

No. 812,065.

PATENTED FEB. 6, 1906.

I. A. MILLIRON.
GLASS WORKING FURNACE.
APPLICATION FILED AUG. 1, 1905.

2 SHEETS—SHEET 1.

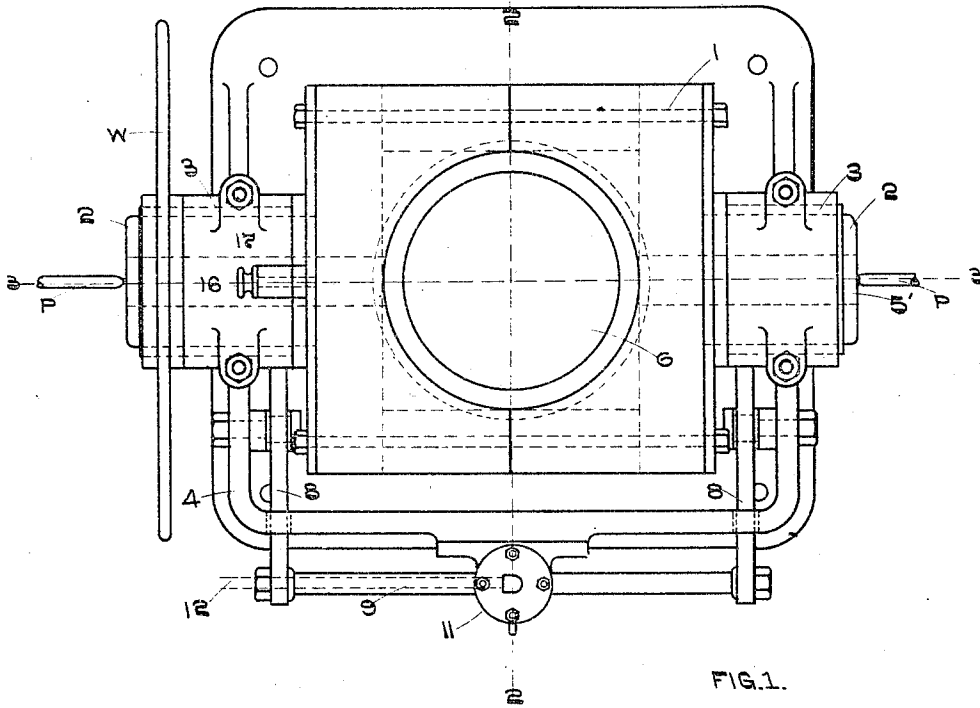


FIG. 1.

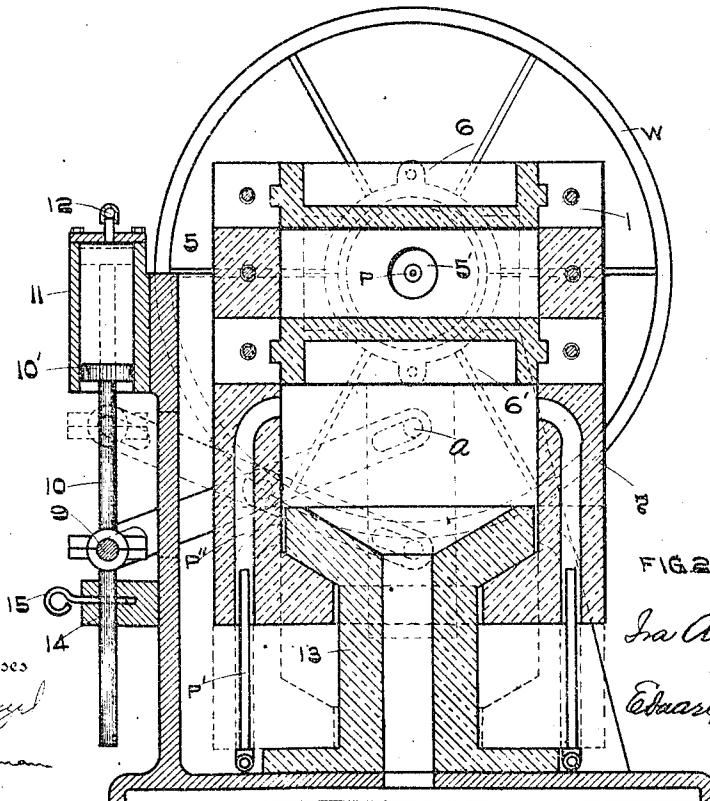


FIG. 2.

Witnesses
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2 SHEETS—SHEET 2

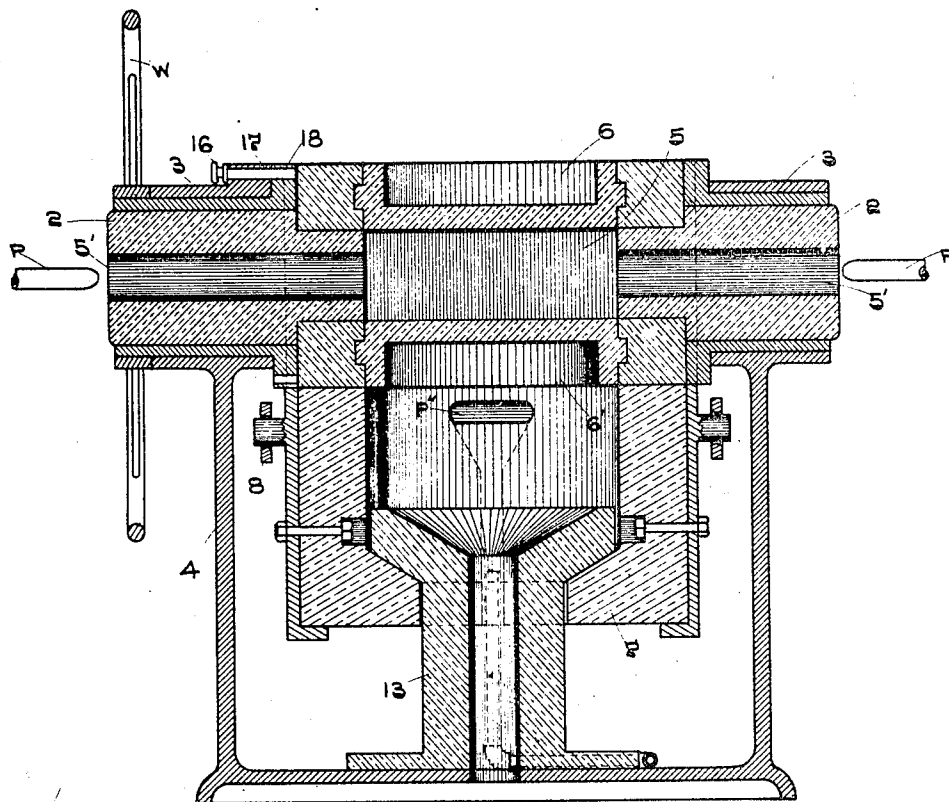


FIG. 3.

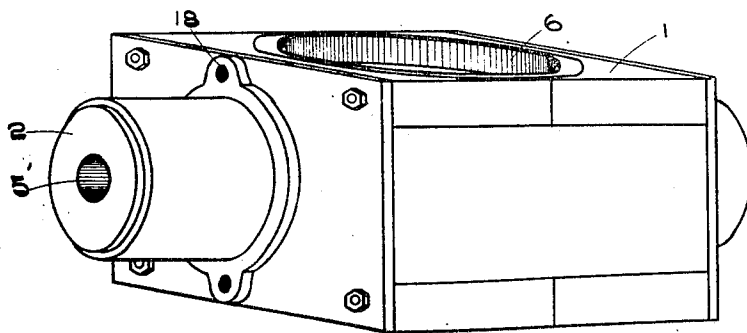


FIG. 4.

Witnesses

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UNITED STATES PATENT OFFICE.

IRA A. MILLIRON, OF FRANKLIN, PENNSYLVANIA.

GLASS-WORKING FURNACE.

No. 812,085.

Specification of Letters Patent.

Patented Feb. 6, 1906.

Application filed August 1, 1905. Serial No. 272,177.

To all whom it may concern:

Be it known that I, IRA A. MILLIRON, a citizen of the United States, residing at Franklin, in the county of Venango and State of Pennsylvania, have invented certain new and useful Improvements in Glass-Working Furnaces, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention relates to improvements in furnaces for working glass, and will be fully understood from the following specification, reference being had to the accompanying drawings, which form a part hereof, and in which—

Figure 1 is a plan view of my furnace. Fig. 2 is a central vertical section on line 2 2 of Fig. 1. Fig. 3 is a section on line 3 3 of Fig. 1. Fig. 4 is a perspective view of the furnace proper dismounted from its housing.

The construction of my furnace is substantially as follows:

The furnace proper (shown in perspective in Fig. 4) is of rectangular form and is provided with trunnions 2 2, for which bearings 3 3 are provided in the housing 4, whereby the furnace is adapted to revolve vertically.

The furnace has a heat-chamber 5, into which a blast of hydrocarbon vapor or gas and air is introduced through a passage 5', formed in the trunnions, for the purpose of heating said chamber. Above and below said heat-chamber is located a glass-receptacle 6 6' with their bottoms in juxtaposition.

Beneath the revolving furnace 1 is placed a vertically-movable subfurnace 7, which constitutes a means of generating heat beneath the furnace 1 and whereby the lower pot 6' is heated simultaneously upon both sides thereof. Said subfurnace is so constructed as to be capable of a vertical movement and is equipped with suitable mechanism for so moving it, which mechanism consists of the levers 8 8, one at each side of the furnace. Said levers are pivoted or fulcrumed at their center to the housing, and one end of each lever is attached to the subfurnace at opposite sides, as shown at *a*, Fig. 2, and the opposite end of each lever is attached to a cross-head 9, which is actuated by the piston-rod and piston 10 and 10'. Piston 10 is seated in the vertical cylinder 11, which is closed at the upper end by a suitable head, and a pipe 12 enters said cylinder through the head, and by means of which

pipe fluid under pressure—such as steam, compressed air, or water—may be admitted above the piston for the purpose of forcing the same down to raise the subfurnace. Any suitable valve commonly used for the purpose (not shown) may be placed in the pipe 12 to admit the motive agent to and exhaust it from the cylinder 11, which pipe 12 may lead to a suitable steam-generator, air-receiver, or pump. (Also not shown.)

When my furnace is in use, a blast of fuel from pipe P is admitted to the chamber 5 to heat the interior thereof, and more especially the glass-receptacles, to the required heat. A quantity of molten glass may then be placed in the upper receptacle and drawn therefrom into any desired product capable of being so produced. When said quantity of glass is used up, the subfurnace 7 is lowered, as shown in dotted lines in Fig. 2, and the furnace 1 is then turned over by means of the hand-wheel W. Then subfurnace 7 is again raised and a heat-blast is admitted to the interior thereof through pipe P' and passage P'', which heat-blast is for the purpose of keeping the lower receptacle hot.

An urn 13 is placed beneath the furnace 1 and extends upward into the subfurnace 7 and has at the top thereof an enlarged head, which is for the purpose of holding any glass that may fall from the inverted receptacle and for the further purpose of closing the bottom of the subfurnace.

The essential elements of my device are substantially as above set forth; but in addition to these a few minor details will be described.

The piston-rod 10 is extended below the cross-head, and said extension enters the guide 14, which is for the purpose of sustaining the lateral strain upon the rod when the subfurnace is being raised. Through guide 14 is drilled a hole, and a corresponding hole is also drilled through the rod 10 to register with the hole in the guide when the rod is at its lowest point. A pin 15 may be placed in said holes when in register for the purpose of locking the subfurnace in the elevated position, as the weight of said subfurnace would cause same to drop if the pressure above the piston 10' should diminish by leakage or accident.

It will be readily understood that the locking of the subfurnace 7 in its raised position effectually prevents the revolving of fur-

nace 1; but as an independent means of locking said furnace I provide a bolt 16, which is slidingly mounted in a lug 17 upon the cap of one of the bearings, and said bolt 16 enters the seat 18 in the side of the plate of the furnace 1 and effectually locks the furnace in position.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A glass-working furnace having a central heat-chamber, glass-receptacles located upon opposite sides of said chamber with their bottoms in juxtaposition, and means of revolving said furnace.

2. A vertically-revoluble glass-working furnace having an inclosed heat-chamber with means of admitting heat thereto, said chamber having glass-receptacles located upon opposite sides thereof with their openings facing outward.

3. A glass-working furnace having glass-receptacles in its top and bottom sides, a heat-chamber located between said receptacles, means of generating heat in said chamber, in combination with means of revolving

said furnace, and means of generating heat beneath the same.

4. A vertically-revoluble glass-working furnace having a plurality of glass-receptacles located in the walls thereof, and means of generating heat between said receptacles.

5. The combination with a revoluble furnace having a central heat-chamber and the glass-receptacles located at opposite sides thereof, of means of generating supplementary heat beneath said furnace, means of revolving said furnace and means of preventing the revolving of said furnace.

6. A revoluble glass-working furnace having an interior heat-chamber the glass-receptacles located in the walls of said chamber, in combination with a supplementary furnace, means of bringing said supplementary furnace into proximity to said first-mentioned furnace and of removing the same therefrom.

In testimony whereof I affix my signature in presence of two witnesses.

IRA A. MILLIRON.

Witnesses:

E. R. INMAN,
L. S. INMAN.