

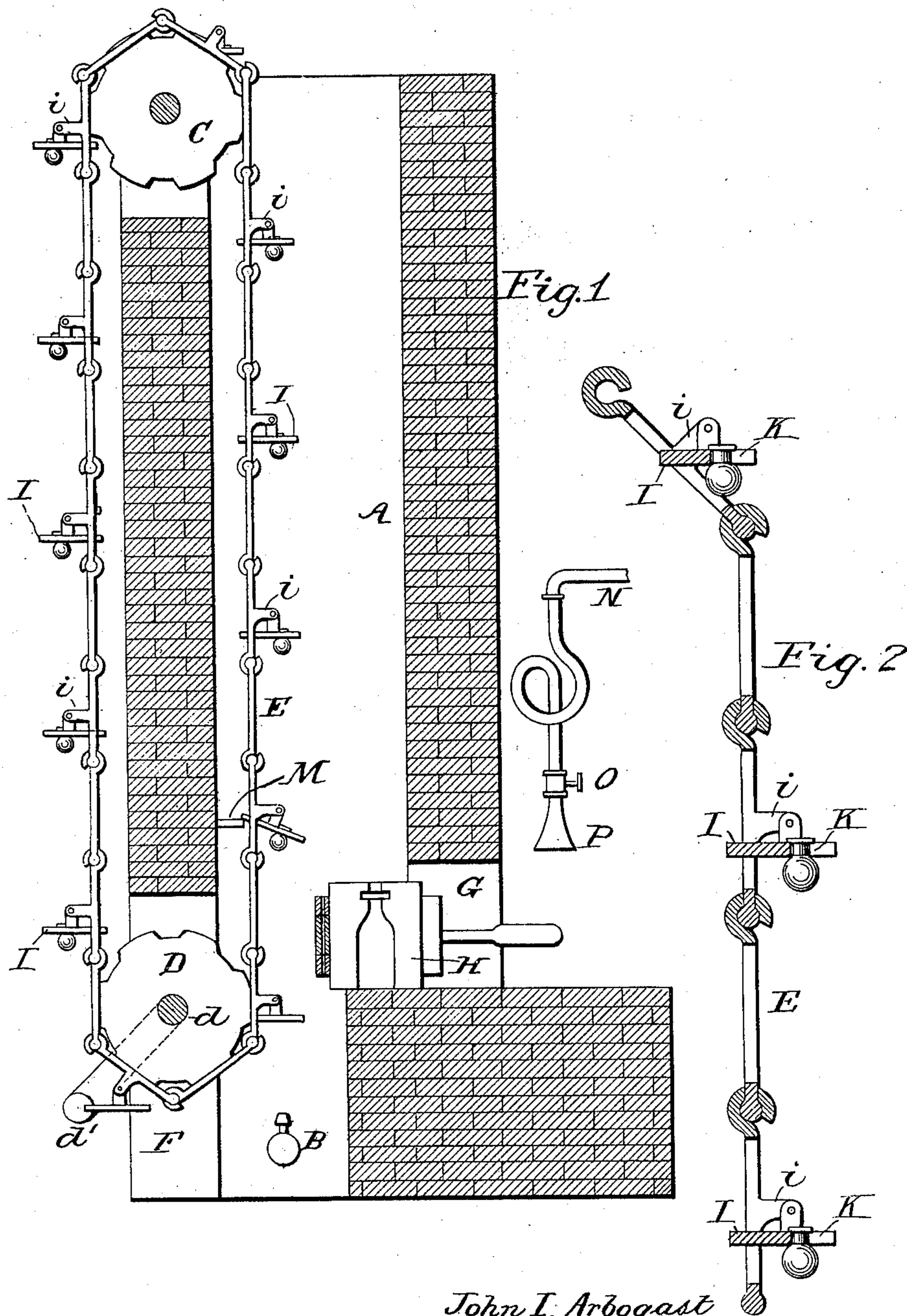
No. 756,557.

PATENTED APR. 5, 1904.

J. I., C. V., F. J., P. R. & F. L. ARBOGAST.  
GLASS REHEATING FURNACE.

APPLICATION FILED JULY 7, 1903.

NO MODEL.



Witnesses

*D. K. Knoch*

*Roy M. Intire*

*John I. Arbogast*  
*Charles V. Arbogast*  
*Francis J. Arbogast*  
*Philip R. Arbogast*  
and *Frederick L. Arbogast*

Inventors:

by *Counolly Bros.*  
Attorneys



## UNITED STATES PATENT OFFICE.

JOHN I. ARBOGAST, CHARLES V. ARBOGAST, FRANCIS J. ARBOGAST,  
PHILIP R. ARBOGAST, AND FREDERICK L. ARBOGAST, OF PITTS-  
BURG, PENNSYLVANIA.

## GLASS-REHEATING FURNACE.

SPECIFICATION forming part of Letters Patent No. 756,557, dated April 5, 1904.

Application filed July 7, 1903. Serial No. 164,579. (No model.)

*To all whom it may concern:*

Be it known that we, JOHN I. ARBOGAST, CHARLES V. ARBOGAST, FRANCIS J. ARBOGAST, PHILIP R. ARBOGAST, and FREDERICK L. ARBOGAST, citizens of the United States, residing at Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Glass-Reheating Furnaces; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

Our invention has relation to reheating-furnaces for glassware, and has for its object the provision of a furnace wherein glassware or blanks for the manufacture of glassware of various characters may be reheated expeditiously, economically, and satisfactorily to prepare them for subsequent manipulation or treatment.

Our invention consists in the novel construction, combination, and arrangement of parts hereinafter described and claimed.

In carrying our invention into effect we provide a furnace substantially in the form of a vertical stack or chimney, and in this furnace we arrange a carrier that traverses the furnace from top to bottom and which is so constructed that it will support and carry a considerable number of articles or blanks to be reheated, all the blanks or articles on the carrier being successively brought from the cooler to the hotter part of the furnace, so that while a large number of such blanks or articles are being simultaneously heated they will be brought either singly or in pairs or groups to the highest degree of heat attainable in the furnace in succession.

As one of the principle applications of our improvement will be the reheating of pressed blanks which are to be blown to completed form when heated to the requisite degree, we have shown in the accompanying drawings an apparatus designed for this specific purpose; but as our invention is adapted for use in connection with other methods of manipulating the reheated blanks or articles—such, for in-

stance, as the finishing of the edges of completely-formed articles by the mere action of the heat in the furnace—we do not wish to be understood as confining our invention to any particular manner of treating or manipulating the reheated blanks or articles.

Referring to the accompanying drawings, Figure 1 is a vertical sectional view of a furnace constructed according to our invention, and Fig. 2 an enlarged sectional view of a part of the carrier shown in Fig. 1.

A designates the body of the furnace, which is constructed of suitable material, such as fire-brick, and substantially in the form of a square vertical stack or chimney. Within the furnace, at or near the bottom of the same, is a gas-burner B, by means of which the chimney is heated, or it can be heated in any other suitable manner. Sprocket-wheels C and D are arranged at the top and bottom of the furnace, and an endless chain E passes over the sprocket-wheels and is caused to traverse the furnace from top to bottom by turning the wheel D, which is mounted on a shaft *d*, having a handle *d'*, by means of which it can be turned. The sprocket-wheels are so placed that one side of the chain E is inside and the other outside the furnace, and the latter has an opening F in its side wall near the bottom for the passage of the chain and an opening G on the other side for the passage of a mold H, into which the blanks drop from the chain and in which they are blown to completed form. As shown in the enlarged view of part of the chain, Fig. 2, it consists of jointed links, each alternate link being formed with lateral wings *i i*, in which are pivoted swinging plates *l*, having notches or recesses K for the reception of the blanks L. As it is intended to put the blanks on the chain at the lower end of the same outside the furnace, the swinging plates *l* are provided for the purpose of allowing the blanks to pass over the upper sprocket-wheel without falling off, the position which the blanks assume while passing over the sprocket being clearly shown in Fig. 2.

While the drawings for convenience of illus-



tration show only one sprocket-wheel at the top and bottom of the furnace. it is to be understood that there are two sprocket-wheels at each of these places, as usual in the construction of chain conveyers, so that the pivoted plates, with the blanks thereon, will pass over the upper shaft of the sprockets C and avoid contact with the sprocket-wheels.

In Fig. 1 the mold H is shown in position within the furnace ready to receive a blank which is slipping off one of the links, and in order to cause the pivoted plate to tilt and drop the blank into the mold a tripper M is provided which will contact with the inner end of each pivoted plate as it reaches the point where it is desired to discharge the blank.

When it is desired to deliver the blanks in pairs or groups instead of one at a time, the plates I can be made with two or more notches or an additional chain can be provided and arranged to travel alongside the chain E.

The furnace being constructed and arranged as described is operated in the following manner: The blanks are placed successively in the notches in the swinging plates and the sprocket D being turned by turning the handle *d'* the chain will carry the blanks up on the outside and down the inside of the furnace, where they will be successively brought from the point of least heat at the top to the point of greatest heat at the bottom, and thus while a large number are being heated simultaneously they will be successively brought to the degree of heat required. As the blanks reach the lower end of the furnace the pivoted plates I are successively tripped by the tripper M and the blanks allowed to slide off the plates and into the mold H, which is then drawn out of the furnace and the blank blown therein to the desired shape, preferably by compressed air which is conveyed from a

suitable source through a pipe N, having a cock O for regulating the supply of air and a mouth or fitter P adapted to fit down over the neck of the blank.

Instead of receiving the blanks directly in the mold they may be removed from the chain on forks, and being held in suitable blow-snaps they can, if desired or necessary, be still further heated at the glory-hole and then placed in the molds and blown.

The vertical furnace and the manner in which the blanks are held and fed toward the point of greatest heat results in a very gradual and even heating and obviates any danger of cracking or distortion of the blanks.

Having described our invention, we claim—

1. In a furnace for reheating glass articles or blanks, the combination with a vertical heating chamber or flue and means for heating the same, of an endless carrier arranged to travel in said flue and having pivoted blank-supporting plates, substantially as described.

2. In a furnace for reheating glass blanks, the combination with a vertical heating-chamber of an endless chain carrier, pivoted blank-supporting plates carried by said chain and a tripper adapted to tilt said plates substantially as described.

In testimony whereof we have affixed our signatures in presence of four witnesses.

JOHN I. ARBOGAST.  
CHARLES V. ARBOGAST.  
FRANCIS J. ARBOGAST.  
PHILIP R. ARBOGAST.  
FREDERICK L. ARBOGAST.

Witnesses:

A. A. CONNOLLY,  
JOS. B. CONNOLLY,  
JOHN M. STAUFFER  
WM. S. LOUCKS.