

No. 897,432.

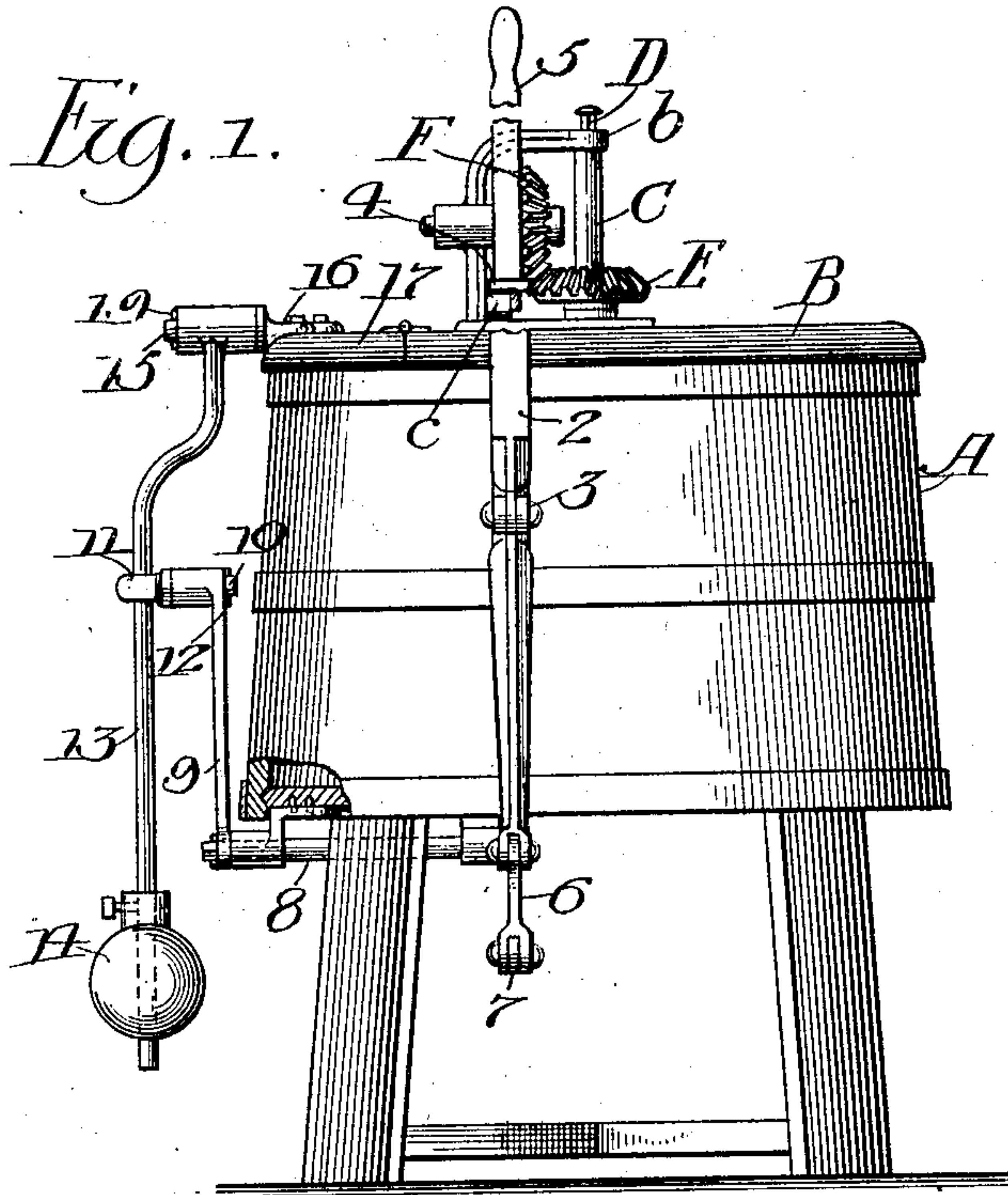
PATENTED SEPT. 1, 1908.

W. H. VOSS.

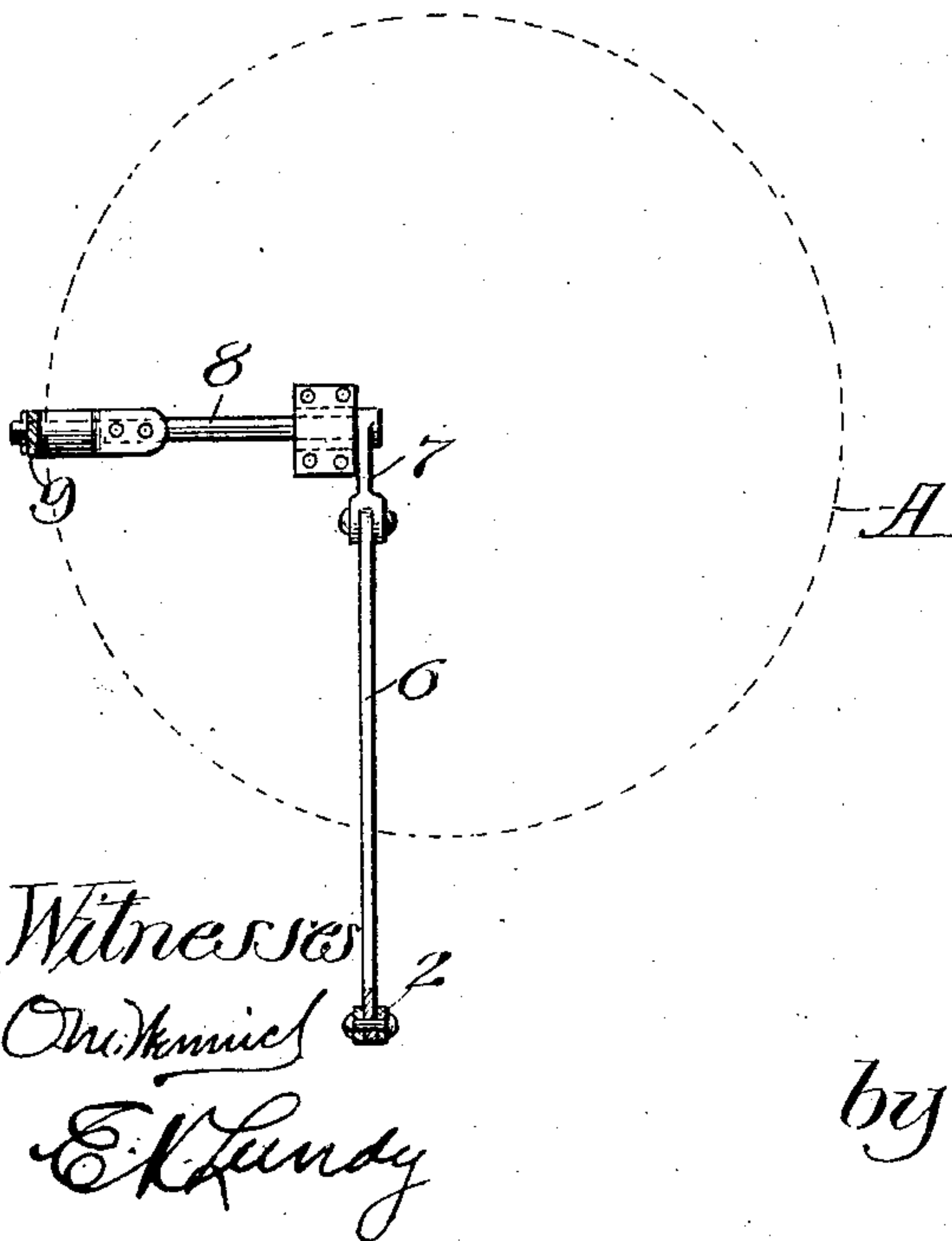
MECHANICAL MOVEMENT FOR WASHING MACHINES.

APPLICATION FILED APR. 1, 1908.

2 SHEETS—SHEET 1.

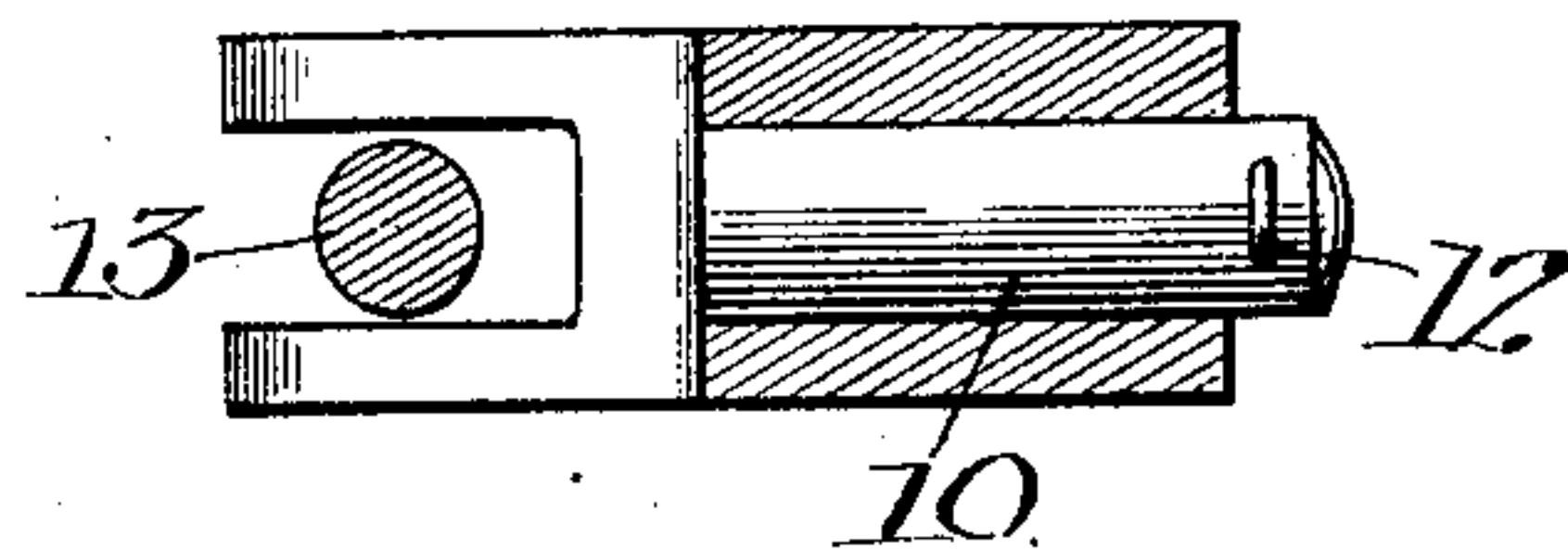


*Fig. 4.*



Witnesses  
O. H. Smith  
E. K. Lundy

*Fig. 5*



Inventor  
William H. Voss  
by Frank D. Thompson  
Atty

No. 897,432.

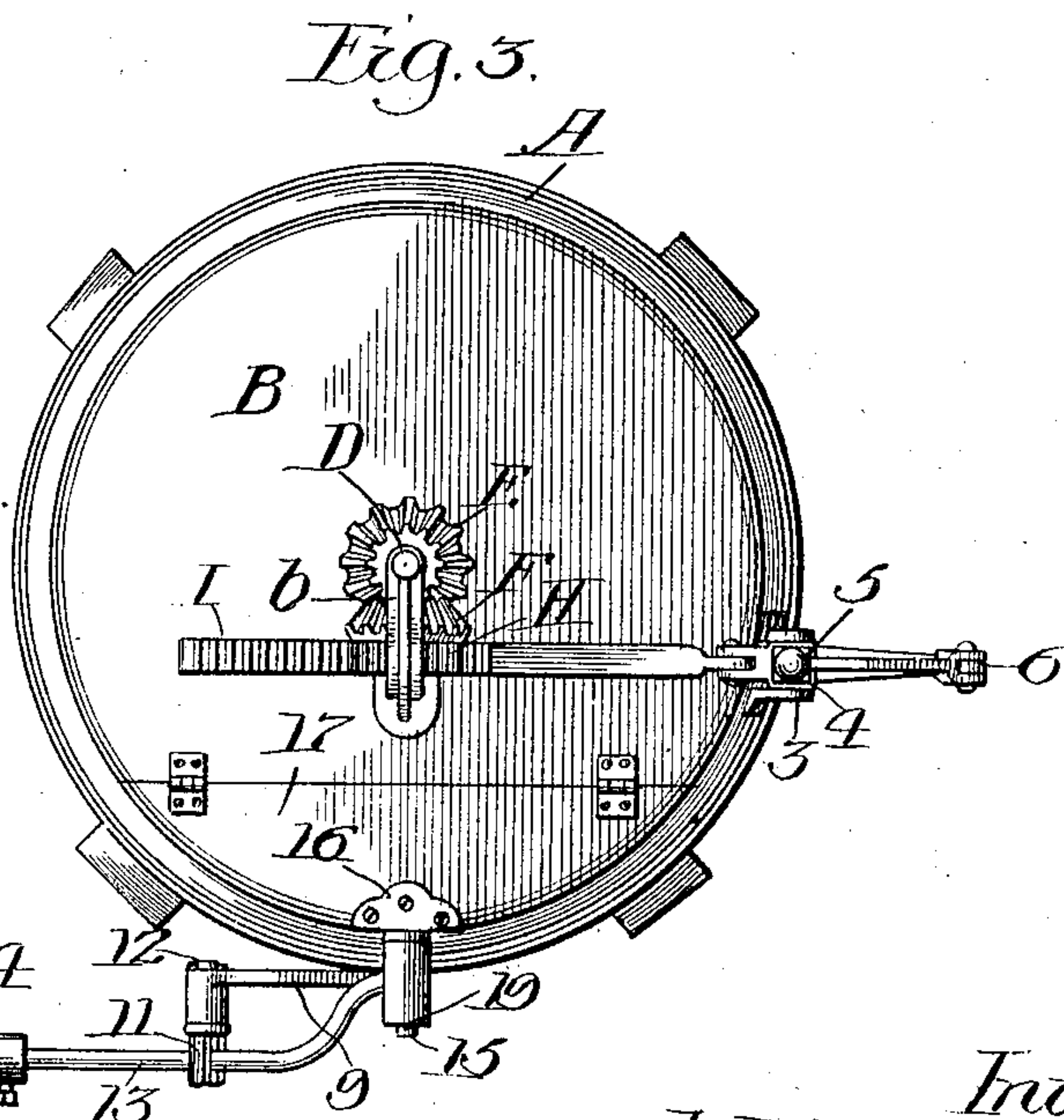
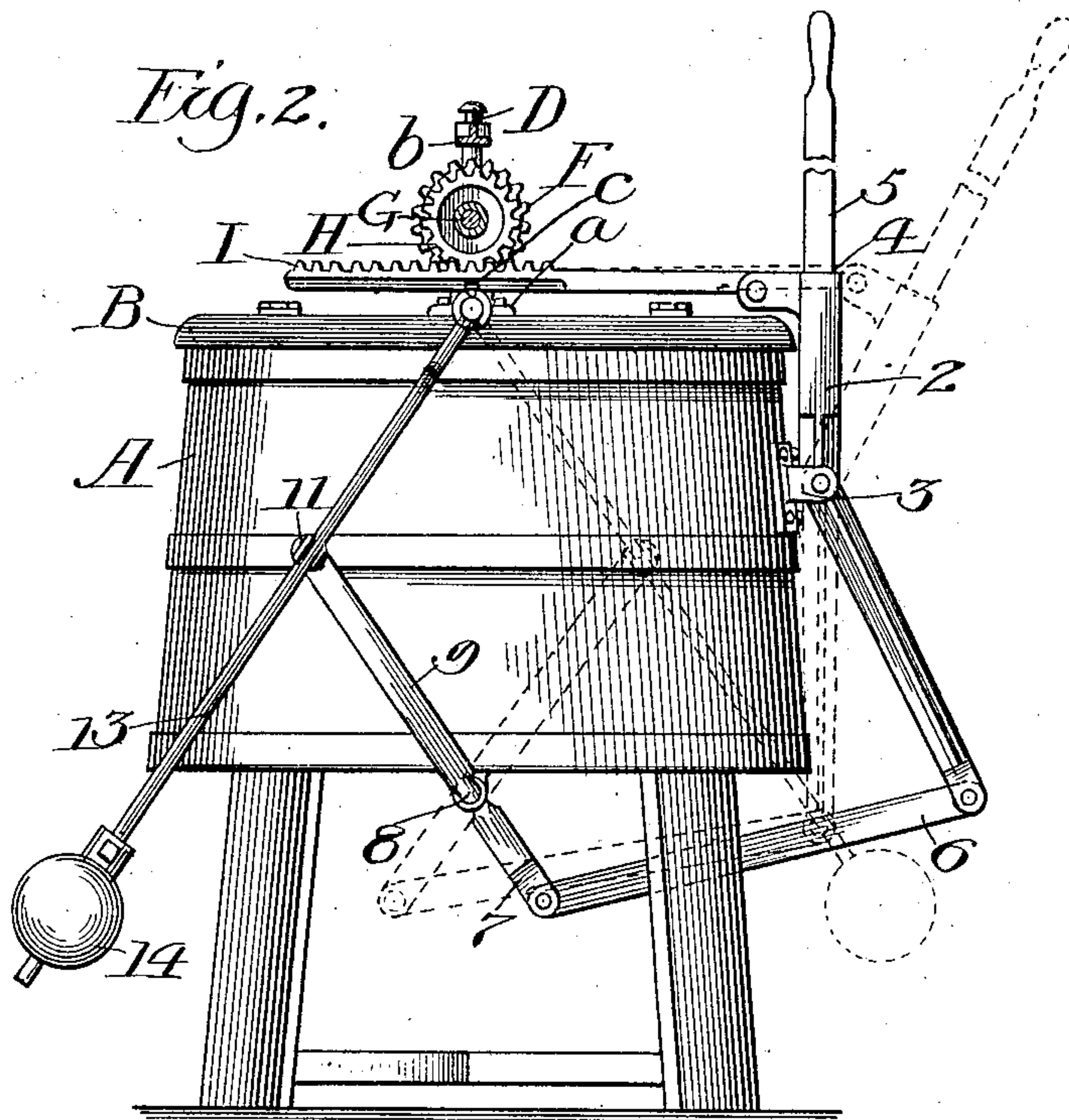
PATENTED SEPT. 1, 1908.

W. H. VOSS.

# MECHANICAL MOVEMENT FOR WASHING MACHINES.

APPLICATION FILED APR. 1, 1908.

2 SHEETS—SHEET 2.



Witnesses:

Ch. Wernic

E. K. Lundy

Inventor  
William H. Voss.

William H. Voss;

by Frank D. Thomason  
Atty

*Atty*



# UNITED STATES PATENT OFFICE.

WILLIAM H. VOSS, OF DAVENPORT, IOWA.

## MECHANICAL MOVEMENT FOR WASHING-MACHINES.

No. 897,432.

Specification of Letters Patent.

Patented Sept. 1, 1908.

Application filed April 1, 1908. Serial No. 424,676.

*To all whom it may concern:*

Be it known that I, WILLIAM H. VOSS, a citizen of the United States, and a resident of Davenport, in the county of Scott and State of Iowa, have invented certain new and useful Improvements in Mechanical Movements for Washing-Machines, of which the following is a clear, full, and exact description.

My invention relates to washing machines having a rotary reciprocal agitator which is operated by a hand lever.

The object of my invention is to provide simple means the momentum of which materially assists the manual effort required to operate the machine, and to so construct these means that they can be readily disconnected and removed from the machine, whenever desired. This I accomplish by the means hereinafter fully described, and as particularly pointed out in the claims

In the drawings:—Figure 1 is a side elevation of my invention. Fig. 2 is a similar view looking at the machine from a viewpoint at right angles to that from which Fig. 1 is taken. Fig. 3 is a plan view of the top of the machine. Fig. 4 is a plan view of the underside thereof. Fig. 5 is a detail view on a slightly larger scale.

In the drawings A represents the tub of the machine which is supported by suitable legs so that its bottom is raised the proper distance above the floor to permit the installation and operation of my improvements. This tub is covered over by a hinged lid B in the usual manner, and in the center of this lid, which alines with the center of the tub, it is provided with a cast metal framework, the base-plate *a* of which has a bearing for the sleeve C surrounding the upper end of a rotary reciprocal agitator shaft D. This shaft is squared and its upper end is free to move longitudinally in the correspondingly squared bore of said sleeve but revolves therewith. The upper end of sleeve C is journaled in the overhanging end of a goose-neck *b* arising from the end portion of the base-plate farthest from the agitator-shaft, and just above its lower bearings said sleeve has a beveled gear E securely mounted thereon. Gear E is engaged by a corresponding beveled idle gear F which is mounted fast on the adjacent end of a horizontal shaft G, that is journaled in elongated bearings in the vertical portion of the goose-neck, as shown, and

between gear F and its bearings, said shaft is provided with a suitable spur-gear H. Spur-gear H is engaged and driven by a horizontal rack I, that is held in engagement with the lowest segment thereof by a lug *c* arising from the base-plate at the base of the goose-neck, and extends to and is pivotally connected with a vertically disposed lever 2, by means of which it is reciprocated. This lever 2 is fulcrumed between lugs projecting from a screw-plate 3 secured to the side of the tub, and above its fulcrum it has a socket 4 into which the lower end or shank of a wooden handle 5 is inserted, as shown. The lower portion of the lever extends in such direction that when the part above its fulcrum is vertical, it curves outwards, and its lower extremity, which terminates just below the plane of the bottom of the tub, is connected by a rod 6 to the end of an arm 7 projecting down from the inner end of a horizontal rock-shaft 6.

Rock-shaft 8 is journaled in suitable bearings secured to the underside of the tub and extends in a plane substantially at right angles to the length of the rack I above, from a point about under the center of the tub to a point beyond the lower edge of the same, below where the lid is hinged, and its outer end is provided with an upwardly extending arm 9.

Arm 7, shaft 8 and arm 9 may be all made in one piece if desired, and the upper end of the latter terminates in a horizontal boss the axis of the bore of which is parallel to that of shaft 8. The cylindrical shank 10 of a bifurcated head 11 is journaled in this bore, and retained by a suitable cotter-pin 12, and the shaft 13 of a pendulum 14 passes down between the bifurcations of said head. The upper end of the shaft of the pendulum terminates in a boss that is journaled on a stud 15 projecting from a screw-plate 16 secured to the permanent segmental strip 17 on the top of the tub to which the lid is hinged, and is retained thereon by a cotter-pin 19, and the lower end thereof terminates above the floor a suitable distance, and has a weight 14 secured thereto. This weight is made of any heaviness desired, and it may be adjustable longitudinally on the shaft of the pendulum if considered advisable. By removing the cotter-pin 19, the pendulum can be easily removed, and the machine made this much lighter.



The principal advantage obtained by my improved construction is the comparatively great swing given the pendulum during the manual operation of the machine, and the increased assistance given by the momentum of the same, and another advantage obtained by the use of the same is the graduation in the length of the segment described by the pendulous weight by adjusting it longitudinally on its shaft so as to adapt the machine for heavy or light work or for fast or slow operation, according to the physical ability of the person running it.

What I claim as new is:—

1. Mechanism for operating a washing machine comprising a suitable support, a rotary reciprocal shaft, devices for operating the same, a lever connected to said devices and fulcrumed to the side of said support, a separate pendulum adapted to oscillate alongside of said support, and means for imparting the motion of said lever thereto.

2. Mechanism for operating a washing machine comprising a suitable support, a rotary reciprocal shaft, devices for operating the same, a lever connected to said devices and fulcrumed to the side of said support, a separate pendulum adapted to oscillate alongside of said support, and means extending under said support for imparting the motion of said lever thereto.

3. Mechanism for operating a washing machine comprising a suitable support, a rotary reciprocal shaft, devices for operating the same, a lever connected to said devices and fulcrumed to the side of said support, a separate pendulum suspended from a point near the top of said support and adapted to oscillate alongside thereof, and means for imparting the motion of said lever thereto.

4. Mechanism for operating a washing machine comprising a suitable support, a rotary reciprocal shaft, devices for operating the same, a lever connected to said devices and fulcrumed to the side of said support, a separate pendulum suspended from a point near the top of said support and adapted to oscillate alongside thereof, and means extending under said support for imparting the motion of said lever thereto.

5. Mechanism for operating a washing machine comprising a suitable support, a rotary reciprocal shaft, devices for operating the same, a lever connected to said devices and fulcrumed to the side of said support, a separate pendulum adapted to oscillate alongside of said support, and means that engage said pendulum below its point of suspension for imparting the motion of said lever thereto.

6. Mechanism for operating a washing machine comprising a suitable support, a rotary reciprocal shaft, devices for operating the same, a lever connected to said devices and fulcrumed to the side of said support, a separate pendulum adapted to oscillate alongside

of said support, and means that extend under said support and engage said pendulum below its point of suspension for imparting the motion of said lever thereto.

7. Mechanism for operating a washing machine comprising a suitable support, a rotary reciprocal shaft, devices for operating the same, a lever connected to said devices and fulcrumed to the side of said support, a separate pendulum suspended from a point near the top of said support and adapted to oscillate alongside thereof, and means that extend under said support and engage said pendulum below its point of suspension, for imparting the motion of said lever thereto.

8. Mechanism for operating a washing machine comprising a suitable support, a rotary reciprocal shaft, devices for operating the same, a lever connected to said devices and fulcrumed to the side of said support, a separate pendulum adapted to oscillate alongside of said support, and means that push against said pendulum first in one direction and then the other for imparting the motion of said lever thereto.

9. Mechanism for operating a washing machine comprising a suitable support, a rotary reciprocal shaft, devices for operating the same, a lever connected to said devices and fulcrumed to the side of said support, a separate pendulum adapted to oscillate alongside of said support, and means extending under said support and pushing against said pendulum first in one direction and then the other for imparting the motion of said lever thereto.

10. Mechanism for operating a washing machine comprising a suitable support, a rotary reciprocal shaft, devices for operating the same, a lever connected to said devices and fulcrumed to the side of said support, a separate pendulum suspended from a point near the top of said support and adapted to oscillate alongside thereof, and means that push against said pendulum first in one direction and then the other for imparting the motion of said lever thereto.

11. Mechanism for operating a washing machine comprising a suitable support, a rotary reciprocal shaft, devices for operating the same, a lever connected to said devices and fulcrumed to the side of said support, a separate pendulum suspended from a point near the top of said support and adapted to oscillate alongside thereof, and means extending under said support and pushing against said pendulum first in one direction and then the other for imparting the motion of said lever thereto.

12. Mechanism for operating a washing machine comprising a suitable support, a rotary reciprocal shaft, devices for operating the same, a lever connected to said devices and fulcrumed to the side of said support, a separate removable pendulum disconnected from the other movable elements and adapted



ed to oscillate alongside of said support, and means for imparting the motion of said lever thereto.

13. Mechanism for operating a washing machine comprising a suitable support, a rotary reciprocal shaft, devices for operating the same, a lever connected to said devices and fulcrumed to the side of said support, a separate pendulum disconnected from the other movable elements and adapted to oscillate alongside of said shaft, and means extending under said support for imparting the motion of said lever thereto.

14. Mechanism for operating a washing machine comprising a suitable support, a rotary reciprocal shaft, devices for operating the same, a lever connected to said devices and fulcrumed to the side of said support, a separate removable pendulum suspended from a point near the top of said support and disconnected from the other movable elements and adapted to oscillate alongside of said support, and means for imparting the motion of said lever thereto.

15. Mechanism for operating a washing machine comprising a suitable support, a rotary reciprocal shaft, devices for operating the same, a lever connected to said devices and fulcrumed to the side of said support, a horizontal rock-shaft actuated by said lever and extending beneath said support, an arm projecting upwards from the outer end of said rock-shaft, and a pendulum engaged by said upwardly projecting arm below its point of suspension.

16. Mechanism for operating a washing machine comprising a suitable support, a rotary reciprocal shaft, devices for operating the same, a lever connected to said devices and fulcrumed to the side of said support, a horizontal rock-shaft actuated by said lever and extending beneath said support, an arm

projecting upwards from the outer end of said rock-shaft, a bifurcated head carried by said arm, and a pendulum engaged by the head carried by said upwardly projecting arm below its point of suspension.

17. Mechanism for operating a washing machine comprising a suitable support, a rotary reciprocal shaft, devices for operating the same, a lever connected to said devices and fulcrumed to the side of said support, a horizontal rock-shaft extending beneath said support, an arm projecting downwards from said rock-shaft, a pitman connecting the lower end of said lever and said downwardly projecting arm, an arm projecting upwards from the outer end of said rock-shaft, and a pendulum engaged by said upwardly projecting arm below its point of suspension.

18. Mechanism for operating a washing machine comprising a suitable support, a rotary reciprocal shaft, devices for operating the same, a lever connected to said devices and fulcrumed to the side of said support, a horizontal rock-shaft extending beneath said support, an arm projecting downwards from said rock-shaft, a pitman connecting the lower end of said lever and said downwardly projecting arm, an arm projecting upwards from the outer end of said rock-shaft, a bifurcated head carried by said arm, and a pendulum engaged by the head carried by said upwardly projecting arm below its point of suspension.

In testimony whereof I have hereunto set my hand and seal this 28th day of March, A. D., 1908.

WILLIAM H. VOSS. [L. S.]

Witnesses:

WILLIAM E. PULS,  
ARTHUR CLIFFORD.