

(No Model.)

C. L. IVES.

ELECTRICAL LIGHTING DEVICE FOR GAS ENGINES.

No. 534,886.

Patented Feb. 26, 1895.

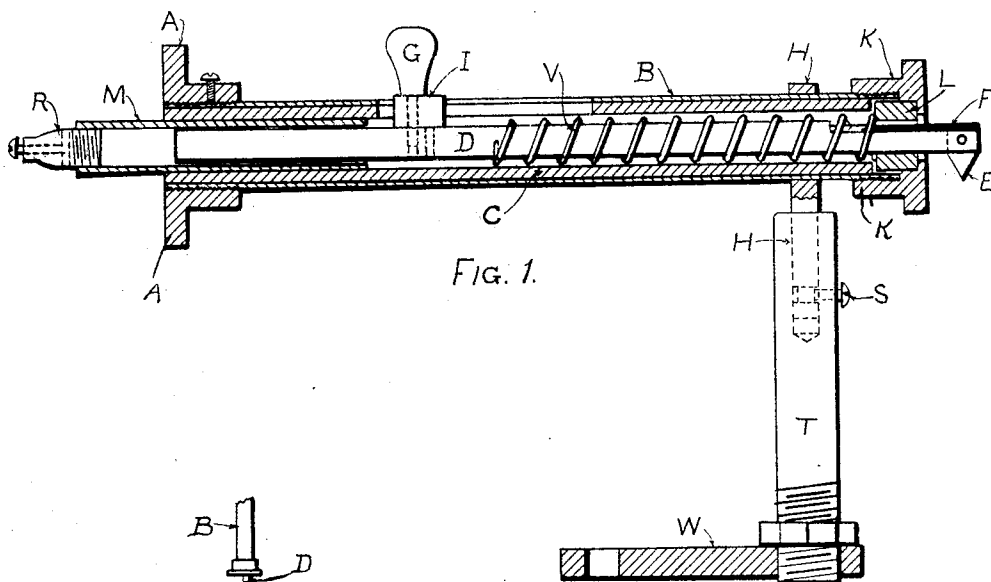


FIG. 1.

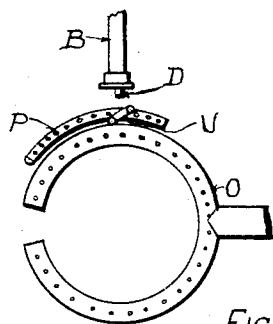


FIG. 3.

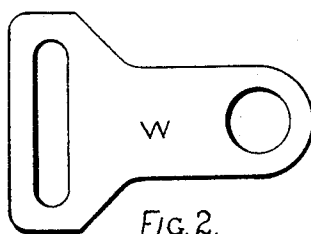


FIG. 2.

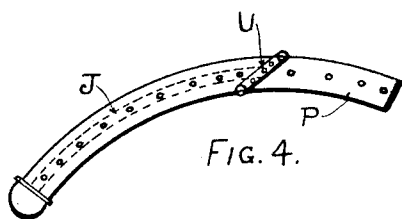


FIG. 4.

WITNESSES

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ELECTRICAL LIGHTING DEVICE FOR GAS-ENGINES.

SPECIFICATION forming part of Letters Patent No. 534,886, dated February 26, 1895.

Application filed March 30, 1894. Serial No. 505,772. (No model.)

To all whom it may concern:

Be it known that I, CALVIN L. IVES, a citizen of the United States, residing at the city of Grand Rapids, in the county of Kent and State of Michigan, have invented a certain new and useful Electrical Lighting Device for Gas-Engines, of which the following is a specification.

The nature of my invention relates to a new and improved device for lighting gas, and other substances, which can be lighted by means of an electrical spark, and it is designed for use in connection with naphtha launches, and other places where it is desirable to dispense with matches and other lighters in igniting gas, gasoline, or similar material, and is especially useful where the gas, gasoline, &c., is to be lighted at a point within a shell or casing; and the object of my invention is to furnish a convenient, cheap and efficient lighting device for igniting by an electrical spark, gas, gasoline, &c., in naphtha launches and any other places to which the same device is applicable. This object I accomplish by means of the mechanism illustrated in the accompanying drawings, in which—

Figure 1 shows a longitudinal sectional view of a cylinder and longitudinally moving rod or needle and mechanism connected therewith for extending and retracting the rod or needle in order to make the proper contact for producing the electric spark used in lighting the gas. It also shows my preferred form of support, and the general arrangement of the parts. Fig. 2 shows a plan view of a plate used in attaching the standard to the framework of a boat or other place to which my lighting device is to be attached. Fig. 3 shows a plan view of a burner such as is used in naphtha launches, and other places. Fig. 4 shows also a plan view of the supplementary burner, such as is used in various places, together with a conducting tube for dividing and conveying a portion of the gas to the point where it will be more readily ignited by means of an electric spark.

Similar letters refer to similar parts throughout the several views.

In the drawings I have not illustrated the means for producing the electric current. This may be done with an ordinary battery,

by means of an ordinary spark coil connected in the manner hereinafter described.

B represents a cylindrical shell, preferably of metal, provided at one end with a cap A screwed thereon, and at the other end with the cap K screwed thereon. In order to hold the cap A suitably in position, there may be added a set-screw as shown in Fig. 1.

D shows the movable rod or needle which is inclosed within the shell B, and C shows an insulating packing surrounding the rod D, and also the cylindrical tube M. L shows a packing in the form of a washer, which also tends further to insulate the rod or needle. M shows a tubular connection, also insulated from the outer shell, but in electrical contact with the rod or spindle D. I represents a block of insulating material set in the slot which extends from the outer side of the shell B to the rod or needle D. G represents a push-button or knob, which is attached to the sliding block I, and is preferably fastened thereto by means of a screw extending through the block into the rod D. These holes for the screw in the rod D may extend entirely through said rod, so that the push-button G may be attached at the lower instead of at the upper side.

In cases where the lighting device is subject to the action of the weather, it is necessary to have the push-button and block on the under side and to have the slot through the case and packing also on the under side in order to exclude water from the shell. Otherwise the water would form an electric connection and the device would not operate.

In case the rod D is provided with screw holes entirely through it, the button can be applied either to the top or the bottom in cases where the shell has suitable slots.

I have shown two screw holes in the rod D. A larger number may be used, if desired, merely for the purpose of adjusting the button to the proper position on the rod.

The tubular part M is fitted preferably at one end with a plug shown by R.

V represents a coil spring, one end attached to the longitudinally moving rod D, and the other end abutting against the washer L.

E represents a pivoted tactile point, preferably set into the rod in the form shown, and

held in position by means of a spring F. This spring allows the point E to turn upon its pivot in either direction, and when resistance is released from the lower point of E the spring F will immediately bring the same into position shown in Fig. 1.

H is a support, the upper part of which is preferably in the form of a collar surrounding the cylinder B, provided with a shank extending downward into the standard T. This shank is held in adjusted position by the set-screw S. This construction allows the movement of the cylinder B longitudinally, and also allows for a turning of the same in any direction, the shank turning within the standard T.

The standard T is preferably supported by means of a base W, in which it is adjustable vertically or laterally, the standard passing through the slot which is shown in Fig. 2.

I have shown the ordinary burner by O in Fig. 3, with a supplementary burner P, and also the wires which come in contact with the point E, as the rod D is extended. These wires are shown in Figs. 3 and 4 by U.

In order to conduct a portion of the gas directly to the point where the spark will reach the wires, I provide a small tube which receives a portion of the gas which enters the supplementary burner and opens at a point directly beneath or in close proximity to the wires U. Thus it will be as shown in Fig. 4 by J. Using my device, the plug R or the tube M through the plug R, is connected by a wire to a battery or through suitable means for producing the electric current. The opposite pole of the battery is connected in any suitable manner to the engine or metal part which supports the burner.

The operation of my invention is as follows: The cylindrical part is adjusted in proper position with reference to the furnace or boiler of a naphtha launch, the whole being adjusted so that when the needle or rod D is extended the tactile point E will pass within the case or shell and come in contact with the wires U, making a closed circuit and causing sparks to pass from E to the wires through a current of gas or gasoline, thereby igniting it. As soon as the pressure is removed from the push-button G, the spring V will immediately retract the extended portion of the rod D, removing the same entirely from the action of the gas and heat which has been lighted, breaking the connection at the time of withdrawal.

I have shown the form of the cylinder as round, and the parts as round in cross section, and have shown a coil spring.

It will be evident that the form of the supports and the parts is not material, the object being merely to insulate the sliding needle or rod, adjust the same so that it will be directed to the proper point, and to provide the same with a spring so that it will be automatically withdrawn beyond the effect of the heat of the lighted gas or gasoline.

It will also be obvious that the same may

be supported on any suitable frame or position, where it may be required for use, and that the same can be applied to advantage in lighting gas or gasoline, or similar material, and especially where the lighting point is inclosed within a case or shell.

Having thus described my invention, what I claim to have invented, and desire to secure by Letters Patent, is—

1. The combination with an electric generator, and a burner for gas, gasoline, or hydrocarbon vapor, of an insulated and longitudinally movable rod or needle adapted to be brought into electrical connection with the burner, a casing or shell supporting said needle and insulated therefrom, means for imparting a forward movement to the needle, and a retracting spring connected to the needle, substantially as described.

2. The combination with an electric generator, and a burner for gas or gasoline, of an insulated rod or needle adapted to have a longitudinal movement and carrying at one end a yielding tactile point to be brought in electrical contact with a point on the burner, a casing or shell supporting said needle and insulated therefrom, a push button connected with the needle and extended through a slot in the supporting casing or shell, and a retracting spring connected to the needle, substantially as described.

3. In combination with a battery, a case or gasoline burner, a longitudinal moving needle connected with the battery and case or shell supporting the needle, insulating packing between the shell and needle, a tactile point pivoted to the extended end of the needle, a spring for holding the point E in position, an adjustable standard supporting the needle and its case, suitable means for extending the needle in contact with a suitable point on the burner, and a spring for automatically retracting the needle from its extended position, substantially as described.

4. In combination with a battery and a gasoline or gas burner, an extending rod or needle and shell supporting the same, packing between the needle and shell, means for extending the needle from its shell or case, a spring for retracting the same, an adjustable support for said shell or case, and a standard in which such support is adjusted, substantially as described.

5. In combination with a battery, or other suitable means for producing an electric current and spark, a longitudinally moving rod or needle, a case supporting the same, packing between the case and needle, a gas or gasoline burner with which the tactile point of the needle is brought in electrical connection, a spring for withdrawing said needle, a support as H, vertically adjustable within a standard and also adapted to turn within the standard, a vertically and laterally adjusted standard as T, and a base as W, supporting said standard, substantially as described.

6. In combination with a shell as B, packing

as C, insulated washer as L, push-button as G, extensible rod as D, tubular connection as M, abutment or washer as L, all constructed substantially as and for the purpose described.

5 7. In combination with a burner as O, and a supplementary burner as P, the gas conducting tube as J, and wires or other equivalents as U, substantially as described.

10 8. In combination with a burner and wire connections as U, a tube as J, adapted to con-

vey a portion of the gas or gasoline to a point in close proximity to the wire, substantially as described.

In witness whereof I have hereunto set my hand and seal in the presence of two witnesses. 15

CALVIN L. IVES. [L. S.]

Witnesses:

LOUISE WRIGHT,
EDWARD TAGGART.