(No Model.)

G. R. FORD & D. ALEXANDER.

SUPPORT FOR BLOWPIPES.

No. 560,092. Patented May 12, 1896.

Fig. 1.

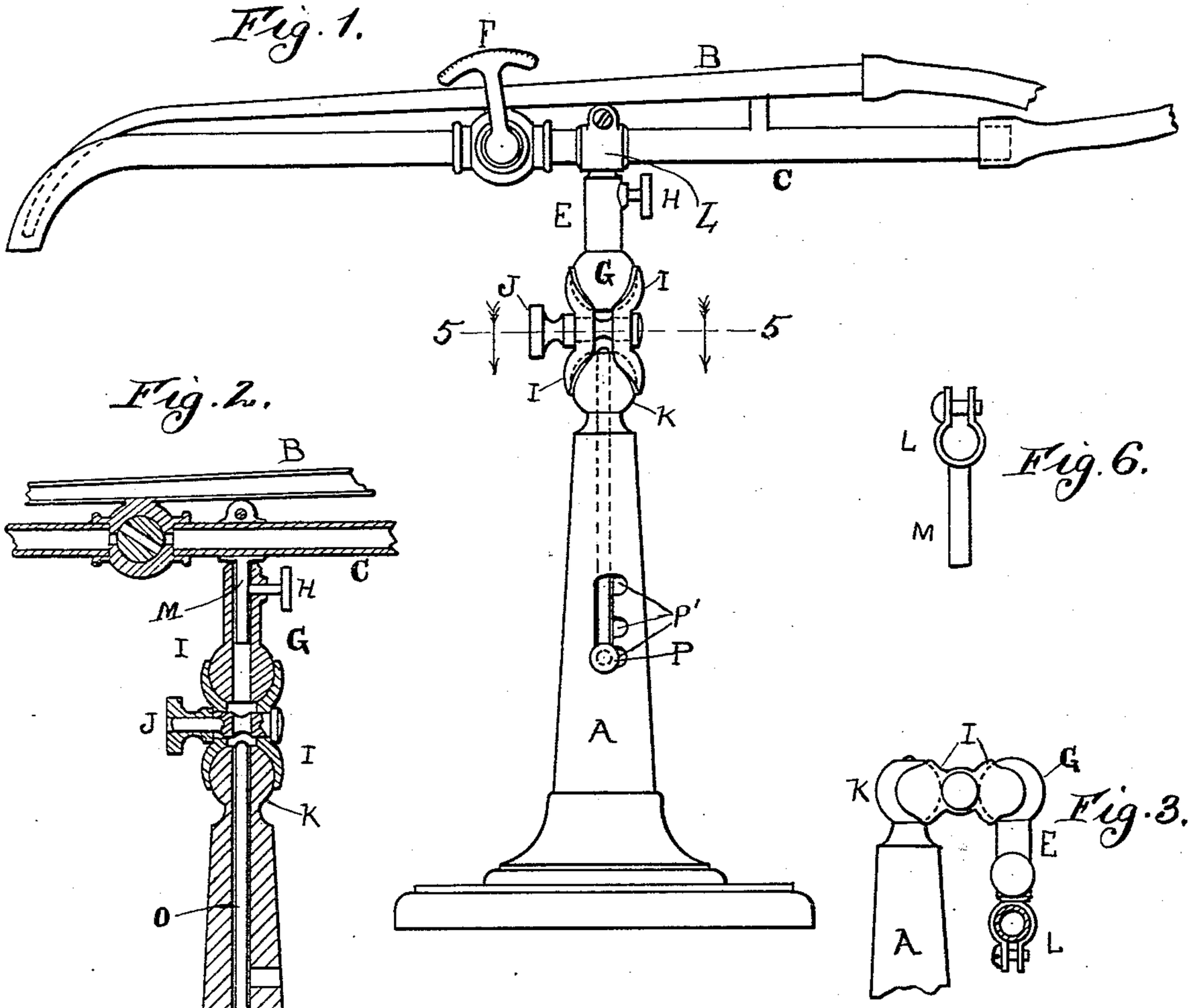

Fig. 2.

Fig. 6.

Fig. 3.

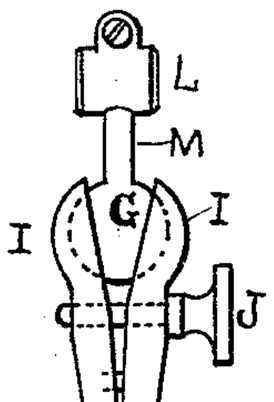

Fig. 7.

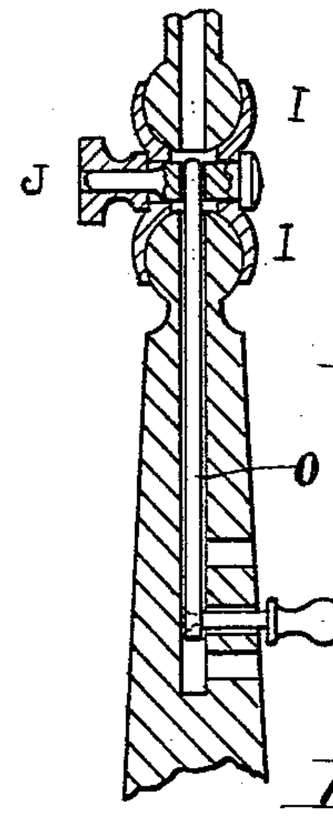

Fig. 4.

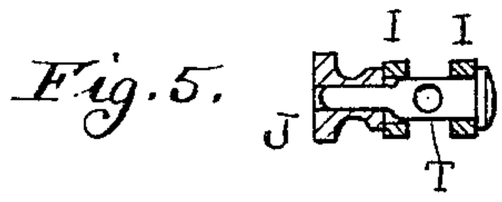

Fig. 5.

Witnesses:
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By Edward Taggart. Atty.

UNITED STATES PATENT OFFICE.

GEORGE RUFFUS FORD AND DAVID ALEXANDER, OF CHICAGO, ILLINOIS.

SUPPORT FOR BLOWPIPES.

SPECIFICATION forming part of Letters Patent No. 560,092, dated May 12, 1896.

Application filed July 15, 1895. Serial No. 556,079. (No model.)

To all whom it may concern:

Be it known that we, GEORGE RUFFUS FORD and DAVID ALEXANDER, citizens of the United States, residing at the city of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Supports for Blowpipes, of which the following is a specification.

This invention relates to a new and useful support for blowpipes and analogous purposes; and the invention relates to the combination, with a blowpipe and means for supplying gas, of a standard, an adjustable portion of the standard for allowing a vertical adjustment, and a ball-and-socket adjustment furnishing means for adjusting the blowpipe with reference to the standard in any required direction; and the object of our invention is to obviate the necessity of moving and adjusting the article to be operated upon and to locate or mount a blowpipe upon a standard having sufficient adjustability to adjust the points of discharge of gas and air in any required position upon the article operated upon. This object we accomplish by means of the mechanism illustrated in the accompanying drawings, in which—

Figure 1 shows a side elevation of a standard with the blowpipe mounted thereon and containing our double adjustment, which is our preferred form. Fig. 2 shows a vertical sectional view of the standard and a portion of the blowpipe mounted thereon. Fig. 3 shows a side elevation of a portion of the standard and the adjustable joints, the same turned down so that the blowpipe is located at the side of the standard, also illustrating the adjustable clamp. Fig. 4 shows a vertical sectional view of the standard with the retaining-bolt raised in order to prevent the movement of adjustability of the lower half of the ball-and-socket arrangement. Fig. 5 is a sectional view on line 5 5 of Fig. 1. Fig. 6 is a detail view of the clamp that holds the blowpipe and allows the same to be adjusted longitudinally. Fig. 7 is a sectional view of a portion of the standard with the support containing a single ball-and-socket joint, and also showing the clamp which attaches the gas-pipe and blowpipe to the movable portion which is secured within the standard.

Similar letters refer to similar parts throughout the several views.

A represents the standard, constructed of metal or any suitable material.

B represents the blowpipe, and C represents the pipe which conveys the jet of gas, the connection between the blowpipe B and the gas-pipe C being the ordinary connection in blowpipes.

E represents a support which in the example of our invention shown in Fig. 4 is a socket provided with a ball at its lower end. (Shown by G.)

L is the clamp which engages adjustably with the gas-pipe C, so as to allow the gas-pipe to be moved longitudinally with reference to such connection.

M is a shank which fits into the socket E, and is adjusted vertically in said socket E by means of a set-screw H.

I I are the clamping-pieces which form the sockets for the balls in making the ball-and-socket joint. The screw J passes through the two parts I I, and is provided with a head or other means, as shown in Fig. 2, furnishing a convenient means for clamping the sockets I I upon the balls G and the ball K, it being understood that in one form of our invention we use a double ball-and-socket joint, in which case the ball K may be formed on the upper end of the standard A.

O is a rod or wire adapted to move longitudinally within the standard A, there being an opening extending upward from the standard A through the ball K and into the ball G.

P represents a pin or other suitable means for raising and lowering the rod O. When it is desired to make the ball-and-socket joints rigid by means of the pin P, the rod O is raised so as to pass through both balls G and K, when the standard will be rigid and the only adjustment which can be then made is a vertical adjustment by means of the shank M and the adjusting-nut H.

The pin P is movable vertically in a slot in the standard, and one edge of this slot is provided with notches P′, with which the pin P can be made to engage for holding the rod O in its highest, lowest, or intermediate position. If the pin P is engaged with the lowest notch P′, both of the ball-and-socket joints

can be operated to adjust the blowpipe to suit the conditions required, and if the pin is engaged with the uppermost notch P′ both ball-and-socket joints will be rigidly locked to the standard, while if the pin be engaged with the intermediate notch P′ the lower ball-and-socket joint only will be rigidly locked to the standard.

In Figs. 1 and 2 the rod O is lowered to the lowest point, so that both of the ball-and-socket joints may be used, and in Fig. 1 the pin P is raised, thereby raising the rod O, so that only the upper ball-and-socket joint can be used.

F is a valve whereby the flow of gas through the pipe C may be regulated or shut off entirely through the will of the user.

T represents a pin having a head to bear against one of the clamping-pieces I and extending through it so as to receive the nut J, and by turning the nut J the clamping-pieces I I are either drawn toward each other or moved from each other. This pin T has a hole which allows the rod O to pass through it when moved upward into the ball G.

In many cases it will not be necessary to have the double ball-and-socket joint, but a single ball-and-socket joint, as shown in Fig. 7, will answer all practical purposes, as it will allow for a vertical adjustment and lateral adjustment of the blowpipe, and also allow the blowpipe to be turned nearly a revolution; but where it is necessary to direct the jet of gas upon the under side of an article to be operated upon we deem the double adjustment preferable. The double adjustment also allows the operator to obtain a greater vertical adjustment than can be obtained by a single ball-and-socket joint.

Having thus described our invention, what we claim to have invented, and desire to secure by Letters Patent, is—

1. The combination with a blowpipe and a gas-pipe, of a standard, a shank having a clamp in which the blowpipe is longitudinally adjustable, a socket receiving the shank and having a duplex ball-and-socket joint connection with the standard, means for adjusting the clamp-carrying shank vertically in the socket, a clamp for operating the duplex ball-and-socket connection, and a lengthwise-movable rod mounted in the standard and movable through the duplex ball-and-socket joint connection for locking the same rigidly to the standard, substantially as described.

2. The combination of a blowpipe and the pipe furnishing the gas-jet, a double ball-and-socket joint, a standard, and a vertically-moving rod within the standard adapted to be moved from the standard into and through both of the ball-and-socket joints, substantially as and for the purpose described.

In witness whereof we have hereunto set our hands and seals in the presence of two witnesses.

GEORGE RUFFUS FORD. [L. S.]
DAVID ALEXANDER. [L. S.]

Witnesses:
DAVID B. GERRETT,
A. W. KOHLER.