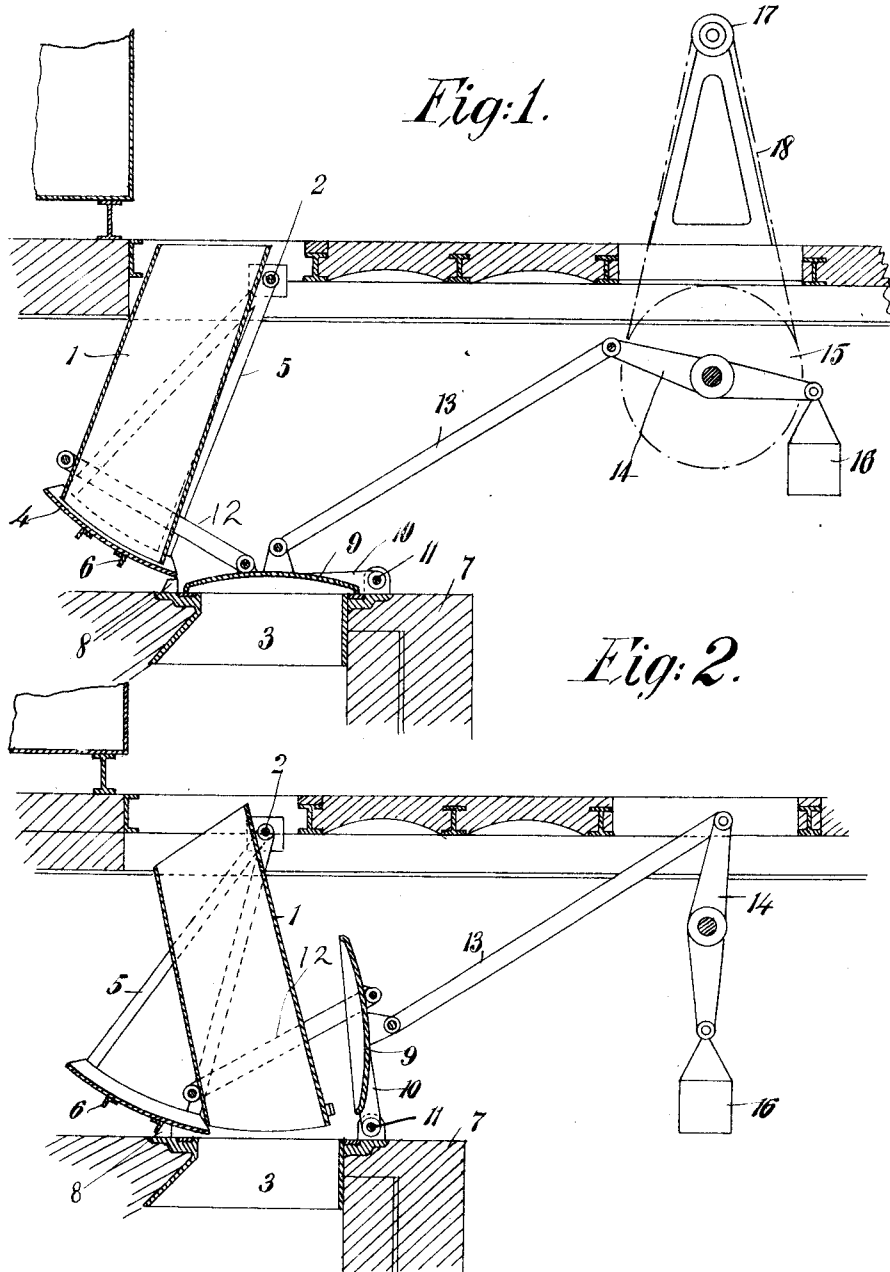


J. H. THWAITES.
CHARGING APPARATUS FOR DESTRUCTOR FURNACES.
APPLICATION FILED MAY 22, 1911.

1,050,254.

Patented Jan. 14, 1913.

2 SHEETS—SHEET 1.



Witnesses
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per:

Inventor
John Hubert Thwaites
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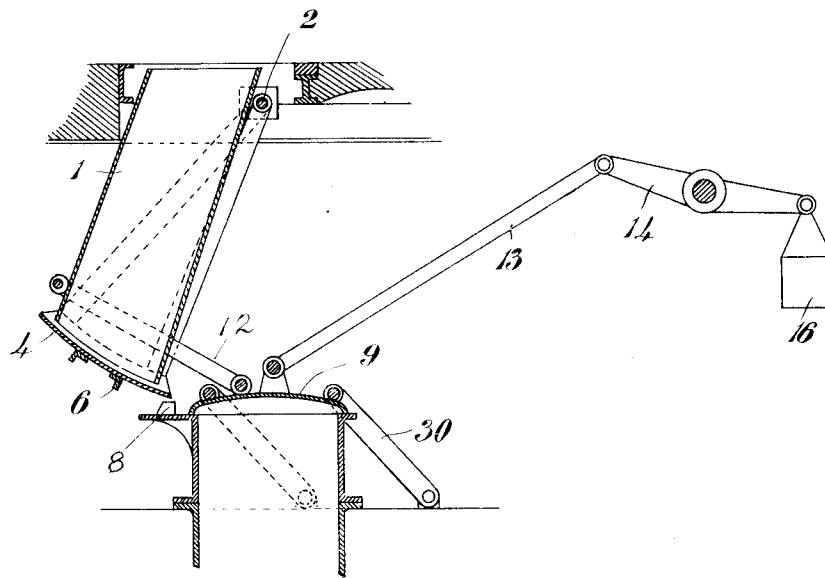
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Fig. 3.



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CHARGING APPARATUS FOR DESTRUCTOR-FURNACES.

1,050,254.

Specification of Letters Patent.

Patented Jan. 14, 1913.

Application filed May 22, 1911. Serial No. 628,807.

To all whom it may concern:

Be it known that I, JOHN HUBERT THWAITES, a subject of the King of Great Britain, residing at Clock House, Arundel street, Strand, London, England, engineer, have invented new and useful Improvements in Charging Apparatus for Destructor-Furnaces, of which the following is a specification.

10 My invention relates to apparatus adapted to insure the charging of destructor furnaces with a pre-arranged quantity of material at any one time while permitting also as desired frequent or occasional charges to be made.

According to my invention I provide a pivotally mounted container adapted to receive the desired quantity of material to be destroyed in the furnace, and connected with the door over the charging opening in the furnace in such a manner that as the filled container is moved on its pivots to a position in which it is over the charging opening of the furnace the said door is removed from the charging opening, while when said container is moved back into a position in which it can be again filled the door is carried with it to its first position over the charging opening of the furnace.

30 My invention is illustrated by way of example in the accompanying drawings in which—

Figure 1 shows a side elevation with the container in a position in which it can be filled and the door in position over the charging opening in the furnace. Fig. 2 shows a view in which the container is in position over the charging opening of the furnace and the door is raised from said opening and Fig. 3 shows a modified form of my mechanism.

Referring now to Figs. 1 and 2 of the drawings, I mount a swinging container 1 on pivots 2 adapted to be moved from the position shown in Fig. 1, in which it can be filled with the pre-arranged quantity of material to the position shown in Fig. 2 in which it is over the charging opening 3. The top of said container 1 can be either left open, as shown, or if desired it may be

closed by means of a door or cover. The bottom of said container 1 is closed by a swinging container closure 4 mounted on the frame 5 and swinging upon the said pivots 2. The bottom closure 4 is only capable of small motion its movement being controlled conveniently by the stops 6; or if desired other mechanical devices so that as said container 1 is moved into the charging position shown in Fig. 2 over the opening 3 in the furnace crown 7, the said closure 4 moves by gravity with it until its stop 6 engages with a stop 8 arranged in such a position in the furnace crown that the lip of said closure has been moved into a position in which the material passing from the container cannot be discharged upon the top of the furnace where it would prevent the closing of the door 9 adapted to cover the furnace charging opening 3. Whenever the container 1 is swung outwardly it abuts the closure 4 and moves said closure along with it. The said door 9 is mounted on one or more lever arms 10 adapted to turn with said door on the pivot or pivots 11 mounted on the furnace crown 7. Said door is also connected by the link 12 to the container 1 and by the link 13 with the mechanism for operating the container. As illustrated in Figs. 1 and 2 this mechanism may consist of an arm 14 mounted on the spindle of a chain wheel 15; said arm 14 being pivotally connected at one end with the link 13 and carrying at the other end a counterweight 16. It will be obvious that when the chain wheel 15 is turned by the operator through the chain wheel 17 and chain 18, the arm 14 will move easily with said wheel 15 owing to the counterweight 16, to the position shown in Fig. 2, thereby lifting the door 9 on its pivots 11 to a position clear of the furnace charging opening 3 and at the same time moving, through the link 12, the container 1 to the position shown in Fig. 2 over said charging opening. When it is desired to return the container after the material has been discharged into the furnace the operator will turn the chain wheel 15 in the opposite direction and the weight of the cover 9 and its link mechanism will balance

the weight of the counter weight 16 thereby allowing the mechanism to be easily moved back to a position in which the cover 9 is over the opening 3 and the container is in the position shown in Fig. 1 with its bottom closed by the container closure 4.

In Fig. 3 I show a modified form of my invention in which a cover 9 is mounted upon parallel links 30 instead of the arrangement shown in Figs. 1 and 2 in which the cover 9 is pivotally mounted on the crown of the furnace by one or more lever arms 10.

What I claim as my invention is:

1. In apparatus for charging destructor furnaces with pre-arranged quantities of material, the combination of a swinging container adapted to receive the desired quantity of material, means simultaneously movable with said container for uncovering the charging opening of the furnace, a closure for the lower end of said container movable with the container through a portion of its movement, and means for overcoming the resistance of said container to swinging as it is loaded.

2. In apparatus for charging destructor furnaces with pre-arranged quantities of material, the combination of a swinging container adapted to receive the desired quantities of material, a furnace provided with a charging opening, a pivoted door adapted to cover said charging opening, and means including said pivoted door for swinging said container into engagement with said opening and simultaneously moving said door on its pivot and uncovering said opening.

3. In apparatus for charging destructor furnaces with pre-arranged quantities of material, the combination of a swinging container adapted to receive the desired quantities of material, a furnace chamber provided with a charging opening, a bottom closure adapted to open said container during its movement to the charging opening, a pivoted door adapted to cover said charging opening, and means including said pivoted door for swinging said container into engagement with said charging opening and simultaneously moving said door on its pivot and uncovering said opening.

4. In apparatus for charging destructor furnaces with pre-arranged quantities of material, the combination of a swinging container mounted on pivotally supported arms and adapted to receive the desired quantities of material, a furnace chamber provided with a charging opening, a swinging bottom closure adapted to swing with said container, means for arresting the movement of said bottom closure to open said container during its movement to said charging opening, a pivoted door adapted to cover said

charging opening and means including said pivoted door for swinging said container into engagement with said opening and simultaneously moving said door on its pivot and uncovering said opening.

5. In apparatus for charging destructor furnaces with pre-arranged quantities of material, the combination of a swinging container mounted on pivotally supported arms and adapted to receive the desired quantities of material, a furnace chamber provided with a charging opening, a swinging bottom closure adapted to swing with said container, stops for arresting the movement of said bottom closure to open said container during its movement to said charging opening, a pivoted door adapted to cover said charging opening and means including said pivoted door for swinging said container into engagement with said opening and simultaneously moving said door on its pivot and uncovering said opening.

6. In apparatus for charging destructor furnaces with pre-arranged quantities of material, the combination of a swinging container adapted to receive the desired quantities of material, a furnace provided with a charging opening, a pivoted door adapted to cover said opening link mechanism connecting said swinging container with said door in such a manner that as said container is moved to a position in which it is in engagement over the charging opening said door is simultaneously turned on its pivot and removed therefrom while when said container is moved back to a position in which it can be filled the said door is carried to its first position over said charging opening, a double armed lever adapted to be turned by the operator, a link connecting one end of said double armed lever with said charging opening and a counter weight at the other end of said double armed lever.

7. In apparatus for charging destructor furnaces with pre-arranged quantities of material, the combination of a swinging container, adapted to receive the desired quantities of material, a furnace chamber provided with a charging opening, a pivoted door adapted to cover said opening, parallel links connecting said door with the furnace crown, a link connecting said container with said door and means for swinging said container into engagement with the furnace opening and simultaneously lifting said door on its parallel links off said charging opening.

8. In apparatus for charging destructor furnaces with pre-arranged quantities of material, the combination of a swinging container, adapted to receive the desired quantities of material, a furnace chamber provided with a charging opening, a pivoted door adapted to cover said opening, parallel links connecting said door with the furnace

crown, a link connecting said container with
said door, a double armed lever adapted to
be turned by the operator, a link connecting
one end of said double armed lever with said
5 charging opening door and a counterweight
at the other end of said double armed lever.

In testimony whereof I have signed my

name to this specification in the presence of
two subscribing witnesses.

J. H. THWAITES.

Witnesses:

ARTHUR J. STEPHENS,
LEONARD E. HAYNES.