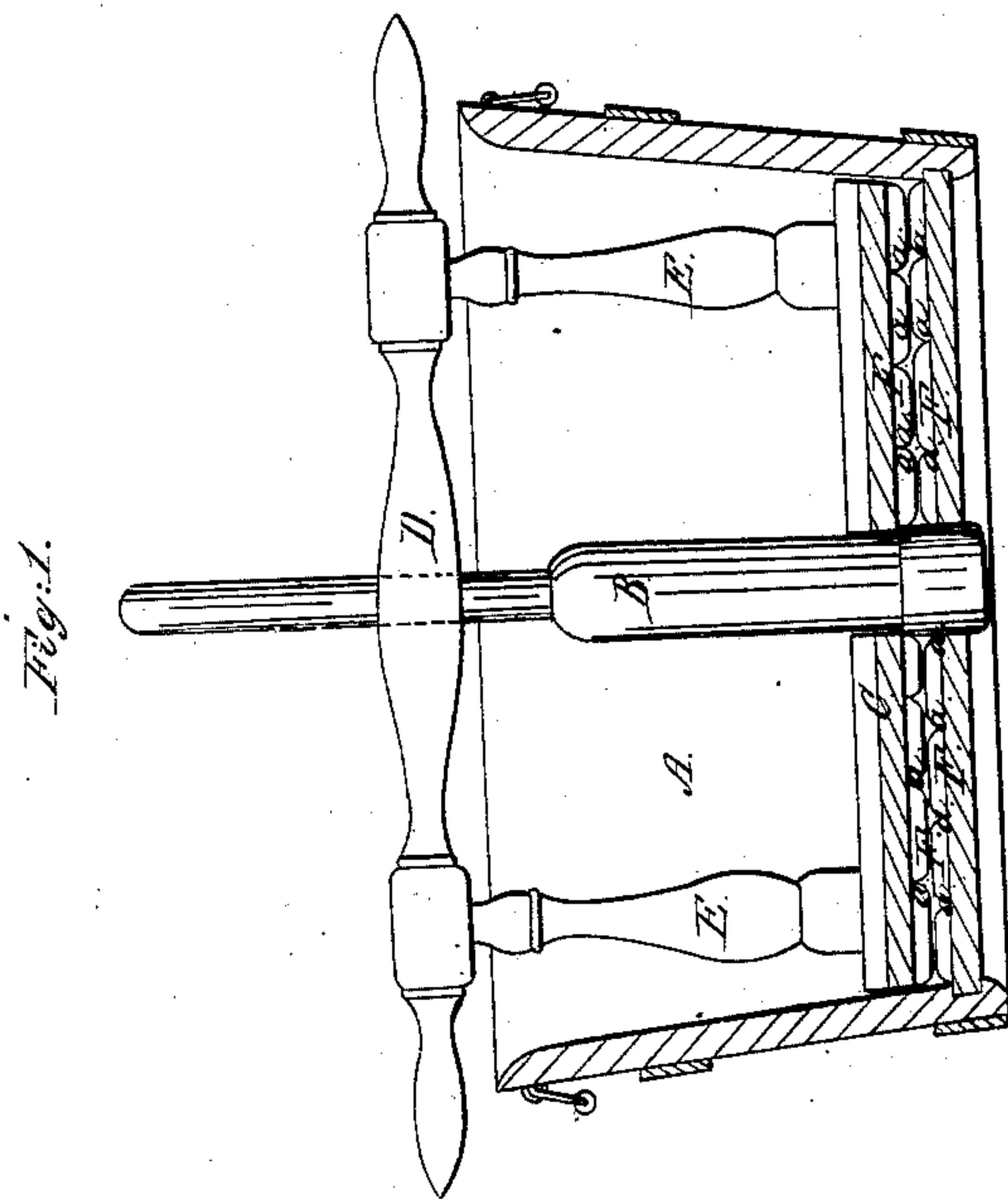
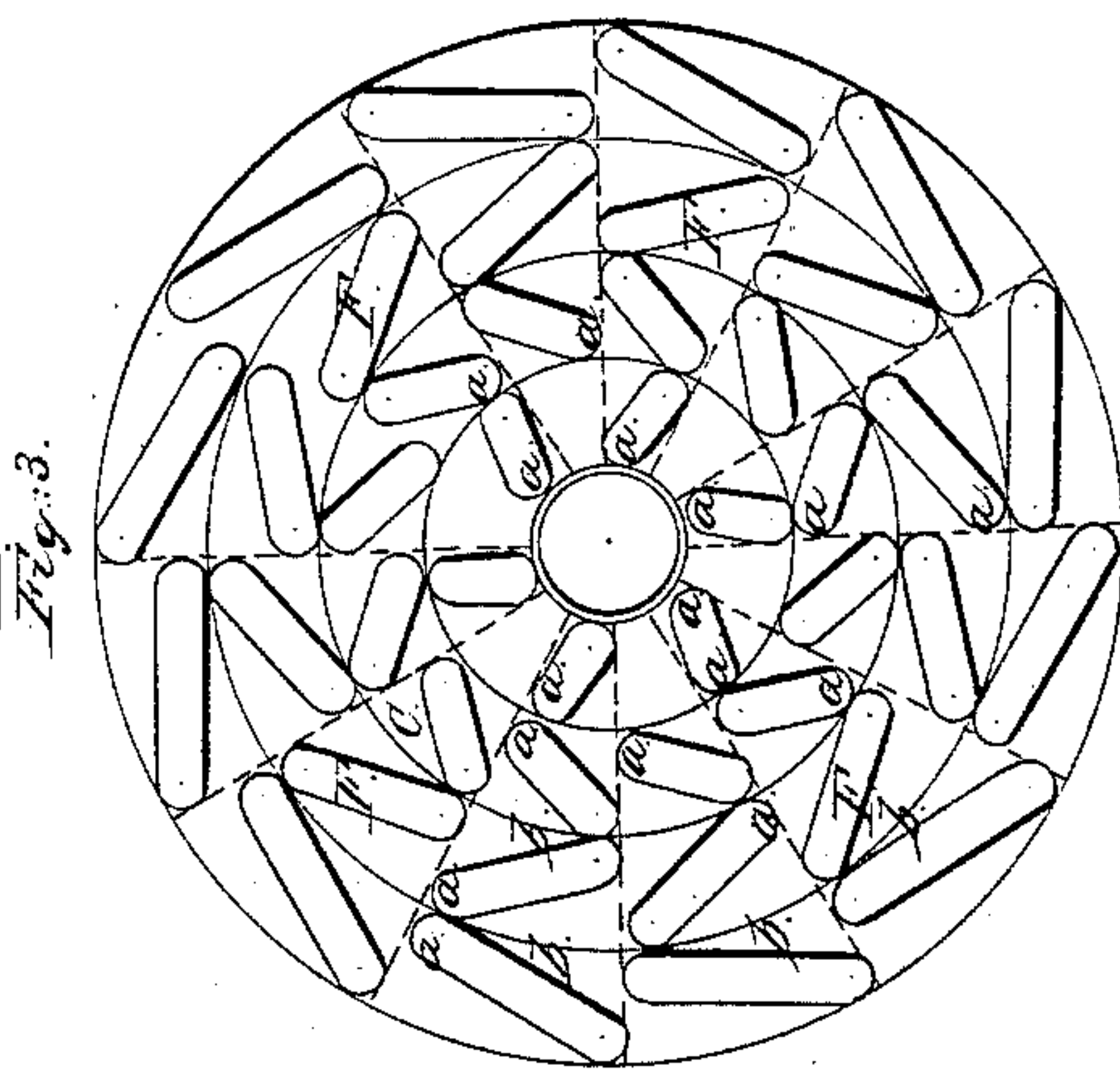
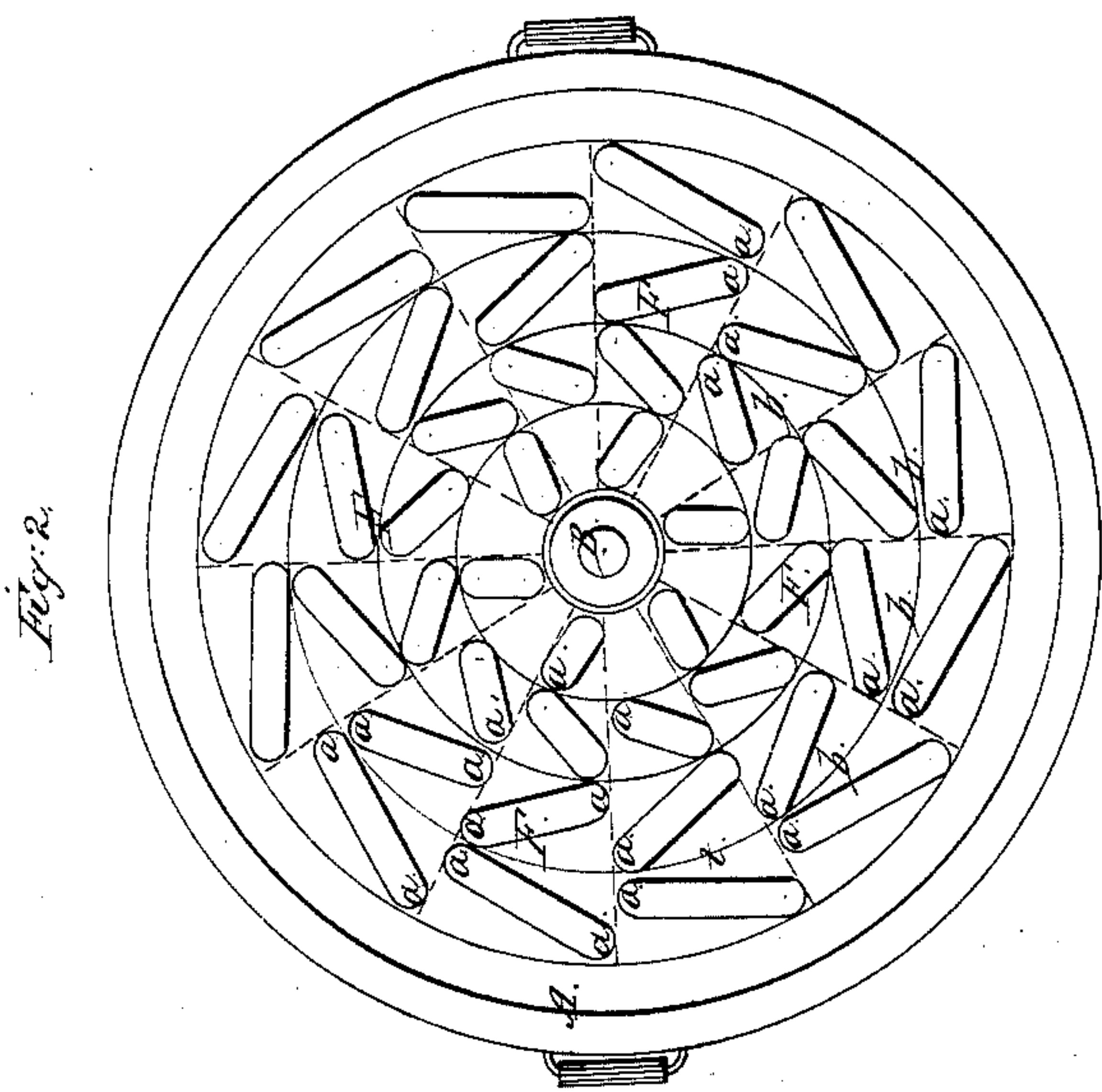


J. Allen,

Washing Machine,

N^o 21,476.

Patented Sept. 14. 1858.



UNITED STATES PATENT OFFICE.

JOHN ALLEN, OF GALENA, MARYLAND.

WASHING-MACHINE.

Specification of Letters Patent No. 21,476, dated September 14, 1858.

To all whom it may concern:

Be it known that I, JOHN ALLEN, of Galena, in the county of Kent and State of Maryland, have invented a new and useful
5 Improvement in Tub Washing-Machines; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming a part of this
10 specification, in which—

Figure 1, is a vertical central section of a tub washing machine constructed with my improvements. Fig. 2, is a plan view of the lower stationary rubbing surface of
15 the same. Fig. 3, is an inverted plan of the moving rubbing surface.

Similar letters of reference in each of the several figures indicate corresponding parts.

The object of my invention is to combine
20 in one machine, the three functions necessary to the perfect washing of clothes with tub machines, to wit: an angular squeezing action, an oblique rubbing action and a wedge like pummeling action.

25 The nature of said invention consists in so dressing, with zig-zag ribs, the bottom of the tub and the undersurface of the rubbing disk, that the approximating angles of the ribs of the disk and tub shall form rhomboidal figures wherein the clothes are sub-
30 jected to an angular squeezing and oblique rubbing action, and the approximating knuckle or wedge shaped ends of said angles, shall, when the motion of the disk is re-
35 versed, enter the rhomboidal spaces, and pummel and loosen up the clothes so as to allow a fresh supply of cleansing water to circulate through them and thus prepare them for a succeeding angular squeezing and
40 oblique rubbing action. By this arrangement of zig-zag ribs, several important advantages are secured: 1st. In a tub, say, of 22 inches diameter there will be some 300 inches in length of smooth semi-cylindrical
45 rubbing surface. 2nd. There will be 168 pummels or knuckles which will perform the very necessary office of knuckling the clothes. And there will also be 96 squeezing angles which will perform the office of squeezing
50 and expressing the water from the clothes so as to allow a fresh quantity to circulate through their pores. The operations of pummeling and squeezing being carried on successively as the angles of the ribs are so
55 placed that they alternately act as pummelers

and squeezers whether the disk be turned to the right or left.

To enable others, skilled in the art, to make and use my invention, I will proceed to describe its construction and operation. 60

A, represents the tub furnished with a central shaft B.

C, is the vibrating disk furnished with a central hole so as to be fitted over the shaft B. It is also provided with a cross head or
65 handle D, which is supported by two vertical standards E, E, projecting up from the top of the disk. The machine thus far described is similar to that in common use.

F, F, represent a series of zig-zag ribs, say 70 12, arranged radially or tangentially on the bottom of the tub A, and on the under side of the vibrating disk C. The angles of the disk ribs are set just the reverse of the angles of the tub ribs and with this exception, the following description will apply to both. 75 The ribs in their transverse section are semicircular in form and are applied by dividing the circle, of the disk radially into, say, 12 equal parts and then dividing its
80 radius into 4 or any number of equal spaces and from these points on the radius scribing concentric circles which cut all the radii and thus form between each radius frustums of cones. and then drawing lines so as to
85 cut the frustums of cones diagonally or in a manner to give the proper angles for the laying down of the zig zag ribs, as illustrated in the drawing.

By examining the drawing, it will be seen 90 that when the knuckles *a a* at one end of the angles of the ribs on the disk approach the knuckles of one end of the stationary ribs on the bottom of the tub, the V shaped angles *b, b*, also approach and consequently 95 the clothes are both knuckled and squeezed at the same time, and in the return movement of the disk those portions of the clothes which have just been knuckled are squeezed while those portions which were squeezed at 100 the start are expanded by the knuckles of the disk and water allowed to circulate through the pores of the clothes until they are again brought in contact with the stationary knuckles on the bottom of the tub, 105 when they are again pummeled as before described and thus the operation continues, different portions of the clothes being alternately subjected to a pummeling and squeezing operation. 110

What I claim as my invention and desire to secure by Letters Patent, is—

So dressing, with zig-zag ribs F, F, the bottom of the tub and undersurface of the rubbing disk, that the approximating angles, b , of the ribs F, of the disk and tub shall form rhomboidal figures wherein the clothes are subjected to an angular squeezing and oblique rubbing action, and the approximating knuckle or wedge shaped ends a , of said angles, shall, when the motion of the

disk is reversed, enter the rhomboidal spaces and punnel and loosen up the clothes so as to allow a fresh supply of cleansing water to circulate through them and thus prepare them for a succeeding angular squeezing and oblique rubbing action, substantially as and for the purposes set forth.

JOHN ALLEN.

Witnesses:

G. YORKE ATLEE.

ADAM PRITZ.