or switch, as I, which may be of ordinary construction and which is located in the electric circuit between the lamp and the pen. The lamp L is furnished with the usual switch S.

To use the writing device, the switch S will be manipulated to turn the current into the lamp L, and the circuit-controller switch I will then be operated to cause the current to flow into the conductors or wires W and W′ and from thence to the resistance R and pen P, thereby establishing the circuit to heat the pen. The holder H will be held in the manner usual with ordinary handwriting appliances, and the finger of the user can be applied to the shoulder 6 to obtain a better purchase on the handle, whereby when the pen is placed in contact with paper or analogous material, such as P, the paper can be indelibly marked with suitable characters by searing the same.

Having described my invention, I claim—

1. A writing implement comprehending a handle; a cap; a resistance medium incased by the cap; and a searing-pen embedded in the resistance medium and passing through one end of the cap, said searing-pen being insulated from the cap.

2. A writing implement comprehending a handle; a cap; a resistance medium incased by the cap and consisting of comminuted or powdered carbon; and a searing-pen embedded in the resistance medium and passing through one end of the cap, said pen being insulated from said cap.

3. A writing implement comprehending a handle; a cap; a resistance medium incased in the cap and insulated from the handle; and a searing-pen insulated, respectively, from the handle and cap.

4. A writing implement comprising a handle; a cap; a resistance medium in said cap; packing of insulating material between the cap and handle; a plug of insulating material in said cap; a searing-pen passing through apertures in said plug and packing; and electric conductors connected, respectively, with the pen and cap.

5. A writing implement comprising a handle; a cap; a resistance medium in said cap; packing of insulating material between the cap and handle; a plug of insulating material in said cap; a searing-pen passing through apertures in the plug and packing and frictionally held therein; and electric conductors connected, respectively, with the pen and cap.

6. A writing implement comprising a handle; a cap; a resistance medium in said cap; a disk between the cap and handle, having a teat seated in a bore in said handle; a plug of insulating material in said cap; a searing-pen passing through said plug and disk; and electric conductors connected, respectively, with the pen and cap.

7. A writing implement comprising a handle; a cap having a flange; comminuted carbon disposed in said cap; a disk located between the flange and the handle, said disk of insulating material having a teat extending into a bore in said handle; a plug of insulating material seated in the cap; a searing-pen having a tapered or sharpened writing end, said pen being passed through apertures in the plug and disk; and electric conductors connected, respectively, with the pen and cap.

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