

No. 629,743.

Patented July 25, 1899.

J. FAUST.
BARREL WASHER.

(Application filed Oct. 6, 1898.)

(No Model.)

3 Sheets—Sheet 1.

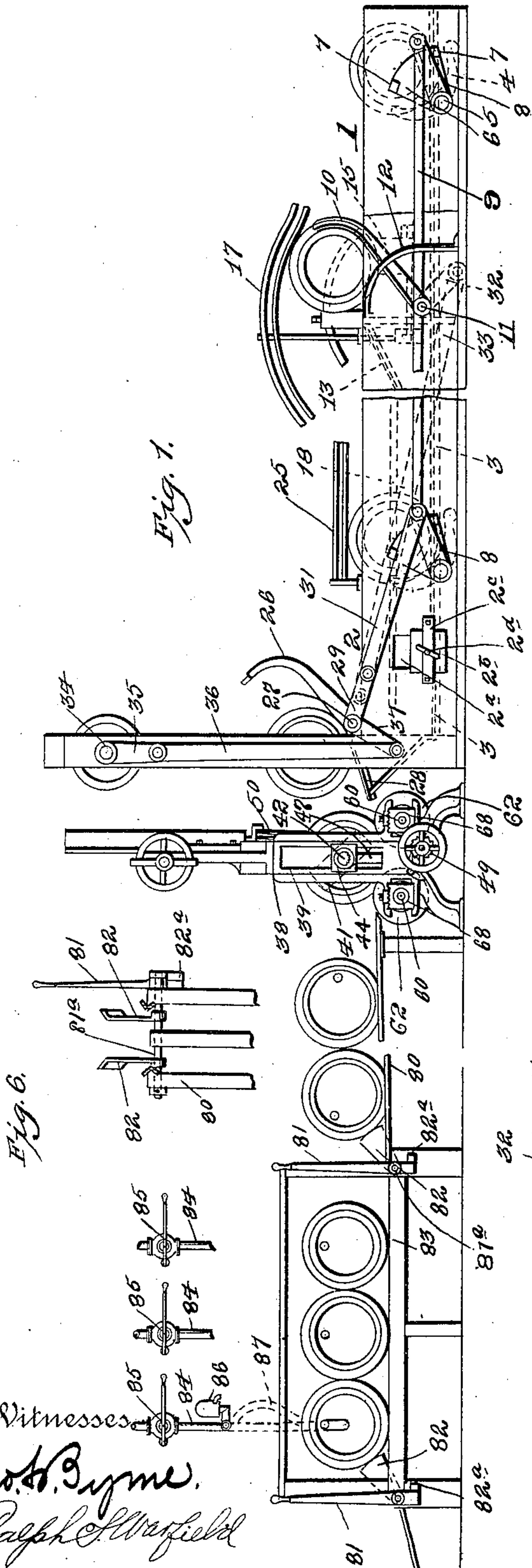


Fig. 1.

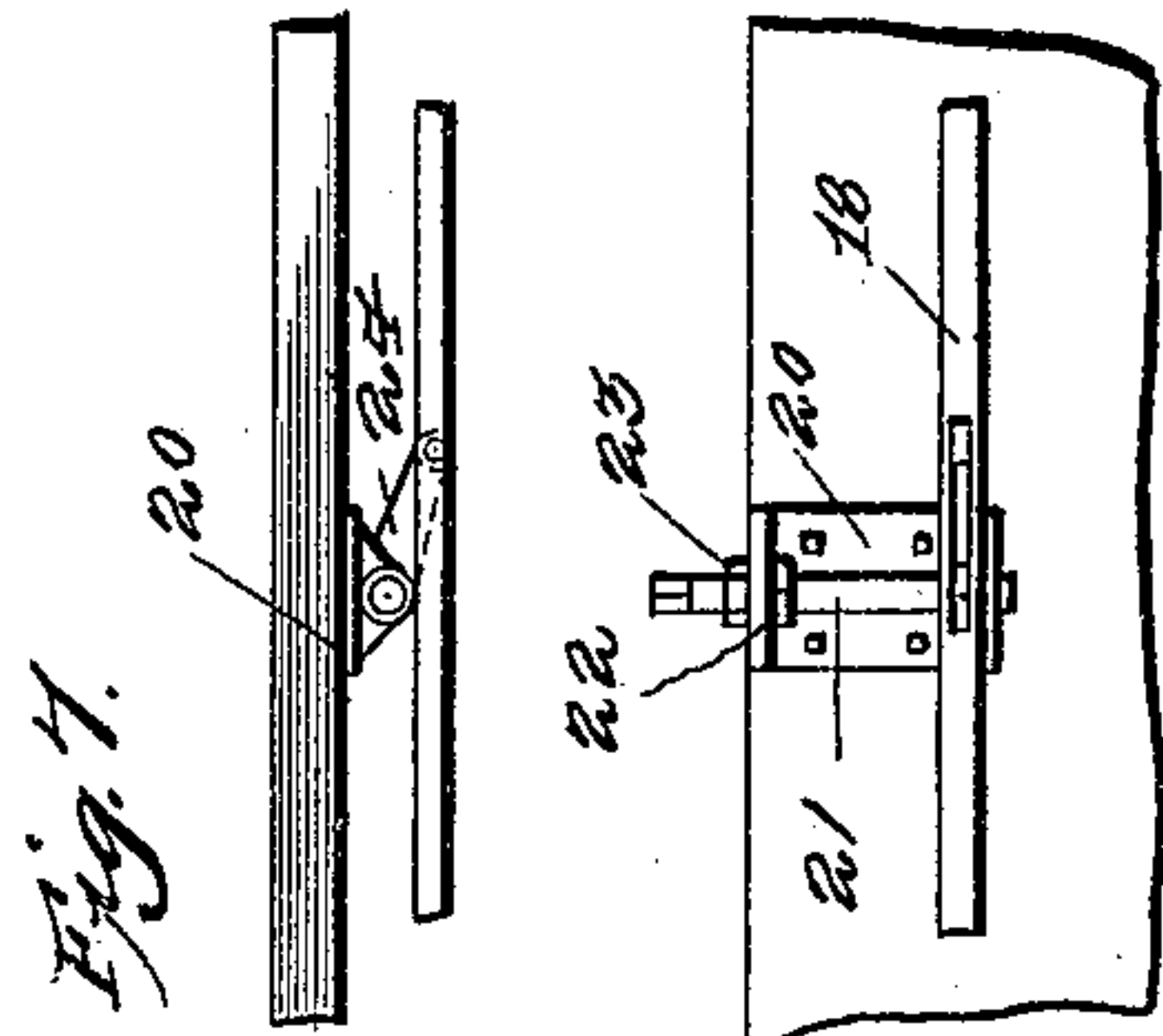


Fig. 7.

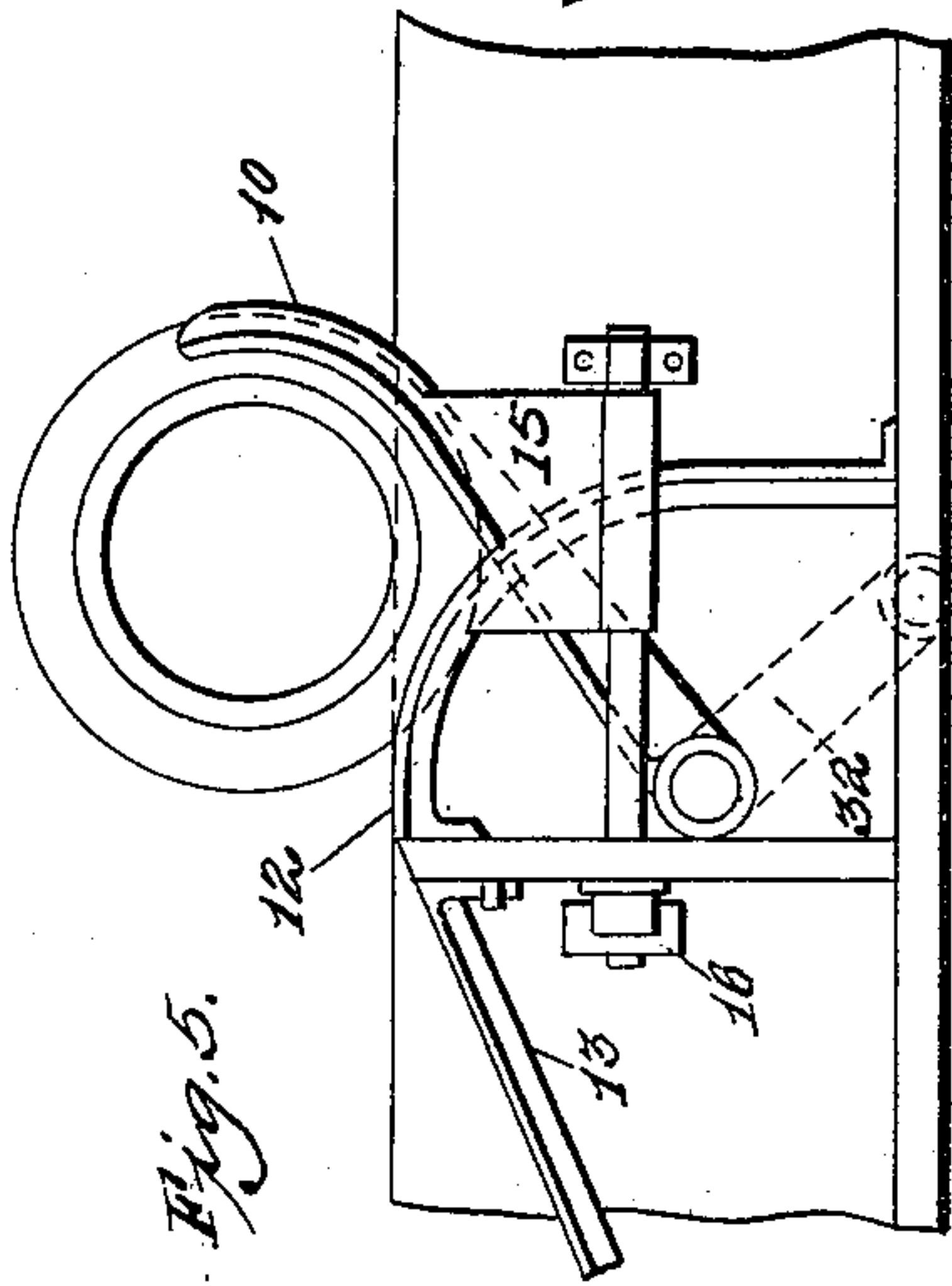


Fig. 5.

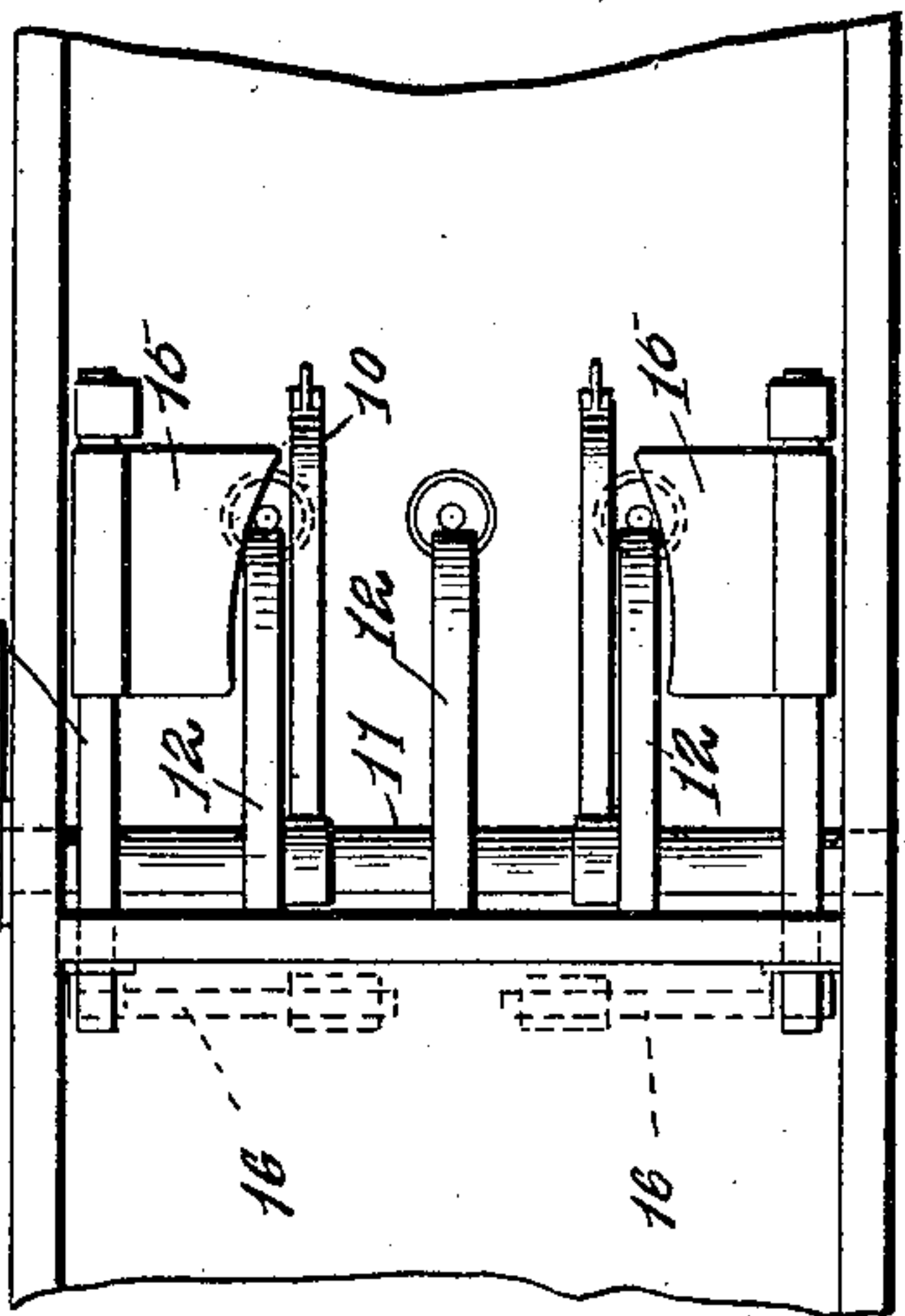


Fig. 4.

Fig. 8.

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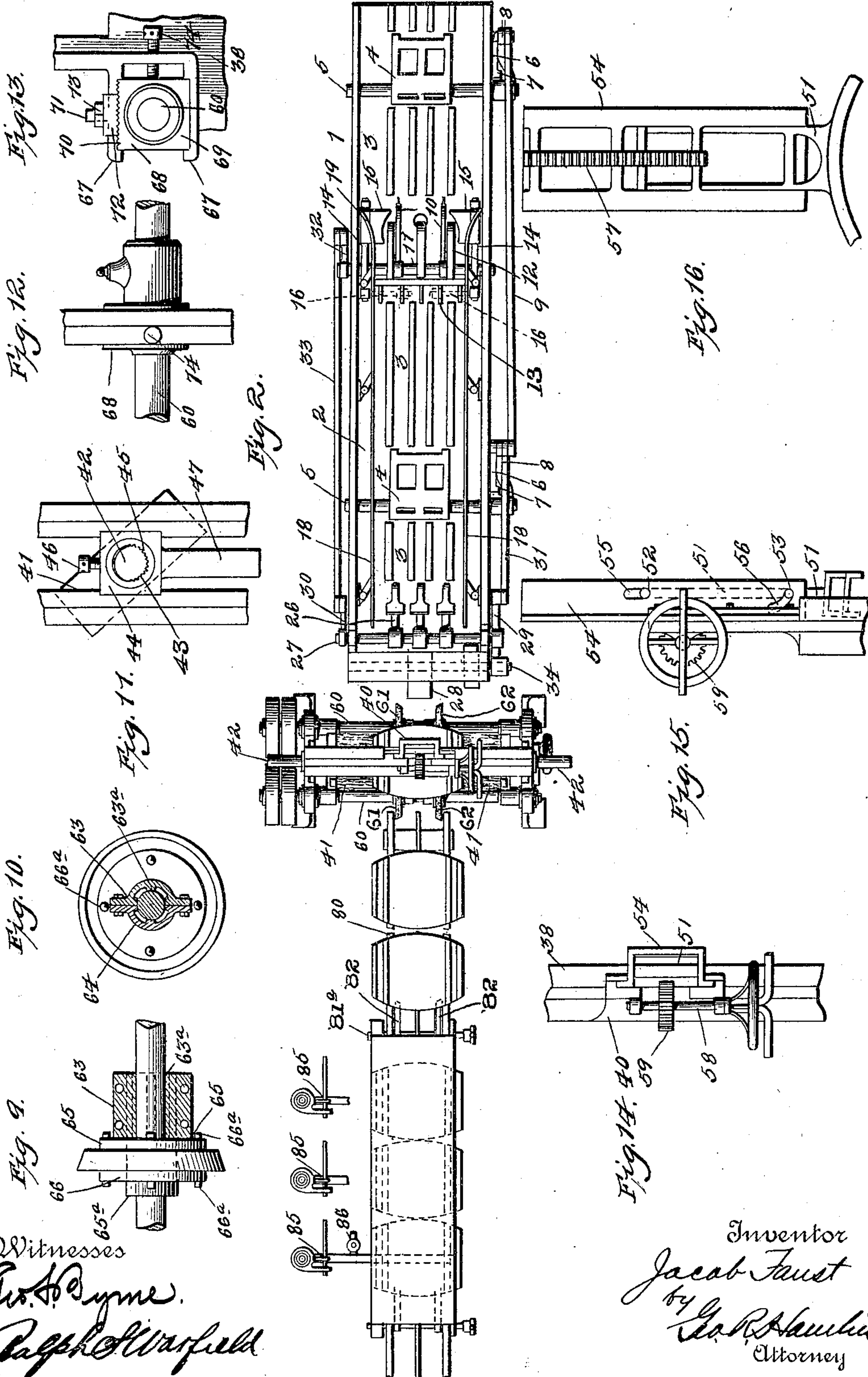
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3 Sheets—Sheet 2.

(No Model.)



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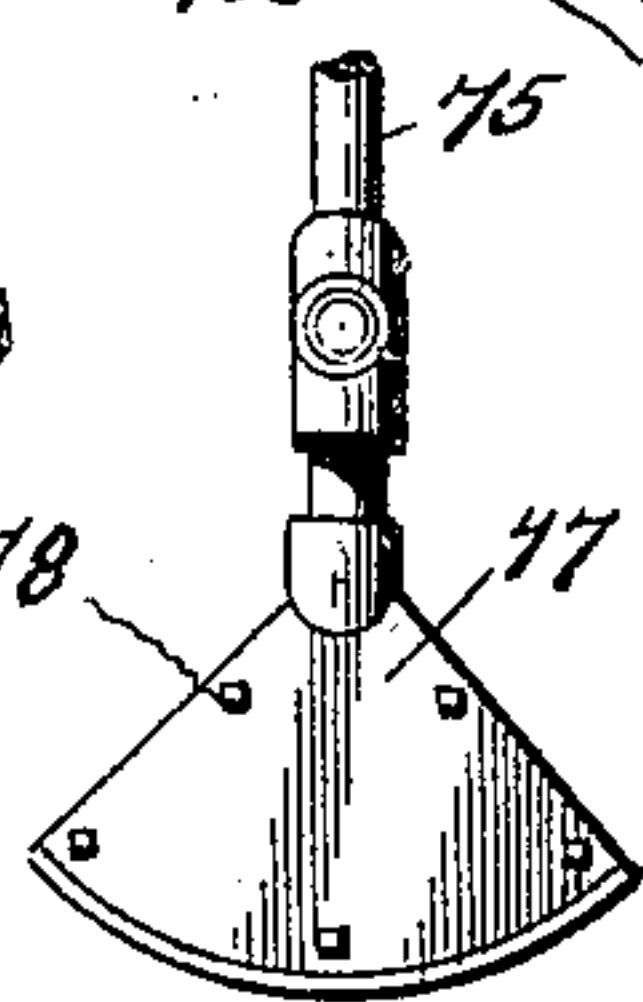
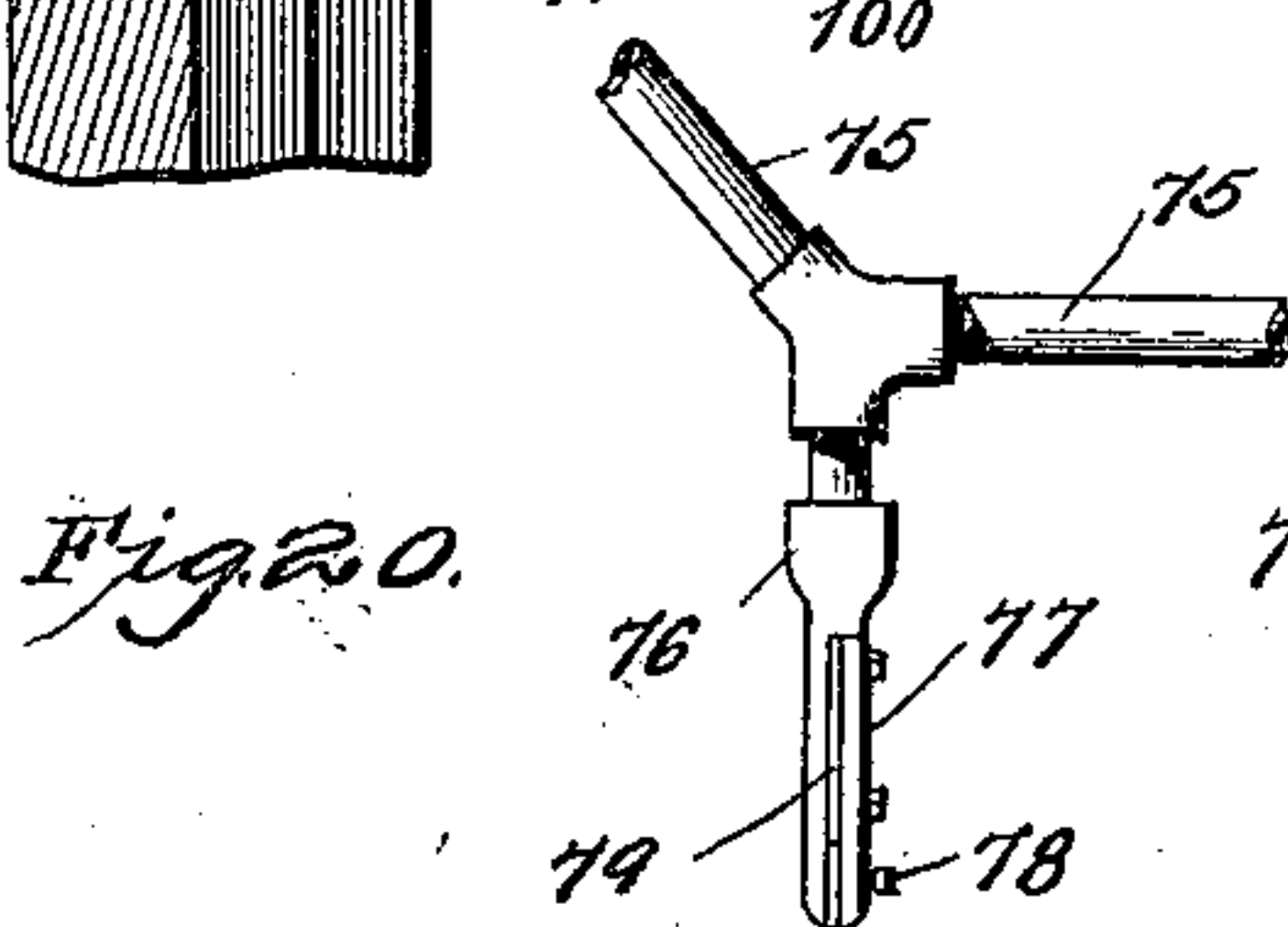
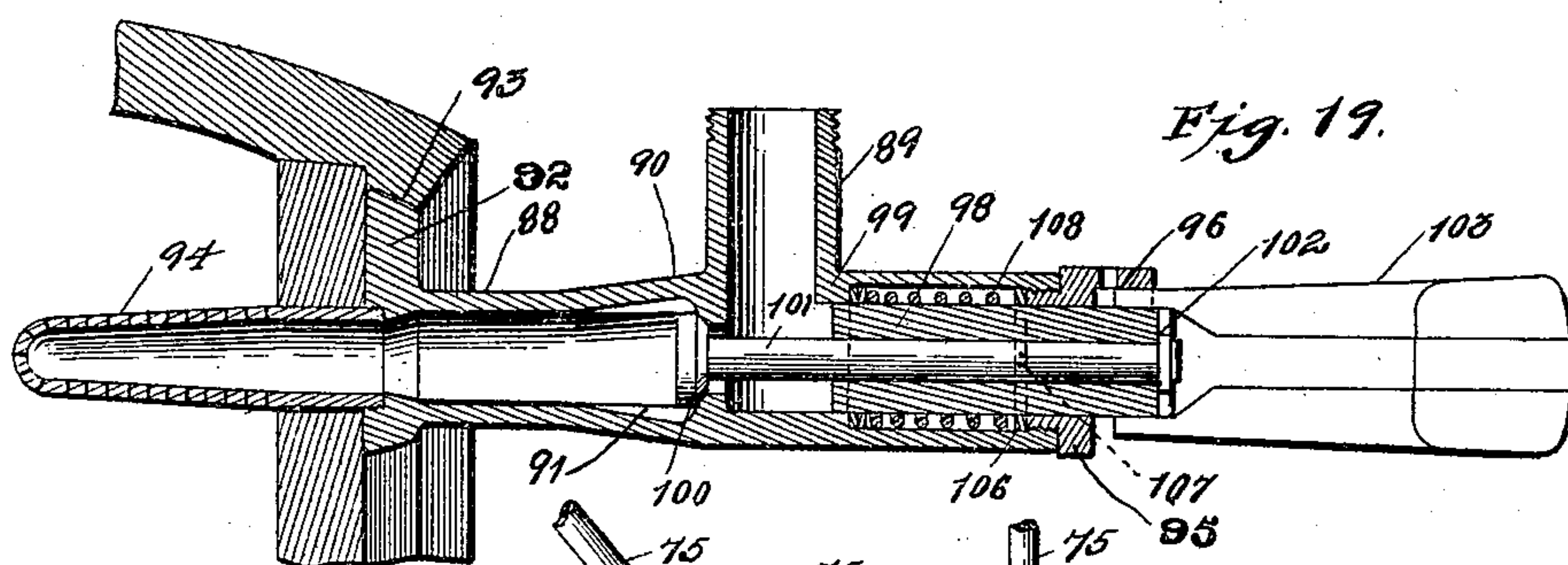
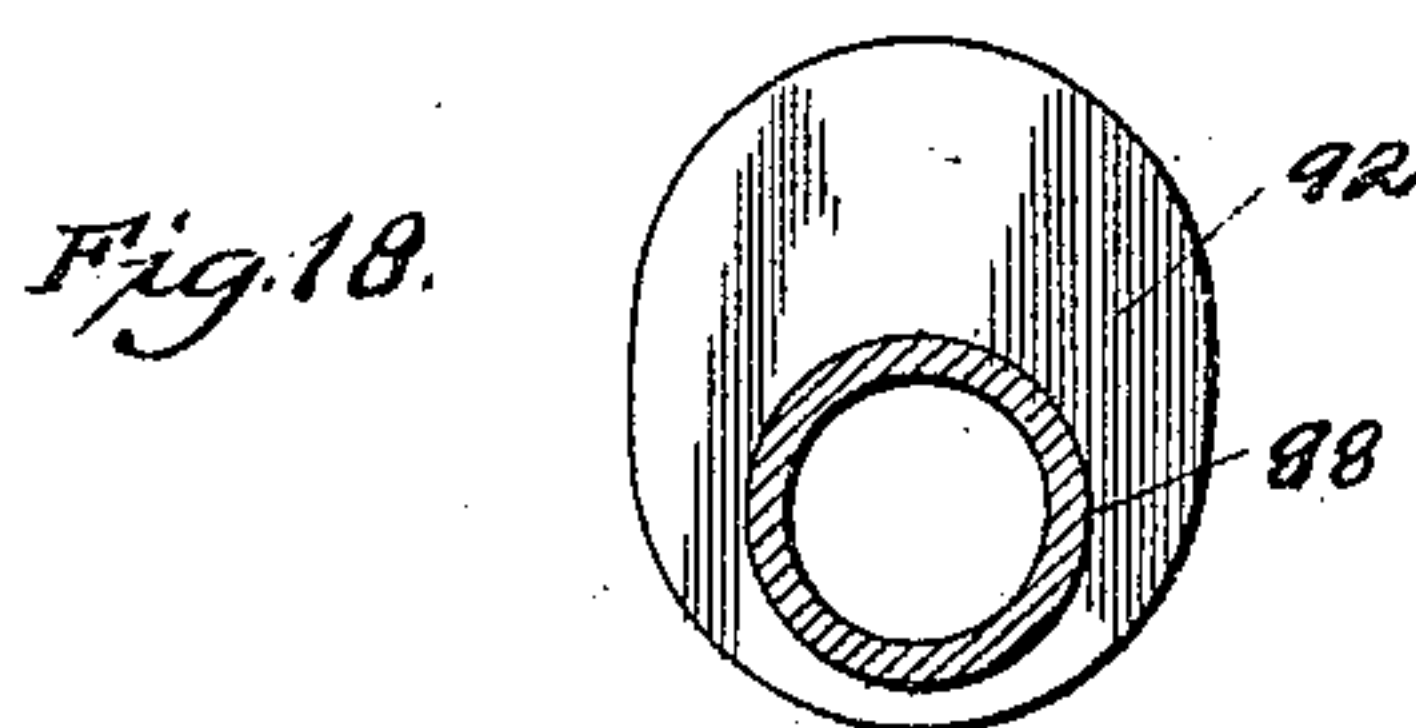
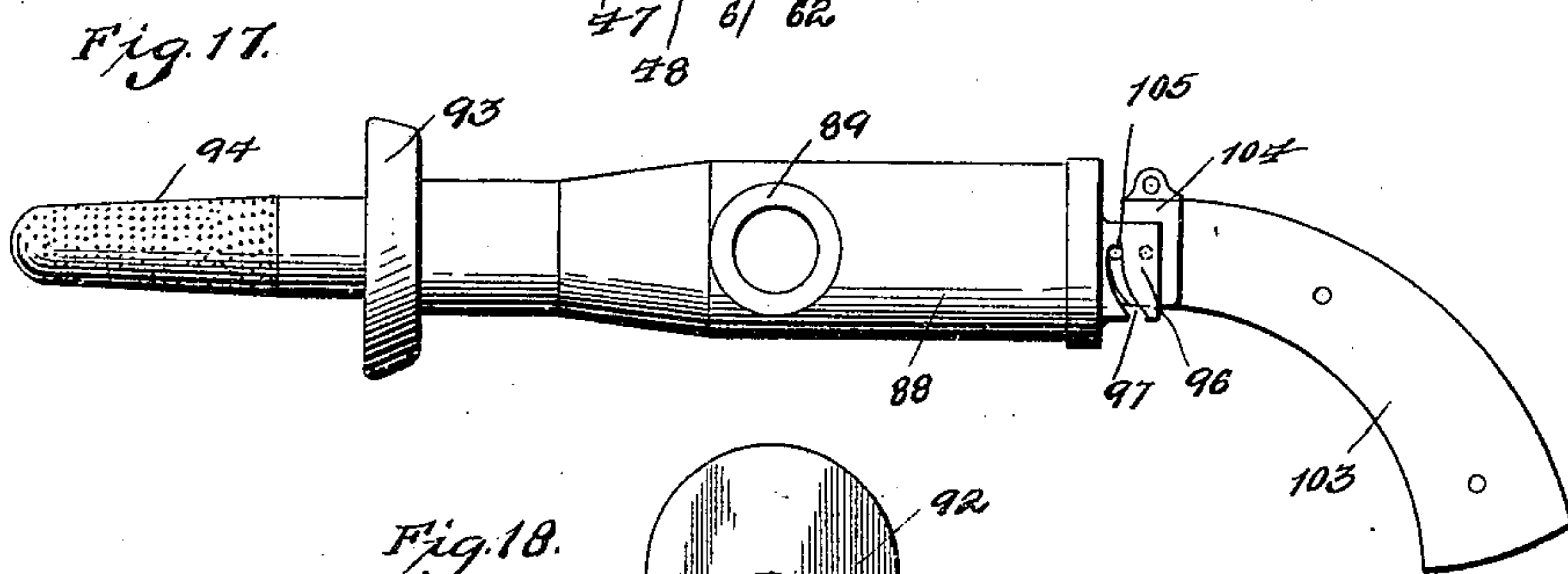
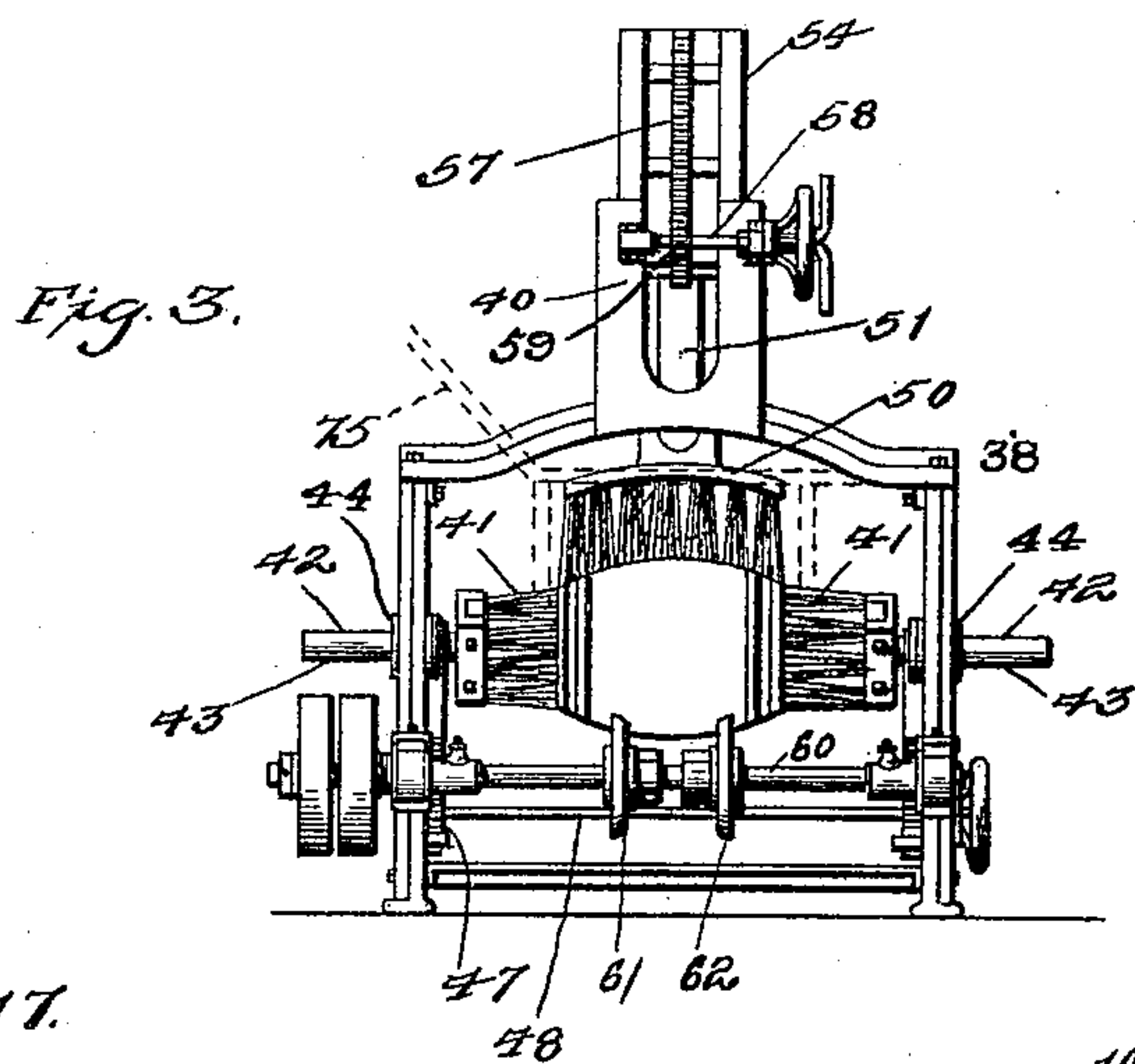
J. FAUST.

BARREL WASHER.

(Application filed Oct. 6, 1898.)

(No Model.)

3 Sheets—Sheet 3.



Witnesses

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UNITED STATES PATENT OFFICE.

JACOB FAUST, OF SCRANTON, PENNSYLVANIA, ASSIGNOR OF ONE-THIRD
TO CHARLES ROBINSON, OF SAME PLACE.

BARREL-WASHER.

SPECIFICATION forming part of Letters Patent No. 629,743, dated July 25, 1899.

Application filed October 6, 1898. Serial No. 692,818. (No model.)

To all whom it may concern:

Be it known that I, JACOB FAUST, a citizen of the United States, residing at Scranton, in the county of Lackawanna and State of Pennsylvania, have invented certain new and useful Improvements in Barrel-Washers; 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.

My invention relates to barrel-washers.

The object of the present invention is to provide a machine comprising improved mechanisms for soaking, brushing, or scrubbing and rinsing or washing the surfaces of barrels or kegs which will insure the proper cleansing of the same with rapidity in an automatic manner.

The invention is embodied in certain improved features and mechanisms adapted to cooperate in a novel manner, set forth in detail in the following description, and recited in the appended claims.

In the accompanying drawings, Figure 1 is a side elevation; Fig. 2, a plan; Fig. 3, an elevation of the brushing mechanism; Fig. 4, a detail plan view showing the barrel-rests and adjacent mechanism; Fig. 5, a detail side elevation of the same; Fig. 6, a detail end elevation of the barrel-blocking mechanism; Figs. 7 and 8, details of an adjustable connection for the barrel-guides; Figs. 9 and 10, details of the barrel-supporting wheels and clamps for securing them to their shafts; Fig. 11, a detail view of one of the devices for holding the end brushes; Figs. 12 and 13, details of the adjustable journal-boxes for the barrel-supporting-wheel shafts; Figs. 14, 15, and 16, details of the devices for suspending the upper or stave brush; Fig. 17, a side view of the interior washer; Fig. 18, a cross-section thereof; Fig. 19, a longitudinal section of the interior washer as applied to a barrel, and Figs. 20, 21, and 22 details of the sprinkler for the brushes.

A trough 1 is employed, which has a soaking-tank 2 of sufficient length to accommodate quite a number of barrels. In the sides of the soaking-tank are vertical overflow slots or openings 2^a, which are adapted to be covered partially or wholly by slide-plates 2^b,

held at any point in brackets 2^c by thumb-screws 2^d. The raising of the slides cuts off the overflow and their lowering increases it, so that the quantity of water in the tank can be brought to the proper height for either barrels or kegs. In the bottom of the trough are skids 3 3 3, along which the barrels or kegs are rolled while going through this part of the machine. Near the receiving end of the trough and adjacent the first skid is an admitter, which consists of a curved rack 4, secured to a rock-shaft 5, journaled in the sides of the trough. A sector 6 is also keyed on shaft 5 at one end thereof, being provided with lugs 7, which are separated quite a distance from each other. A crank 8, loose on shaft 5 and movable independently thereof, has its free end positioned between the lugs and adapted to engage with them alternately when rocked by the mechanism hereinafter described, whereby the shaft and rack are rocked back and forth intermittently. A shaft, rack, segment, and crank similar to those just described are located in the soaking-tank 2 and operate simultaneously with the admitter for the purpose of transferring the barrels from the tank to a lifting-rack hereinafter described. A rod 9 connects the free ends of the cranks 8 together.

Positioned adjacent the right-hand end of the soaking-tank and outside thereof is a lifting-rack 10, composed of arms secured to a rock-shaft 11, said arms having curved end portions. The second skid-section 3 is located between the admitter and this lifting-rack, and the latter receives the keg or barrel from it.

Between and outside the arms of rack 10 are positioned vertically-disposed curved skids 12, on which the keg rolls when it is being lifted by said rack. An inclined skid 13 is employed for the barrel to roll down when passing from skids 12 into the soaking-tank.

Barrel-rests are employed for retaining the barrel after it has been raised by rack 10 until it is displaced by the ascent of another barrel. There are two of these rests designed to support the barrel adjacent its ends, each consisting of a shaft 14, journaled in suitable bearings connected to the sides of the trough, and rest-plates 15, secured to the shafts, and

weighted arms 16, also connected to the shafts, which are disposed at right angles to the rest-plates, so that the latter are kept normally in horizontal position. These rest-plates project inwardly from the sides of the trough in the path of the end portions of the barrel and are brushed aside by the latter when it is being elevated by the lifting-rack; but after the barrel has passed they resume their normal position, and when the lifting-rack descends the barrel is deposited on them and they support it until it is displaced by the next barrel.

Supported above the skids 12 and 13 by standards arising from trough 1 is a curved retaining-guard 17, which prevents upward displacement of the barrels when on said skids.

The numerals 18 designate barrel-guides located at the sides of the trough at a height to bring them on a line with the horizontal axes of the barrels. These guides extend along the sides of the soaking-tank and the sides of the trough adjacent the skids 12 and 13, at which places they are curved, and they terminate in outwardly-flared ends 19, so as to offer no obstruction to the barrel being lifted by rack 10. The means for connecting these guides to the sides of the trough at different points consists of a bracket 20, a spindle 21, journaled in the bracket and having a collar 22, which bears against one of the ears of the bracket, and a clamping-nut 23, bearing against the other side of said ear, and a link 24, secured to the spindle and pivoted to the guide. On unscrewing the nuts slightly the spindles can be turned, which will move the guides outwardly from or inwardly toward the side of the trough, thus causing them to approach sufficiently close to the ends of the barrels to maintain the latter directly at right angles to the length of the trough. This adjustability of the guides makes them adaptable to barrels of different lengths.

A guard 25, supported above the soaking-tank by suitable standards, keeps the barrels at a proper level in the water in the tank.

Adjacent the end of the tank is a lifting delivery-rack 26, consisting of curved arms secured to a rock-shaft 27. This rack is adapted to receive the barrel from the third skid-section 3 and to deliver it onto an inclined skid 28, from which it rolls to the brushing or scrubbing mechanism. On the opposite ends of rock-shaft 27 are cranks 29 and 30, the former of which is connected to crank 8 by a bar or link 31 and the latter to a crank 32, fixed on rock-shaft 11, by a bar 33. At the end of tank 2 is an upright frame, in which is journaled a pulley-carrying drive-shaft 34, having a fixed crank 35. A connecting rod or bar 36 is pivoted to this crank and to a crank 37, fixed on shaft 27. The operation of the drive-shaft 34 puts all the transferring mechanisms heretofore described into action.

The frame which supports the various devices for brushing or scrubbing the barrel is

shown at 38, the same having guides 39 at its sides for the side brushes and an upright guide 40 for the upper brush. The end brushes are shown at 41, the same being secured on the ends of stub-shafts 42, having longitudinally-extending ridges or teeth 43. Boxes 44, composed of separable halves which are located on opposite sides of guides 39, loosely receive the shafts 42 and are provided with teeth 45, corresponding to those on the shafts and adapted to be made to engage therewith by set-screws 46. The boxes are supported by upright racks 47, a hand-operated shaft 48, carrying pinions meshing with the racks, being employed to simultaneously raise and lower the brushes. Pawl-and-ratchet mechanism 49 is provided for the purpose of locking the shaft. This mechanism insures the maintenance of the end brushes in the same position horizontally at any desired height, according to the size of the barrel. The end brushes are disposed in inclined position—i. e., with their planes at an angle to the horizontal—their lowest end being the one which the barrel first touches. The advantage of this position is that the barrel does not strike the entire face of the brush at once, as in former constructions, but only a part of it, and the brushes offer but slight resistance to the entrance of the barrel until it is well in between them, so that there is no possibility of its being repelled by such resistance, as is the tendency in those machines where the barrel strikes the entire faces of the brushes when entering between them. By loosening screws 46 the brushes can be turned to bring them to any desired angle.

The upper or stave brush 50 is equipped with an upright slide 51, having trunnions 52 at its upper end and trunnions 53 near its lower end. A traveler 54, slidable vertically in upright guide 40, is provided with straight vertical slots 55, which receive trunnions 52, and with curved slots 56, which receive trunnions 53. The member 51 is slidable within this traveler. The traveler has a vertical rack 57. A hand-operated shaft 58, journaled in boxes on frame 38, carries a pinion 59, which meshes with rack 57. Means are thus provided for elevating and lowering the brush to the desired height. When the barrel strikes the stave-brush 50, the impact knocks the brush backwardly and upwardly, which is permitted by the movement of the trunnions in slots 55 and 56, thus minimizing the resistance offered to the entrance of the barrel between the brushes and insuring the proper positioning of the brush relatively of the barrel when the brush again assumes normal position.

In the lower part of frame 38 are twin shafts 60, designed to be driven in the same direction, each of which carries barrel-supporting bevel-wheels 61 and 62, preferably of rubber, which are separated a suitable distance. For each wheel there are two clamp-sections 63 and 64, embracing the shaft and secured to-

gether by suitable fastenings. They are provided with separated integral ribs 63^a, which bear against the shaft and by keeping the main portions of the sections away therefrom prevent them from rusting on it after continued use. With the old form of fastening the collar, which secured the wheel to the shaft, became rusted on the latter by being constantly subjected to water, and this rendered adjustment difficult. This defect is obviated by the foregoing construction. The clamp-section 63 has a disk 65 and a hub 65^a, formed integral therewith, the former disposed against the face of the wheel and the latter passing through it. A disk 66 of the same size as disk 65 is loose on hub 65^a and lies against the face of the wheel. Fastenings 66^a, passing through the disks and the wheel, secure them to it. By loosening clamp-section 64 the entire fastening and the wheel can be adjusted to any point on the shaft.

Frame 38 has arms 67, between which slide journal-boxes 68 for the ends of shafts 60, said boxes having flanges 69 overlapping the arms to prevent their displacement and provided with teeth or serrations 70. On one of the arms is a threaded stud 71, which passes through a locking member 72, that straddles the arm. The teeth on this locking member engage those on the box 68. A nut 73 holds the locking member in engagement with the box; but upon loosening said nut the box can be shifted by screw 74. By adjusting the foregoing boxes the shafts 60 can be moved toward or away from each other to suit the size of the barrel to be treated.

A separate sprinkler is employed for each brush, said sprinklers being connected together by water-pipes 75. Each sprinkler consists of a segmental plate 76, positioned to have the water from pipe 75 flow over one of its faces, a segmental cover-plate 77, adjustably secured to plate 76 by screws 78, and separating-strips 79, interposed between the plates. The water issues from between the plates in a thin sheet, and the size and rate of flow are regulated by the thickness of the strips 79 and the proximity of the plates to each other. The sprinkler for the stave or top brush is disposed in front of the same, and those for the end brushes are located above them at right angles to their shafts, so that the brushes will be properly sprinkled no matter what the degree of their inclination may be.

After passing through the brushing mechanism just described the barrels are received on an inclined skid 80, where they are held by blocking mechanism. This blocking mechanism comprises a shaft 81^a, mounted in skid 80, a lever 81, and sector-blocks 82, secured to the shaft at an angle to each other. The lower end of the lever is extended down below the shaft, and a stop 82^a is provided on the skid to engage said end. When the lever is in vertical position, the blocks are presented to the barrels, and the pressure the

latter exert on them is resisted by the stop, so that there is no movement of the mechanism. When the lever is turned, however, the blocks are lowered beneath the barrels, which can then roll onto another skid 83, where the barrels are held by mechanism similar to that just described. Here they have their interiors washed by the improved mechanism now to be described.

The numerals 84 designate water-supply pipes having suitable cut-off valves 85 and safety-valves 86, which are employed to prevent bursting of the flexible hose 87 when the washing mechanism is temporarily out of use.

The numeral 88 designates a valve casing or shell having a coupling 89, to which hose 87 is connected, and a valve-seat 90 below the same. Below the valve-seat the shell is enlarged and integral ribs 91 are provided, against which the valve slides for the guidance thereof. Integral with the lower part of the valve-casing is an eccentrically-arranged boss 92, having a beveled edge 93, and into this boss is screwed a tapering perforated nozzle 94, of a size to snugly fit the tap-hole of a barrel.

The numeral 95 designates a gland which has a portion threaded into the upper end of the valve-casing, this gland being provided with a curved flange 96 on its upper face, which has an upwardly-curved slot 97. In the upper part of the valve-shell is a cylindrical valve-stem casing 98, which is rotatable in the gland 95 and a seat 99, formed in the casing. The valve is shown at 100, the same being adapted to fit the lower side of seat 90, and the valve-stem 101 passes up through the valve-stem casing 98, being held therein by a nut 102, screwed on its upper end and abutting on the upper end of the valve-casing 98. A curved handle 103 fits over the upper end of the valve-stem casing and the nut and is secured to the former by a clamp-collar 104, which it carries. This clamp-collar has a stud 105, which is adapted to travel in slot 97. A washer 106 encircles the upper part of the valve-stem casing and bears against a pin 107, projecting therefrom, and a coil-spring 108, encircling said casing and seated on metal and rubber washers on seat 99, bears against the washer and keeps the valve-stem casing and stem normally raised and the valve seated. The stud 105 is then at the upper end of slot 97.

In using the washing mechanism the nozzle 94 is inserted in the tap-hole of the barrel until the boss lies against the end thereof. The handle 103 is then turned, which causes the boss 92 to wedge in under the rim on the end of the barrel, thus securing the device, and the stud 105 being made to travel in the slot causes the valve to become unseated. The water then continues to flow through the nozzle into the barrel until the handle is released, whereupon the spring returns the parts to normal position, thus closing the valve. The barrel or keg is first skidded onto the admit-

ter, which deposits it on the second skid. The lifting-rack then elevates the barrel along the curved skids 12, opening the barrel-rest plates 15, which close under the barrel and support it. When the rack descends for another barrel and lifts it, the first barrel is pushed up off the rest-plates and along the skids and passes down into the soaking-tank, while the barrel just lifted is deposited on said plates. The barrels accumulate in the soaking-tank in a row, being held in proper position one after another by the guides 18 and guard 25. The soaking-tank is of sufficient length to accommodate a number of barrels, so the individual barrels will have plenty of time to soak. The first barrel of the row in the tank is taken by the second admitter or rack 4 and deposited on the third skid, from which it is taken by lifting-rack 26, which elevates the barrel and deposits it on skid 28, from which it rolls in between the brushes 41 and 50 and onto the wheels 61 and 62. Here it is kept turning by the rotation of shafts 60 and is brushed and washed on the exterior until the lifting-rack 26 elevates another barrel, which upon rolling down skid 28 displaces it and takes its place. The displaced barrel is received on skid 80, down which it rolls until stopped by the blocking mechanism. When the barrels are allowed to pass onto skid 83, the interior sprinkling or washing mechanism is applied, and after washing they are allowed to pass from the skid to a suitable place by releasing the other blocking mechanism.

It is to be understood that I do not limit myself to the use of the precise constructions herein shown and described, but consider that I am entitled to all such changes as come within the spirit and scope of the invention. Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a barrel-washer, a transferring device comprising a rockably-mounted barrel-receiver, and operating mechanism adapted to intermittently engage said receiver and rock it in opposite directions alternately said receiver being at other times stationary.

2. In a barrel-washer, a transferring device comprising a rockably-mounted barrel-receiver having separated stops or lugs, and a movable member adapted to play freely and disengagedly between the stops and to engage with them alternately and rock the receiver.

3. In a barrel-washer, a transferring device comprising a rock-shaft, a barrel-receiver carried thereby, a member secured on the shaft which has separated stops or lugs, and an arm or crank, loose on said shaft, having its free end adapted to play freely and disengagedly between the lugs or stops and to engage with them alternately whereby intermittent rocking of the receiver is accomplished.

4. In a barrel-washer, the combination with an upright, curved skid, and an inclined skid leading from the upper part of the curved

skid, of a barrel-lifter adapted to elevate the barrels along the curved skid to bring them to the inclined skid, and a curved guard-rack above the skids to prevent upward displacement of the barrels from the skids by the lifting mechanism.

5. In a barrel-washer, the combination with an inclined skid, of a barrel-rest, and a reciprocable lifting device adapted to elevate the barrels along the skid and past the rest on the advance movement and allow the barrel to roll back along the skid onto the rest on the return movement.

6. In a barrel-washer, the combination with an inclined skid of a barrel-transferring device, adapted to transfer the barrel on its advance movement along the said skid, hinged or pivoted barrel-rests and means for holding them normally in horizontal position, said rests being disposed in the path of the barrel and swung aside on the advance movement of the transferring device and returned to supporting position when the barrel has passed, whereby on the return movement of the transferring mechanism the barrel rolls down the skid and is deposited on said rests.

7. In a barrel-washer, the combination with a barrel-transferring device adapted to transfer the barrel on its advance movement, of rock-shafts, weighted arms carried by the rock-shafts, barrel-rests secured to the shafts and normally held in horizontal position by the weighted arms, said transferring device being disposed to pass between the barrel-rests and said rests being positioned to be struck and brushed aside by contact with the barrel on its advance movement and to return to supporting position when the barrel has passed, whereby on the return movement of the transferring mechanism the barrel is deposited on said rests.

8. In a barrel-washer, adjustable barrel-guides comprising guide-bars, and substantially horizontal links pivoted to said bars and also pivoted to supports.

9. In a barrel-washer, adjustable barrel-guides comprising guide-bars, brackets secured to supports, spindles adapted to turn in the brackets, links connected to the spindles and pivoted to the bars, and means for locking the spindles to the brackets.

10. In a barrel-washer, the combination with a soaking-tank, of a guard supported above the top thereof to maintain the barrels in the tank at one level.

11. In a barrel-washer, the combination with a soaking-tank, a curved upright skid, and an inclined skid leading from the curved skid down into the tank for the introduction of the barrels thereinto, of barrel-guide bars extending along the sides of the tank and up above the skids at the sides thereof and terminating in flared ends to permit easy entry of the barrels between them, and means adjustably connecting the bars to the sides of the tank.

12. In a barrel-washer the combination

with a device for transferring the barrels horizontally, comprising a rockable barrel-receiver, and means for operating the same, of means for transferring the barrels vertically, consisting of a hinged or pivoted barrel-receiver adapted to swing upwardly or vertically and to receive and elevate the barrels after they have been transferred by the rockable barrel-receiver and to deposit them after lifting.

13. In a barrel-washer, the combination in the brushing or scrubbing mechanism thereof, of end brushes having stub-spindles, boxes in which said spindles are rotatively received, so as to be capable of turning therein, and means for locking the spindles in the boxes with the brushes disposed at any angle to the direction of movement of the barrels.

14. In a barrel-washer, the combination in the brushing or scrubbing mechanism thereof, of end brushes having stub-spindles provided with longitudinally-extending teeth, boxes in which the spindles are loosely received which have teeth and means for causing the engagement of these teeth with those on the spindles.

15. In a barrel-washer, the combination with an upright brush-support, of a brush mounted upon pivots slidably connected to said support whereby the brush is adapted to simultaneously rise and swing when struck by the barrel.

16. In a barrel-washer, the combination with a brush, of an upright slide connected thereto, a member in which said slide is movable which has straight and curved slots, and sets of trunnions on the slide which are located in the slots and adapted to move therein.

17. In a barrel-washer, the combination with a shaft, of a wheel thereon and means for securing the wheel to the shaft consisting of separable clamp-sections secured together, a disk secured to one clamp-section but not to the other and located against one side of the wheel, and a detachable disk located against the other side of the wheel and secured to it and to the other disk.

18. In a barrel-washer, the combination with a shaft, of a wheel thereon, and means for securing the wheel to the shaft, consisting of a clamp-section, a hub and disk integral therewith, said hub passing through the wheel and the disk lying against the face of the wheel, a second disk loosely fitted over the hub and lying against the wheel, and fastened

to it and to the first-named disk, and a second clamp-section secured to the first-named clamp-section.

19. In a barrel-washer, barrel-blocking mechanism consisting of a rock-shaft, blocks secured thereto against which the barrel abuts, a lever secured to the shaft, and a stop which prevents movement of the lever incident to the pressure of the barrels on the blocks.

20. In a barrel-washer, a washing device for the barrel interior, comprising a valve shell or casing provided with a nozzle adapted for insertion through the barrel tap-hole and having an eccentric boss adapted to be turned in under the rim of the barrel, and a valve for the casing.

21. In a barrel-washer, a washing device for the barrel interior comprising a valve shell or casing having an eccentric boss provided with a beveled edge which is adapted to be turned in under the rim of the barrel, a perforated nozzle screwed into the casing which is adapted to be passed through the barrel tap-hole, and a valve in the casing.

22. In a barrel-washer, a washing device for the barrel interior comprising a valve shell or casing having an inlet and a perforated spraying-nozzle and a valve-seat located between the inlet and nozzle, said shell or casing being enlarged below the seat and provided with interior guiding-ribs as a bearing for the valve, a valve slidable against the ribs and adapted to close against the bottom of the valve-seat, a valve-stem, a valve-stem casing through which the valve-stem passes, a nut secured to the projecting end of the valve-stem, a washer encircling and secured to the valve-stem casing, a coil-spring encircling the valve-stem casing and bearing against the washer and a shoulder on the valve-shell, said spring being adapted to keep the valve normally seated, a gland screwed into the end of the valve-shell and through which the valve-stem casing passes, and which is provided with a flange having a curved slot, a handle for the valve-stem and a pin on the handle which travels in the slot.

In testimony whereof I affix my signature in presence of two witnesses.

JACOB FAUST.

Witnesses:

JOHN LENTES,
H. BURGERHOFF.