No. 771,507. PATENTED OCT. 4, 1904.

T. L. STRONG.

APPARATUS FOR DRYING ENAMELED WARE.

APPLICATION FILED DEC. 4, 1903.

NO MODEL.

FIG. 1

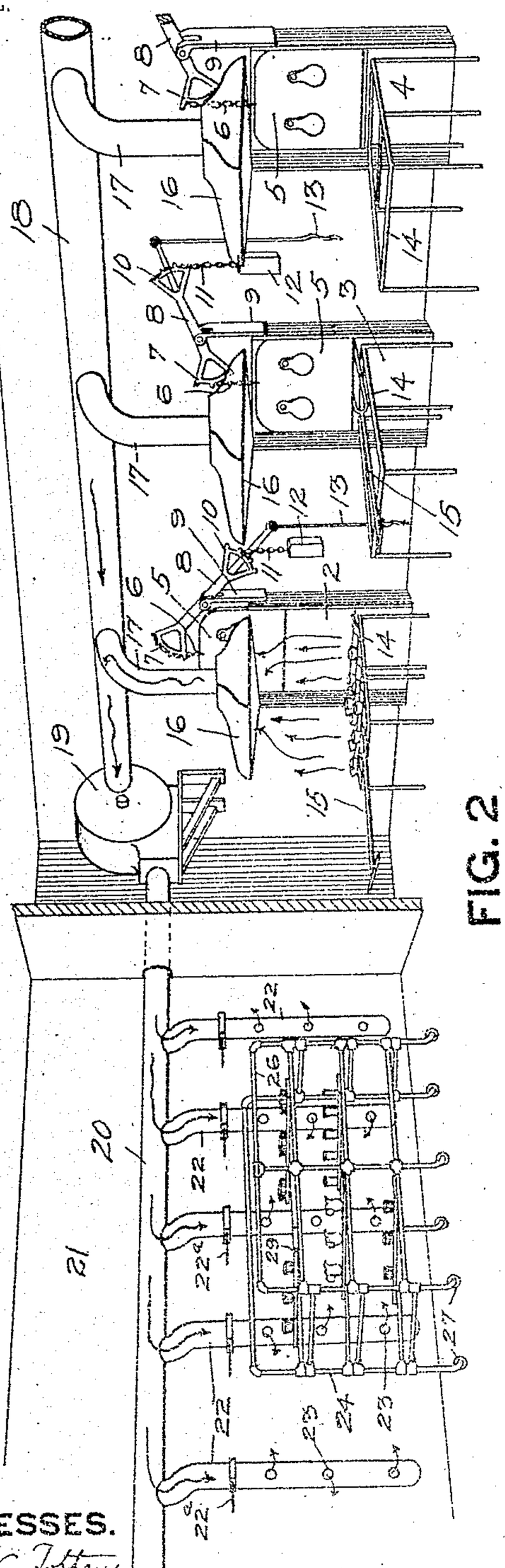
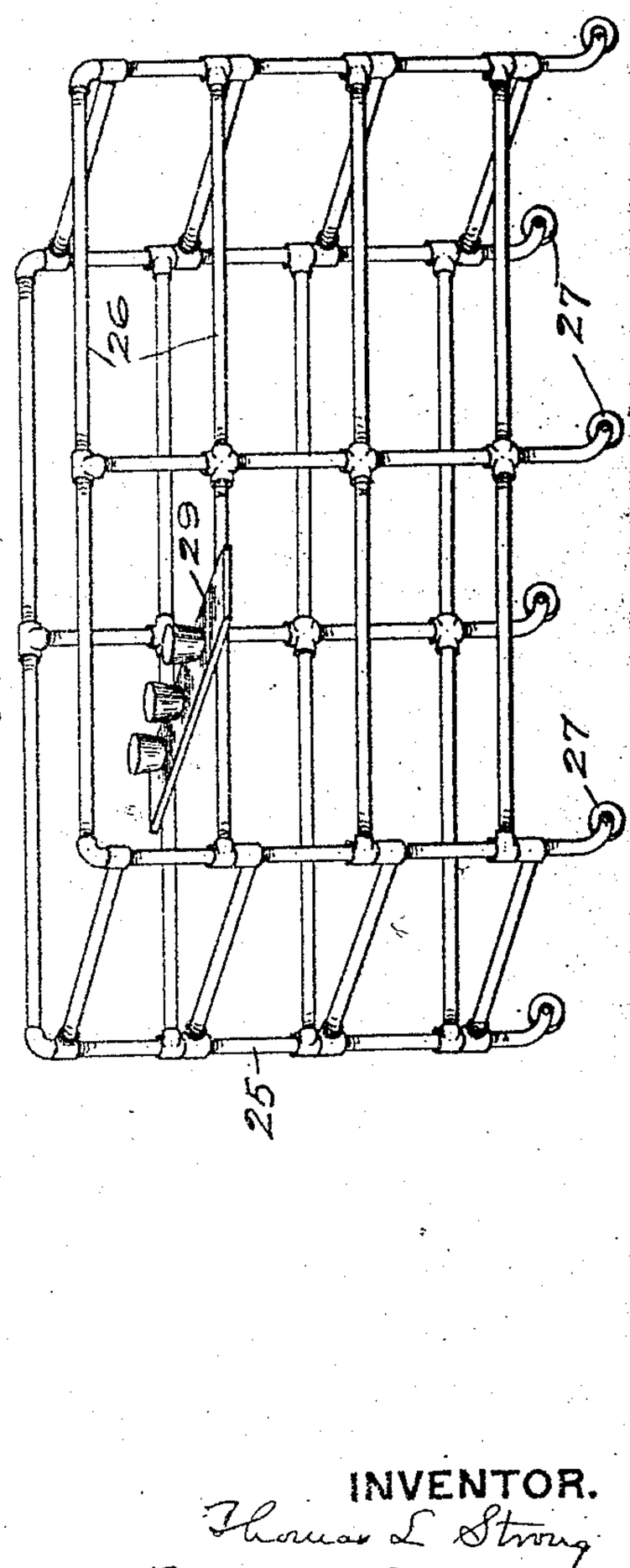


FIG. 2



WITNESSES.
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No. 771,507. Patented October 4, 1904.

UNITED STATES PATENT OFFICE.

THOMAS L. STRONG, OF BELLAIRE, OHIO, ASSIGNOR TO THE STRONG ENAMEL & STAMPING CO., OF BELLAIRE, OHIO, A CORPORATION OF OHIO.

APPARATUS FOR DRYING ENAMELED WARE.

SPECIFICATION forming part of Letters Patent No. 771,507, dated October 4, 1904.

Application filed December 4, 1903. Serial No. 183,744. (No model.)

To all whom it may concern:

Be it known that I, THOMAS L. STRONG, a resident of Bellaire, in the county of Belmont and State of Ohio, have invented a new and useful Improvement in Apparatus for Drying Enameled Ware; and I do hereby declare the following to be a full, clear, and exact description thereof.

My invention relates to apparatus for the drying of enamel-ware.

In an application of even date herewith, Serial No. 183,743, I have set forth and claimed a process for drying enamel-ware consisting in the extracting and collecting of the waste anhydrous heat from the hot ware as it is taken from the furnace and conveying said heat to the drying-room, where it acts upon the wet ware contained therein.

The object of the present invention is to provide a simple form of apparatus for carrying out the above-described method; and to these ends my invention comprises the novel features hereinafter set forth and claimed.

To enable others skilled in the art to make and use my invention, I will describe the same more fully, referring to the accompanying drawings, in which—

Figure 1 is a perspective view of my improved apparatus. Fig. 2 is an enlarged perspective view of the truck for conveying the dipped ware to the drying-room and thence to the furnace.

In the drawings the numerals 2, 3, and 4 designate furnaces arranged side by side at suitable distances apart, and while I have only illustrated three such furnaces it is apparent that any number may be employed, according to the capacity of the plant. These furnaces are provided with the doors 5, which are adapted to be raised and lowered, said doors being connected by the chains 6 to the toothed quadrant 7 on one end of the equalizing-bar 8, supported upon the upright 9. A second toothed quadrant 10 is secured to the bar 8, and connected thereto is the chain 11, connected to the weight 12. Connected to the outer end of the bar 8 is the operating-cable 13. The door is thus raised by drawing down on the operating-cable 13, while the door is lowered into position again by its own weight counterbalanced by the weight 12.

In front of each furnace is the stand 14, upon which rests the burning-fork 15. These burning-forks support the ware and by means of which it is introduced and drawn from the furnace. As these burning-forks are of the ordinary construction, it is not deemed necessary to illustrate the same in detail.

Supported above each furnace is the hood 16, said hood being connected by the elbow-pipe 17 to the horizontal pipe 18. A fan 19 of any suitable construction is connected to the pipe 18, while the pipe 20 is connected to the fan 19, said pipe 20 leading to the drying-room 21. A number of branch pipes 22 are connected to the pipe 20, said branch pipes extending down into the drying-room and being provided with the apertures 23, through which heat escapes into the drying-room. These pipes 22 may be provided with the dampers 22*.

The rack 24 may be formed of sections of pipe or other suitable material forming the uprights 25 and the cross-bars 26 connected in any suitable manner. The rack 25 is mounted upon the wheels or casters 27, by means of which the rack may be readily moved from one part of the factory to the other. Supported upon the racks are the plates 29, which support the ware.

When my improved apparatus is in use, the fan 19 is put in operation, which creates a suction in the pipe 18 and also in the elbow 17 and hood 16. The furnaces are charged and drawn in succession, and when the furnace-door is open to withdraw the burning-fork and the ware carried thereby the suction of the fan 19 draws the escaping heat from the furnace, as well as the heat from the hot ware which has been withdrawn from the furnace and rests upon the stand 14. In this way the heat is extracted or collected and drawn up into the pipe 18, whence it is conveyed to the pipe 20. This heat is an anhydrous heat, and consequently when it escapes through the apertures 23 in the branch pipes

22 it furnishes to the drying-room a very dry heat, which takes up quickly the hydrogen of the wet ware and greatly expedites the drying operation. When the furnace 2 is charged again and the door closed, the furnace 3 is opened and the hot air withdrawn, and the heat of same is drawn up into the pipe 18 and carried to the drying-room.

By working the furnaces in succession in the manner described a constant supply of anhydrous heat is conveyed to the drying-chamber, so that said drying-chamber is maintained at a proper temperature, while by my invention the waste heat is being extracted from the hot ware for use in drying. At the same time the suction of the fan tends to cool the hot ware more rapidly, and the time required for the cooling of the ware is thereby reduced.

By having the racks mounted on wheels the extra handling of the ware is avoided, for the racks may be filled at one part of the factory with the dipped ware and when the rack is loaded may be rapidly transferred to the drying-room. After the ware has been properly dried the same rack is conveyed to the furnace and the ware transferred from the rack to the burning-fork. By the use of such a rack I am enabled to dispense with the extra handling of the ware and the expense involved in the employment of more hands. Furthermore, the time required in the process of manufacture is reduced and the subsequent saving of further expense in this way.

What I claim is—

1. In apparatus for the drying of enamel-ware, the combination of a furnace having a single door for the admission and withdrawal of the ware, a support in front of said door, means directly above said furnace-door for collecting the heat emanating from the hot ware resting on said support, and means for transferring said heat to the drying-room.

2. In apparatus for the drying of enamel-ware, the combination of a furnace having a single door for the admission and withdrawal of the ware, a support in front of said door, means directly above said furnace-door for drawing off by suction the heat emanating from the hot ware resting on said support, and means for transferring said heat to the drying-room.

3. In apparatus for the drying of enamel-ware, the combination of a furnace having a single door for the admission and withdrawal of the ware, a support in front of said door, a hood supported from a point directly above said furnace-door, means for creating a suction in said hood, and a pipe leading from the top of said hood for conveying the heat to the drying-chamber.

4. In apparatus for drying enamel-ware, the combination of a furnace having a single door for the admission and withdrawal of the ware, a support in front of said door, a hood supported from a point directly above said door, a pipe connected to the upper end of said hood, a fan connected to said pipe, and means for conveying the heat to the drying-chamber.

5. In apparatus for the drying of enamel-ware, the combination of a furnace having a single door for the admission and withdrawal of the ware, a support in front of said door, a hood supported at a point directly above said door, a pipe connected to the upper end of said hood, a fan connected to said pipe, a pipe leading from the fan to the drying-chamber, and downwardly-extending branch pipes with openings therein.

In testimony whereof I, the said THOMAS L. STRONG, have hereunto set my hand.

THOMAS L. STRONG.

Witnesses:
HUNTER S. ARMSTRONG,
JOHN R. GOW.