

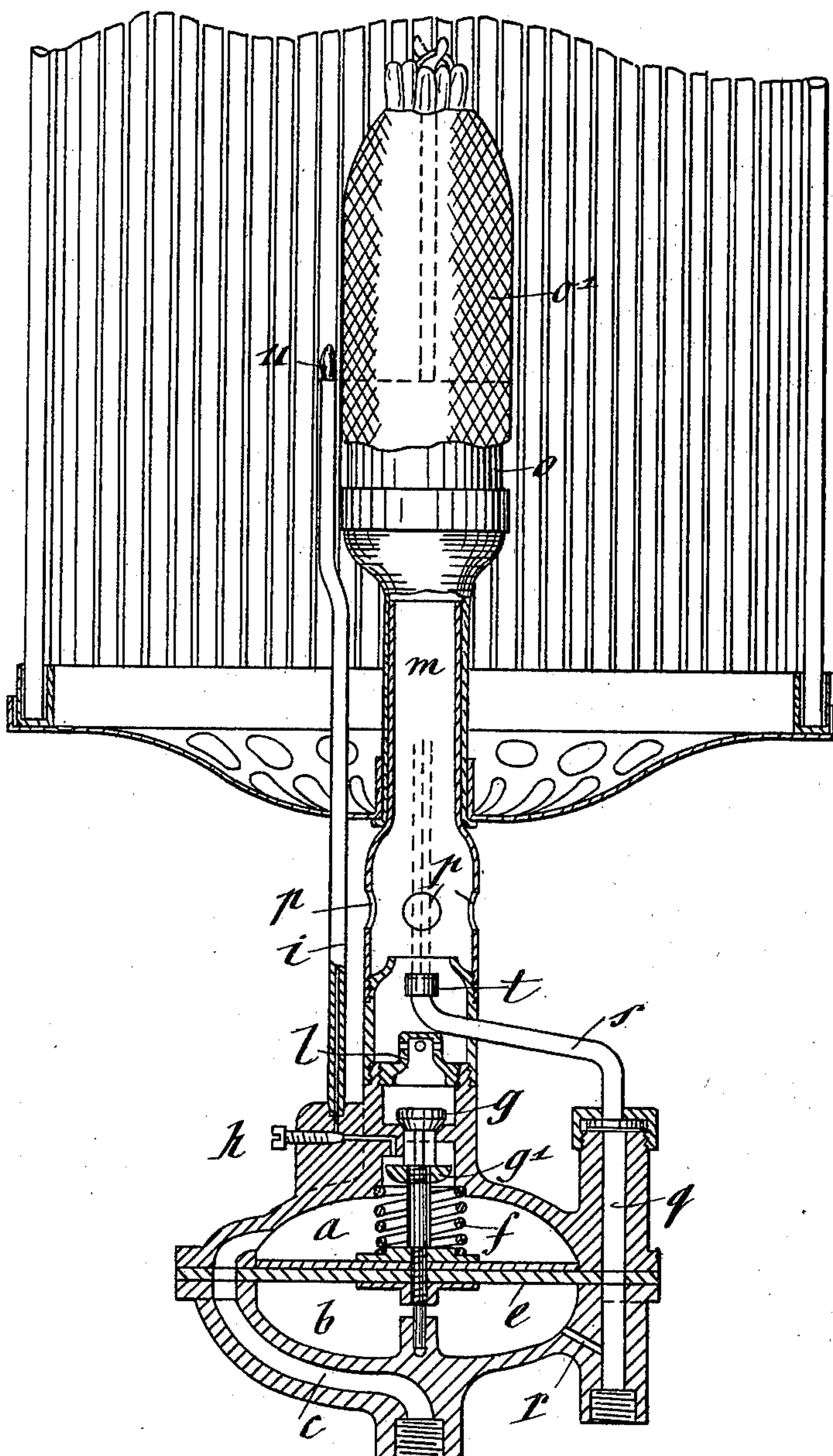
No. 626,558.

Patented June 6, 1899.

E. H. C. OEHLMANN.
GAS LIGHTING APPARATUS.

(Application filed Mar. 10, 1898.)

(No Model.)



WITNESSES:

Geo. W. Jaerel.
Chas. Gash.

INVENTOR

Emil H. C. Ohlmann
by Louis Regener
his ATTORNEYS.

UNITED STATES PATENT OFFICE.

EMIL HEINRICH CONRAD OEHLMANN, OF BERLIN, GERMANY.

GAS-LIGHTING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 626,558, dated June 6, 1899.

Application filed March 10, 1898. Serial No. 673,297. (No model.)

To all whom it may concern:

Be it known that I, EMIL HEINRICH CONRAD OEHLMANN, a citizen of the Empire of Germany, residing at Berlin, in the Kingdom of Prussia and Empire of Germany, have invented certain new and useful Improvements in Gas-Lighting Apparatus, (for which I have made applications for patents in Germany, filed December 31, 1897; in Austria, filed December 31, 1897; in Hungary, filed January 2, 1898; in Belgium, filed January 3, 1898; in France, filed January 4, 1898; in Denmark, filed December 31, 1897; in Sweden, filed January 3, 1898; in Switzerland, filed January 1, 1898; in Italy, filed January 4, 1898; in Great Britain, filed January 7, 1898, and in Norway, filed January 10, 1898,) of which the following is a specification.

This invention relates to gas-lighting apparatus of that class in which compressed air is used for raising the illuminating power of the gas.

The object of the invention is to provide an automatic gas shut-off arranged below the burner, which shut-off is worked by compressed air in such a way that at the formation of the flame the compressed air rushes with such force through the mixing-chamber and burner that the backlash of the flame and the explosive noise which is often produced thereby are prevented. The compressed air also acts in the same way at the extinguishment of the flame.

In the accompanying drawing a vertical section of the apparatus is shown.

The apparatus comprises a gas-burner *o*, with an incandescent mantle *o'*, which is surrounded by a cage of round or prismatic strips of glass arranged close to one another or provided with intermediate spaces; further, a mixing-tube *m*, which has openings *p*, that may be controlled by an annular register or slide in the well-known manner, the igniting-tube *i*, the compressed-air nozzle *t*, gas-nozzle *l*, double valve *g g'*, forming a shut-off, spring *f*, gas-chamber *a*, compressed-air chamber *b*, gas-passage *c*, compressed-air passages *q* and *r*, elastic diaphragm *e*, and regulating-screw or needle-valve *h*. The passage *r* can itself evidently be provided with a regulating-screw or needle-valve. The diaphragm is composed of material non-decomposable by air or gas

and can for that purpose be made of different layers.

The passage *c* is connected with the gas-supply pipe, which is provided with a small regulating or shut-off cock. The compressed-air passage *q* is by means of a pipe controlled by a suitable cock connected with an air-compression apparatus of desired form.

The pressure of the air is maintained higher than that of the illuminating-gas and is set to a certain pressure through the medium of a regulating-valve.

The method of operation is as follows: The illuminating-gas passes in the well-known manner through the passage *c* to the gas-chamber *a*, around the valve *g'*, and arrives at the igniting-flame through the valve-controlled passage in the igniting-tube *i*, which is ready to ignite the gas and air mixture as soon as the same issues from the lower part of the burner. For the purpose of placing the incandescent burner in proper working condition compressed air is let in, which then passes into the mixing-tube *m* and tends to carry forward with it all gas deposits. Upon a certain pressure of air, which compressed air passes through the passage *r* into air-chamber *b*, the elastic diaphragm and the spring are raised in order to open the gas-valve *g*. The outflowing gas is immediately taken up by the compressed air and conducted to the igniting-flame in such a way that no explosive mixture remains in the mixing-chamber, and consequently a backlash of the flame is prevented. The gas and compressed air together rush through the mixing-chamber *m*, whereby more air is caused to be admitted through the openings *p*, and the mixture issuing from the upper part of the burner is ignited by the igniting-flame. To put out the light, the compressed air is let off from the supply-pipe or is so far reduced that the gas-pressure, in connection with the spring *f*, moves the diaphragm downward and closes the valve *g*, but opens valve *g'*, so that the igniting-flame again burns full, and the incandescent burner is ready for the next lighting.

The diaphragm and spring must be strong enough in order to leave the valve *g* open when under a certain pressure and to close the same as soon as this pressure is reduced. This is necessary in order that the compressed

air, which still, after closing of the valve *g*, passes through the nozzle *t* into the mixing-chamber, will cause the remaining gas in the apparatus to be led out with a rush, and thus
5 the explosive-like noise and the backlash of the flame are prevented.

Having thus described my invention, what I claim is—

10 The combination with a gas-chamber, of a mixing-tube and an ignition-tube in communication with such gas-chamber, a valve controlling such communication, a compressed-

air chamber comprising a pressure device, whereby the compressed air is made to operate said valve, and a compressed-air conduit 15 opening into said air-chamber and into said mixing-tube, substantially as set forth.

In testimony that I claim the foregoing as my invention I have signed my name in presence of two subscribing witnesses.

EMIL HEINRICH CONRAD OEHLMANN.

Witnesses:

C. H. DAY,

HENRY HASPER.