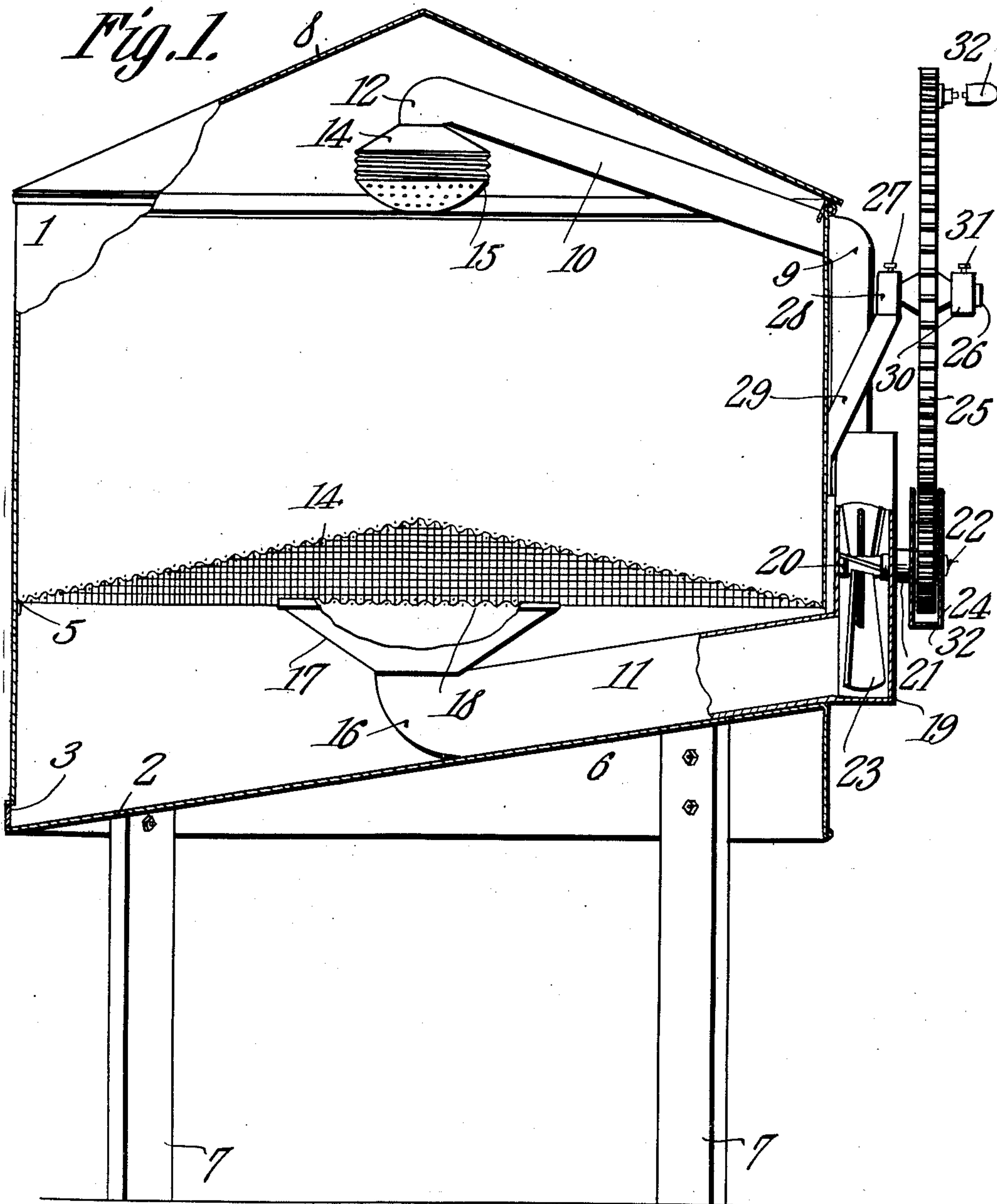


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APPLICATION FILED JUNE 28, 1909.

954,103.

Patented Apr. 5, 1910.

2 SHEETS—SHEET 1.



Inventor

*Ralph G. Irely.*

Witnesses

*E. J. Stewart*  
*Mason B. Lawton*

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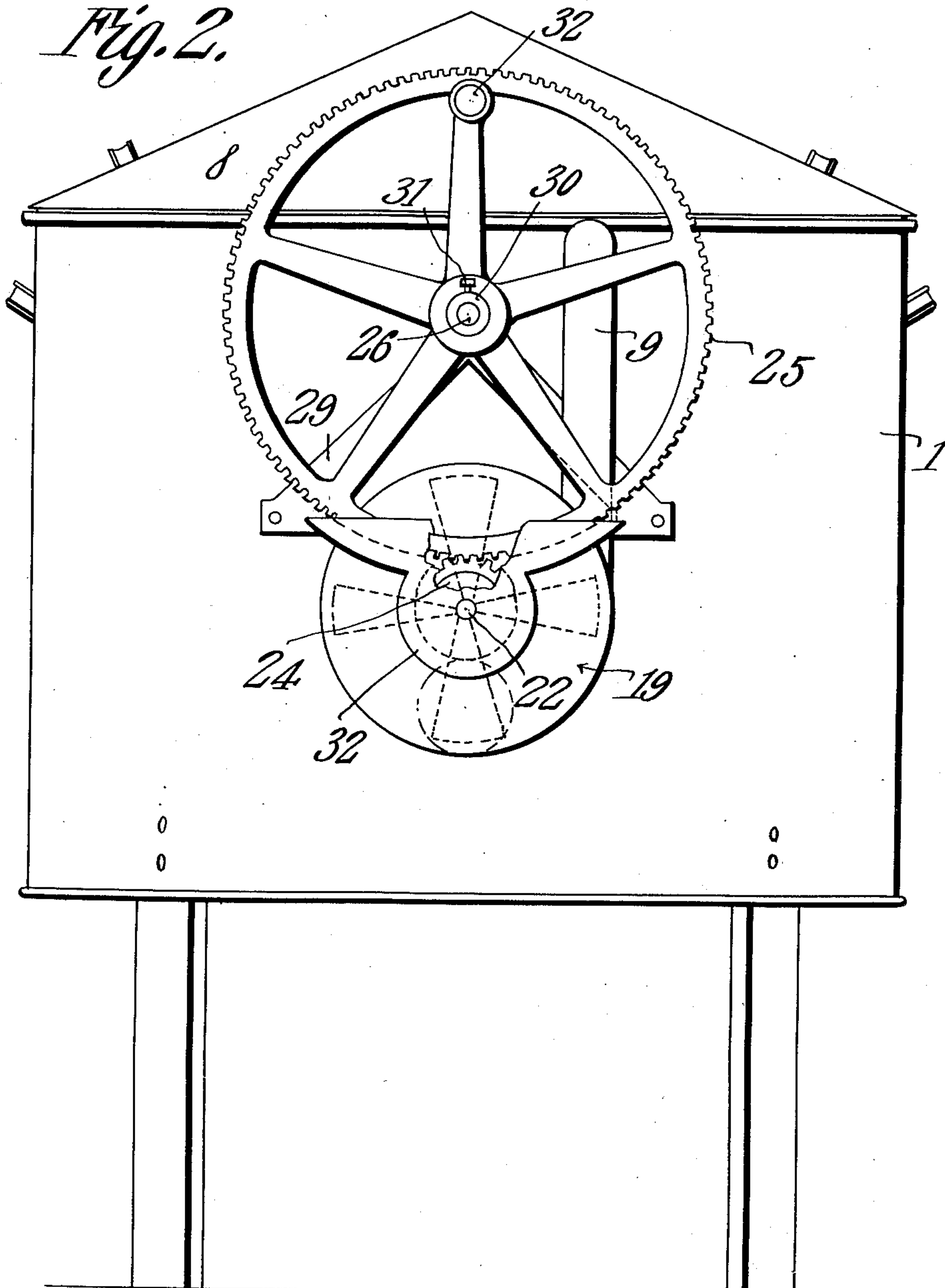
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*Fig. 2.*



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# UNITED STATES PATENT OFFICE.

RALPH G. IREY, OF ABILENE, KANSAS.

## WASHING-MACHINE.

954,103.

Specification of Letters Patent.

Patented Apr. 5, 1910.

Application filed June 28, 1909. Serial No. 504,840.

*To all whom it may concern:*

Be it known that I, RALPH G. IREY, a citizen of the United States, residing at Abilene, in the county of Dickinson and State of Kansas, have invented a new and useful Washing-Machine, of which the following is a specification.

The objects of the invention are, generally, the provision, in a merchantable form, of a device of the class above mentioned, which shall be inexpensive to manufacture, facile in operation, and devoid of complicated parts; specifically, the provision of a tub of novel and improved construction; the provision of a pipe adapted to be assembled with the tub and so mounted therein that it may deliver a stream of water upon the top of garments inclosed within the tub, and, after the water has passed through the garments, withdraw the water from the tub; the provision of novel means for inducing a circulation through the pipe; other and further objects being made manifest hereinafter as the description of the invention progresses.

The invention consists in the novel construction and arrangement of parts hereinafter described, delineated in the accompanying drawings, and particularly pointed out in that portion of this instrument wherein patentable novelty is claimed for certain distinctive and peculiar features of the device, it being understood that, within the scope of what hereinafter thus is claimed, divers changes in the form, proportions, size, and minor details of the structure may be made, without departing from the spirit or sacrificing any of the advantages of the invention.

Similar numerals of reference are employed to denote corresponding parts throughout the several figures of the drawings.

In the accompanying drawings:—Figure 1 shows my invention in transverse section, parts being left in elevation; Fig. 2 is an end elevation of the device.

In carrying out my invention, I provide, primarily, a tub, which is denoted by the numeral 1. The tub 1 is provided with an inclined bottom 2, and with an outlet 3, preferably disposed in the side wall of the tub, adjacent the lowermost portion of the bottom 2. Intermediate the top and the bottom of the tub, the same is provided upon its inner wall, with lugs 5, adapted to support

a screen 4, preferably conoidal in form, and arranged to serve as a rack, upon which the garments may rest in the process of washing. The body of the tub 1 is downwardly extended below the inclined bottom 2 thereof, to form a flange 6, with which may be assembled, in any suitable manner, the legs 7 upon which the device is mounted. The tub 1 is closed by means of a removable lid 8, which may be of any form.

The invention further includes a pipe, denoted by the numeral 9, and serving as a means whereby the water may be caused to circulate through the garments which are disposed in the tub 1. The middle portion of this pipe 9 is disposed in an upright position upon the outer wall of the tub 1, the upper end 10 of said pipe, which is the outlet end thereof, passing through the side wall of the tub 1 and rising above the periphery of the tub. The lower, or intake end of the pipe 9, denoted by the numeral 11, enters the tub 1 through the side wall thereof, adjacent the highest portion of the inclined bottom 2, the said intake end 11 of the pipe being downwardly inclined and arranged to rest upon the bottom 2 of the tub. The outlet end 10 of the pipe extends inwardly into the tub 1 to a point approximately above the center of the tub and is downturned as denoted by the numeral 12, and terminates in a flaring head 14, which is threaded to receive, removably, a dished screen 15. The inner extremity of the intake end 11 of the pipe is upturned, as denoted by the numeral 16, and this upturned portion 16 terminates in a flaring head 17, adapted to receive, removably, a screen 18.

As is shown most clearly in Fig. 1, the extremities of the outlet 10 and the intake 11 are disposed in vertical alinement, the screen 4 being disposed between them.

Mounted upon the outer extremity of the intake portion 11 of the pipe, is a casing 19, provided with bearings 20 and 21, in which is journaled for rotation a shaft 22, provided with radial blades 23, the construction last above pointed out constituting a centrifugal pump.

The shaft 22 is arranged to extend outwardly beyond the casing 19, and carries in its extended portion, a pinion 24, in mesh with a larger pinion 25, which is journaled for rotation upon an arm 26, retained by a set screw 27 in a head 28, whereby the up-



per extremities of arms 29 constituting a bracket, are connected with each other, the lower extremities of the arms 29 being rigidly assembled with the tub 1 in any suitable manner. Mounted upon the outer extremity of the member 26 is a collar 30, adapted to hold the pinion 25 in mesh with its fellow, the collar 30 being held in place upon the arm 26 by means of a set screw 31. For the rotation of the pinion 25, any suitable means may be provided; in the present instance I have equipped the pinion 25, adjacent its periphery, with an operating handle 32.

The bearing 21 is arranged to project beyond the outer wall of the casing 19, and with this bearing is assembled a casing 33, arranged to inclose the small pinion 24 and the portion of the larger pinion 25, which is in mesh with the pinion 24. This casing 33 prevents the garments of the operator from being drawn between the pinions when the device is in use.

The operation of the device will be clear from the foregoing description, but a brief résumé may profitably be given at this point.

In practical operation, the garments which are to be cleansed may be disposed within the tub 1, resting upon the conoidal screen 4. The tub 1 is then filled with a sufficient quantity of water to cover the screen 18, so that there will be no possibility of sucking air into the intake 11. The pinion 25 is then rotated by means of the handle 32, and this pinion engaging the pinion 24, will cause the rotation of the shaft 2, the blades 23 carried thereby drawing the water through the relatively large intake 11 and forcing the same upward through the outlet 10, allowing the water to fall upon the upper surface of the clothes supported by the screen 4.

The foregoing operation will result in a continuous circulation of water through the garments which are disposed within the tub 1.

I regard it as of importance, that I have given a downward inclination to the bottom 2 of the tub. By this construction, the sediment contained in the water after it has passed through the garments, will tend to work downward, ultimately collecting adjacent the outlet 3, from which position it may readily be drained off from time to time. The mouth of the intake 10 is upbent and spaced apart from the bottom 12, so that the cleanest portion of the water may be drawn into the intake. The screen 18, which is removably assembled with the mouth of the intake is adapted to receive lint and other matter; but, should I desire to dispense with the screen 18, the downward inclination given to the intake 11, will tend to prevent buttons and other relatively heavy substances not readily affected by the

flow of water in the intake, from being drawn into the casing 19, to the damage of the pumping mechanism therein contained. The flaring outline given to the head 17 prevents the water adjacent the inner extremity of the intake 11 from being drawn thereinto from the bottom of the tub, and the sediment derived from the garments will thus be allowed to settle, following the inclination of the bottom of the tub to the outlet 3, as hereinbefore described.

The device results not merely in a circulation of the water through the garments which are mounted in the tub, but in a circulation of water which represents the most cleanly portion of the liquid contained in the tub.

It will be seen that by means of the screens 4 and 18, and owing to the inclination given to the intake 11, it is extremely improbable that any substance should be drawn into the pumping mechanism, but, should such an occurrence arise, the dished screen 15 will retain such substance in the mouth of the outlet pipe, preventing the same from falling upon and working its way through the clothes, to make again the circuit hereinbefore described.

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

1. A device of the class described comprising a tub; a pipe having its ends extended through the walls of the tub to points adjacent the axis of the tub, the lower, intake end of the pipe being downwardly inclined toward the axis of the tub and upbent in its terminal portion; and a pump interposed in the pipe between its ends, above the lowermost portion of the intake end of the pipe.

2. A device of the class described comprising a tub having an inclined bottom and provided with an outlet adjacent the lowermost portion of the bottom; a pipe having its ends disposed within the tub adjacent the top and the bottom thereof, the lower, intake end of the pipe being downwardly inclined to rest upon the bottom of the tub and upbent in its terminal portion; a screen located between the ends of the pipe and peripherally assembled with the tub; a centrifugal pump interposed in the pipe intermediate its ends; and intermeshing pinions supported by the tub and operatively connected with the pump.

3. A device of the class described comprising a tub having an inclined bottom and provided with an outlet adjacent the lowermost portion of the bottom; a pipe having its middle portion disposed in upright position upon the exterior of the tub and terminating in an intake end and an outlet end extending through the wall of the tub to

points adjacent the axis of the tub, the in-  
take end of the pipe being inclined to rest  
upon the bottom, and terminally upbent; a  
screen located between the ends of the pipe  
5 and assembled with the tub; and pumping  
mechanism interposed in the upright por-  
tion of the pipe.

In testimony that I claim the foregoing  
as my own, I have hereto affixed my signa-  
ture in the presence of two witnesses.

RALPH G. IREY.

Witnesses:

M. E. CUTHBERT,  
M. H. MALOTT.