

H. WASSERZIER.
ELECTRIC IGNITION APPARATUS FOR GAS BURNERS.
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1,030,953.

Patented July 2, 1912.

Fig. 2.

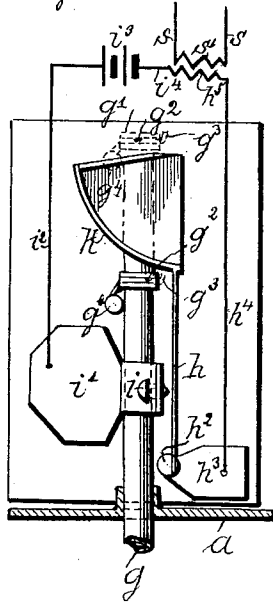


Fig. 1.

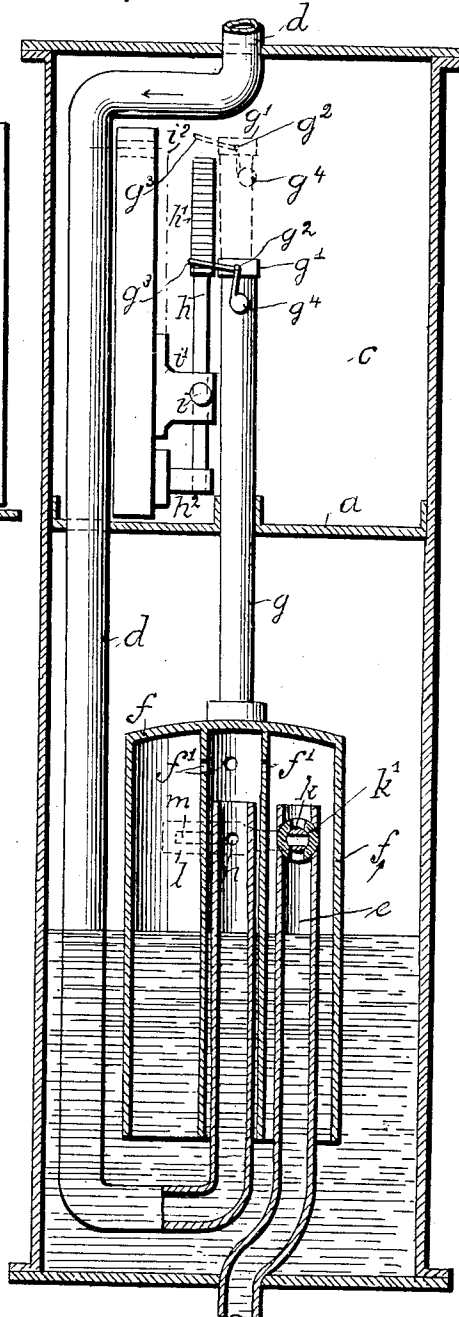
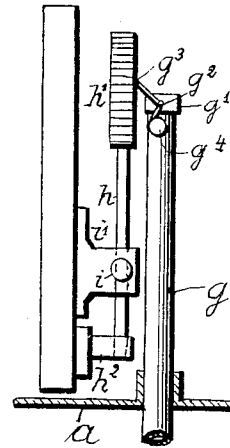


Fig. 3.



Witnesses:

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UNITED STATES PATENT OFFICE.

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ELECTRIC IGNITION APPARATUS FOR GAS-BURNERS.

1,030,953.

Specification of Letters Patent.

Patented July 2, 1912.

Application filed March 20, 1911. Serial No. 615,529.

To all whom it may concern:

Be it known that I, HERMANN WASSERZIER, subject of the German Empire, residing at Karlshorst, near Berlin, Germany, have invented a new and useful Electric Ignition Apparatus for Gas-Burners, of which the following is a specification.

The present invention relates to an electric ignition apparatus for gas burners which is operated by the pressure of the gas at the gashouses.

One of the objects of the invention is to provide means whereby as the pressure on the gasbell is increased the gas outlet pipe will be opened and the electric ignition device will be operated.

A further object of the invention is to provide means for lighting a large number of lamps by the creation of sparks, and to make these sparks so lasting and so strong that the lighting of the lamps will be positive under all considerations.

Other objects will be in part obvious and in part be pointed out hereinafter.

In the illustrative embodiment of the invention shown in the accompanying drawing, Figure 1 is a vertical sectional view of the apparatus. Fig. 2 a side elevational view of the upper part of the apparatus, showing the circuit. Fig. 3 a front elevational view of the upper part when the bell is at its normal position.

Referring to the drawings the apparatus is shown as comprising a casing divided by a partition *a* in two parts *b* and *c*, and is provided with an inlet pipe *d* and an outlet pipe *e*. The pipe *d* terminates under a bell *f* the lower end of which dips into the water for the purpose of providing an air-tight seal. In pipe *e* is positioned a cock *k'*, the plug *k* of which is movably connected with the bell *f* by a rod *l* having a slot *m* engaging a pin *n* fitted to the bell *f* in such a manner that the rising of the bell turns plug *k* and opens the cock *k'* to permit the gas to flow through the outlet pipe *e*, while a sinking of the bell closes the cock *k'* and cuts off the supply of gas. Openings *f'* allow the passage of the gas from pipe *d* to pipe *e*.

Rigidly attached to the upper part of bell *f* and extending vertically is a guide rod *g* which moves with the rise or fall of the bell and which is provided with a bearing *g'* at its upper end. Rotatably mounted in the bearing is a crank *g²* to which is secured a

lever *g³* and a weighted lever *g⁴*, which levers form a weighted angle-lever. Within the path of lever *g³* is a sector-shaped member *h'* which is mounted on a spring *h*. When the rod *g* and consequently the lever *g³* move upward, the latter imparts to the sector *h'* and to the spring *h* a considerable lateral movement and as the rod *g* reaches the uppermost position the lever *g³* will be carried beyond the sector *h'*, thereby releasing the same. This sudden release causes the sector *h'* and its spring *h* to oscillate rapidly for a few seconds. The combined weight of the lever *g³* and the weighted lever *g⁴* is so adjusted that lever *g³* will always have a tendency to move within the path of the sector, that is, it will always strive to regain its normal position. At the downward movement of the rod *g*, the lever *g³* will pass to one side of the sector *h'* so as not to injure any of the operative parts.

The spring *h* is mounted on a bearing *h²* which is electrically connected to the terminal *h³*, which, in turn, is connected by a conductor *h⁴* with a primary coil *h⁵*. The spring *h* is adapted to contact with a fixed screw contact *i* which is carried by a contact plate *i'*, which, in turn, is connected by a conductor *i²* with a battery *i³*. The battery is connected by a conductor *i⁴* with the primary coil *h⁵*. This provides a main working circuit for the current which flows over the following parts: spring *h*, bearing *h²*, terminal *h³*, conductor *h⁴*, primary coil *h⁵*, conductor *i⁴*, battery *i³*, conductor *i²*, contact plate *i'* and contact screw *i*. The rapid oscillation of the spring *h* opens and closes the main circuit at *h*, *i*, for a few seconds, thereby producing a series of impulses in the primary coil *h⁵*. The lamp circuit *s* is in series with the secondary winding *s'*. The lamp circuit, which contains any number of lamps, is naturally provided with a sparking gap at each individual lamp, in order to make use of the sparks at such points for lighting the lamp. When at six o'clock in the morning the pressure is removed, the bell *f* will swing to its normal position, thereby moving the cock *k'* to close the outlet pipe *e*. At the same time rod *g* will also descend and the lever *g³* will pass to one side of the sector *h'*, shown in Fig. 3, and as the rod reaches the lowermost point of its travel, the lever *g³* will, through the action of the weight *g⁴*, again occupy its operative position in the path of sector *h'*.

The working of the apparatus will now be described: At any suitable time, say at 5 o'clock, a high pressure is produced in the gas house, and the gas under pressure flows through pipe *d* under the bell *f* and raises the latter. This movement of the bell actuates the rod *l* which turns the plug *k* opening the cock *k'* and allowing the gas to pass through the outlet pipe *e*. As the bell *f* rises the rod *g* ascends, and as the sector *h'* is in the path of the lever *g*³, the latter imparts to the sector and to the spring *h* a considerable lateral movement. At the moment when the lever *g*³ passes beyond the sector *h'* (see the dotted lines in Figs. 1 and 2), the spring *h* and the sector *h'* oscillate rapidly on account of the elasticity of the spring, and this oscillation which lasts a few seconds makes and breaks the main circuit causing impulses in the primary coil *h*⁵. These impulses induce currents in the secondary coil and the lamps are lighted by means of the sparks in the usual manner. It allows the placing in the circuit of a great number of lamps. It provides, in consequence of the extended duration of time, of the closing and breaking of the circuit, an effective sparking, thereby assuring the lighting of the lamps. The operation of the sparking device is independent of the velocity of the bell.

Having described this invention in connection with the illustrative embodiment thereof, to the details of which disclosure the invention is not, of course, to be limited,

what is claimed as new and what is desired to be secured by Letters Patent is set forth in the appended claim:

In a device of the class described, in combination, a gas bell, a gas inlet pipe communicating with the interior of said bell, a normally closed gas outlet pipe communicating with the interior of the bell, means responsive to the movement of the bell for opening and closing said outlet pipe as the bell rises and falls, an electric circuit, a make and break device in said circuit comprising a fixed contact and a contact spring fixed at one end, a sector-shaped member carried upon the free end of said spring, a rod carried by said bell, and a bell-crank lever carried by said rod, one leg of said lever being adapted as the bell rises to engage the curved surface of said sector-shaped member to push it to one side, said lever moving out of engagement with said sector-shaped member as the bell reaches the uppermost limit of its movement whereby the spring will oscillate, the other leg of said lever being weighted to hold the lever in its normal position and to permit the lever to move out of the path of said sector-shaped member as the bell descends.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

HERMANN WASSERZIER.

Witnesses:

HERMANN BURBA,
HENRY HASPER.