Jan. 10, 1933. D. ROSSI ET AL 1,894,006

ELECTROMECHANICAL PILOT LIGHT CONTROL

Filed Sept. 8, 1930 2 Sheets-Sheet 1

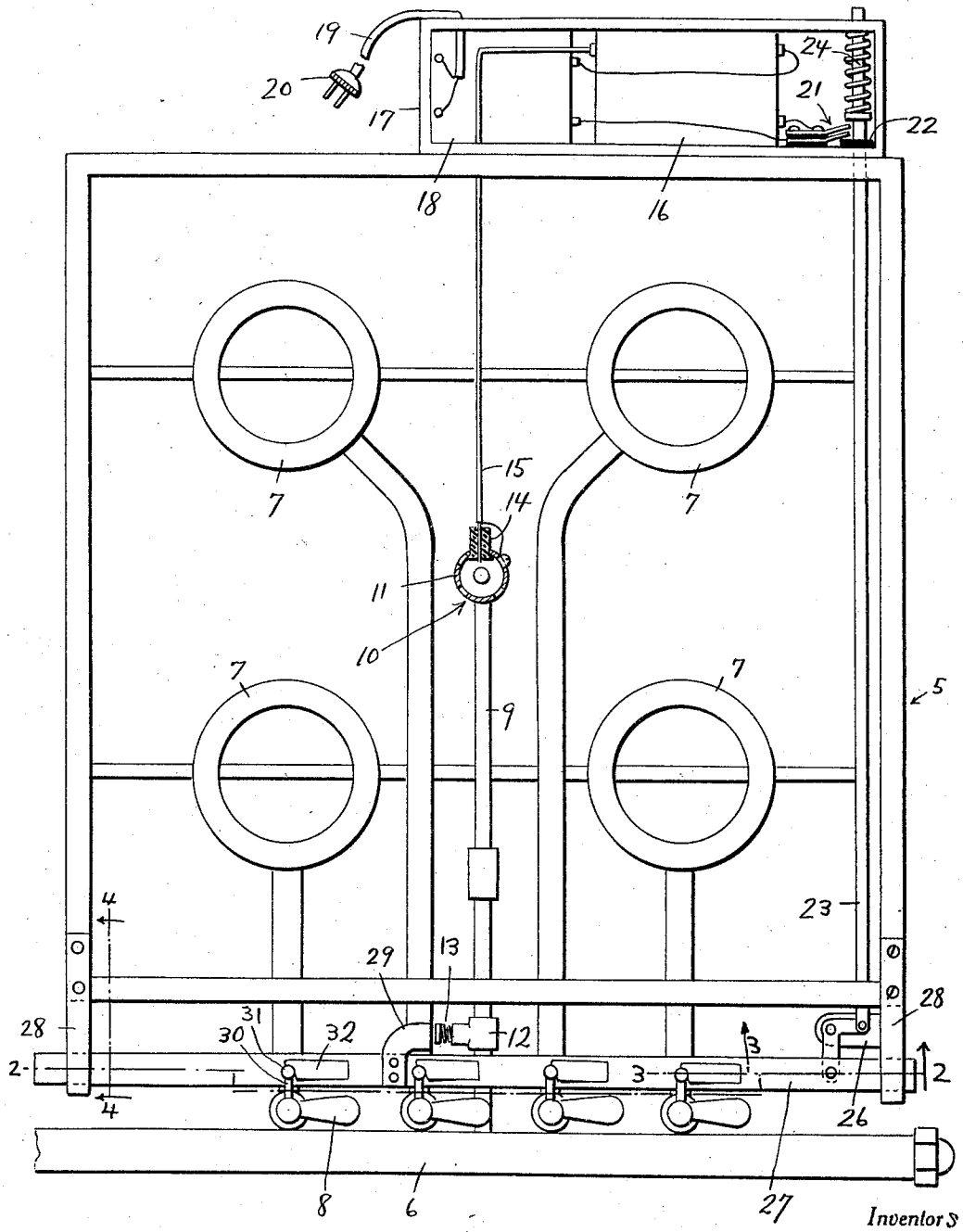


Fig. 1.

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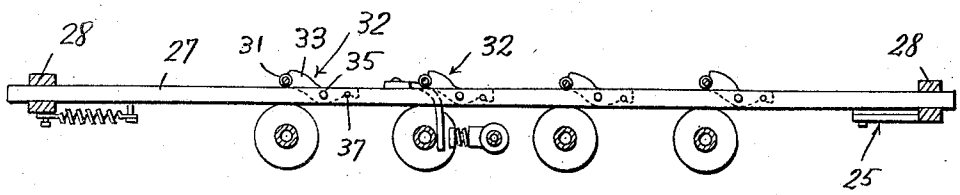


Fig. 2.

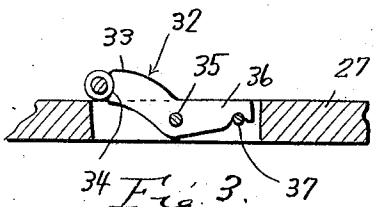


Fig. 3.

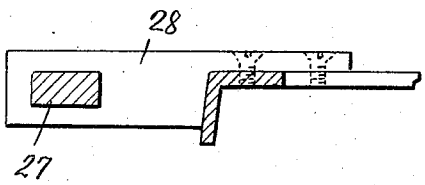


Fig. 4.

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UNITED STATES PATENT OFFICE

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ELECTROMECHANICAL PILOT LIGHT CONTROL

Application filed September 8, 1930. Serial No. 480,500.

This invention relates to a combination electrical and mechanical control or operating device for the pilot light of a domestic gas range or equivalent household stove or the like.

As a general rule conventional domestic gas ranges are provided with constantly burning pilot lights for igniting the surrounding burner. Pilot lights when allowed to burn constantly consume an unnecessary amount of gas, and are frequently dangerous when extinguished by draft, since this produces objectionable gas leakage.

With the foregoing in mind we have developed a construction which is characterized partly by mechanical details and partly by electrical means for bringing the pilot light into play only when the gas burners are turned on, whereby to provide a more practical and safe appliance for lighting the burner.

The particular details and their relative arrangement and association constituting the compact and feasible structure will become more readily apparent from the following description and drawings.

In the drawings:

Figure 1 is a diagrammatic top plan view showing the invention associated with the burner and pilot light.

Figure 2 is a horizontal section on the line 2—2 of Figure 1 but with the bar 27 shown in elevation.

Figure 3 is an enlarged detail sectional and elevational view on the line 3—3 of Figure 1 but with the rocker 32 and the ball 31 shown in elevation.

Figure 4 is a section taken approximately on the plane of the line 4—4 of Figure 1.

In Figure 1 the reference numeral 5 designates generally the frame of the stove, 6 represents the gas supply pipe or conduit and the numerals 7 indicate the burner. These burners are connected with the pipe 6 in the conventional way and are provided with the usual turning handles 8 for convenient operation.

The numeral 9 designates the gas supply pipe leading to the centralized pilot generally represented at 10. This pilot includes the customary apertured shield 11. In accordance with the present invention there is a valve 12 located in the line 9, and this is provided with a spring-closed valve element 13 which is normally closed.

The improvement comprises an electrical spark producing device at 14 which is associated with the jet of the pilot light 10. Current is supplied to this device 14 through the medium of the conductor 15. This conductor is connected to a coil 16 mounted in a suitable frame 17. The coil in turn is connected with a transformer 18. The transformer has a lead wire 19 provided with a plug 20 designed to be connected with the conventional floor or wall socket.

The current in the coil is controlled through the medium of a make and break device or switch generally represented at 21. The contacts of this are normally spaced apart. An insulation washer 22 on a push-pull rod 23 serves to close the switch. The numeral 24 designates a spring which returns the rod to normal position to allow the switch to automatically open.

The rod 23 is operated by a bellcrank 25 pivotally supported on the bracket 26 on the frame of the stove. The bellcrank in turn is operated through the medium of an actuating bar 27 slidably mounted in bracket 28. It will be observed that the actuator bar 27 is formed intermediate its ends with a valve opening element 29 which is located to engage the spring pressed valve element 13.

Each oscillatory shaft portion of each handle 8 is formed with a stub shaft 30 which in turn terminates in a ball-like head 31. This constitutes the means for shifting the bar 27 through the medium of the rockers 32. There is a rocker for each handle.

Referring now to Figure 3, it will be observed that the rocker 32 embodies an upwardly curved cam 33 having a seat 34 in which the ball 31 is received. The rocker is pivotally mounted between its ends as at 35 and the long-end portion 36 is counterweighted to automatically return the rocker to the position represented in Figure 3.

The swinging motion of this rocker is limited in one direction by stop pins 37. In

operation, it will be observed that by catching hold of the handle 8 and pulling it outwardly in the usual way to turn on the gas, the ball equipped shaft 30 will exert an endwise thrust on the bar 27 through the medium of the adjacent rocker 32. As the handle 8 is turned completely out to completely open the gas jets, the ball 31 will swing clear of the trip rocker 32 due to the fact that the ball 31 is swung outwardly away from the rocker 32.

As the bar 27 is thus shifted over, the device 29 will open the valve 13 to allow gas to flow through the pipe 9 and pilot 10. At the same time, the push pull link or rod 23 will close the switch 21. The electrical means will then come into play to produce the desired spark at the device 14 for igniting the pilot light 10. The flame jet from the pilot light will in turn ignite the burner 7 in the usual way.

The spring means 24 will then come into play to return the parts to their normal positions. As the handles 8 are turned back to valve closing position, the knobs or ball-like projections 31 will ride over the respective cams 33 so as to permit the device to become set again for subsequent operation.

A construction of this character provides a dependable electro-mechanical means for actuating the pilot light momentarily and for sufficient periods to ignite the burners 7. As the parts of the apparatus go back to normal position under the action of the spring 24, the pilot light will be extinguished, since it will not be needed again until the burners are turned on for ignition.

The gist of the inventive conception comprehends a structure wherein the operation of the control handles for the main gas supply valves to the burners serves to actuate mechanical means for closing an electric switch and to bring into play a source of electrical supply for producing a spark of sufficient intensity to ignite the pilot light sufficiently long to allow the burners 7 to become lighted.

The structure is safe and sane and fulfills the requirements of an appliance of this kind in a highly satisfactory manner.

It is thought that persons skilled in the art to which the invention relates will be able to obtain a clear understanding of the invention after considering the description in connection with the drawings. Therefore, a more lengthy description is regarded as unnecessary.

Minor changes in shape, size, and rearrangement of details coming within the field of invention claimed may be resorted to in actual practice if desired.

We claim:

Means for closing a switch by the operation of a turn handle comprising a supporting structure, a rod slidably supported by said structure and having a part thereon for closing the switch when the rod is moved in such direction, spring means for holding the rod in a position with the switch opened, a bar slidably supported by the structure and arranged at right angles to the rod, a bell crank pivotally supported by the structure and having one end connected with the rod and its other end connected with the bar for communicating movement of the bar to the rod, a projection on the handle, a cam lever fixed to the bar engaged by the projection when the handle is moved in one direction for imparting movement to the bar to move the rod to a switch closing position, said projection riding over the cam and tilting the same on opposite movement of the handle, and means for normally holding the cam lever in a position where it will be engaged by the projection.

In testimony whereof we affix our signatures.

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