

E. ALLS.
FURNACE.

APPLICATION FILED DEC. 3, 1908. RENEWED NOV. 5, 1909.

943,763.

Patented Dec. 21, 1909.

2 SHEETS—SHEET 1.

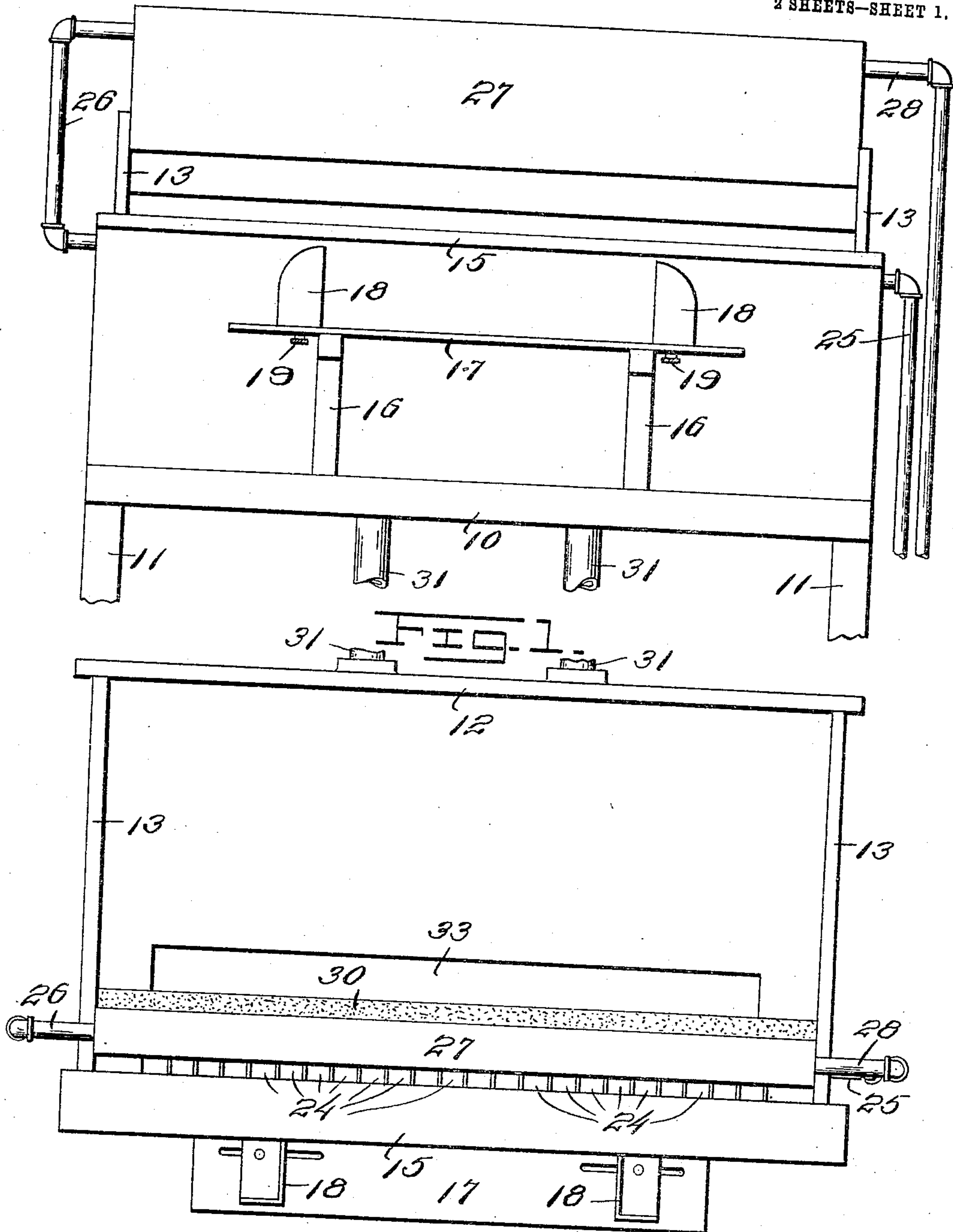


FIG. 2 - Edwin Alls

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2 SHEETS—SHEET 2.

FIG. 3.

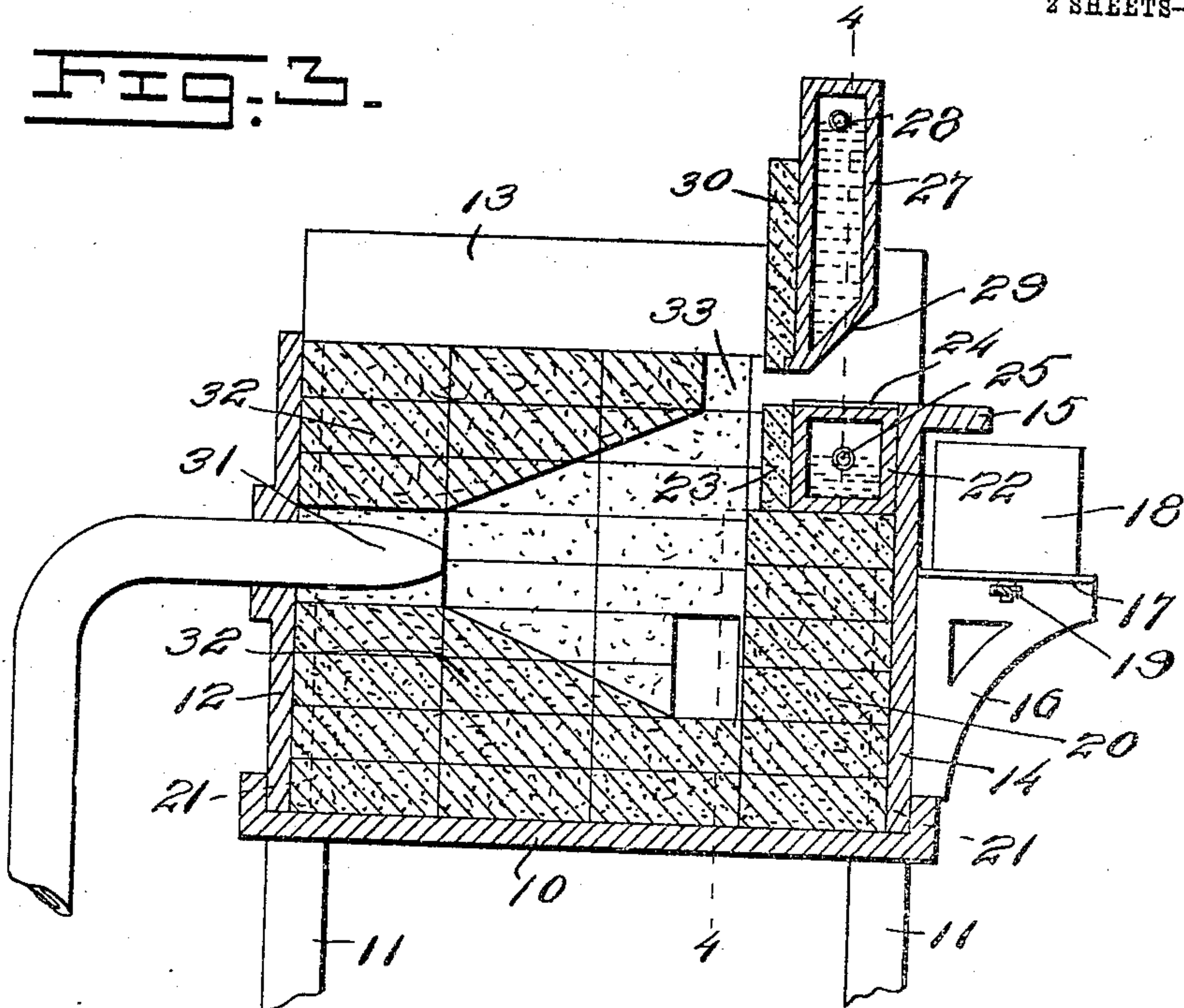
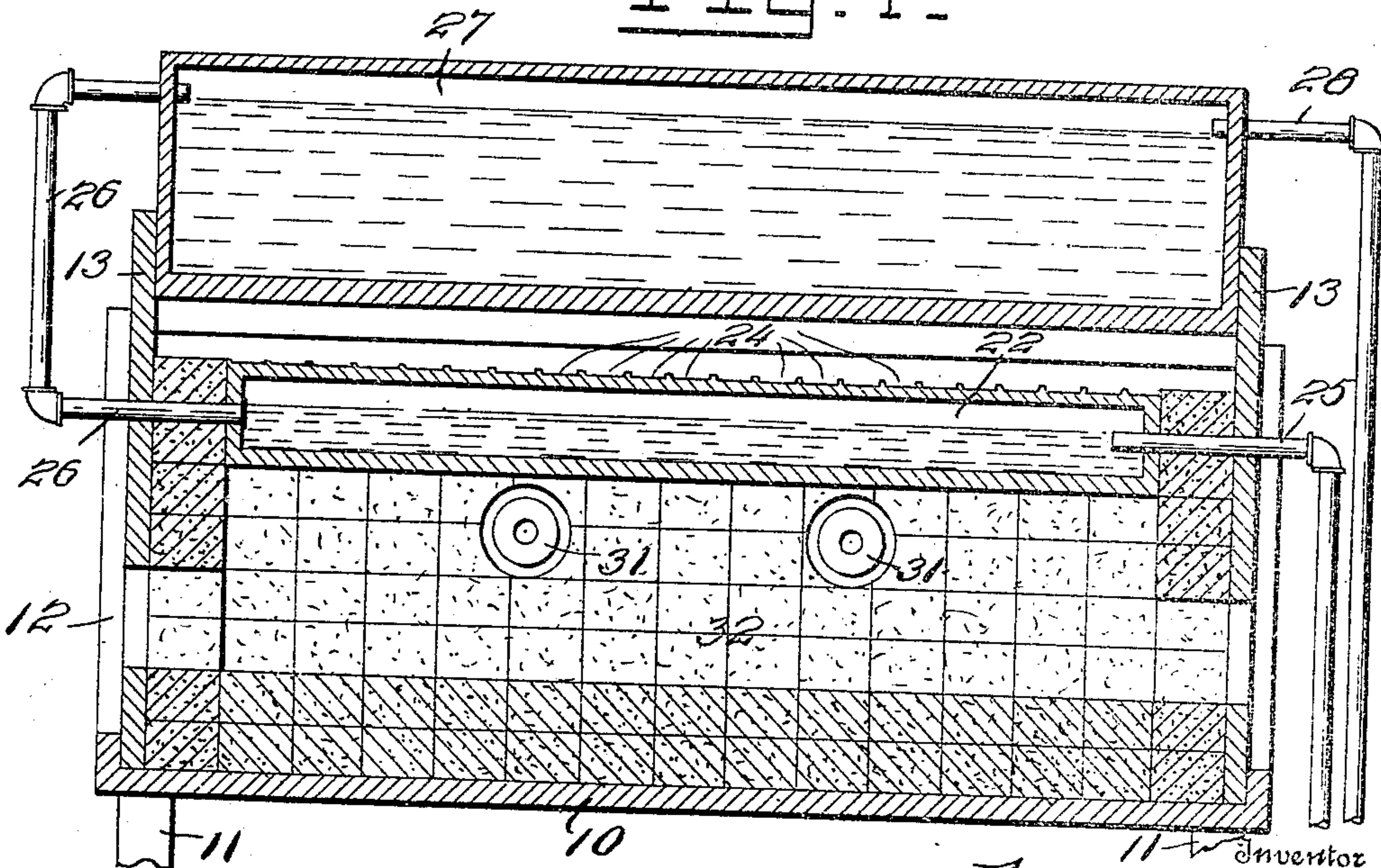


FIG. 4.



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UNITED STATES PATENT OFFICE.

EDWIN ALLS, OF BALTIMORE, MARYLAND, ASSIGNOR TO THE MONARCH ENGINEERING AND MANUFACTURING COMPANY, OF BALTIMORE, MARYLAND.

FURNACE.

943,763.

Specification of Letters Patent.

Patented Dec. 21, 1909.

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To all whom it may concern:

Be it known that I, EDWIN ALLS, a citizen of the United States, residing at Baltimore, State of Maryland, have invented certain new and useful Improvements in Furnaces, of which the following is a specification.

This invention relates to furnaces and has special reference to a metallurgical furnace.

An object of this invention is to devise a furnace for the heating of the ends of blanks from which bolts are to be manufactured.

Another object of the invention is to provide means in connection with a furnace of this character for the protection of the operator during the positioning and withdrawal of the blanks.

The invention has for another object the provision of an improved table positioned at the opening of the furnace for the purpose of preventing the blanks from contacting with each other and adhering to each other during the heating of the same and also for the provision of means to prevent the surface of the table from becoming over heated by reason of its proximity to the furnace lining.

The invention has for a further object the provision of an adjustable bracket for positioning a quantity of the blanks adjacent the furnace for easy access of the operator from which the same are fed to the table.

The invention has for a still further object the novel arrangement and formation of fire brick to be positioned in the furnace for a lining thereof which is durable and strong and which can be readily positioned within the furnace.

Other objects and advantages will be apparent from the following description and it will be understood that changes in the specific structure shown and described may be made within the scope of the claims without departing from the spirit of the invention.

In the drawings forming a portion of this specification, and in which like numerals of reference indicate similar parts in the several views, Figure 1 is a front elevation of the complete device, Fig. 2 is a top elevation of the same, Fig. 3 is a transverse vertical section of Fig. 1, Fig. 4 is a longitudinal vertical section of the furnace.

Referring to the drawings, 10 designates the bottom of the furnace which is supported upon suitable standards 11 and which is provided with a back 12 and sides 13. The bot-

tom 10 also supports a front plate 14 which extends upwardly and is provided with an outwardly extended flange 15. The plate 14 carries brackets 16 which extend forwardly therefrom and upon which is disposed a shelf 17 which is positioned longitudinally across the face of the plate 14. A support 18 is slidably positioned upon each extremity of the shelf 17 and is adjustably engaged therewith by means of a set screw 19 engaged upwardly through the shelf 17 in a slot formed longitudinally therein. Upon the bottom 10 against the plate 14 are positioned fire bricks 20 which are provided at their corners with cutaway portions for the reception of a plurality of rods 21 which are vertically disposed through the same. The fire bricks 20 extend upwardly to a point near the extremity of the plate 14 where a table 22 is disposed which extends the length of the furnace and which is protected by a fire brick lining 23 disposed against the inner face of the same. The table 22 is provided with a plurality of transverse grooves 24 across its upper face for the reception of bolt blanks. The table 22 is hollowed out for the reception of water which is introduced therethrough by an inlet pipe 25 and which is carried thereout by connecting pipes 26, the pipes 25 and 26 being disposed at the opposite extremities of the table 22. Spaced above the table 22 is a protector 27 which is vertically disposed and which is chambered centrally to receive water therethrough which is introduced through the connecting pipe 26 at one extremity and which is carried from the opposite extremity by an outflow pipe 28. The protector 27 comprises a flat substantially rectangularly formed chamber which is provided with a forwardly beveled lower edge 29 to admit of the introduction of the blanks upon the table 22 and which is provided with an inner lining 30 of fire brick or the like. The back 12 of the furnace supports a burner 31 of any suitable and common construction which extends inwardly of the same and is surrounded by a lining of fire brick 32. The formation of the fire brick 32 about the burner 31 is such as to form a central cavity in the furnace which flares outwardly toward the fire bricks 20 and conducts the burning gases upwardly therefrom to escape through a channel 33 formed at the top of the furnace.

This arrangement enables the operator to

place a number of blanks upon the shelf 17 and to adjust the support 18. The operator places the blanks upon the table 22 in the transverse grooves 24 and while thus positioning the blanks is protected from the heat contained within the furnace by means of the protector 27 and table 22 through which a continuous circulation of water is maintained. The water circulating through the table 22 also serves for the purpose of preventing the excessive heating of the outer extremities of the blanks and of protecting the flange 15.

What is claimed is:—

1. A furnace of the class described, comprising a rectangular frame having front and back plates and sides extended above the front and back plates, an integrally formed flange extending outwardly from the upper edge of said front plate, a shelf longitudinally mounted upon the front plate, an adjustable support at each extremity of said shelf, a hollow table secured to the inner face of said front plate, a plurality of transverse grooves formed in the upper surface of said table, a protector supported on the sides of said frame in vertical spaced relation to said table and a burner positioned through the back of said frame.
2. A furnace of the class described, comprising a rectangular frame having front and back plates and sides extended above the front and back plates, an integrally formed flange extending outwardly from the upper edge of said front plate, spaced brackets secured to said front plate, a shelf

mounted upon said brackets, an adjustable support at each extremity of said shelf, a hollow table secured to the inner face of said front plate at the top thereof, a plurality of transverse grooves formed in the upper surface of said table, a hollow protector supported on the sides of said frame in vertical spaced relation to said table and a burner positioned through the back of said frame.

3. A furnace of the class described, comprising a rectangular frame having front and back plates and sides extended above the front and back plates, an integrally formed flange extending outwardly from the upper edge of said front plate, spaced brackets secured to said front plate, a shelf mounted upon said brackets, an adjustable support at each extremity of said shelf, a hollow table secured to the inner face of said front plate, a plurality of transverse grooves formed in the upper surface of said table, a hollow protector supported on the sides of said frame in vertical spaced relation to said table, a fire brick lining for said table and protector, fire bricks disposed within said frame, means for producing a circulation of water through said table and said protector, and a burner positioned through the back of said frame.

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

EDWIN ALLS.

Witnesses:

LOUIS E. PURNELL,
ELMER HENNEBERGER.