O. G. DODGE & W. GUSHURST.

BLOW-PIPES.

No. 182,649. Patented Sept. 26, 1876.

Fig. 1.

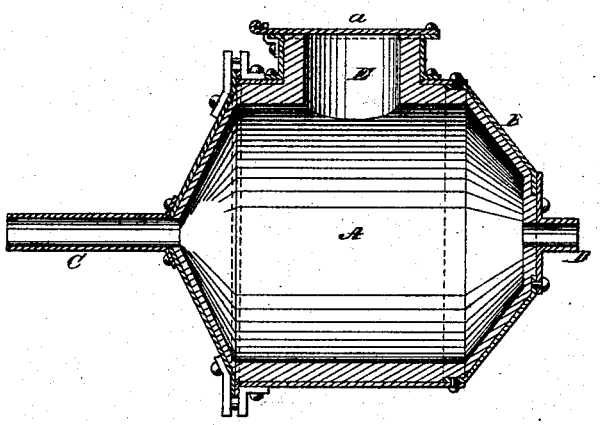


Fig. 2.

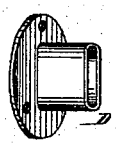
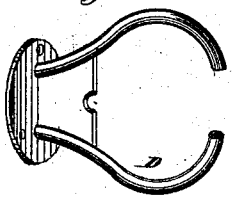


Fig. 3.



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UNITED STATES PATENT OFFICE.

ORREN G. DODGE AND WILLIAM GUSHURST, OF OMAHA, NEBRASKA.

IMPROVEMENT IN BLOW-PIPES.

Specification forming part of Letters Patent No. **182,649**, dated September 26, 1876; application filed August 28, 1876.

To all whom it may concern:

Be it known that we, ORREN G. DODGE and WILLIAM GUSHURST, of Omaha, in the county of Douglas and State of Nebraska, have invented a new and Improved Blow-Pipe, of which the following is a specification:

Figure 1 is a longitudinal section. Figs. 2 and 3 are detail views of nozzles.

Similar letters of reference indicate corresponding parts.

Our invention consists of a fire-chamber for containing charcoal, coke, or other combustible substance, connected with a pump, bellows, fan, or other air-forcing apparatus, and provided with nozzles of various forms for directing one or more jets of heat and flame.

The object of our invention is to provide a portable blow-pipe, the flame of which will have sufficient power to heat objects of considerable size.

A is a fire-chamber of any suitable form or size, and made from any material adapted to the purpose. In the present case it consists of a cylinder, B, of iron, having conical ends. To one of these ends the blast-pipe C is attached, and to the other a nozzle, D, is attached by screws, so that it may be removed and replaced by nozzles of different forms. E is an aperture in the top of the fire-chamber, for the introduction of coal and the removal of ashes, closed by the door *a*. The fire-chamber A is lined with a coating of fire-clay, which is made to adhere by roughening the inner surface of the chamber, or by covering it with wire-cloth.

Figure 2 represents a flat or elliptical nozzle, and Fig. 3 a double nozzle, capable of directing the flame on both sides of an object. Nozzles of various forms may be used, that are appropriate to the work to be done.

In using the blow-pipe the chamber A is filled with burning charcoal, coke, or other suitable combustible substance, and the blast-pipe C is connected by a flexible pipe with a blower or bellows. A blast being created, a jet of flame and heated gases issues from the nozzle D, which is directed against the object to be operated on. The heat generated in this manner is so intense that heavy irons like the frame or braces of a locomotive or other large objects may be heated in their places and bent. With a nozzle having several jets arranged in an arc, the tire of a locomotive-wheel may be heated and expanded, so that it may be easily removed. Portions of boilers may be heated in a similar way, and there are various other places where the blow-pipe can be used to advantage.

Having thus described our invention, we claim as new and desire to secure by Letters Patent—

A blow-pipe, consisting of a fire-chamber provided with a door for the introduction of combustible material, and with a blast-pipe connected with any suitable air-forcing apparatus, and having nozzles adapting it to different kinds of work, substantially as herein shown and described.

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