

No. 608,400.

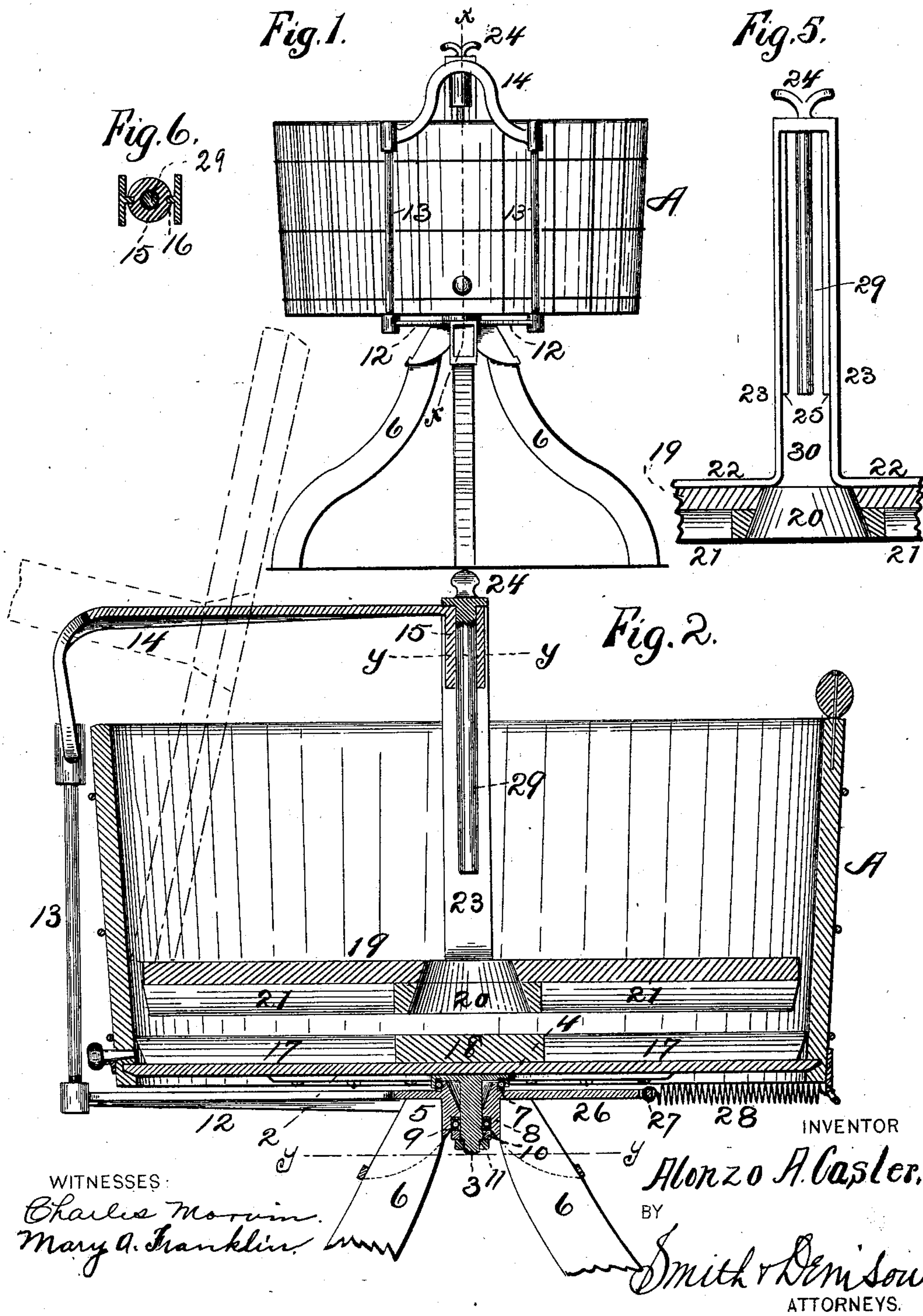
Patented Aug. 2, 1898.

A. A. CASLER.  
WASHING MACHINE.

(Application filed Oct. 28, 1897.)

(No Model.)

2 Sheets—Sheet 1.



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Fig. 3.

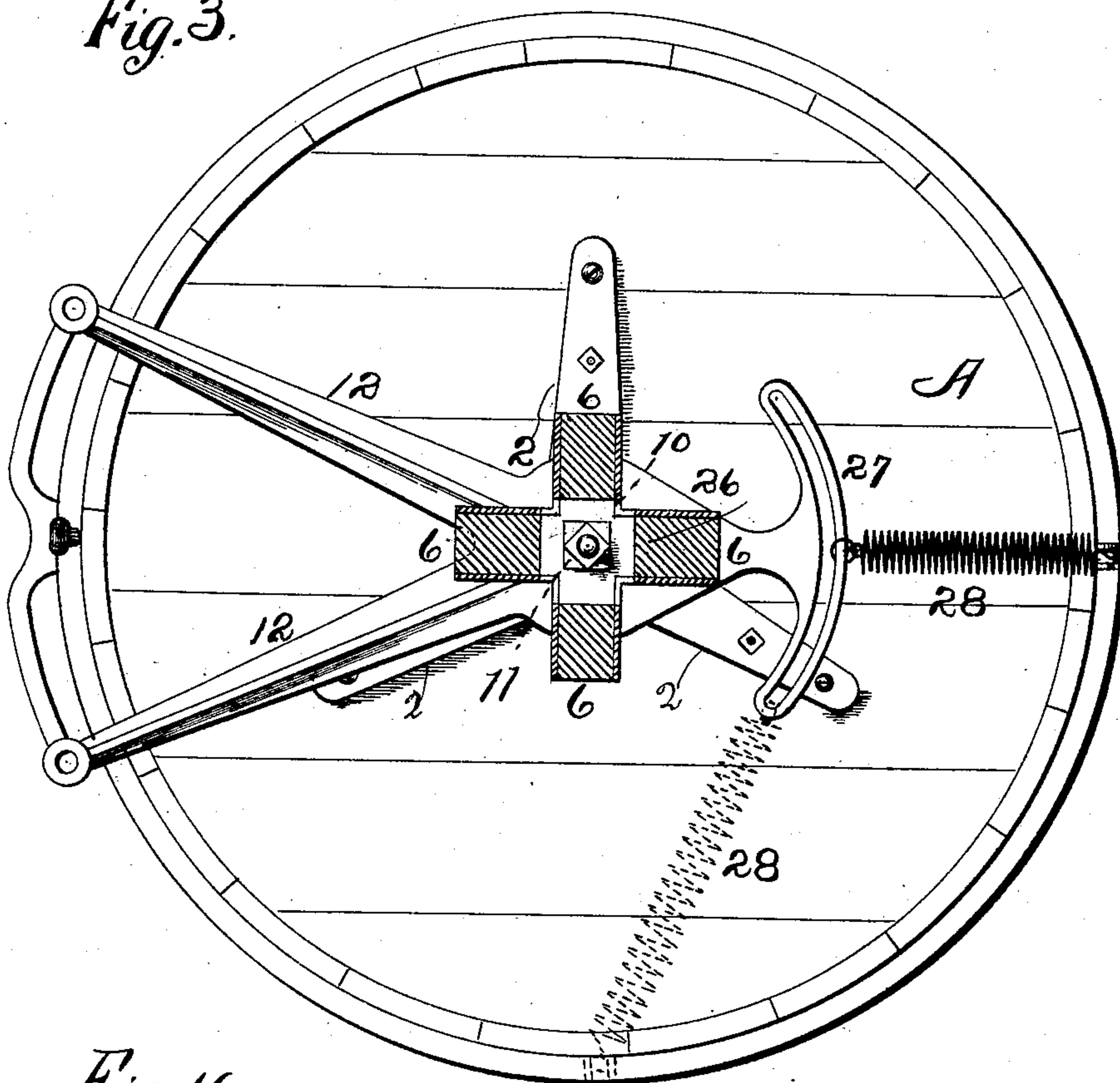
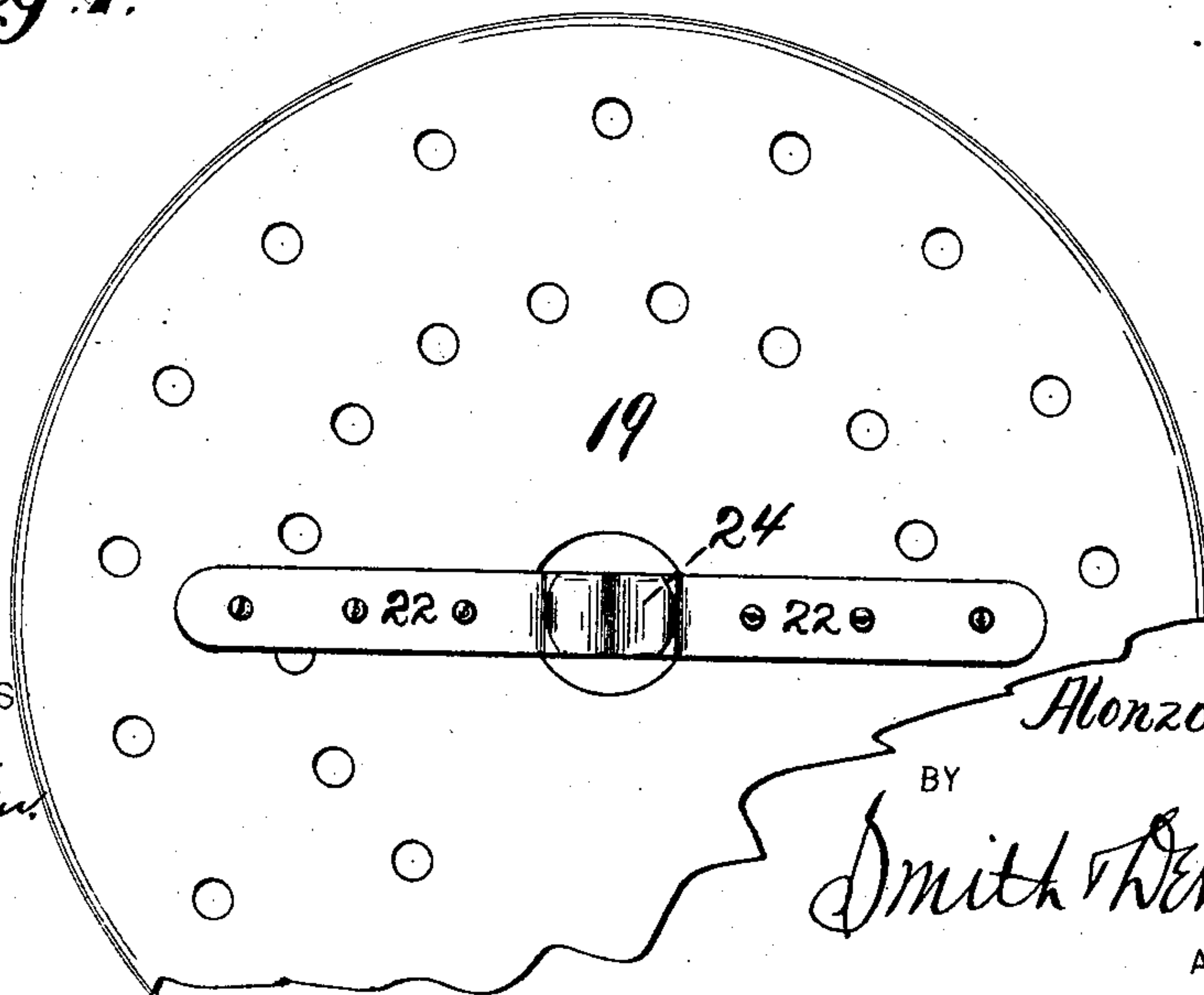


Fig. 4.



WITNESSES

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# UNITED STATES PATENT OFFICE.

ALONZO A. CASLER, OF BINGHAMTON, NEW YORK.

## WASHING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 608,400, dated August 2, 1898.

Application filed October 28, 1897. Serial No. 656,614. (No model.)

*To all whom it may concern:*

Be it known that I, ALONZO A. CASLER, of Binghamton, in the county of Broome, in the State of New York, have invented new and useful Improvements in Washing-Machines, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

My invention relates to washing-machines, and particularly to that class which embodies a rotating tub provided with rubbing-cleats and a rubber suspended in and separate from the tub.

It is to remedy certain existing difficulties that I have made this invention, embodying a tub, a pivot therefor having double ball-bearings, one above the other, one of which at least engages with said pivot to prevent its lateral oscillation, a bracket-arm extending partially around and over the center of the tub and provided with means whereby the rubber is normally both suspended therefrom and prevented from revolving, and also permitting said rubber to be raised and shifted upon its support, remaining partly within and partly above the tub, but so that it will drip or drain into it, and also embodying means, as a spring, for checking the momentum of the rotating tub and overcoming or aiding in overcoming the inertia of the tub when it is desired to change the direction of the semirota-  
tion or reciprocatory swing.

It is constructed as follows, reference being had to the accompanying drawings, in which—

Figure 1 is a side elevation. Fig. 2 is a vertical section on line  $xx$ , enlarged. Fig. 3 is a bottom plan of the tub on the lower line  $yy$ . Fig. 4 is a top plan of the rubber. Fig. 5 is a sectional elevation of part of the rubber, showing its stem, the ways therein, and the center guide. Fig. 6 is a cross-section on the upper line  $yy$  in Fig 2.

A is a suitable tub having a plate 2 secured under its bottom, provided with a central boss 3, which constitutes the pivot-pin, and also having a ball-race 4 in its lower face. A suitable plate 5 is suitably adapted to hold the legs 6. In or upon its upper face it has a ball-bearing member 7, coinciding with the race 4, and the bearing thus created when the balls are put in carries the weight of the

tub and of its contents. This plate has a downward tubular boss 8, receiving the pivot-pin 3, and near the lower end its base is enlarged, and it is otherwise adapted to a ball-bearing 9 and receives part, at least, of the members thereof in such manner that the balls therein bear against the exterior of the pivot-pin in a horizontal plane and transverse to said pin. The lower end of said boss is exteriorly threaded, and a nut 11 and washer 10 support the movable members of said ball-bearing in position. In this manner the bearing 9 and the bearing of which 4 and 7 are members constitute a double ball-bearing for the tub, lying in different but parallel planes having unequal radii, the one supporting the entire weight of the tub and contents and the other supporting the pivot-pin laterally and preventing its oscillation or vibration.

Arms 12, integral with or secured to the plate 5, extend out beyond the edge of the tub, carrying the uprights 13, which are secured to the fork ends of the outer end of the arm 14, which is provided on its inner end, at the center of the tub, with a tubular sleeve 15, which is also vertically grooved, as at 16.

The bottom of the tub is provided with suitable rubbing-ribs 17, as upon radial lines around a central boss 18.

A suitable rubber 19 is provided upon its under side with a central and perforated boss 20 and suitable rubbing-ribs 21 and it is provided with a support consisting of feet 22, parallel uprights 23, a cross-bar connecting them, and a hand-grip 24 upon said cross-bar. These uprights are provided with ribs or ways 25 upon their inner faces, which are broken off adjacent to the rubber and which normally enter the grooves in the sleeve 15.

An arm 26 projects from the plate 5 and is provided with a longitudinally-grooved head 27, and 28 is a spring suitably connected to said head and to the edge of the tub, whereby when said tub is rotated upon its pivot the inner end of said spring will traverse said head until it reaches the end of said slot, and the centrifugal momentum of the tub will then produce a tension upon the spring to stop the tub, and then this tension will exert its force to overcome the inertia and start the tub to swing or rotate in the opposite direc-



tion, and thus this spring performs an important function, greatly assisting an operator, as in some cases the tub and contents will weigh several hundred pounds, and thus require great exertion in stopping or starting and swinging it when it is swung to and fro with only a partial rotation each way.

The double ball-bearing performs these functions: first, the upper one carries the weight, and, second, as the balls of the lower one bear against the outer surface of the pivot they prevent any swinging of the pivot and vertical oscillation of the tub, and thereby maintain the ribs in the tubs at all times in parallelism with those of the rubber; also, the rubber is maintained in like parallelism and prevented from revolving by the joint action of the ways engaging with the sleeve and also by the aid of the guide-pin 29, pendant from the cross-bar of said uprights, and which passes through said sleeve.

To remove the rubber to obtain access to the clothing or for other purposes, it is lifted until the ways and guide-pin are free from the sleeve 15, which sleeve is then in the space 30, and then the rubber can be tilted over and slid along on the arm 14 into the position shown by the dotted lines, whereby the tub is opened and all of the water or suds will drain into the tub.

Having described my invention, what I

claim, and desire to secure by Letters Patent, is—

1. In a washing-machine, the combination with a support, a tub centrally pivoted thereon, and a rubber within said tub, of an upright upon said support exterior to said tub, an arm projecting over the tub from said upright, a sleeve upon said arm, parallel uprights upon said rubber, provided with ways for part of their length, with which said sleeve engages, whereby when said rubber is raised and said sleeve disengaged from said ways, said rubber can be tilted and moved laterally and outwardly upon said arm to the side of the tub.

2. In a washing-machine, the combination with a tub, and a rubber within it, of parallel uprights secured to said rubber, ways upon said uprights for part of their length, a sleeve grooved to engage with said ways, and means to support said sleeve over the center of said tub and rubber whereby said ways can be disengaged from said sleeve and said rubber tilted.

In witness whereof I have hereunto set my hand this 23d day of October, 1897.

ALONZO A. CASLER.

In presence of—

C. W. SMITH,

HOWARD P. DENISON.