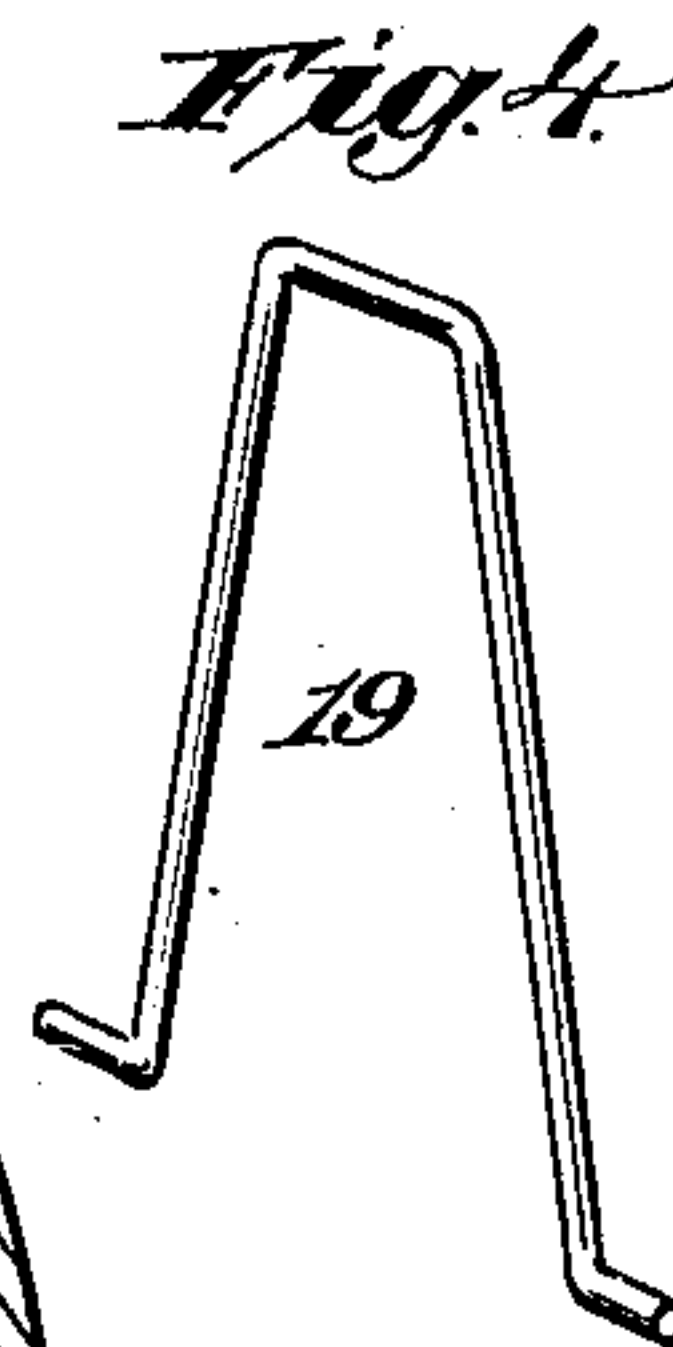
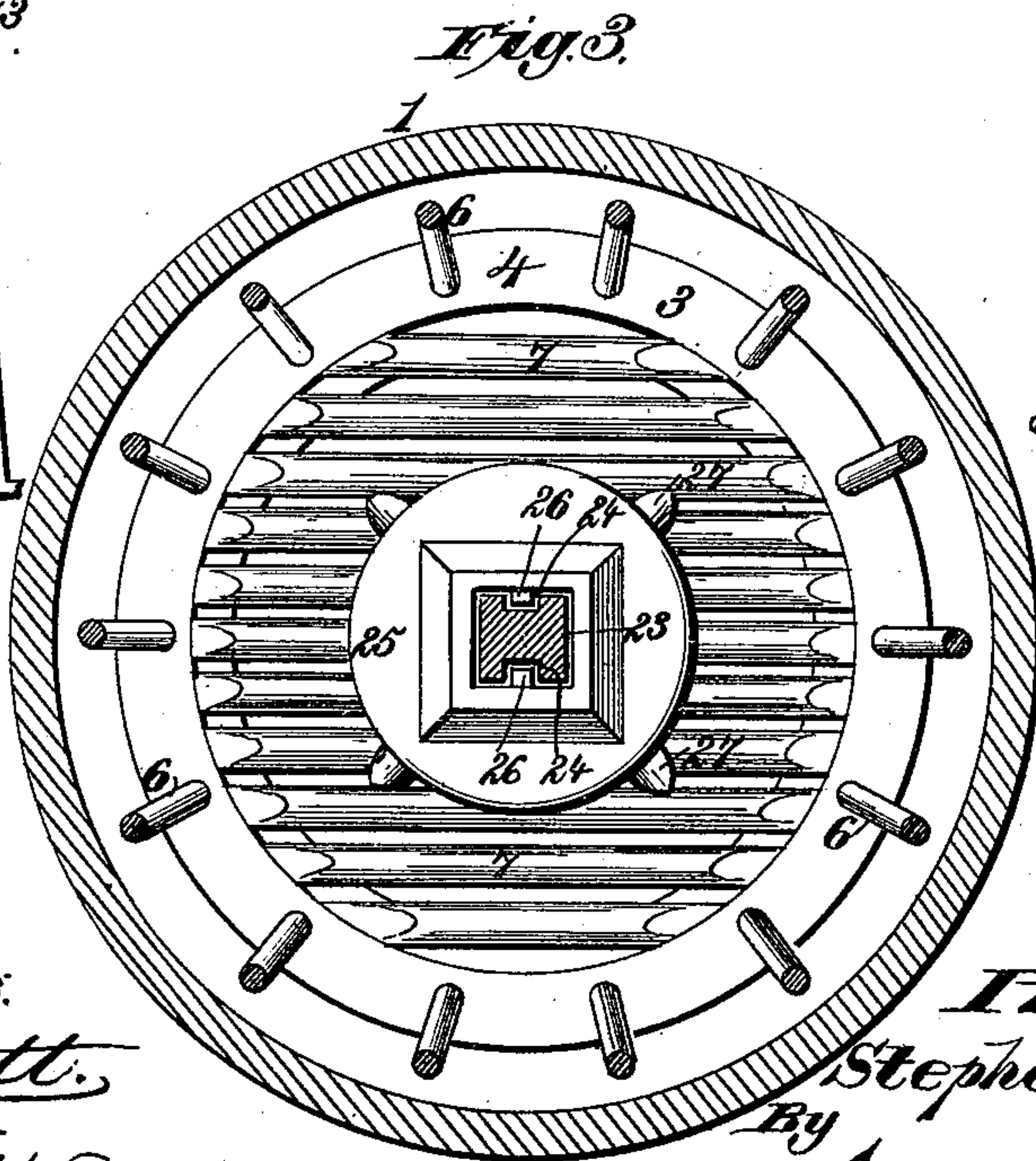
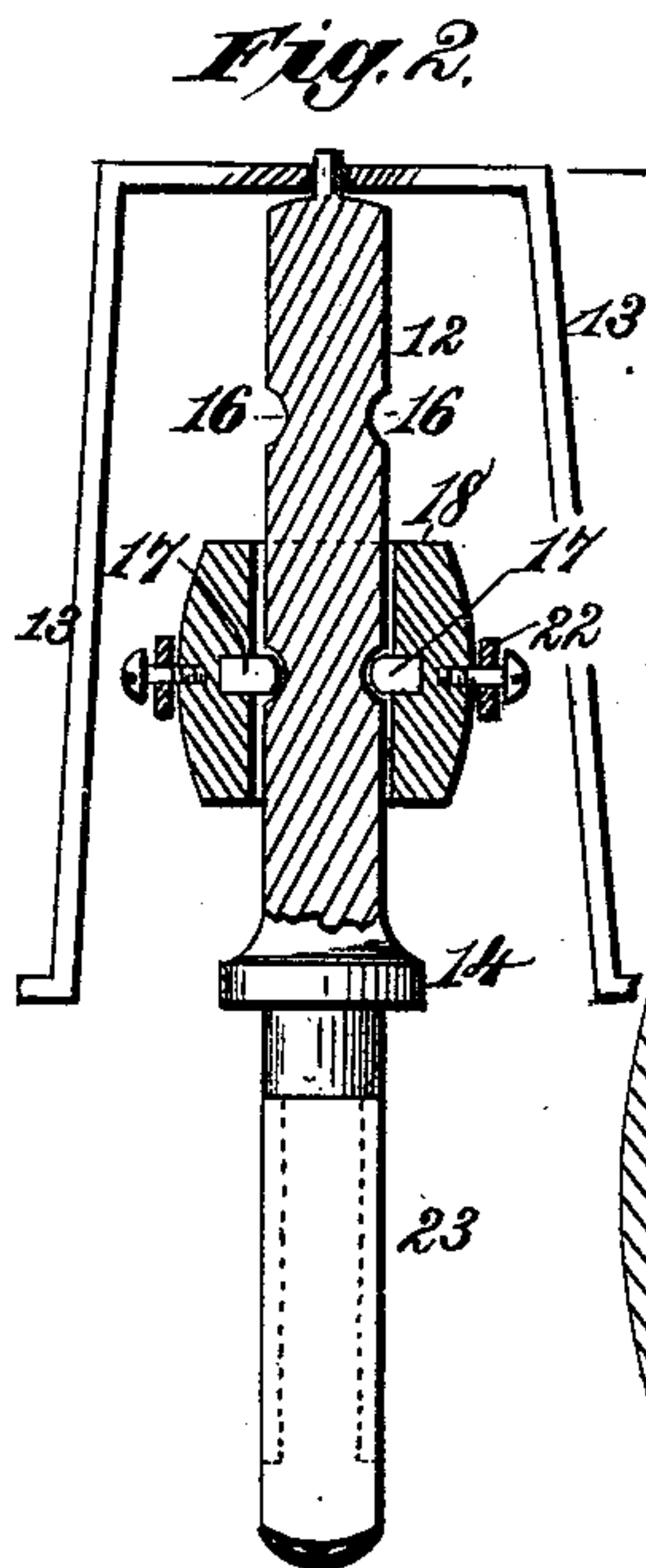
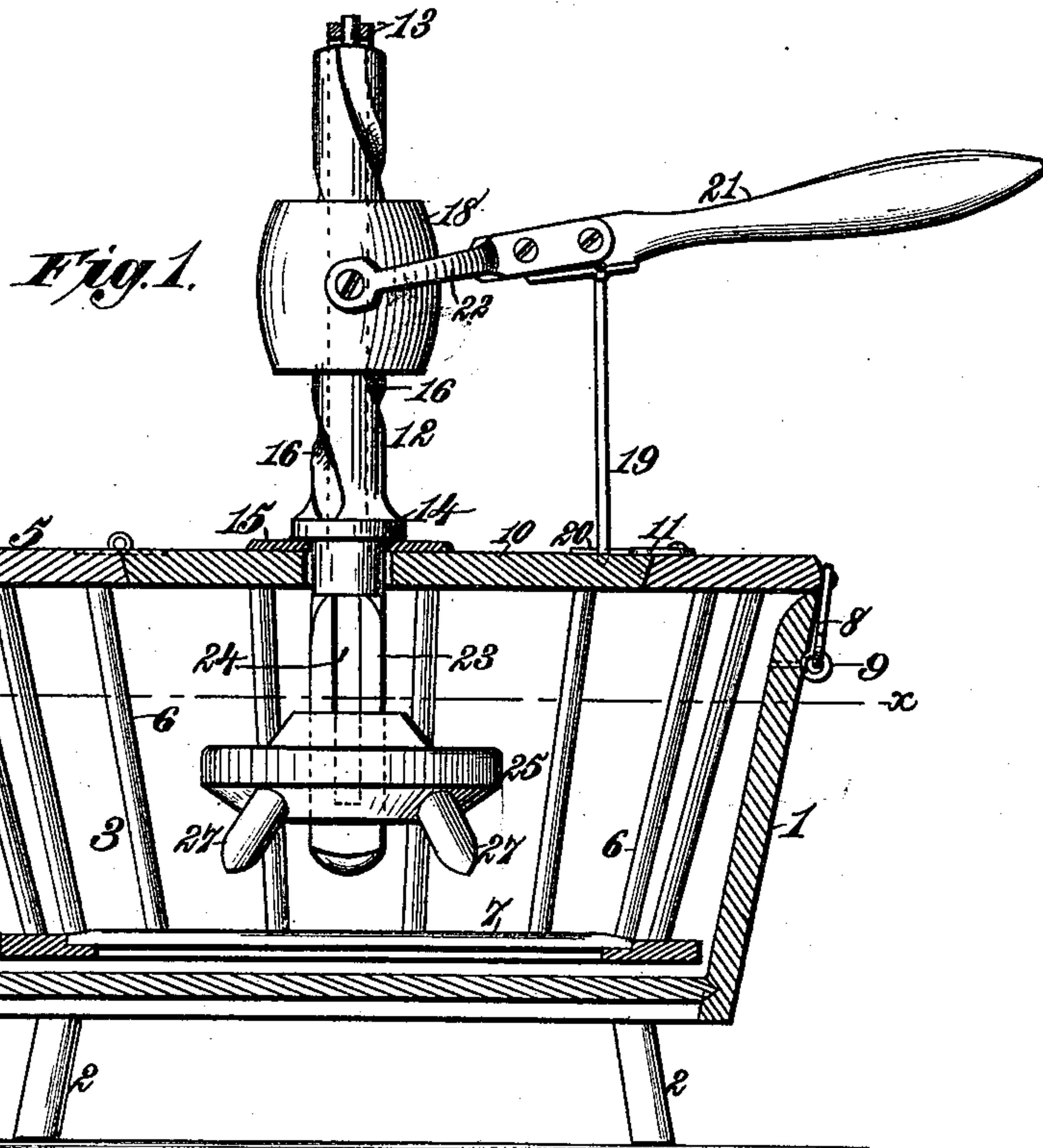


(No Model.)

S. C. MORTIMER.
WASHING MACHINE.

No. 329,760.

Patented Nov. 3, 1885.



Witnesses:
Robert Everett.
A. H. Norris.

Inventor:
Stephen C. Mortimer.
By *James L. Norris.*
Atty.

UNITED STATES PATENT OFFICE.

STEPHEN C. MORTIMER, OF FORT WAYNE, INDIANA.

WASHING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 329,760, dated November 3, 1885.

Application filed January 29, 1885. Serial No. 154,330. (No model.)

To all whom it may concern:

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

My invention relates to washing apparatus of that class wherein the cleansing is effected
10 by means of a rapid agitation of the clothing in and through the water, and the purpose thereof is to provide mechanism for such purpose which shall be simple in organization and effective in operation, and wherein
15 the result sought may be accomplished with the least possible expenditure of labor.

It is the purpose, also, of my invention to so construct the apparatus that it may be readily removed from or attached to an ordinary
20 tub, and to give access thereto without disturbance of the mechanism.

The invention consists in the several novel features of construction and combination of parts hereinafter fully set forth, and definitely
25 pointed out in the claims annexed to this specification.

Referring to the drawings, Figure 1 is a central vertical section, the shaft and its actuating-sleeve and the agitator being shown in elevation. Fig. 2 is a detail view showing the
30 manner of connecting the shaft and sleeve. Fig. 3 is a horizontal section of Fig. 1 in the plane *x x*. Fig. 4 is a detail perspective of the lever-support detached.

In the said drawings, the reference-numeral 1 indicates a tub or other suitable vessel, which may be of any suitable size or form, though it is preferably round. If desired, this tub may be mounted upon legs 2, or placed
40 upon a stand of any kind, to raise it from the floor and avoid the necessity of stooping on the part of the operator. Within the tub or vessel 1 is placed a cage, 3, composed of an annulus, 4, lying adjacent to the bottom of the tub, and connected with a disk, 5, which is substantially flush with its top, by means of
45 bars 6, placed at suitable intervals. The bottom of the cage is formed of strips 7, set in or attached to the inner edge of the annulus 4, and having their upper faces rounded off to avoid the presence of sharp wearing-edges. This cage, when placed in the tub, may be

connected thereto by hooks 8, pivoted and engaging with eyes 9 upon the tub. Within the disk 5 is formed a central opening closed by
55 a lid, 10, which may be fastened down by a turn-button, 11. Upon the lid 10, at or near its central point, is mounted a vertical shaft, 12, formed of iron, having its upper end supported by a yoke-bearing, 13, mounted on the
60 lid. This shaft has a shoulder, 14, which rests upon a flat bearing, 15, the lower portion of said shaft passing through the lid and extending a little below it. That portion of the shaft lying between the shoulder 14 and the
65 yoke-bearing 13 is provided with spiral grooves 16, of suitable pitch, and these grooves receive the ends of studs 17, projecting from the inner face of a sleeve, 18, which surrounds and moves freely upon this portion of the
70 shaft. In front of the shaft 12, and mounted upon the lid 10, is a bail, 19, having its outwardly-turned ends set in bearings 20, of any suitable form. Upon this bail, which rises to the middle portion of the threaded shaft, or
75 thereabout, is pivotally mounted a lever, 21, having a fork, 22, upon its end, which is pivoted upon the sleeve 18, upon opposite sides thereof. Upon the lower end of the shaft, which lies within the cage, is mounted a rectangular block, 23, extending nearly to the bottom of the cage, having vertical slots 24 upon
80 opposite sides thereof, which extend nearly to the lower end of the block. Upon the part 23 is mounted a disk, 25, having free vertical movement thereon, and provided with solid portions 26, which move in the slots 24. To this disk are firmly attached any suitable number of pins or bars, 27, projecting downwardly and outwardly, and preferably of such length
90 that when the disk is at its lowest point of adjustment the ends of said bars will lie below the lower end of the block 23, and not far above the bottom of the cage.

The operation of the device is as follows:
95 The cage being placed in a tub, water or water and soap and other cleansing substance are placed therein in suitable quantities, the cage being prevented from floating upward by the hooks 8. The clothing is then introduced and
100 the lid 10 closed and fastened, when by reciprocating the lever 21 a rapid rotary reciprocation is imparted to the disk 25, the bars 27 catching in different parts of the fabrics and

dragging them with great rapidity and force through the fluid, thereby producing a violent and thorough agitation of the mass, which speedily and thoroughly cleanses the clothes.

5 The disk 25 has automatic vertical adjustment on the block 23, according to the bulk of water and clothing contained within the cage. To prevent it from binding upon the block, a guiding-piece, 28, may be attached to the top of
10 the disk. The slats or strips in the bottom of the cage, and the bars 6, are rounded to avoid wearing the clothes injuriously, and at the same time to provide a rubbing-surface upon which the clothes may move and by which the
15 cleansing process is accelerated. The bail 19, having pivotal mounting in its bearings 20, admits of the rocking movement which is necessary to throw the sleeve end to end of the shaft without binding. The operative parts
20 being all mounted on or supported by the lid 10, the latter may be opened and the agitator 25 swung out through the opening without difficulty, thereby giving free access to the vessel at all times.

25 I prefer to make the threaded portion of the shaft and the actuating-sleeve of metal; but the disk, the lid 10, and all parts below the same are made of wood, to avoid staining the clothing by the formation of oxide of iron.

30 What I claim is—

1. In a washing-machine, the combination, with a vertical shaft carrying an agitator, and having spiral threads formed on its periphery, of a sleeve moving thereon and provided with
35 studs engaging with such threads, and a lever pivoted to said sleeve and fulcrumed upon a support having pivotal bearing upon the machine, substantially as described.

2. In a washing-machine, the combination,

with a vertical shaft having spiral threads 40 formed upon its periphery, of a sleeve having studs which engage with said threads, a lever actuating said sleeve, and an agitator mounted upon a rectangular block carried by the shaft, and having automatic vertical adjustment 45 thereon, substantially as described.

3. In a washing-machine, the combination, with a cage constructed substantially as described, and having a top provided with a hinged lid, of a spirally-threaded shaft having 50 bearing on and passing through said lid, a rectangular block carried by the lower end of said shaft, and having vertical slots which receive splines upon a disk mounted on said block, a sleeve having studs running in the 55 threads of the shaft, a lever pivoted to said sleeve, and a bail upon which said lever is fulcrumed, said bail having pivotal bearings upon the lid of the cage, substantially as described. 60

4. In a washing-machine, the combination, with a cage composed of a slatted bottom, open sides, and a top, of a tub or other vessel which receives said cage, a lid hinged in the 65 top of the cage, a vertical shaft passing through the lid, an automatically-adjustable agitator carried by said shaft, a sleeve having studs running in spiral grooves in the shaft, and a lever actuating said sleeve and having its fulcrum pivotally supported upon the lid, sub- 70 stantially as described.

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

S. C. MORTIMER.

Witnesses:

CHAS. E. JONES,
F. H. WOLKE.