No. 663,601. Patented Dec. 11, 1900.

W. C. DEGELMAN.

APPARATUS FOR ENAMELING BATH TUBS.

(Application filed Sept. 22, 1900.)

(No Model.) 2 Sheets—Sheet 1.

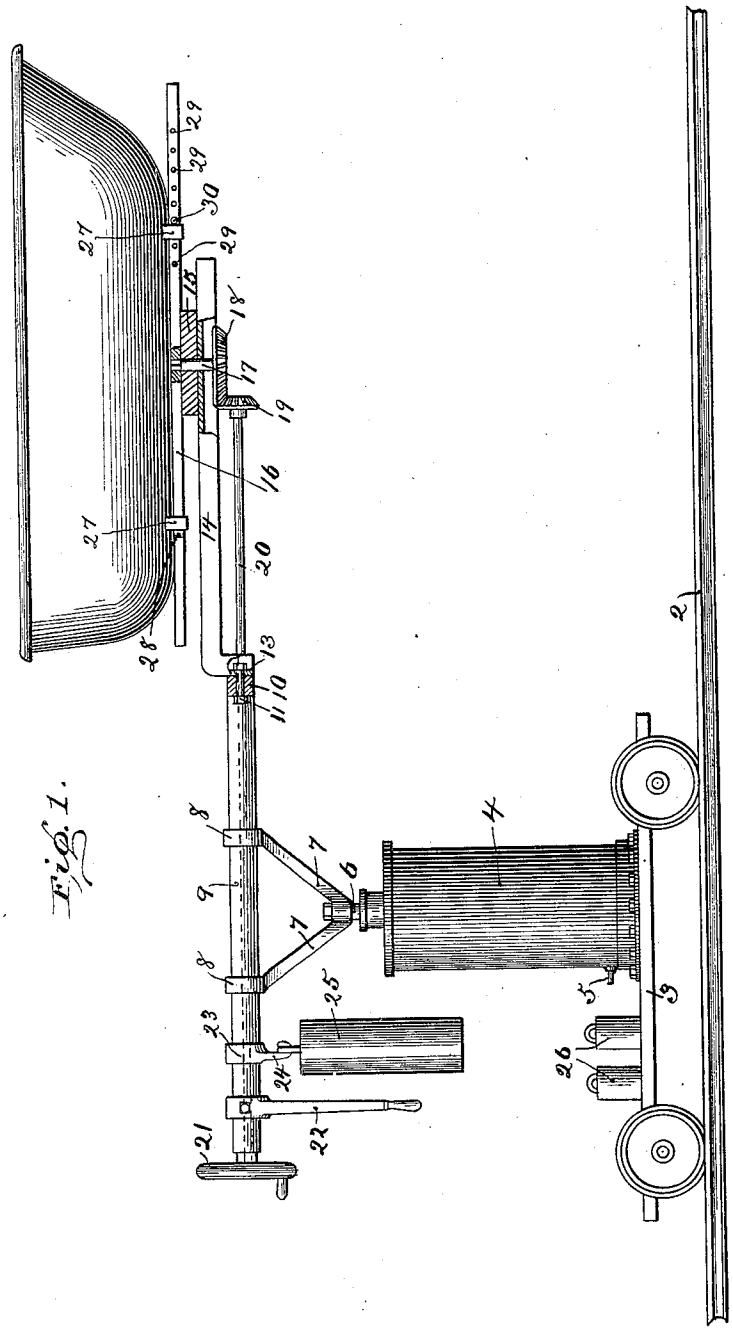


Fig. 1.

Witnesses.
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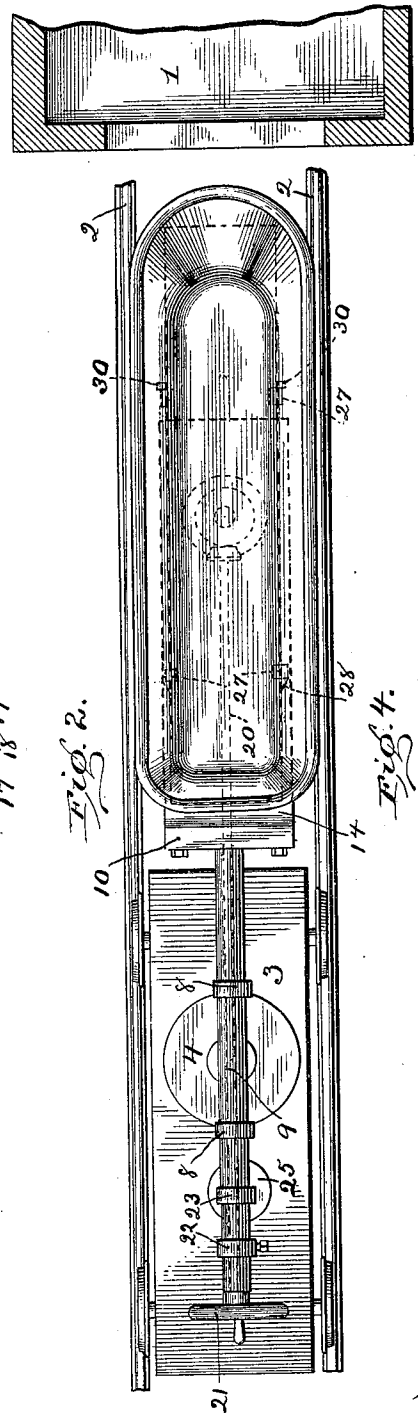


Fig. 2.

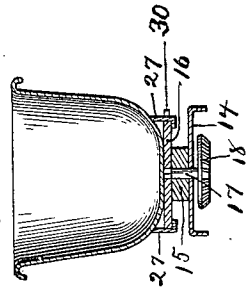


Fig. 3.

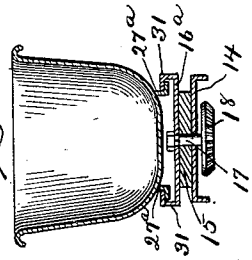


Fig. 4.

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UNITED STATES PATENT OFFICE.

WILLIAM C. DEGELMAN, OF MANSFIELD, OHIO.

APPARATUS FOR ENAMELING BATH-TUBS.

SPECIFICATION forming part of Letters Patent No. 663,601, dated December 11, 1900.

Application filed September 22, 1900. Serial No. 30,849. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM C. DEGELMAN, a resident of Mansfield, in the county of Richland and State of Ohio, have invented a new and useful Improvement in Apparatus for Enameling Bath and Similar Tubs; and I do hereby declare the following to be a full, clear, and exact description thereof.

My invention relates to apparatus for use in enameling bath-tubs, foot-baths, or any metallic vessel whose exterior it may be desired to enamel.

In enameling bath-tubs according to the method generally in use the tub-casting is heated in a suitable furnace, from which it is removed by means of a large fork which engages the tub beneath its rim or bottom and by means of which the tub is placed upon a combined revolving and tilting table. This table permits the turning and tilting of the tub at various angles, so that the workmen can properly dredge the enamel-powder on the casting. The tilting-table is provided with arms at its sides and ends which contact with the exterior of the tub at the sides and ends and hold the tub in position while being turned and tilted by the table. When a tub is supported in this manner, the interior surface thereof is entirely exposed, so that there is no difficulty in dredging the enamel-powder evenly over the entire interior surface, whereby a smooth and permanent finish is imparted to the same. If, however, it is attempted to enamel the exterior surface of the tub supported in this manner, the arms at the ends and sides of the table interfere with the dredging of the enamel-powder evenly over the entire surface, and bare places will be left where the arms contact with the tub, while at the same time the arms rub off the enamel after it is applied. It has been attempted to overcome these difficulties by providing the tub-casting with perforated lugs and providing the tilting-table with seats for receiving said lugs and then securing the lugs to said table by means of split pins. This was a great improvement upon the old method for the reason that the entire exterior of the tub was exposed, so that the enamel-powder could be evenly dredged thereupon. It is open, however, to the defect that considerable time is required in transferring the tub-casting from the fork to the tilting-table and securing the same to the latter, so that the casting is liable to cool down to such an extent that the enamel-powder will not melt sufficiently when dredged thereupon.

It is the object of my invention to overcome this defect; and to this end it consists in providing the fork itself with tilting and revolving means to which the tub-casting can be secured and upon which the tub-casting is received while in the furnace and removed from the furnace by means thereof.

In the accompanying drawings, Figure 1 is a side elevation of a tub supported upon my improved fork, the latter being broken away in part to show the construction thereof. Fig. 2 is a plan view of the same fork. Fig. 3 is a cross-section through the tub and revolving plate, and Fig. 4 is a cross-section of a modified form.

In the drawings, 1 represents the usual heating-furnace, in which the tub-casting is raised to the desired temperature. In front of this furnace extends the track 2, upon which runs the carriage 3, which supports the fork. Upon this carriage is mounted a pneumatic or hydraulic cylinder 4, having a connection at 5 for the introduction of compressed air or water, as will be readily understood. To the upper end of the piston-rod 6 is secured the lower end of a V-shaped piece 7, said piece being provided at the upper ends of both of its arms with bearings 8 8, in which is journaled the hollow shaft 9 of the fork. This shaft has rigidly secured thereto at its inner end a cross-head 10, to which is secured, as by means of bolts 11, the downturned end 13 of a channel-plate 14. Secured to the top of this channel-plate is a spacing-block 15, which serves as a support for the revolving plate 16. This revolving plate is secured to the upper end of a short shaft 17, which is mounted in suitable bearings in the channel-plate 14 and spacing-block 15, and has secured to its lower end the beveled gear 18, which meshes with a similar gear 19 on the end of a shaft 20, mounted in

and extending through the hollow shaft 9 and provided on its outer end with a hand-wheel 21, by means of which it can be rotated. Instead of the bevel-gears 18 and 19 I may use a worm and worm-wheel, especially if a slow rotation is desired. Secured to the outer end of the hollow shaft 9, as by means of a set-screw, is an arm or lever 22, by means of which the former can be tilted. Loosely mounted upon the outer end of the shaft 9 is a collar 23, provided with a hook 24 for receiving a counterbalancing-weight 25, which is to compensate for the weight of the fork and tub-casting. If the weight 25 is not found sufficient, the carriage can be further counterbalanced by placing thereupon the weights 26, as shown.

The plate 16 is of a width sufficient to freely slide between the hook-lugs 27, formed on the bottom of the tub-casting, and is provided on one or both sides thereof with a lug or projection 28, which will prevent the tub sliding off the plate in that direction. To prevent the tub from sliding off the plate in the opposite direction, the latter is provided with a series of holes 29, into which may be inserted a suitable pin 30, which will contact with the forward side of a lug 27 and the tub thus held securely between the lug 28 and the pin 30.

Instead of providing the tub with inturned hook-lugs, as shown in Fig. 3, it may be provided with outturned hook-lugs 27^a, as shown in Fig. 4, which are engaged by the overhanging flanges 31 of a channel-plate 16^a, which is secured to the shaft 17, as above described. This channel-plate 16^a is provided with a lug and holes for receiving the pin 30, by means of which the tub-casting can be secured thereto, so as to prevent its sliding off during the tilting and revolving thereof.

The operation of the device is as follows: The tub-casting rests on cast-iron angle-pieces in the furnace, and when it has been raised to the desired temperature the fork-carriage 3 is moved forward to project the fork into the furnace, and the plate 16 is caused to slide underneath the tub-casting and between the hook-lugs 27, the forward movement of the fork-carriage being continued until the lug 28 of the plate 16 engages one of the lugs 27 on the tub. Compressed air or water is then admitted underneath the piston in the cylinder 4, and the fork and tub-casting thereupon are raised from the angle-pieces in the furnace, after which the carriage is moved back on the track 2, carrying the tub-casting out of the furnace on the fork. The pin 30 is then inserted in one of the holes 29, thereby firmly securing the tub to the tilting and revolving plate 16, so that the tub-casting can be turned and tilted in any direction or position without danger of its falling from the fork. By turning the hand-wheel 21 the plate 16 is revolved through the gears 18 and 19 and shaft 20, as will be readily understood. For tilting the tub to any position the shaft 9 is rotated in the bearings 8 by means of the arm 22, as likewise will be readily understood. The enamel-powder is dredged on the sides and ends of the tub, both inside and outside, the plate 16 being revolved and tilted to different angles and positions to permit of the even and thorough distribution of the enamel over the entire surface of the sides and ends of the tub. There are no obstructions to the thorough distribution of the enamel over the entire surface, both inside and outside of the tub, so that no bare spots remain and the workmen applying the enamel have free access to all parts of the tub. Furthermore, it is not necessary to transfer the tub from the fork to the tilting-table, so that the tub can be quickly coated with enamel-powder at the most desirable temperature, thereby not only saving time in manipulation and handling, but also insuring a more even and permanent enamel.

What I claim, and desire to secure by Letters Patent, is—

1. In a device for supporting bath-tubs when applying enamel, the combination with a carriage, of a tilting-fork mounted thereon, means for raising and lowering the fork on the carriage, and means on said fork for engaging a lug on the bottom of the bath-tub.

2. In a device for supporting bath-tubs when applying enamel, the combination with a carriage, of a tilting and revolving plate mounted thereon, said plate being adapted to engage hook-lugs on the bottom of the tub.

3. In a device for supporting bath-tubs when applying enamel, the combination with a carriage, of a tilting-fork mounted thereon, a revolving plate on said fork for engaging hook-lugs on the bottom of the bath-tub, and means for securing the tub to said plate.

4. In a device for supporting bath-tubs when applying enamel, the combination with a carriage, of a tilting-fork mounted thereon, a revolving plate on said fork for engaging lugs on the bottom of the bath-tub, a lug or projection on said plate for engaging a lug on the tub, and holes in said plate for receiving a pin for engaging another lug on the bottom of the tub.

5. In a device for supporting bath-tubs when applying enamel, the combination with the support, of a tilting-fork mounted thereon, and means on said fork at one side of the support for engaging hook-lugs on the bottom of the bath-tub.

6. In a device for supporting bath-tubs when applying enamel, the combination with a support, of a tilting-fork mounted thereon, means on said fork at one side of the support for engaging a lug on the bottom of the bath-tub, and a counterbalance on the opposite side of the support.

7. In a device for supporting bath-tubs

when applying enamel, the combination with a support, of a tilting and revolving plate mounted thereon, said plate being adapted to engage hook-lugs on the tub, a lug or projection on said plate for engaging a lug on the tub, and holes in said plate for receiving a pin for engaging another lug on the tub.

In testimony whereof I, the said WILLIAM C. DEGELMAN, have hereunto set my hand.

WILLIAM C. DEGELMAN.

Witnesses:
JESSE E. LA DOW,
MELVILLE A. POLLOCK.