No. 650,559. Patented May 29, 1900.

J. A. JANSSON.

GAS BURNER.

(Application filed Jan. 31, 1900.)

(No Model.)

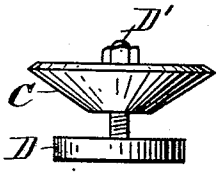
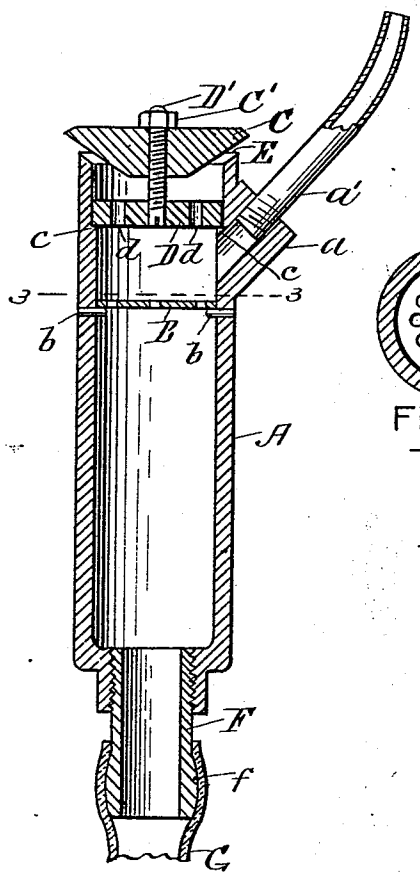


Fig. 2.



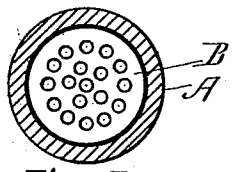


Fig. 3.

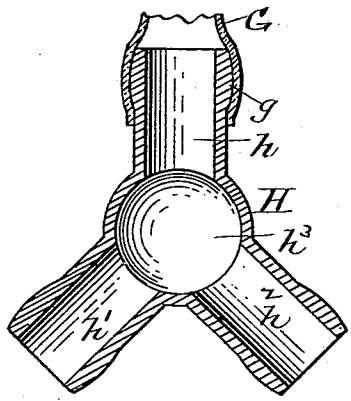


Fig. 1.

WITNESSES.

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UNITED STATES PATENT OFFICE.

JOHN ARTHUR JANSSON, OF BOSTON, MASSACHUSETTS, ASSIGNOR TO THE AMERICAN TYPE FOUNDERS' COMPANY, OF NEW YORK, N. Y.

GAS-BURNER.

SPECIFICATION forming part of Letters Patent No. 650,559, dated May 29, 1900.

Application filed January 31, 1900. Serial No. 3,465. (No model.)

To all whom it may concern:

Be it known that I, JOHN ARTHUR JANSSON, of Boston, in the county of Suffolk and State of Massachusetts, have invented a new and useful improvement in gas-burners more especially adapted for heating the metal-pots used in melting type-metal for type-founding, of which the following is a specification.

The metal-pots customarily used in type-founding with the more modern mold have usually a pump attached to the bottom of the pot, by means of which the metal is forced out of the nozzle of the pot and into the type-mold. It is desirable in any burner which is used to heat such a pot that the burner be so constructed as to prevent the flame from striking the middle of the under surface of the pot, and yet at the same time afford a strong flame immediately about the center, and the flame also should be capable of adjustment. It is also desirable that the burner be protected from the metal, which often splashes out of the pot or nozzle, and if it happens to strike the gas-exit clogs it so that it gives an uneven flame. With these facts in mind I have invented the device shown in the drawings, in which—

Figure 1 is a longitudinal section of a burner embodying my invention, Fig. 2 being a detail showing the means for closing and protecting the end of the burner and adjusting its flame, Fig. 3 being a cross-section on line 3 3 of Fig. 1.

A is the burner, which is provided with a branch *a*, carrying the nipple *a'*, which is adapted to heat the nozzle of the metal-pot. The burner A is provided on its interior with means for supporting a perforated disk B, known as a "mixing-disk," these means being, as shown in the drawings, a number of pins *b* driven through the wall of the burner. A shoulder on the interior of the burner would answer this purpose. The upper end of the burner is partially closed in order to provide a flame of proper shape and size, as well as to protect the pump, which is located in the bottom of the pot and directly above the burner, and for this purpose I have shown a protector C, which is adjustably supported in the burner. For this purpose I have provided a shoulder *c* within the burner, upon which rests a disk D, provided with a series of openings *d* to allow the free escape of gas through it, and a screw D', connecting the disk D with the protector C. The protector C is slightly larger in diameter on its upper side than the mouth of the burner and quite thick, so as to fit well within the mouth of the burner, the edge of which is beveled, so that a passage E is provided for the gas, which will cause it to spread and give a flaring flame. The protector, being larger in diameter on top than the mouth of the burner, will overhang this passage and so protect it from any drops of metal, as well as protect the under surface of the middle of the bottom of the pot over which the pump is located.

The screw D' is attached at its lower end to the disk D and passes up through the protector C, which is threaded, so that its position may be adjusted thereon with reference to the disk D, and hence with reference to the mouth of the burner. C' is a set-nut to hold it in place. The advantage of this construction is that if the burner is not giving a proper flame it is only necessary to lift the protector C and disk D out of the upper end of the burner and adjust the protector on the screw D' and set it by the nut C', so that when the protector is replaced it will be nearer to or farther from the mouth of the burner, and hence control the amount of gas escaping therefrom.

The lower end of the burner A is connected with a pipe F, having a slight enlargement *f* at its lower end, by means of which connection may be made with a rubber tube G. The lower end of this rubber tube fits over a corresponding enlargement *g* upon one branch *h* of a coupling H, the three arms of which are located at equal distances about the central chamber, which is spherical. The other branches h' h^2 are connected, respectively, with air and gas reservoirs, from which air and gas are supplied under pressure.

The operation of this burner will be easily understood. The burner being connected up to its air and gas reservoirs through the joint H, the air and gas pass up under pressure into the spherical chamber h^3 therein, where they get a preliminary mixing, due to the fact that they enter the chamber at a compara-

tively-slight angle to each other. They pass through the tube G, which in practice I prefer to make, say, six feet long or so. From the tube the mixture passes into the burner itself, where the perforated disk B, offering a certain resistance to its onward movement, causes a more intimate mixture of the gas and air. The mixture passes out through the openings in this disk, a portion of it through the nipple a' and the rest through the openings d in the disk D and out through the outlet E. If the flame is too large, the protector C and its disk D are removed, and the adjustment of these parts is made to cause the protector C to approach more nearly the disk D, and hence the upper edge of the burner A. If, on the contrary, the flame is not large enough, the opposite course is pursued, so as to enlarge the opening E to give more flame. This is a very easy and simple method of adjustment, requiring, as it does, merely the turning of the protector and its set-nut, and is a great improvement on those structures in which the burner is covered with a cap of some sort which must be removed before any adjustment is made.

The protector is best made of sufficient diameter to prevent the splashing of the molten metal into the burner, so that the protector will form a guard which will receive any metal which falls in the direction of the burner and will cause it to pass the mouth of the burner and over and down its outside, thus preventing the plugging up of the mouth of the burner.

Of course it is evident that the form of the protector may be changed and the mode of holding it in the upper end of the tube may also be changed, for my invention does not relate, primarily, to such details, but to the closing of the upper end of the burner by means of a protector, which is supported from within the tube and requires only to be lifted out for purposes of adjustment.

What I claim as my invention is—

1. In combination with a gas-burner of the kind described, a protector, a perforated disk or the like and adjustable means for connecting said disk and said protector and means located within said burner adapted to support said disk and said protector, whereby said protector will be held above the upper end of said burner, as and for the purposes set forth.

2. In combination with the gas-burner of the kind described, a conical protector, a perforated disk or the like removably supported within said burner and out of contact with said protector and means consisting of a screw or the like, whereby said protector and said disk are adjustably connected and said protector is supported above the mouth of said burner, as set forth.

3. In combination with a gas-burner, a protector, a perforated disk, a screw connecting said disk and said protector and means located within said burner adapted to support said disk and said protector, as and for the purposes set forth.

In testimony whereof I have hereunto set my name this 24th day of January, 1900.

JOHN ARTHUR JANSSON.

Witnesses:
GEORGE O. G. COALE.
E. A. GUILD.