(No Model.)

C. W. HOLTZER.

ELECTRIC GAS BURNER.

No. 360,696. Patented Apr. 5, 1887.

Fig. 1.

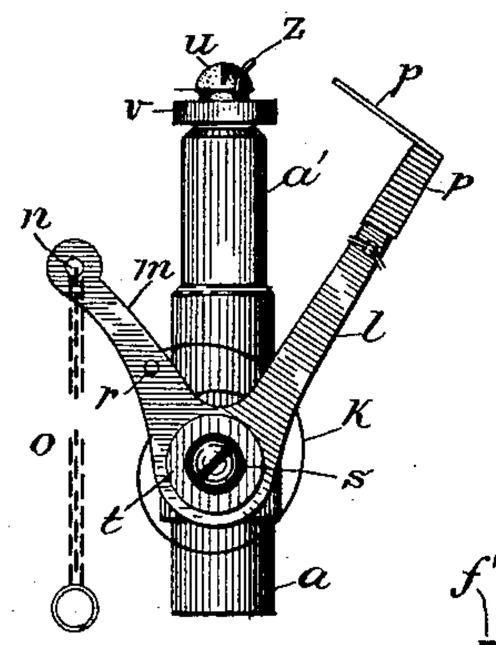


Fig. 2.

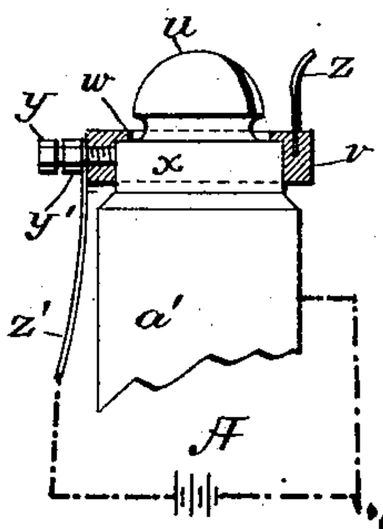


Fig. 6.

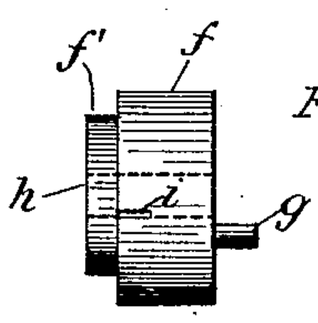


Fig. 3.

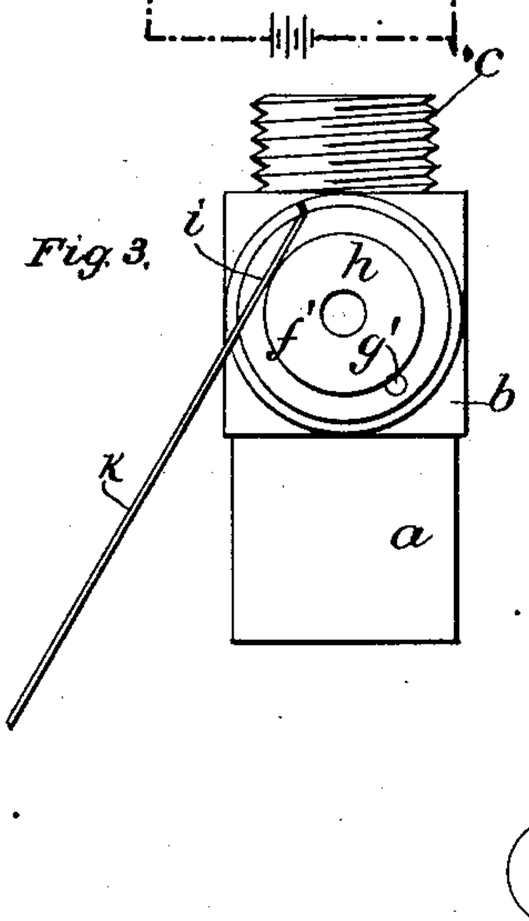


Fig. 4.

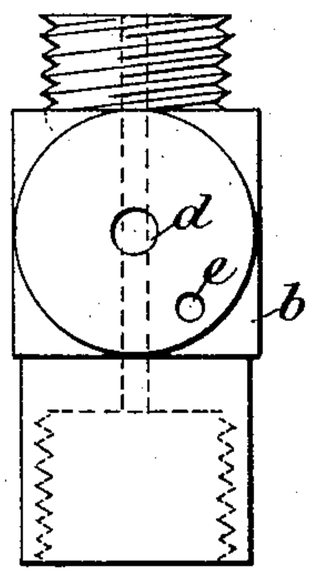


Fig. 5.

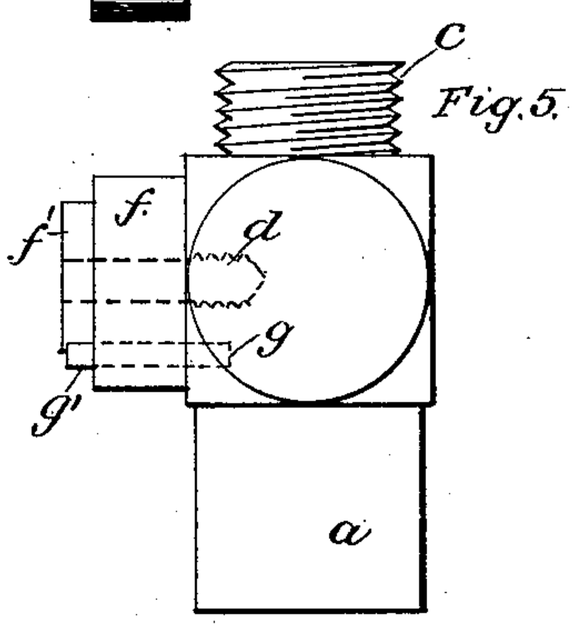
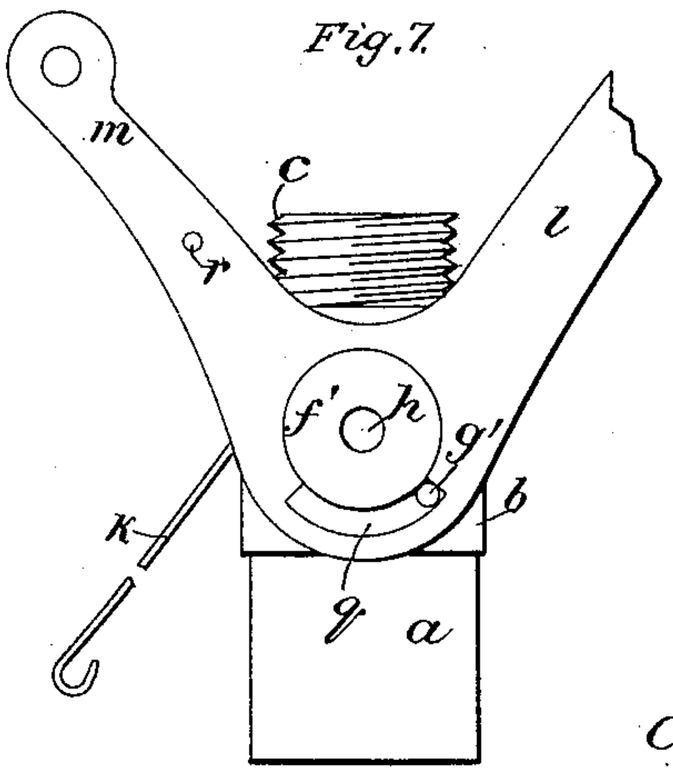


Fig. 7.



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UNITED STATES PATENT OFFICE.

CHARLES W. HOLTZER, OF BROOKLINE, MASSACHUSETTS.

ELECTRIC GAS-BURNER.

SPECIFICATION forming part of Letters Patent No. 360,696, dated April 5, 1887.

Application filed January 11, 1887. Serial No. 224,002. (No model.)

To all whom it may concern:

Be it known that I, CHARLES W. HOLTZER, a citizen of the United States, and a resident of Brookline, county of Norfolk, and State of Massachusetts, have invented certain new and useful Improvements in Electric Gas-Burners, of which the following is a specification.

My invention relates to an electric igniting device for gas-burners; and its object is to provide simplicity of construction and efficiency of action.

The invention consists of details of mechanical construction.

Figure 1 is a full outside view of the device. Fig. 2 is a sectional view, on an enlarged scale, of the electrode, which is attached to the usual insulated burner-tip. Fig. 3 is a view showing the spring released from tension and the manner of attaching one end of the spring. Fig. 4 shows the tube or foundation-piece, to which all the other parts are directly or indirectly attached. Fig. 5 is a side view of Fig. 3 with the spring removed. Fig. 6 is a side view of a portion of Fig. 5, and Fig. 7 is a view showing the means of limiting the motion of the movable electrode.

The device consists of the combination of the tube *a*, having an enlarged rectangular portion, *b*, a thread, *c*, cut upon one end, a threaded hole, *d*, passing from the inside of the tube to the outside and located at the center of the rectangular portion, a second hole, *e*, located adjacent to the hole last mentioned, a removable cylindrical projection, *f*, located upon said rectangular portion, and having upon each end, near the periphery, projecting rods *g* and *g'*, respectively, the part *g* fitting into the hole *e*, a hole, *h*, passing through the center of the cylinder *f*, a smaller cylinder, *f'*, located upon the same end of the cylinder *f* as the rod *g'*, the said hole *h* passing also through the cylinder *f'*, a groove, *i*, in the end of the cylinder *f* and tangent to the cylinder *f'*, a flat steel spring, *k*, having one end located in said groove *i*, a bent lever having one arm, *l*, and another arm, *m*, a hole, *n*, in the arm *m*, an operating-chain, *o*, located in said hole, the usual spring-electrode, *p*, secured upon the arm *l*, the said bent lever having an enlarged portion through which passes loosely the cylinder *f'*, a notch, *q*, in said enlarged portion concentric with the hole *h* and containing the rod *g'*, a projecting pin, *r*, to which is attached the other end of the spring *k*, and a screw, *s*, passing first through a washer, *t*, the hole *h*, and the hole *d*, the said washer being larger in circumference than the cylinder *f'*.

Upon the usual insulating-tip, *u*, is a collar, *v*, having an inwardly-projecting flange, *w*, which hangs upon the shoulder *x* of the tip, and which is held rigidly to the tip by means of the screw *y*. A fixed electrode, *z*, is mounted upon the collar, and the wire *z'* is secured to the collar by means of a nut, *y'*, which works upon the screw *y*. The wire *z'* leads from one pole of the battery A to any metallic part of the device, such as the tube *a'*, which contains the tip *u*, and which is screwed tightly upon the screw-thread *c*. The insulating-tip *u* insulates the electrode *z* from the tube *a'*.

The *modus operandi* is as follows: When the chain *o* is pulled downward, the platinum wire *p* rubs upon the platinum wire *z* and then breaks contact with the same wire, *z*. When the chain *o* is released, the spring *k* pulls back the wire *p* into its normal position. (Shown in Fig. 1.) The backward movement of the wire *p* causes it to come in contact with the wire *z*, then to rub upon it, and, finally, to break contact. The making and breaking of contact causes the gas to be ignited as it issues from the tip *u*. The function of the projecting rod *g* is to prevent the cylinder *f* from rotating about the screw *s*. The function of the projecting rod *g'* is to limit the motion of the lever-arms *l* and *m*.

I do not claim a ring without a shoulder. An old form of an electric gas-lighter has a special lava-tip with shoulder to prevent a flangeless collar from slipping off.

What I claim is—

1. In an electric gas-lighter, the combination of a gas-tube, a screw-threaded hole in said tube, a second hole adjacent to the first, a larger cylindrical piece having concentric therewith a smaller cylindrical piece, a projecting rod upon one end of said larger cylindrical piece and fitting into said second hole, a second projecting rod upon the opposite end of said larger cylinder, a slot or groove

in the end of said larger cylinder and containing one end of a flat steel spring, a bent lever pivoted upon said smaller cylinder, and having a circular slot in which fits the said second projecting rod, for the purpose mentioned, a washer pressing upon one end of said smaller cylinder, a projecting pin, and an operating-chain upon one arm of said lever, a wire upon the other arm of said lever, forming a flexible electrode, and a retaining-screw passing through said washer, both of said cylinders, and into said gas-tube, and a second electrode fixed at the outlet of said gas-tube and in the path of the wire which projects from one arm of the said lever, the said wire electrode and the said second electrode being in an electric-circuit, the opposite end of said spring being attached to said projecting pin, substantially as and for the purpose described.

2. In an electric gas lighter, a movable electrode mounted upon a detachable projection to the gas-tube of said lighter, the said detachable projection having a projecting rod which fits in a hole in said gas-tube, substantially as and for the purpose described.

3. In an electric gas-lighter, a movable electrode mounted upon a detachable projection to the gas-tube of said lighter, the said detachable projection having a projecting rod which fits into a hole in said gas-tube, and the said movable electrode being fastened to one end of a retractile spring whose other end fits in a groove in said detachable projection, substantially as and for the purpose described.

4. In an electric gas-lighter, a detachable collar having an internal flange which rests upon the tip of said lighter, substantially as and for the purpose described, the said collar being a support for one of the electrodes of said lighter.

5. In an electric gas-lighter, the combination of a gas-tip of insulating material, a collar provided with an internal flange which rests upon said tip, a fastening-screw passing through said collar and pressing upon said tip, and a nut upon said screw and pressing upon a wire which presses upon said collar, the said collar being one of the electrodes of an electric circuit, substantially as and for the purpose described.

6. In an electric gas-lighter, the combination of a cylinder with a projecting rod passing through the larger part of the cylinder and projecting on either side to prevent the cylinder from turning and for limiting the motion of the arm, substantially as described.

7. In an electric gas-lighter, the combination of a slot in the larger part of the cylinder *f*, a spring therein, and a lever lying over the spring, holding the spring in place, substantially as described.

8. In an electric gas-lighter, the combination of a slot, *q*, in the lever *l*, substantially as and for the purpose described.

9. In an electric gas-lighter, the combination of a shoulder, *w*, on the collar *v*, to allow the ordinary lava-tip to be used, substantially as described.

In testimony that I claim the foregoing as my invention I have signed my name, in presence of two witnesses, this 30th day of December, 1886.

CHARLES W. HOLTZER.

Witnesses:
S. K. HAMILTON,
E. F. HOBBS.