

No. 674,644.

Patented May 21, 1901.

G. J. CLINE.
WASHING MACHINE.

(Application filed Feb. 16, 1900.)

(No Model.)

2 Sheets—Sheet 1.

Fig. 1.

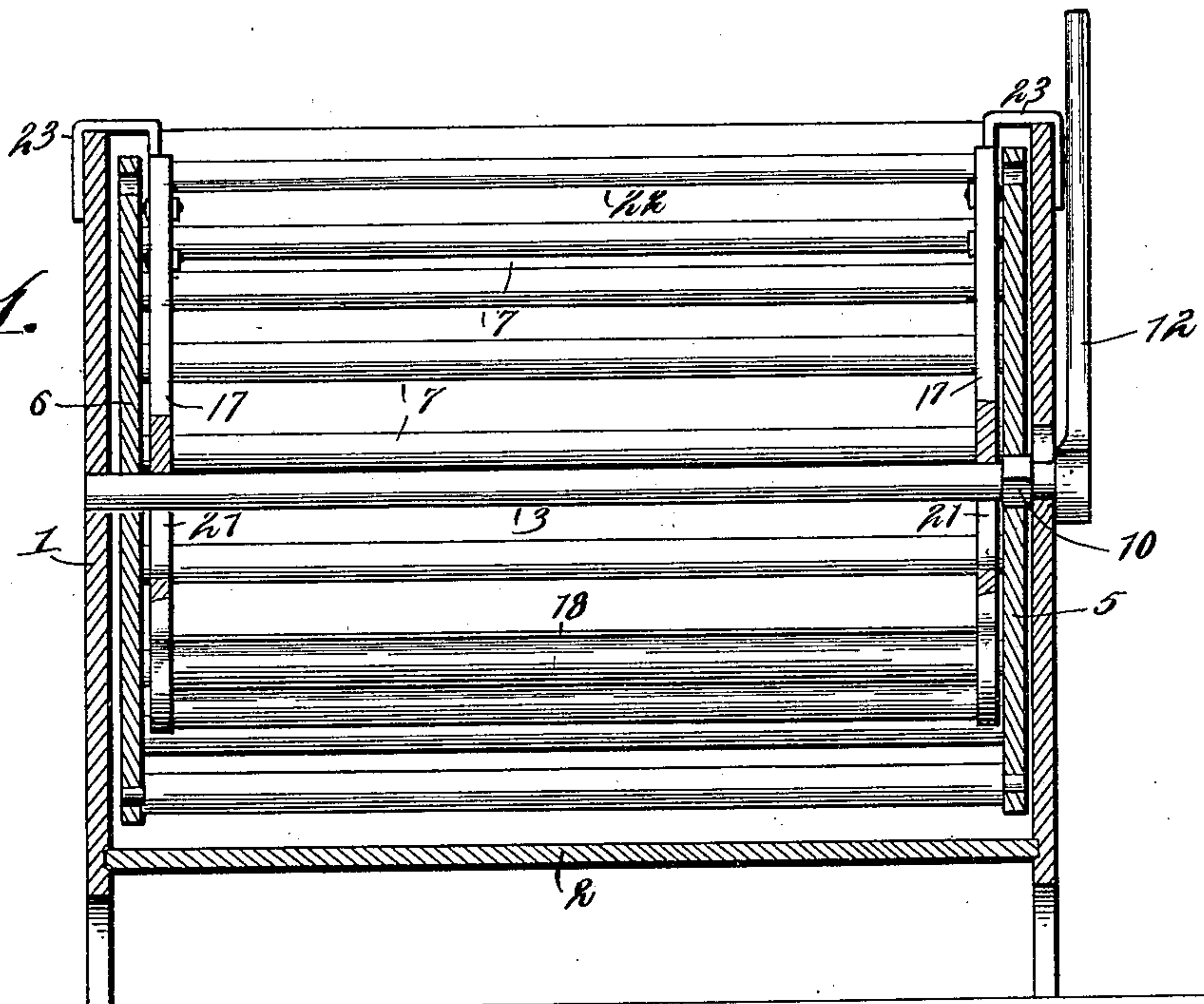


Fig. 2.

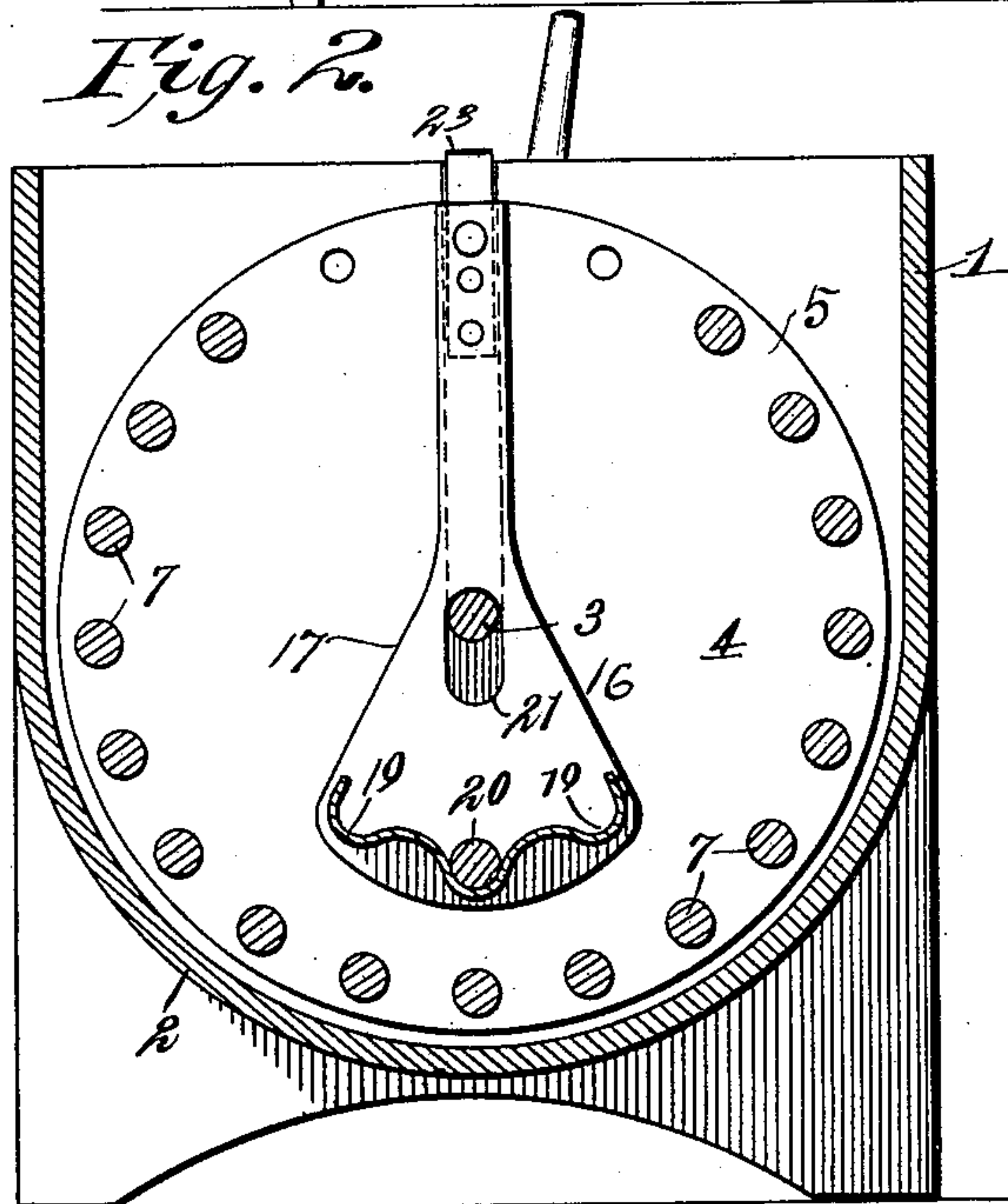
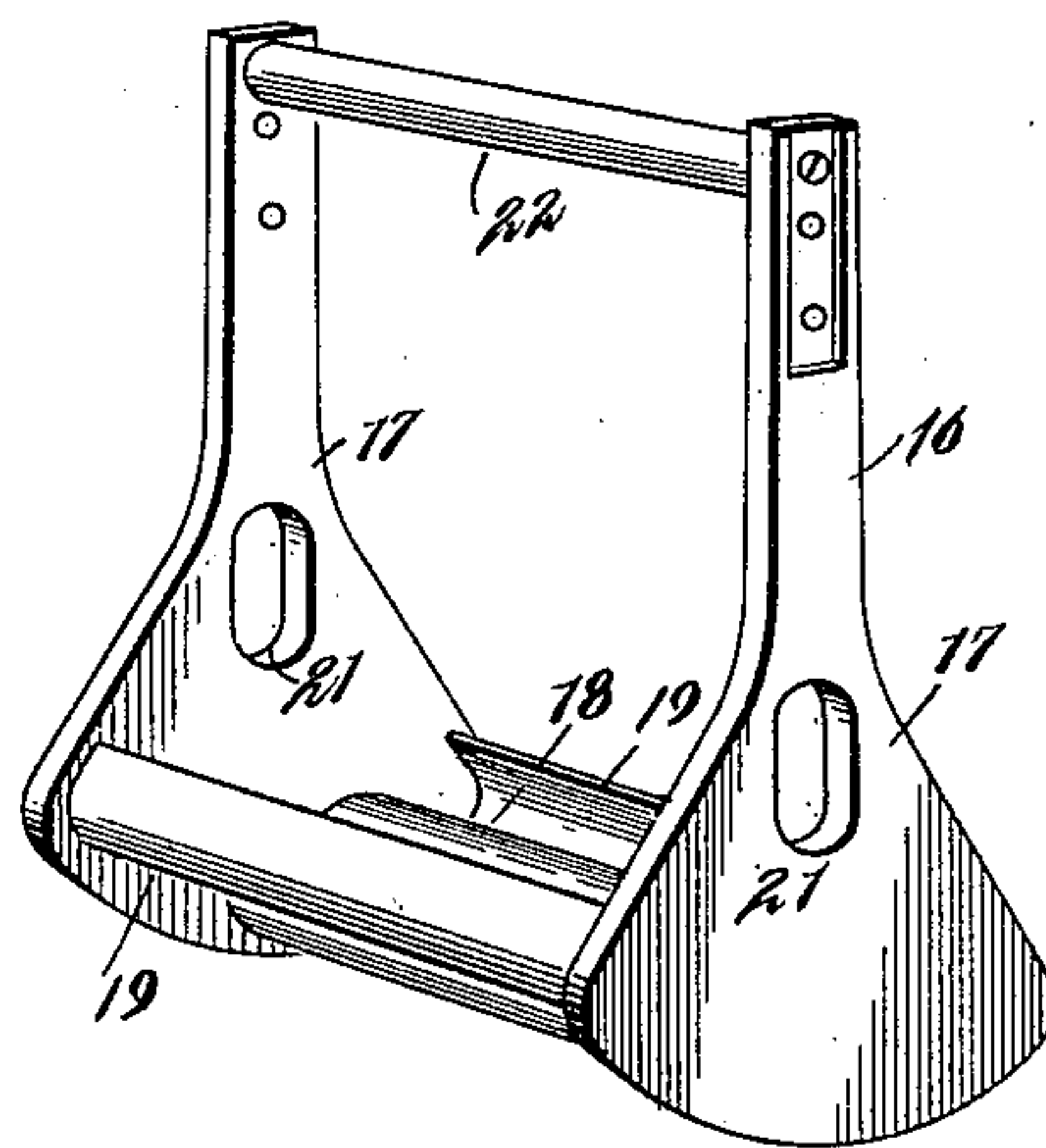


Fig. 3.



Witnesses

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2 Sheets—Sheet 2.

Fig. 4.

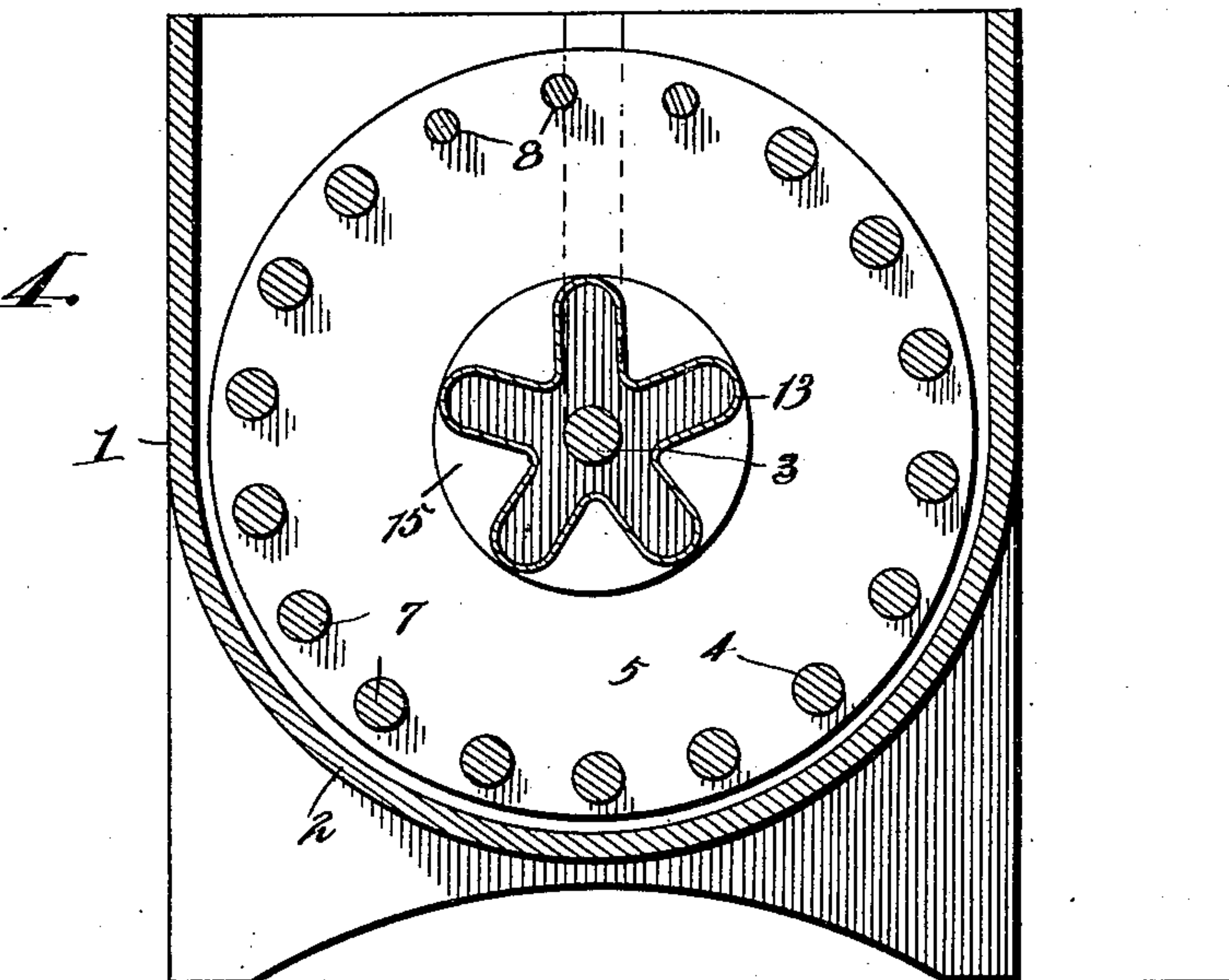
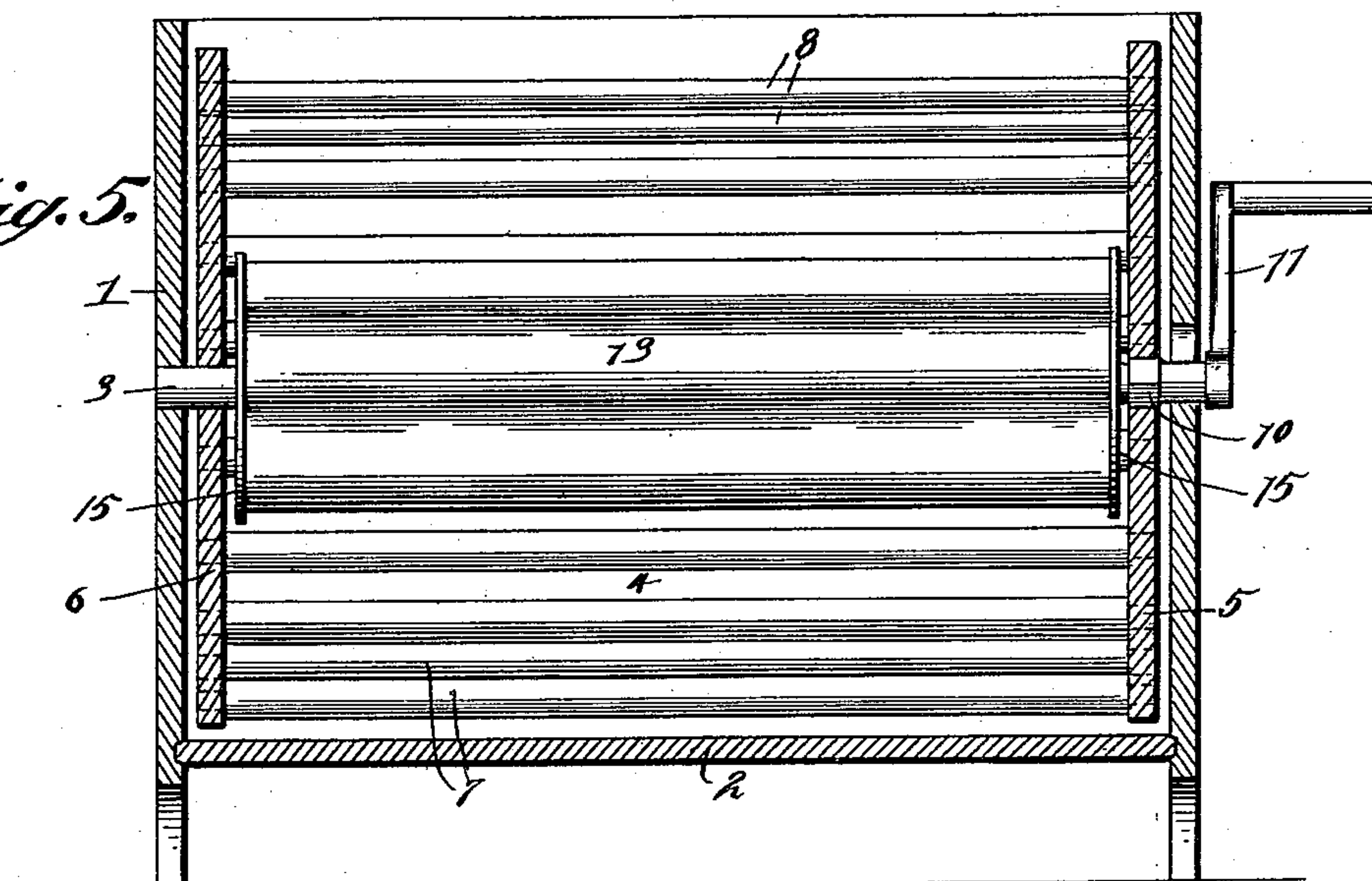


Fig. 5.



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UNITED STATES PATENT OFFICE.

GEORGE J. CLINE, OF GOSHEN, INDIANA.

WASHING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 674,644, dated May 21, 1901.

Application filed February 16, 1900. Serial No. 5,521. (No model.)

To all whom it may concern:

Be it known that I, GEORGE J. CLINE, a citizen of the United States, residing at Goshen, in the county of Elkhart and State of Indiana, have invented a new and useful Washing-Machine, of which the following is a specification.

The invention relates to improvements in washing-machines.

The object of the present invention is to improve the construction of washing-machines and to provide a simple and comparatively inexpensive one capable of rapidly and thoroughly washing clothes and other fabrics without injuring the same and adapted to be arranged for washing clothes and similar light fabrics and also for heavy fabrics, such as blankets and the like.

The invention consists in the construction and novel combination and arrangement of parts hereinafter fully described, illustrated in the accompanying drawings, and pointed out in the claims hereto appended.

In the drawings, Figure 1 is a vertical sectional view of a washing-machine constructed in accordance with this invention, the section being taken longitudinally of the shaft. Fig. 2 is a similar view taken at right angles to Fig. 1. Fig. 3 is a detail perspective view of the stationary rubber. Fig. 4 is a sectional view similar to Fig. 2, the cylindrical clothes-receptacle being arranged for rotation. Fig. 5 is a vertical sectional view taken at right angles to Fig. 4.

Like numerals of reference designate corresponding parts in all the figures of the drawings.

1 designates a washing-machine body having a curved bottom 2 and provided at opposite sides with bearings for the reception of a removable transverse shaft 3, and the latter is adapted to rotate or oscillate an approximately cylindrical clothes-receptacle 4. The cylindrical clothes-receptacle consists of a pair of disks or heads 5 and 6 and an annular series of rods 7, having their ends fitted in perforations of the disks or heads at points adjacent to the periphery of the same, the spaces or intervals between the rods forming openings for the passage of suds and water. The rods 8 at the top of the cylindrical clothes-receptacle are removable, being of less diame-

ter than the rods 7 to enable them to be drawn lengthwise through the openings of the disk or head 5, and the other rods 7, which are permanently secured to their disks or heads, are preferably reduced at their ends to form tenons and to provide shoulders for abutting against the inner faces of the disks or heads.

The heads of the cylindrical clothes-receptacle are provided with openings for the reception of the horizontal shaft, and the head 5 is interlocked with a squared portion 10 of the shaft, whereby the cylindrical receptacle is operated by the operation or rotation of the shaft. One end of the shaft is extended beyond the washing-machine body and is adapted to receive either a crank-handle 11 for rotating the shaft or a lever 12 for oscillating the same.

When the entire annular series of rods are arranged in the cylinder or cylindrical receptacle, as illustrated in Fig. 4 of the accompanying drawings, this receptacle is adapted to be rotated, and a loose rubber 13 is fitted on the shaft and is adapted to be engaged by the clothes. This loose rubber 13 consists of a sheet-metal body provided with an annular series of longitudinal flutes or radially-extending bends substantially U-shaped in cross-section and forming flanges which cooperate with disks or heads 15 at the ends of the body to form an annular series of buckets. When the cylinder or cylindrical receptacle is rotated, the clothes dropping backward on the loose rubber 13 cause the latter to rotate in a direction opposite to the direction in which the cylindrical receptacle is rotated. This results in a certain rubbing action and the buckets become filled with air and water successively, causing the air to pass upward through the clothes to facilitate the operation of washing.

When the rods 8 are removed, as illustrated in Figs. 1 and 2 of the accompanying drawings, the cylindrical receptacle is designed to be oscillated in connection with a stationary rubber 16, composed of two vertical sides 17 and a horizontal pan 18, connecting the sides at the lower ends thereof. The sides consist of upper shanks and lower sector-shaped portions, and the pan, which is preferably constructed of sheet metal, is curved or corrugated to form a lower rubbing-surface, and

its longitudinal edges extend upward and inward to form interior grooves or recesses 19, which are adapted to catch and retard water flowing over them, whereby such water is agitated. The water flowing in one direction will contact with one side of the pan and will be thrown upward and backward by the same, and when it flows in the opposite direction it will contact with the other upturned edge. The center of the pan is supported and held against upward movement on the sides 17 by a transverse rod 20. The sides are provided with vertical slots or openings 21, through which passes the shaft and which permit the rubber to adjust itself vertically to accommodate itself to the quantity of clothes within the cylindrical receptacle and also to relieve the pressure and prevent the clothes or other fabrics from becoming wedged between the lower face of the pan and the bottom of the cylindrical receptacle. The upper ends of the sides 17 are preferably supported by a cross-bar 22, and one or both of the sides may be provided with an approximately L-shaped arm 23, preferably formed integral with a shank or bar and engaging over the upper edge of the washing-machine body, whereby the rubber 16 is prevented from oscillating materially on the shaft when the cylindrical receptacle is operated. The removable rods 8 permit the clothes or other fabrics to be placed into and removed from the cylindrical receptacle when the same is arranged for rotation, and the stationary rubber is adapted to exert a rubbing action on the clothes passing beneath it, while its up-

per portion serves to agitate the water passing over it.

When the washing-machine is arranged as illustrated in Figs. 1 and 2 of the drawings, it is adapted for operating on heavy fabrics—such as blankets, quilts, carpets, and the like—and when the parts are arranged as illustrated in Figs. 4 and 5 of the drawings the machine is adapted for washing clothes and other light fabrics.

What is claimed is—

1. A washing-machine comprising a washing-machine body, a removable cylindrical receptacle composed of heads provided with an annular series of perforations, and an annular series of peripheral rods connecting the heads, the rods at the top of the receptacle being removable, a shaft interlocked with the heads, and a rubber mounted on the shaft, substantially as described.

2. A washing-machine comprising a body, a receptacle arranged within the body, a shaft supporting the receptacle, and a rubber provided with slotted sides to receive the shaft and having hooks at their upper ends extending over the top of the receptacle and engaging the sides of the body, substantially as described.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

GEORGE J. CLINE.

Witnesses:

H. C. B. HARRISON,
W. S. WISE.