

PATENT SPECIFICATION



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331,119

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COMPLETE SPECIFICATION.

Improvements relating to Electric Lighters.

I, WERNER ISCH, 36, Rue du Faubourg de Pierres, Strasbourg, Department Bas-Rhin, France, of Swiss Nationality, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

This invention relates to an electric lighter of the kind in which a metal ended rod carrying an ignitable wick is rubbed against a conductive friction plate located inside a casing and connected with an electric circuit, the rod being introduced through a slot in the casing of the lighter and the rapid movement of the rod in contact with the friction plate produces a succession of current interruptions resulting in numerous electric sparks by which the wick referred to is lighted.

The object of my invention is to provide a simple and effective construction of lighter. According to the invention the conductive rubbing plate is provided with a series of resilient friction teeth (for co-acting with the metal end of the rod) and said conductive plate is resiliently mounted on a non-conductive block located within the casing.

In order that the invention may be clearly understood and readily carried into practice reference is now made to the accompanying drawings, from which further features of construction will be apparent.

Figures 1—2 show a front view, the front-wall of the casing being removed, and a vertical section of the first example.

Figures 3—4 show a front view and a cross section of a second example.

Figures 5—6 are similar views of the third example.

Figures 7—8 are cross sections of some other examples.

Figures 9—10 show details of the ignition rod.

The lighter as shown in Figures 1 and 2 consists of a casing 1 whose back extends beyond its upper and lower wall in order to form two fixing means 2. In the casing, a prismatical insulating

[Price 1/-]

block 3 is disposed, in which holes 4 are bored for locating two spiral springs 5. The spring ends rising above the block 3 are fastened to a brass plate 6 provided on its opposite side with some rows of flat steel teeth 7 having bent heads 7¹. The latter form the rubbing surface proper and they appear behind an elongated slot 8 cut into the front wall of the casing. As these teeth as well as their supporting plate resting on the springs 5 are resilient wear of the rubbing surface is quite avoided.

In the casing is arranged also a receptacle 9 filled with porous materials 10 soaked with an ignitable liquid. In this receptacle an ignition rod 11 is located as is usual, said shaft being hollow and made, as also its handle, of insulating material.

The hollow rod embraces a metallic bush 11¹ raising but little above the end of the shaft and containing a wick 13 grasped by a clamp 12.

The back-wall of the casing is provided with contact terminals 14, 14¹, one of which is insulated from and the other connected to the body of the casing, the first being connected to the brass plate 6.

When the ignition rod is to be lighted, its metallic end is inserted into the elongated slot 8 of desired breadth, so that the metallic bush 11¹, when moved along the slot, is rubbing simultaneously against the bent teeth 7¹ and the bordered side-walls of the slot, thus closing the electric circuit and producing a set of sparks which cause the wick 13 to be lighted.

The construction thus described is operated from a low voltage. When adapted to be connected either to a low voltage circuit or to ordinary lighting mains, the lighter is combined with a resistance coil 17 as shown in Figures 3 to 6, disposed abreast the insulating block 3 and the ends of which are connected to two terminals one of which is shown at 23. Both of these terminals may be alternately connected to the contact terminal 14 secured to the flank of the block 3, in which the electric current enters and for this purpose, said terminal

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may be alternately inserted in the screw borings. In this manner, the current passes, either directly to a vertical connecting tongue 24 attached to the terminal 23 of the resistance coil and from there to the plate, when the contact terminal 14 is connected to said terminal or through the resistance coil 17 and only then to the connecting tongue 24 when the contact terminal 14 is connected to the other of the terminals 23.

The connecting tongue 24 leads to a brass plate 25 secured to the back of the front wall of the casing 1 and electrically insulated from it by means of an insulating strip, as shown in Figure 4. It is also possible to connect the terminal 23 of the resistance coil 17 to the resilient teeth and supporting plate 6 and to provide above the rubbing surface of the lighter a member 26 insulated from the casing but electrically connected to the contact terminal 14 which carries off the electric current. In this case, the electric current passes directly to plate, by the terminal 14, and through the coil 17.

In Figure 7 two metallic combs 15 electrically insulated from each other are fastened to a resilient supporting block 6 of insulating material which presses them against an insulating layer 18 on the casing cover. The bases of said combs are bent over the base of the block 6 so as by pressing the block, when the ignition rod is rubbed against the combs 15, said bases come into contact with two metallic plates 16 connected with an electric circuit. The rubbing system thus arranged may be combined with an electric resistance coil as before described.

In Figure 8 the metallic combs 15 form double armed levers, which on their upper ends are hooked and jagged while their lower ends are straight and can come into contact with metallic plates 16 secured to the flanks of the block 3.

The ignition rod shown in Figure 10 has on its end a resilient tongue 22 projecting into a recess of the rod. The purpose of this tongue which substitutes the bush 11¹ is the production of sparks by sliding it along the resilient rubbing surface. The wick of the ignition rod is grasped by springs, which may have one of the forms shown at *a*, *b*, or *c*, in Figure 9.

Having now particularly described and

ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is:—

1. An electric lighter of the kind described wherein the conductive rubbing plate is provided with a series of resilient friction teeth for co-acting with the known metal ended rod carrying the wick, said conductive plate being resiliently mounted on a non-conductive block located within the casing.

2. An electric lighter in accordance with claim 1 wherein the plate carrying the teeth rests on coiled springs which are located on the insulating block.

3. An electric lighter in accordance with claim 1, operated from low voltage current the casing serving as a connecting pole.

4. An electric lighter in accordance with claim 1, and having a high or low tension resistance coil combined therewith to suit the voltage of the circuit with which the lighter is connected.

5. An electric lighter in accordance with Claim 4, wherein a conducting wire leads from one end of the coil to the conductive plate and a metallic body surrounding said plate is connected to the other contact terminal insulated from the lighter housing.

6. An electric lighter in accordance with claim 1, wherein a set of steel teeth are arranged in two parallel rows above or beneath and transversely to the slot in the casing.

7. An electric lighter in accordance with claim 1, wherein the rubbing teeth are bent over the base of said plate, and electric contacts are arranged beneath said bent teeth portions.

8. An electric lighter in accordance with claim 1, wherein an ignition rod of insulating material has a metallic bush located in said rod and whose end is raised above the rod end and the wick is located in the metallic bush and held by spring clamps.

9. An electric lighter substantially as hereinbefore described with reference to the annexed drawings.

Dated this 22nd day of July, 1929.

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FIG. 1

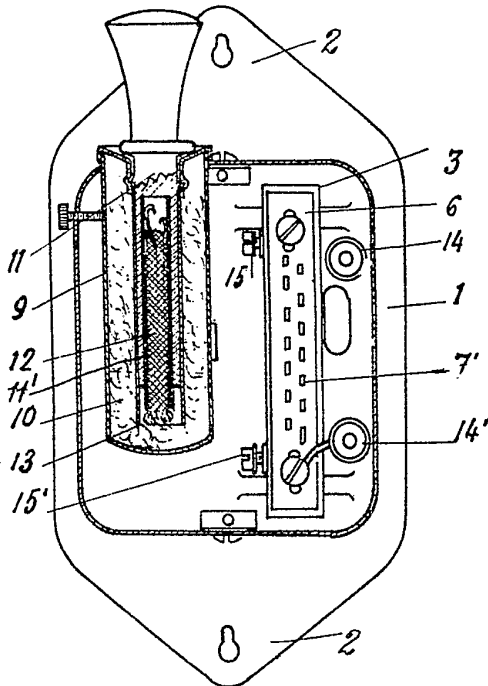
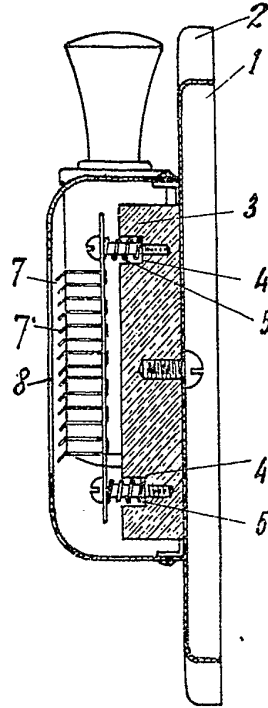


FIG. 2.



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9.

15.

FIG 3.

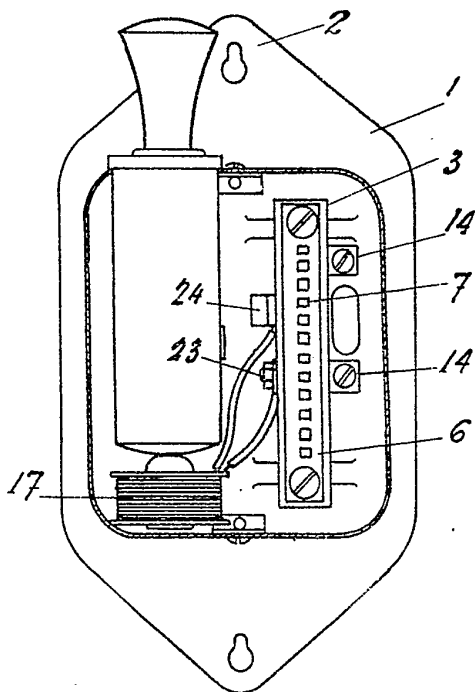
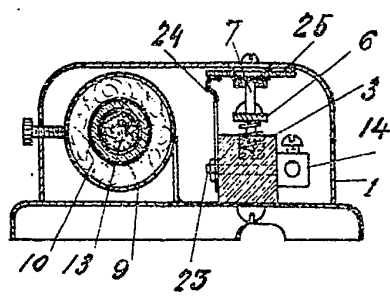


FIG. 4



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1
3
4
5
4
5

FIG. 5

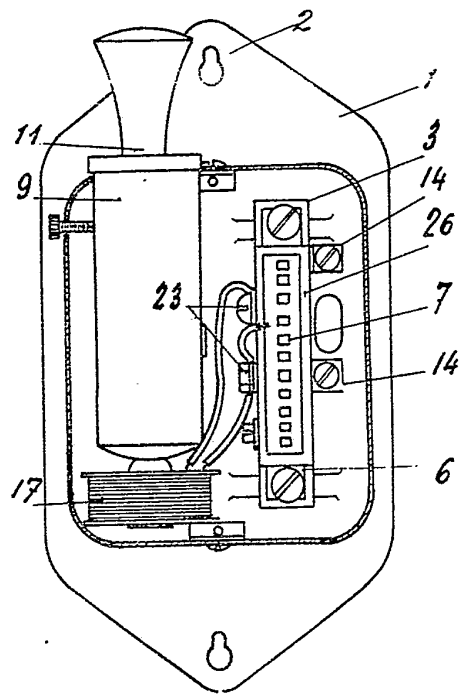


FIG. 6

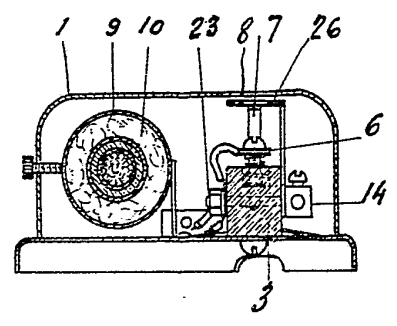


FIG. 7-18

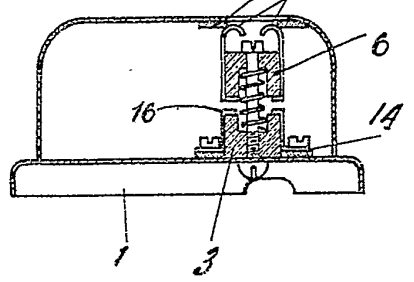


FIG. 8

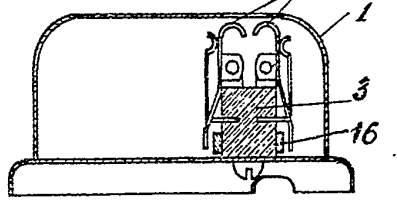
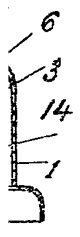
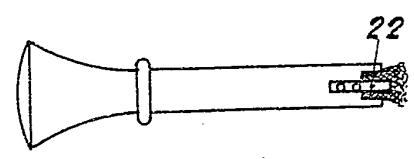


FIG. 10



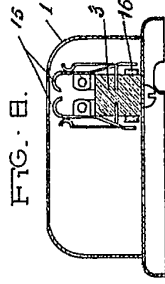
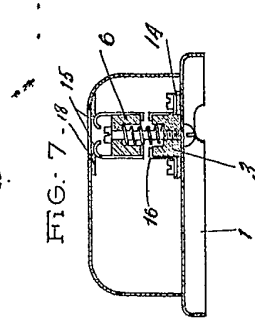
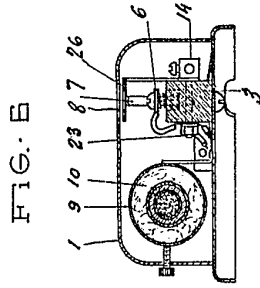
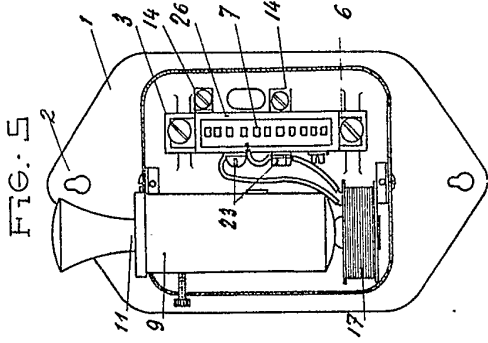
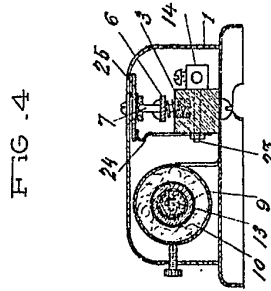
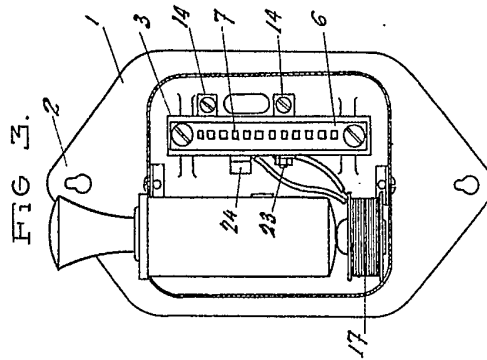
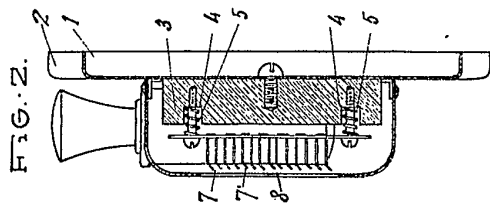
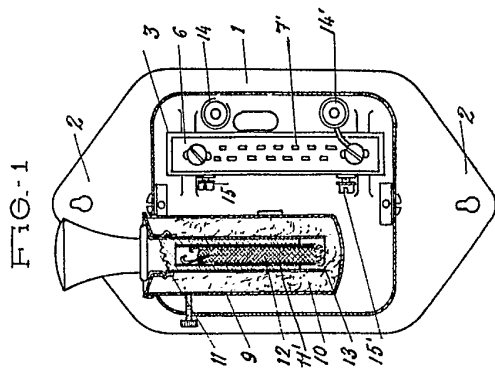
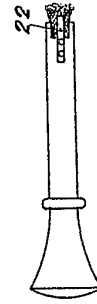


FIG. 10.



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[This Drawing is a full-size reproduction of the Original.]

FIG. 9.

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