No. 724,350. PATENTED MAR. 31, 1903.

D. B. STAUFT.

APPARATUS FOR WATERING COKE OVENS.

APPLICATION FILED MAY 26, 1902.

NO MODEL.

Fig. 1

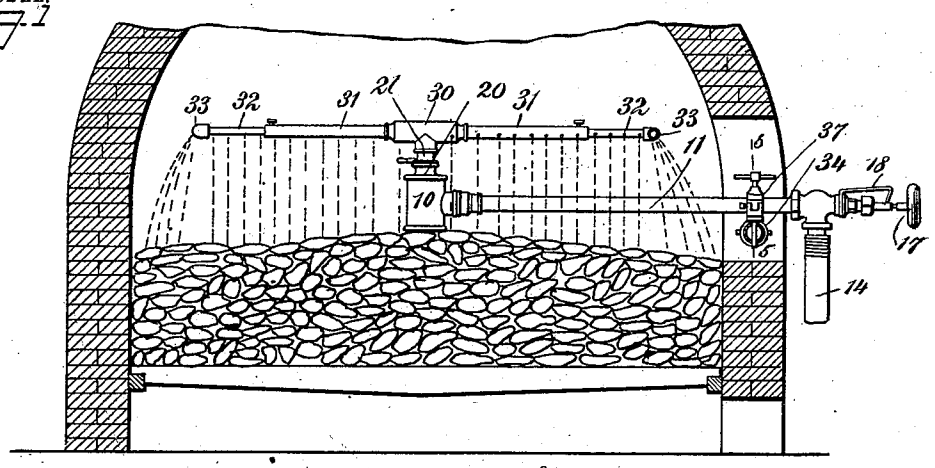


Fig. 2

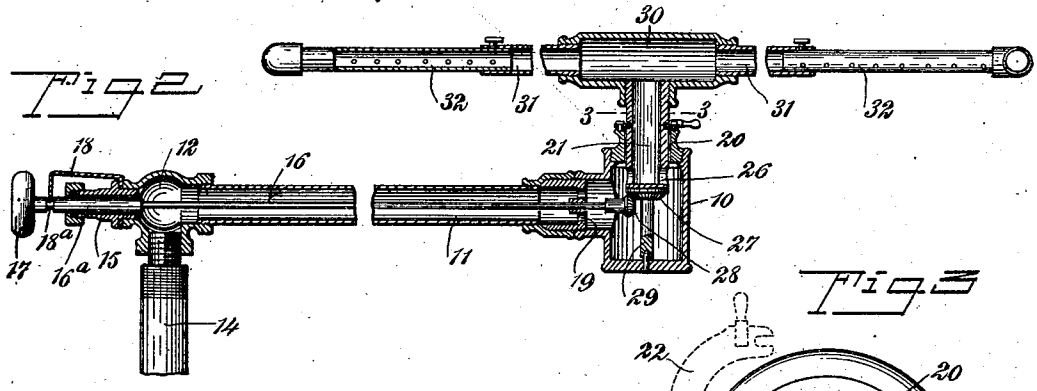


Fig. 3

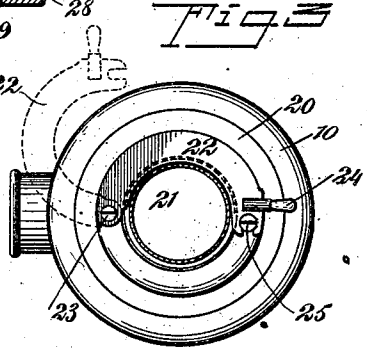


Fig. 4

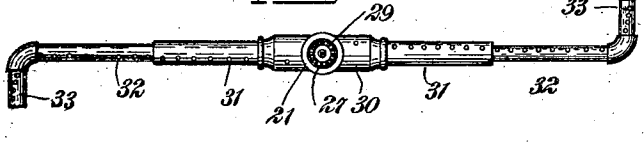
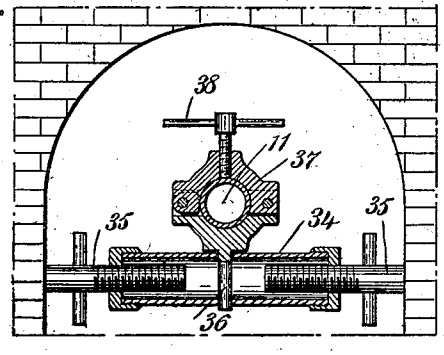


Fig. 5



WITNESSES:

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UNITED STATES PATENT OFFICE.

DANIEL BERKEY STAUFT, OF SCOTTDALE, PENNSYLVANIA.

APPARATUS FOR WATERING COKE-OVENS.

SPECIFICATION forming part of Letters Patent No. 724,350, dated March 31, 1903.

Application filed May 26, 1902. Serial No. 108,940. (No model.)

To all whom it may concern:

Be it known that I, DANIEL BERKEY STAUFT, a citizen of the United States, and a resident of Scottdale, in the county of Westmoreland and State of Pennsylvania, have invented a new and Improved Apparatus for Watering Coke-Ovens, of which the following is a full, clear, and exact description.

The object of this invention is to provide a convenient and effective means for watering or cooling the coke in beehive coke-ovens preparatory to removing it from the oven.

To this end the invention comprises a novel sprinkling apparatus which may be introduced through the oven-door into the oven, so as to lie over the bed of coke, and which is so constructed that it will automatically turn over the coke thoroughly to sprinkle the same.

The invention also provides means for permitting of manually turning the sprinkler. The arrangement of the sprinkling pipe or pipes is such that the water is confined to the bed of coke and is not allowed to spray over the walls of the oven, since the sudden cooling of these walls would tend to destroy them, as will be clearly understood by persons skilled in the art.

This specification is an exact description of one example of my invention, while the claims define the actual scope thereof.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the views.

Figure 1 is a sectional view of an oven, showing the invention in use. Fig. 2 is an enlarged sectional view of the sprinkler. Fig. 3 is an enlarged sectional plan view on the line 3 3 of Fig. 2. Fig. 4 is a bottom plan view of the sprinkling-pipes and the hollow pivot thereof, and Fig. 5 is an enlarged section on the line 5 5 of Fig. 1.

10 indicates a central casing or body, to which leads a rigid metallic pipe 11, conducting the water into the body 10. At its outer end this pipe 11 is formed with a union 12, into which passes the water-supply pipe 14, and the union is also provided with a stuffing-box 15. In the stuffing-box 15 is mounted to turn the enlarged part 16^a of a shaft 16, which passes axially through the pipe 11 and carries at its outer end a hand or other operating wheel 17.

18 indicates a spring-catch which works with a notch 18^a in the shaft 16, and when this catch is engaged in said notch 18^a the shaft 16 is held at its inward or operative position. When, however, the dog is released, the shaft 16 may be drawn outward into inoperative position—that is to say, in a position opposite to that shown in Fig. 2. The inner end of the shaft 16 is held to turn and to slide by a spider-bearing 19, carried by the inner end of the pipe 11.

In the upper end of the body or casing 10 is fitted a bushing 20, and in this bushing is arranged to turn the hollow pivot 21 of the sprinkling-pipes. This pivot is held against axial movement by means of a locking-arc 22, pivoted at the point 23 to the bushing 20 and provided at its free end with a handle 24 and a locking-screw or other device 25, this locking-screw holding the arc 22 engaged in an exterior groove in the pivot 21, as Fig. 2 illustrates, and by these means the pivot is held to turn, but not to move axially. The arc 22 may of course be thrown back to the position shown by dotted lines in Fig. 3. At a point within the body 10 the pivot 21 is perforated, as shown at 26, so that water may enter into the pivot from the body 10, and just below this perforated point 26 a bevel-gear 27 is located, this gear being fast to the pivot and meshed with a bevel-gear 28 on the inner end of the shaft 16.

29 indicates a pin projecting downward from the center of the pivot 21 and engaged with the bottom of the casing 10, so as to assist in sustaining the pivot to turn freely in the body.

The upper end of the pivot 21 carries a T 30, to which are connected the sections 31 and 32 of the telescopic sprinkling-pipes, the outer sections 32 thereof terminating in laterally-disposed adjustable extensions 33, and these parts 30, 31, 32, and 33 being perforated, so that the water rushing into the pipes 30, 31, 32, and 33 and passing out of the perforations thereof will by the reactionary forces generated cause the pipes to turn with the pivot 21 after the manner of the well-known Barker's mill.

For the purpose of holding the device while in operation I provide a bridge-tube 34, in the ends of which are fitted screws 35, which enable said tube to be fastened horizontally in the door of the oven, and this tube is transversely perforated to receive the pivot-stud

36 of a clamp 37, which is adapted to span the main tube 11 and be fastened thereto by means of a screw 38, as shown best in Fig. 5.

In using the invention slight water-pressure is first turned on to protect the pipes from heat, and then the tubes 31 and 32 are turned so as to lie in parallelism with the tube 11, and then the device is moved longitudinally through the door of the oven into the same, as Fig. 1 shows. The bridge-tube 34 is then put in position, and the pin 36 of the clamp 37 is engaged with the said tube. An increased supply of water should now be turned on, and the water-pressure will cause the sprinkler-tubes 31 and 32 to turn rapidly around with the pivot 21 on the body or casing 10, and thus the coke will be thoroughly sprinkled. If the water-pressure is not sufficient for this purpose or if it be desired to supplement this pressure, the sprinkler-tubes may be manually turned by rotating the shaft 16, which imparts its movement to the pivot 21 through the medium of the gears 27 and 28. By means of this apparatus the coke may be very effectively and quickly cooled, and when the operation is finished the sprinkling device may be withdrawn from the oven by a reversal of the operations required to introduce the sprinkler.

Various changes in the form and details of my invention may be resorted to at will without departing from the spirit thereof. Hence I consider myself entitled to all forms of the invention as may lie within the intent of my claims.

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

1. A device for sprinkling coke, comprising a body or casing, a hollow pivot mounted to turn therein and communicating with the interior thereof, said pivot projecting above the body, a perforated sprinkler-tube attached to the said pivot, a supply-tube passing to the body or casing, and a lock device mounted on the top of the body and removably engaging the pivot to prevent its axial movement on the body, said lock device permitting the rotation of the pivot.

2. A device for sprinkling coke, comprising a body or casing, a hollow pivot mounted to turn therein and communicating with the interior thereof, a perforated sprinkler-tube attached to the said pivot, a supply-tube passing to the body or casing, and a lock device mounted on the body and removably engaging the pivot to prevent its axial movement on the body, said lock device consisting of an arc pivoted at one end and adapted to embrace the pivot, the pivot having an annular groove in which the arc extends and means for releasably holding the free end of the arc.

3. A sprinkling device having a casing or body, a supply-tube leading thereto, a hollow pivot mounted to turn in the body and communicating with the interior thereof, a perforated sprinkler-tube held by and communicating with the hollow pivot, a bearing-rod extending downward from the pivot within the body and stepped on the bottom thereof, and means extending through the supply-tube into the body, for rotating the pivot.

4. A sprinkling device having a casing or body, a supply-tube leading thereto, a hollow pivot mounted to turn in the body and communicating with the interior thereof, a perforated sprinkler-tube held by and communicating with the hollow pivot, a bearing-rod extending downward from the pivot within the body and stepped on the bottom thereof, and means extending through the supply-tube into the body, for rotating the pivot, said means comprising a rotary shaft in the supply-tube and beveled gears in the body.

5. A device for sprinkling coke, comprising a body or casing, a perforated sprinkler-tube arranged to turn therein and communicating therewith, a supply-tube passing to the body or casing and lying in a plane essentially parallel with that of the sprinkler-tube, and means extending through the supply-tube and into the body for turning the sprinkler-tube.

6. A device for sprinkling coke, comprising a body or casing, a hollow pivot mounted to turn therein and communicating with the interior thereof, a perforated sprinkler-tube attached to the said pivot, a supply-tube passing to the body or casing and disposed laterally thereof, and means extending through the supply-tube and into the body, said means connecting with the pivot to facilitate turning the same.

7. In a sprinkling apparatus, the combination of a body or casing, a sprinkling-tube mounted to swing thereon and communicating therewith, said tube being perforated on one side to be swung by the reactionary force of the escaping fluid, a supply-pipe leading to the body, and means extending through the supply-pipe into the body to facilitate manually driving the sprinkling-tube.

8. A device for sprinkling coke, comprising a body or casing, a perforated sprinkler-tube arranged to turn thereon and communicating therewith, a supply-tube passing to the body or casing and disposed transversely thereof, a bridge adapted to bear the supply-tube, and means for fastening this bridge in the mouth of the oven.

9. A sprinkling apparatus, comprising a hollow body, a sprinkler-tube mounted to swing thereon and communicating therewith, a supply-pipe extending to the body, and means projecting through the supply-pipe into the body and having connection with the sprinkler-tube, to permit manually turning the said tube.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

DANIEL BERKEY STAUFT.

Witnesses:
W. B. HUBBS,
HERBERT BOYD.