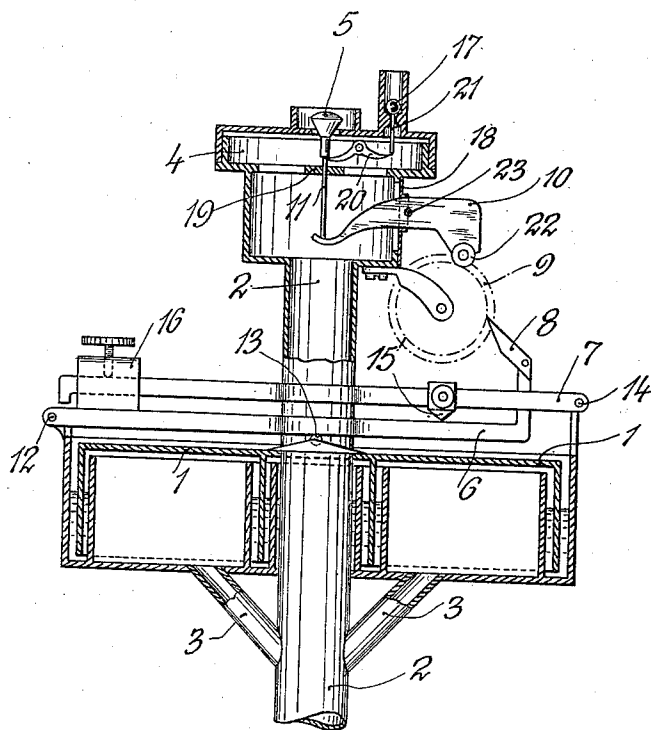


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 AUTOMATIC IGNITING AND EXTINGUISHING DEVICE FOR GAS BURNERS.
 APPLICATION FILED SEPT. 9, 1911.

1,043,946.

Patented Nov. 12, 1912.



Witnesses:

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UNITED STATES PATENT OFFICE.

OLE SEVERIN LIED, OF CHRISTIANIA, NORWAY.

AUTOMATIC IGNITING AND EXTINGUISHING DEVICE FOR GAS-BURNERS.

1,043,946.

Specification of Letters Patent.

Patented Nov. 12, 1912.

Application filed September 9, 1911. Serial No. 648,521.

To all whom it may concern:

Be it known that I, OLE SEVERIN LIED, a citizen of Norway, residing at Christiania, Norway, have invented a new and useful

Improvement in Automatic Igniting and Extinguishing Devices for Gas-Burners; and I do hereby declare the following to be a full, clear, and exact description of the same.

Devices for automatically igniting and extinguishing gas-burners as hitherto known are usually objectionable in some respect especially as regards the adjustment of the apparatus according to the different conditions of pressure. The adjustment is one of the most difficult points in automatic gas-igniting and it is impractical and not exact enough in hitherto known systems. Spring-loading of the movable member (diaphragm, floating bell, piston) used in such devices is not satisfactory, because the resistance increases with the degree of flexion and, besides, the original resistance decreases after some use. Loose weights are, therefore, used for loading the movable member subjected to the gas pressure. As, however, the gas pressure depends upon the height of the locality and upon the quantity of gas consumed, and also always varies at different gas works, it is obvious that great difficulties may arise and trouble be caused, when the load is to be adjusted correctly by means of a greater or less number of such loose weights or plates.

My invention has for object to provide a device, in which the above mentioned objections are obviated.

The invention is illustrated in the accompanying drawing, which represents a side elevation, partly in section, of the device.

The device is provided in a known manner with a member such as a diaphragm, floating bell or piston which receives the gas pressure. In the drawing a floating bell —1—, is shown, which by means of a pipe —2— and branch pipes —3— is connected with a gas supply pipe. The pipe —2— is further connected with a valve chamber —4—, in which a valve —5— opens or closes the opening leading to the gas-burner, to be mounted upon the chamber —4—. The movable member —1— subjected to the gas pressure is in operative connection with two oscillating levers —6—, and —7—, the lever —6— being also connected with the valve operating mechanism

(pawl —8—, usual ratchet and cam wheel —9—, lever —10— and valve operating bar —11—), while the other lever —7— serves for adjusting or balancing the member —1— in the following manner:—The gas pressure tends to lift the bell —1—, which is so light that a very low gas pressure is sufficient to elevate it. The lever —6—, which is hinged at —12—, lies above the bell —1— and rests upon two rollers —13— at its middle portion. Above the lever —6— is the lever —7— which is hinged at —14— and which by an adjustable pressing piece —15— acts on the subjacent lever —6— acting again on the rollers —13— of the bell —1—. The lever —7— besides, has an adjustable weight —16—. The pressure on the bell —1— from the loading mechanism thus depends upon the position of the piece —15— between the two levers —6— and —7—. The farther the pressing piece —15— is removed from the fulcrum —14— the less is the pressure upon the rollers —13—, *i. e.* the less is the bell —1— loaded, and vice versa, when the pressing piece —15— is moved toward the point —14—. The lever —6— or the lever —7— may be graduated so as to indicate the degree of the load upon the bell —1— at any adjustment of the piece —15—.

In addition to forming a member of the loading mechanism, the lever —6— serves to cause the opening or closing of the burner-valve —5— and eventually also of the pilot-light-valve —17—. For this purpose the lever —6— through a pawl —8— and an ordinary ratchet and cam wheel —9— operates a roller —22— carried by the lever —10—. The latter is secured gas-tight in a flexible material —18— (leather for example) forming one wall of the chamber —4— and enabling the lever —10— to move as required upon the pivot —23— without the use of side-surfaces, stuffing boxes or the like.

The stem —11— of the main valve —5— is guided by a cross piece —19— and is so connected through a double lever —20— with the stem —21— of the pilot-light-valve —17—, that the latter in the usual manner is closed, when the valve —5— is opened, and vice versa.

When now the bell —1— is lifted—on account of the gas pressure being temporarily increased—the two levers —6— and —7— are so lifted and turn upon their fulcrums —12— and —14— respectively.

When the lever —6— lifts the loaded lever —7—, its pawl —8— rotates the wheel —9— one step forward. This wheel is in a known manner provided with cams, teeth or pins, which during the stepwise rotation cause the alternate lifting and lowering of the outer end of the lever —10— and consequently also of the valves —5— and —17—.

Having now described my invention, what I claim as new and desire to secure by Letters Patent is:

1. In a device for automatically igniting and extinguishing gas burners, the combination of a gas-burner-valve, a lifting member actuated by varying gas pressure, a pivoted loading lever loading the said member, a second pivoted lever having a longitudinally adjustable block transmitting the pressure of the said second lever to the loading lever, and an actuating device operated by the movement of said loading lever and effecting the movement of the gas-burner-valve on actuating the lifting member.

2. In a device for automatically igniting and extinguishing gas-burners, the combination of a gas-burner-valve, a lifting member actuated by variation in gas pressure, a pivoted loading lever loading the said member, a second pivoted lever transmitting its pressure to the loading lever and having an adjustable weight for varying this pressure and an actuating device operated by

the movement of said loading lever and effecting the movement of the gas-burner-valve on actuating the lifting member.

3. In a device for automatically igniting and extinguishing gas-burners, the combination of a gas-burner-valve, a lifting member actuated by variation in gas pressure, a pivoted loading lever loading the said member, a second pivoted lever having a longitudinally adjustable block transmitting the pressure of the said second lever to the loading lever, a pressure varying weight adjustably carried by the second lever and an actuating device operated by the movement of said loading lever and effecting the movement of the gas-burner-valve on actuating the lifting member.

4. In a device for automatically igniting and extinguishing gas-burners, the combination of a gas-burner-valve, a gas chamber for the same having a flexible side wall, a valve actuating lever gas tightly attached in the said flexible wall so as to project with one end into the gas chamber and with its other end outside same, and a wheel actuating the said outside lever end to move the lever and valve.

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

OLE SEVERIN LIED.

Witnesses:

MARLIN GUBBORCEUSEN,
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