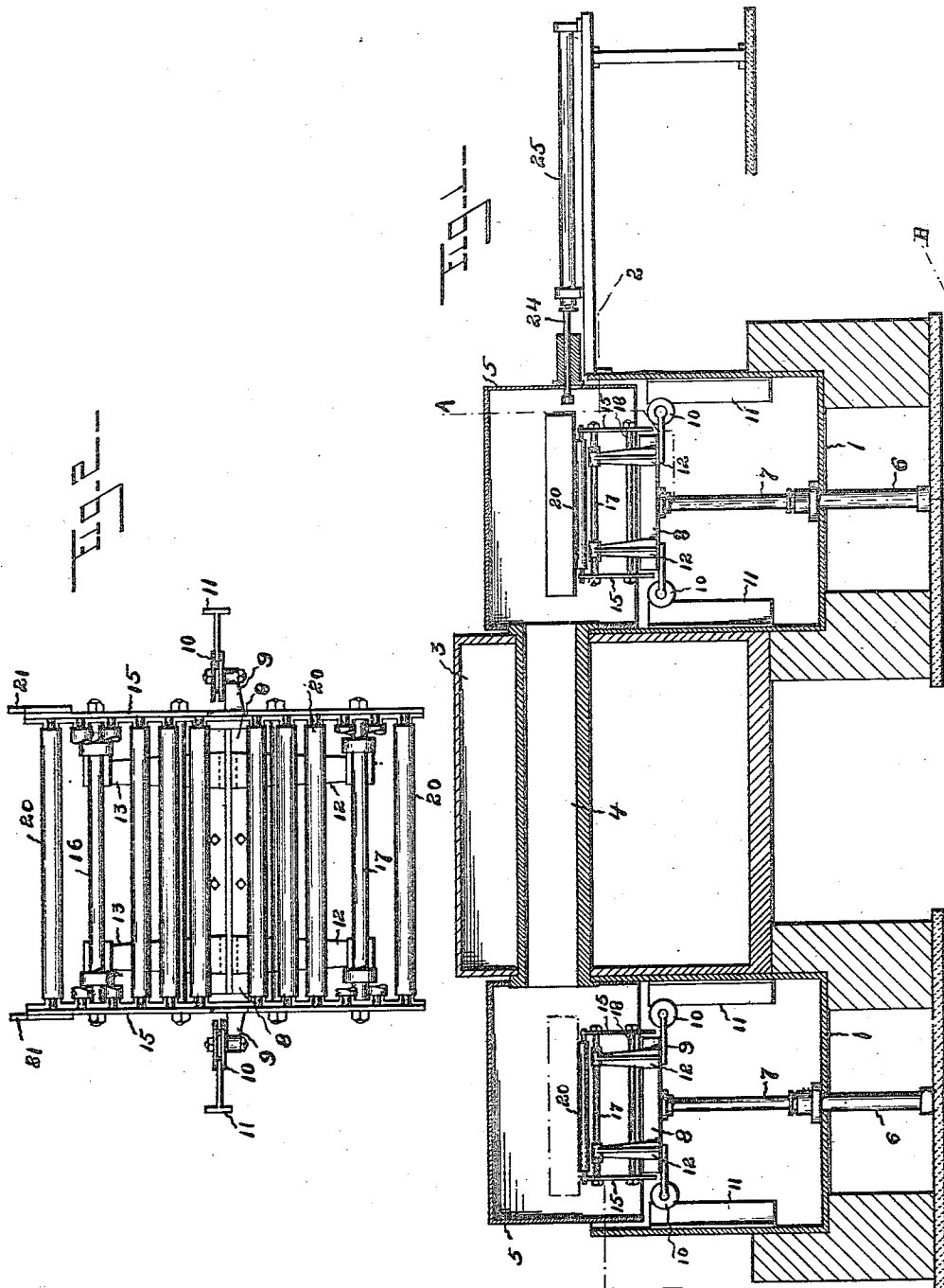


C. F. KENWORTHY.
FURNACE.
APPLICATION FILED AUG. 7, 1914.

1,168,313.

Patented Jan. 18, 1916.

2 SHEETS—SHEET 1.



WITNESSES
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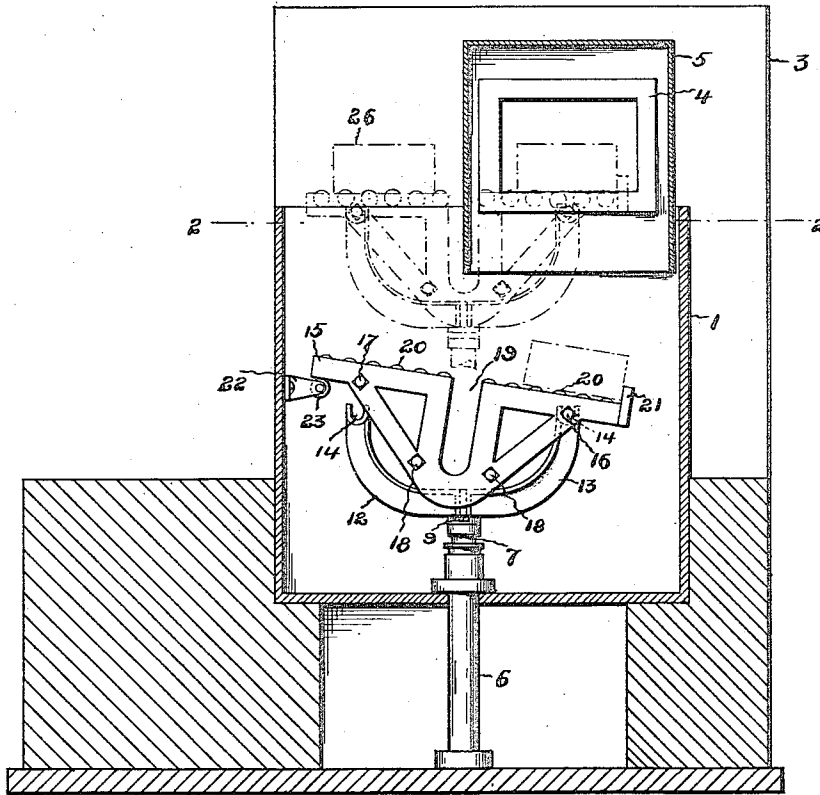


Fig. 3.

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CHARLES F. KENWORTHY, OF WATERBURY, CONNECTICUT.

FURNACE.

1,168,313.

Specification of Letters Patent.

Patented Jan. 18, 1916.

Application filed August 7, 1914. Serial No. 855,805.

To all whom it may concern:

Be it known that I, CHARLES F. KENWORTHY, a citizen of the United States, residing at Waterbury, in the county of New Haven and State of Connecticut, have invented certain new and useful Improvements in Furnaces, of which the following is a specification, reference being had to the accompanying drawings.

This invention relates to a new and improved furnace, and has particular reference to the means for loading and unloading the same.

It is the object of my invention, among other things, to so design such loading and unloading mechanism that the load is automatically shifted from its receiving position to a position wherein it is in line with the annealing chamber, and vice versa, and construct the several parts so that they may be economically produced and capable of withstanding rough, hard usage, without becoming disarranged or injured.

To these, and other ends, my invention consists in the furnace, having certain details of construction and combinations of parts, as will be hereinafter described and more particularly pointed out in the claims.

Referring to the drawings, in which like numerals of reference designate like parts in the several figures; Figure 1 is a sectional elevation of my improved furnace; Fig. 2 is an enlarged fragmentary plan view of the elevator mechanism; and Fig. 3 is an enlarged transverse sectional elevation taken substantially upon line A—B of Fig. 1 with the elevator in its down position.

In the drawings I have illustrated the preferred form of my improved mechanism, but any other form having the essentials of my mechanism will operate equally as well.

As herein shown, the furnace has two tanks 1—1, of substantially the same size and shape, that are filled with water or other fluid up to the line 2, and interposed therebetween is a furnace 3, having an annealing chamber or retort 4 therein.

Connected with the furnace or retort, at opposite ends thereof, are the hoods 5, which are substantially one-half the width of the tanks 1—1, and project therein below the water line 2 so as to form an air seal.

Projecting into the lower portion of the tanks 1—1, and below the same, are the cylinders 6, in which are operatively mounted the pistons 7. Fixed to the top of these pis-

tons is a beam 8, having plates 9 thereon carrying grooved wheels 10 that engage guide bars 11 fixed to the inside of the tanks. The operative engagement of these grooved wheels with the guide bars, prevents the rotation of the piston 7 and the parts connected therewith. Fixed to the beam 8 and projecting outwardly and upwardly upon opposite sides thereof at both ends, are the trunnion arms 12 and 13, having the recesses 14 in the upper ends thereof. The platform mechanism comprises the frames 15 that are secured together by rods 16, 17 and 18, and have a central opening 19 therein that terminates near the bottom of said frames; rollers 20 rotatably mounted in the frames; and the stop arms 21 fixed upon one end of said frames.

Within each of the tanks 1 there is secured the bracket 22, having a roll 23 rotatably mounted therein, which roll is in the path of the ends of the frames 15 for tilting the elevator as hereinafter described.

In Fig. 3 of the drawings, the elevator mechanism in its down position, with the platform thereof tilted, is illustrated by full lines, and its up position, with the elevator platform horizontal, by broken lines. In this latter position it will be observed that one side of the hood 5 below the water line 2 projects into the opening 19 of the elevator frames 15, and that upon one side thereof is exposed above the top of the tank 1, and upon the other side it is within the hood 5 and above the water line 2. Assuming the elevator to be in its up position, the load, represented by the broken lines 26, is placed upon the rollers exposed outside of the hood 5 and above the tank 1. The elevator is then lowered below the water line, and when near the limit of its downward movement, the frames 15 contact with the rolls 23 and cause the same to rock upon the rods 16 within the recesses 14 of the trunnion arms 13, thereby tilting the platform. When the platform is in this position the load will shift from its original position to the opposite side of the platform against the stop arms 21, the rollers 20 facilitating this movement. The elevator is now moved upwardly and the platform assumes its horizontal position when the rod 16 is in a higher horizontal plane than the rolls 23, at which time the rod 17 will enter and lie within the recesses 14 in the trunnion arms 12. At the completion of the upward

stroke of the piston 7 the load will be within the hood 5 above the water line 2 and opposite the annealing chamber 4. It is moved from the platform into the annealing chamber by a plunger 24, operatively mounted in a cylinder 25. While the load is being shifted from the platform into the annealing chamber 4, another load is placed upon that portion of the platform outside of the hood, as above described. The elevator mechanism for receiving the load after it passes through the annealing chamber is located at the opposite end of the annealing chamber and is of substantially the same construction as that above described, with the exception that the elevator is tilted in its downward movement in the opposite direction, so that the load may be shifted from that portion of the platform operative in line with the hood to that portion outside thereof.

There are minor changes and alterations that can be made within my invention, aside from those herein suggested, and I would therefore have it understood that I do not limit myself to the exact construction herein shown and described, but claim all that falls fairly within the spirit and scope of my invention.

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

1. In a mechanism of the character described, the combination with an annealing furnace; of delivery and discharge means therefor provided with means for automatically shifting the relative position of the load thereon between its receiving and its discharge positions.

2. In a mechanism of the character described, the combination with an annealing furnace; of an elevator for receiving and de-

livering loads therein; means for moving said elevator; and a fixed part in the path of movement of said elevator, and engaged thereby, to shift the angular position of a part of said elevator during the movement thereof.

3. In a mechanism of the character described, the combination with an annealing furnace; of a non-rotatable elevator for receiving and discharging loads therein; a platform upon said elevator; and means for moving said platform from a substantially horizontal position to a position wherein it lies at an angle to its horizontal position.

4. An annealing furnace, comprising a retort, a hood inclosing an opening to said retort, a seal located adjacent to said hood and into which said hood extends; an elevator with a portion thereof movable in line with said hood and a portion thereof movable in line outside of said hood; and means for shifting a load upon said elevator from that portion of the platform outside of the hood to that portion of the platform in line therewith and vice versa.

5. In mechanism of the character described, the combination with a reciprocating frame; of means for preventing the rotation thereof; a platform; means for mounting said platform upon said frame so that it may rock thereon in relation thereto upon two different axes; and a fixed member in the path of said platform that engages the same and causes it to rock upon one of said axis during the movement of said frame.

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

CHARLES F. KENWORTHY.

Witnesses:

GEORGE E. HALL,
FLORENCE H. MONK.