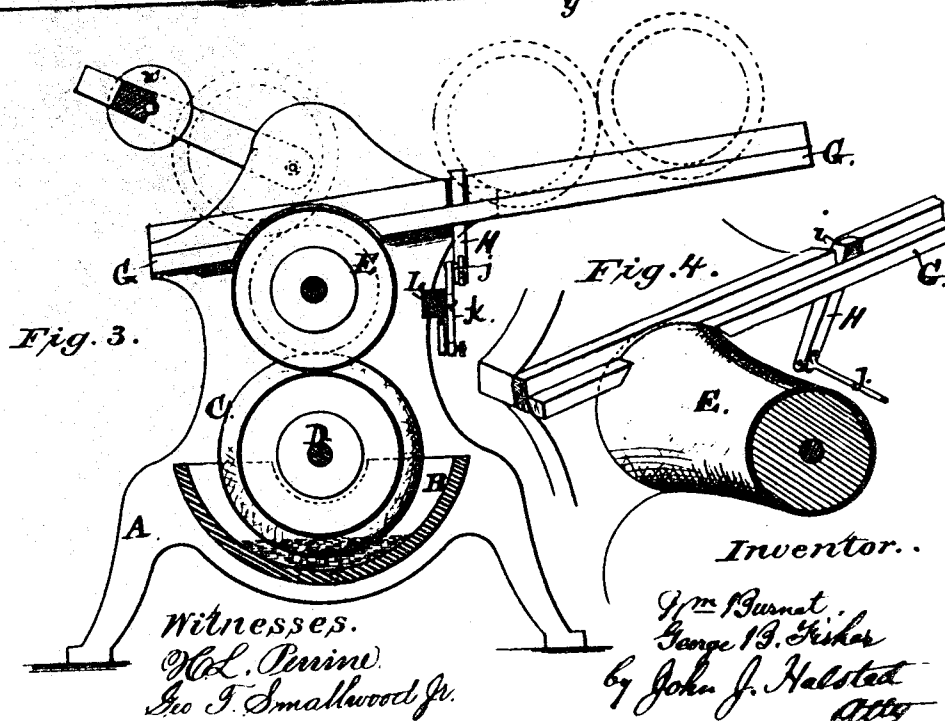
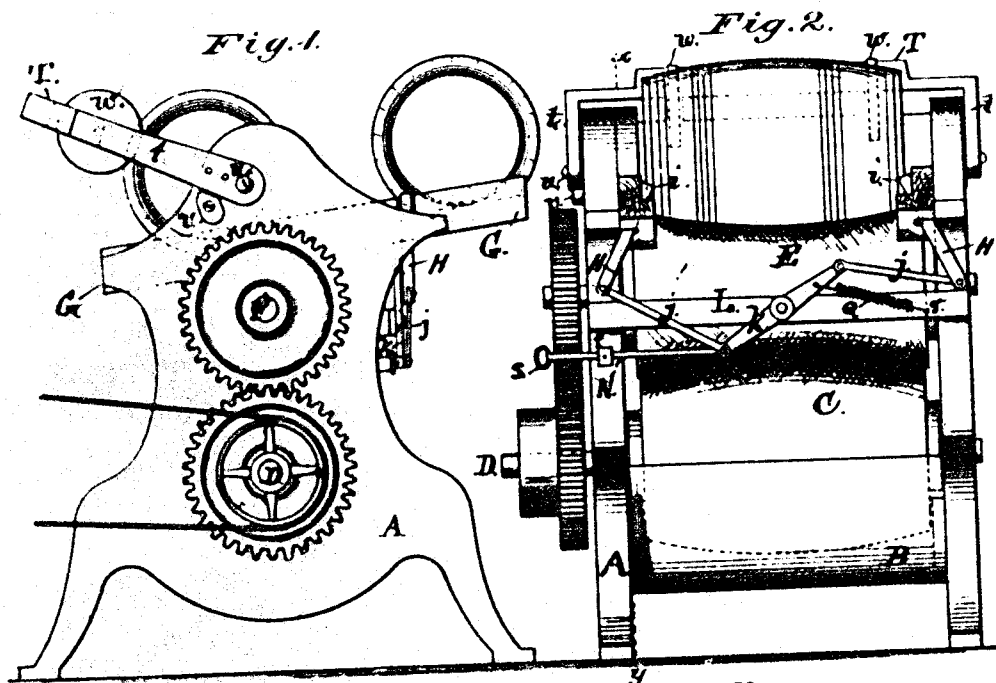


W. BURNET & G. B. FISHER.
Machines for Painting Barrels, Casks, &c.
Patented August 5, 1873.
No. 141,542.



UNITED STATES PATENT OFFICE.

WILLIAM BURNET AND GEORGE B. FISHER, OF CHICAGO, ILLINOIS.

IMPROVEMENT IN MACHINES FOR PAINTING BARRELS, CASKS, &c.

Specification forming part of Letters Patent No. **141,542**, dated August 5, 1873; application filed July 21, 1873.

To all whom it may concern:

Be it known that we, WILLIAM BURNET and GEORGE B. FISHER, both of Chicago, in the State of Illinois, have invented an Automatic Barrel-Painting Machine, of which the following is a specification:

It is well known that barrels and casks painted externally, for holding kerosene oil and similar liquids, are now most extensively used, and that the painting, so far as known to us, is done entirely by hand, a large establishment requiring between forty and fifty men at enormous cost for this purpose alone.

Our invention relates to an automatic barrel-painting machine, adapted to be driven by steam or other power, whereby a barrel, cask, or other similarly-shaped article, or an indefinite number of them, being introduced into the machine, will be each held successively until ready to be fed to the painting device, will then, by its own weight, roll to its place, be then arrested and revolved on its imaginary axis until painted, and then automatically discharged from the machine, its own gravity rolling it away, and all with great rapidity and economy of time, labor, and money. The invention therefore consists in the general method and means for effecting such purpose, and in certain details of construction contributing thereto.

We will now proceed to describe a machine embodying the principles of our invention, premising, however, that some of the parts might be variously constructed without departing from the spirit of the invention.

A is the frame-work, between the two parallel sides of which, near its bottom, is a trough, B, for containing an ample supply of paint. Within this trough dips a barrel-shaped roller or cylinder, C, of wood or iron, covered with a flexible material, preferably of woolen cloth, and arranged to be revolved with its shaft, the power from the steam-engine being preferably applied to this shaft D. Above the roller C is placed another roller, E, on a shaft, F, this upper roller being in form the converse of the lower one—that is, concave instead of convex—from end to end, and thereby being adapted for surface contact with the periphery of the lower roller; and it is also covered with a similar cloth or

flexible material. The rolls we connect with ordinary cog-gearing, so that there shall be no stoppage from slipping. G G are inclined rails for receiving, supporting, guiding, and discharging the barrels. They are formed with ledges on the inner sides, upon which the extreme edges of the barrel rest, the space between these rails being entirely open, except where the upper side of roller E occupies a portion of such space. H H are automatic lever-stops, the upper ends of which project, as seen at *i*, into the track of the rails, thus serving as detents to hold back one or more barrels, as shown in Fig. 2, until the period when it is desired to allow the forward one to enter the machine and take its place over the roller E, to be revolved and painted, as described hereafter. These lever-stops H H are severally connected, by links *j j*, to the opposite ends of a link-bar, K, centered on a cross-bar, L; and to one end of bar K is pivoted one end of a lever, N, sliding or playing on a stationary pin, *p*, on one side of the frame-work, the other end of lever K being connected with a spring or link, Q, which is, at its other end, fastened, at *r*, to the other side of the frame, the construction of these parts being such that when the outer end, S, of lever N is pushed inward, it will act upon both links *j j*, and thereby force outward the upper ends of lever-stops H H, and thus withdraw them from the track and permit the barrel to roll downward into the machine. In order to arrest this downward motion at the proper period—that is to say, just when the barrel shall have arrived immediately over the roller E, and with its convex portion resting upon the concave of that roller, and in position to be painted—a swing-frame, T, is provided, pivoted, by its two side arms *t t*, to the opposite sides of the frame, as seen at *u u*, an adjustable stop or fixed detent, *v*, being so located as to properly limit, as occasion may require, the descent of this swing-frame. The swing-frame itself may be adjustable for different-sized barrels. The cross-bar of this swing-frame is furnished with two friction-wheels, *w w*, having very narrow edges; and these edges are the only parts of the frame which can impinge upon the surface of the barrel which is being painted, and they serve

to prevent the barrel from emerging from the machine until the swing-frame is lifted for that purpose. Any cam or projection on shaft F (not necessary to be illustrated) serves, at each revolution of the shaft, automatically to lift the frame and release the painted barrel, which then, by its own gravity, rolls down the inclined rails, whence it may be taken by an attendant, by merely placing his hands upon the heads of the barrels, without touching the painted surface.

Two attendants only are required for a machine—one to place the barrels upon the feeding end of the rails and another to take them from the discharging end, so that the machine is entirely automatic, the movement of the levers H at the proper juncture being effected by any proper mechanical connection with the shaft F, such as a cam, or by connections with the swing-frame.

If it be desired to lift the swing-frame less frequently than at each revolution of the roller, it is only necessary to interpose between the shaft F and the arms *t t* an idle-wheel gearing with a gear on shaft F, and having a cam or projection thereon, and of such diameter as may be preferred, in order to release the barrel at any desired stage of its revolution or revolutions. The lifting of frame T and the releasing of the detent-levers H should be effected at or nearly at the same time, in order that, when one barrel is discharged, another should at once roll in and occupy its place, thus keeping up a rapid and continuous succession and supply of barrels, and a continuous deposit of paint upon the peripheries of the whole train fed in.

It will now be seen that the covered roller C takes up the paint from the trough and delivers it to the covered roller E, the latter, therefore, not receiving an excessive amount; that no handling of the barrel is necessary while being painted, nor from the time it is laid upon the receiving-rails until it leaves the delivery-rails; that no journals, chucks, or clamping devices are needed to hold to place and revolve the barrel while being painted; but that, on the contrary, it is entirely free, except that its progressive motion is, for the moment, arrested, and therefore no attention or time is wasted in adjusting or detaining or releasing it. It will also be seen that we avoid any necessity for repeatedly and intermittently applying paint to a flat painting surface, as is done in the old method of graining buckets, &c., which are rolled over such a flat bed, and receive their imitation-grained surface from such bed.

Our machines are capable of painting six barrels per minute, or over three thousand barrels per day, working eight and a half hours only, while by hand painting, as now practiced, a good workman can paint but one hundred in a day, thus requiring thirty men to do the work of one of our machines and two attendants—a saving alone in labor of forty-five dollars for every three thousand bar-

rels, or one day's labor. The importance of our invention is hence apparent, as a single known establishment paints by hand about four thousand barrels per day, at an expense of about eighty dollars for painters' wages, most of which our machine would save, while doing the work better and with less handling of the partially-painted barrel.

It is evident that the described machine is adapted to applying any other material with which its trough may be supplied, such as varnish, water-proof compounds, &c., whether liquid or semi-liquid.

Instead of a single roller revolving within the trough, two may be used, if desired, the surfacing-roller in such case resting partially on both. Or three may be used, two rollers being placed above them, resting each between two of the lower ones, and the surfacing or painting roller resting partially upon both of these; but in such case, in order to have the topmost roller concave, the lower three would need to be concaved, and the two above them convex.

It may in some cases be desirable, especially when using a coating having rapidly-drying or quickly-penetrating qualities, to duplicate the surfacing-rollers in a single machine. In such case it would simply be necessary to extend the trough and to duplicate the roller or rollers C, which take up the material; and the swing-frame might be duplicated or not, as found most convenient. By such construction each barrel or article could pass at once from one surfacing-roller to the next one, and become very thoroughly coated.

What we claim as new, and desire to secure by Letters Patent, in a machine for surface-coating barrels, casks, and kegs, is as follows:

1. A cloth-covered or flexible-surfaced roller having an appropriate configuration for and as a means for applying a coat of paint or other material directly to the periphery of a barrel or cask.

2. In combination with a cloth-covered or flexible-surfaced roller adapted for applying a coat of paint or other material to the surface of a barrel or similar article, one or more cloth-covered or flexible-surfaced rollers dipping into a vessel, and conveying the paint or other material therefrom to such painting-roller.

3. In a barrel-painting or surfacing-machine, a roller having a concave surface adapted to fit the periphery of a barrel, substantially as described, and as shown at E.

4. The combination of one or more barrel-shaped rollers, C, for taking up the paint or other liquid or semi-liquid with a concaved roller for receiving the material from it, and depositing it directly upon the surface of a barrel or cask.

5. In a machine for painting or surfacing barrels or casks, inclined feed and guide rails, substantially as described, where by the article shall, by the mere force of gravity, be fed into and discharged from the machine.

6. The inclined guiding and feed rails pro-

vided with movable stops to hold back a barrel prior to feeding it to the painting-roller, substantially as and for the purpose described.

7. In combination with the inclined discharging-rails, a swing-frame operating to prevent the advance of the barrel while being painted or coated, but permitting it to be freely revolved while so held back.

8. The swing-frames provided with a stop or stops to limit its descent so as to hold the barrel to proper position, substantially as and for the purpose described.

9. In combination with the swing-frame, friction disks or wheels, substantially as and for the purpose described.

10. The combination, with the lever-stops H, of the described link-and-lever connections or their equivalents, whereby both stops may be simultaneously withdrawn from the tracks of the rails.

11. The described means or their equivalent for automatically lifting the swing-frame at the desired period of time.

12. The described means or their equivalent for automatically operating the lever-stops H.

13. The combination of the means for operating the swing-frame with the means for operating the lever-stops, the combination being substantially as described.

14. The mode of operation or method herein described of surface covering or painting a cask or barrel, the same consisting in retaining it over and upon the surfacing-roller upon which it loosely rests by means of a device in front, which checks its advance and yet permits it to be revolved by the frictional contact of such surfacing-roller.

15. The combination, in a machine for applying paint or other liquid or semi-liquid material to a barrel or cask, of a paint-delivering roller, inclined feed and delivery rails, and a swing-frame to hold back the article till painted.

16. The combination, with a paint-delivering or surfacing roller, of the inclined rails and stops and the swing-frame.

17. The combination of the trough, the lower and upper covered rollers, the inclined rails, stops to hold back an unpainted barrel, and a swing-frame to hold back a barrel while being painted, substantially as and for the purpose described.

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G. B. FISHER.

Witnesses:

W. BEDFORD,
F. FREES.