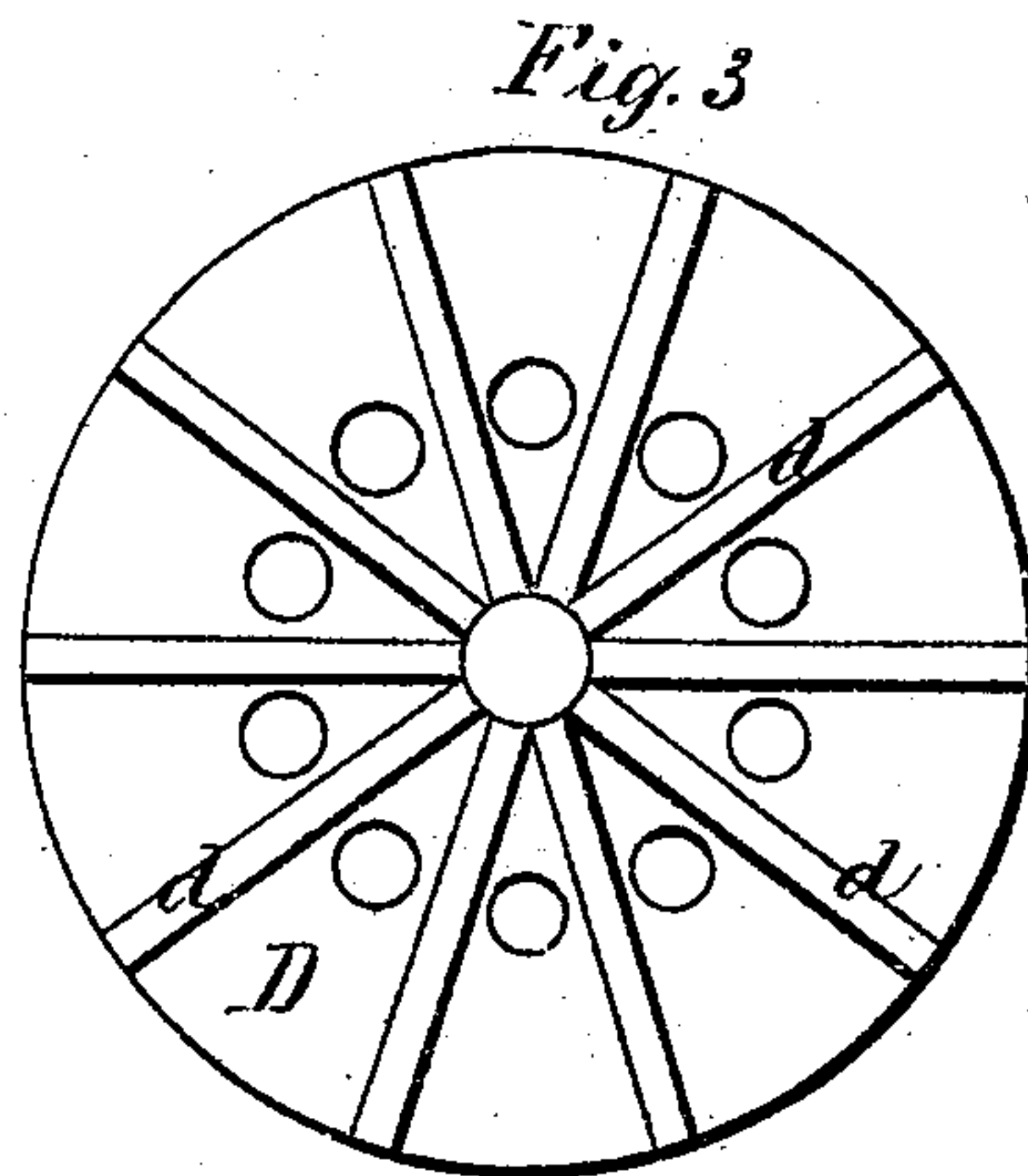
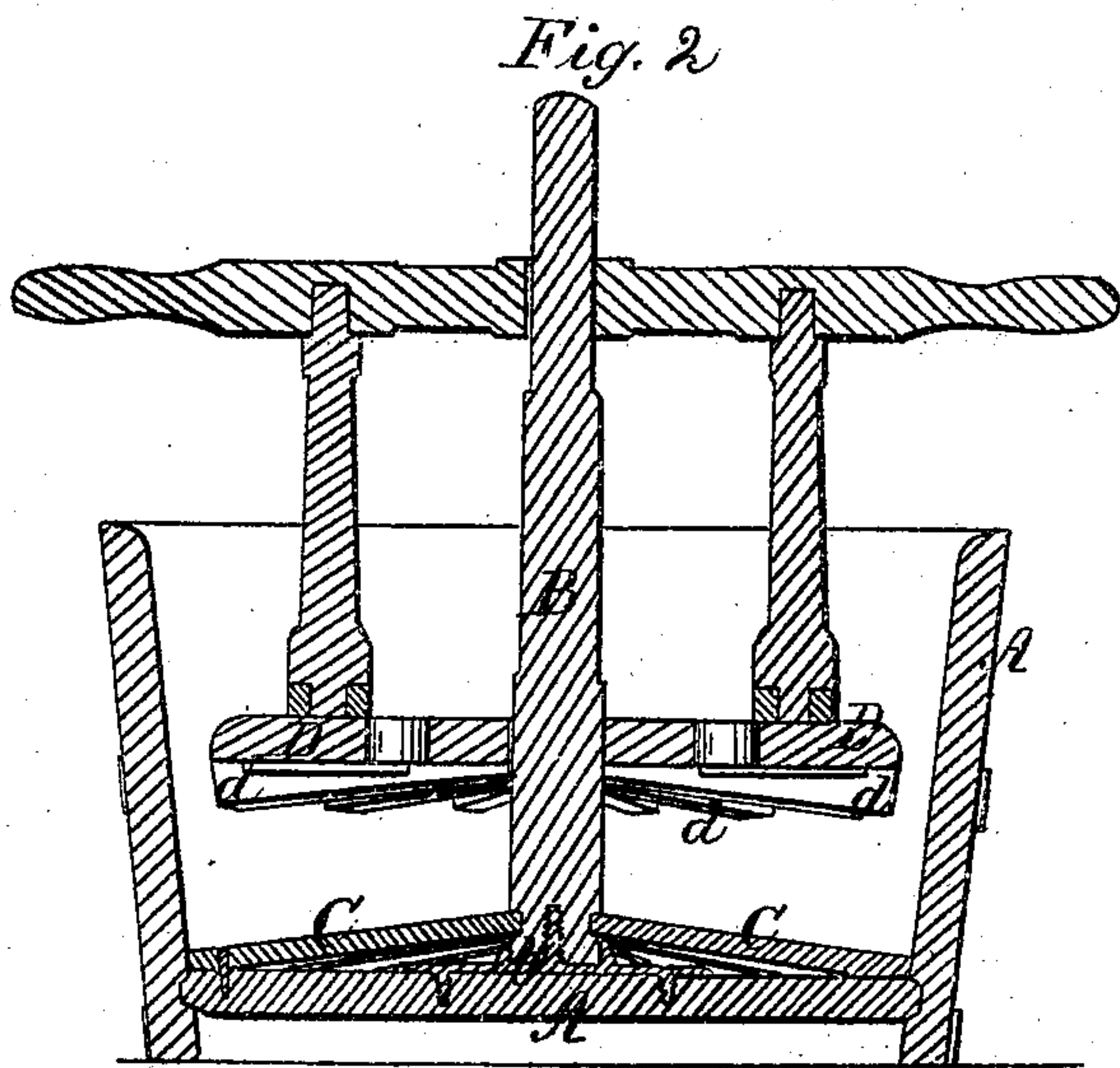
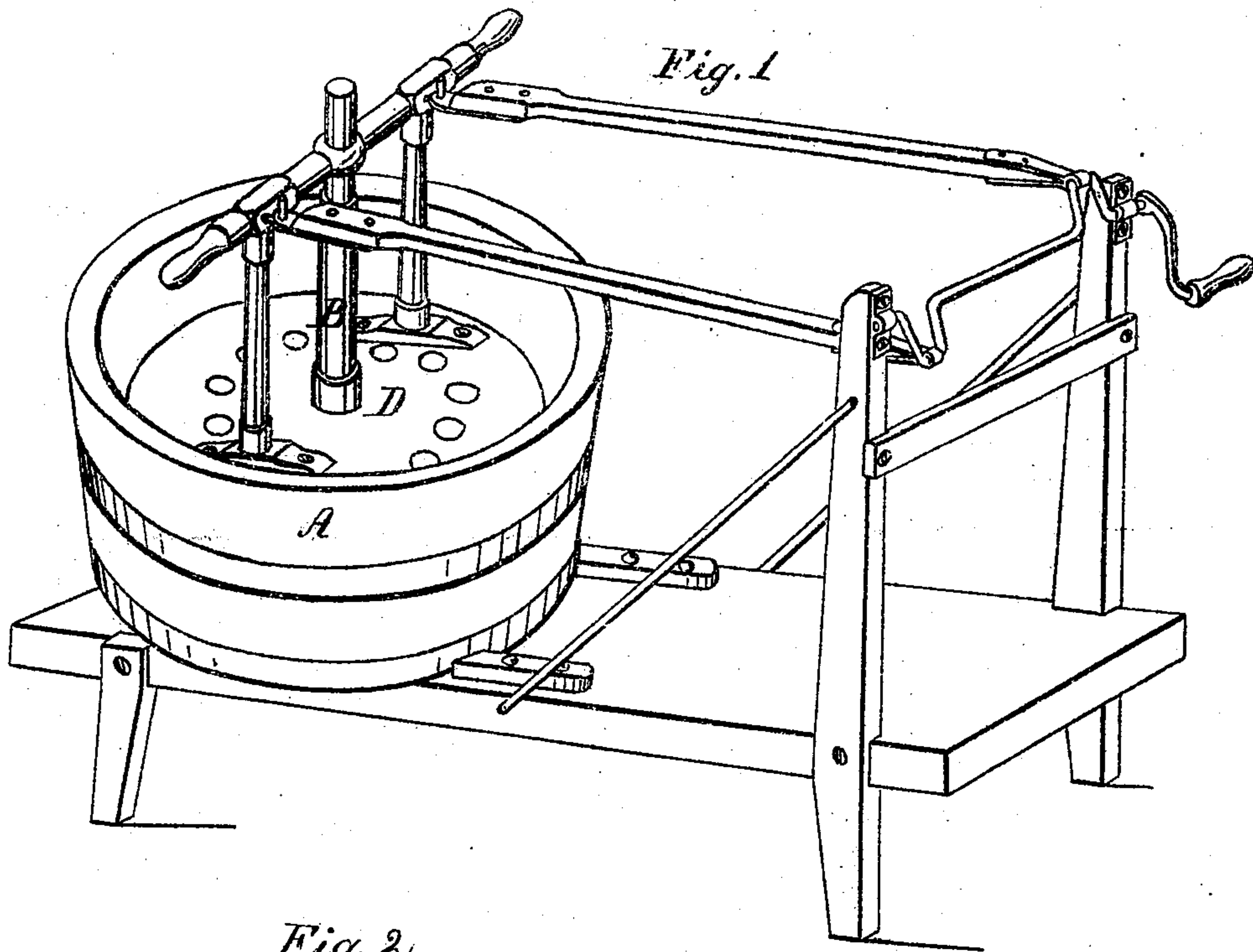


O. M. Mitchell.
Washing Mach.
No. 92,868. *Patented Jul. 20, 1869.*



Witnesses
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OTIS M. MITCHELL, OF MARATHON, NEW YORK.

Letters Patent No. 92,868, dated July 20, 1869.

IMPROVEMENT IN WASHING-MACHINES.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, OTIS M. MITCHELL, of Marathon, in the county of Cortland, and State of New York, have invented certain new and useful Improvements in Washing-Machines; and I do hereby declare the following specification, taken in connection with the drawings furnished, and forming a part of the same, to be a full, clear, and exact description thereof.

My invention consists in a cheap, simple, durable, and effective apparatus for extracting the dirt from clothes, which may be attached to wash-tubs of the ordinary form, without difficulty, and at a trifling expense, and the different parts of which are so constructed and arranged, as to keep the clothes being operated upon, near the circumference of the tub, prevent their becoming wound around the standard by the motion of the machine, and secure their thorough cleansing with little if any rubbing, and with the least possible amount of labor.

I am well aware that many different devices have been employed heretofore for washing clothes, in which a disk or circular rubber, supplied with cleats or rollers on the under side, radiating from near the centre, have been made to move by different kinds of mechanism with a horizontal semi-rotary motion upon a standard which is secured to the bottom of the tub at the centre.

I am also aware that inventions exist in which cleats radiating from a common centre, and secured to the bottom of the tub, have been used in conjunction with the above-described fixed standard and semi-rotating disk.

But there are many serious objections to be urged against such of these as have been heretofore invented, which it is the purpose of my improvements to remedy.

It is well known that in the ordinary washing-machines where a semi-rotatory motion is produced, the clothes are liable to wind about the standard upon which the disk turns, or to roll up into a ball, or work to one side of the tub, in either case necessitating the frequent raising of the disk for the purpose of rearranging them so that they may be subjected fully to the action of the rubbers.

The standards also are liable to work loose or break off at the point where they are secured to the tub; or if, as in most cases, they pass through the bottom, and are secured on the under side by a screw and nut, there is constant wear consequent upon the strain they are subjected to, which soon enlarges the hole, causes the tub to leak, and renders a new bottom necessary.

These difficulties are all fully obviated by my improvements, which I will now proceed to describe more fully, in order to enable those skilled in the art to which it pertains, to manufacture and use my invention.

In the drawings—

Figure 1 represents a view of my improved washing-machine complete and ready for operation.

Figure 2 is the same, in vertical section, upon the line *x y*, fig. 1.

Figure 3 is a view showing the under side of the circular cover.

Like letters of reference indicate similar parts of my invention.

A is a tub of ordinary form mounted upon a platform or bench of convenient height and dimensions.

B is a standard, the lower end of which is fitted into a socket, *b*, of metal, having projecting flanges at its base, and is secured therein by means of a large screw or equivalent device passing up from the under side into the foot of the standard.

This socket, with the standard fastened therein, as described, is securely attached to the centre of the bottom of the tub by means of screws passing through holes in the flanges.

It will be readily perceived that by this method the bottom of the tub is not injured in the least, as no hole is made in it for the passage of the standard, or for a bolt to secure it in place.

C are spokes or arms radiating from the standard B, their inner ends being retained in position by entering recesses within the same near its base, while their outer ends rest against the circumference of the tub at the bottom, to which they are secured by screws or nails in an obvious manner. They present, when all in place, a convex appearance similar to the dish of a wheel.

These arms serve as braces to keep the standard firmly in place, and prevent its working loose under any strain to which it may be subjected.

They also, by their peculiar arrangement, prevent the clothes which are being washed from working up to the centre and winding around the standard, thus doing away with a great annoyance to be met with in all ordinary machines.

The water is also permitted to circulate freely underneath them by reason of their elevation above the bottom of the tub. If one should be accidentally broken, its place can be supplied by any one with very little trouble.

D is a circular perforated cover, having a circumference a little less than that of the tub, fitted so as to move freely upon the standard B, which may be provided with one or more fixed or adjustable shoulders, to enable the operative to regulate the position of the cover in accordance with the contents of the tub.

This cover is provided on the upper side with two standards fastened to it in an obvious manner, and which are connected at the top by a cross-piece having a hole at the centre, through which the upper end of the standard B passes.

Fastened upon the under side of D are arranged, radially, cleats, *d d*, of a wedge-form, the thicker end being placed nearest the circumference, which are pro-

vided with slots or openings on the sides next to the cover, to allow the water to pass through when they are in motion.

The larger ends of the wedge-shaped cleats may be, say, two and one-half inches or more in thickness, and are thus constructed in order to enable them to become firmly bedded into the clothes during the operation of the apparatus, and be thereby prevented from sliding over or simply rolling the clothes, as often happens in machines heretofore used for like purposes.

Their office is to act in conjunction with the arms or spokes C, and wring and twist the clothes backwards and forwards, forcing the water through and through them, extracting the dirt by this process, rather than by rubbing it out in the manner hitherto generally adopted.

E is a double-crank shaft, mounted upon proper bearings, with a crank-handle upon one or both ends, and two connecting-rods or pitmen attached to the cross-piece at the top of the two standards upon the cover D, by means of which the apparatus is operated with greater ease than it possibly could be were only one pitman used instead.

The employment of two pitmen, working in alternation, by means of a double-crank shaft, as shown, gives a steady motion in place of a jerking one caused by the use of a single pitman, the pressure being applied to both ends of the lever or cross-piece, thus lessening and balancing the strain, as may be easily seen.

The operation of my improved washing-machine is as follows:

The tub being supplied with the requisite amount of water, the clothes to be washed are introduced, and

the cover D put in place, connected with the driving-mechanism, and set in motion.

The cleats *d* bed themselves into the clothes, forcing them down upon, and into the spaces between the arms C, and as the cover semi-rotates, wring and twist them back and forth, extracting the dirt thoroughly, and with comparatively little or no rubbing.

The arms C being inclined in the direction of their outer ends, the clothes are kept away from the standard, and this arrangement, together with the construction of the cleats *d*, also prevents the clothes from accumulating in a mass at any one point, but keeps them evenly distributed over the bottom of the tub.

Having thus explained my improvements, I do not claim broadly the arrangement of cleats radially upon the under side of a perforated cover or disk; neither do I claim the arrangement of arms or spokes around the bottom of a tub, nor the general principle of operating a washing-machine by means of a crank and connecting-rod, these all being old and well-known devices; but

What I do claim as new, and of my own invention, and for which I desire to secure Letters Patent of the United States, is—

The improved washing-machine herein described, consisting of the cover D, provided with the cleats *d*, the radial arms or spokes C, and the standard B, combined with, and operated by the crank-shaft E, substantially in the manner and for the purposes specified.

OTIS M. MITCHELL.

Witnesses:

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