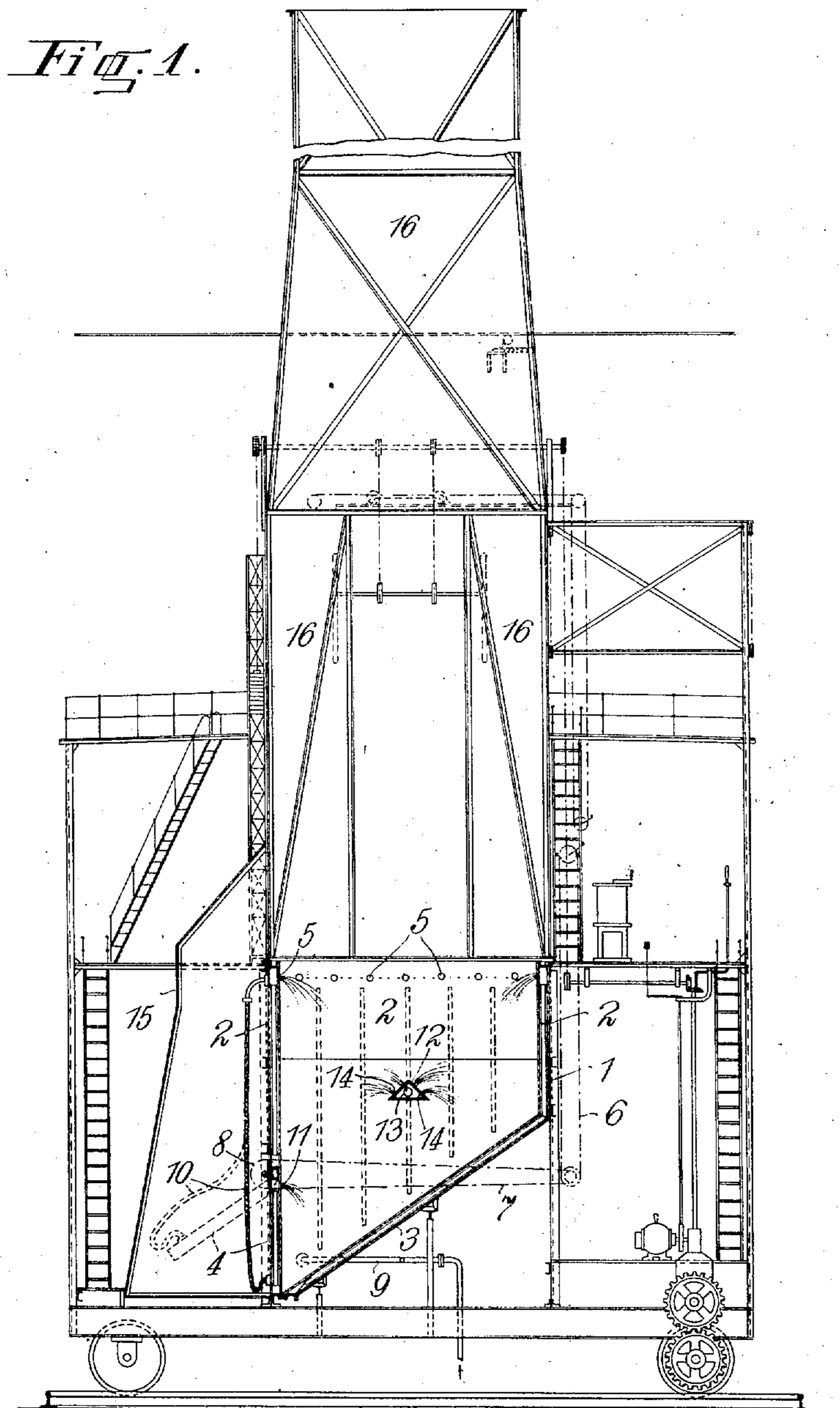


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 APPARATUS FOR QUENCHING INCANDESCENT MATERIALS.  
 APPLICATION FILED JULY 8, 1909.

976,580.

Patented Nov. 22, 1910

2 SHEETS—SHEET 1.



Witnesses:  
 G. V. Rasmussen  
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Ernst H. Krause  
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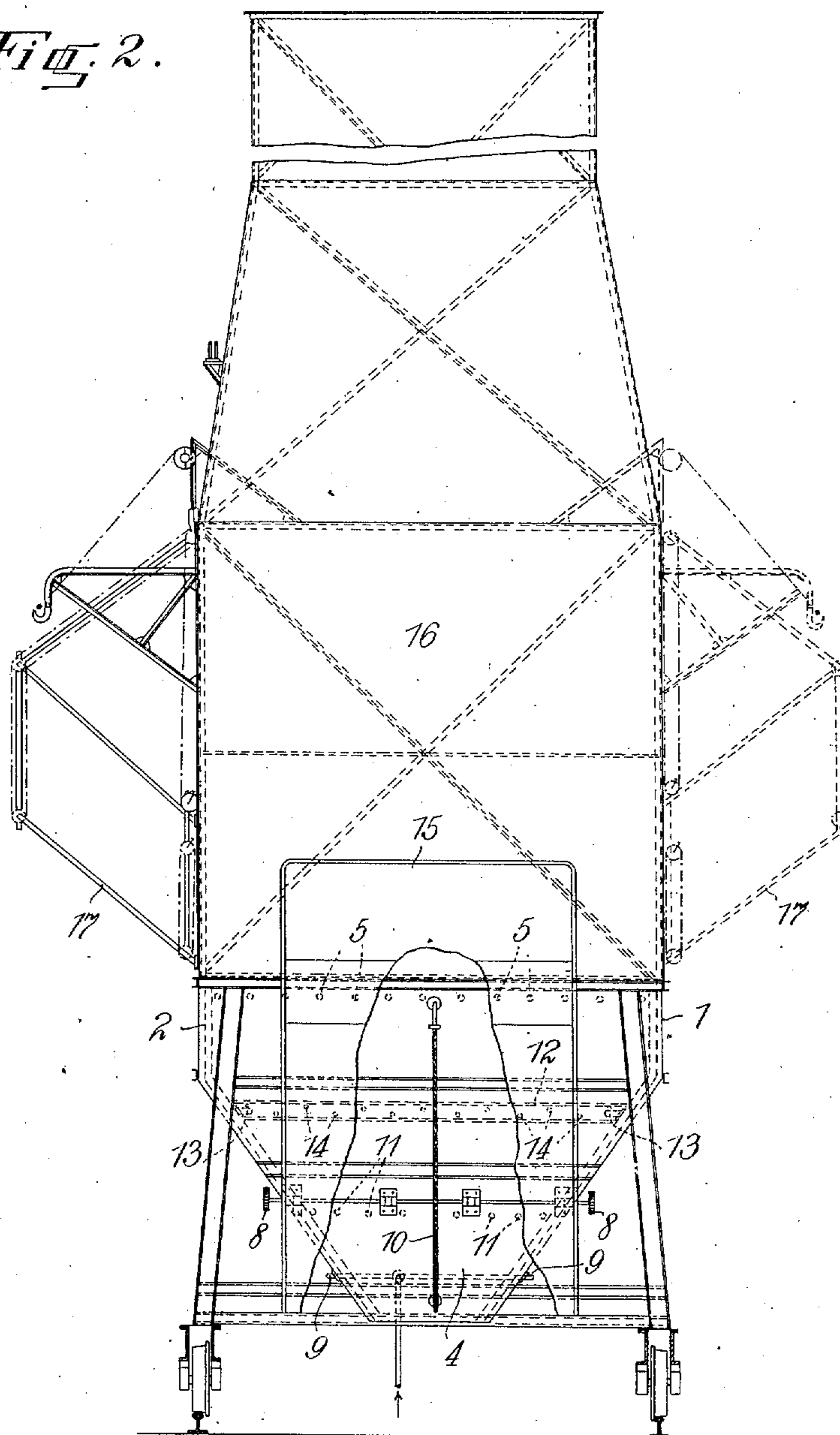
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2 SHEETS—SHEET 2.

*Fig. 2.*



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# UNITED STATES PATENT OFFICE.

ERNST HUGO HERMANN KRAUSE, OF HAMBURG, GERMANY, ASSIGNOR TO FIRM OF STETTINER CHAMOTTE-FABRIK ACTIEN-GESELLSCHAFT, VORMALS DIDIER, OF STETTIN, GERMANY.

## APPARATUS FOR QUENCHING INCANDESCENT MATERIALS.

976,580.

Specification of Letters Patent.

Patented Nov. 22, 1910.

Application filed July 8, 1909. Serial No. 506,496.

*To all whom it may concern:*

Be it known that I, ERNST HUGO HERMANN KRAUSE, a citizen of the Empire of Germany, residing at Hamburg, Germany, have invented certain new and useful Improvements in Apparatus for Quenching Incandescent Materials, of which the following is a full, clear, and exact description.

This invention relates to apparatus for quenching incandescent materials and is particularly adapted for dealing with coke in large quantities, such as produced, for instance, in retorts working with large charges.

The object of this invention is to effect in as speedy and thorough manner as possible the quenching of such large quantities of coke in the trough of a traveler movable on rails in front of the retorts. As in such case the walls of the quenching trough are apt to be damaged by becoming excessively hot owing to their contact with the incandescent coke, it has already been suggested to make the lateral walls of the trough hollow and to cool them by water circulation, the upper walls having previously been in the form of a hood above the trough and provided with a longitudinal slot through which water contained therein could flow on to the coke in the trough.

According to this invention the water-jacketed quenching trough is of the special construction hereafter described and apparatus is provided for conveying water to the coke in the trough so as to insure the most thorough and rapid quenching thereof.

A coke quenching apparatus constructed according to my invention is illustrated in the accompanying drawings in which—

Figure 1 is a vertical section of the apparatus mounted on the traveler, and Fig. 2 an elevation of the same, partly in section, seen from the left hand side.

The quenching trough 1 is mounted in the center of a traveler which is movable, as is well known, in front of the gas generating retorts. The lateral walls 2 as well as the bottom 3 of the trough are formed double, and adapted to have water circulated through them for cooling purposes. The lateral walls 2 of the extinguishing trough are stiffened inside by means of ribs which, however, are of such construction that the water used for cooling the walls can freely flow through the hollow space of the walls.

The trough is open at the top and openings 5 are formed in the upper portions of the side walls 2 through which cooling water can pass into the interior of the trough 1.

The wall which is on the left hand side in Fig. 1 is provided at its lower end with a movable discharge door 4 which also has double walls and can be opened or closed at will from the central platform of the traveler by means of a sprocket and chain gear 6 and 7 to empty the contents of the trough. The gear chains 7 pass over the sprockets 8 mounted on the outer ends of the door pivot.

Water is supplied to the walls 2 and to the bottom of the trough through a pipe 9 leading into the bottom of the trough and suitably connected with a source of water supply to permit the traveler to be shifted, while the hollow door 4 is supplied with water by means of a flexible pipe 10 connected to the upper portion of the corresponding lateral wall 2. The door 4 is provided near its upper end with openings 11 whereby the coke contained in the lower portion of the trough 1 or falling from the same, is sprinkled with water.

In the construction illustrated, there is further provided in the interior of the trough 1 a hollow cross-beam 12 to which water is supplied through pipes 13 from the hollow lateral walls 2, this water passing through lateral openings 14 in the beam to the heart of the mass of coke in the trough. The beam 12 is at the same time utilized as a baffle, since it separates and divides the coke falling on it from the retort into the trough 1, and thus assists its quenching.

In front of that lateral wall 2 of the trough 1 having the discharge door, a partition 15 is provided at the required distance forming an exhaust passage for the steam or fumes, the upper portion of which opens into the central tower-like chimney 16 of the apparatus through which steam generated during the extinction of the coke is carried upward in the well known manner, thus protecting the attendants from danger.

The transfer of coke from the retorts to the quenching trough 1 is effected by means of chutes 17 arranged at one or both sides of the traveler and opening into the trough 1.

In operation the coke discharged into the trough 1 will be quenched all over its upper surface by water from the openings 5 in the

lateral walls 2, its central portion or core being simultaneously subjected to the action of the water from the openings 14 in the cross-beam 12, and its lower portion by the water escaping through the openings 11 of the water cooled door 4. Owing to the coke being simultaneously extinguished throughout, quenching takes place in a rapid and thorough manner. On the other hand, owing to the cooling of all the walls, as well as of the bottom and discharge door of the trough, the latter is not excessively heated by the incandescent coke and is not therefore damaged.

The apparatus illustrated is also provided with mechanism whereby the movement of the traveler can be controlled from the central platform for actuating the discharge door and the door of the retorts it is desired to empty.

The platforms of the traveler are arranged in such a manner that cleaning of the retorts or repairs thereto can be conveniently effected.

Finally, the apparatus illustrated is adapted to carry any mechanism or parts required for attending to the retorts, but such mechanism forms no part of the present invention and is not therefore shown or described.

What I claim is:—

1. An apparatus for quenching incandescent materials comprising a water-jacketed trough having water outlets in its inner wall and provided with a discharge opening for the material, means for supply-

ing water to said jacket, a hollow movable door controlling said discharge opening and provided with water outlets in its inner wall and means for supplying water to said door.

2. An apparatus for quenching incandescent materials comprising a water-jacketed trough having water outlets in its inner wall and provided with a discharge opening for the material, means for supplying water to said jacket, a water containing transverse beam provided with water outlets from which the core of the incandescent material is sprayed, a connection for supplying water to said beam, a hollow movable door controlling said discharge opening and provided with water outlets in its inner wall and a flexible connection between said door and said water jacket for supplying water to said door.

3. An apparatus for quenching incandescent materials comprising a water-jacketed trough having water outlets in its inner wall and provided with a discharge opening for the material, an exhaust chimney and a protecting hood over said discharge opening and spaced from said trough to form an auxiliary exhaust channel connected with said chimney.

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

ERNST HUGO HERMANN KRAUSE.

Witnesses:

ERNEST H. L. MUMMENHOFF,  
EDUARD HOPF.