

(No Model.)

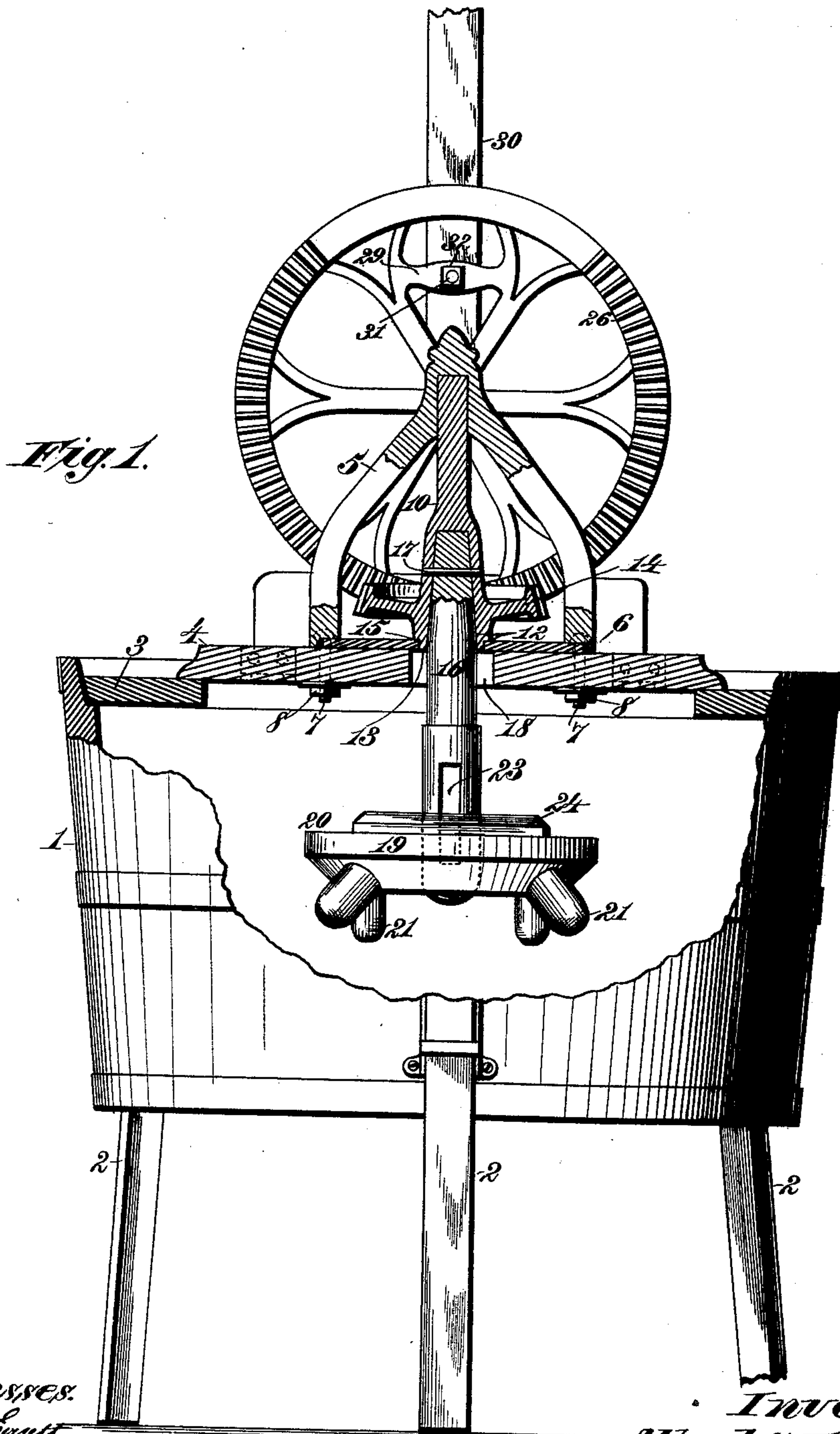
2 Sheets—Sheet 1.

A. C. F. WICHMAN.

WASHING MACHINE.

No. 414,100.

Patented Oct. 29, 1889.



Witnesses:

Philippine

J. A. Rutherford

Inventor:

Albert C. F. Wickman

By *James L. Norris*

Atty.

(No Model.)

2 Sheets—Sheet 2.

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Fig. 2.

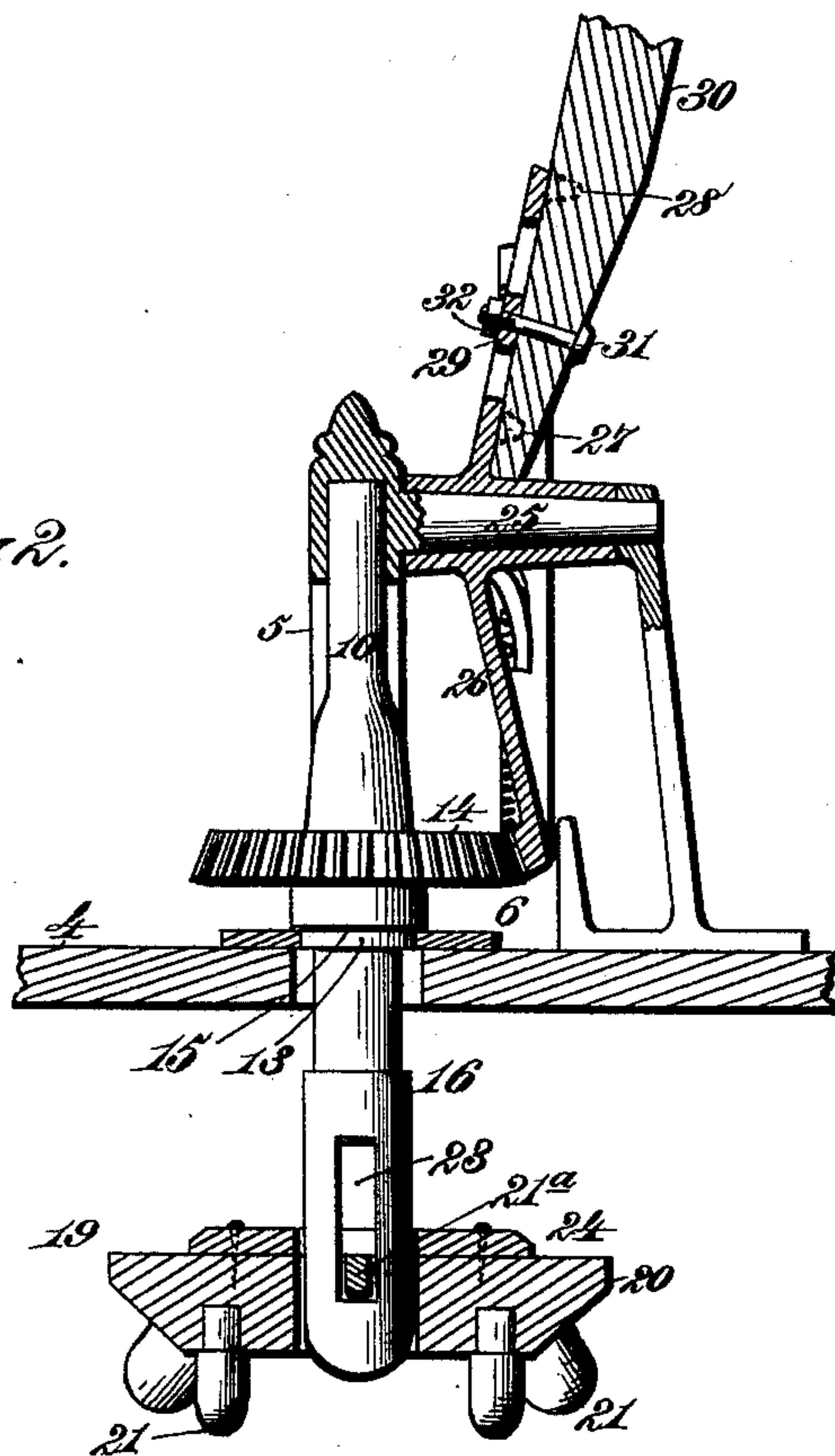
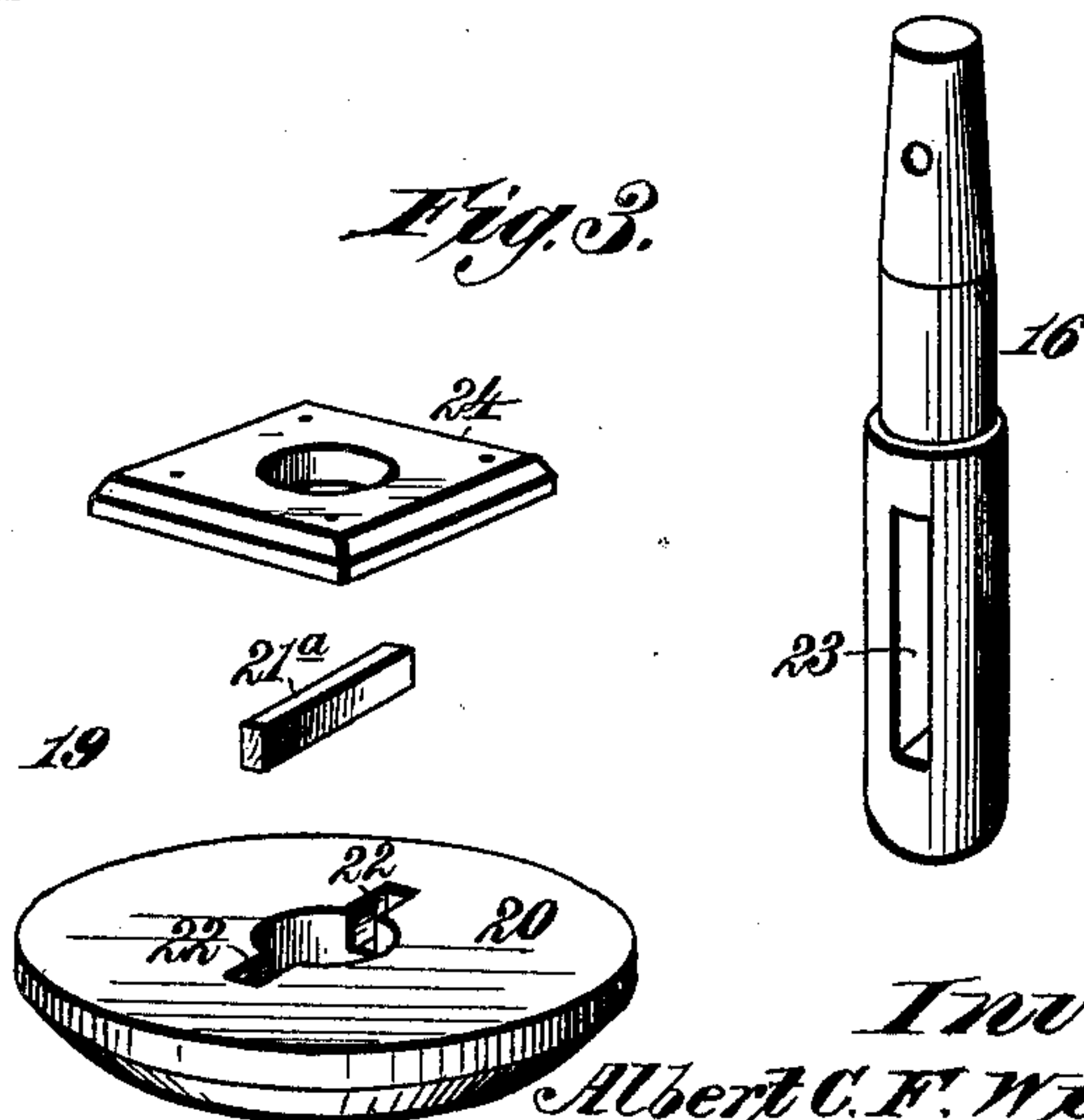


Fig. 3.



Witnesses:
Robert Everett,

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Inventor:

Albert C. F. Wichman.

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James L. Norris
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UNITED STATES PATENT OFFICE.

ALBERT C. F. WICHMAN, OF FORT WAYNE, INDIANA.

WASHING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 414,100, dated October 29, 1889.

Application filed February 12, 1889. Serial No. 299,571. (No model.)

To all whom it may concern:

Be it known that I, ALBERT C. F. WICHMAN, a citizen of the United States, residing at Fort Wayne, in the county of Allen and State of Indiana, have invented new and useful Improvements in Washing-Machines, of which the following is a specification.

My invention relates to washing-machines of that type in which a rotary dasher is carried by a shaft inserted through the cover of the tub and driven by suitable gearing, the dasher being vertically movable on the shaft or stem to compensate for variations in the height or quantity of clothes in the tub.

It is the purpose of my invention to provide an improved construction whereby a strong and durable union may be made between the shaft and the movable dasher, and whereby also only smooth or non-angular surfaces shall be presented to the clothes.

It is my purpose also to provide an improved construction and combination of parts, whereby a strong, simple, and easily-operated shaft shall be provided having a firm bearing at two points, and whereby also the construction of the gear, the shaft-socket, and their immediate adjuncts shall be greatly simplified.

The invention consists to these ends in the several novel features of construction and new combination of parts, hereinafter fully set forth, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a vertical section of a washing-machine showing my invention. Fig. 2 is a detail section of the shaft and dasher. Fig. 3 is a perspective view of the same with the shaft and cleat removed and shown separately.

In the said drawings, the reference-numeral 1 designates the tank, tub, or vessel of the washing-machine, which may be of any suitable form and size and mounted on legs or other supports 2. The vessel or tank is provided with a cover 3, having a hinged lid 4. Upon the lid 4 is mounted an arch 5, composed of a metal frame, the ends of which rest upon a plate 6 on the lid, to which they are fastened by bolts 7, passing up through the lid and plate and screwed into or otherwise fastened to the ends of the arch, nuts 8 turned upon the lower projecting ends of said bolts, washers being interposed between the nuts and the lower surface of the lid. Journaled

in a bearing in the central and highest portion of the arch 5 is a vertical shaft 10, of metal, having a socket 12 at its lower end, which rests upon the plate 6, and is provided with a flange or depending collar 13, which lies in an opening in said plate. Cast upon the lower end of the socket-piece is a miter-gear 14, having a horizontal shoulder 15, resting upon the plate 6. Inserted within the socket of the metal shaft is a cylindrical shaft 16, of wood, attached to the socket-piece by a transverse pin 17. This wooden shaft passes down through an opening 18 in the lid, which is closed by the collar 13 of the metal shaft. Upon the lower end of the cylindrical wooden shaft 16 is mounted a dasher 19, consisting of a circular wooden disk 20, having pins 21, which project therefrom at various angles and at different radial distances. Through the center of this disk is formed an opening large enough to admit the lower end of the cylindrical wooden shaft 16. Crossing this opening centrally is a wooden pin or bar 21^a, the ends of which lie in openings or slots 22, formed in the upper surface of the disk, of such depth that the bar 21^a shall lie substantially flush with the top of the said disk. This bar passes through a vertical slot 23, formed longitudinally in the shaft 16 and of such length that the disk may rise and fall on the shaft. A plate or cleat 24 is then laid upon the disk, said plate having an opening through which the shaft passes, the plate 24 being the only means whereby the bar 21^a is held in the slots 22.

Upon the upper and central portion of the arch 5 is formed a laterally-projecting stud or journal 25, upon which is mounted a miter-gear 26, meshing with the miter 14. The miter 26 is cast with a boss or nipple 27, projecting from its outer face near the journal, and a second and similar nipple 28, projecting from a point near its periphery. Between these two points a transverse brace or arm 29 is cast or mounted on the radial parts of the gear, said brace having an aperture to receive a bolt. The end of the journal 25 is supported by a brace 33, rising from the lid and having an arm 34, which projects from the brace and has its end lying in close proximity to the periphery or edge of the gear 26, to preserve the mesh between its teeth and the teeth of the

beater-driving pinion 14. The actuating-lever 30 is connected to the nipples 27 and 28, openings being formed in the lever to receive them, and a bolt 31 is then passed through an opening in the lever between the said nipples and upon its end which projects through the aperture in the brace 29. A nut 32 is turned, which holds the lever firmly in place. This gives an exceedingly firm, durable, and cheap connection for the lever, which may be readily and quickly attached and detached, and whereby also any loosening of the lever may at once be compensated by turning up the nut fastening said lever.

By giving the shaft 16 a cylindrical form I am able to avoid the tendency on the part of the clothes to wind around and become entangled thereon, as well as to avoid sharp angles, which may injure delicate fabrics. Moreover, by laying the bar 21^a in the slots 22 and confining it by the plate 24 I obtain an exceedingly strong connection without the use of metal fastenings, and I am able to instantly detach and replace the bar when it is desired to disconnect the shaft and disk.

What I claim is—

1. The combination, with the lid of a washing-machine, of the arch secured to the lid and cast integral with the lateral journal, the metallic shaft cast integral with the miter-gear and the socket and having its upper end journaled in the center of the arch, the metallic plate on the lid serving as a bearing for the lower end of the metallic shaft, the wooden

dasher-carrying shaft having its upper end secured in the socket of the shaft cast with the miter-gear, and the miter-gear mounted loosely on the journal cast with the arch, substantially as described.

2. The combination, with the lid of a washing-machine having an attached metallic plate provided with a central orifice, of the arch cast integral with a central vertical socket-bearing and a horizontally-projecting journal, the metallic shaft seated at its upper end in the socket of the arch and cast integral with the miter-gear, the central vertical socket, the annular collar and the annular shoulder, and the miter-gear loosely mounted on the journal cast with the arch, substantially as described.

3. The combination, with the tub and lid of a washing-machine, of the arched frame 5, cast integral with the horizontal journal 25, the shaft 10, journaled at its upper end in the arched frame and cast integral with the miter-gear 14 and vertical socket 12, dasher-carrying shaft 16, secured within said socket, and the miter-gear 26, loosely mounted on the journal cast with the arched frame, substantially as described.

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

ALBERT C. F. WICHMAN.

Witnesses:

JACOB J. KERN,
J. H. SIMONSON.