A. LAWRES.

TRENCH FOUNTAIN PEN.

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Fig. 1.

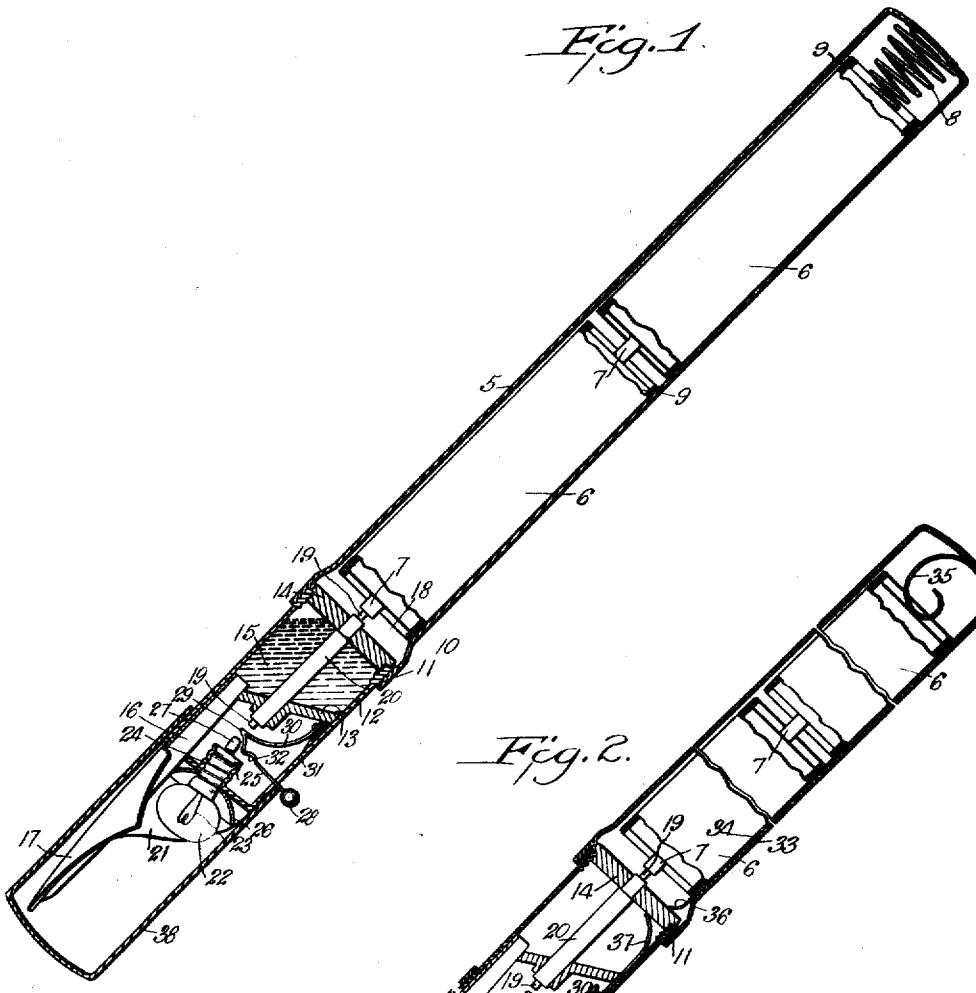


Fig. 2.

WITNESSES

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TRENCH FOUNTAIN-PEN.

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To all whom it may concern:

Be it known that I, ABRAHAM LAWRES, a citizen of the United States, and a resident of the city of New York, borough of Brooklyn, in the county of Kings and State of New York, have invented a new and Improved Trench Fountain-Pen, of which the following is a full, clear, and exact description.

Among the principal objects which the present invention has in view are: to illuminate a limited area of the surface on which the pen is writing and at the under side of the nibs thereof; to concentrate the light emitted from the illuminating member so as to avoid its being seen from above; and to simplify and cheapen the construction of the pen.

Drawings.

Figure 1 is a longitudinal section of a pen constructed and arranged in accordance with the present invention;

Fig. 2 is a modified form of the pen.

Description.

By reference to the drawings, it will be noted that a pen when made in accordance with the present invention has two separable major sections, which in service are united preferably by means of a screw-thread joint. One of the said sections has a magazine 5, which in service is charged with electric cells 6, each of which cells has a carbon element 7 extending beyond the end of the cell for contact with the zinc casing or bucket which forms the exterior walls of said cells. At the bottom of the magazine 5, a feeding spring 8 is introduced. The cells 6 are so arranged in the magazine that the zinc casing of the cell adjacent the spring 8, makes electrical contact with the said spring. When, as shown in the drawings, only two cells are used for forming the battery, the second cell is introduced into the magazine so that the bottom of the bucket or casing of the said cell rests on the carbon pencil 7 of the cell first introduced. The magazine 5 is constructed of metal and forms electrical contact through the spring 8 with the zinc bucket or casing of the initially placed cell. An insulating wrapper 9 is wrapped around each of the cells to prevent electrical contact between the sides thereof and the wall of the magazine.

The end of the magazine has a screw-threaded section 10, the threads formed on which register with threads formed on the collar 11 of the pen section 12. The pen section 12 is provided with a partition 13, which, together with a screw cap 14, forms an ink reservoir into which the receiving end of the pen and the duck bill 16 project for feeding the ink to the nibs 17 of the said pen.

When it is desired to refill the reservoir 15, the screw cap 14 is removed, a spanner wrench to engage the spanner holes 18 being provided therefor. The threads on the cap 14 and the threads on the pen section 12 engaging the same are formed close enough to prevent the leakage of ink through the said threads. It is evident that if such should prove to be insufficient, any suitable form of packing may be employed to cure the joint of this defect.

Permanently mounted in the partition 13 and extending through the cap 14, is a jumper 19. The jumper 19 is a wire designed to make electrical contact with the end or terminal carbon pencil 7 of the battery formed by the cells 6—6. The jumper is insulated from the cap 14, partition 13, and the ink within the reservoir 15, by a coating 20.

Suitable and efficient precaution is taken to prevent leakage of the joints formed by the coating 20, with the partition 13 and the cap 14. The arrangement is such that when the magazine section 5 is screwed into service relation with the pen section 12, the outer end of the chamber 19 engages the outer pencil 7, and forces the two cells or battery constituted thereby against the spring 8 to partially compress the same. Thereafter the spring 8 serves to maintain electrical contact between the cells forming the battery, the walls of the magazine 5, the walls of the pen section 12, and the jumper 19.

The wall of the pen section 12 adjacent the pen is extended to form a cowl. The side walls of the cowl 21 completely envelop the electric glow lamp 22, and the illuminating filament 23 thereof. The shank 24 of the lamp is screw-threaded to engage the threads of a lamp socket 25 with which the pen section 12 is provided. Metallic contact is maintained between the socket 25 and the structural walls of the pen section 12. A reflector 26 assists in concentrating the rays of the lamp 22 to form an illuminated area directly adjacent and below the nibs 17 of the pen.

A switch for electrically connecting the

exposed edge of the jumper 19 and the adjacent filament terminal 27 of the lamp 22, is operated by pressure applied to an exposed button 28. The button 28 is structurally attached at one end to a metallic spring, which is bent to form a wedge 29 adapted to be pressed between and to form a contact with said jumper and filament terminal. The body 30 of the spring is secured to an insulating block 31 on the pen section 12, and operates normally to hold the wedge 29, as shown in the drawings, out of contact with the said jumper and filament terminal. The normal tendency of the body 30 is overcome by pressure manually applied to the button 28. This pressure is continued until the widest portion of the wedge is forced between the jumper and the terminal 27, and until the latter rests in the niche 32, which thereafter resists the action of the body 30 until the button 28 is manually engaged by the pen user and the switch 29 is withdrawn from contact.

From the foregoing it will be seen that whenever the user of a pen constructed and arranged as described, desires to employ the same, by pressing his thumb of the hand holding the pen on the button 28, the wedge 29 may be forced into holding position between the jumper 19 and terminal 27. Thereafter the current delivered by the battery 6, will flow through the jumper 19, terminal 27, filament 23, socket 25, wall of the pen section 12 and magazine 5, to the spring 8, and thence to the zinc element of the battery, thus establishing complete circuit. It is obvious that during the operation of writing, the cowl 21 serves to prevent the escape of any upward rays, such as might be observed by an enemy overhead. Also it will be observed that the light though concentrated to a relatively small area, is in the desired space below the nibs of the pen and thereby serves the best advantage to the user thereof.

In the modified form of the invention shown in Fig. 2, the magazine 33 is constructed of hard rubber and the electric circuit by which the current is conveyed has incorporated therein a metal strip 34, one end of the strip being coiled to form a spring section 35, which operates to press the cells 6 together and to form a cushion for the battery formed by said cells. The forward end 36 of the strip 34 engages the screw cap 14, which is in turn engaged by a second strip 37. The strip 37 forms a continuation of the spring body 30 shown in the form disclosed in Fig. 1 of the drawings. The pen section and the nibs 17 mounted thereon are covered when not in service by a cap 38.

While I have shown the switch connecting the lamp and battery as having a wedge-shaped member 29 and a button 28, by means of which the same is pressed into engagement with the terminal 27 of the lamp and the jumper 19, I do not wish to be thought as limited to such construction as any of the well-known sliding contacts may be employed either to lift the wedge 29 between said jumper and terminal or to bridge the gap therebetween.

Claims.

1. An apparatus as characterized comprising a pen section embodying an ink reservoir, pen, and ink-feeding attachment therefor; a magazine handle adapted to contain a series of electric cells to form a battery; an electric lamp socket disposed in said pen section below said pen; an electric jumper extending through the center of said reservoir for forming electric contact with the center terminal of said battery when said magazine is attached in service to said pen section; and a lamp mounted in said socket in juxtaposed relation to said jumper.

2. An apparatus as characterized comprising a pen section embodying an ink reservoir, pen, and ink-feeding attachment therefor; a magazine handle adapted to contain a series of electric cells to form a battery; an electric lamp socket disposed in said pen section below said pen; an electric jumper extending through the center of said reservoir for forming electric contact with the central terminal of said battery when said magazine is attached in service to said pen section; a lamp mounted in said socket in juxtaposed relation to said jumper; and a manually operated switch member mounted in said pen section adjacent said lamp and extending beyond the wall of said pen section.

3. An apparatus as characterized comprising a pen section embodying an ink reservoir, pen, and ink-feeding attachment therefor; a magazine handle adapted to contain a series of electric cells to form a battery; an electric lamp socket disposed in said pen section below said pen; an electric jumper extending through said reservoir for forming electric contact with one terminal of said battery when said magazine is attached in service to said pen section; a lamp mounted in said socket in juxtaposed relation to said jumper; and a manually operated switch member mounted in said pen section adjacent said lamp and extending beyond the wall of said pen section, said switch having a wedge-shaped resilient section for engaging in holding relation the terminals of said lamp and of said jumper.

ABRAHAM LAWRES.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."