

2 Sheets—Sheet 1.

BARREL WASHER.

Patented Aug. 1, 1893.



Witnesses:

Vincent Hughes

George H. Pringle

By their Attorneys:

John W. Flinn

Augustus F. Flower

Robert J. Cousins.

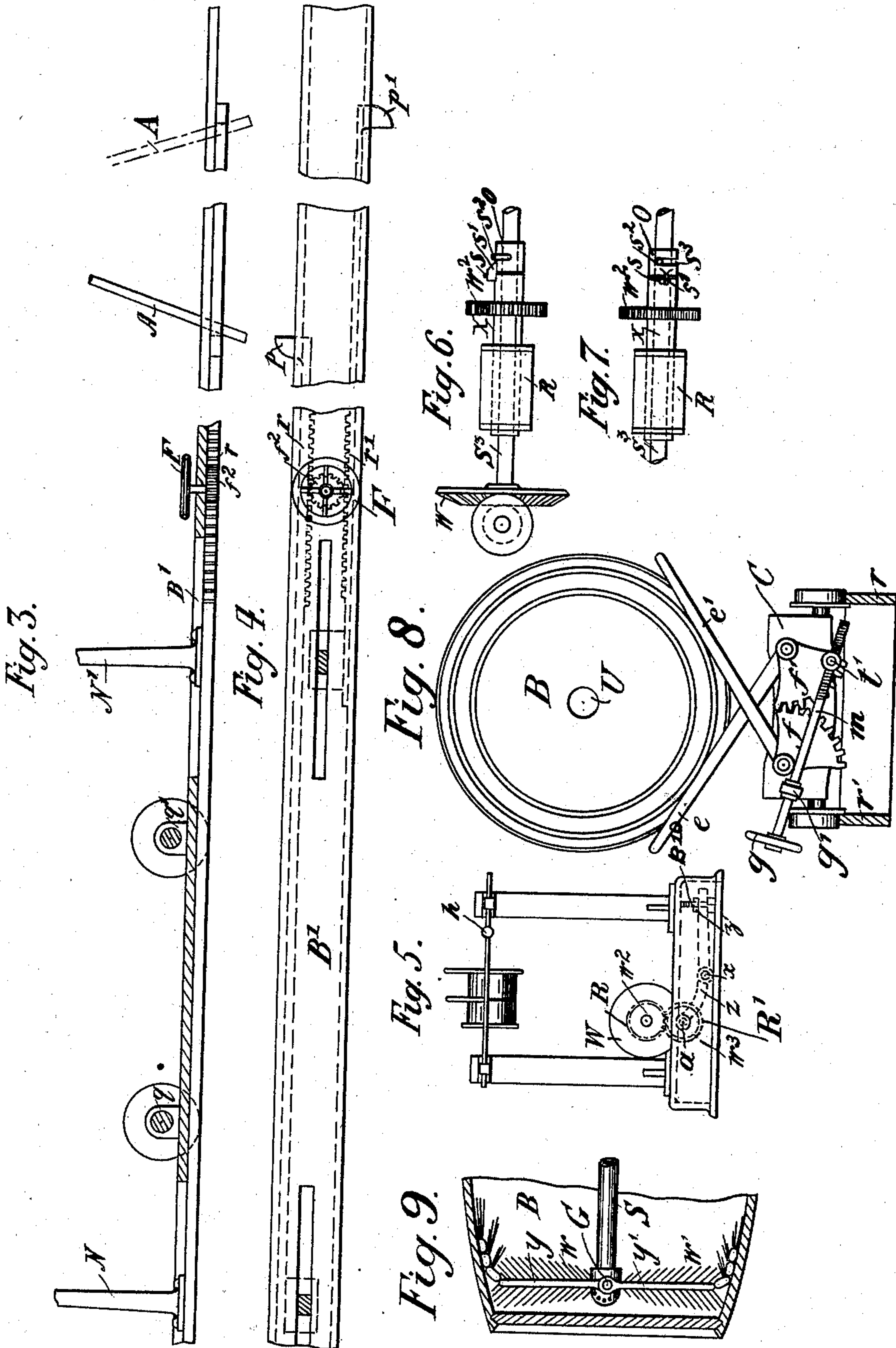
(No Model.)

2 Sheets—Sheet 2.

J. W. & A. F. FLOWER & R. J. COUSINS.
BARREL WASHER.

No. 502,414.

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Vincent Hughes
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UNITED STATES PATENT OFFICE.

JOHN WALTER FLOWER, AUGUSTUS F. FLOWER, AND ROBERT JOHN
COUSINS, OF SHAFTESBURY, ENGLAND.

BARREL-WASHER.

SPECIFICATION forming part of Letters Patent No. 502,414, dated August 1, 1893.

Application filed December 9, 1890. Serial No. 374,118. (No model.) Patented in England July 25, 1889, No. 11,861, and in Germany July 22, 1890, No. 55,761.

To all whom it may concern:

Be it known that we, JOHN WALTER FLOWER, AUGUSTUS FREDERICK FLOWER, and ROBERT JOHN COUSINS, subjects of the Queen of Great Britain, residing at Fontmell Magna, Shaftesbury, in the county of Dorset, England, have invented certain new and useful Improvements in Machines for Scrubbing or Scouring the Insides of Casks or Barrels, (for which we have obtained patents in Great Britain, No. 11,861, dated July 25, 1889, and in Germany, No. 55,761, dated July 22, 1890,) of which the following is a specification.

Our invention relates to an improved machine for scrubbing the insides of casks, barrels and other similar vessels and comprises a hollow shaft mounted upon two standard bearings and connected at its outer extremity through a stuffing box, with a pipe destined to supply the liquid required to clean the barrel or cask and furnished with a tap. The inner extremity of the shaft is provided with a nozzle and two extensible wire brushes of special construction for the purpose in view. These brushes are rounded at the edges and furnished with wire bristles to scrub the inner periphery of the cask or barrel. They can be folded together forward so as to enter the bung hole in the face of the barrel. The cask or barrel is placed on a carriage connected by suitable mechanism with the traveling band which actuates the same by means of suitable driving gear. To the front of this carriage or truck are fixed two toothed sectors meshing together and carrying each one arm, these two arms crossing one another and receiving between them and another set of arms the cask or barrel to be cleaned. The said arms can be more or less opened or closed by means of a hand wheel and rod fixed to one of the sectors so that the barrel or cask may be raised or lowered until the before mentioned bung hole comes exactly opposite the front end of the brushes. A lateral motion can likewise be imparted to the cask or barrel for a similar purpose by another hand wheel fixed to the carriage which is further furnished with tram wheels and roll on a rail track, within which moves the traveling band above mentioned. A driving pulley is keyed

on the shaft and is connected by a belt to any suitable driving pulley.

In the accompanying drawings Figure 1 is a side elevation of our improved cask scrubbing machine. Fig. 2 is an end view thereof. Fig. 3 is a side view partly in section of the traveling band showing its connection with the carriage and rack rods which actuate the supports, holding the barrel in position. Fig. 4 is a plan view of the same. Figs. 5 to 11 are details.

Our invention consists of a hollow shaft S provided at one end with a nozzle G while its other end terminates with a reduced part inclosed in a stuffing box *b*. A tap *t* is connected at one end to this box *b* and at the other to a supply pipe Q through which the liquid required for cleaning the barrel is conveyed thereto along the hollow shaft S. The latter is carried on suitable bearings upon two circular frames M, M' bolted to a bed plate I.

Upon the nozzle end of the shaft S are fixed the two collapsible and extensible brushes *w* and *w'* (Fig. 9) provided preferably with wire bristles and pivoting upon the pins which secure them to the movable nozzle G. These brushes are formed of two rods *y, y'* carrying the bristles designed to scrub or scour each end of the barrel B while joined at the ends of these wires or rods are links likewise provided with wire or other bristles for the purpose of scrubbing or scouring the inner periphery of the said barrel. This barrel B is carried upon two sets of crossed arms *e, e'* (Figs. 1 and 8) mounted on axles which are connected at the front of the carriage C by toothed sectors *f, f'*, meshing together. The rod *m* is journaled in a swiveled bearing *g'*, pivoted upon the front end of the carriage or truck C while its lower extremity moves through a nut *t'* pivoted upon the sector *f'*. The said rod *m* carries a hand wheel *g* by means of which the sectors *f, f'* can be moved up and down and the barrel B can be correspondingly raised or lowered by the arms *e* and *e'* according as required for the purpose of adjusting the said barrel so as to bring its bung hole U directly opposite the front end of the brushes *w, w'* which are folded forward

with a view of inserting them in the said bung hole. For a similar purpose a lateral motion can be imparted to the barrel B by turning a hand-wheel u mounted upon a screw threaded rod passing through a nut x (Fig. 11) rigidly fixed by the arms p, p' to the two axles of the carriage C which is capable of sliding upon the said axles. The driving gear consists of a slotted driving band B' connected as shown in Fig. 3 to the wheels of the carriage or truck C by means of straps q, q' and to the racks r, r' by the supports N N' fixed on each side of the band, one to the rack r and the other to the rack r' . This band carries a projection p on one side and a projection p' on the other both fixed to the racks r, r' respectively. These projections which are turned in different directions have for their purpose to reverse the motion of the band B' each time they come into contact with the lever A or A' in the manner hereinafter more particularly described.

A toothed wheel f^2 gears with the two racks r, r' and carries on its axis a hand-wheel F by means of which the supports N, N' can be adjusted by hand before starting, against the ends of the cask or barrel B. As the band B' travels it carries the supports N N' and the racks r, r' with it.

S is the hollow shaft of the scrubbing-machine and P P' the fast and loose pulleys mounted upon the sleeve J keyed on the said shaft.

S', S² are two longitudinal shafts (Fig. 1) mounted upon suitable bearings formed in the circular standards M and M'.

S³ (Fig. 2) is a transverse shaft carried at each end by bearings fixed to the bed plate I. Upon the shaft S' is mounted a grooved pulley i' gearing by means of a cat-gut or cord c with a similar pulley i mounted on the sleeve J. Motion is thus imparted by the shaft S to the shaft S' and thence to the gear-wheel o keyed thereon, which as it meshes with the gear wheel o' transmits the motion to the shaft S². Upon this shaft S² are mounted the two small bevel-wheels W' W² capable of gearing with the large bevel wheel W mounted on the shaft S³ (Figs. 2 and 6). The wheels W' W² (Fig. 10) have each a short coupling sleeve n' and n^2 having serrated edges meshing with those of the coupling sleeve n mounted on the shaft S², whenever the said sleeve is moved in one or the other direction by a lever L which may be of any suitable shape either as shown in Fig 1 or in Fig. 10. This lever carries a pin at its lower end, and is mounted at its upper end upon a transverse shaft S⁴ carried by suitable uprights u, u' . This shaft S⁴ carries the two arms A A' one on each side of the band B' and when one of these arms, the arm A for instance, is moved by the projection p of the band B' from the position shown in full lines in Fig. 3 to that shown in dotted lines in the same figure the coupling sleeve n is thrown into gear with the bevel wheel W² and the motion is reversed the carriage or truck C traveling now for-

ward, while when the arm A' is subsequently acted upon by the projection p' of the said band B' the motion is again reversed and the truck C moves now backward. The traveling band B' is moved by the two india rubber rollers R R' between which it passes. The roller R' and its motor wheel w^3 are mounted on a shaft a carried by the arm or lever z fulcrumed on an axis x (Fig. 5). When the band B' is not traveling the roller R' can be slightly depressed and farther separated from the roller R by throwing the two wheels w^2, w^3 partly out of gear for the purpose of adjusting the band B' when required.

The two wheels W² and W³ are held in gear by means of a screw b^{10} passing through the arms z' (Fig. 5) and bearing at its upper end against the underside of the bed-plate. Z' is a nut by means of which the position of the outer end of the arm z can be adjusted. The bevel-wheel W imparts a motion to the shaft S³, and hence to the roller R and to the wheel w^2 which are both mounted upon the sleeve X while the wheel w^2 gearing with the wheel w^3 imparts a motion to the shaft a . The sleeve X is capable of being connected to and disconnected from the said shaft S³ by the following arrangement, clearly shown in Figs. 6 and 7. The sleeve X has fixed thereto a pin or stud s which engages within a projection s' secured to the collar O likewise mounted upon the shaft S³ with which it is connected by a pin or stud s^2 moving in a circular slot of the latter in such a manner that as the brush in the barrel reaches either end thereof there is a pause, while the motion is being reversed, during which the said brush is allowed to thoroughly scrub or scour the said ends of the cask or barrel B this pause being equal to two revolutions of the shaft S³, *i. e.*, while the stud s' leaves one end of the circular slot s^3 in order to reach the other end thereof. Meanwhile the sleeve X engaged with the collar O is disconnected with the latter from the shaft S³ and hence the roller R ceases to turn and the band B' is stopped.

Having thus described our invention, what we claim as new, and desire to secure by Letters Patent of the United States, is—

1. In machinery for scrubbing the inside of casks or barrels and other similar vessels the improved scrubbing brush pivoted upon the nozzle of the main shaft and composed of two rods and jointed links furnished with wire or other bristle in combination with the mechanism for adjusting the cask or barrel, substantially as and for the purposes described.

2. In a cask scrubbing and scouring machine the barrel supporting carriage having its body or frame adjustably mounted upon the axles by means of arms B, B rigidly connected to the said axles, nut t' and the screw rod engaging said nut, the crossed arms e, e' rigidly secured to axles journaled in the carriage-frame, the toothed sectors f, f' rigidly secured to the axles of the crossed arms and the screw rod journaled in a swiveled bear-

ing upon the carriage frame and engaging a swiveled nut upon one of the sectors, substantially as herein described and shown and for the purpose set forth.

5 3. In cask scrubbing machines the carriage band B connected thereto and provided with projections $p p'$ and supports N N' in combination with the rollers R R' for moving the cask or barrel and holding the same in position substantially as and for the purpose described.

10 4. In a cask scrubbing and scouring machine the combination of carriage C, band B', connected thereto and provided with projections $p. p'$ and supports N. N', rollers R R' for

moving said band and carriage and the shifting mechanism consisting of shafts S' and its gear o , shaft S² its gear o' and bevel-wheels W' W³ with their couplings $n' n^2$ and shifting coupling n^3 , and shafts S⁴ carrying arms A. A' 20 and crank lever L, substantially as herein described and shown and for the purpose set forth.

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