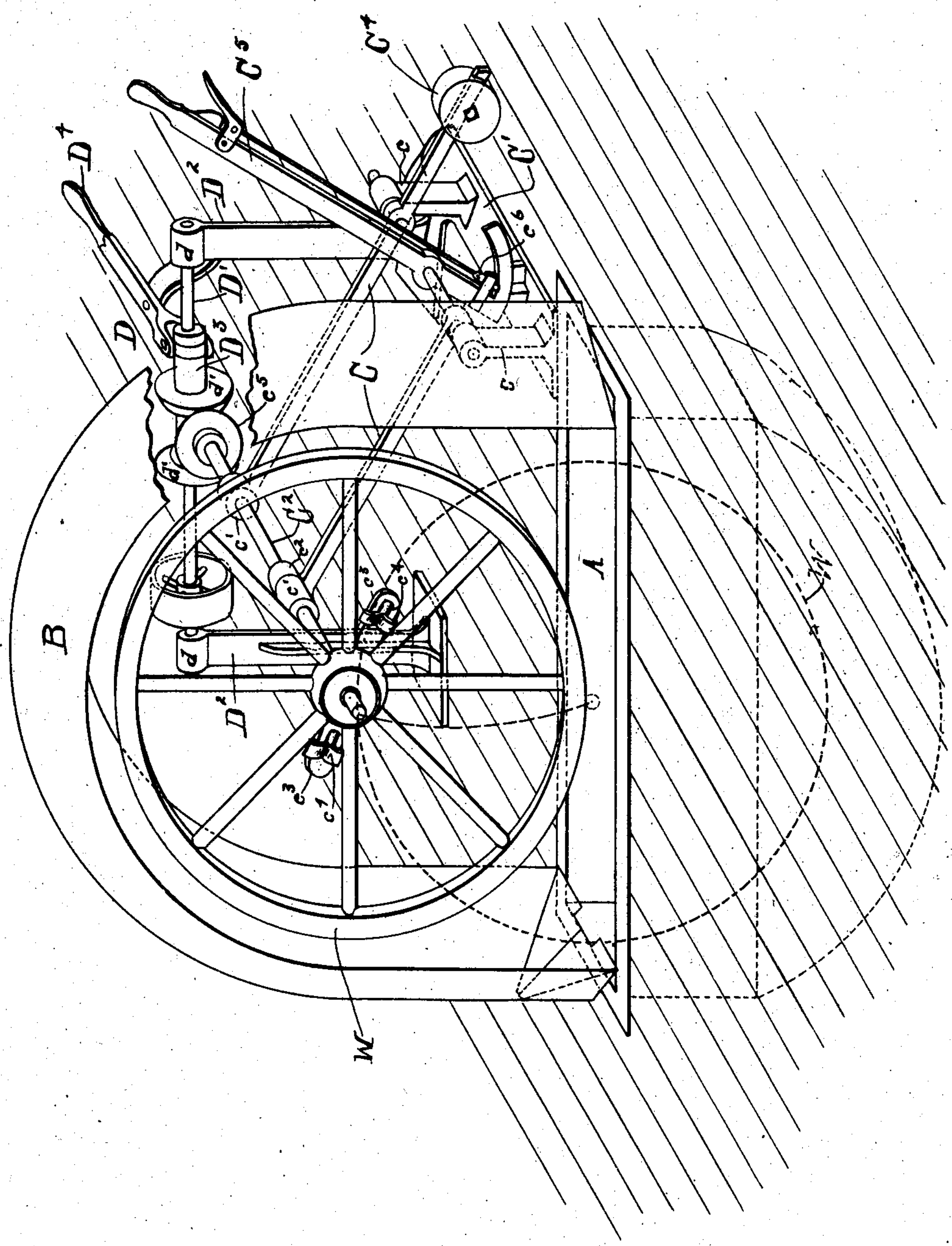
No. 834,249. PATENTED OCT. 30, 1906.

J. C. BEARDSLEE.

WHEEL PAINTING MACHINE.

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WHEEL-PAINTING MACHINE.

No. 834,249. Specification of Letters Patent. Patented Oct. 30, 1906.

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To all whom it may concern:

Be it known that I, JAMES C. BEARDSLEE, a citizen of the United States, and a resident of Cleveland, county of Cuyahoga, and State of Ohio, have invented a new and useful Improvement in Wheel-Painting Machines, of which the following is a specification, the principle of the invention being herein explained and the best mode in which I have contemplated applying that principle, so as to distinguish it from other inventions.

My invention relates to improvements in machines for painting objects by immersion or dipping. It has particular reference to machines of this class designed for painting wheels. Machines have come into quite general use for this last purpose not merely in the painting of the metal wheels ordinarily employed on agricultural machinery—such as on mowers, reapers, cultivators, and the like—these wheels being difficult to paint by hand with a brush, but also in the painting of the wooden wheels of cheaper grades of carriages and wagons. Such machines, of which a number have from time to time been brought forth, all involve the use of an open paint-receptacle in the form of a tank and mechanism adapted to receive and dip a wheel therein, raise the same, and thereupon rapidly rotate it in order to remove by centrifugal force any surplus of paint. A hood is of course always found desirable as a means for collecting the paint thrown from the wheel and for returning it to the tank.

My invention has as its object the provision, in connection with a tank and hood of the character described, of means for more readily and easily effecting the several operations just described; and to the accomplishment of this end it consists of means hereinafter fully described, and specifically set forth in the claims.

The annexed drawing and the following description set forth in detail certain mechanism embodying the invention, such disclosed means constituitng but one of various mechanical forms in which the principle of the invention may be used.

In said annexed drawing the single figure there appearing represents in perspective a wheel-painting machine embodying my improvements. Such machine comprises, primarily, a vertically-disposed paint-tank A, surmounted by a housing or hood B of substantially semicircular contour. Tank A is preferably sunk into the floor, as is shown, and should be of a depth at least equal to half the diameter of the largest wheel that it is desired to operate upon. Hood B is conveniently made of sheet metal and should be of such a height as to readily accommodate such largest wheel when the latter is raised entirely above the top level of the tank A. In the preferred construction illustrated in the figure of reference such hood is of triangular cross-section in order to facilitate the collection and return of the paint to the tank A. Inclined triangular plates *b* at the bottom of the legs of the hood assist in properly diverting the paint as it flows downwardly along the same.

Laterally of tank A and superimposed hood B is pivotally mounted a frame C, suitable standards *c* upon a base C′ being provided therefor. In the outer end of such frame is rotatably mounted in bearings *c′* a horizontal shaft C^2. This shaft is held against endwise movement in said bearings by means of collars, such as c^2, or equivalent means and has one end extending centrally within the opening inclosed by hood B and so directly over tank A. Such end of the shaft is adapted to receive and hold the object to be painted. This being a wheel W in the case in hand, the means for effecting such attachment comprise simply a pair of oppositely-disposed arms c^3, rotatively mounted near the end of the shaft and provided with forwardly-projecting pins c^4. The wheel-hub need accordingly be merely slipped onto such end of the shaft until pins c^4 engage the spokes of the wheel, whereupon the wheel is likewise rotatively held upon the shaft. Any other approved device may be employed instead of arms c^3 and pins c^4 whereby to secure the wheel to the shaft. The device described, however, has the advantage of simplicity of construction and of permitting the wheel to be readily affixed and removed over any other form of which I have knowledge. The tendency of the wheel to move axially is of course very slight, and any displacement thereof due to such cause is prevented by spreading the heads of pins c^4, as shown.

The opposite or rear end of the shaft is designed, in one position of frame C to be oper-

atively engaged by suitable driving mechanism D. As shown, such mechanism comprises a transversely-disposed shaft D′, mounted in suitable bearings *d*, provided in standards D^2 and driven from a countershaft or motor directly, as desired. Properly disposed on shaft D′ to effect the result about to be indicated is a sleeve D^3. This sleeve bears two opposed cone friction-pulleys *d′*, respectively adapted to be brought into frictional engagement with a cone friction-pulley c^5, mounted on the rear end of shaft C^2, when the latter is raised into its highest position by tilting or swinging frame C, on which it is mounted, upwardly. Such contact may be made with either friction-pulley *d′*, as desired, by shifting sleeve D^3 in the proper direction and the direction of rotation of shaft C^3 and of the wheel secured to the other end thereof governed and reversed to suit the operator. A hand-lever D^4 is connected to conveniently shift such sleeve and cone-pulleys in the manner just described.

It has been indicated in the foregoing description that to lower the wheel W into the paint-tank A and then raise the same until shaft C^2, whereon it is mounted, comes into engagement with driving mechanism D frame C is simply tilted up and down on its pivotal axis. A counterweight C^4, which may be differently disposed from the manner indicated in the figure, serves normally to maintain such frame in a raised position, although such position is further assured by means of a latch c^6 on hand-lever C^5, connected with the frame in the manner clearly shown in the same figure. This hand-lever serves as means for effecting the oscillation of the frame referred to, and the same catch also secures the frame in its lower position in which the wheel W, borne thereby, is semi-immersed in tank A, as indicated by the dotted outline of the same in the figure.

Having thus described the construction of my improved wheel-painting machine, I shall now proceed to describe its mode of operation, although this is already sufficiently evident. A wheel W being affixed to the forward end of shaft C^2, the latter is lowered by swinging frame C downwardly in the manner and to the extent just set forth. A turn or two is now given the wheel, so as to bring all parts thereof into contact with the paint contained in the tank. This accomplished, frame C is swung upwardly by means of hand-lever C^5 and the wheel raised to its upper position in housing B, in which it appears in the figure. By the same movement the rear end of shaft C^2 is operatively connected with driving mechanism D, and by properly shifting sleeve D^3, the same is rapidly rotated in first one direction, then the other. In this way the paint is caused to spread evenly over the entire outer surface of the wheel and any surplusage is thrown off and returned to tank A. A wheel having been thus painted, it is removed from shaft C^2 and the operation repeated, as before.

It is of course understood that the disposition of hand-levers C^5 and D^4, whereby frame C is swung and sleeve D^3 shifted, respectively, may be varied to suit different situations, so as to be most convenient for the operator. In order to steady shaft C^2 against undue vibration, especially when heavy wheels are being painted, I have found it advisable in practice to provide one or two bearing-rests adapted to engage the same when in its elevated position. These I do not show in the drawing; but they would be positioned, preferably, one near each end, and standards would be provided to support them solidly against the shaft.

Having thus described my invention in detail, that which I particularly point out and distinctly claim is—

1. In a machine for painting wheels and the like, the combination with a paint-receptacle, of a rotatable member oscillatorily mounted with respect to an axis other than its own, said member projecting over said receptacle and being adapted to receive the object to be painted.

2. In a machine for painting wheels and the like, the combination with a paint-receptacle, of a rotatable member oscillatorily mounted with respect to an axis substantially parallel with its own, said member projecting over said receptacle and being adapted to receive the object to be painted.

3. In a machine for painting wheels and the like, the combination of a paint-receptacle, an oscillatory frame, and a rotatable member wholly supported in said frame and projecting over said receptacle, said member being adapted to receive the object to be painted.

4. In a machine for painting wheels and the like, the combination of a paint-receptacle, an oscillatory frame, and a member rotatably mounted in the free end of said frame so as to oscillate therewith and projecting over said receptacle, said member being adapted to receive the object to be painted.

5. In a machine for painting wheels and the like, the combination of a paint-receptacle, an oscillatory frame, and a shaft wholly supported in said frame and having one end extending laterally over said receptacle, such end being adapted to receive and hold the object to be painted.

6. In a machine for painting wheels and the like. the combination of a paint-receptacle, an oscillatory frame adjacent thereto, a member rotatably mounted in the free end of said frame so as to oscillate therewith and

projecting laterally over said receptacle, said member being adapted to receive and hold the object to be painted, and means adapted to rotate said member.

7. In a machine for painting wheels and the like, the combination of a paint-receptacle, an oscillatory frame adjacent thereto, a rotatable member wholly supported in the free end of said frame so as to oscillate therewith and projecting laterally over said receptacle, said member being adapted to receive and hold the object to be painted, and means adapted to secure said frame in various angular positions.

8. In a machine for painting wheels and the like, the combination of a paint-receptacle, an oscillatory frame adjacent thereto, and a rotatable member mounted wholly in said frame and on a substantially horizontal axis, said member projecting over said receptacle and being adapted to receive the object to be painted.

9. In a machine for painting wheels and the like, the combination of a paint-receptacle, an oscillatory frame, and a member rotatably mounted in said frame on an axis substantially parallel with the latter's axis of oscillation, said member projecting over said receptacle and being adapted to receive the object to be painted.

10. In a machine for painting wheels and the like, the combination of a paint-receptacle, an oscillatory frame, a shaft mounted in the free end of said frame on an axis substantially parallel with the latter's axis of oscillation, one end of said shaft extending over said receptacle and being adapted to receive and hold the object to be painted, and means for driving said shaft.

11. In a machine for painting wheels and the like, the combination of a paint-receptacle, an oscillatory frame adjacent thereto, a shaft rotatably mounted in the free end of said frame on an axis substantially parallel with the latter's axis of oscillation, said shaft projecting over said receptacle and being adapted to receive the object to be painted, means for driving said shaft, and means for swinging said frame.

12. In a machine for painting wheels and the like, the combination of a paint-receptacle, a frame pivotally mounted to one side of the same, a shaft mounted in the free end of said frame and having one end extending over said paint-receptacle, such end being adapted to receive and hold the object to be painted, and means adapted to secure said frame in various angular positions about its axis.

13. In a machine for painting wheels and the like, the combination of a paint-receptacle, a frame pivotally mounted to one side of the same, a horizontal shaft mounted in the free end of said frame and having one end extending over said paint-receptacle, such end being adapted to receive and hold the object to be painted, and means adapted to secure said frame in various angular positions about its axis.

14. In a machine for painting wheels and the like, the combination of a vertically-disposed paint-tank, an oscillatory frame mounted laterally thereof, a horizontal shaft mounted in the free end of said frame and having one end extending over said tank, such end being adapted to receive and hold the object to be painted, means adapted to swing said frame to raise and lower said shaft, and means adapted to rotate said shaft when in its raised position.

15. In a machine for painting wheels and the like, the combination of a vertically-disposed paint-tank, a hood surmounting the same, an oscillatory frame mounted laterally of said tank, a shaft mounted in the free end of said frame and having one end extending over said paint-tank, such end being adapted to receive and hold the object to be painted, and means adapted to secure said frame in various angular positions about its axis.

16. In a machine for painting wheels and the like, the combination of a vertically-disposed paint-tank, a hood surmounting the same, an oscillatory frame mounted laterally of said tank, a horizontal shaft mounted in the free end of said frame and having one end extending over said tank, such end being adapted to receive and hold the object to be painted, means adapted to secure said frame in various angular positions about its axis, and driving means adapted in one position of said frame to operatively engage said shaft.

17. In a machine for painting wheels and the like, the combination of a vertically-disposed paint-tank, a hood surmounting the same, an oscillatory frame mounted laterally of said tank, a horizontal shaft mounted in the free end of said frame and having one end extending over said tank, such end being adapted to receive and hold the object to be painted, means adapted to secure said frame in various angular positions about its axis, and reversible driving means adapted in one position of said frame to operatively engage said shaft.

18. In a machine for painting wheels and the like, the combination of a vertically-disposed paint-tank, a hood surmounting the same, an oscillatory frame mounted laterally of said tank, a horizontal shaft mounted in the free end of said frame and having one end extending over said tank, such end being adapted to receive and hold the object to be painted, means adapted to swing said frame to raise and lower said shaft, and driving means adapted to operatively engage said shaft when in its raised position.

19. In a machine for painting wheels and

the like, the combination of a vertically-disposed paint-tank, a hood surmounting the same, an oscillatory frame mounted laterally of said tank, a horizontal shaft mounted in the free end of said frame and having one end extending over said tank, such end being adapted to receive and hold the object to be painted, means adapted to swing said frame to raise and lower said shaft, and reversible driving means adapted to operatively engage said shaft when in its raised position.

Signed by me this 21st day of April, 1906.

JAMES C. BEARDSLEE.

Attest:

B. C. LUCAS,

JNO. F. OBERLIN.