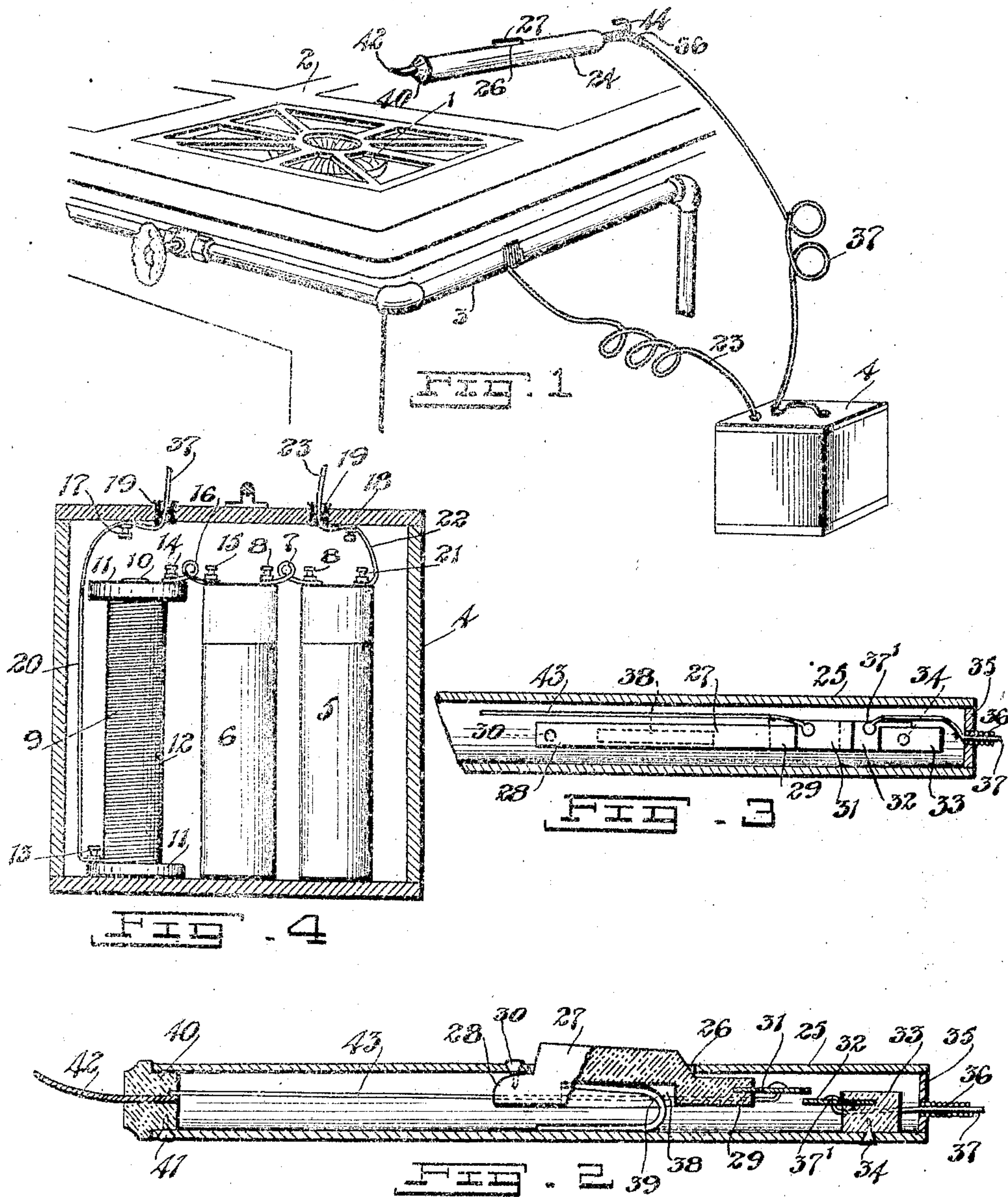


F. F. DIER.
GAS LIGHTING APPLIANCE.
APPLICATION FILED NOV. 20, 1908.

928,307.

Patented July 20, 1909.



WITNESSES

Gerald S. Rostburgh
Jas. M. Gabley

INVENTOR

F. F. Dier

By *Lakustmayer* *Att'y.*

UNITED STATES PATENT OFFICE.

FREDERICK FRANKLIN DIER, OF WINNIPEG, MANITOBA, CANADA.

GAS-LIGHTING APPLIANCE.

No. 928,307.

Specification of Letters Patent.

Patented July 20, 1909.

Application filed November 20, 1908. Serial No. 463,699.

To all whom it may concern:

Be it known that I, FREDERICK FRANKLIN DIER, of the city of Winnipeg, in the Province of Manitoba, Canada, have invented certain new and useful Improvements in Gas-Lighting Appliances, of which the following is the specification.

My invention relates to an electrical device, but it more particularly concerns improvements in an electrical igniting combination in which the various parts are devised so that they may be conveniently assembled and applied.

The object of the invention is to provide an economical, simple, electrically operated device by which gas can be ignited, the invention being particularly designed for use in connection with a gas burner as utilized in the ordinary cooking gas-stove.

A further object has been to so devise the appliance that there is no possibility of the operator receiving an electric shock when using.

In using gas or gasolene stoves it has heretofore been necessary to resort to matches as a means for igniting the burners of the same but this is both costly and inconvenient; the operation of igniting the burners carrying with it certain possibilities of injury, by burning, to the hand, which might well be avoided.

Accordingly this invention has in view the provision of a means whereby a gas burner can be ignited without the employment of any combustible device, the gas being ignited by an electric spark produced in the path of the escaping gas from the burner, through the employment of a contact making instrument, the application of the instrument to the metallic burner closing the circuit.

Other objects and advantages will become apparent when the invention has been further described.

The invention consists essentially in a contact making hand instrument in combination with an electric circuit containing a number of cells in series; a spark coil or solenoid; and a source from which the gas is supplied such as a stove, the parts being arranged and constructed as hereinafter more particularly described.

Figure 1 is a partial perspective view of a gas range showing the lighting appliance as applied. Fig. 2 is an enlarged longitudinal sectional view through the hand instrument,

certain parts being shown in side elevation. Fig. 3 is a longitudinal cross sectional view through a portion of the tube forming the body of the instrument, the section being taken at right angles to the section as shown in Fig. 2, and the operating parts therewithin appearing in plan. Fig. 4 is an enlarged vertical sectional view through the box showing a spark coil and a battery.

In the drawings like characters of reference indicate corresponding parts in each figure.

1 represents a gas burner of any form carried by the stove 2, the burner being connected with a gas supply pipe 3.

4 is a square box in which is placed two cells 5 and 6 forming a battery, the cells being connected electrically by a wire 7 secured to the binding post 8. 9 is a helix or solenoid also within the box, the solenoid appearing in the form of a spool and being formed from a soft iron core 10, end pieces 11, and many turns of wire 12, such turns passing around the core from the binding post 13 to the binding post 14. The binding post 14 is electrically connected to the battery 15 of the cell 5 by a wire 16.

17 and 18 are binding posts within the box and secured to the under side of the top adjoining the bushings 19 which pass through the top. The binding post 17 is electrically connected with that 13 by a wire 20, and the binding post 18 is connected to the binding post 21 of the cell 5 by a wire 22.

23 is a lead wire passing from the binding post 18 through the bushing 19 to the stove being placed in electrical contact therewith. In the drawing the wire is connected to the supply pipe 3 by winding it around the pipe.

24 is the contact making hand instrument which consists in a handle formed from a tube 25, preferably of metal, and of a length which is best adapted for the purpose. The tube has a longitudinal slot 26 cut therein through which extends from the interior outwardly a fibrous member 27 forming a contact press button. The member is formed with forwardly and rearwardly extending end pieces 28 and 29, respectively, the end piece 28 having its upper face somewhat rounded and receiving a screw 30 passing inwardly from the tubing whereby the member is depressibly secured to the tubing. It is to be understood that there is a slight play given the screw in the tube so as to allow of a rocking motion.

31 is a contact plate extending from the end piece 29 to which it is secured being thereby electrically insulated from the tube.

32 is a second plate immediately beneath the plate 31, such plate extending from a fibrous supporting block 33 firmly secured to the tube and toward its end by a screw 34. The tube is closed at one end by a plate 35 there being a central opening in the plate in which is secured a coiled spring 36 which extends for a slight distance beyond the end. Within the coil spring is an insulated wire 37, the one end of which enters the tube and is electrically connected to the plate 32 at 37 and the other end of which passes to the post 17 through the bushing 19. The purpose of the spring coil is to protect the wire from unnecessary wear, as will readily be understood.

The member 27 is recessed at 38 on its under side, and a flat bent spring 39 is inserted within the recess bearing against the member and against the inner face of the tube thereby holding the member in its upper position which places the plates 31 and 32 out of contact. By depressing by the hand that portion of the member which extends through the slot the plates are brought into electrical contact, and upon release of the hand pressure the contact is broken by the action of the spring.

40 is a paper fiber plug inserted in the open end of the tube and held securely in position by a screw 41.

42 is a resilient, metallic, conducting plate having its end embedded within the plug 40 so as to be completely insulated from the tube. The plate is placed in electrical contact with the plate 31 by a wire 43 which passes to the side of the member 27.

44 is a hook extending from the plate 35 whereby the instrument can be hung up if desired.

It will be seen that the hand instrument can be readily put together when desired as the electrical connections between the various parts can all be made before the parts are inserted within the tube. In other words the wire 43 is secured to the plate 42 and to the plate 31, and then the member 27 is inserted in the tube, the spring being previously placed in the recess. The member 27 is turned till it comes to the proper point where it is secured by the screw. The plug 40 is then fastened in position. The contact between the wire 37 and the plate 32 is made before the fiber block 33 is inserted, it being understood that the end of the tube is closed by the plate 35 after the block has been secured in position by the screw 34.

In using the device the instrument is grasped by the hand, the plate 42 being

brought into contact with the gas burner of the stove and at the same time the member 27 is depressed bringing the plates 31 and 32 into contact, thereby closing the circuit. With the plates still in contact the instrument is removed from the burner and there is a flash or spark, which if the gas be turned on ignites it.

An important feature in connection with my appliance is that there is no possibility of a closed circuit when not desired. On account of the connection of the wire 23 with the stove a spark can be made by applying the plate 42 of the instrument to the stove at almost any point and withdrawing it, the whole stove forming a conductor.

If the contact were not broken within the instrument and the portion not insulated from the tube the circuit would be closed if the tube were carelessly left on the stove and the result would be harmful to the battery in time.

What I claim as my invention is:

1. In a device of the class described, a tubular handle having a longitudinal slot therein, an insulating plug closing one end of the tube, an electrical conducting plate in said plug, an insulating member depressibly secured within the tube and having an extending portion passing through the slot, a contact plate carried by the rear end of said member, a wire connecting the said plate with the conducting plate, a stationary contact plate in the tube adapted to contact with the plate carried by the depressible member, and a lead wire connected with said stationary plate and passing through the end of the tube.

2. In a device of the class described a hand instrument comprising a tubular handle having centrally a longitudinal slot therein, and one of its ends closed, an insulating plug removably closing the other end of the handle and provided with an extending electrical conducting plate, an insulating member depressibly secured to and within the tube and having an extending portion passing outwardly through the slot, a spring between the member and the inner face of the tube, a contact plate passing from the member and in electrical connection with the conducting plate, a second co-acting stationary contact plate insulated from the tube, and a lead wire passing through the end of the tube, as and for the purpose specified.

Signed at Winnipeg, in the Province of Manitoba, this 5th day of November 1908.

FREDERICK FRANKLIN DIER.

Witnesses:

GERALD S. ROXBURGH,
M. A. SOMERVILLE.