

A. T. SMITH.

Electric Lighting Attachments for Gas-Burners.

No. 152,427.

Patented June 23, 1874.

Fig:1.

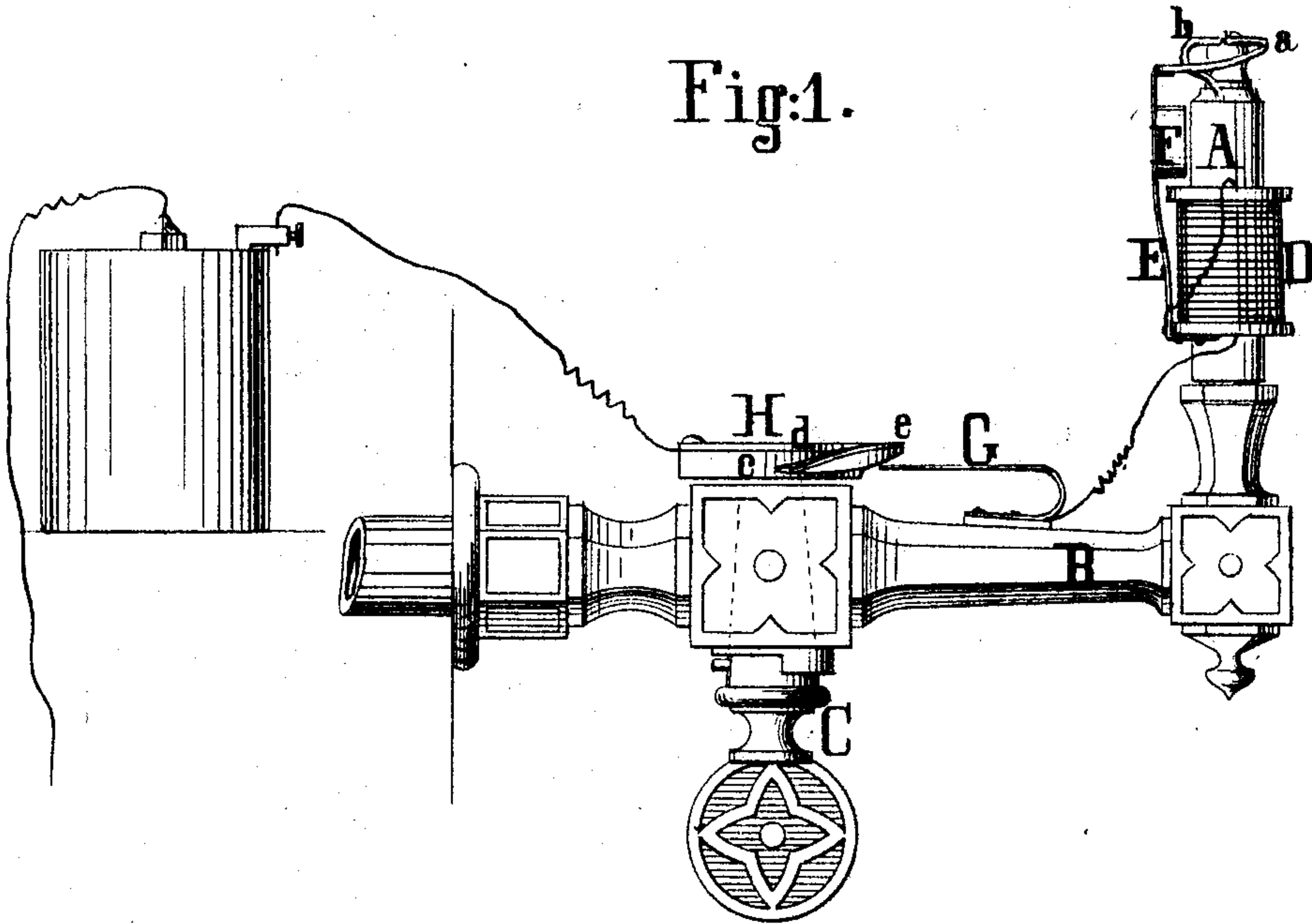
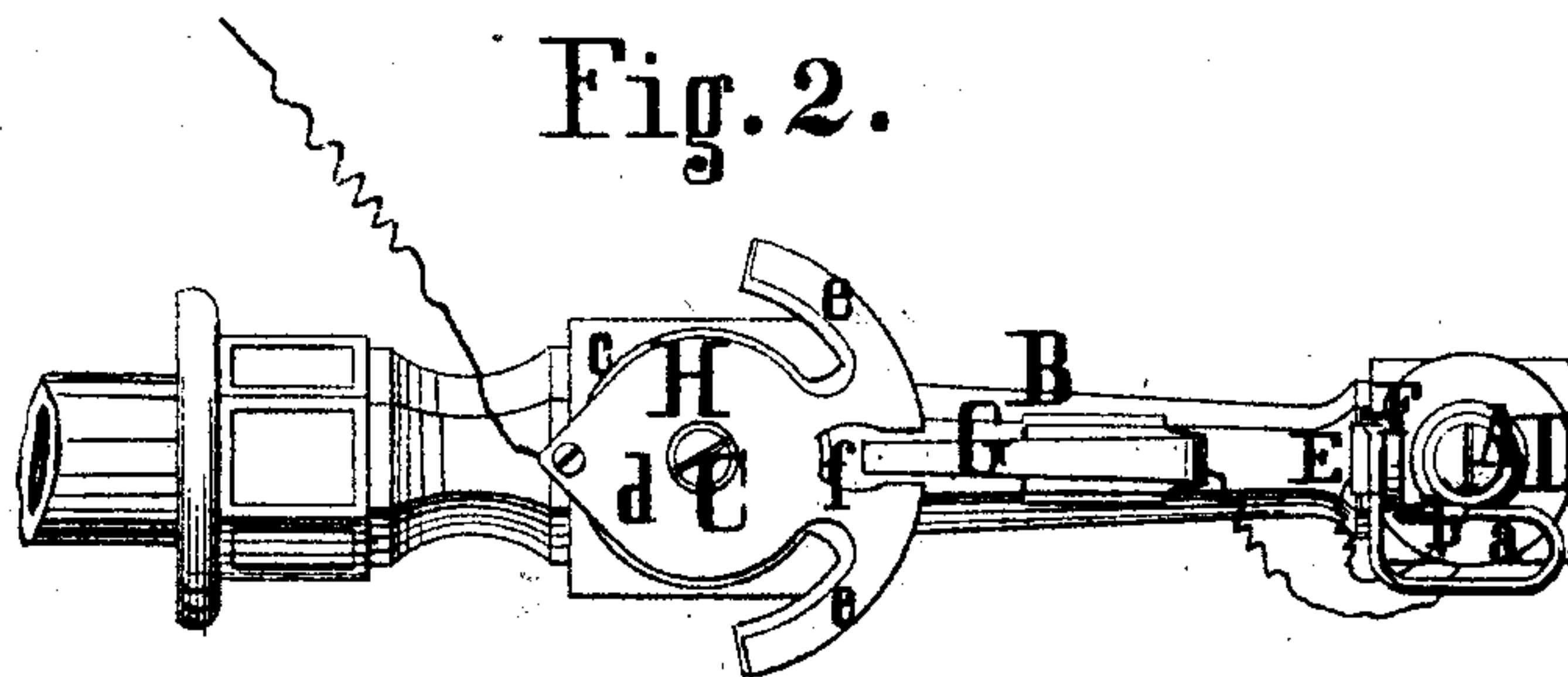


Fig. 2.



Witnesses.

Ernst Bilhuber
Henry Gentner

Inventor.

Adolph Th. Smith.
Van Santvoord & Hauff.
Attors.

UNITED STATES PATENT OFFICE.

ADOLPH T. SMITH, OF NEW YORK, N. Y., ASSIGNOR, BY MESNE ASSIGNMENTS,
TO ABRAHAM L. BOGART, OF SAME PLACE.

IMPROVEMENT IN ELECTRIC LIGHTING ATTACHMENTS TO GAS-BURNERS.

Specification forming part of Letters Patent No. **152,427**, dated June 23, 1874; application filed
March 19, 1874.

To all whom it may concern:

Be it known that I, ADOLPH T. SMITH, of the city, county, and State of New York, have invented a new and useful Improvement in Electro-Magnetic Gas-Burners; and I do hereby declare the following to be a full, clear, and exact description thereof, which will enable those skilled in the art to make and use the same, reference being had to the accompanying drawing forming part of this specification, in which drawing—

Figure 1 represents a side view of this invention. Fig. 2 is a plan or top view of the same.

Similar letters indicate corresponding parts.

This invention relates to a gas-burner the body of which forms the core of a helix, one end of which is in metallic contact with the armature of the electro-magnet, while its other end is in metallic contact with a spring that acts on a cam secured to the plug of the gas-cock, in such a manner that, while the cock is being opened, the armature of the electro-magnet receives a vibrating motion, producing a number of sparks, which light the gas escaping from the tip.

In the drawing, the letter A designates a gas-burner, which is secured in a pipe, B, that can be opened or closed by means of a stop-cock, C. The body of said burner is made of soft iron, and on it is secured a helix, D, which is insulated from the burner or core A, and one end of which connects with a spring-lever, E, that carries the armature F, while the other end of said helix connects with a switch-spring, G, which is secured to the gas-pipe B, but insulated from the same.

From the armature-lever E extends a wire, *a*, the end of which bears against the end of another wire, *b*, that is firmly secured to the burner A, and is in metallic contact with the ground through the gas-pipes themselves.

On the plug of the stop-cock C is secured a cam, H, which is composed of an insulating base-plate, *e*, and a metallic top plate, *d*, so that the metallic top plate is insulated from the plug. From said top plate extends a wire to one pole of a battery, the other pole of which connects with the ground.

The cam H consists of two segmental wings, *e e*, which are inclined, as shown in Fig. 1, and which are separated from each other at their high ends by a recess, *f*, Fig. 2.

When the stop-cock C is open, this recess is over the tip of the switch-spring G, and as the cock is being closed said tip slides at the under surface of one of the wings *e* until it passes the low end of the wing, when it (the tip) flies up by its inherent elasticity.

When the cock is being opened, the tip of the switch-spring G slides up on the metallic surface of one of the springs *e*, and as soon as the switch-spring comes in metallic contact with the cam H, the circuit is closed from the battery through the plate *d* of cam H; thence through switch-spring G to helix D, through this helix to armature-lever E; thence through wires *a b*, burner A, and pipe B to the ground, and through the ground back to the second pole of the battery.

As the circuit is closed, the armature F is attracted by the core A; the wire *a* is thrown out of contact with the wire *b*; the circuit is broken; the wire *a* falls back against the wire *b*; the circuit is again closed, and so on as long as the contact between the switch-spring G and the metallic surface of the cam H lasts, and each time the wire *a* falls back from the wire *b* an elastic spark is produced, so that as soon as gas begins to escape from the tip of the burner A, it will be ignited without fail.

The cam H is made with two wings, *e e*, so that the switch-spring G must come in contact with one of said wings, in whatever direction the plug of the stop-cock is turned. Said plug is supposed to be so constructed that it can make half a turn, or that, when it has been opened, it can be closed either by turning it to the right or to the left; but if the plug has only a quarter-turn, and consequently must be opened and closed always in the same direction, one of the wings of the cam H becomes superfluous.

What I claim as new, and desire to secure by Letters Patent, is—

1. The helix D, arranged on the body of a gas-burner, said body being made to form the core of the helix, in combination with the ar-

mature F, and contact-points *a b*, and an electric circuit, substantially as described.

2. The combination of the burner A, helix D, armature-lever E, and wires *a b*, with a switch-spring, G, and cam H, secured to the plug of the gas-cock, all constructed and operating substantially as set forth.

3. The cam H, provided with two wings, *ee*, in combination with the gas-cock C, substantially as and for the purpose described.

ADOLPH THEODOR SMITH.

Witnesses:

W. HAUFF,

E. F. KASTENHUBER.