Feb. 6, 1945. I. T. JANSEN 2,368,839

LIGHT PENCIL

Filed May 18, 1942

FIG. 1.

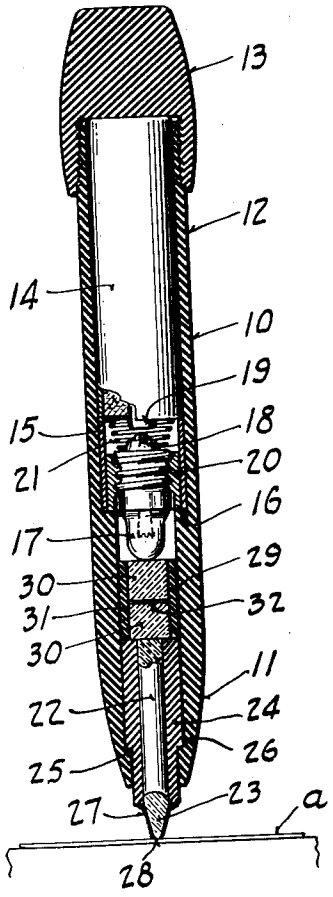


FIG. 2.

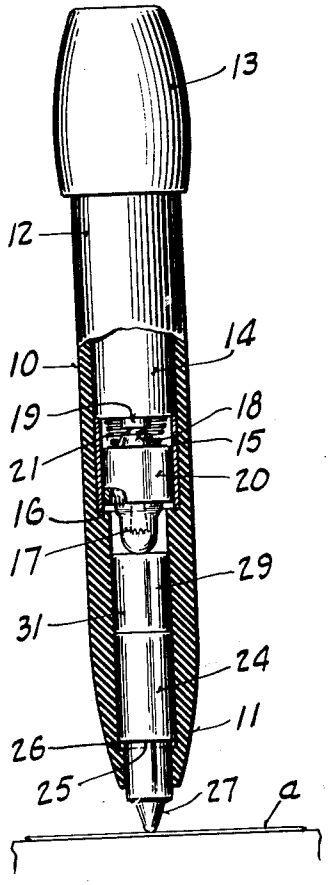
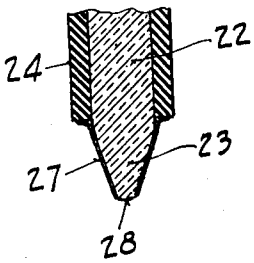


FIG. 3.



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LIGHT PENCIL

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1 Claim. (Cl. 95—1.1)

This invention relates to light pencils for use in marking sensitized surfaces of photographic films and plates and the like.

In pencils of this type, the markings are ordinarily effected by the reaction upon the sensitized surface of a light beam emitted through a duct in the pointed end of the pencil. As heretofore designed, such pencils have not proven entirely satisfactory. Due to an inherent inability to effect proper control of the light beam, the resultant markings are ordinarily objectionably coarse and heavy, and the light projecting duct is subject to frequent clogging.

One object of the present invention is to provide a light pencil so designed as to avoid the objections above noted.

Another object is to provide an improved light pencil that may be readily accommodated for use with sensitized films and the like of widely varying sensitivity.

Another object is to provide an improved light pencil of simple and inexpensive design easily controlled by a delicate pressure thereof against the sensitized surface.

Other more specific objects and advantages will appear, expressed or implied, from the following description of an illustrative embodiment of the present invention.

In the accompanying drawing:

Figure 1 is a longitudinal sectional view of a light pencil constructed in accordance with the present invention.

Fig. 2 is a side view, partly in section and partly in elevation, showing the relative positions of parts thereof during a marking operation.

Fig. 3 is an enlarged sectional view of the pencil point.

The light pencil selected for illustration comprises an elongated barrel 10 of appropriate material preferably opaque and non-conducting. The lower active end 11 of the barrel is preferably tapered, as indicated, the opposite end 12 being screw threaded or otherwise fashioned to receive an appropriate closure cap 13 removably attached thereto.

The barrel 10 provides a container for a conventional dry battery 14 confined between the cap 13 and a spacer sleeve 15, the latter being seated at one end against an internal shoulder 16 formed in the barrel. The sleeve 15 is preferably of copper or other good electrical conducting material and abuts the lower end of the side wall of the battery through which an electrical connection is of course maintained between the sleeve and the upper pole of the battery.

A conventional light bulb 17 is arranged below the battery 14 with its contact 18 normally spaced from the lower pole 19 of the battery. In this instance the bulb 17 is seated in a socket 20 in the form of a sleeve closely fitted for sliding movement within the spacer sleeve 15 and in electrical contact therewith. Appropriate means, such as a light weight compression spring 21, between the battery 15 and base of the bulb 17, yieldably retains the bulb 17 in the lower position shown in Fig. 1.

A narrow rod 22 of light conducting material, such as lucite or glass, projects beyond the lower end 11 of the barrel and is preferably tapered to provide a pencil point 23. In this instance, the rod 22 is fixed within a carrier sleeve 24 which is slidably fitted within the lower end 11 of the barrel. The lower end of the sleeve 24 is reduced to form a shoulder 25 which coacts with a mating internal shoulder 26 formed in the end 11 of the barrel to limit the outward movement of the sleeve 24 and rod 22. The sleeve 24 is preferably of metal or other appropriate opaque material and the exposed tapered end 23 of the rod is preferably covered with an appropriate opaque coating 27, so as to leave only a minute window 28 at the tip of the pencil point through which a narrow light beam may escape.

The rod 22 receives light from the bulb 17 preferably through an appropriate light controlling element 29 interposed therebetween which, in this instance, comprises two sections 30 of light conducting material, such as lucite or glass, fixed in a cylindrical cartridge 31 slidably fitted within the barrel 10. This element 29 controls the amount and character of light that passes to the pencil point 23, and it may be readily removed and replaced by another similar element designed to admit more or less light to and through the pencil point 23, so as to adapt the pencil for use with sensitized surfaces of various sensitivities. In this instance the amount of and character of the light passing through the element 29 is controlled by an appropriate light filter 32 interposed between the sections 30.

The light bulb 17 normally rests against the upper end of the light control element 29, so that when the pencil point 23 is pressed against the sensitized surface *a*, in the act of writing, the rod 22 and element 29 are forced upwardly into the barrel 10, thereby forcing the bulb 17 upwardly until its contact 18 engages the battery pole 19, as indicated in Fig. 2, in which position the bulb

is energized from the battery through the contacts just mentioned and through the socket 20 and spacer sleeve 16. Light then passes to and through the element 29, rod 22, and small window 28 onto the sensitized surface *a*. As soon as the pressure on the point 23 is relieved, however, the spring 21 acts to force the bulb downwardly, thereby separating its contact 18 from the battery pole 19 so as to break the circuit and de-energize the bulb, the element 29 and rod 22 reassuming the positions shown in Fig. 1.

It has been found that by automatically controlling the light bulb in the manner just described and by proper control of the transmitted light through the use of a control element 29 properly selected for use with the particular sensitized surface *a*, well formed, sharply defined markings may be readily produced on the sensitized surface by the pencil above described.

Various changes may be made in the embodiment of the invention hereinabove specifically described without departing from or sacrificing the advantages of the invention as defined in the appended claim.

I claim:

In a light pencil, the combination of an elongated hollow barrel, a light conductor projecting from one end of said barrel and having its exposed end fashioned to form a narrow light transmitting pencil point, said barrel having an internal shoulder coacting with said light conductor to limit the outward projection thereof, an electric battery within the other end of said barrel, said barrel having a second internal shoulder therein, a spacer sleeve positioned by said second shoulder and coacting with said battery to position the latter, a light bulb, a socketed carrier for said bulb slidably engaged with and within said sleeve and electrically connected to one pole of said battery through said sleeve, a spring interposed between said battery and bulb to yieldably retain the latter spaced from the other pole of said battery, said light conductor and bulb being movable lengthwise of said barrel to effect electrical contact of said bulb with the last named pole of said battery.

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