

MARY P. CARPENTER.
BARREL PAINTING-MACHINE.

No. 174,477.

Patented March 7, 1876.

Fig. 1

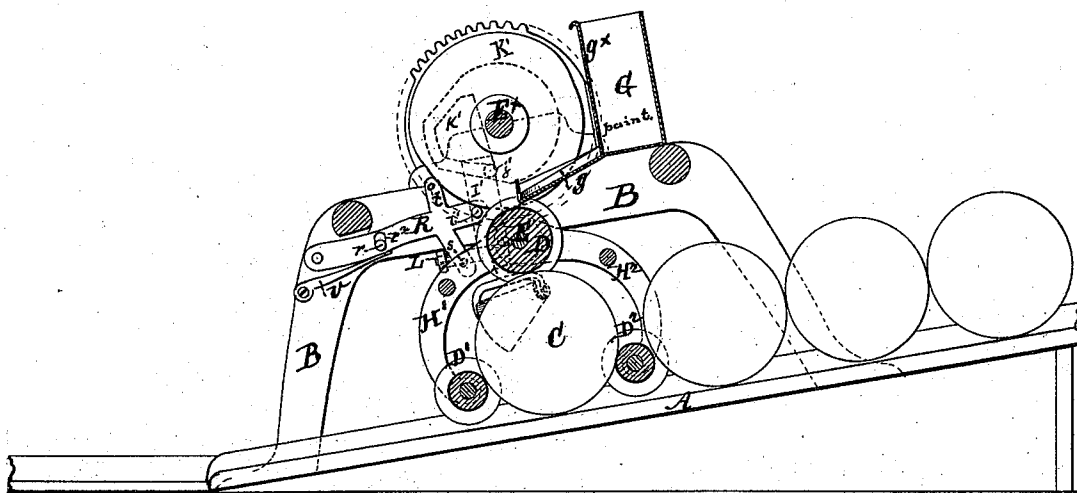


Fig. 2

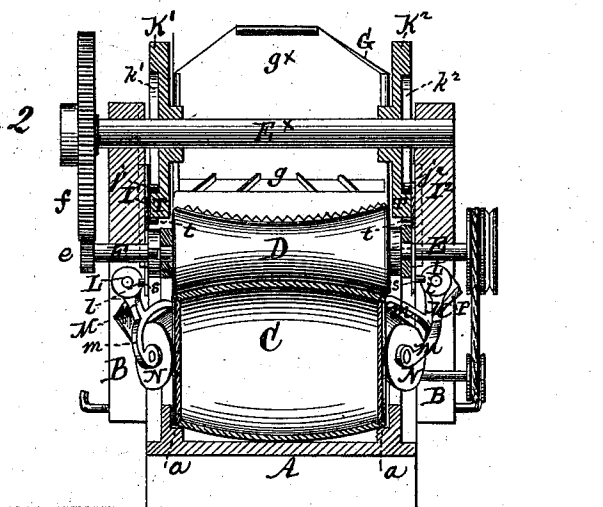
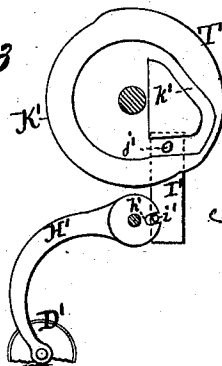


Fig. 3



Witnesses:

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UNITED STATES PATENT OFFICE.

MARY P. CARPENTER, OF NEW YORK, N. Y.

IMPROVEMENT IN BARREL-PAINTING MACHINES.

Specification forming part of Letters Patent No. 174,477, dated March 7, 1876; application filed December 18, 1875.

To all whom it may concern:

Be it known that I, MARY P. CARPENTER, of New York, in the county and State of New York, have invented a new and useful Machine for Painting Barrels; and I do hereby declare that the following is a full, clear, and exact description of the same.

My invention consists in a novel construction, arrangement, and combination of a frame, and of mechanism carried thereby, whereby paint is applied to the entire surface of the sides and heads of a barrel or cask by means of revolving brushes or rollers supplied with paint from fountains connected therewith, and whereby provision is made for the automatic action of the parts to receive the cask to be painted, and to discharge it after the completion of the painting operation.

In carrying out my invention I provide a frame for carrying the working parts, which frame may be attached to either an inclined plane, down which the barrels may descend by their own gravity, or to a level plane, along which they may be rolled by an attendant. The supporting-frame carries three rollers for applying and distributing the paint to the sides of the barrels, and two other rollers for applying it to the ends or heads. The first one of the three rollers receives the paint from a fountain and applies it to the surface, and the other two of the three distribute it thereon. The first one is arranged in stationary bearings, and always remains in the same position, and the other two are attached to pivoted arms, to allow them to rise and fall to receive a barrel to be painted and permit it to be removed after being painted. The two end rollers are also attached to pivoted arms, to allow them to swing laterally to receive and release the barrel, and each of these rollers is supplied with paint from a separate fountain. The swinging motion is imparted to the pivoted arms by means of cams and slides operated by the shaft which carries the principal roller, or by the main driving-shaft, or both. The barrel is rotated by the friction of the rollers, and the paint is thoroughly applied and distributed over all parts of the surface thereof.

The accompanying drawing represents an apparatus constructed according to my invention, Figure 1 being a longitudinal vertical section; Fig. 2, a transverse vertical section, and Fig. 3 a detail view.

The carrying or supporting frame B may be of any suitable construction, and the plane A, to which it is attached, may be either level or inclined, but is here shown as inclined, so that the cask C may roll down the ways or tracks *a* by its own gravity. The rollers for applying and distributing the paint may consist of revolving brushes, or they may be covered or faced with composition or any suitable substance, and their profiles correspond with the general conformation of the surfaces to which they are applied. The principal roller D is attached to and carried by a shaft, E, which is driven by the main driving-shaft E^{*} by means of gearing *e f*. The shafts E and E^{*} are arranged in stationary bearings in the frame B, with the shaft E in such a position as to cause the roller D to revolve in contact with the sides of the cask immediately over and parallel with its longitudinal center when in position to be operated upon, as shown.

The roller D receives the paint from a fountain, which is here represented as consisting of a hopper, G, attached to the frame B, and provided with a conduit, *g*, for conducting the paint to the surface of the roller, and with an adjustable gate, *g*^{*}, for regulating the quantity of paint flowing from the fountain. The conduit may be constructed and arranged to deliver the paint through a series of perforations, as shown, or in a stream of continuous width, or in any other suitable manner. The rollers D¹ D², for distributing and spreading the paint on the surface after its application thereto by the main roller, are each carried by a frame or pair of arms swinging from the shaft E, so as to allow the rollers to rise and fall. The roller D¹ has its bearings in the lower portions of a pair of arms, H¹, which are suspended from the shaft E by said shaft passing through perforations in their upper portions, in such a manner as to cause said frame or arms to operate as a lever, with the shaft E for the fulcrum.

The upper end of one of the arms H¹ ex-

tends beyond the fulcrum or shaft E, and is provided with a slot or notch, h' , (see Fig. 3,) with which engages a pin or stud, i' , projecting from a plate or bar, I' , arranged to slide vertically in a recess or guides in the frame B.

The driving-shaft E^x carries two disks or wheels, $K^1 K^2$, near its ends, but preferably on the inner sides of the frame B. On one side of the wheel K^1 is a groove-cam, k^1 , with which engages a pin or stud, j^1 , projecting from the upper portion of the slide I^1 .

As the shaft E^x revolves, the frame H^1 remains stationary as long as the concentric portion of the cam k^1 remains engaged with the pin j^1 ; but as soon as the eccentric portion of the cam reaches said pin j^1 the slide I^1 is depressed, so that the pin or stud i' , engaging with the notch h' , raises the arms or frame H^1 until the lower side of the roller D^1 is about on a level with the lower side of the main roller D, and holds it in said position until the concentric portion of the cam again reaches the pin, when the roller D^1 is allowed to descend to the position shown in Fig. 1.

The roller D^2 has its bearings in a frame or pair of arms, H^2 , one of which is notched, and both of which are suspended from the shaft E in the same manner as those just described, but opposite thereto, so that when a cask is in position to be operated upon by the rollers the main or upper roller is immediately over the longitudinal center of the cask, the roller D^1 bears against one side and the roller D^2 against the other side, and the three rollers D D^1 D^2 occupy a triangular position with relation to each other, as shown in Fig. 1.

The cam-wheel K^2 carries a groove-cam, k^2 , similar to that above described, but arranged in a reverse position, so as to operate at a different time. The cam k^2 acts upon a slide, I^2 , provided with pins or studs j^2 , in the same manner as before described.

The parts being in motion, when the eccentric portion of the cam k^2 engages with the pin or stud j^2 , the slide I^2 is depressed, so as to raise the frame or arms H^2 and roller D^2 , as before described, and thus allow a cask to pass under the roller D^2 to the position shown in Fig. 1. When in this position the paint is received from the fountain G by the roller D, and deposited upon the surface of the cask, upon which it is thoroughly spread and distributed by the two rollers D^1 D^2 . Said two rollers may have their shafts connected with the shaft E by means of belts and pulleys, as shown. As the cask is held between the three rollers D D^1 D^2 , as shown, the friction of said rollers causes the cask to revolve, so as to bring every portion of its sides in contact with them, and thus insure the thorough spreading and distribution of the paint. When the eccentric portion of the cam k^1 reaches the pin j^1 of the opposite slide I^1 , said slide is depressed, so as to raise the frame or arms H^1 and roller D^1 , and allow the painted barrel to

roll out. As the revolution of the shaft continues, the roller D^2 is again raised for the admission of another cask, and the operation proceeds, as before described.

The casks to be painted may be rolled along one at a time, or a number of them may be placed on the inclined plane, as shown.

For painting the ends of the cask, I employ two rollers, which are preferably conical in form, and are arranged to bear against the ends of the cask as it revolves. These rollers are alike in their arrangement and operation, and simultaneous in their action, and a description of one will apply with equal propriety to the other. In the frame B, transverse to the axis of revolution of the cask and rollers, a rock-shaft, L, is arranged in suitable bearings. From this rock-shaft an arm, M, extends downward, and is divided into two branches, $m m$, which carry the bearings for a conical roller, N, arranged to bear against the end or head of the cask C. The arm M carries a hopper or fountain, P, for supplying paint to the roller. On one side of the rock-shaft L is a groove, l , running longitudinally of said shaft. To the frame B is pivoted one end of a lever, R, near the other end of which is a lateral pin or stud, t , for engagement with a peripheral cam, T, on the face of the wheel K^1 or K^2 . Between this pin or stud t and the fulcrum of the lever is another lateral pin or stud, s , which extends into the groove l in the rock-shaft L. The motion of the lever R is limited and guided by means of a stationary pin, r , and transverse groove r^2 . (Shown in Fig. 1.) A spring, v , attached to the frame B, and bearing against the lever, has a tendency to keep it pressed upward. When the concentric portion of the peripheral cam T is bearing against the pin or stud t , the arm M hangs in such a position as to cause the conical roller N to bear against the head of the cask, so as to revolve by friction therewith, and apply the paint thereto. When the eccentric portion of the cam T bears against said pin t the lever R is depressed, and the pin s , working in the groove l , oscillates the rock-shaft L, causing the arm M to swing outward and remove the conical roller N from contact with the head of the cask. By a suitable arrangement of the cams and their connections with relation to each other this outward movement of the end rollers will take place at the same time that the roller D^2 is raised to admit a cask to be painted, and at the same time that the roller D^1 is raised to allow the cask to roll out to make room for another, by which means the end rollers will present no obstacle to the admission of a cask to be painted, or its expulsion after being painted, but will only bear against the surfaces of the heads or ends while the cask is going through the painting process.

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

1. In an apparatus for painting casks and other articles, the combination of a stationary roller and one or more movable rollers, for applying, spreading, and distributing paint upon the sides of the cask, said movable rollers being arranged to rise and fall to provide for the admission and expulsion of the cask before and after the painting operation, substantially as herein described.

2. The combination, with the admitting-roller D^2 , of the pivoted arms or frame H^2 , the slide I^2 , having pins i^2 and j^2 , and the groove-cam k^2 , substantially as and for the purpose herein described.

3. The combination, with the discharging-roller D^1 , of the pivoted arms or frame H^1 , the slide I^1 , having pins i^1 and j^1 , and the

groove-cam k^1 , substantially as and for the purpose herein described.

4. The combination, with the frame B, of the rollers N, provided with paint-fountains P, for applying paint to the heads or ends of the cask, substantially as herein described.

5. The combination, with the roller N, of the roller-carrying arm M $m m$, rock-shaft L, lever R, having pin t , and peripheral cam T, for moving said roller toward or away from the head or end of the cask, substantially as herein described.

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Witnesses:

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