

F. E. THOMPSON.
GEARING FOR WASHING MACHINES.
APPLICATION FILED JULY 13, 1907.

930,706.

Patented Aug. 10, 1909.

3 SHEETS—SHEET 1.

Fig. 2.

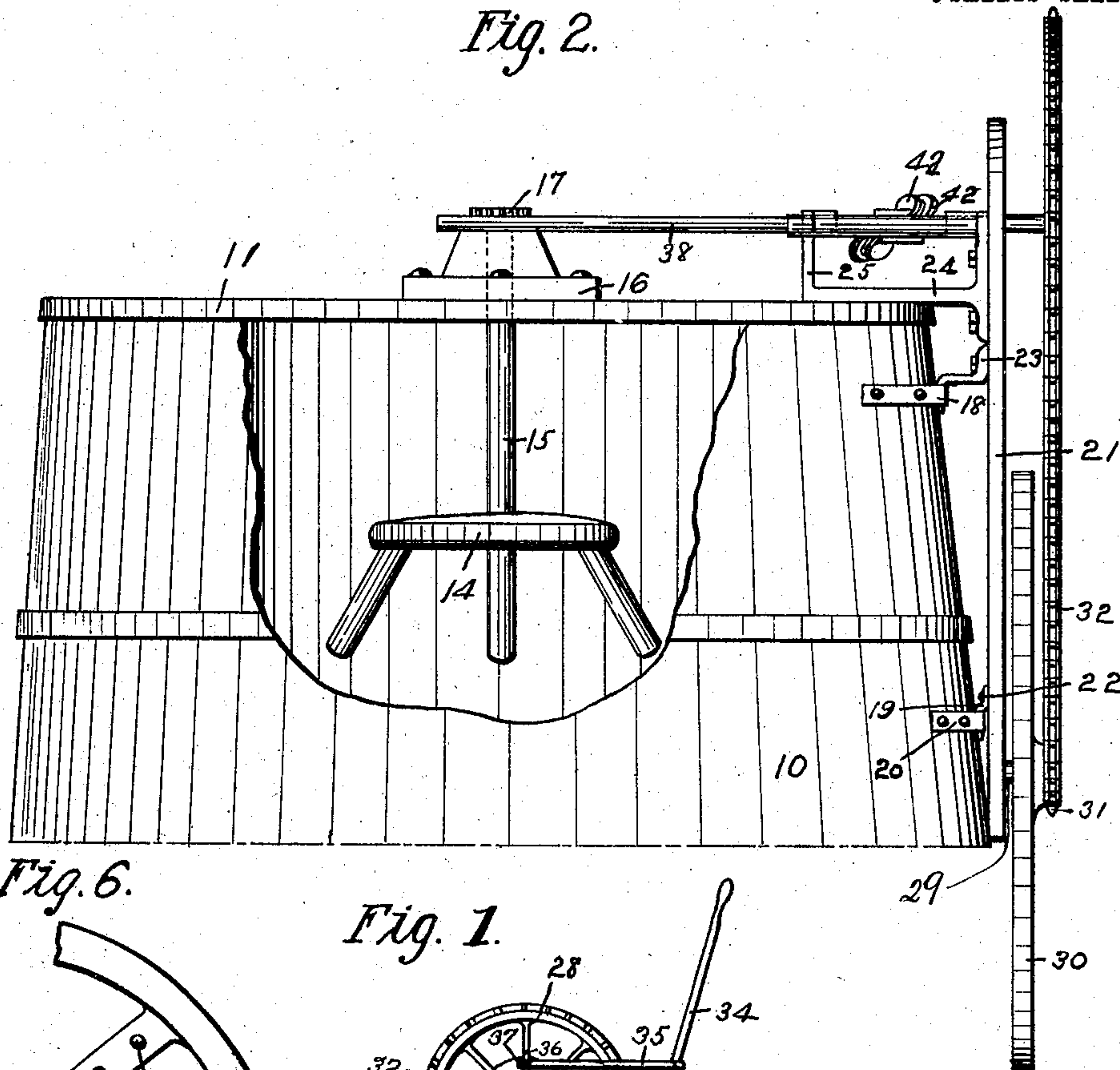


Fig. 6.

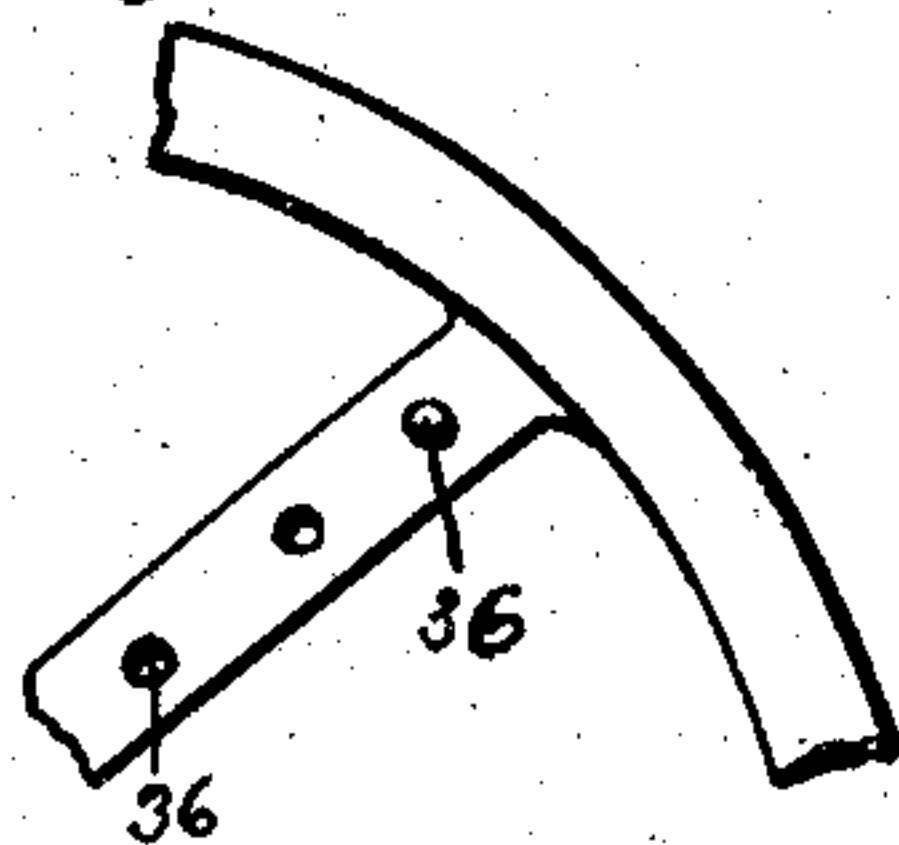
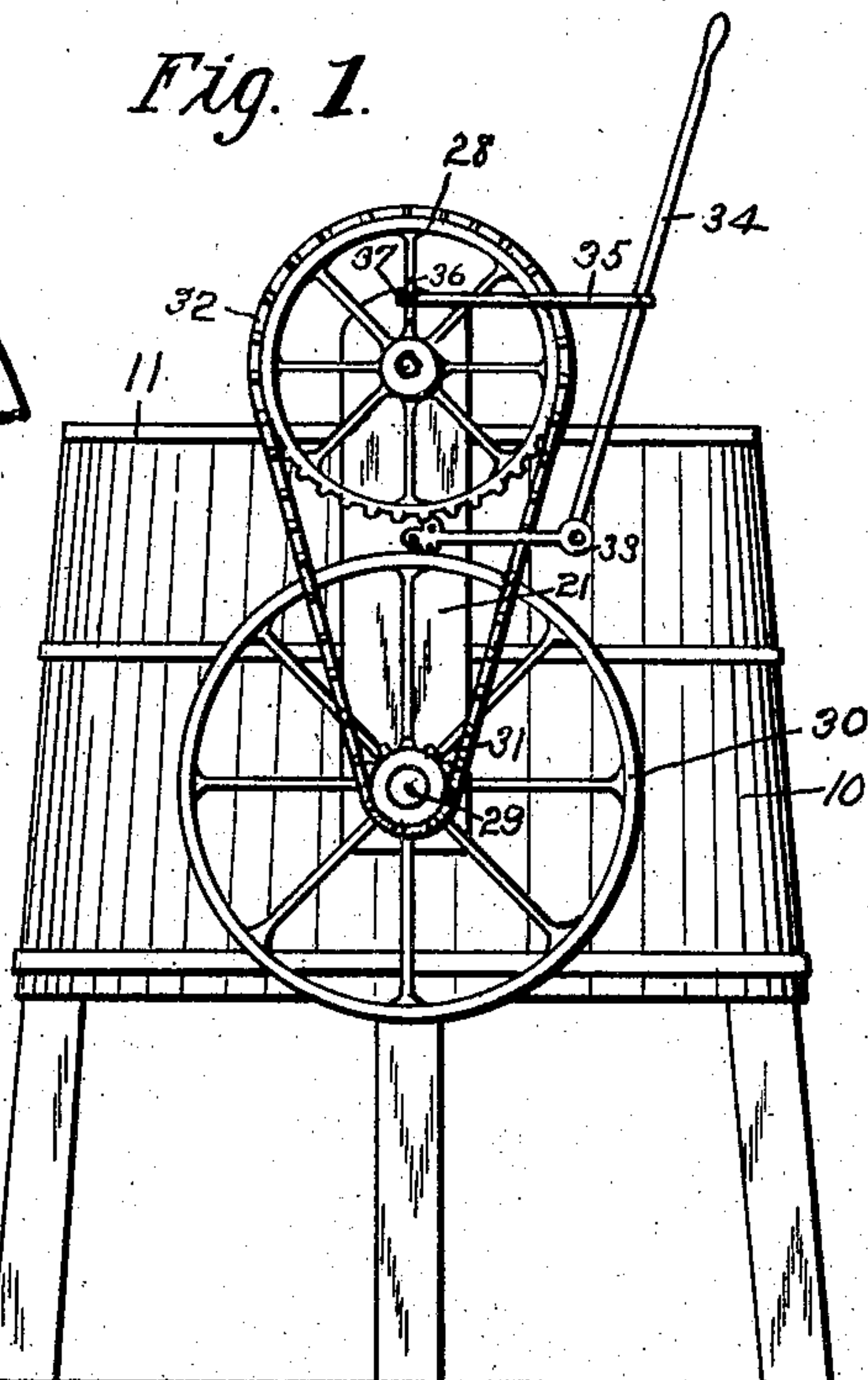


Fig. 1.



Witnesses.

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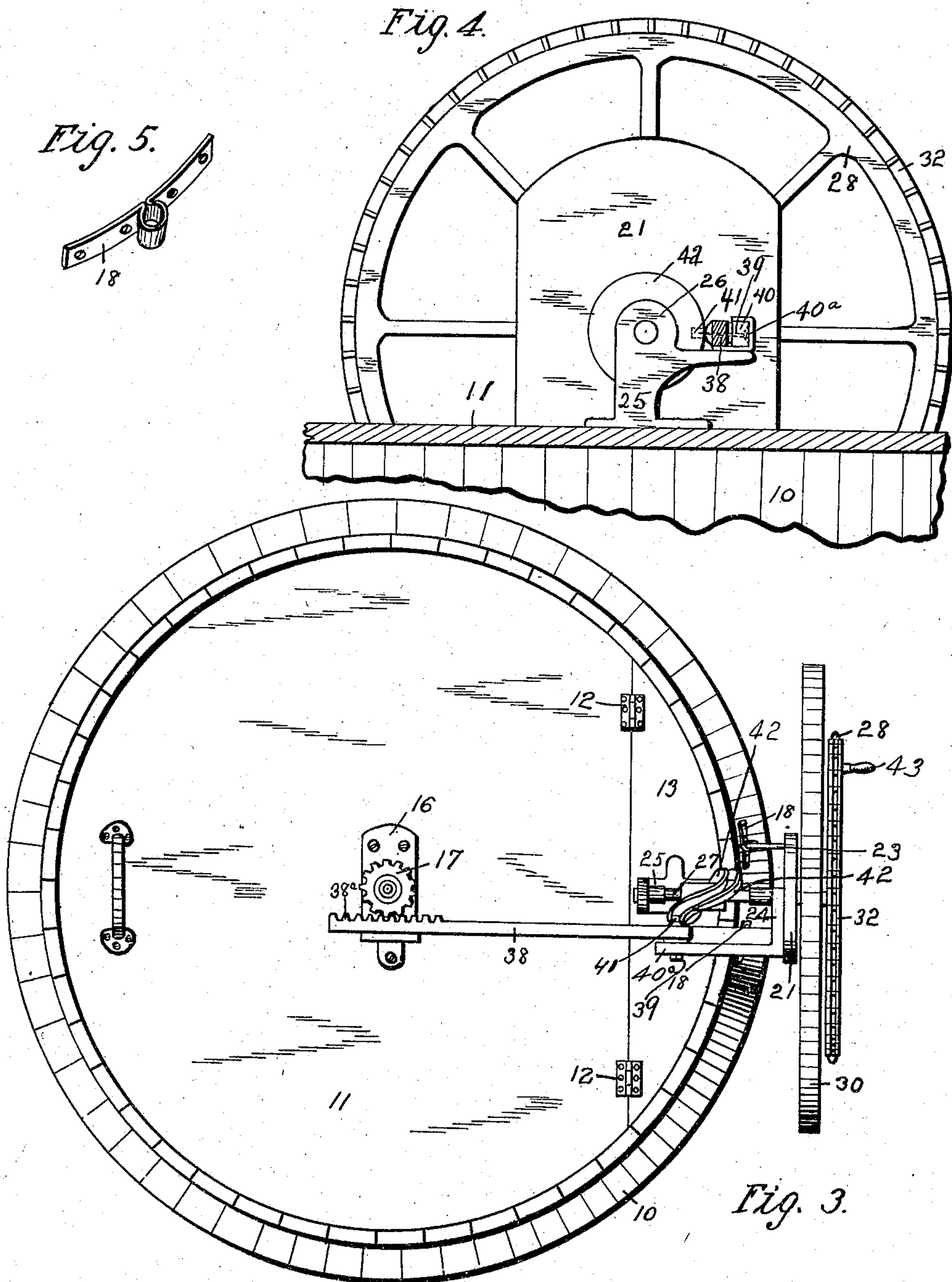
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3 SHEETS—SHEET 2.



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3 SHEETS—SHEET 3.

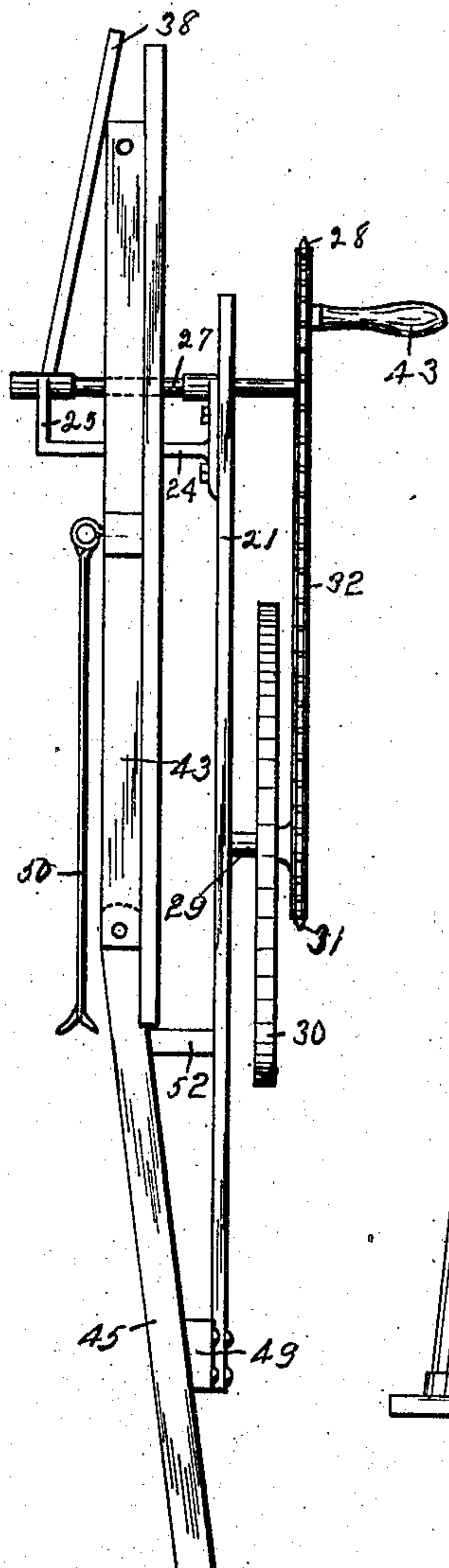


Fig. 8.

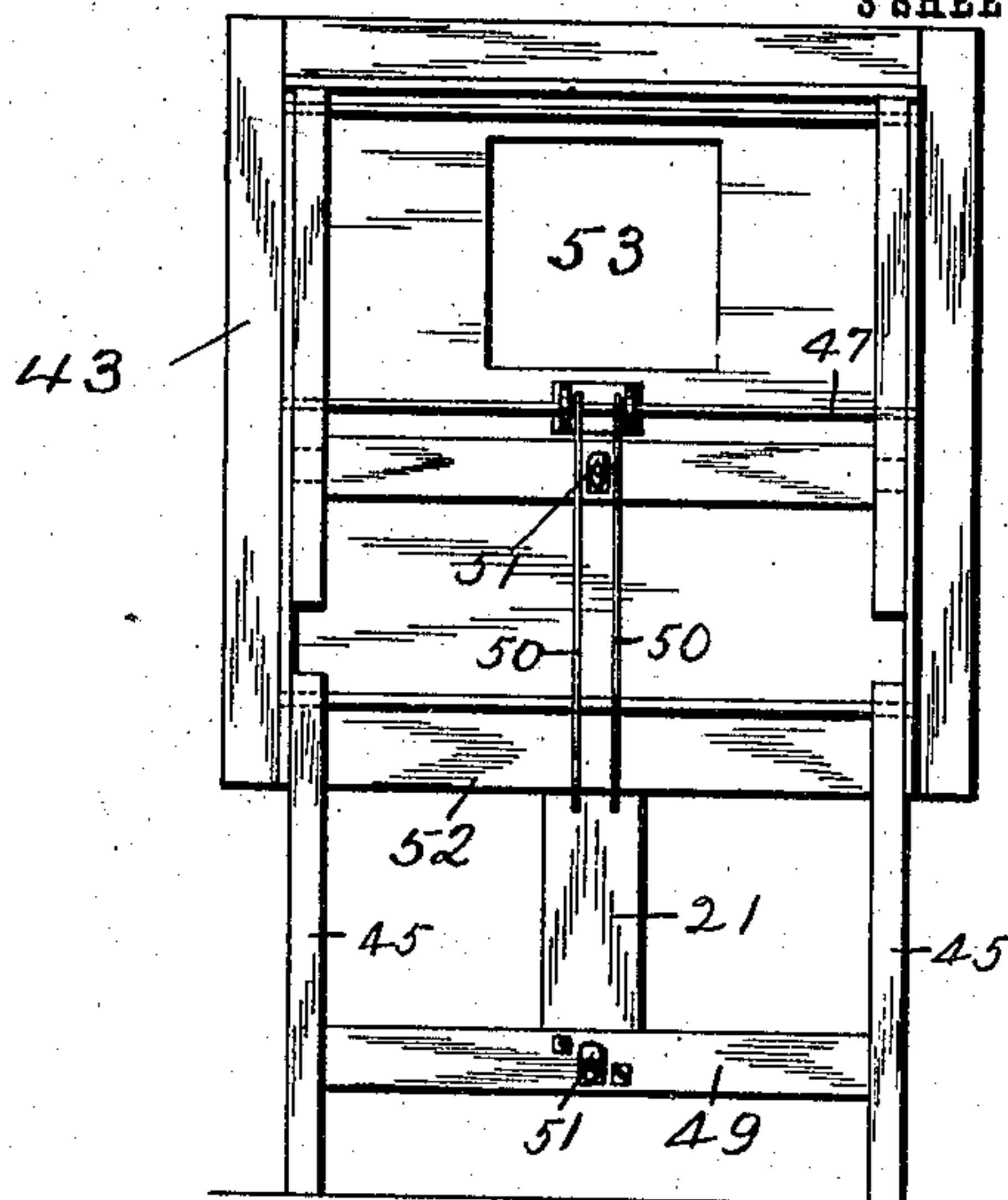


Fig. 9.

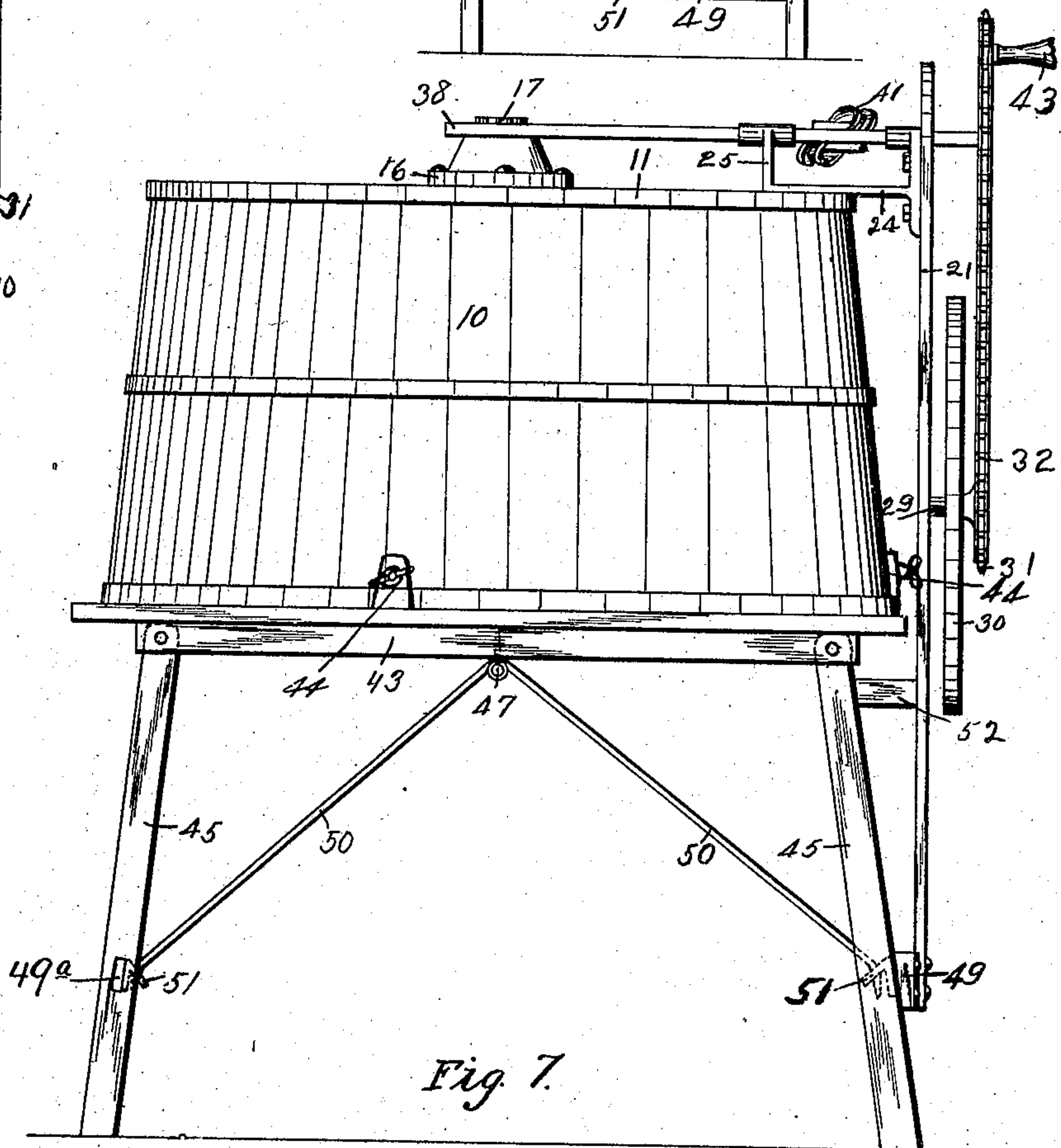


Fig. 7.

Witnesses.

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UNITED STATES PATENT OFFICE.

FRANK EVANS THOMPSON, OF NEWTON, IOWA.

GEARING FOR WASHING-MACHINES.

No. 930,706.

Specification of Letters Patent.

Patented Aug. 10, 1909.

Application filed July 13, 1907. Serial No. 383,611.

To all whom it may concern:

Be it known that I, FRANK EVANS THOMPSON, a citizen of the United States, residing at Newton, in the county of Jasper and State of Iowa, have invented a new and useful Gearing for Washing-Machines, of which the following is a specification.

The object of my invention is to provide a washing machine of simple, durable and inexpensive construction, so arranged that the operative mechanism thereof may be readily attached to, or detached from the machine when desired by the user. Further, to provide an operating mechanism constructed as an independent unit, and not capable of being thrown out of alinement should the parts of the machine, which come in contact with water, warp. Furthermore the user of my machine may stand erect while operating it, should he desire, and all the working parts of the machine are readily accessible for cleaning and oiling.

My invention consists in the construction of an operative mechanism of a washing machine assembled as a unit, readily attached and detached from the tub portion of the machine, means for attaching said mechanism to the tub and means for transmitting the working power to the agitator within the tub, as hereinafter more fully set forth, pointed out in my claims and illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation of a washing machine embodying my invention. Fig. 2 is a side view of the operating mechanism attached to the tub portion of the washing machine. Fig. 3 is a plan view of the device. Fig. 4 is an end view of the driving shaft, the journal and rack connections. Fig. 5 is a detail perspective view of one of the supporting eyes upon which the operating mechanism is mounted. Fig. 6 is a detail view showing one of the spokes of the large sprocket wheel with which the operating lever is connected. Fig. 7 is a side elevation of a washing machine embodying a modified form of my invention. Fig. 8 is an end elevation of the operative mechanism attached to one of the supporting legs of the stand, showing the stand thrown upwardly, bringing the parts into a compact position. Fig. 9 is a side elevation of the device as shown in Fig. 8.

Referring to the accompanying drawings, the numeral 10 indicates the tub portion of the washing machine; the swinging portion of the top is indicated by 11, attached by

hinges 12, to the fixed portion of the cover 13. I have provided an agitator, comprising the head, 14 and the shaft 15, which passes through the journal plate, 16, and is supported and driven by a pinion 17. Attached to the side of the tub 10, near its upper portion are two eyes, 18; and beneath these eyes are the eyes, 20. I have provided a gearing supporting frame, 21, having attached to it two pairs of supporting hooks, 22 and 23, adapted to enter the supporting eyes 18 and 20, all of which are designed to maintain the operating mechanism of my device in position relative to the tub. Secured to the upper portion of the frame 21, above the hooks 23, is a supporting bracket 24, adapted to rest upon the fixed portion of the cover 13, the ends 25 of the supporting bracket 24 being bent upward at substantially right-angles to its body portion. In the end 25, there is a journal 26, through which passes the driving shaft 27, upon which is mounted the sprocket wheel 28.

Mounted upon the stub shaft 29, near the lower end of the frame 21, is the balance wheel 30. The small sprocket 31 is formed integral with the hub of the balance wheel 30 and a sprocket chain 32 passes around the sprockets 28 and 31. Attached to the central portion of frame 21 is the bracket 33 to which is pivoted the operating lever 34, pivotally attached to the central portion of which at one end and at its other end to a spoke of the sprocket wheel 28 is a pitman 35. I have provided a series of openings 36 in the spokes of the sprocket wheel 28 to which the pitman is attached to enable the said pitman to be adjusted for lengthening or diminishing the stroke of the operating lever 34.

The numeral 38 designates a rack bar having at one end the rack 38^a, to mesh with the pinion 17 and held in operative position by the angular extension of the plate 16; extending through the outer end of the rack bar 38, is a bolt 39 securing it to the guide block 40, which is fitted to reciprocate in a channel in the extension, 40^a which forms a part of the supporting bracket 24, this angular extension 40^a being substantially parallel with the driving shaft 27. Mounted on the outer end of the bolt 39 is a roller 41, fitted to engage a suitable cam 42, which is rigidly attached to the driving shaft 27 so that as the shaft 27 is rotated the cam will cause the rack 38 to reciprocate and impart

a rotary reciprocatory motion to the agitator in the tub. Secured to the sprocket 28, is a handle 43, which may be used in operating the machine in place of the operating lever 34 and the pitman 35 which parts may be detached if desired to operate the machine by using the handle 43.

In the practical use of my invention the operator applies power to the operating lever 34 or the handle 43, which causes the large and small sprockets and balance wheel to revolve, communicating a rotary motion to the driving shaft 27. As this shaft revolves, the cam 42 engages the roller 41 and causes the rack bar 38 to reciprocate, thus communicating a rotary reciprocatory motion to the agitator within the tub, the balance wheel 30 by its rapid movement creating a steady action of the machine. When it is desired to move the machine, the operator may remove the operating mechanism for the purpose of dividing the weight of the device.

In a modified form of my construction shown in Figs. 7, 8, and 9, the tub 10 is detachably mounted upon the stand 43 by means of the clamps 44. To add to the stability of the construction I have provided two connecting bars 49 and 49^a, rigidly attached to the legs 45, substantially as shown in Fig. 9. I have also provided the braces 50 pivoted to the stand 43 and adapted to engage the eyes 51, which are firmly attached to the bars 49 and 49^a near the middle portions thereof. On bars 52 firmly joined to the set of legs 45 which is connected by the bar 49, and upon said bar 49, I mount rigidly the gearing supporting frame 21. In the use of this form of my device, if desired to move the machine, the operator may readily release the clamps 44 and remove the tub 10. By disengaging the braces 50 from the eyes 51 the stand 43 may be raised upon the pivoted supporting legs to which the frame 21 is attached and the other legs will swing downwardly so that the entire device assumes the position shown in Fig. 8, the shaft 27 and parts mounted thereon extending through the opening 53 in the stand 43 and the rack 38 folding upwardly as shown. In this way the operating mechanism and tub supporting frame may be brought into close compass for transportation and ease in handling.

Having thus described my invention, what I claim and desire to secure by Letters Patent of the United States therefor, is—

1. In a device of the class described, the combination of a support, a supporting frame arranged at one side of and detachably connected with said support, a rotary element mounted in the support, a reciprocatory bar mounted on the supporting frame and operatively connected with said rotary element, a drive shaft mounted on the supporting frame and removable with it, a cam fixed on said shaft and in engagement with the reciprocatory bar for operating the bar during the rotation of the shaft, a balance wheel mounted on the supporting frame, and a speed increasing gearing device connecting the drive shaft with said balance wheel.

2. In a device of the class described, a support, a supporting frame detachably connected to one side of the support and having a bearing and guide overhanging the support, a rotary element mounted in the support, a reciprocatory bar movable in and connected with said guide, and having a lateral projection, said bar being operatively connected with said rotary element, a drive shaft mounted in the bearing of the supporting frame, a cam fixed on said shaft and in engagement with the projection on the reciprocatory bar, a balance wheel mounted on the lower portion of the supporting frame, and a speed increasing gearing device for operating said balance wheel by power from the drive shaft.

3. In a device of the class described, the combination of a support, a rotary element mounted in the support, a supporting frame detachably mounted on one side of the support, a drive shaft mounted on the support, means operated by the drive shaft for imparting an alternating rotary motion to the rotary element when the drive shaft is rotated in one direction, a balance wheel mounted on the lower portion of the support, and a gearing device operatively connecting the drive shaft and the balance wheel, and means for rotating the drive shaft.

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Witnesses:

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