

No. 607,097.

Patented July 12, 1898.

R. TROEHLER.
BARREL WASHING MACHINE.

(Application filed Mar. 15, 1898.)

(No Model.)

Fig 1

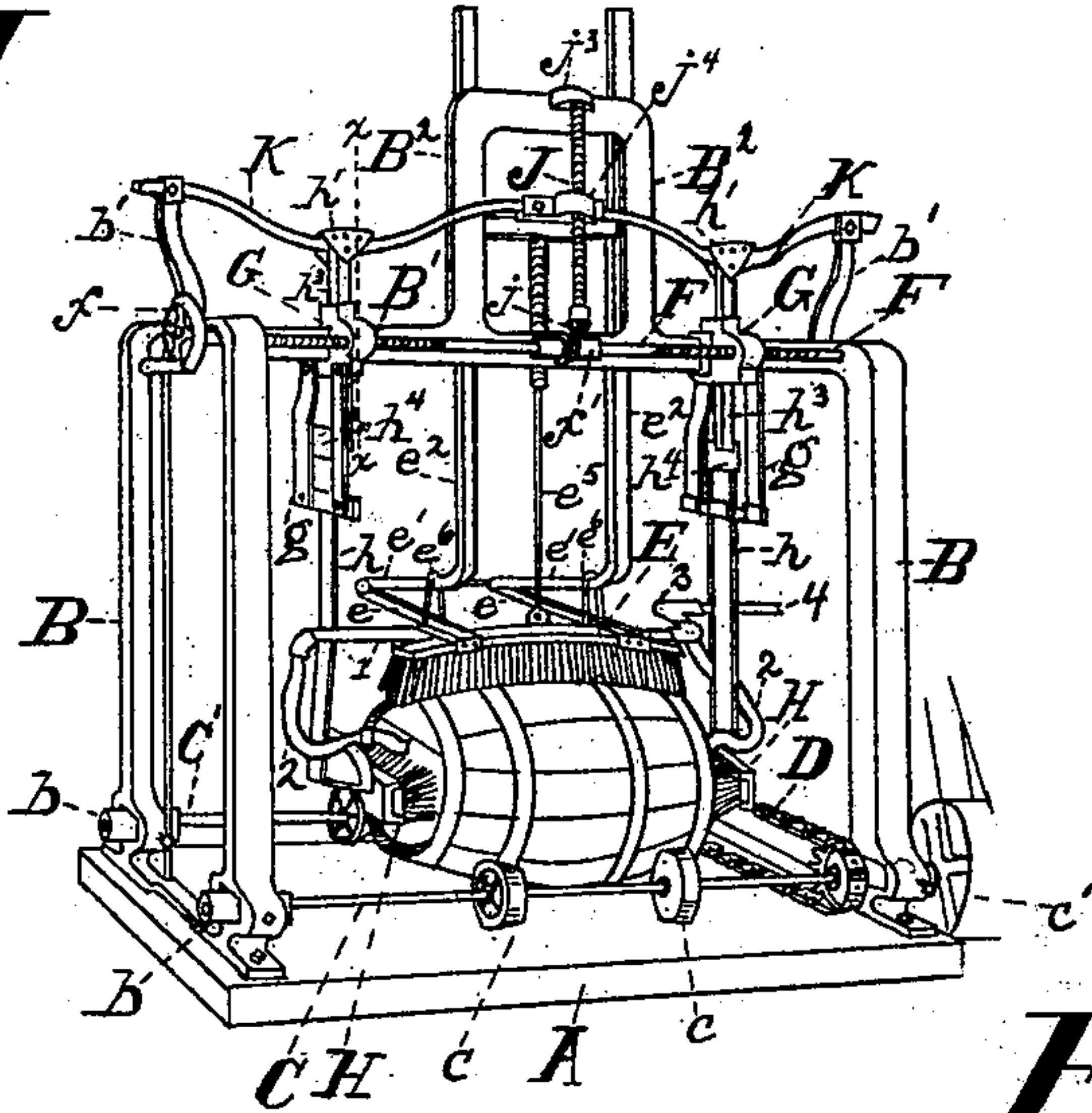


Fig 5

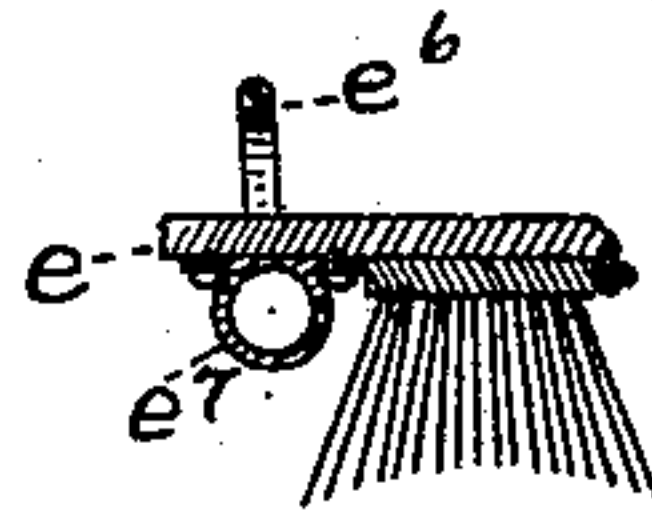


Fig 3

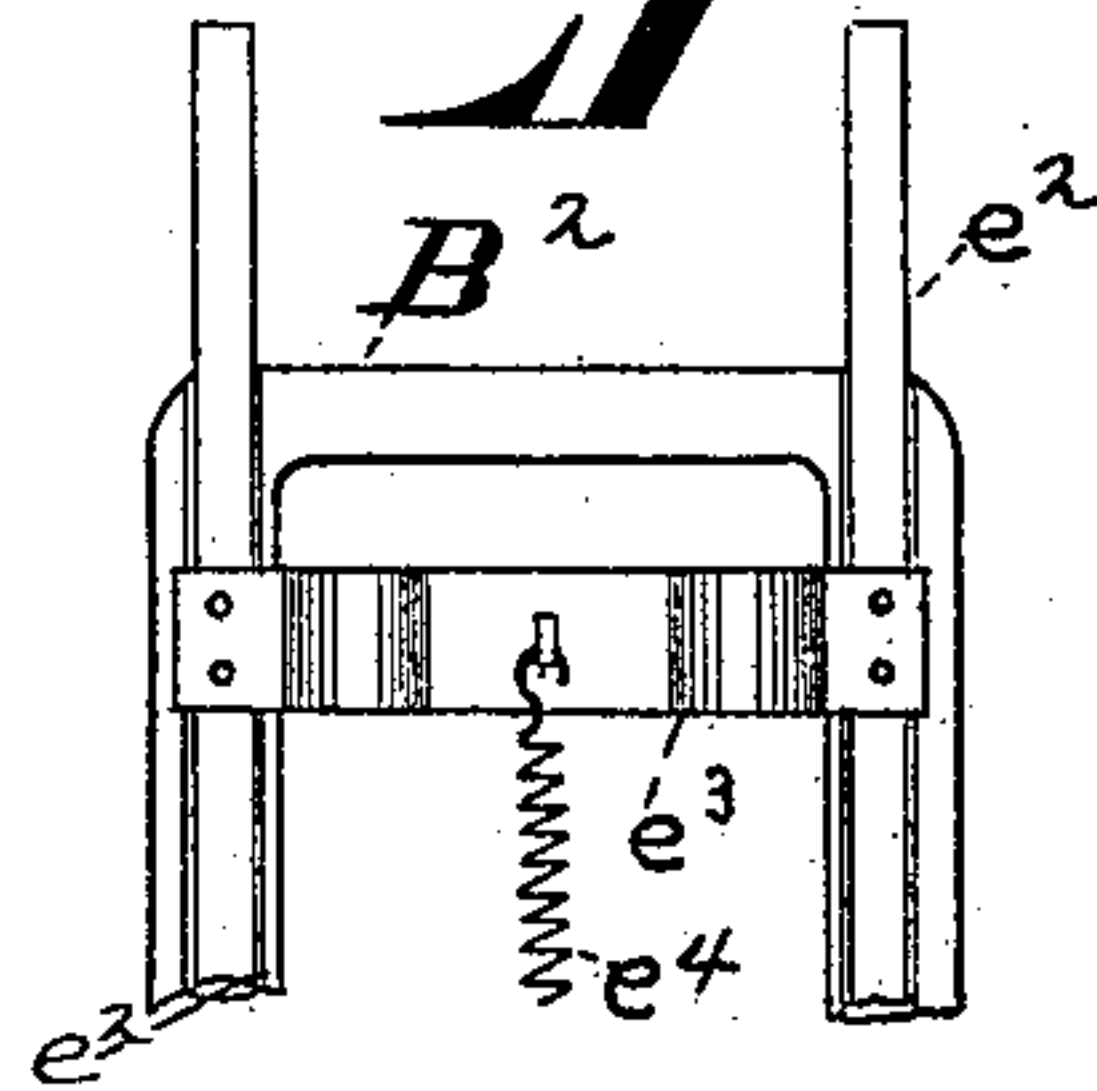


Fig 4

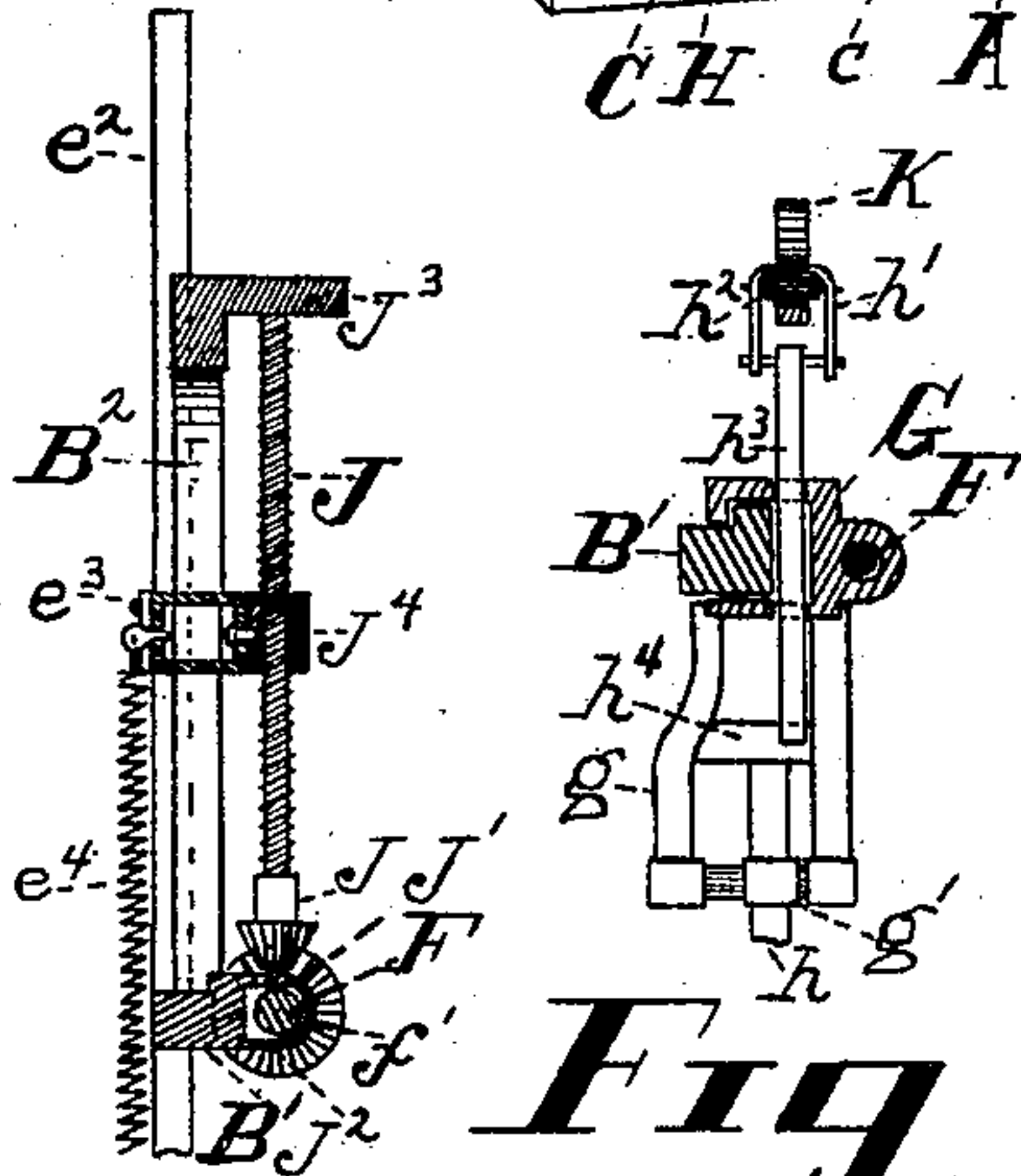


Fig 2

WITNESSES

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BARREL-WASHING MACHINE.

SPECIFICATION forming part of Letters Patent No. 607,097, dated July 12, 1898.

Application filed March 16, 1898. Serial No. 674,074. (No model.)

To all whom it may concern:

Be it known that I, RUDOLPH TROEHLER, a citizen of the United States, and a resident of Cincinnati, in the county of Hamilton and State of Ohio, have invented certain new and useful Improvements in Barrel-Washing Machines, of which the following is a specification.

My invention relates to that class of barrel or keg washing or cleaning machines in which the keg or barrel is rotated upon rollers, while brushes supplied with water are applied to the ends and periphery of the keg or barrel. Its object is to provide a compact reliable machine in which the brushes are so arranged that they are simultaneously and by a single action of a revolving screw-shaft adjusted to fit any size of keg or barrel, the brushes by the action being simultaneously carried away from the barrel to allow its removal and the replacement of another upon the rollers and by the reverse action of the shaft simultaneously brought to bear with elastic pressure against the periphery and ends of the keg.

The invention will be first fully described in connection with the accompanying drawings, and then particularly referred to and pointed out in the claims.

Referring to the drawings, in which like parts are indicated by similar reference letters and numerals wherever they occur throughout the various views, Figure 1 is a perspective view of my machine with the brushes in contact with the keg as they are in the process of washing or cleaning it. Fig. 2 is a detail view, upon a greatly-enlarged scale, in vertical transverse section, taken centrally through the upper cross-bar of the frame in the plane of the vertical screw-shaft. Fig. 3 is a detail view, in rear elevation, of the central upwardly-projecting guide-yoke, which is an integral part of the upper cross-bar, with the upper-brush-holding arms fitted to slide in it. Fig. 4 is a detail view, in vertical section, of one of the end-brush carriers, taken through line xx of Fig. 1. Fig. 5 is a detail view, in transverse section, through the upper brush and one of the clips for holding it.

Referring to the parts, A is the base of the machine; B, the end uprights, which are secured upon the base; B', the transverse brace

or cross-bar uniting the two uprights and having the U-shaped upper extension B² formed integral with it. In the base of the uprights are journal-boxes b , in which are journaled the shafts C and C', upon which the rollers c , which rotate the barrel or keg, are secured. The shaft C has secured upon its protruding end a driving-pulley c' , and upon both shafts, inside one of the side uprights, are secured sprocket-wheels coupled by a sprocket-chain D to rotate the shafts in the usual manner. The top brush E is secured by clips, as shown in Fig. 5, to the ends of arms e , which are hinged to the rearwardly-extending arms e' of the vertical bars e^2 , which are fitted to slide in guideways at the rear of the vertical uprights B², and are united by a cross-bar e^3 , which has an eyebolt projecting rearwardly from it, in which is hooked one end of the spiral spring e^4 , which is connected by a chain or rod e^5 centrally to the top of the brush E for the purpose of sustaining the brush by yielding pressure on the keg or vessel. The arms e have yokes e^6 secured to them, which pass over the rearwardly-extended arm e' of the brush-carrier. These yokes or loops sustain the brush, while allowing it a limited play under the action of the spring within the limit of the yokes.

In the upper transverse bars of the uprights B is journaled a shaft F, one end of which is provided with a right-hand screw-thread and the opposite with a left-hand screw-thread, which pass through screw-threaded boxes G, fitted to slide upon the upper transverse bar B' of the frame. The outer end of the shaft is provided with a hand-wheel f , by which the shaft is turned to spread the boxes apart or bring them together. Depending from these boxes are bracket-arms g , connected by a transverse bar at the bottom, which is provided with a loop g' to guide the spring-bars h , to which the end brushes H are secured.

The shaft F is centrally provided with a bevel-pinion f' , which meshes with a bevel-pinion j , secured upon the lower end of the screw-shaft J, which revolves in the step j' , projecting from a box j^2 on the upper cross-bar B', and in an upper bearing j^3 at the top of the upper extension B². The screw-shaft J is tapped through a nut j^4 , which is secured

to the transverse bar e^3 , which couples the vertical brush-carrying bars e^2 .

From the end uprights B extend bracket-arms b' , in the bifurcated ends of which is held by transverse pins one end of curved bars K. The opposite or inner ends of these bars are held in the nut j^4 , through which the screw-shaft J is tapped. These bars are straddled by U-shaped boxes h' and are adapted to ride over the top of the bars, having friction-rolls h^2 journaled near their inner ends to bear on the top of the curved bars. The arms of the boxes h' are perforated to receive a cross-pin, which passes through the rod h^3 , which passes through the screw-boxes G to the cross-heads h^4 , which are secured to the spring-bars h , which carry the end brushes H.

The water-pipe 1 passes through and is supported by circular boxes e^7 , secured to the under side of the upper-brush-holding arms e . This pipe is perforated on the side adjacent to the brush E to supply it with water and has couplings at its end to connect with the flexible pipes or tubes 2, which supply the end brushes with water, and also at one end with a coupling 3, to which the supply-pipe 4 from any source of water-supply is connected.

The operation of the device is as follows: In Fig. 1 the machine is in the position it occupies when the keg is placed within it and the brushes adjusted to bear against the periphery and ends for cleaning the keg. When the keg is cleaned, the screw-shaft F is rotated in the proper direction to carry the boxes G toward the end uprights, moving the end brushes away from the keg, and by the same operation the screw-shaft J is rotated through the bevel-pinions f' and j to carry the central brush-holding arms e^2 upward and draw the brush E away from the keg, which may now be removed and another one placed in position without stopping the machine, and by a reverse movement of the screw-shaft F the brushes are again brought to the operative position shown in Fig. 1.

In the position in which the parts are shown in Fig. 1 it is adapted for washing or cleaning a medium-sized keg; but a larger or smaller sized keg may be cleaned in the same machine without adjusting any of the parts. For instance, if a larger keg is to be cleaned the top and side brushes are carried far enough away from the position shown to receive a larger-sized keg. This will of course elevate the center-brush-carrying frame and also the inner ends of the curved bars K, which will raise the end brushes to some extent, and as these are separated the boxes h' , riding up the incline of the bars K, will further elevate them, so that the end brushes will come near the center of the ends or heads of the keg. If a smaller keg is to be employed, the inner ends of the curved bars K, being lowered to bring the center top brush down on the smaller

keg, will also lower the end brushes correspondingly and simultaneously.

It is obvious that many mere mechanical changes may be made in the machine without varying the principle of the invention, and hence I should consider all mere mechanical changes within its spirit and scope.

What I claim is--

1. In a barrel-washing machine the combination of the frame, the barrel-supporting rolls and shafts journaled in the bottom thereof, the top and side brushes supported on carriers fitted to slide vertically in said frame, the right and left screw-shaft journaled in the upper part of said frame, the sliding screw-boxes on the upper cross-bar of the frame through which the said screw-shaft passes, the end-brush carriers carried by said boxes, the bevel-pinion centrally secured upon said screw-shaft, a vertical screw-shaft fitted above the frame, the pinion on the lower end of said vertical screw-shaft to mesh with the pinion on the right and left screw-threaded shaft, the frame carrying the upper brush fitted to slide vertically in the upper extension of the main frame, the screw-threaded box secured to said brush-carrying frame through which the vertical screw-shaft is tapped, and the hand-wheel for operating the screw-shaft and simultaneously separating the top and end brushes when turned in one direction, or bringing them to the opposite position when turned in the opposite direction, substantially as shown and described.

2. In a machine of the character described the combination of the transverse shaft having right and left screw-threads on its opposite ends, screw-tapped boxes through which said shaft passes fitted to slide upon the top cross-bar of the frame, spring-bars secured to said boxes, the end brushes secured to the lower end of said spring-bars, the top-brush-carrying frame fitted to slide vertically in the machine-frame having hinged arms at its lower end, the top brush secured to said arms, the yokes secured to the brush-holding arms and passing around the rigid arms of the brush-carrier to permit a limited play of the brush within said yokes, the screw-threaded box secured to the upper part of the brush-frame, a vertical screw-shaft journaled in the frame passing through said screw-threaded box, a pinion on the transverse shaft and a pinion on the lower end of said vertical screw-shaft, a spring connection between the upper end of the frame and top of the brush to hold it with yielding pressure on top of the keg, and the hand-wheel to revolve the transverse shaft and simultaneously separate the brushes or bring them together, substantially as shown and described.

3. In a machine of the character described the combination of the frame, keg-supporting rolls and shafts and driving mechanism, the transverse shaft having right and left screw-threads upon its opposite ends journaled in

the upper part of the frame, the sliding screw-threaded boxes through which said shaft is tapped, said boxes being adapted to slide apart or together as the screw-shaft is revolved in one or the other direction, the end-brush-carrying guides depending from the under side of said boxes, the top-brush-holding frame fitted to slide vertically in the frame of the machine, having a cross-bar near its upper end to which is secured a screw-threaded nut or box, a screw-shaft passing through said box and journaled in the upper part of the frame, bevel-pinions on both screw-shafts meshing together to separate the brushes or bring them together as the transverse screw-shaft is revolved to the right or left, bracket-arms extending from the top uprights of the machine, curved bars having their outer ends pivoted in said bracket-arms and their inner ends pivoted to the opposite ends of the screw-threaded box which is connected to the top-brush frame, U-shaped boxes passing over said curved bars, vertical sliding bars coupled to said boxes and passing through the sliding boxes for separating the end brushes, bars coupled to the lower end of said rod and guided by the frames depending from the under side of said sliding boxes, and the end brushes secured to the lower end of said bars, substantially as shown and described.

4. In a barrel-washing machine of the character described the combination of the frame having a central upright from its upper cross-brace to guide the top-brush carrier, a transverse shaft journaled in the upper part of the frame in front of the top cross-brace, said

shaft having right and left threads upon opposite ends, a bevel-pinion secured centrally upon said shaft to mesh with a similar pinion on the lower end of a vertical screw-shaft having its bearing in the cross-brace and top bar of the center upright, the pinion on the lower end of said shaft, sliding screw-boxes carried by the transverse screw-shaft to carry the end-brush carriers away from or toward the center, a screw-box secured to the top-brush carrier to elevate or lower the top brush simultaneously with the spreading or contraction of the end-brush carriers, the curved bars having their outer ends coupled in the end upright and their inner ends coupled to the top-brush carrier, the boxes to ride over the said bars, the friction-wheels interposed between the top of the boxes and bars, the brush-carrying frames coupled to the screw-boxes, vertical bars coupled to boxes on the curved bars passing through the sliding screw-boxes and at their lower ends to the end-brush carriers, the end-brush carriers consisting of spring-bars, and the spring connection between the top brush and the frame, whereby the brushes are yieldingly held in contact with the barrel, simultaneously drawn away from it to permit its removal and the replacement of another, and the brushes simultaneously adjusted to fit barrels of different sizes, substantially as shown and described.

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Witnesses:

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