(No Model.) 3 Sheets—Sheet 1.

H. E. KLAMT.

BARREL WASHING MACHINE.

No. 400,346. Patented Mar. 26, 1889.

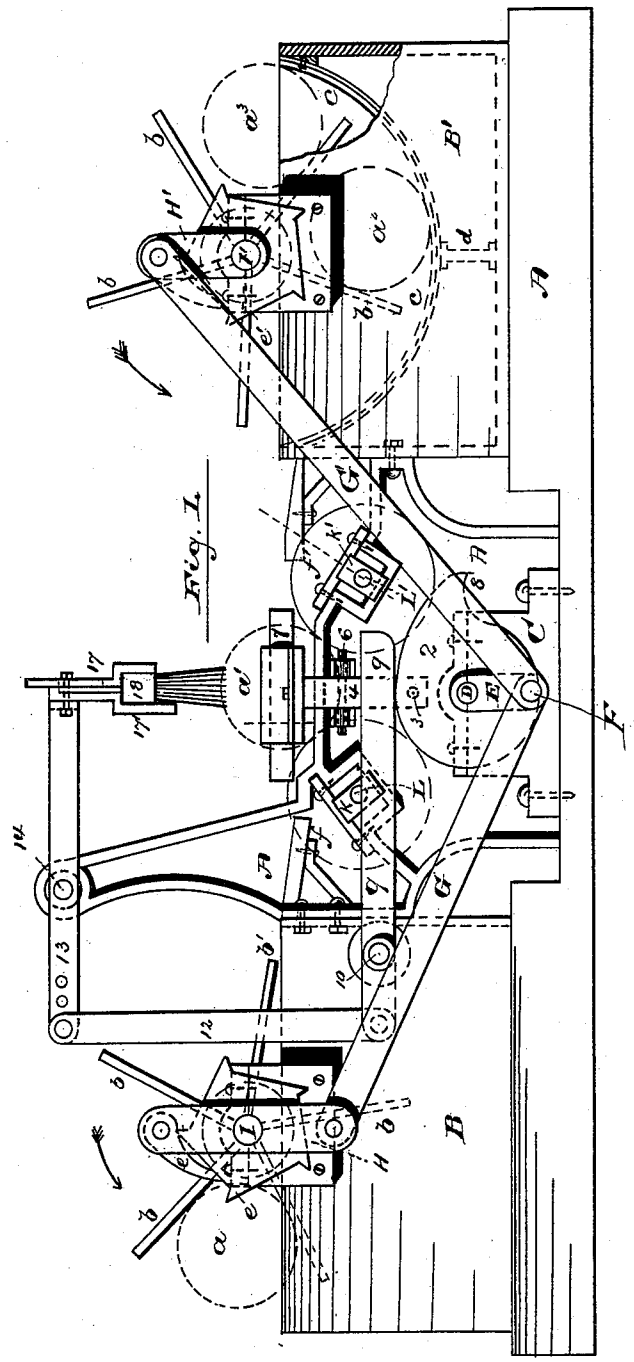


Fig. 1.

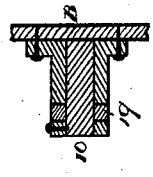


Fig. 5

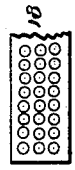


Fig. 4.

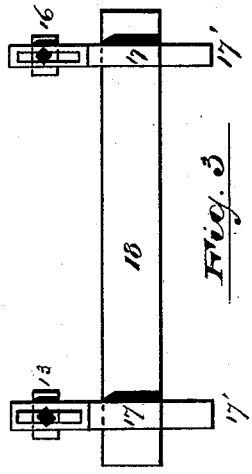


Fig. 3

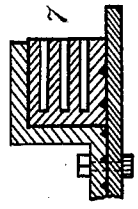


Fig. 2

WITNESSES: INVENTOR

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Henry E. Klamt,

BY Drake & Co. ATT'YS.

N. PETERS, Photo-Lithographer, Washington, D. C.

(No Model.) 3 Sheets—Sheet 2.

H. E. KLAMT.

BARREL WASHING MACHINE.

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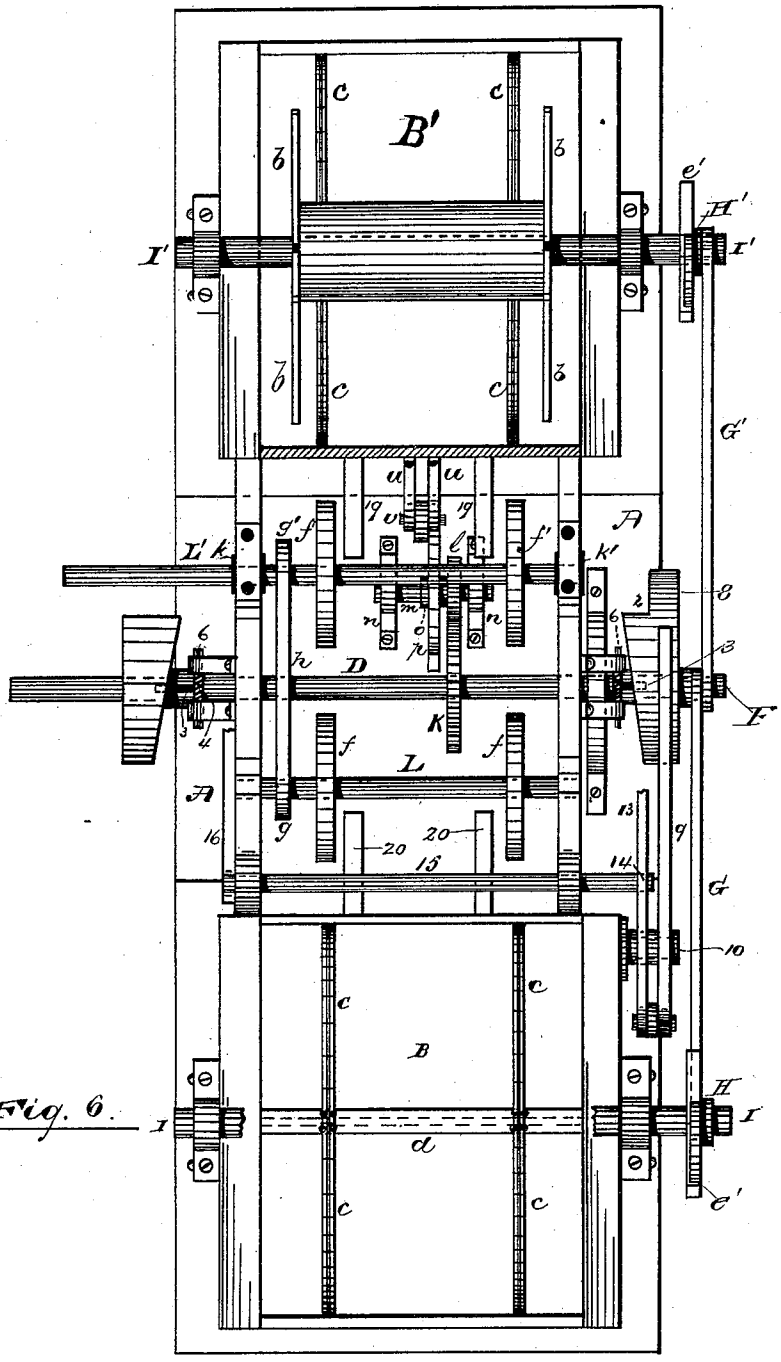


Fig. 6.

WITNESSES:

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(No Model.) 3 Sheets—Sheet 3.

H. E. KLAMT.

BARREL WASHING MACHINE.

No. 400,346. Patented Mar. 26, 1889.

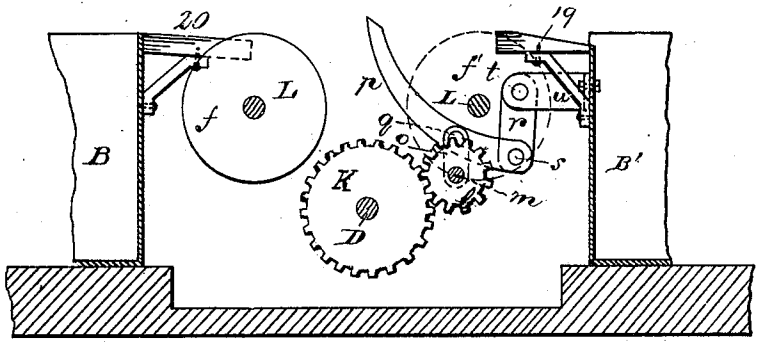


Fig. 7.

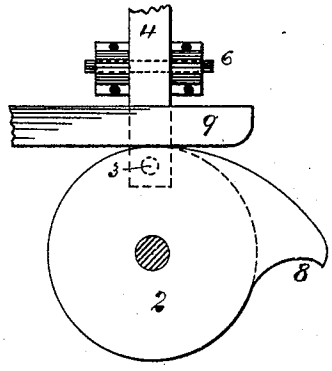


Fig. 8

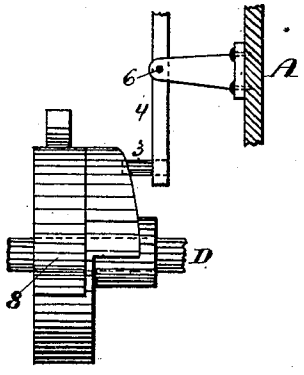


Fig. 9.

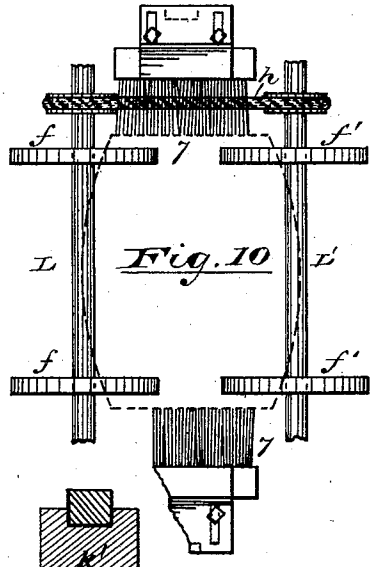


Fig. 10

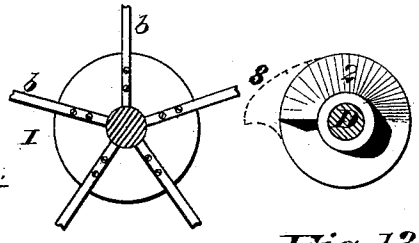


Fig. 11.

Fig. 12.

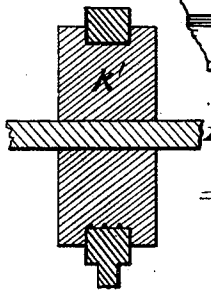


Fig. 13.

WITNESSES: INVENTOR

E. L. Sherman
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UNITED STATES PATENT OFFICE.

HENRY E. KLAMT, OF NEWARK, NEW JERSEY.

BARREL-WASHING MACHINE.

SPECIFICATION forming part of Letters Patent No. 400,346, dated March 26, 1889.

Application filed April 12, 1888. Serial No. 270,463. (No model.)

To all whom it may concern:

Be it known that I, HENRY E. KLAMT, a citizen of the United States, residing at Newark, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Barrel-Washing Machines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

The object of this invention is to facilitate and reduce the cost of washing barrels and kegs as compared with the methods of doing the same now in general use.

The invention consists in the construction, combination, and arrangements of the several parts of the machine, substantially as will be hereinafter set forth, and finally embodied in the clauses of the claim.

Referring to the accompanying drawings, in which like letters of reference indicate corresponding parts in each of the several figures of the drawings, Figure 1, Sheet 1, is a side elevation of a barrel-washing machine embodying my improvements, the skids not being shown and a portion of one of the water-tanks broken away. Figs. 2, 3, 4, and 5, same sheet, are detail views. Fig. 6, Sheet 2, is a plan view of the machine, with the end brushes omitted and part of the lever omitted that connects with the top brushes. Fig. 7 is an elevation of the removing device. Figs. 8 and 9 are detail views. Fig. 10 is a bottom plan view showing the end brushes in connection with the same. Fig. 11 is an end view showing the shaft with projecting arms for receiving and discharging the barrels. Fig. 12 is an end view, reduced, of the cam shown in Fig. 9; and Fig. 13 is a sectional view of one of the bearings of the roller-shafts, on dotted lines, shown in Fig. 1.

In said drawings, A represents the frame of the machine, which may be made of metal or wood, as may be preferred.

B B′ are tubs or tanks secured to the frame A for holding water, B being designed for hot water and B′ for cold clean rinsing-water.

C is a block bolted or screwed to the frame A, in which is placed the bearing for the journals of the driving-shaft D. On the end of said main or driving shaft is placed a crank, E, with crank-pin F, to which are pivoted rods G and G′, pivotally connecting said cranks with the loose crank-levers H H′ on shafts I and I′. These shafts revolve in bearings secured to the water-tanks. On the frame A are also adjustable bearings *k k′*, in which are journaled shafts L and L′. On the rear end of the driving-shaft is placed a driving-pulley, or a crank can be used when the machine is driven by hand.

a, *a′*, a^2, and a^3 represent barrels in various positions of the machine as the washing process proceeds.

Projecting from the shafts I I′ are arms *b b*, so arranged as to receive between them a barrel or keg, as shown in Fig. 1. Within the water-tanks B and B′ are arranged double wire frames *c c*, (seen in Figs. 1 and 6,) on which the barrels roll when being carried through the water-tanks by the action of the machines. These frames *c c* are circular and of a radius a little larger than the arc in which the arms *b b* move. These wire frames are supported at their lowest point on support *d*, as shown in tank B′, Fig. 1, and tank B, Fig. 6. On the end of shafts I and I′ are arranged pawl-and-ratchet-wheel devices, as seen at *e e′*, Figs. 1 and 6. These ratchet-wheels have teeth in their periphery, so arranged as to stop the revolution of the respective shafts to which they are attached when the arms on which the barrel rests shall have reached a position even, or nearly so, with the top of the rear part of the water-tanks, as shown more particularly at *b′*, Fig. 1.

On each of the shafts L L′ are fixed two rollers, *f f* and *f′ f′*, and preferably so arranged that the top of those rollers shall be a little below the top surface of the water-tank B. Upon the rear end of shaft L′ a driving-pulley can be attached, to which motive power can be applied. On said shaft L′ is also fixed a band-wheel, *g′*, and on shaft L is fixed a similar band-wheel, *g*. Over these band-wheels is stretched a belt or band, *h*, as seen in Figs. 6 and 10, so that by this arrangement shafts L L′ will receive uniform motion.

On main shaft D, inside the frame of the machine, is securely fixed a gear-wheel, K, mesh-

ing into small gear-wheel *l* on short shaft *m*. This shaft runs in bearings *n n*, located on top of supports secured to the bottom of frame A, as seen in Fig. 6. On this shaft *m* is arranged a crank, *o*, for operating the devices for removing the barrels from the rollers *f* and *f'* at the proper time. This device is shown in Fig. 7, and consists of an arm, *p*, pivotally connected to said crank *o* by crank-pin *q*, and at its lowest extremity pivotally connected to one end of link *r* by crank-pin *s*. This crank is also pivotally connected at its other end to pin *t* in lugs *u u*, secured to the front of the water-tank B', as seen in Figs. 6 and 7.

The mechanism for brushing and scrubbing the outside of the barrels is as follows: Upon main shaft D, I arrange two cam-wheels, 2 2, of equal throw, as seen in Fig. 6. Against the inner faces of these cam-wheels rest or bear pins 3, firmly secured in the lower ends of the levers 4, as seen in Figs. 1, 8, and 9. These levers 4 are pivotally connected to lugs on the frame A, as at 6, and to the upper ends are secured brushes 7, as seen in Fig. 1. These cam-wheels are so cut upon their surfaces that the brushes 7 7, which bear upon the ends or heads of the barrels, shall be withdrawn from contact with the barrel when the arm *p* rises up, so as to remove the barrel from the rollers *f f'*.

Upon the periphery of the cam-wheel 2, on the front of the machine, is formed another cam projection, as shown at 8, Fig. 1. Upon this periphery rests or is held one end of lever 9, Fig. 1. This lever is pivoted to the frame, as at 10, and at its other end is pivoted to vertical lever 12, and this lever 12 is pivoted to a horizontal lever, 13, secured at 14 to rocker-shaft 15, Fig. 6. On the other end of this rocker-shaft and upon the other side of the machine is secured another lever, 16. To the outer ends of these levers 13 and 16 are bolted or screwed hangers 17. In these hangers is secured the horizontal brush 18, as seen in Figs. 1 and 3. The action of these levers upon this horizontal brush will be clearly understood from the drawings. The cam-throw 8 should be so arranged and constructed that the brush 18 shall be raised up from contact with the barrel at precisely the same time that the brushes 7 7 are released from contact with the heads of the barrel.

I prefer to construct the rollers *f f'* on shafts L and L'; but they would from long usage become smaller by being worn away. In order to compensate for this wearing away I arrange the bearings of the shafts so that they can be adjusted upon the frame. This is shown in sectional view, Fig. 1.

The hangers for holding the top brush I construct in two parts, 17 and 17', between which the brush-head is clamped. The part 17' is firmly secured below the brush-head. The part 17 has an elongated slot, so that it can be raised or lowered by slightly loosening the bolts or screws which hold it to the ends of the levers.

In running the machine I prefer to have the shaft L' make about fifty revolutions while the main shaft D is making one revolution.

The operation of the machine is as follows: The water-tank B is filled with hot water and the tank B' is filled with cold water. The barrel to be washed is then placed upon one of the arms *b* of the machine, as seen at *a*, Fig. 1. The machine is then started and revolves in the direction shown by the arrows. The barrel is carried slowly down into the tank of hot water, where it is rapidly filled sufficient for washing. It is then carried up in the rear of the tank until the arm upon which it rests has reached the position shown at *b'*. The barrel will then roll over the ways or skids 20, Figs. 6 and 7, to the top of the rollers *f f f' f'*. The barrel will then be in position, as at *a'*, and the top and end brushes will by means of the cam-wheels above referred to be brought into contact with the barrel. These rollers revolving at a high rate of speed, the water inside the barrel does not move as fast as the barrel itself; hence the inside of the barrel is scrubbed and rubbed by the friction of the water, while the outside is being brushed and scrubbed by the top and end brushes. The removing-arm *p* then rises up and pushes the barrel over onto the ways or skids 19, over which it rolls, and onto the arm *b* from the shaft I', which will be there in the action of the machine at the right time to receive it. The barrel is then carried down and into the cold water in tank B', as seen at a^2, and after being rinsed and cleansed is rolled up to the rear of the machine and from thence to a table or any place arranged to receive it.

I do not intend to limit myself to the use of rubber rollers, such as I have described on shafts L L', as metal rolls can be used, which would be much cheaper, or wooden rolls, if made of close-grained wood.

Having thus described my invention, what I claim as new is—

1. The improved automatic barrel-washing machine herein described, combining a tank adapted for filling the barrels with water, top and end brushes operated by levers for washing and scrubbing said barrels, a tank adapted for cleansing and rinsing the barrels after being washed and scrubbed, rollers to cause the barrel to revolve, and an arm for automatically transferring the barrel to the rinsing-tank, as and for the purposes set forth.

2. An automatic barrel-washer combining a plurality of washing-tanks, a carrier for conveying or transferring the keg or barrel from one tank to the next, and a scrubber or washer for removing the adhering dirt in the transfer, as set forth.

3. In a barrel-washing machine, a water-tank, a revolving shaft provided with arms for receiving, holding, and automatically discharging the barrel from the tank, pawl-and-ratchet wheel for regulating the motion of the shaft, crank, levers, and rods connecting said shaft with the main driving-shaft of the ma-

chine, substantially as described, and for the purposes set forth.

4. In a barrel-washing machine, a washing and scrubbing mechanism consisting of two revolving shafts provided with rubber rollers, on which the barrel rests and with which it revolves, brushes adapted and arranged to automatically brush and scrub the ends and sides of the barrel, and an arm disposed to automatically lift and remove the barrel from the rollers, substantially as described, and for the purposes set forth.

5. In a barrel-washing machine, the combination, with main driving-shaft D, provided with crank E, of tanks B B′, shafts I I′, cranks H H′, arms *b b*, for holding the barrels, pawls and ratchets *e e′*, and rods G G′, connecting cranks H H′ to crank E, substantially as described, and for the purposes set forth.

6. In a barrel-washing machine, the combination, with main driving-shaft D, of gear-wheel K on said shaft, gear-wheel *l*, meshing into said gear-wheel K, crank *o*, and link *r*, arm *p*, pin *t*, cam-wheels 2 2 on main driving-shaft, pivoted levers 4 4, having their lower ends resting against said cam-wheels, brushes 7 7, secured to the upper ends of said levers, pivoted lever 9, having one end resting upon the periphery of cam-wheel 2 and operated by projection 8 on said cam-wheel, pivoted lever 13, rod 12, connecting levers 9 and 13, rocker-shaft 15, to which are secured levers 13 and 16, and brush and clamps 17, secured to the ends of levers 13 16, all said parts being arranged and combined as herein shown, and for the purposes set forth.

7. In a barrel-washing machine, the combination, with main driving-shaft D, provided with gear-wheel K, of a gear-wheel, *l*, shaft *m*, crank *o*, arm *p*, link *r*, pin *t*, and lugs *u u*, secured to the frame of the machine, all said parts being arranged and combined as shown, and for the purposes set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 30th day of March, 1888.

HENRY E. KLAMT.

Witnesses:
OLIVER DRAKE,
E. L. SHERMAN.