

J. F. NÄSSÉN & F. J. H. RUSTIGE.
 APPARATUS FOR LIGHTING AND EXTINGUISHING GAS LIGHTS FROM A DISTANCE.
 APPLICATION FILED FEB. 15, 1911.

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2 SHEETS—SHEET 1.

Fig. 1.

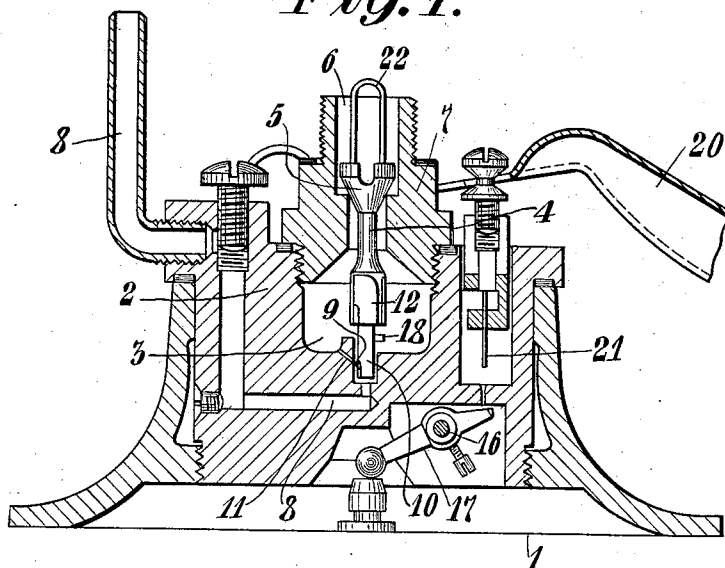
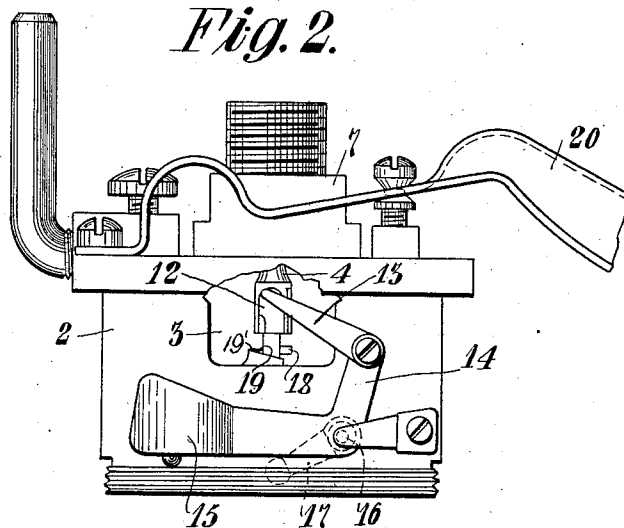


Fig. 2.



Witnesses.

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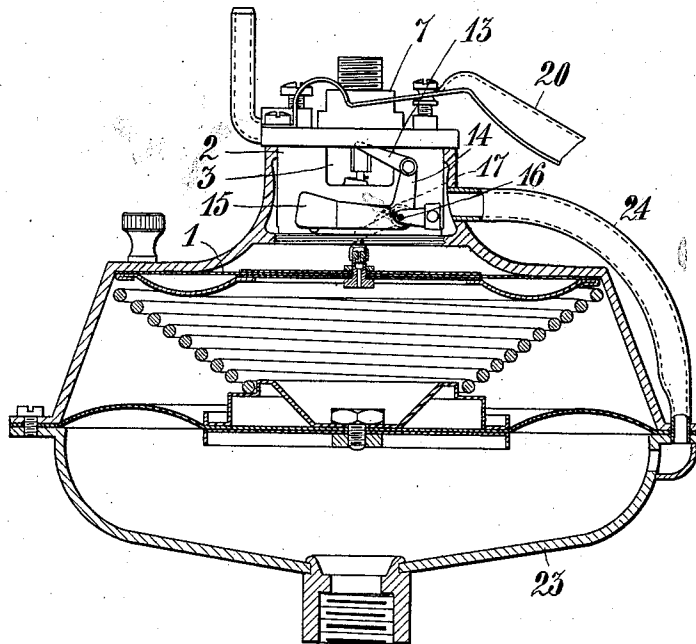
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2 SHEETS—SHEET 2.

Fig. 3.



Witnesses

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UNITED STATES PATENT OFFICE.

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APPARATUS FOR LIGHTING AND EXTINGUISHING GAS-LIGHTS FROM A DISTANCE.

1,047,552.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that we, JOHN FRITIOF NÄSSÉN and FRANS JOHAN HENRIK RUSTIGE, subjects of the King of Sweden, residing, respectively, at Solhem, in the parish of Spånga, in the hundred of Sollentuna and district of Stockholm, Sweden, and at Lilla Essingen, in the city of Stockholm, Sweden, have invented new and useful Improvements in Apparatus for Lighting and Extinguishing Gas-Lights from a Distance, of which the following is a specification, reference being had to the drawings accompanying and forming a part hereof.

This invention relates to apparatus for lighting and extinguishing gas lights from a distance and particularly to apparatus of the said kind having a valve body by the movements of which the main flame and the pilot flame are alternately lighted and extinguished. The valve body is operated by a diaphragm actuated by changes of pressure in the gas conduit. In apparatus of the said kind certain solid substances suspended in the gas, such as paraffin and the like, settle on the valves so that the latter must often be cleansed, in order to work satisfactorily.

The object of the invention is to provide an apparatus of the said kind which is simple in construction and reliable in working, and which may be easily cleansed, when required.

The invention consists, chiefly, in arranging the valve body in such a manner that the same may be freely removed and re-inserted from without the casing upon removal of the burner, without any other parts of the apparatus being removed or displaced.

The invention further comprises the construction and combination of parts hereinafter more particularly set forth with reference to the drawing.

In the drawings, we have shown parts of an apparatus embodying the invention.

Figure 1 is a vertical section of the valve mechanism of the apparatus, and Fig. 2 is a side view of the same, both being shown on an enlarged scale. Fig. 3 is a central

vertical section of the whole apparatus in natural size.

Referring to the drawings, 1 is a diaphragm actuated by changes of pressure in the gas conduit either directly or through the intermedium of an air cushion, as clearly shown in Fig. 3. The valve casing 2 has a bore 3 adapted to receive the valve body 4 (Figs. 1 and 2). The latter is journaled vertically in such manner as to be able to turn about its longitudinal axis. In the position shown in Fig. 1 the upper conical part 5 of the said valve body shuts off the passage 6 to the main flame. The passage 6 is made in a nut 7 screwed into the bore 3 and provided at its upper part, with screw threads to receive the main burner.

The lower valve controlling the supply of gas through the passage 8 to the pilot flame consists of a lateral recess 9 in the lower pivot pin 10 of the valve body, said recess communicating in the position shown with a passage 11 so that the gas entering into the lower part of the outer casing 23, below the air cushion, and flowing through the tube 24 to the valve casing 2, can pass from the bore 3 therein through the passage 11, the recess 9 and the passage 8 to the pilot flame.

The middle part of the valve body, which is somewhat thickened, has a number of cavities 12 adapted to be engaged by a spring pawl 13 (Fig. 2) pivotally connected to an angle lever 14. The pawl 13 has such a form as to glide freely over the valve body, from one cavity 12 into another, when the lever 14 swings in the one direction (the clockwise direction in Fig. 2), the friction between the valve body and the valve casing being sufficient to prevent the valve body from turning, whereas the said valve body is turned by the pawl when the lever 14 swings in the opposite direction. This lever carries a weight 15 and is attached to a rocking shaft 16 journaled in the valve casing. Attached to the said shaft 16 is a second lever 17 adapted to be turned when the diaphragm 1 is raised or lowered. The diameter of the thickened part of the valve

body provided with the cavities 12 is not greater than to allow the said part to freely pass through the opening in the seat of the valve body 5. The pivot pin 10 of the valve body has a lug or shoulder 18 cooperating with the fixed guide surface 19, which in the embodiment shown extends in an oblique direction, said guide surface serving to control the movements of the valve body.

In order to enable the valve body to be turned by hand, when desired, a yielding arm 20 is provided, by means of which the pin 21 may be depressed against the lever 17 so as to turn the same. When the valve body is to be cleansed or exchanged it may be easily removed by hand to which end it is provided with a clamp or handle 22 projecting somewhat above the upper edge of the nut 7.

The apparatus described works as follows: When the gas pressure increases, the diaphragm 1 (Fig. 1) is raised, by which the shaft 16 with the weighted lever 14 is turned in the clockwise direction (Fig. 2) causing the pawl 13 to engage one of the cavities 12 of the valve body. When the diaphragm returns into its normal position, the weight 15 sinks and turns the lever 14 with the pawl 13 in the opposite direction. The pawl thereby acts to lift and turn the valve body into a position in which the valve 5 is open while the valve 9 is closed. The movement of the valve body is facilitated and guided by the fixed guide surface 19 on which the lug or shoulder 18 rides during the turning of the valve body. During the next movement of the diaphragm 1 the valve body 4 is turned through a certain angle in the same direction whereby the lug or shoulder 18 rides beyond the highest point of the guide surface 19 so that the valve body 4 drops down into its former position shown in Fig. 1.

If it is desired to turn the valve body through a certain angle, without the same being raised or lowered, the guide surface is formed with a horizontal surface 19' (Fig. 2) extending from the upper end of the oblique part of the guide surface. By such an arrangement any desired intervals of time may be determined between lighting and extinguishing or between extinguishing and lighting of the main and pilot flames of a lamp, for instance in such a manner that the first increase in gas pressure causes the valve body to be raised and turned (effecting the lighting of the main flame and the extinguishing of the pilot flame), while the second increase in pressure causes the valve body to be turned through a further angle without raising or dropping (effecting no change of the flames) and the third increase in gas pressure causes the valve body to be further turned until it drops down (effect-

ing the extinguishing of the main flame and the lighting of the pilot flame).

We claim:

1. In an apparatus of the kind described, the combination of a casing, a burner connected to the said casing, a diaphragm actuated by gas pressure, a valve body placed in the said casing in such a manner as to allow it to be freely removed and reinserted from without the casing upon removal of the burner, and connections between the diaphragm and the said valve body for simultaneously turning and raising the latter by varying gas pressure on the diaphragm, substantially as and for the purpose set forth.

2. In an apparatus of the kind described, the combination of a casing, a burner connected to the said casing, a diaphragm actuated by gas pressure, a valve body controlling both the main flame and the pilot flame, said valve body being placed in the said casing in such a manner as to allow it to be freely removed and reinserted from without the casing upon removal of the burner, and connections between the diaphragm and the said valve body for simultaneously turning and raising the latter by varying gas pressure on the diaphragm substantially as and for the purpose set forth.

3. In an apparatus of the kind described, the combination of a casing, a burner connected to the said casing, a diaphragm actuated by gas pressure, a rotary valve body controlling both the main flame and the pilot flame, said valve body being placed in the said casing in such a manner as to allow it to be freely removed and reinserted from without the casing upon removal of the burner, and connections between the diaphragm and the said valve body for simultaneously turning and raising the latter by varying gas pressure on the diaphragm, substantially as and for the purpose set forth.

4. In an apparatus of the kind described, the combination of a casing, a burner connected to the said casing, a diaphragm actuated by gas pressure, a rotary and longitudinally movable valve body controlling both the main flame and the pilot flame, said valve body being placed in the said casing in such a manner as to allow it to be freely removed and reinserted from without the casing upon removal of the burner, and levers transmitting motion from the diaphragm to the valve body for simultaneously turning and raising the latter by varying gas pressure on the diaphragm, substantially as and for the purpose set forth.

5. In an apparatus of the kind described, the combination of a casing, a burner connected to the said casing, a diaphragm actuated by gas pressure, a valve body controlling both the main flame and the pilot flame, said valve body being adapted to turn

about a substantially vertical axis and placed in the casing in such a manner as to allow it to be freely removed and reinserted from without the casing upon removal of the burner, and connections between the diaphragm and the said valve body for simultaneously turning and raising the latter by

varying gas pressure on the diaphragm, substantially as and for the purpose set forth.

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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."
