(No Model.)

U. EBERHARDT.

BARREL WASHING MACHINE.

No. 371,046. Patented Oct. 4, 1887.

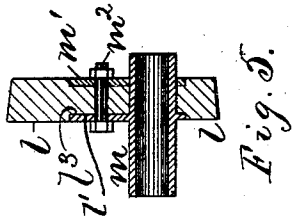


Fig. 5.

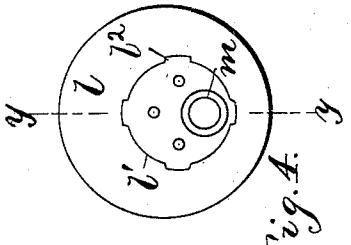


Fig. 4.

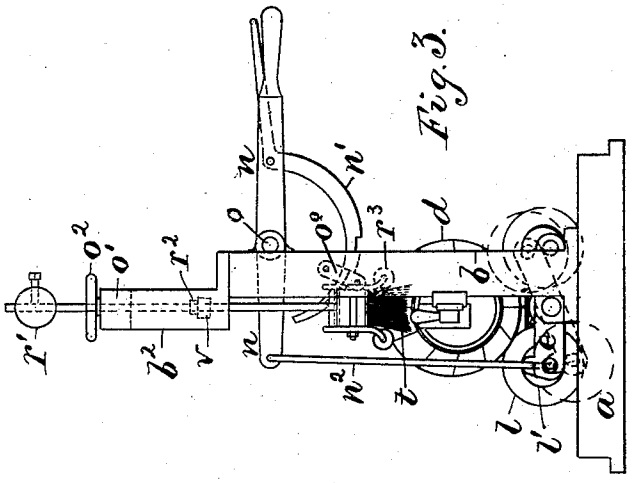


Fig. 3.

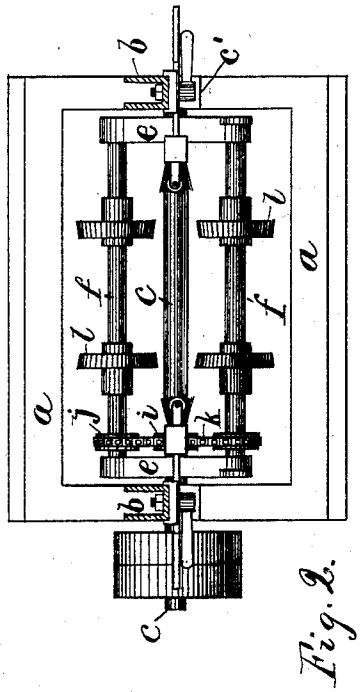


Fig. 2.

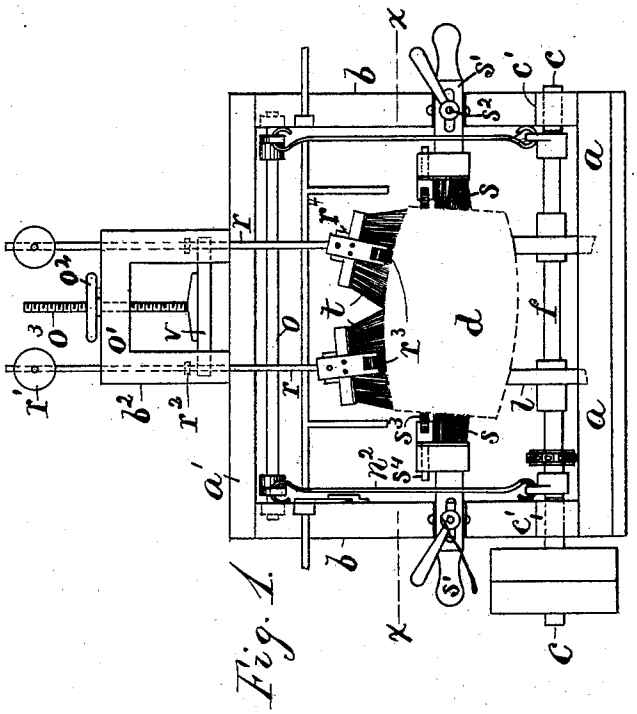


Fig. 1.

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UNITED STATES PATENT OFFICE.

ULRICH EBERHARDT, OF NEWARK, NEW JERSEY.

BARREL-WASHING MACHINE.

SPECIFICATION forming part of Letters Patent No. 371,046, dated October 4, 1887.

Application filed February 26, 1887. Serial No. 228,926. (No model.)

To all whom it may concern:

Be it known that I, ULRICH EBERHARDT, a citizen of the United States, residing at Newark, Essex county, New Jersey, have invented certain new and useful Improvements in Barrel-Washing Machines, fully described and represented in the following specification and the accompanying drawings, forming a part of the same.

This invention consists, partly, in means for imparting an irregular rotary movement to the barrel or keg, partly in means for protecting the fibrous part of the brushes, partly in means for pressing the brushes toward the barrel, partly in the construction of the bearing-wheels for the cask to produce the desired eccentric movement, and partly in the means for discharging the barrel or keg from the bearing-rollers.

In the annexed drawings, Figure 1 is an elevation of the machine. Fig. 2 is a plan of the same below the line $x\,x$ in Fig. 1, with the cask removed. Fig. 3 is an end elevation of the machine, and Figs. 4 and 5 are respectively upon a larger scale an end view of one of the bearing-rollers and a central section on line $y\,y$ in Fig. 4.

a is the bed of the machine; *b*, vertical stanchions; *a'*, a cross-beam upon the tops of the same; b^2, guides for sustaining the upper brush-rods; *c*, a driving-shaft mounted in bearings *c'* upon the bed *a*, below the center of the cask *d*.

e are tipping levers, pivoted at their middle loosely upon the shaft *c*, near the stanchions *b*, and having two parallel shafts, *f*, journaled in their outer ends.

i is a chain-gear applied to the shaft *c*. *j* are chain-wheels upon the shafts *f*, and *k* is a chain connecting such wheels. The bearing-wheels are formed of rubber disks *l*, clamped eccentrically upon hubs *m*, and between eccentric flanges *l'* and followers *m'* upon the said hub, by means of bolts m^2, the hubs being fastened to the shafts *f* in the usual manner.

n is a hand-lever provided with a latch, *n'*, and is pivoted by shaft *o* to the stanchions *b* and connected by links n^2 to the ends of the bars *e*. The bars *e* are shown in Fig. 3 sustained horizontally, so that the barrel *d* is retained upon the bearing-rolls *l*; but it is obvious that by unlatching the lever *n* from the catch o^6 the bars *e* may be simultaneously tipped, as shown in dotted lines in Fig. 3, with the effect of lowering one of the shafts *f* and elevating the other, so that the barrel may be readily rolled from the machine over the lower shaft. The movement of the handle *n* in the opposite direction would serve to lower the opposite roller to facilitate the rolling of another barrel into the machine upon the side opposite that from which one was discharged. The bearing-wheels *l*, by reason of their eccentric construction, operate not only to rotate the barrel, but to raise and lower the barrel and to tip it in various directions, according to the arrangement adopted for the four bearing-wheels. Thus in the drawings the two bearing-rolls at one end of the barrel are arranged with their greatest projection upon the upper side of the shafts *f*, while the other two rolls are arranged in the opposite manner, the right-hand end of the barrel being thus tipped downward, as shown in Fig. 1, while the continued rotation of the shafts would serve to lower the higher end of the barrel at the same time that the right-hand end was raised. A continual longitudinal oscillation would thus be imparted to the barrel, so that the fluid placed therein would be dashed from one end to the other and the interior more effectually cleansed.

Brushes are applied to the tops and ends of the barrel, and its oscillating motion also subjects its exterior to a more thorough and general contact with the brushes than if it rotated axially. The end brushes, *s*, are carried by holders *s'*, clamped to the stanchions *b* by screws s^2, and are provided each with guard-rolls s^3, affixed upon the holders by shanks s^4, to maintain the barrel in a proper longitudinal position when oscillated by the bearing-rolls, and to also protect the fibrous part of the brushes *s* from injury. The upper brushes, *t*, are affixed to the lower ends of freely-movable vertical rods *r*, carried in the guides b^2, and provided each with a weight, *r'*, to press it steadily toward the barrel. Guard-rolls r^5 are also affixed to the upper brush-holders, r^4, to rest upon the barrel and prevent the fibrous portion of the brushes from yielding injuriously under the pressure of the weight *r'*. A

cross-bar, o', over the tops of the guides b^2, sustains a wheel-nut, o^2, through which passes a screw, o^3, carrying a cross-bar, v, pivoted loosely to the rods r below the collars r^2. The lifting of the cross-bar v by means of the wheel o^2 raises the collars r^2 and the rods r, and thus removes the brushes t from contact with the barrel when desired. When washing a barrel or keg, the cross-bar is adjusted entirely clear of the nuts, as shown in Fig. 1, permitting the guard-rolls r^3 to rest freely upon the barrel, and to guide the brushes up and down when the barrel oscillates.

It is evident that the oscillation of the barrel necessitates a yielding support for the brushes, and some means of positively imparting the irregular movement of the barrel to the brush-holders, which I effect by means of the guard-rolls r^3, affixed thereto.

It is also immaterial whether the guards r^3 and s^3 be formed as rollers or otherwise constructed. It is also immaterial whether the cross-bar v or other means be used to sustain the rods r when the barrel is being removed or replaced.

The flanges l' are not only perforated eccentrically, but have tongues l^2 fitted to notches l^3 in the sides of the disks l, to prevent the disks from slipping between the flanges. The driving-strain is thus removed from the bolt-holes, where the india-rubber is thin and liable to tear, and is transmitted by the tongues and notches where the india-rubber is much thicker.

Having thus set forth my invention, what I claim herein is--

1. In a barrel-washing machine, the combination, with bearing-rolls of irregular form adapted to oscillate the barrel, as set forth, of yielding brushes applied to the sides of the barrel, end brushes applied to the heads of the barrel, and guards to hold the barrel in position longitudinally, as and for the purpose set forth.

2. In a barrel-washing machine, the combination, with bearing-rolls of irregular form adapted to oscillate the barrel, as set forth, of yielding brushes applied to the sides of the barrel, end brushes applied to the heads of the barrel, and guard-rolls affixed to the holders of such end brushes and adjustable therewith, as and for the purpose set forth.

3. In a barrel-washing machine, the combination, with bearing-rolls of irregular form adapted to oscillate the barrel, as set forth, of vertical brush-rods movable in guides over the top of the barrel, brushes affixed thereto, and guards affixed to such brush-holders, as and for the purpose set forth.

4. In a barrel-washing machine, the combination, with bearing-rolls of irregular form adapted to oscillate the barrel, as set forth, of vertical brush-rods movable in guides over the top of the barrel, brushes affixed thereto, guard-rolls affixed to such brushes to rest upon the sides of the barrel, and a lifter to sustain such brushes when removing and inserting the barrel, substantially as herein set forth.

5. In a barrel-washing machine, the combination, with a suitable frame and brushes for cleansing the barrel, of the longitudinal shaft c, mounted to revolve beneath the barrel in suitable bearings, the bars e, pivoted thereon at their middle, the shafts f, rotated by the shaft c, and provided with wheels for supporting and driving the barrel, and means, substantially as described, for tipping the bars, and thus lowering the bearing-rolls at one side of the barrel and elevating the bearing-rolls upon the opposite side of the barrel, as and for the purpose set forth.

6. In a barrel-washing machine, the combination, with the rubber disk l, having eccentric perforation and eccentric recesses formed with notches l^3, of the hub m and its eccentric flanges l', with tongues l^2, arranged and operated as set forth.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

ULRICH EBERHARDT.

Witnesses:
JOS. B. PIERSON,
HENRY J. MILLER.