No. 689,657. Patented Dec. 24, 1901.

W. H. A. SIEVERTS & J. F. C. JUERGENS.

INCANDESCENT GAS BURNER.

(Application filed Aug. 4, 1900.)

(No Model.)

Fig. 3.

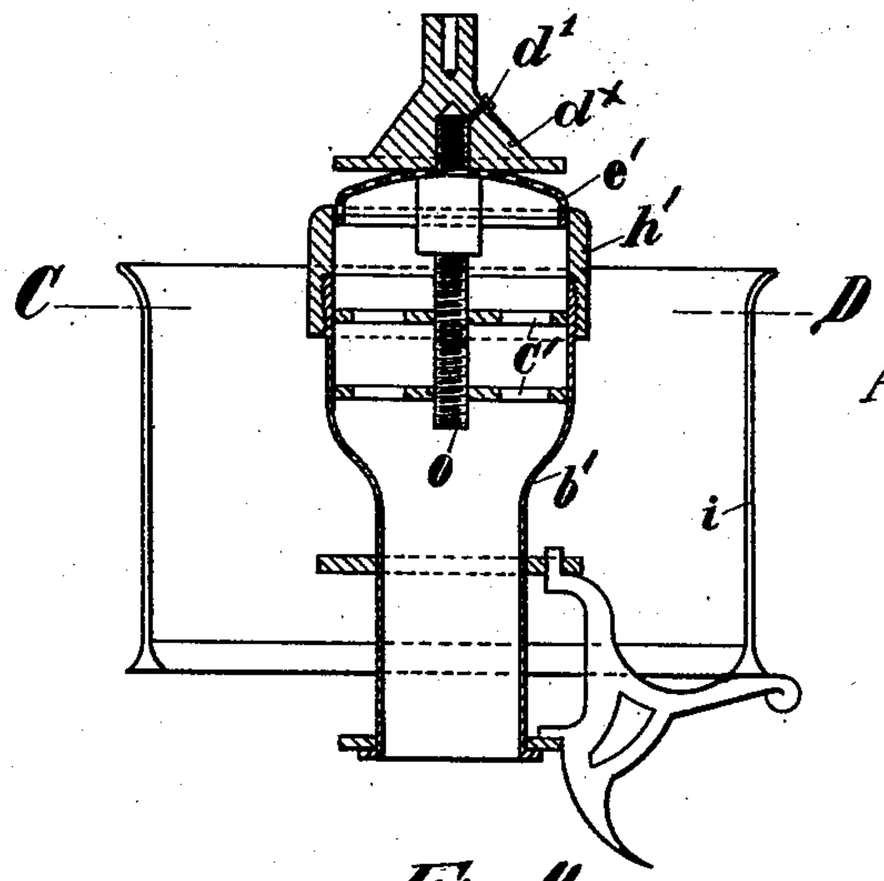


Fig. 4.

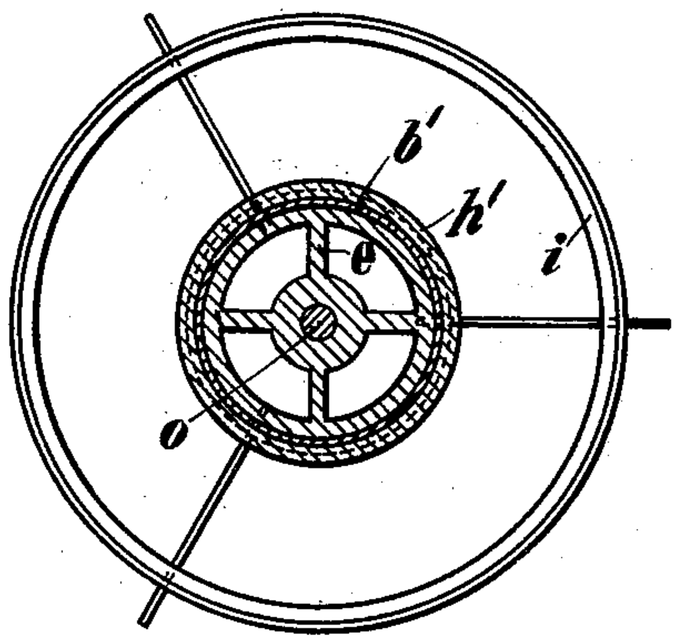


Fig. 1.

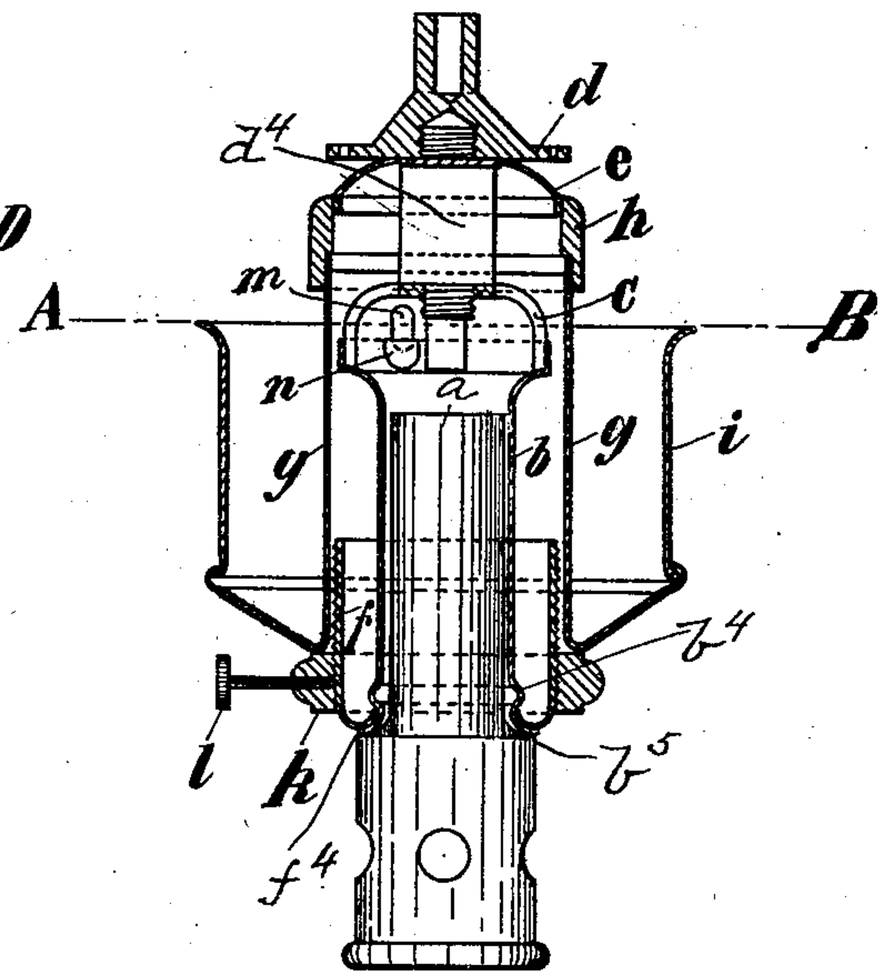
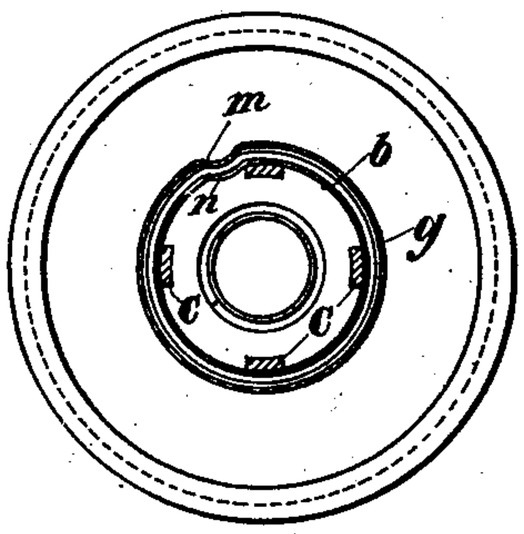


Fig. 2.



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UNITED STATES PATENT OFFICE.

WILHELM HEINRICH AUG. SIEVERTS, OF HAMBURG-UHLENHORST, AND JULIUS FRIEDRICH CHARLES JUERGENS, OF ALTONA, GERMANY.

INCANDESCENT GAS-BURNER.

SPECIFICATION forming part of Letters Patent No. 689,657, dated December 24, 1901.

Application filed August 4, 1900. Serial No. 25,865. (No model.)

To all whom it may concern:

Be it known that we, WILHELM HEINRICH AUGUST SIEVERTS, residing at Hamburg-Uhlenhorst, and JULIUS FRIEDRICH CHARLES JUERGENS, residing at 35 Oelkers Allee, Altona, Germany, subjects of the Emperor of Germany, have invented a certain new and useful Improved Incandescent Gas-Burner, of which the following is a specification.

Our invention relates to improvements in incandescent gas-burners of that type in which the burner is provided with a disk or flame-spreader; and the object of our invention is to render the said disk or flame-spreader adjustable upon the burner when lighted, as it has been found that such disks are efficient only when arranged at a properly-regulated distance from the top of the supply-nozzle in accordance with the variations in the mixture of gas and air issuing through the nozzle. The various arrangements heretofore devised for this purpose have been void of practical results for the reason that they do not admit of adjustment while the burner is lighted, and much less so when the incandescent mantle is placed on the burner. Moreover, it has been noticed that in the position of the burner in which the flame develops its greatest heat there is a strong tendency to back-lighting unless this is prevented by a wire netting or sieve arranged in the immediate proximity of the disk and in such a manner that the said sieve shall remain in the same relative position with the disk and without disengaging from the burner-head. We attain these objects by the construction illustrated in the accompanying drawings, in which—

Figure 1 is a vertical section of the entire burner; Fig. 2, a horizontal section taken on the line A B of Fig. 1; Fig. 3, a vertical section of a slightly-modified burner-tube, and Fig. 4 a horizontal section taken on the line C D of Fig. 3.

Similar letters refer to similar parts throughout the several views.

Over the ordinary mixing-tube a, having reduced top, Fig. 1, is placed a sleeve b, provided with a support c for carrying the threaded stem d^4 of the disk d and the wire sieve e, connected therewith. The stem d^4 is adjustable in the said support c, and the disk is adjustable on the stem. The lower portion of this sleeve-like carrier b of the disk or flame-spreader d is surrounded by a second and shorter sleeve or ring f, provided with external screw-threads. The carrier-sleeve b is further surrounded by a third sleeve or outer tube g, to the upper end of which is secured the burner-head h, while to its lower end is secured the gallery i for the chimney. The tube g is seated upon a nut k, screwed upon the ring f and furnished with a set-screw l for fixing it in position. The screw may obviously be replaced by other means which will allow of the vertical adjustment of the tube g, and this latter may, if desired, also be provided with screw-threads. The lower end of this sleeve is provided with the collar or projection b^4 and adjacent flange b^5 and the sleeve or ring f with a correspondingly-shaped flange f^4, fitting therein, as seen in Fig. 1.

When turning the nut k, the tube g, with the burner-head h, is moved in a vertical direction and can thereby be adjusted relatively to the nozzle of the mixing-tube a, and the correct position of the burner-head can be ascertained by watching the light, which will indicate the moment when flame develops its greatest heat. The carrier-sleeve b may, if desired, be prevented from revolving by providing a projection m on the tube g and a corresponding notch n on the sleeve b for their mutual engagement.

In the modified form shown at Figs. 3 and 4 the mixing-tube is surrounded by a carrier-tube b', provided with a cup-shaped enlargement at the top, to which is secured the burner-head h'. In the interior of this tube there are provided two cross-pieces c', which receive the screw-threaded stem o of the disk $d^\times$ and wire sieve e'. In lieu of the cross-pieces and screw-stem an internal screwed path or the like may be adopted. The rotation of the disk $d^\times$ upon the upper end of its stem is prevented by a small screw d', which is tightened against the stem. For adjusting the disk upon the lighted burner the outer tube is held by means of suitable tongs while revolving the disk with its stem in the supporting cross-pieces.

The correct adjustment can be ascertained

without the incandescent mantle being on the lighted burner by the fact that the disk is then enveloped in a green zone of the flame.

We are aware that prior to our invention incandescent gas-burners have been provided with disks; but these could not be adjusted in accordance with the variations in the gas and air mixture after the burner was lighted. We therefore do not claim such a combination broadly; but

What we do claim as our invention, and desire to secure by Letters Patent of the United States, is—

1. In an incandescent gas-burner, the combination with the mixing-tube and a flame-spreader, of a sleeve for carrying the flame-spreader, a sieve for the top of the burner, and an intervening stem having its ends secured in the flame-spreader and in the said sleeve respectively, as set forth.

2. The combination in an incandescent gas-burner with a mixing-tube having a reduced top portion, of a sleeve fitting such reduced top portion and widened at its upper end, a burner-sieve a flame-spreader having an adjustable stem, and a support for the stem of the flame-spreader and the burner-sieve, as set forth.

3. In an incandescent gas-burner the combination with a mixing-tube having a reduced top portion, of a short outer ring, a sleeve widened at its upper end and formed at its lower end with a circular projection and with an adjacent flange between which a correspondingly-shaped flange of the short outer ring is secured, substantially as set forth.

4. In an incandescent gas-burner, the combination with a burner-sieve, a mixing-tube, a flame-spreader having a stem, and a sleeve carrying the stem of the flame-spreader and burner-sieve, of an outer ring secured to said sleeve and provided with external screw-threads and with a nut adapted to be adjusted upon the ring and to be fixed in position thereupon by a set-screw and an outer tube, substantially as set forth.

5. In an incandescent gas-burner the combination with a burner-sieve, a mixing-tube, a flame-spreader having a stem, a sleeve carrying the stem of the flame-spreader and burner-sieve and a ring externally screw-threaded and an adjustable nut or collar, of a tube fitting loosely around the said ring and carried by the adjustable nut thereof, such tube carrying at its upper end an annular burner-head, substantially as set forth.

6. In an incandescent gas-burner the combination with a burner-sieve, a mixing-tube, and a flame-spreader having a stem, of a closely-fitting sleeve having an enlarged top and carrying the stem of the flame-spreader and the burner-sieve, a ring secured to the lower end of the sleeve and fitted with an adjustable nut, an outer burner-tube furnished with a burner-head and adapted to slide upon the said sieve and with an enlarged base and a gallery connected to such base, substantially as set forth.

7. In an incandescent gas-burner the combination with a mixing-tube, and a flame-spreader having a stem, and a burner-sieve, of a sleeve having an enlarged upper portion, an external annular burner-head, its support, and a support for the reception and adjustment of the lower end of the stem carrying the disk and burner-sieve which latter is thereby capable of being adjusted in the burner-head and as to its distance from the nozzle of the said mixing-tube, substantially as set forth.

In testimony whereof we have hereunto set our hands, in presence of two subscribing witnesses, this 17th day of July, 1900.

WILHELM HEINRICH AUG. SIEVERTS.
JULIUS FRIEDRICH CHARLES JUERGENS.

Witnesses:
RUDOLPH GUSTAV WITT,
ED. JUERGENS.