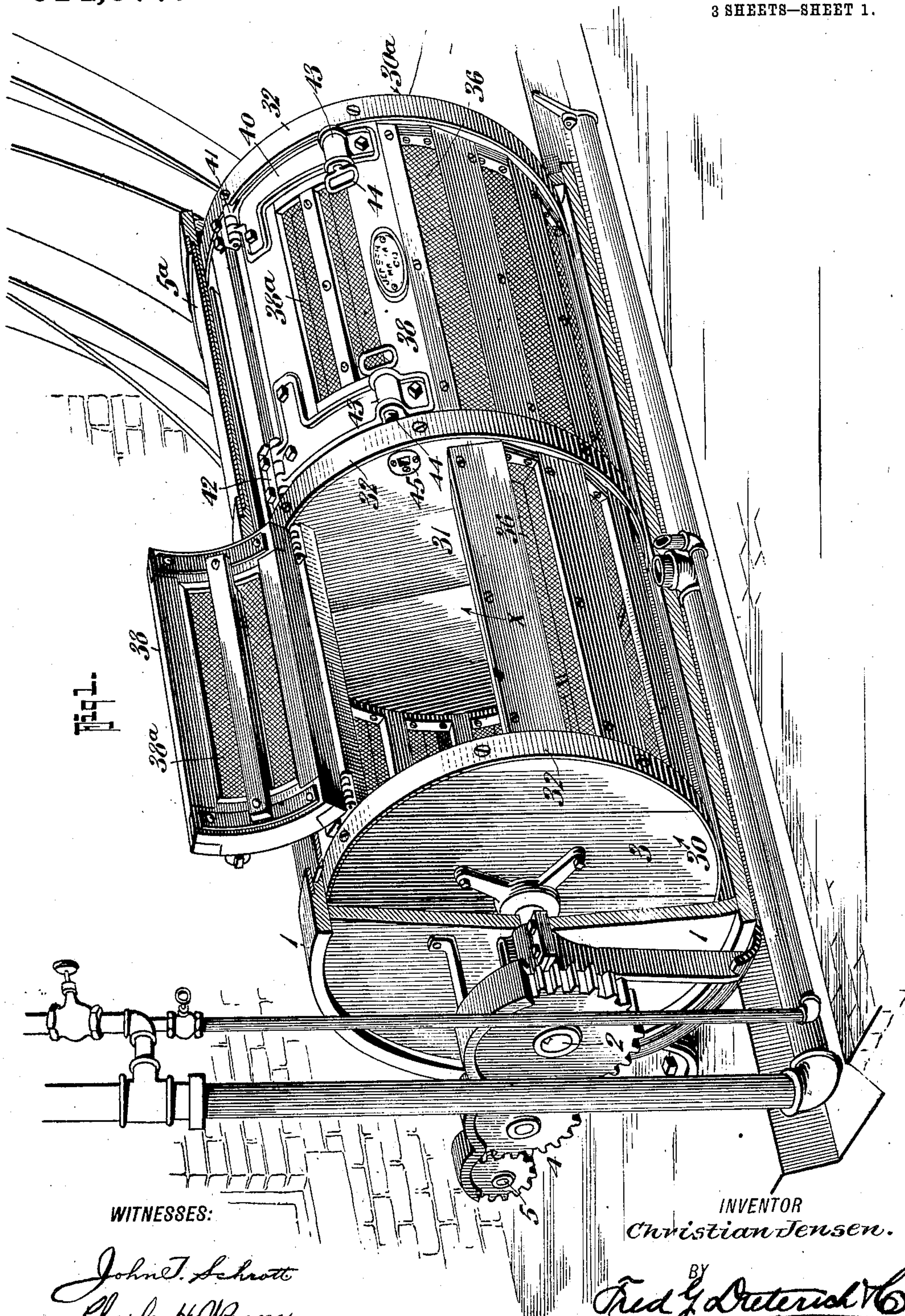


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ROTARY CYLINDER WASHING MACHINE.
APPLICATION FILED DEC. 10, 1907.

914,577.

Patented Mar. 9, 1909.

3 SHEETS—SHEET 1.



WITNESSES:

John T. Schrott
Charles H. Wagner.

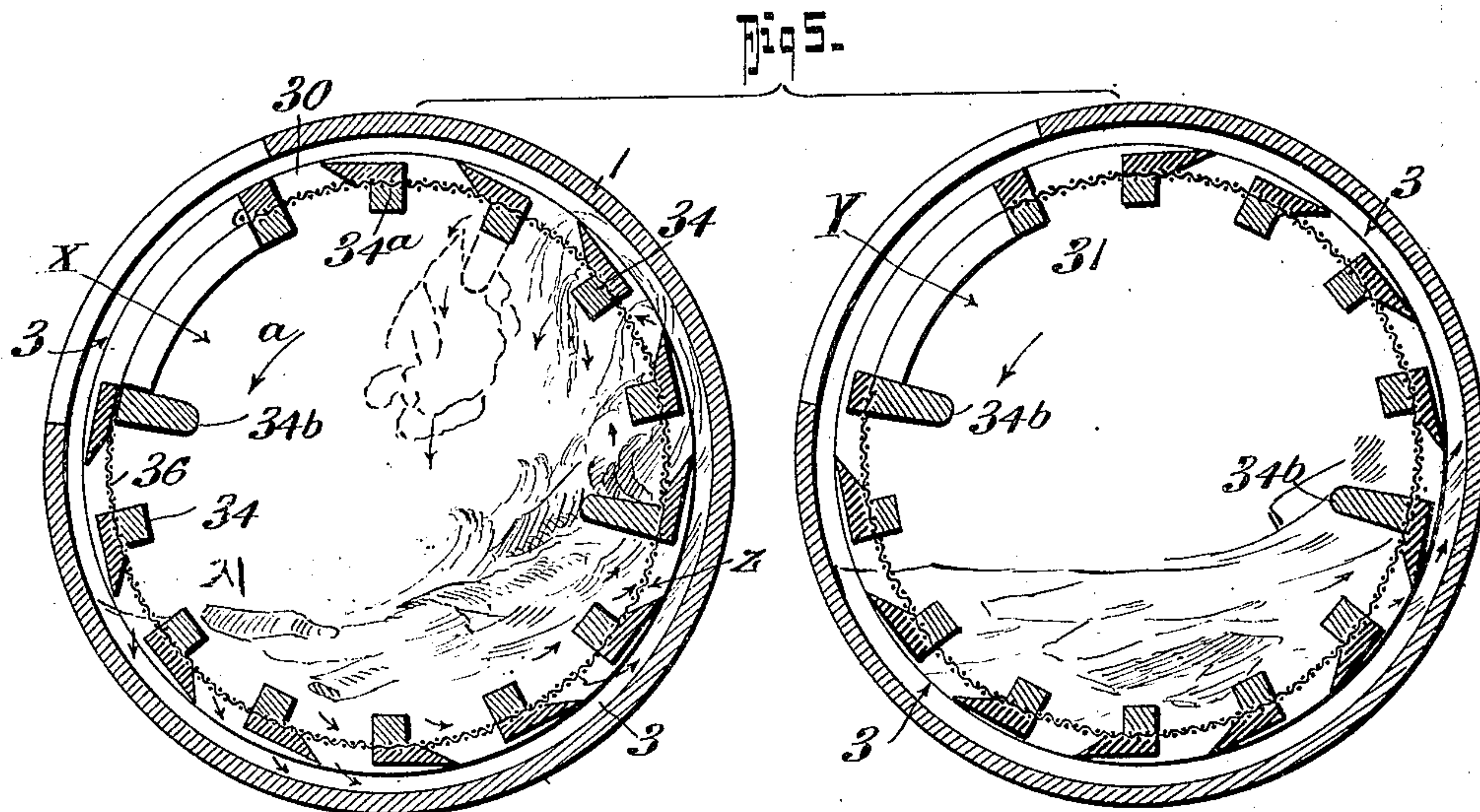
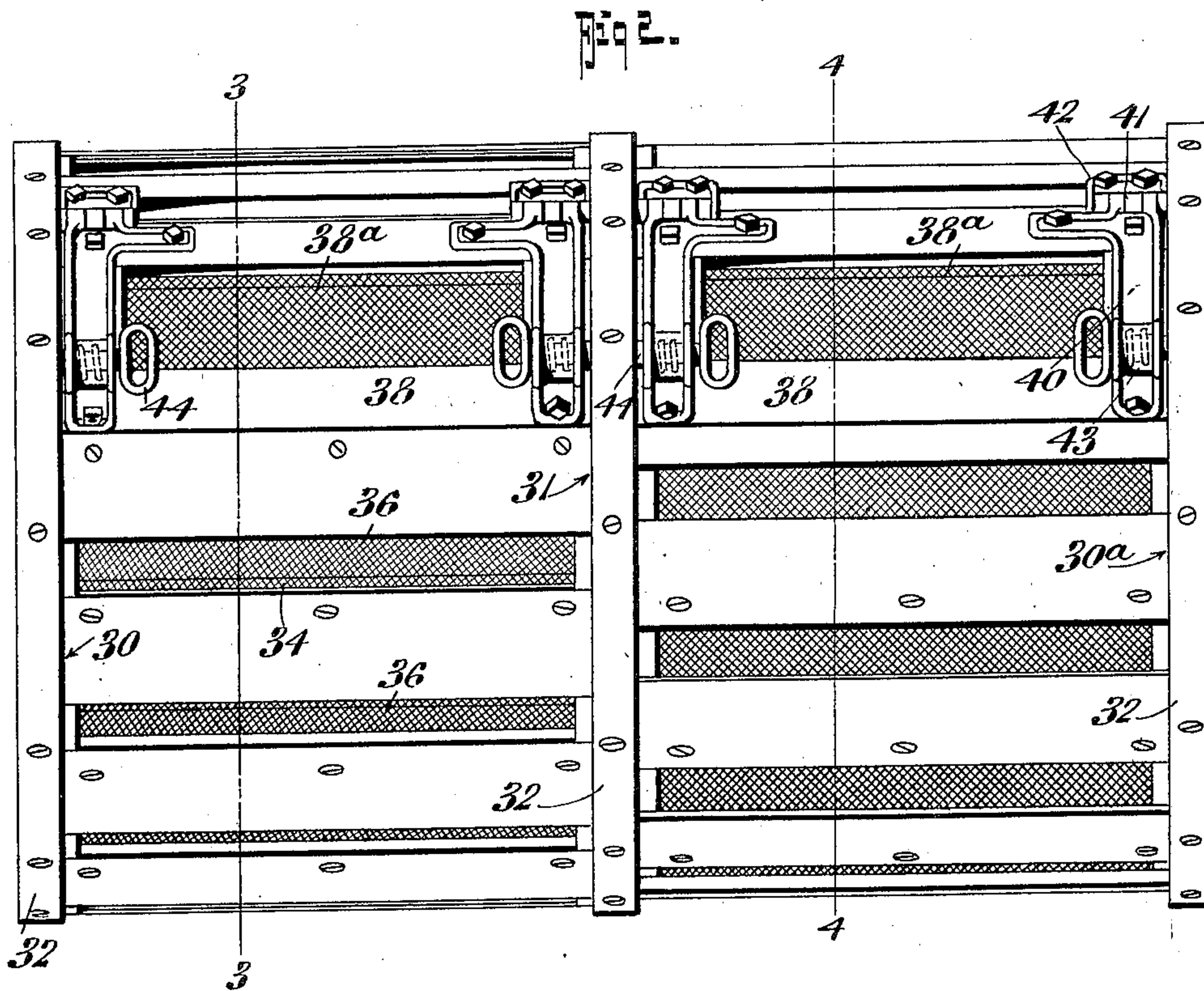
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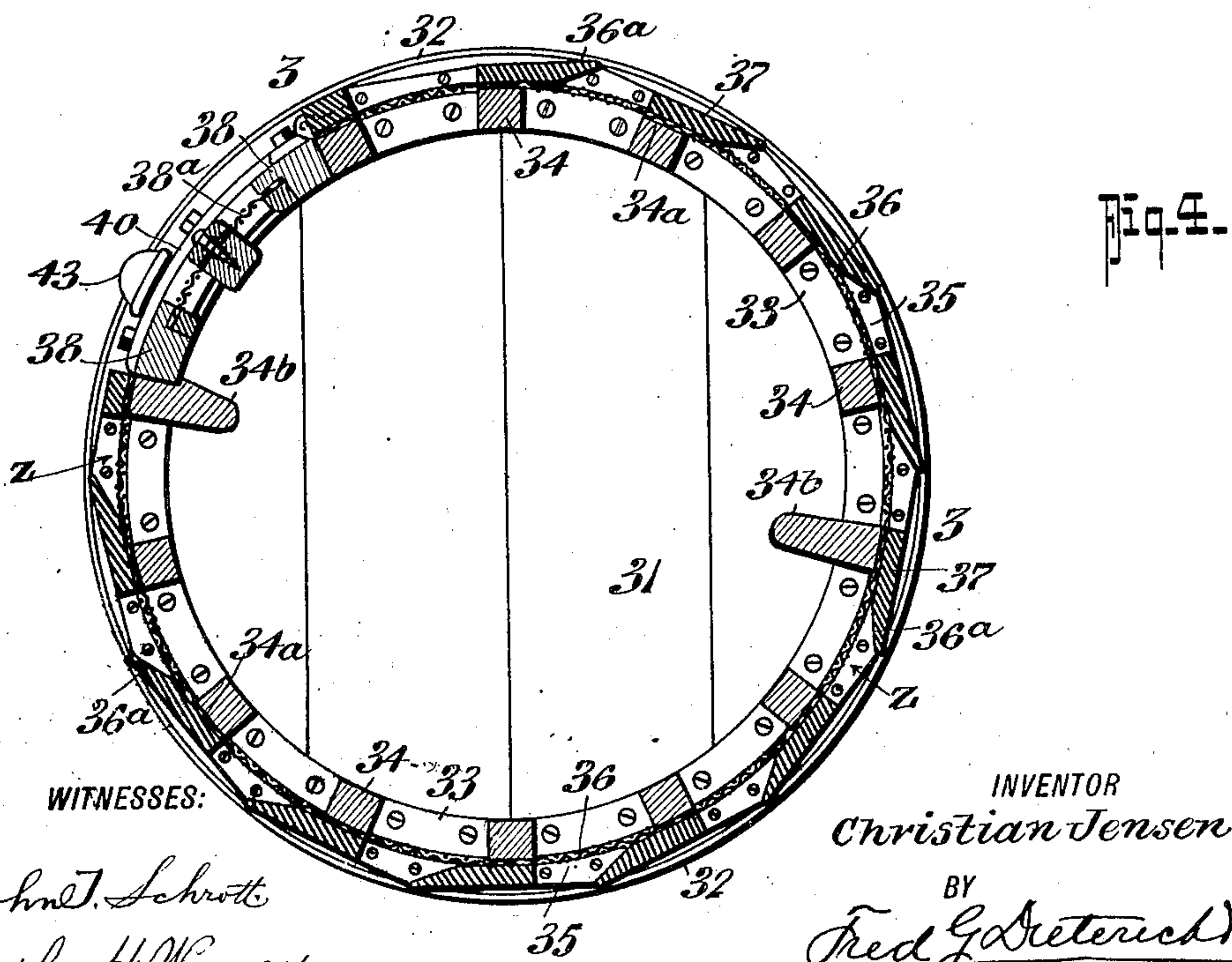
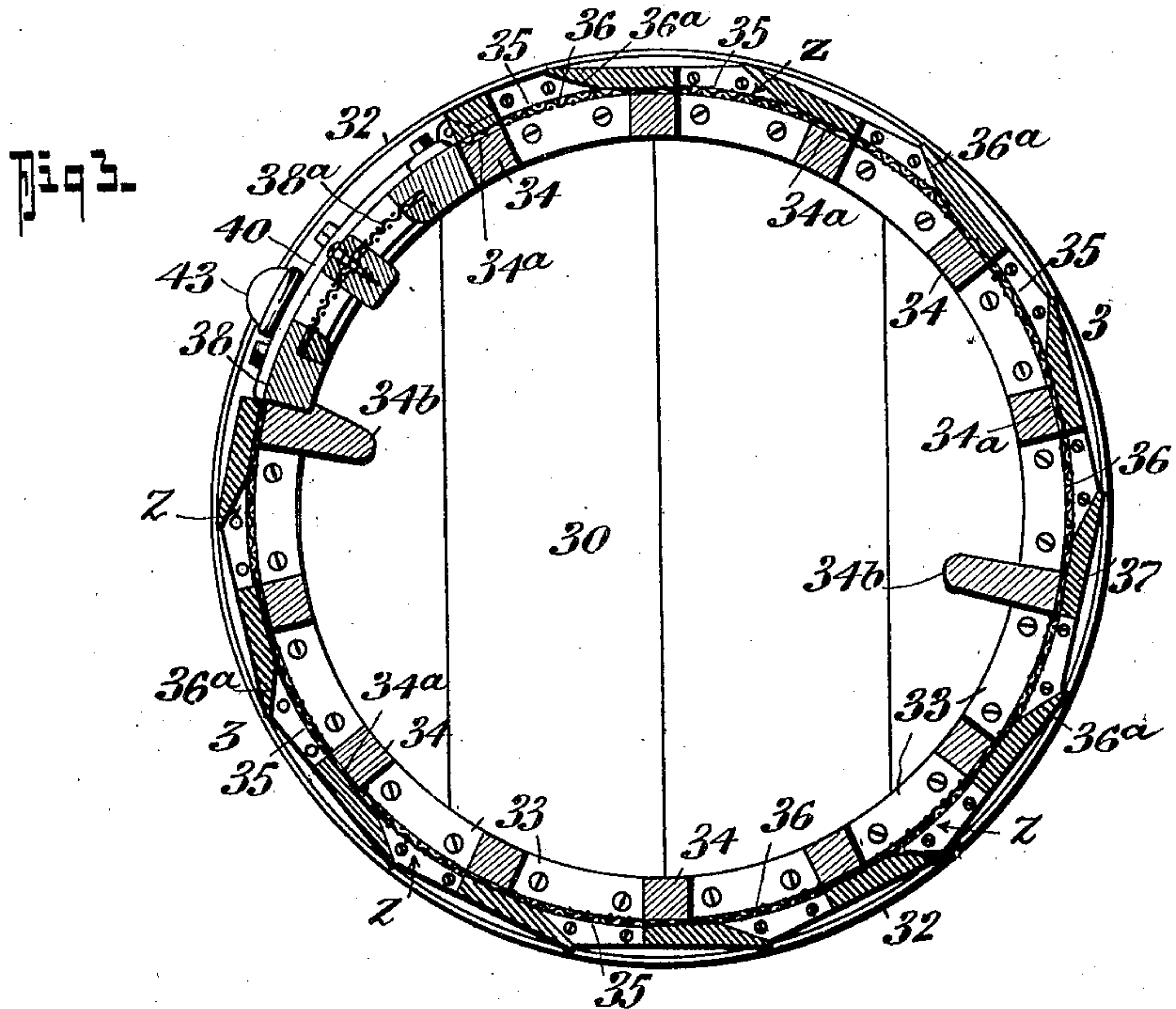
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 ATTORNEYS.

UNITED STATES PATENT OFFICE.

CHRISTIAN JENSEN, OF PALMYRA, NEW JERSEY.

ROTARY-CYLINDER WASHING-MACHINE.

No. 914,577.

Specification of Letters Patent.

Patented March 9, 1909.

Application filed December 10, 1907. Serial No. 405,948.

To all whom it may concern:

Be it known that I, CHRISTIAN JENSEN, residing at Palmyra, in the county of Burlington and State of New Jersey, have invented a new and Improved Rotary-Cylinder Washing-Machine, of which the following is a specification.

My invention, which relates to laundry machinery, more particularly is in the nature of an improved rotary washing cylinder of that type used within a water holding casing, and it primarily has for its object to provide a machine of the character stated, of a simple and compact construction, which is easily manipulated, capable of effectively washing the clothes under a minimum expense of power and time.

With the above and other objects in view, my invention comprehends with a stationary casing or tank, of a two-chambered cylinder, having similar, but alternately arranged means for causing the water within the casing to first flow into one section or chamber of the cylinder when it is revolved in one direction and then flow therefrom and through the other section or chamber when the cylinder is revolved in the reverse direction, the actions in the two cylinder sections taking place reversely and alternately.

My invention, in its more complete nature, embodies a special construction of the two chambers or sections that constitute the cylinders, and comprising circumferentially disposed and longitudinally extended blades whereby to direct the water into one section for thoroughly rinsing and agitating the clothes in the water at the incoming side of the said section and providing for pounding and washing the clothing in the other section at the bottom of the said section during the outflow of the water from the said other section, as the cylinder is revolved.

In its more subordinate features, my invention consists in certain details of construction and novel arrangement of parts, all of which will be hereinafter fully described, specifically pointed out in the appended claims and illustrated in the accompanying drawings, in which:—

Figure 1, is a perspective view of the complete machine, as set up for use, the outer casing being broken away to show the revolving cylinder, one of the hinged doors of one section of the cylinder being opened. Fig. 2, is a side elevation of the cylinder. Figs. 3 and 4 are cross sections thereof on the

lines 3—3 and 4—4 respectively on Fig. 2, and Fig. 5, is a diagrammatic cross section of the two compartments or cylinder sections illustrating the direction of flow of the water into one section as it flows out the other and the approximate positions of the clothes contained in the said cylinder sections.

My invention, in its practical application, is arranged substantially as shown in Fig. 1, in which 1 designates the outer casing or water tank into which the water is fed and from which it is exhausted in the usual manner, said casing having the usual end bearings for the stub shafts 2 (only one being shown) mounted on the opposite ends of the cylinder 3, which is driven by suitable drive gearing 4, that receives motion from a drive shaft 5 as will be clearly understood from Fig. 1.

It should be stated that in the practical arrangement of the drive mechanism, the drive shaft is driven reversely preferably two or three revolutions in one direction and then likewise in the opposite direction, to impart the desired reverse motions to the cylinder 3 for reasons presently explained.

The cylinder 3, the construction of which is the essential feature of my invention, comprises two end heads 30—30^a and a centrally disposed head 31, the several heads being solid, preferably formed of a number of boards incased by a strong metal strap band 32, three heads being arranged as shown, whereby to provide two like chambers or sections designated by X—Y, each of which is of like size and has its several parts constructed alike, excepting that the several scoops or blades of the two sections are reversely projected for reasons presently explained.

Since the detailed construction of the two sections or chambers are alike a description of one section will suffice for both.

At the opposite ends of section X and made fast to the opposing heads 30 and 31 are a series of spacing blocks 33—33 concentrically disposed, between the adjacent ends of which fit the opposite ends of series of longitudinal ribs 34 the outer faces 34^a of which are disposed inside of the peripheral bands on the heads whereby annular spaces 35 are formed and the said faces 34^a form the bearings for the closure screen or wire netting 36.

A diametrically opposite pair of the ribs 34

are extended inwardly to form lifting flanges 34^b for lifting the clothes on the water incoming side of the cylinder, as clearly shown in the diagrammatic view Fig. 5, by reference to which, the coaction of the two sections of the cylinder is shown, and by reference to which the relative positions of a series of scoop like blades 37, is shown. The blades 37 consist of thin flat boards, one of which is secured to each of the ribs 34 with their rear edges flush with the corresponding edge of the ribs 34 and with their front ends extended beyond the ribs whereby to form restricted openings *z*, between the several ribs 34.

The front ends of the blades 36 are cut on a bevel that extends from the outer circumferential edge inwardly to the ribs 34, such shaping of the members 36 forming scoop ends 36^a, which, when the cylinder is traveling in the direction of the arrow *a* on the one section X, causes the said ends to act as scoops that lift the water and direct it and cause it to flow up on the one side of the casing as indicated by the arrows at the left of Fig. 5, and thereby also causing the water to fall back into the section X, creating, as it were, a circulation of the water transversely through the said section X and by reason thereof, since a flow of the water is directed as stated, and shown, the clothes agitated and rinsed are also caused to take that direction of movement, such movement being materially aided by the inwardly projected rib members 34^b.

It will be noticed that the scoop ends of the blades 36 are disposed inside of the circumference of the heads, this being done to provide for a positive inflow of the water scooped up through the section X. Now, since the scoop blades in section Y are reversely disposed, it follows that since the flat or rear edges of the blades 36 engage the water, there will be little or no elevation of the water on the up-going side of the section Y, and hence little or no lifting action of the clothing by the rib portion 34^b, the weight and outward flow of the water serving to subject the clothing in the bottom of the section Y, to a thorough pounding and washing as the clothes in the section X are being rinsed and agitated, and subjected to the beating of the water.

By providing a cylinder with two sections arranged to act on the clothes in the manner stated, it is manifest that revolving the cylinder first in one direction and then in the other direction effects, first a thorough pounding and washing of the clothes and then rinsing and agitating, the washing occurring in one section as the rinsing goes on in the other, thus cleansing the clothes quickly and under a minimum power and time. Each of the cylinder sections has a hinged section 38, which can be lifted up

through a corresponding opening in the top of the main casing or tank, which openings during the operation of the cylinder are closed by the sliding closure members 5^a, see Fig. 1.

The cylinder doors are also provided with screened openings 38^a, Fig. 1 and they have straps 40 hinged at 41 to the butts 42 and formed with housings 43 in which are held lock members 44 adapted to be slipped into engagement with sockets 45 in the heads of the cylinder as will be readily understood by reference to Fig. 1, they being automatically held to their closed or locked position by any suitable means, such as springs held in the housings 43 and as indicated in dotted lines on Fig. 2.

In practice, the cylinder is revolved a number of times in one direction and then likewise in the opposite direction and during these operations the water contained in the main casing or tank is forced through one cylinder section or compartment as it is partially emptied through the other section and then likewise forced through the said other section and emptied from the first stated section when the cylinder is reversed in its direction of movement, such reverse operations serving to positively cleanse the clothes contained in the cylinder, which it should be stated, are entered and lifted out of the cylinders through the openings in the top of the main casing.

Having thus described my invention, what I claim and desire to secure by Letters Patent, is:—

1. In a washing machine of the character described, the combination with a water holding casing or tank, of a screen cylinder revolubly mounted within the casing, said cylinder having a plurality of compartments, each compartment including means for forcing water into the compartment while the cylinder is rotating in one direction and permitting the water to escape when the cylinder is rotating in the opposite direction, the means for forcing water in one compartment being arranged reversely to that of the other compartment, means within the compartment for lifting the clothes as the cylinder is rotated, and means for rotating the cylinder in either direction.

2. As a new article of manufacture, a screen cylinder for washing machines having a plurality of compartments and provided with a plurality of series of water scoops, one for each compartment, the water scoops of one compartment being arranged reversely to those of the other compartment so that as the cylinder is rotated water will be taken into one compartment while water will be simultaneously discharged from another compartment.

3. As a new article of manufacture, a cylinder for washing machines of the character described, consisting of two end heads and a

central head, a series of longitudinal ribs concentrically disposed on the said heads, screens extended over the said ribs, longitudinal blades secured to each of the ribs having scoop portions disposed within the circumferential edge of the heads, the scoop portions of one compartment being projected in a direction reverse to the scoop portions of the other compartment.

10 4. As a new article of manufacture, a cylinder for washing machines of the character described, consisting of two end heads and a centrally disposed head, a series of spacing blocks concentrically mounted upon the
15 several heads, a series of longitudinal ribs whose ends are secured between the spacing blocks, a screen secured around the said ribs, a diametrical pair of said ribs being extended inwardly, a longitudinal blade secured to the said ribs and projected over the
20 spaces between the ribs, the projected por-

tions of the blades being beveled inwardly whereby to form scoop members, the said scoop members being located within the circumferential edge of the heads and the
25 scoop ends of the blades in one compartment of the cylinder being projected reversely of the scoop ends of the blades in the other compartment of the cylinder.

5. As a new article, a rotary cylinder for
30 washing machines having a plurality of compartments and provided with a plurality of series of water scoops, one for each compartment, the water scoops of one compartment being arranged in a direction reversely
35 to those of the other compartment, said scoops being spaced apart and wire screens held across the spaces between the scoops.

CHRISTIAN JENSEN.

Witnesses:

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HAYWARD WOODARD.