J. J. Adams,

Glass Furnace.

No. 2,820. Patented Oct. 17, 1842.

Fig. 1.

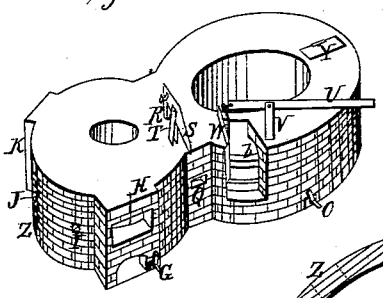


Fig. 2.

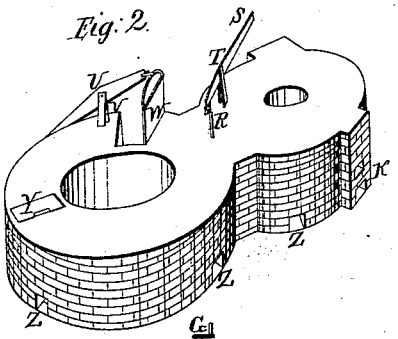


Fig. 3.

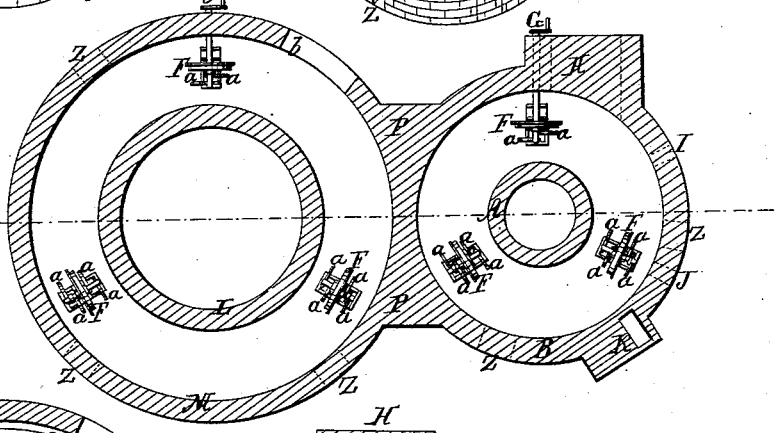


Fig. 4.

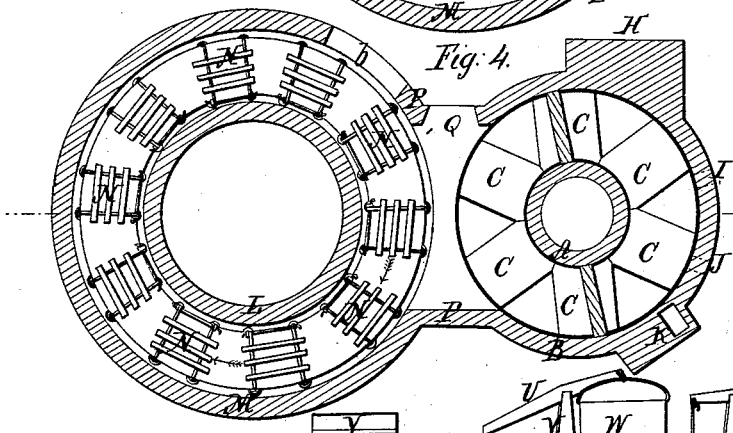


Fig. 6.

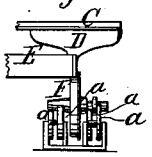
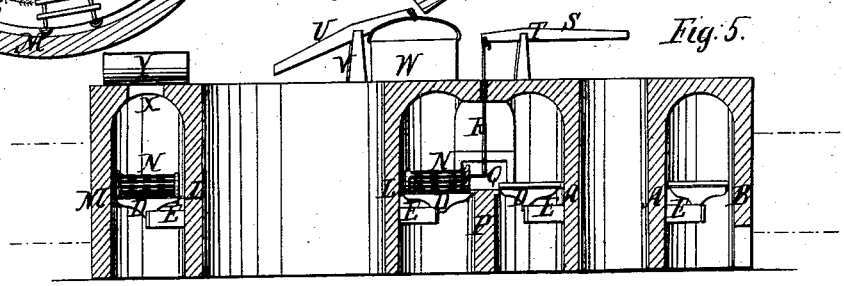


Fig. 5.



UNITED STATES PATENT OFFICE.

JOHN J. ADAMS, OF WINSLOW, NEW JERSEY.

IMPROVEMENT IN FLATTENING AND TEMPERING WINDOW-GLASS.

Specification forming part of Letters Patent No. **2,820**, dated October 17, 1842.

To all whom it may concern:

Be it known that I, JOHN J. ADAMS, of Winslow, in the county of Gloucester and State of New Jersey, have invented a new and useful Improvement in the Apparatus for Flattening and Tempering Window-Glass; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, in which—

Figures 1 and 2 are perspective views, Figs. 3 and 4 horizontal sections, and Fig. 5 a vertical section. Fig. 6 is a detail of the friction-rollers, part of the revolving platform, &c.

To enable others skilled in the art to make and use my invention, I will proceed to describe its construction and operation.

There are two circular walls, of brick, stone, or any other suitable material, one inner wall A and one outer wall B. These walls are covered by an endless arch, and between them revolves the circular platform supporting the flattening-stone C, of which I use six in number, but may be more or less. The platform, which is of iron, rests by means of arms D on a circular rim E, which revolves on the main rollers F, the bearings of which are supported by friction-rollers *a*. This flattening-platform is set in motion by means of a crank G, which is attached to the end of the shaft of the main roller nearest the sticking-hole H, which is on one side of the outer circular wall. (See drawings.) About six feet and to the left of the sticking-hole is the first flattening-mouth I, and about six feet from it and also to the left is the second flattening-mouth J. These flattening-mouths are made as in the common oven. To the left of and near to the second flattening-mouth is the fire-flue K, made in the usual manner.

The aforedescribed parts constitute the flattening apparatus. Next I shall describe the cooling apparatus. It consists also of two circular walls—one inner wall L and one outer wall M—substantially the same as the walls A and B, and of such a diameter as to admit of a sufficient number of sets of grates, able to contain a sufficient quantity of glass as to give it time enough to temper before it comes out. I generally use ten sets of grates. (See drawings.) These sets of grates N are stationary and supported by a similar revolving platform as the one in the flattening apparatus, and therefore the same letters of reference have been used on the drawings for its different component parts. It is set in motion by means of the crank O, which is attached to the end of the shaft of the main roller nearest the discharging-mouth of the tempering apparatus. These two circular apparatuses are connected by a neck consisting of two straight walls P, the circular platforms revolving together as near as possible without their respective peripheries coming in contact with each other. The two straight walls P are also covered by an arch, the intersection of which with those arches of the apparatus form groins.

The sets of grates N are constructed as follows: Two upright posts are set in the arms of the rotary platform, to which the back part of a series of grates are hinged in such a manner as to leave between every two grates sufficient space to admit twenty plates of glass, more or less. On the same side with the sticking-hole and in the straight wall P of the neck is the piling-mouth Q. There is a rod R, with a hook on its lower extremity, passing through the straight arch and connected at its upper end to a lever S, the fulcrum of which T rests on a standard on the top of a straight neck. Another lever U on its standard V, near the discharging-mouth *b*, is connected with a gate W, for the purpose described in the operation. There is an opening X in the top of the tempering-arch in a line with the centers of the two apparatuses, which is furnished with a cover Y, hinged on one side so as to admit of being opened to let out a superfluity of heat when necessary. The openings Z at the bottom of the apparatus are to admit air under the platforms, and thus assist in cooling the glass.

Operation: The glass cylinder is put through the sticking-hole H on one of the triangular spaces between the flattening-stones C, where it gets heated. Then the crank G is turned until the next triangular space presents itself to the sticking-hole for the reception of another cylinder. By that time the first cylinder arrives at the flattening-mouth I, where it is laid open on the nearest flattening-stone. The crank is again turned and a third cylinder put in. At the same time the first cylinder, having been laid open

at the flattening-mouth I, has now arrived at the flattening-mouth J, where it is perfectly flattened in the usual manner. In this manner the flattening operation is going on continually. When the first plate of glass has reached the junction of the two apparatuses the grates N (all but one) are raised by means of the hooked rod R and the lever U, in order to put the glass plates on the lower grate. When this is filled, another is let down, and so on until all the grates of the set are filled. During this operation the gate W is kept down, so as to cause the heated air to take the direction as indicated by the arrow on the drawings, instead of escaping at the gate-opening. When the set of grates is full, the gate is raised, the crank O is turned, and another set of grates having been admitted the gate is closed again. In this manner all the sets of grates are filled successively. The glass in the meantime cooling comes finally out at the discharging-mouth *b* near the gate W, where it is taken off and so presents the empty sets of grates ready to enter the apparatus again. If the glass should not be quite cool enough to be taken off, recourse is had to the opening X, the cover of which Y is then to be opened.

What I claim as my invention, and desire to secure by Letters Patent, is—

The movable or revolving tempering platform with its appendages, either separately or in combination with the revolving flattening-platform, and also the series of grates for laying the glass upon, all of which are constructed and operates as herein above set forth.

JOHN J. ADAMS.

Witnesses:
FRANCIS BENNE,
WILLIAM H. BISHOP.