

(No Model.)

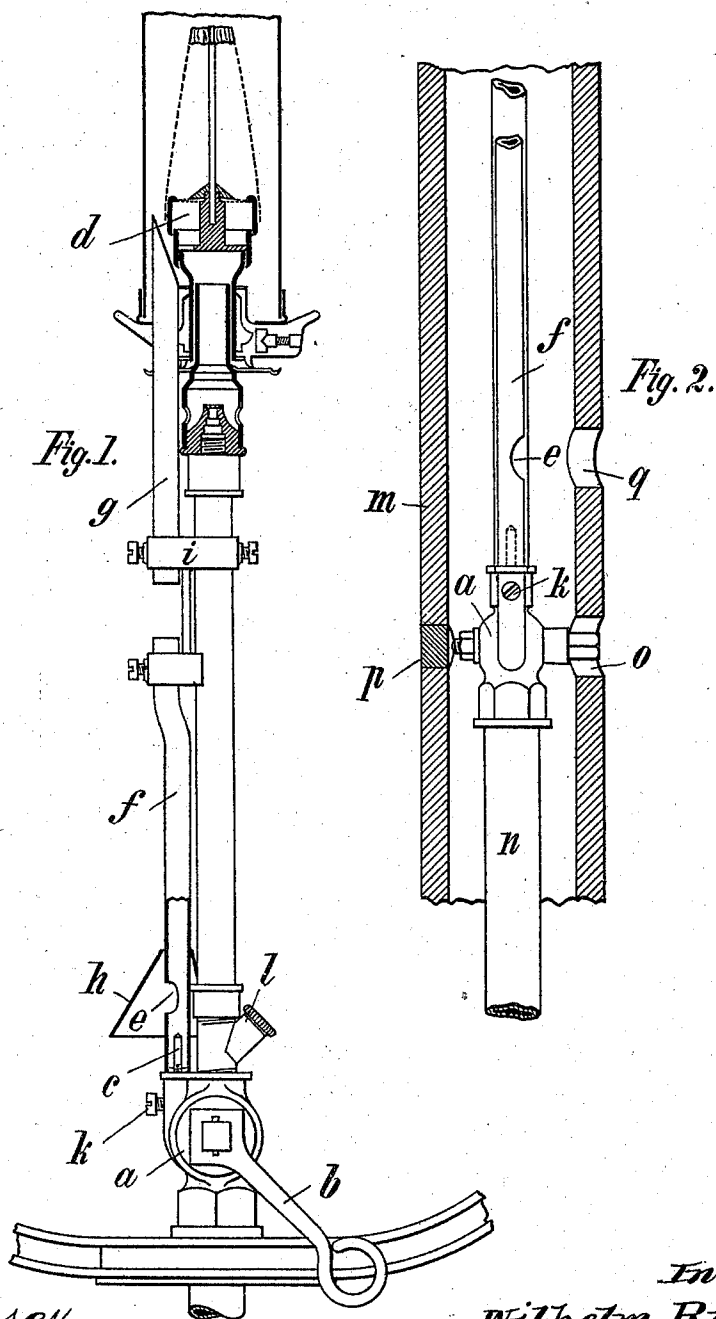
2 Sheets—Sheet 1.

W. RITTER.

LIGHTING APPARATUS FOR GAS LAMPS.

No. 576,227.

Patented Feb. 2, 1897.



Witnesses.

D. S. Ober,
[Signature]

Inventor.

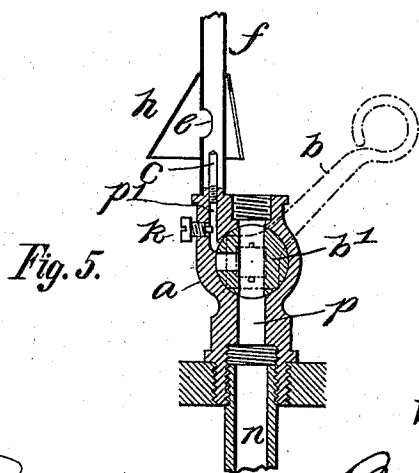
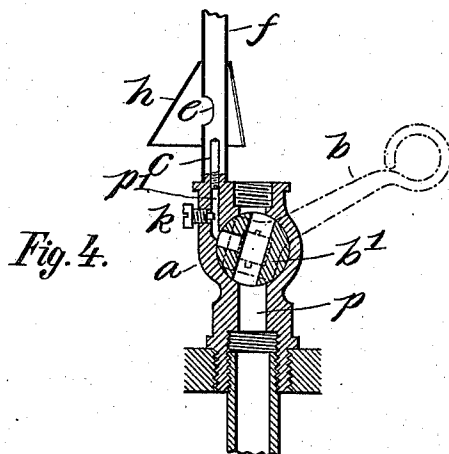
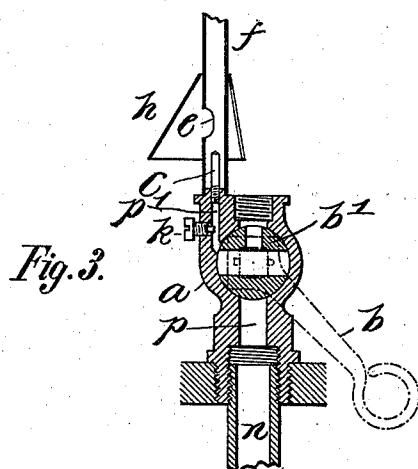
Wilhelm Ritter.

By *[Signature]* atty

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Witnesses
B. S. Ober
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Inventor:
Wilhelm Ritter
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UNITED STATES PATENT OFFICE.

WILHELM RITTER, OF COLOGNE, GERMANY.

LIGHTING APPARATUS FOR GAS-LAMPS.

SPECIFICATION forming part of Letters Patent No. 576,227, dated February 2, 1897.

Application filed March 11, 1895. Serial No. 541,292. (No model.)

To all whom it may concern:

Be it known that I, WILHELM RITTER, a subject of the King of Prussia, German Emperor, and a resident of Cologne-on-the-Rhine, Kingdom of Prussia, and German Empire, have invented certain new and useful Improvements in Lighting Apparatus for Gas-Lamps, &c., of which the following is a specification.

My invention has relation to devices for lighting gas-lamps, stoves, and the like the burners of which are not readily accessible for the purpose; and it has for its object the provision of means whereby the usual auxiliary and constantly-burning igniting-jet is dispensed with, as will now be fully described, reference being had to the accompanying drawings, in which—

Figure 1 is an elevation, partly in section, illustrating my invention in its application to a street lamp or lantern provided with a Welsbach burner. Fig. 2 is a like view illustrating my invention in its application to candelabra or gas-lamps supported from hollow standards or posts; and Figs. 3, 4, and 5 are sectional views illustrating the controlling-valve or stop-cock in its different positions.

Referring to Figs. 1, 3, 4, and 5, *d* indicates a Welsbach or Wells light incandescent burner of usual and well-known construction. *P* is the burner-pipe and *n* the gas-supply pipe, in which pipes is interposed a controlling-valve or stop-cock and a coupling *C'* on the burner side of said stop-cock, said coupling *C'* being provided with a branch *l*, normally closed by a screw-cap, for the purpose of introducing alcohol or the like into the casing *a* of the stop-cock for thawing water that may collect and freeze in said valve-casing. The barrel or casing *a* of the stop-cock is also provided with a passage *p'*, parallel with the axial gas-passage *p*² in said barrel or casing. In the outer end of the passage *p'* is a small burner *c*, surrounded by a pipe *f*, provided immediately above the burner-orifice with an igniting and air-supply port *e*, itself protected by a hood *h*, so that the jet may be lighted in windy or stormy weather. The supply of gas to the igniter-

burner *c* is controlled by a needle or cone valve plug *k*, adapted to more or less close the aforementioned gas-passage *p'*.

The pipe *f*, surrounding the igniter-burner *c*, constitutes the lower portion of a pipe *P'*, that conducts the ignited gas from the said burner *c* to the main burner *d*, said pipe *P'* being composed of two superposed sections, the upper section *g* being arranged relatively to the lower section *f* so as to leave a hiatus between the two. The upper pipe-section *g* terminates at or about at the orifice of the main burner and is cut away obliquely at its outlet to form an enlarged orifice *g'* for the flame facing the said main burner orifice or outlet. The upper section *g* of the igniter-pipe *P'* is adjustably secured in a bore of a sleeve *i* by means of a set-screw *i'*, said sleeve being likewise secured to the burner-pipe *P* by means of a set-screw *i*². The lower section *f* of igniter-pipe *P'* is held in a sleeve *i*³ by means of a set-screw *i*⁴, said sleeve having a concave bearing-face fitting the main burner-pipe *P* and being held in position relatively to the upper pipe-section *g* by a rod *i*⁵.

In Figs. 3 to 5 I have shown the two-way plug *b'* of the stop-cock in its various positions, said plug having a squared end *b*² for a key or hand lever *b*, by means of which the plug is set to the desired position.

In the position of the plug shown in Fig. 3 the supply of gas is cut off from both the main and the igniter burner *c*. In the position of the stop-cock Fig. 4 the supply of gas is turned on fully to the igniter-burner and partly to the main burner *d*, while in the position Fig. 5 the supply of gas to the main burner *d* is fully turned on, and cut off from the igniter-burner.

In lighting, the lever *b* is turned to bring the plug *b'* to the position shown in Fig. 4, a full supply of gas flowing to the igniter-burner *c*, while but a partial supply flows to the main burner *d*. If the gas supplied to burner *c* is allowed to escape therefrom, so as to become mixed with air and fill the lower section *g* of the igniter-pipe *P'* and is then ignited at *e*, there will be a flash, and as the gas and flame issue from said lower section an additional quantum of air will be mixed

therewith, resulting in an explosion at the hiatus between the pipe-sections that will force the ignited mixture to the upper end of the enlarged orifice g' of the upper section g of said igniter-pipe P' and project the flame into the path of the gas issuing from the main-burner orifice and igniting the same, after which the lever b is fully turned up, or to the position shown in Fig. 5, whereby the supply of gas to the igniter-burner is cut off. When, on the other hand, the lamp is to be extinguished, the lever is fully turned down, or to the position shown in Fig. 3.

It will thus be seen that the lighting and extinguishing of the lamp is readily controlled by the lever b , that there is no waste of gas either during the burning of the lamp or after it is extinguished, and that but a comparatively small volume of gas is required to ignite the gas at the main burner.

By making the igniter-pipe P' in sections and leaving a hiatus between the proximate ends the jet of flame from the igniter-burner can be forced to a considerable distance by the explosive force of the gaseous mixture, which explosion takes place about midway between the two burners c and d .

In the application of my invention to candelabra or to street-lamps supported from hollow posts, as shown in Fig. 2, the igniting devices are located in the hollow standard or post m , so as to be within easy reach from the floor or ground. To this end the post m is provided with an opening g , diametrically opposite to the lighting-aperture or air-port e in the lower section f of the igniter-pipe P' , the hood h , Fig. 1, being of course unnecessary. The post is further provided with two diametrically opposite apertures o and o' in the plane of the axis of the barrel or casing a of the stop-cock, while the opening o' , after the plug b' has been secured in position, can be closed by a suitable plug p^2 . The post is also provided with a third opening (not shown) opposite the regulating-valve k for the purpose of affording access thereto.

When the lamp or candelabrum has a plurality of burners, the upper section g of the igniter-pipe P' will of course be provided with a corresponding number of branches extending to the respective burners, and as this construction will be readily understood by all those conversant with the manufacture of devices for gas illumination I have deemed it unnecessary to illustrate the same.

Having thus described my invention, what

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

1. The combination with a main burner and a gas-supply pipe therefor, of an igniter-burner distant from the main burner, an imperforate duct inclosing the igniter-burner and leading to the main burner, said duct interrupted at a point or points intermediate of the two burners, and an air and igniting opening in said duct immediately opposite the tip of the igniter-burner, substantially as and for the purpose set forth.

2. The combination with a main burner, a gas-supply pipe an igniter-burner and a regulating-valve constructed to admit gas to either or both burners, of an imperforate flame-conveying pipe inclosing the igniter-burner and provided with an air and igniting port above said igniter-burner, said pipe extending to the main burner and composed of two sections arranged to leave a hiatus between them, substantially as and for the purpose set forth.

3. The combination with a main burner, a gas-supply pipe an igniter-burner, and a regulating-valve constructed to admit gas to either or both burners, of an imperforate flame-conveying pipe inclosing the igniter-burner and provided with an air and igniting port above said igniter-burner, said pipe extending to the main burner and composed of two sections arranged to leave a hiatus between them, said sections adjustable toward and from each other, substantially as and for the purpose set forth.

4. The combination with a main burner, an incandescing hood thereon, a gas-supply pipe, an igniter-burner distant from said main burner, and a regulating-valve constructed to admit gas to one or both burners, of an imperforate conduit inclosing the igniter-burner and extending therefrom to the main burner, said pipe composed of two sections arranged to leave a hiatus between them, the upper section having its end proximate to the incandescing hood and burner cut away slantingly to form an enlarged outlet, substantially as and for the purpose set forth.

In testimony that I claim the foregoing as my invention I have signed my name, in presence of two witnesses, this 23d day of February, 1895.

WILHELM RITTER.

Witnesses:

FRITZ SCHRÖDER,
SOPHIE NAGEL.