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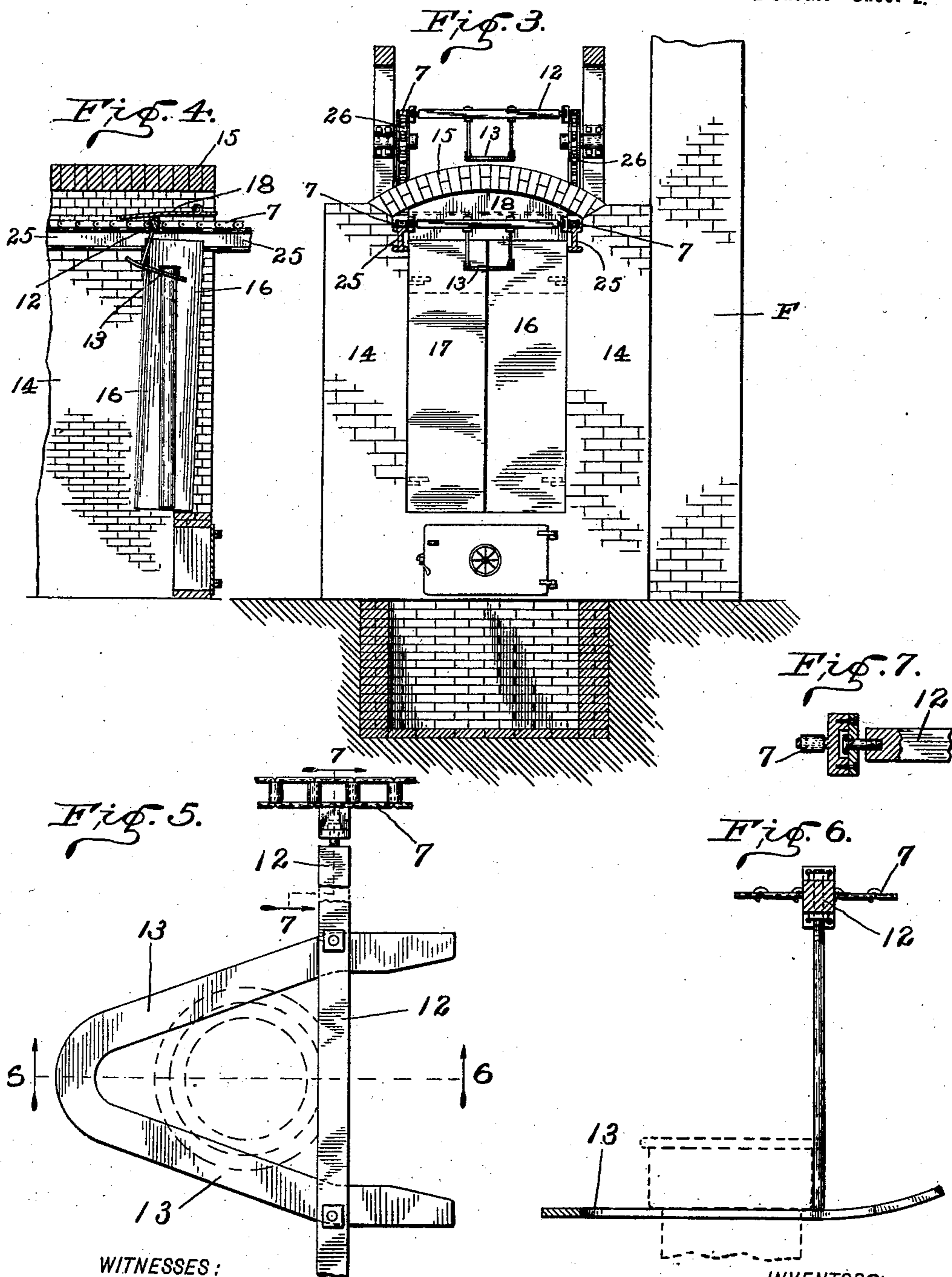
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DIP PAINTING APPARATUS.

(Application filed Mar. 25, 1901.)

(No Model.)

2 Sheets—Sheet 2.



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# UNITED STATES PATENT OFFICE.

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## DIP PAINTING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 689,563, dated December 24, 1901.

Application filed March 25, 1901. Serial No. 52,709. (No model.)

*To all whom it may concern:*

Be it known that we, WILLIAM H. ORCUTT and CHARLES E. SNEDIKER, citizens of the United States, residing at Noblesville, in the county of Hamilton and State of Indiana, have invented certain new and useful Improvements in Apparatus for Coating Articles, of which the following is a specification.

The object of our said invention is to provide an apparatus whereby soil-pipes or other articles may be conveniently, expeditiously, and uniformly tarred or dipped. Heretofore this work has been done by operatives dipping the pipes into the molten tar by hand, which is obviously a slow and tedious operation, while the results are somewhat ununiform.

Our improved apparatus consists, generally speaking, of an endless carrier traveling over and into a pit containing the molten tar or dipping material and thence off to a suitable place of delivery and a furnace arranged between the point where the joints of soil-pipe are placed on the carrier and the point where the carrier runs into the tar-pit, through which the carrier bearing the joints of soil-pipe will pass, whereby said joints of pipe are heated, and thus put into condition to best take on the thin layer of tar required.

Referring to the accompanying drawings, which are made a part hereof, and on which similar reference characters indicate similar parts, Figure 1 is a top or plan view of an apparatus embodying our said invention; Fig. 2, a view, partly in side elevation and partly in longitudinal vertical section, as seen when looking in the direction indicated by the arrows from the dotted line 2 2 in Fig. 1; Fig. 3, a transverse vertical sectional view, on a somewhat-enlarged scale, as seen when looking in the direction indicated by the arrows from the dotted line 3 3 in Fig. 2; Fig. 4, a detail view showing the furnace-doors in the position they occupy when forced open at the moment when a bar 12, carrying a joint of pipe, is passing through; and Figs. 5, 6, and 7, detail views, on a still further enlarged scale, showing the means whereby the joints of pipe are suspended to the carriers more plainly.

Upon a suitable framework 1 is mounted a

shaft 2, bearing sprocket-wheels 3. At the opposite end of the apparatus is a second framework 4, upon which is likewise mounted a shaft 5, bearing sprocket-wheels 6. Extending between these sprocket-wheels are the chains 7 of the endless carrier. The shaft at one end of the apparatus is a driving-shaft and is driven from any suitable source of power (not shown) and by any suitable means. A belt B, (see Fig. 2,) a pulley 30 therefor, a second shaft 31, on which said pulley is mounted, and suitable spur-gearing 32 and 33 to reduce the speed and cause the carrier to travel slowly are shown; but obviously any suitable means may be employed. The shaft at the other end of the apparatus is shown as mounted in adjustable boxes, and adjusting-screws S are shown as the means for adjusting the boxes and keeping the carrier-chains sufficiently taut.

At a point intermediate the ends is a third framework 8 above the tar-pit, and under this framework are the idle wheels 9, 10, and 11, by means of which the carrier-chains are caused to travel down into the tar-pit and up out again as they pass said pit and before proceeding on their way.

Bars or rods 12 extend transversely between the chains 7 at suitable intervals throughout the length of said chains, and these bars or rods are provided with suitable rests 13 to receive and hold the joints of soil-pipe when placed thereon. Such joints of pipe are always provided with a hub at one end, and the rests 13 are of a suitable size to pass under said hubs, which rest thereon, as shown. The arrangement is such that the soil-pipes may constantly maintain a perpendicular position irrespective of the direction in which the carrier bearing them is traveling. In the construction shown this is accomplished by pivoting the bars 12 to the chains 7, as best shown in Figs. 5 and 7.

As above stated, a furnace is arranged between the point where the joints of pipe are placed on the carrier and the frame above the tar-pit. This furnace has suitable sides 14 and top 15, which are preferably built permanently in place and of any suitable construction. A flue F is shown at one side.

One end of this furnace is provided with ingress-doors 16, 17, and 18, two of which are upright and the other horizontal, and at the other end with corresponding egress-doors 19, 20, and 21, (door 20 does not show in the drawings, but corresponds to door 17 on the other end, as will be understood,) the latter being near the tar-pit. The ingress-doors are mounted so that they may be pushed open inwardly and are arranged to automatically close as soon as the force applied is removed. The egress-doors are likewise arranged to be pushed open outwardly and to automatically close when the force applied is removed. This may be provided for in any suitable way. I have shown the upright doors inclined somewhat and the hinges arranged so that the natural tendency of said doors is to swing shut. In addition the horizontal doors, which are above the vertical doors, are arranged to bear against said vertical doors and aid in forcing them shut, as will be clearly understood by an examination of Figs. 2 and 4. This arrangement is simple, inexpensive, effective, and not liable to get out of order.

The top of the furnace extends to a height which brings it between the two laps of the traveling carrier, so that the lower lap of said carrier passes through the furnace beneath its top. The carrier-chains pass alongside the horizontal swinging doors, said horizontal doors being of a length to pass down between said chains. They therefore remain shut, except when the transverse bars carrying the joints of pipe come in contact therewith, when they are forced open thereby, as will be readily understood upon an examination of the drawings; but they will automatically close as soon as the pipe-carrying parts pass out of contact therewith.

Beneath the frame 8 is tar-pit 22 of suitable size, which is kept filled with molten tar, and suitable means, as a steam-pipe 23, are provided to keep it heated and in a properly molten condition. Beyond the tar-pit is a drip board or trough 24, onto which the surplus tar will fall as the joints of pipe are being borne along by the carrier toward the point of removal. Being quite thin they also cool perceptibly during the travel from the pit to said point.

The lower laps of the carrier-chains 7 rest upon and are supported by suitable longitudinal ways 25, and are thus enabled to support the joints of pipe carried thereby at a level. The portions of these ways within the furnace should be of metal and those outside may be of metal or wood. Idle wheels 26 support the upper, returning, or idle portion of the carrier sufficiently.

In operation our improved apparatus is used in the following manner: An operative stands alongside the carrier near the frame 1 and takes the joints of soil-pipe which (after they are cast and tested) are brought to him and hangs them onto the carrier as it passes along on its way to the furnace, placing the

hubs of said joints one by one upon the rests 13. The carrier moves slowly along, bearing these joints of pipe first into the furnace, the ingress-doors of which yield and open as said joints come in contact therewith and as soon as they have passed automatically close. As the joints are borne slowly through the furnace they become heated to a proper degree and emerge through the doors 19, 20, and 21 in a heated condition. The carrier then passes from the idle wheels 9 down to the idle wheels 10, carrying the heated pipe down into the tar-pit, where it is submerged in the tar. After passing the idle wheels 10 the carrier begins to rise, and by the time it has reached the idle wheels 11 the joint of pipe attached at that point is completely withdrawn from the tar. It then passes on, the surplus thin tar dripping off onto the drip board or trough 24. As the joints of pipe respectively reach the end of the carrier at a point near the sprocket-wheels 6 an operative positioned at this point removes them and disposes of them properly, usually placing them on a truck or barrow, by means of which they are carried away to the pipe-yard. As will be readily seen, the pipes, by means of our improved apparatus, are handled expeditiously and are all treated uniformly, with the result that much time and labor and a considerable percentage of the coating material are saved.

Having thus fully described our said invention; what we claim as new, and desire to secure by Letters Patent, is—

1. An apparatus for coating metal articles comprising a furnace, a receptacle containing the coating material arranged near to and at a lower level than said furnace, an endless carrier adapted to receive the articles to be coated and arranged to pass and carry said articles bodily through said furnace and said receptacle, guides whereby said carrier is caused to descend toward and rise from said receptacle, and means for propelling said carrier.

2. The combination with an endless carrier mounted on suitable wheels and adapted to receive and transport articles to be coated, a receptacle arranged below said carrier containing a coating material, and a furnace through which the carrier bearing the articles passes on its way to the receptacle, whereby the said articles are first heated and then submerged in and withdrawn from the coating material.

3. The combination, in a coating apparatus, of an endless carrier adapted to receive and transport the articles to be coated, a receptacle through which said carrier passes containing the coating material, and a furnace through which said carrier passes before it reaches said receptacle, said furnace being provided with automatically-operating ingress and egress doors, substantially as set forth.

4. The combination, in a coating apparatus, of an endless carrier running over suit-

able wheels and composed of two chains with transverse bars extending between them, said bars being provided with rests or hangers for the articles to be coated, the same being pivotally mounted, whereby said articles are maintained in proper position irrespective of the direction in which the carrier bearing them is traveling, thereby enabling the carrier to descend toward and rise from the receptacle containing coating material, a furnace arranged so that the carrier bearing the articles to be coated may pass therethrough, and said receptacle arranged below said carrier, substantially as set forth.

5 5. The combination, in a coating apparatus, of suitable framework, shafts mounted thereon, wheels on said shafts, an endless carrier passing over said wheels, said carrier being composed of two chains, bars extending transversely between and pivoted to said chains, and rests or hangers for the articles to be coated secured to said bars, a receptacle arranged below said carrier, guiding-wheels over which the carrier-chains pass  
25 whereby said chains are caused to descend toward and rise from said receptacle in passing, a furnace arranged near said receptacle

through which the carrier bearing the articles to be coated passes before arriving at said receptacle, said furnace being provided with automatically-operating ingress and egress doors, and suitable guides or ways for supporting the carrier, substantially as shown and described.

6. The combination, in an apparatus for tarring soil-pipes, of an endless carrier, a pit below said carrier containing the molten tar, wheels over which said carrier runs adapted to guide said carrier down toward and up from said pit, and a furnace arranged between the pit and the end support for the carrier, provided with openings through which said carrier may pass, whereby the articles carried thereby are taken bodily through said furnace, substantially as set forth.

In witness whereof we have hereunto set our hands and seals, at Noblesville, Indiana, this 21st day of March, A. D., 1901.

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Witnesses:

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