

No. 679,197.

Patented July 23, 1901.

H. W. WEBB.
ELECTRICALLY OPERATED GAS BURNER.

(Application filed Apr. 27, 1901.)

(No Model.)

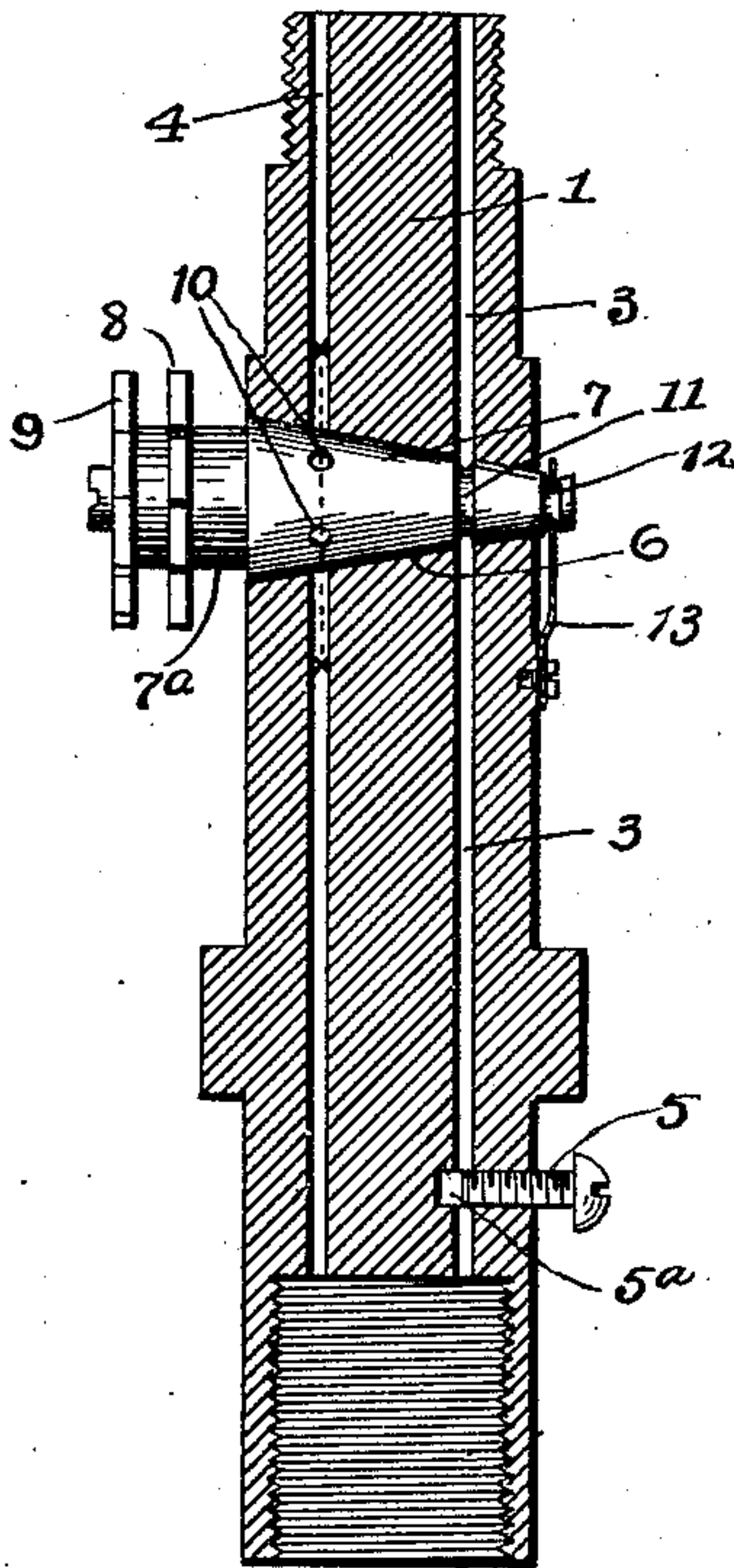
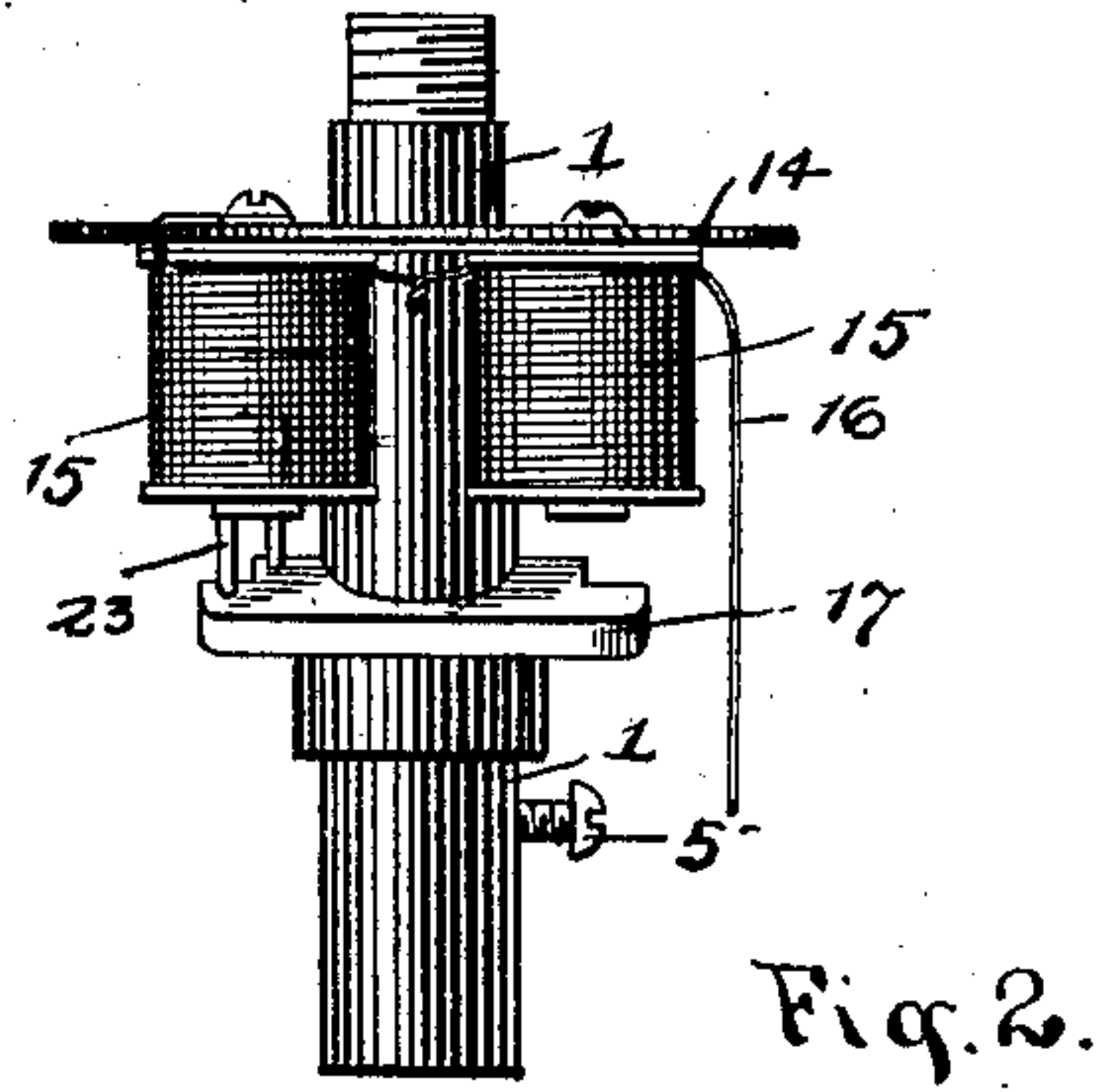
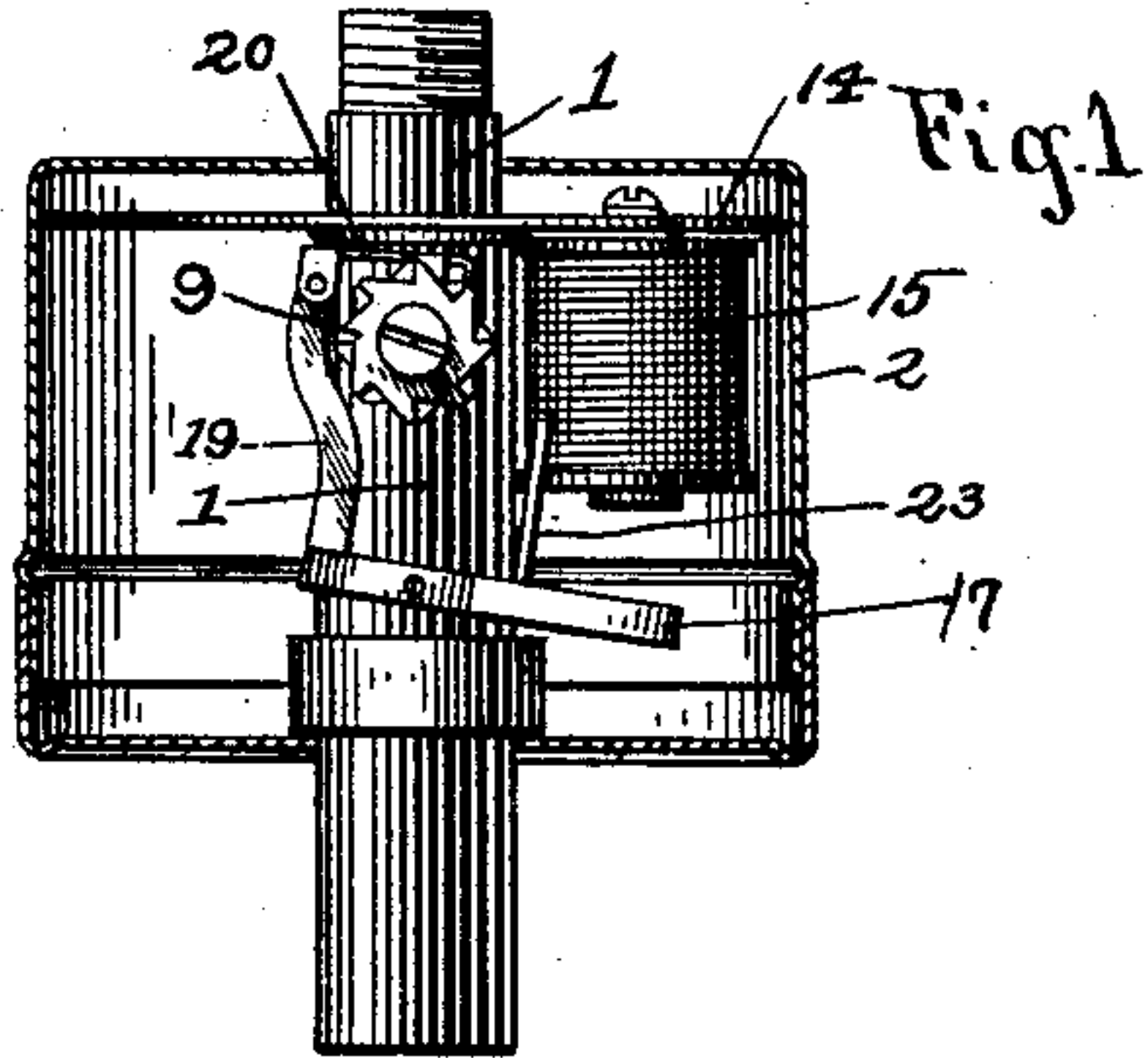


Fig. 3.

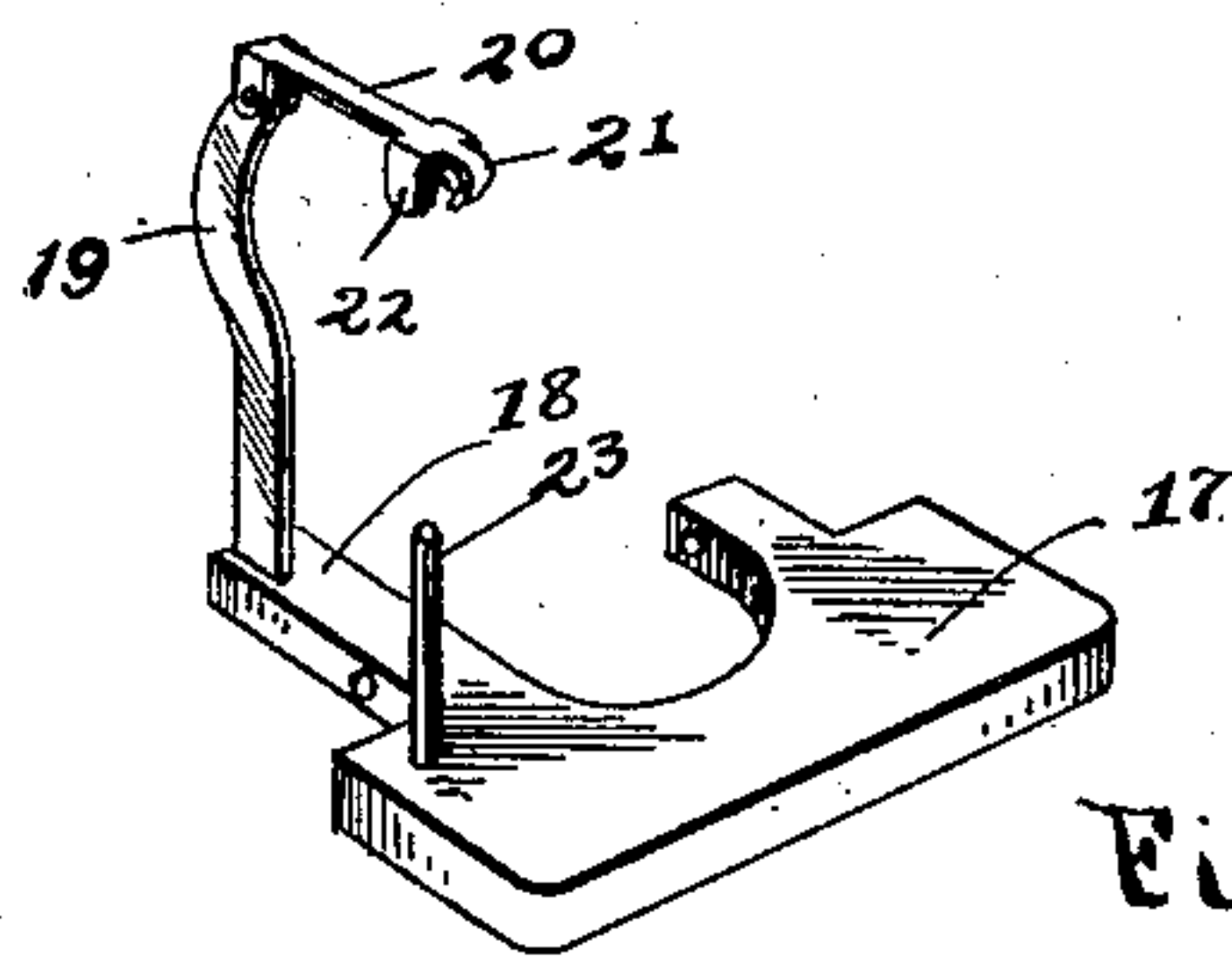


Fig. 4.

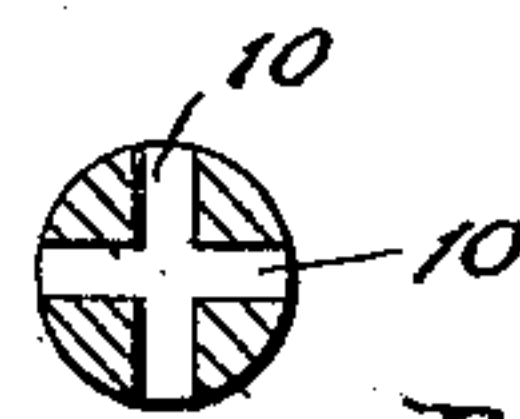


Fig. 5.

WITNESSES:

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HOLSTEIN W. WEBB, OF COLUMBUS, OHIO.

ELECTRICALLY-OPERATED GAS-BURNER.

SPECIFICATION forming part of Letters Patent No. 679,197, dated July 23, 1901.

Application filed April 27, 1901. Serial No. 57,650. (No model.)

To all whom it may concern:

Be it known that I, HOLSTEIN W. WEBB, a citizen of the United States, residing at Columbus, in the county of Franklin and State of Ohio, have invented a certain new and useful Improvement in Electrically-Operated Gas-Burners, of which the following is a specification.

My invention relates to electrically-controlled gas-burners of that class in which the gas-burner valve is adapted to be opened and closed through the closing of an electric circuit.

The objects of my invention are to provide an improved construction of valve operating and controlling mechanism of this class, to so construct the valve-operating parts as to insure a positive operation of the same, to combine therewith improved means for preventing overthrow of the valve, and to produce other improvements the details of construction and arrangement of parts of which will be more fully pointed out hereinafter. These objects I accomplish in the manner illustrated in the accompanying drawings, in which—

Figure 1 is a sectional view through the casing of my device, showing therein in elevation a portion of the burner-tube having my improvements thereon. Fig. 2 is a view in elevation of said burner-tube and operating mechanism, said view being taken at right angles with that shown in Fig. 1 and with the casing removed. Fig. 3 is a central vertical section through the burner-tube. Fig. 4 is a detail view in perspective of the armature-bar and its valve-operating arm, and Fig. 5 is a transverse section of the valve on line *x x* of Fig. 3.

Similar numerals refer to similar parts throughout the several views.

1 represents a suitable gas-burner tube, and 2 a casing or housing which is mounted thereon at a desirable point. In constructing the burner-tube 1 I form therein, on opposite sides of the center of its diameter, longitudinally-arranged gas-passages 3 and 4, the gas-passage 3 being adapted to be intersected or partially intersected at a suitable point below the hereinafter-described valve by a set-screw 5, which engages a threaded opening in the tube 1 and the inner end of which is adapted to

enter a socket 5^a on the inner side of the passage 3. The lower end of the burner-tube 1 is adapted to be screwed or otherwise secured in connection with a gas-supply pipe or tube. Formed in the tube 1 and intersecting both the gas-passages 3 and 4 is a conical valve-opening 6, within which is adapted to fit and rotate a correspondingly-shaped valve 7. This valve is provided at its larger end with an outward extension or short stem 7^a, on which is carried inner and outer ratchet-wheels 8 and 9, the teeth of one of said wheels inclining in the opposite direction from those of the other. Formed through the body or conical portion of the valve are ports 10, these ports or passages intersecting each other centrally, as indicated in Fig. 5, and being so arranged that a partial rotation of the valve will bring one of the same into or out of communication with the gas-passage 4. At the point where the valve-body 7 intersects the passage 3 said valve is provided with a peripheral groove 11, thus providing a continuous communication between the upper and lower or outer and inner portions of the passage 3. The outer or smaller end of the valve is formed with a peripheral groove 12, with which engages the upper end of a spring-strip 13, the lower end of which is secured to the tube 1, this spring serving to normally hold the valve in proper engagement with the valve-opening 6. Within the casting 2 and on one side of the burner-tube 1 are supported, from a fixed plate 14 or any other suitable manner, the upper end portions of the spools or coils 15 of a two-spool electric magnet, the latter being connected, through the medium of wires 16, through the usual battery and circuit-closing button. (Not herein shown.) Beneath the magnet-spools I fulcrum to the burner-tube or otherwise an armature-bar 17, the latter having formed therewith on its rear or inner side near one end an arm extension 18, from which rises a fixed bar or standard 19, with the upper end of which is pivoted one end of a substantially horizontal pawl-arm 20. In constructing this pawl-arm I provide the outer end thereof, as indicated more clearly in Fig. 4 of the drawings, with a downturned and hook-like pawl-finger 21 and with lateral downwardly-extending guide or stop ears 22. These ears 22

are adapted to loosely embrace opposite sides of the toothed portion of the ratchet-wheel 8, while the hook-finger 21 depends in the path of the teeth thereof. I also provide the armature-bar 17, adjacent to its junction with the arm 18, with an upwardly-projecting stop-pin 23.

In utilizing the herein-described invention the set-screw or valve-screw 5 is ordinarily so turned as to permit of the continuous flow through the passage 3 of a comparatively small amount of gas, thus permitting a continuous though small light at the burner with which the tube 1 is connected. Assuming that the valve 7 is so turned as to cut off communication between the portions of the passage 4 which are above and below said valve, it is obvious that the closing of an electric circuit through the magnet-wires 16 and magnet-spools 15 will result in magnetizing the cores of the latter and drawing the armature-bar 17 into contact therewith. In this upward movement of the bar-body 17 it will be seen that a corresponding downward movement of the bar 19 and rearward movement of the pawl-arm 20 will occur, the latter resulting, through the engagement of its tooth or hook 21 with one of the teeth of the ratchet 8, in rotating the valve 7 until the ends of one of its ports 10 is in communication with the passage 4, thus providing a desirable supply of gas to the burner through said last-named passage. Owing to the fact that the armature-bar has its greater weight in its body portion 17 or in front of its pivot-points, it is obvious that the breaking of the circuit through the magnet will result in said bar dropping by gravity and the pawl-arm assuming a position permitting it to engage another of the teeth of the ratchet 8. It is obvious that a second operation of the device as above described will result in so moving the valve as to bring

either one of the ports 10 out of communication with the passage 4, thus reducing the light at the burner to a minimum. In the rapid operation of the pawl-arm 20 it has been found that a tendency exists toward an overthrow or too great movement of the valve 7. In order to avoid this tendency toward overthrow, I have provided the stop-pin 23, which when the armature-bar 17 is elevated comes into contact with a tooth of the outer ratchet-wheel 9 and serves to stop the valve against further or undesirable rotation.

From the construction and operation herein described it will be seen that simple, reliable, and effective means are provided for operating a gas-burner valve which will insure a positive movement and stopping of the latter at the proper points.

Having now fully described my invention, what I claim, and desire to secure by Letters Patent, is—

In an electrically-operated gas-burner, the combination with a burner-tube having passages 3 and 4 therethrough and an adjustable valve-screw adapted to intersect said passage 3, of a rotatable valve intersecting said passages, said valve having a peripheral recess in constant communication with the passage 3 and ports through said valve intersecting each other at right angles, ratchet-wheels 8 and 9 carried on said valve, a pivoted armature-bar having a pivoted pawl-carrying arm adapted to engage the teeth of one of said ratchet-wheels and a pin 23 projecting from said armature-bar and adapted when said bar is elevated to contact with a tooth of the remaining ratchet-wheel, substantially as specified.

HOLSTEIN W. WEBB.

In presence of—

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