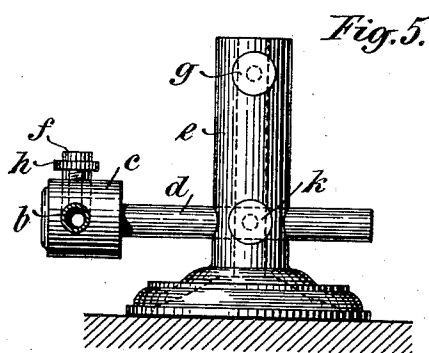
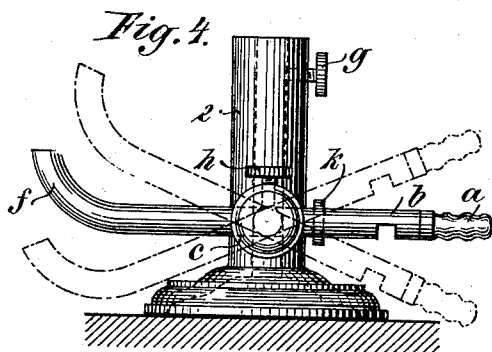
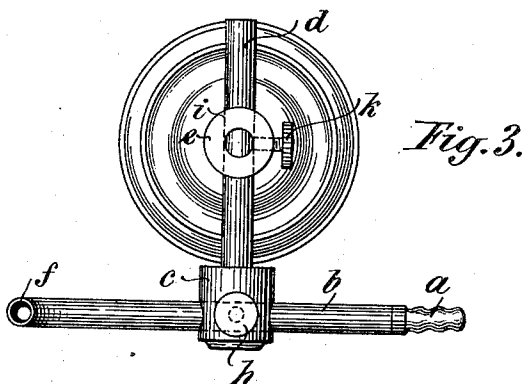
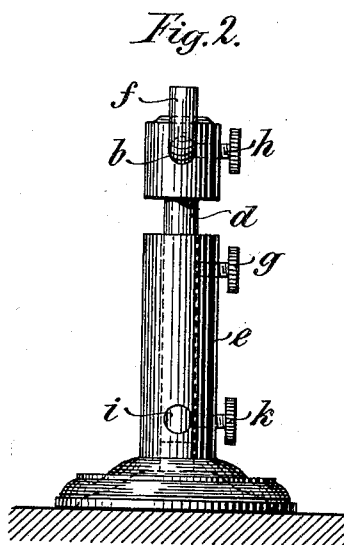
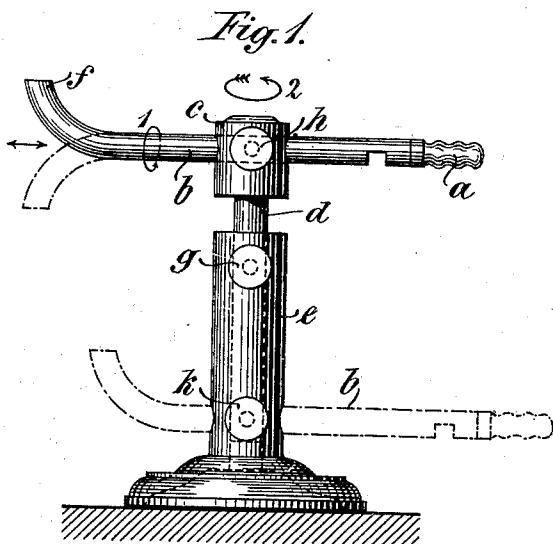


W. KAPPEL.
BUNSEN BURNER.
(Application filed Oct. 8, 1901.)

(No Model.)



Witnesses:
P. H. Bagley.
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UNITED STATES PATENT OFFICE.

WILHELM KAPPEL, OF BERLIN, GERMANY.

BUNSEN BURNER.

SPECIFICATION forming part of Letters Patent No. 706,830, dated August 12, 1902.

Application filed October 8, 1901. Serial No. 77,974. (No model.)

To all whom it may concern:

Be it known that I, WILHELM KAPPEL, a subject of the King of Prussia, German Emperor, and a resident of Berlin, Kingdom of Prussia, German Empire, have invented certain new and useful Improvements in Bunsen Burners, of which the following is a specification.

This invention relates to improvements in Bunsen burners.

According to the invention the burner proper is adjustably mounted in a stem which can be adjustably fitted in holes or the like in a suitable stand, by which arrangement the position of the burner can be altered to suit any requirement.

To enable my invention to be fully understood, I will describe it by reference to the accompanying drawings, in which—

Figures 1 and 2 are side elevations, at right angles to one another, of a burner made according to the invention. Figs. 3, 4, and 5 are respectively a plan view and elevations at right angles to one another, showing the burner-tube in a different position.

b is the burner proper, which is provided with the nozzle *a* for the connection of the usual flexible tubing. This tube *b* slides in the head *c* of a stem *d*, one end of which is inserted into the tubular socket or stand *e*, provided with a foot. The burner *f* is bent out of the axial line of the tube *b*, as clearly shown. By adjusting the stem *d* in the socket *e* the height of the burner *f* can be adjusted, being secured in the position to which it is adjusted by a set-screw *g*, which engages a screw-threaded hole in the socket and bears against the stem *d*. Furthermore, the burner-tube can be slid axially in the head *c* of the stem *d*, whereby the burner can be brought nearer to or farther away from the socket *e*. If it be desired to apply heat along a straight line, the burner-tube can be moved to and fro in the carrying-head *c*. For fixing the tube *b* in any particular position a set-screw *h* is provided, which passes through the head *c* and clamps the said tube. In a similar manner the burner-tube can be rotated in the

carrying-head. For example, the burner *f* can be directed toward the side or downward, as shown in dotted lines in Fig. 1. In order, for instance, to apply heat in a circular path around a tube or the like, the burner-tube can be turned continuously in the direction indicated by the arrow 1, Fig. 1. The arrow 2, which is shown above the head of the burner-tube *b*, indicates that the said tube can also be turned on the stem *d* in a horizontal plane in order to apply heat to a correspondingly-shaped surface. In cases where the flame is required at a lower elevation a hole *i*, Fig. 2, is made at the bottom of the socket *e*, into which hole the burner-tube *b* can be inserted, as shown in the broken lines, Fig. 1. A set-screw *k* serves to secure it in position. In this case, also, obviously the different adjustments of the burner are possible. Several of these transverse holes *i* can be provided, if desired. The hole *i* can also serve for the reception of the stem *d*, as shown in Figs. 3 to 5, which then forms a horizontal pivot for the burner-tube *b*. This can then be adjusted in height by simply rotating it, as shown in dotted lines, Fig. 4.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is—

1. A Bunsen burner comprising a supporting socket or stand with axial opening and an independent transverse opening, a stem constructed to fit either of said openings and having a head, a burner-tube axially and longitudinally adjustable in the head of said stem and means for holding the stem in either opening of the socket and means for holding the tube in said stem.

2. A Bunsen burner comprising a supporting stand or socket with axial and transverse openings, a stem adjustable in either of said openings, and a burner-tube axially and longitudinally adjustable in said stem, the said burner-tube having its burner end bent out of the axial line of the tube and its other end provided with a nozzle.

3. A Bunsen burner comprising a support-

ing stand or socket having axial and trans-
verse openings intersecting each other, a head
with transverse opening and a stem at right
angles thereto, a burner-tube axially and lon-
5 gitudinally adjustable in the opening of the
head, said stem being constructed to fit either
the axial or transverse opening of the socket,
means for securing the tube in its support,

and means for securing the stem in its ad-
justed position in the socket. 10

In witness whereof I have hereunto set my
hand in presence of two witnesses.

WILHELM KAPPEL.

Witnesses:

WOLDEMAR HAUPT,

HENRY HASPER.