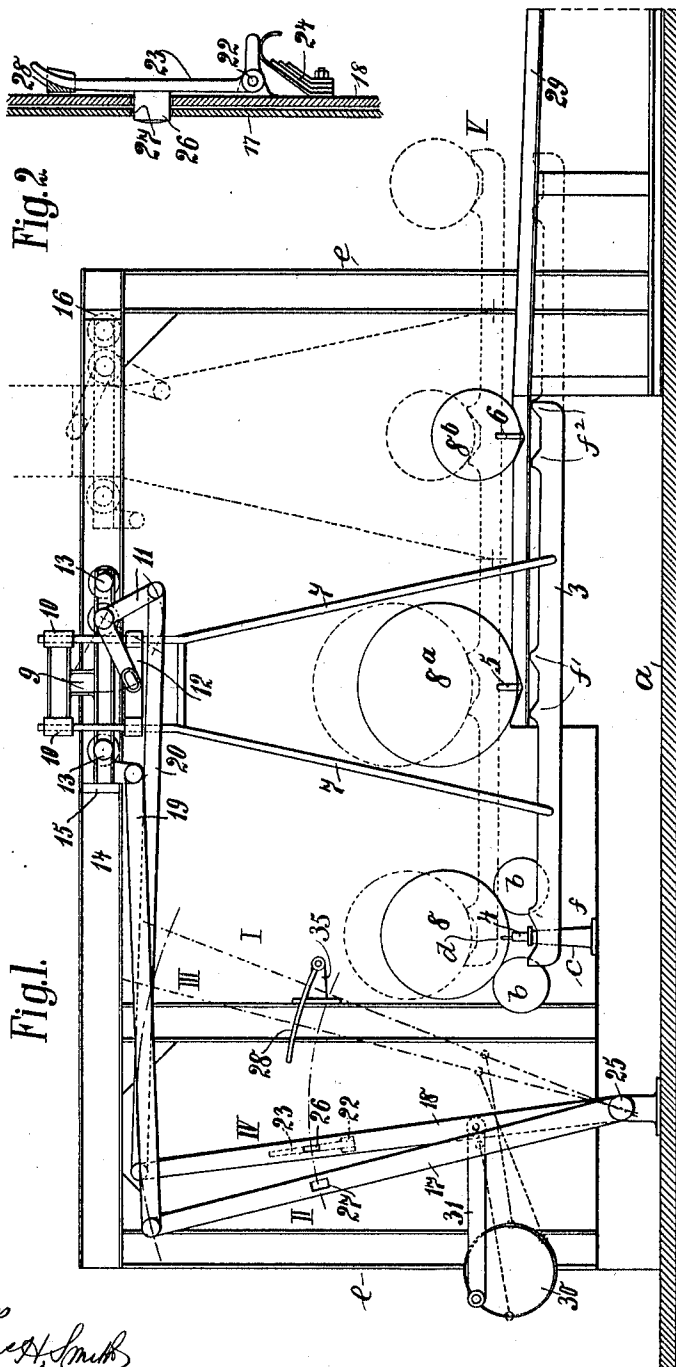


B. DANZIGER.
 BARREL WASHING MACHINE.
 APPLICATION FILED MAY 21, 1910.

1,004,381.

Patented Sept. 26, 1911.

2 SHEETS-SHEET 1.



Witnesses

Charles Smith
 A. D. Terrell

Inventor

Benno Danziger
 by Harold Terrell his atty

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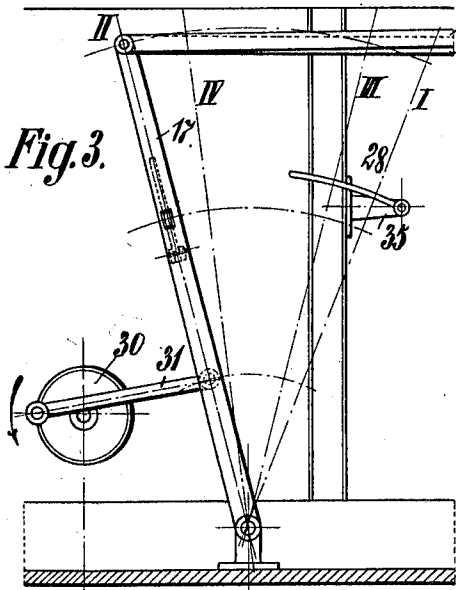


Fig. 3.

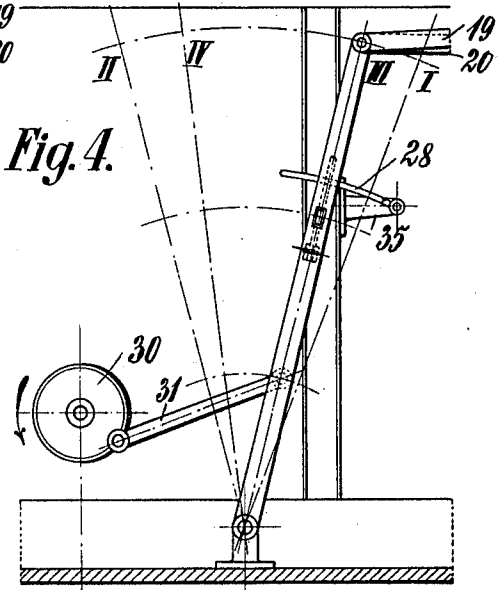


Fig. 4.

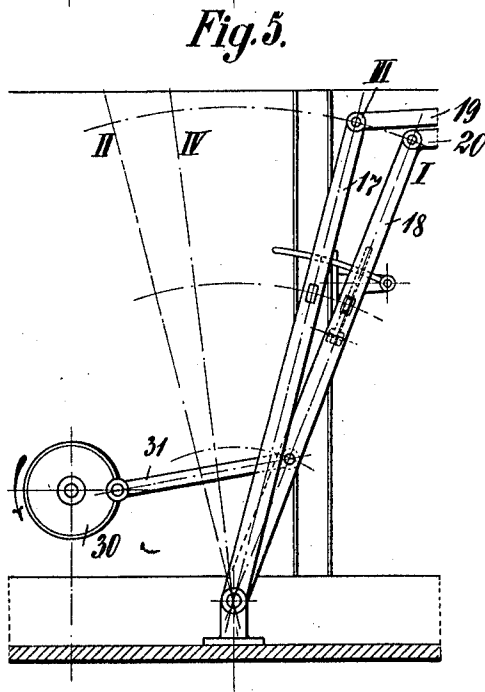


Fig. 5.

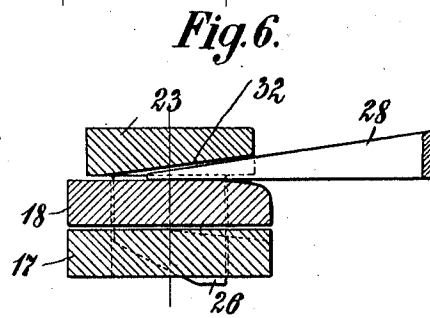


Fig. 6.

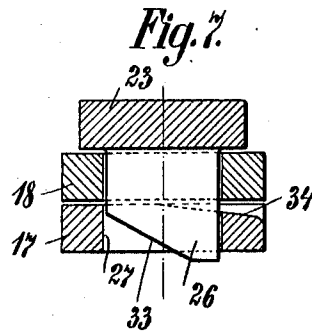


Fig. 7.

Witnesses
 Chas. H. Smith
 A. J. Serrell

Inventor
 Benno Danziger
 by Harold Serrell
 his atty

UNITED STATES PATENT OFFICE.

BENNO DANZIGER, OF MANNHEIM, GERMANY.

BARREL-WASHING MACHINE.

1,004,381.

Specification of Letters Patent. Patented Sept. 26, 1911.

Application filed May 21, 1910. Serial No. 562,612.

To all whom it may concern:

Be it known that I, BENNO DANZIGER, a subject of the Grand Duke of Baden, residing in Mannheim, Germany, have invented an Improvement in Barrel-Washing Machines, of which the following is a specification.

My present invention relates to an apparatus for washing or cleansing barrels, casks and similar receptacles, and the object thereof is the provision of a barrel washing machine in which the barrels to be cleaned are placed in position in the machine, are then conveyed successively from and through a plurality of cleaning operations and finally delivered from the machine.

The construction of the apparatus made in accordance with my invention is such that the barrels when placed in the machine, remain in position therein until they are delivered therefrom, so that there is no rolling movement imparted to the barrels, and furthermore there is a considerable saving in the power necessarily employed to operate the machine, by the elimination of heavy counter-balance mechanism such as so far as I am aware, has heretofore commonly been employed in machines of the class to which my present invention relates.

In the drawing, Figure 1 is a side elevation of a machine built in accordance with my invention, Fig. 2 is a cross section of the operating levers and associated parts illustrating the manner in which these levers may be connected and separated, Fig. 3 is an elevation of the operating levers showing them in the position indicated by II in Fig. 1. Fig. 4 is a similar view showing the operating levers in the position indicated at III in Fig. 1. Fig. 5 is a similar view showing the positions assumed by the operating levers when the carriage is in its extreme right hand position; the lever 17 being in the position indicated by III and the lever 18 in the position indicated by I. Fig. 6 is a horizontal section through the operating levers and showing the trip member 28, and Fig. 7 is a horizontal section through the operating levers at the slotted portions thereof showing the lug member 26 in position as within the said levers.

Referring to the drawing, in carrying out my invention, the machine comprises a base indicated at *a*, on one end of which there is a platform 29 and in which in suitably spaced apart positions, there are spraying

nozzles indicated at 5 6 respectively, by which the interior of the cask or barrel, into which a spraying nozzle has been inserted through the bung-hole, may be cleansed, it being understood that any other similar devices may be employed for accomplishing this purpose. Also as illustrated, the platform 29, adjacent to the nozzles 5 6 is grooved or recessed in order to maintain a barrel or cask in position when placed thereon. Nozzle 5 is used for spraying hot water and nozzle 6 for cold water. On the base *a*, I also prefer to employ a device which I call a bung-hole detector; this being indicated at 4 and comprising a pair of rollers *b* mounted in suitable bearings in such a manner that they are parallel, spaced apart and at an equal distance from the base *a*. Centrally between the rollers there is a standard *c* carrying a pin *d*, which as will be understood, enters the bung hole of the barrel after the barrel has been placed on the rollers and revolved thereon until the bung hole comes into the bottommost position.

Secured to the base *a* there are upright members *e* between which at their upper extremities, extends a rail 14. I also employ a conveyer, comprising a carriage whose frame 9 is provided with rollers 13 adapted to run on the rail 14. The frame 9 of the conveyer carriage is also provided with bearings 10, in which supporting-rods 7 are slidably mounted. At their lower ends the rods 7 are connected to a barrel-support 3, which in suitably spaced apart positions on its upper surface, is provided with lugs *f f'* and *f''*.

11 represents a bell crank lever pivotally connected to the conveyer carriage 9 and connected at the extremity of one of its arms with a cross-piece 12 and pivotally connected at the extremity of its other arm with a connecting rod 20.

19 designates a connecting rod pivotally connected at one end with the conveyer carriage 9.

17 and 18 represent operating levers, both pivotally connected at corresponding ends to a shaft 25. At its upper end, the lever 17 is pivotally connected to the opposite end of the connecting rod 19 and at its upper end the lever 18 is pivotally connected to the opposite end of the connecting rod 20.

30 designates a crank disk and 31 a connecting rod by means of which the crank

disk 30 is connected to the lever 18. The lever 18 in a suitable position is provided with a lever arm 23 pivotally mounted thereon as indicated at 22 and adapted to be normally maintained in position by a spring 24. The arm 23 is provided with a lug 26 adapted at certain periods in the operation of the machine to enter a slot 27 provided therefor in the lever 17, it being understood that the levers 17 and 18 are mounted side by side.

Secured on a bracket 35 is a trip 28 the extremity of which is preferably wedge-shaped as clearly indicated in Fig. 6, and adapted to enter the space between the end of the arm 23 and the adjacent face of the lever 18 in order to free the lever 17 from the lever 18, as hereinafter described, it being understood that the bracket 35 is of sufficient length to permit the lever 18 to move into the position indicated by *z*.

In the operation of the hereinbefore described barrel washing machine, the conveyer carriage 9 travels between a stop 15 and a stop 16, both of which are secured on the rail 14. Now assuming that the apparatus is in an initial position as shown in Fig. 1 and that a barrel 8 has been placed on the bung-hole detector 4 in the proper position, then as will be seen, the conveyer carriage 9 has reached the extreme limit of its travel from right to left and ceases to move, whereupon also the movement of the lever 17 also ceases. In the continued revolution of the crank disk 30, in a counter clockwise direction as indicated by the arrow, the movement of the lever 18 is continued from right to left thereby actuating the bell-crank lever 11, raising the cross piece 12, the rods 7 and barrel-support 3 with the barrels 8 ^{8a} 8^b thereon from the position shown in full lines to that shown in dotted lines, whereupon the lever 18 will have assumed a position in alinement with the lever 17 and the lug 26 will have entered the slot 27 to lock the levers 17 and 18 together. In this action the inclined face 33 of the lug 26 slides over the inclined face 34 of the lever 17 until the lug 26 enters the slot 27 in the lever 17. The levers are then in the position indicated by II as shown in Fig. 3. Then in the continued revolution of the crank disk, the levers are moved together from the position II Fig. 3 to that indicated by III Fig. 4, wherein the conveyer carriage 9 will be brought against the stop 16 in this left to right movement of the parts of the apparatus; the barrel support being moved from left to right in a raised position as will be understood, by means of the levers 16 17 being locked together.

Simultaneously with the carriage 9 coming against the stop 16 or immediately prior thereto the trip 28 enters the space between the inclined face 32 of the arm 23 and the

adjacent face of the lever 18 as shown in Fig. 6 and separates the lever 17 from the lever 18 by removing the lug 26 from the slot 27 and in the continued revolution of the crank disk 30, the lever 18 moves from the position indicated in III Fig. 4 to that indicated by I Fig. 5, during which movement, as will be understood, the connecting rod 20 actuates the bell crank lever 11 to lower the cross-piece 12, the rods 7 and the barrel support 3 whereupon the barrel 8 which was last placed in the machine, assumes a position on the platform 29 over the spraying nozzle 5 and the barrel 8^a assumes a position on the platform over the spraying nozzle 6 and the barrel 8^b will be delivered to the platform 29 in the position indicated at V. Then in the continued revolution of the crank disk 30, the lever 18 is moved from right to left, returning the conveyer carriage 9, the barrel support 3 and associated parts to the position shown in full lines in Fig. 1, in order that another barrel may be placed thereon, it being understood that when the barrel support 3 is raised, it not only picks up the barrel last placed in the machine, but also the last two preceding ones. During the return travel the lever 18 does not lift the barrel support 3 until the carriage 9 strikes the stop 15, as the power required for lifting the heavy platform with the barrels is much greater than the slight out-put for moving the carriage 9 and lever 17.

It will be understood that while the hereinbefore described apparatus is particularly adapted for washing barrels and casks, it may also be employed for covering the interior of barrels with pitch or removing pitch from the interior of casks and other obvious similar uses, without departing from the nature and spirit of my invention.

I claim as my invention:

1. A barrel-washing machine, comprising a base, a frame, a plurality of nozzles, a conveyer and means for imparting a vertically upward, then a horizontally forward, then a vertically downward and then a horizontally backward movement to the said conveyer, so that the barrel to be cleaned is first raised vertically, then carried forward horizontally, then lowered vertically and successively over the said nozzles and is finally delivered from the machine.

2. A barrel-washing machine, comprising a base, a platform, a series of nozzles, a conveyer comprising a carriage and a barrel support connected to said carriage and means for first raising the barrel support, then moving the carriage and barrel support, with the barrel support in its raised position, then lowering the barrel support and then returning the carriage and barrel support to their initial positions.

3. A barrel-washing machine, comprising a base, a platform, a series of spaced apart

nozzles fixed in said platform, a bung-hole detector, a conveyer comprising a carriage, a frame adapted to be raised and lowered therein and a barrel support carried by the said frame and means for first raising the said frame and barrel support, then moving forward the said carriage, frame and barrel support, then lowering the said frame and barrel support and then returning the said carriage, frame and barrel support to their initial positions.

4. A barrel-washing machine, comprising a base, a platform, a series of spaced apart nozzles in said platform, a bung-hole detector, a conveyer comprising a carriage, a frame adapted to be raised and lowered in said carriage, a barrel support carried by said frame, stops for limiting the travel of the said carriage, a bell-crank lever pivotally connected to the said carriage, the end of one arm of which is pivotally connected to said frame, a lever, a shaft to which the said lever is pivotally connected, a second lever also pivotally connected to said shaft, a connecting rod extending between the first aforesaid lever and the said carriage, a second connecting rod extending between the said second lever and the end of the other arm of the said bell-crank lever, means whereby the said first lever is connected and disconnected from the said second lever at the ends of the travel of the said carriage, and means for operating the said second lever.

5. A barrel-washing machine, comprising a base, a platform, a series of spaced apart

nozzles fixed in said platform, a bung-hole detector, a conveyer comprising a carriage, a frame adapted to be raised and lowered in said carriage, a barrel support carried by the said frame, stops for limiting the travel of the said conveyer in both directions, a bell-crank lever pivotally connected to the said carriage, the end of one arm of which is pivotally connected to the said frame, a lever, a shaft to which said lever is pivotally connected, a second lever also pivotally connected to said shaft, a connecting rod extending between the said first lever and the said carriage, a second connecting rod extending between the said second lever and the end of the other arm of the said bell-crank lever, an arm 23 connected to the said second lever, a lug on the arm 23 adapted to engage a slot provided therefor in the said first lever to lock the said first and second levers together, a trip for moving the said arm 23 to disengage the said lug from the said slot in the said first lever and means for operating the said second lever to move the carriage, the frame and barrel support horizontally and to raise and lower the frame and barrel support when the said carriage is stationary.

In testimony that I claim the foregoing as my invention, I have signed my name in presence of two subscribing witnesses.

BENNO DANZIGER.

Witnesses:

ERNEST L. IVES,
W. W. SCHMIDT.