

1,155,150.

J. HENDERSON.
TUMBLING BARREL.
APPLICATION FILED MAR. 25, 1914.

Patented Sept. 28, 1915.
2 SHEETS—SHEET 1.

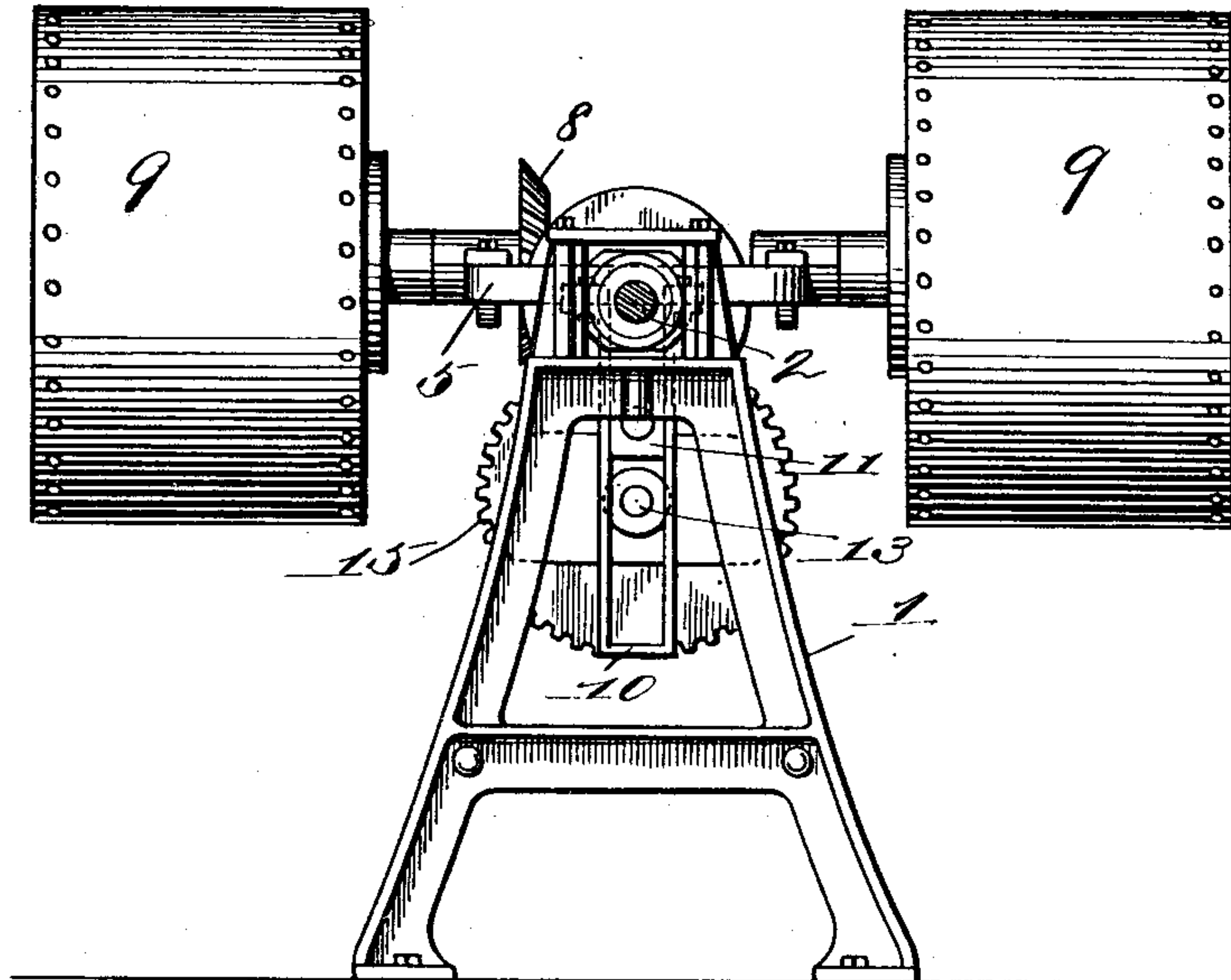


Fig. 1.

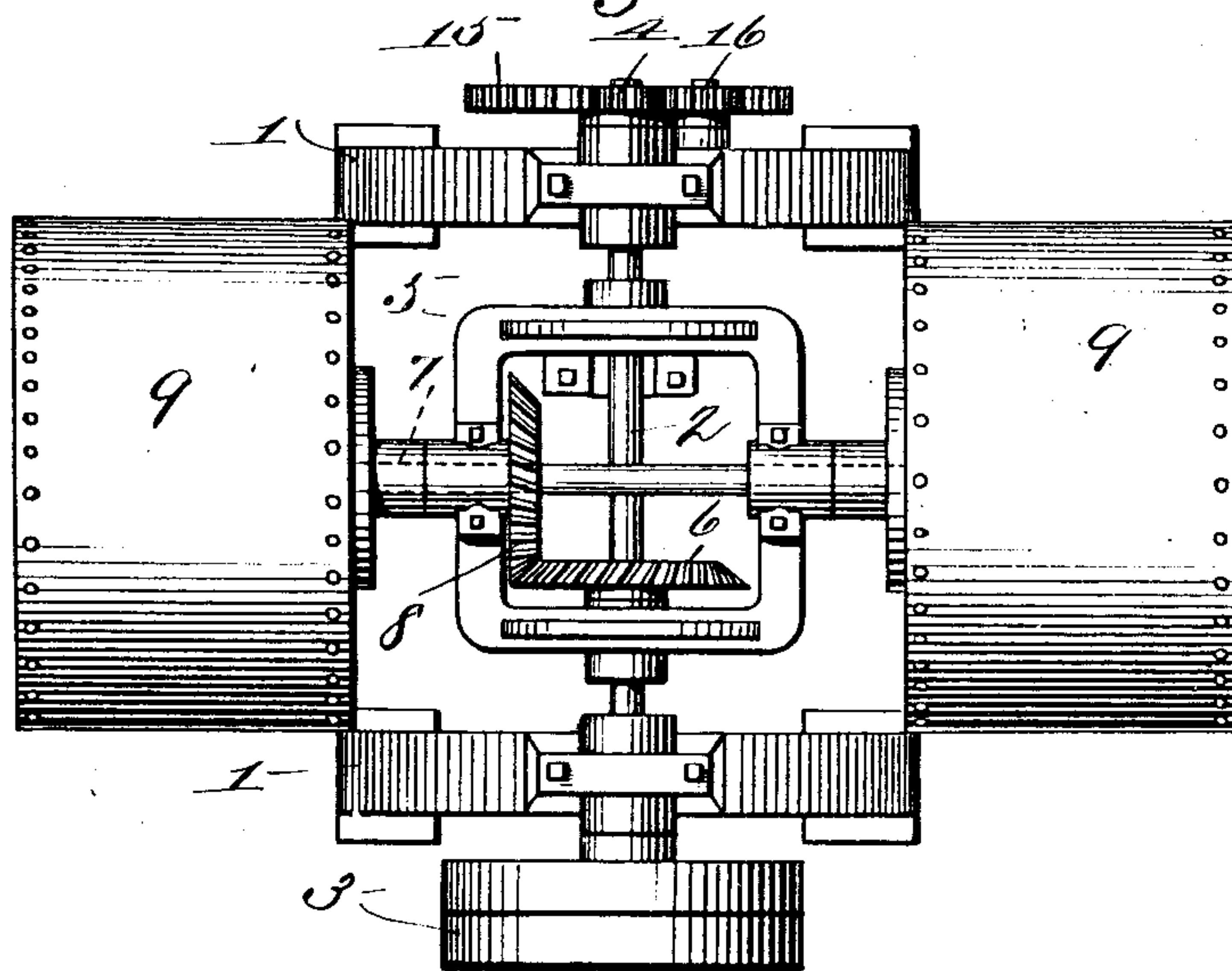


Fig. 2.

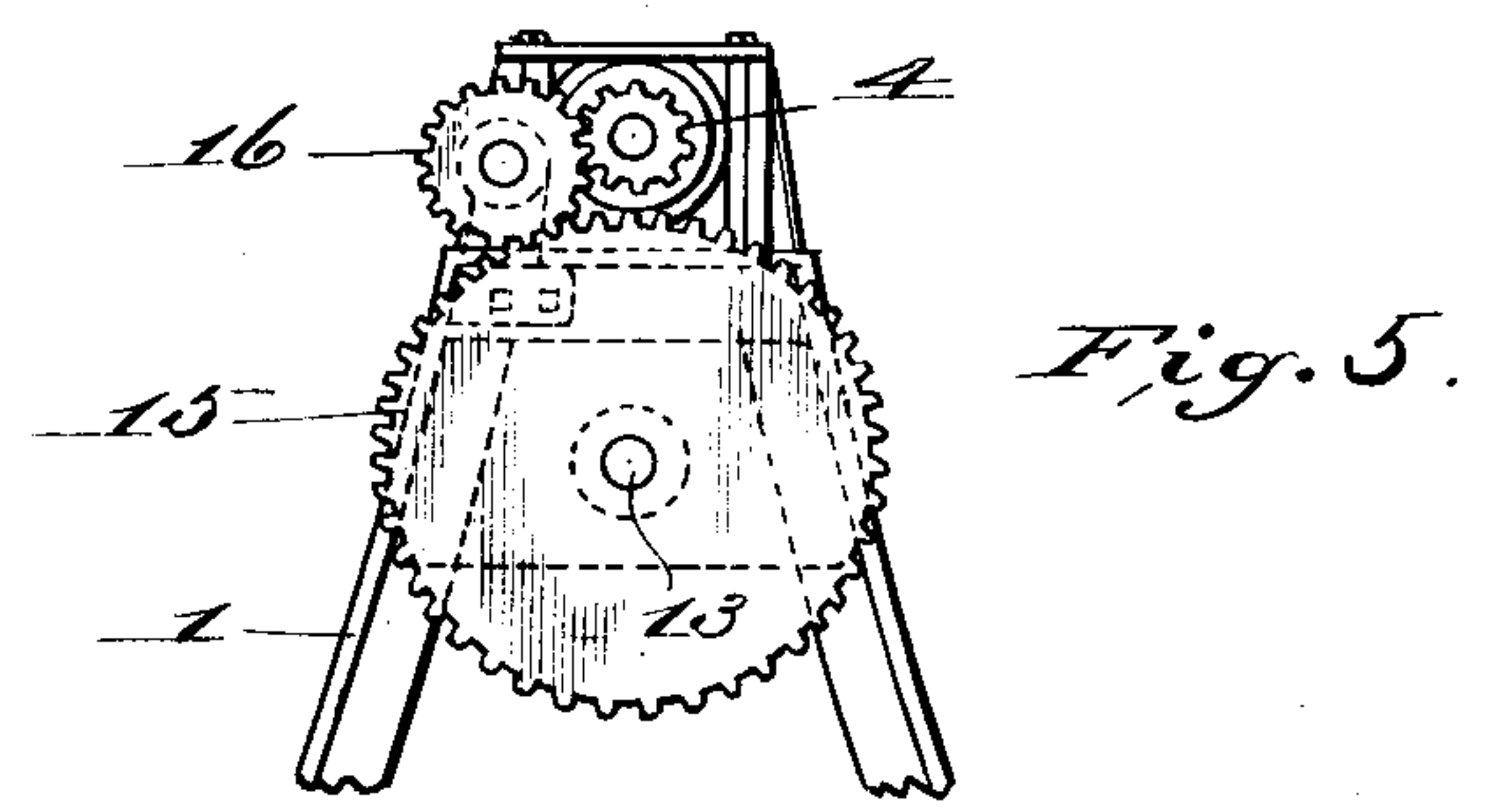
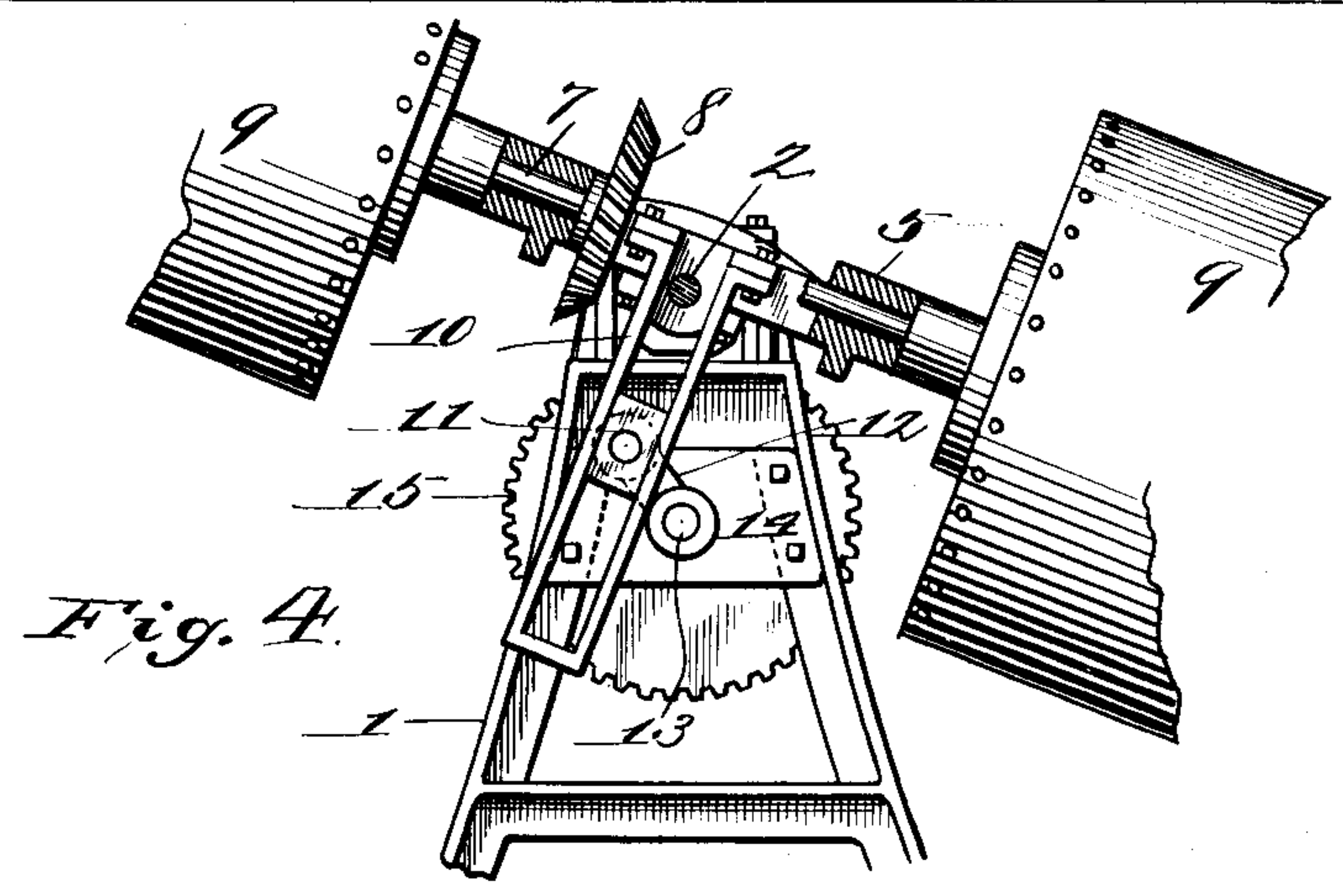
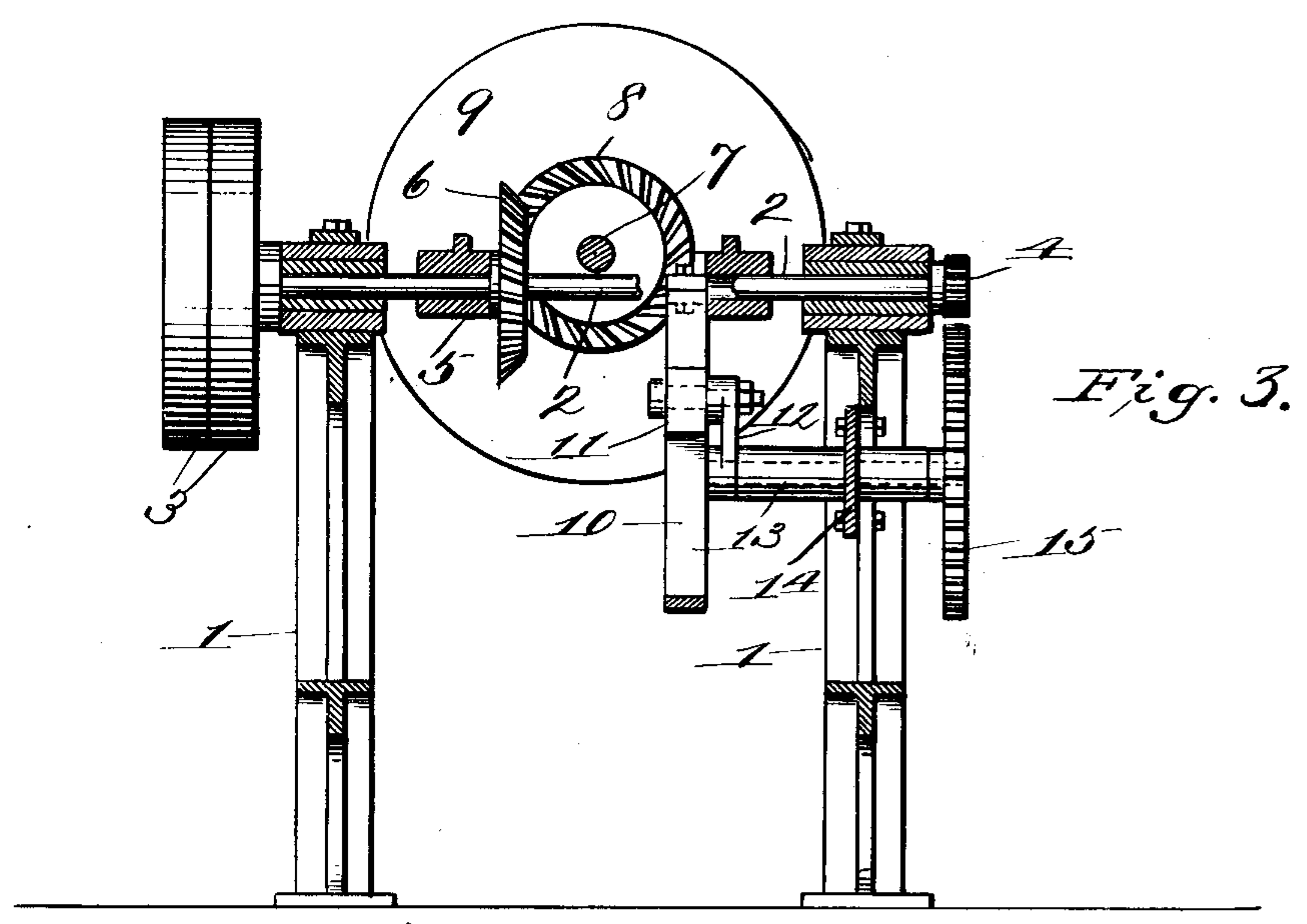
Witnesses
J. Milton Jester.
E. B. McBeth

Inventor
John Henderson
By Chas. E. Brock
Attorney

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Chas E Brock
Attorney

UNITED STATES PATENT OFFICE.

JOHN HENDERSON, OF WATERBURY, CONNECTICUT.

TUMBLING-BARREL.

1,155,150.

Specification of Letters Patent.

Patented Sept. 28, 1915.

Application filed March 25, 1914. Serial No. 827,184.

To all whom it may concern:

Be it known that I, JOHN HENDERSON, a citizen of the United States, residing at Waterbury, in the county of New Haven and State of Connecticut, have invented a new and useful Improvement in Tumbling-Barrels, of which the following is a specification.

This invention is an improvement in tumbling barrels and especially upon the tumbling barrel disclosed in my application for patent filed April 12, 1912, Serial Number 690,379.

In the present construction by employing gears with skewed teeth and running one shaft across the other I am able to place all the spur gears for driving the device upon the outer side of a supporting stand in which position they do not limit the angle of oscillation as when otherwise mounted.

The present invention also embodies other improvements which are hereinafter described, pointed out in the claims and shown in the accompanying drawings, in which:

Figure 1 is a side elevation the shaft being shown in section. Fig. 2 is a plan view of the complete machine. Fig. 3 is a vertical section taken along the line of the drive shaft. Fig. 4 is a detail sectional view taken along the line of the barrel shaft. Fig. 5 is a detail side elevation showing the spur gears.

In these drawings 1 represents suitable supporting stands properly spaced apart and which provide bearings for a horizontally arranged shaft 2. This shaft carries at one end suitable pulleys 3, one of them being a loose pulley, and at the opposite end the shaft carries a small spur gear 4. Mounted to rock upon said shaft and between the stands 1 is a substantially rectangular frame 5. Fixed upon the shaft inside of said frame and adjacent to one side of the frame is a miter gear 6 having skewed teeth. Journaled upon the frame 5 and crossing the shaft 2 at right angles is a second shaft 7 upon which is mounted a miter gear 8 toothed to engage the miter gear 6. The shaft 7 of course rocks with the frame 5 and carries upon its outer end portions tumbling barrels 9. The shaft 7 is rotated from the shaft 2 through the medium of the gears 6 and 8. In order to impart oscillating movement to the barrels a depending bracket 10 is carried by the frame 5 and a block 11 connected to a crank

arm 12 of a stub shaft 13, works in said bracket. The shaft 13 is journaled in a suitable plate 14 carried by one of the stands, and upon the outer end of the stub shaft 13 is mounted a spur gear 15 of comparatively large size, which meshes with an intermediate spur gear 16, which in turn meshes with the spur gear 4.

The intermediate gear 16 is for the purpose of changing the direction of rotation of the crank shaft, which is a matter of great importance; it also equalizes the velocity of the upward and downward oscillations. The oscillations, alternately, slightly retard and accelerate the motion of the gears 6 and 7 but by using an intermediate gear the crank is caused to run slow where otherwise it would run too fast, and to run fast when it would otherwise run too slow. The advantages of the construction above described and shown in the drawings will be obvious to those familiar with the use of barrels of this kind.

What I claim is:—

1. A device of the kind described comprising two shafts arranged at right angles to each other, one of said shafts being adapted to oscillate in a vertical plane, intermeshing miter gears having skewed teeth carried respectively by said shafts, tumbling barrels carried by the oscillating shaft, means for rotating the other shaft and means for oscillating the shaft having the tumbling barrels.

2. A device of the kind described comprising suitable supports, a shaft journaled in said supports, a frame mounted to rock upon said supports, a shaft journaled in said frame, tumbling barrels carried by the second mentioned shaft, intermeshing gears carried respectively by said shafts, means for driving the first mentioned shaft, and means driven from the first mentioned shaft for oscillating the second mentioned shaft.

3. In a device of the kind described a shaft, an oscillating shaft arranged at right angles to the shaft, a barrel upon each end of said oscillating shaft common means for rotating both shafts, a depending bracket adapted when swung to rock the oscillating shaft, a block slidable in said bracket, a crank shaft connected to said block, a gear wheel mounted upon said crank shaft, a gear wheel mounted upon the first mentioned shaft and an intermediate gear meshing with the two above mentioned gears, as and for the purpose set forth.

4. The combination with a combined rotating and oscillating shaft having a tumbling barrel at each end thereof, of a frame in which said shaft is journaled, a rotary shaft on which the frame is mounted, gearings arranged within the frame for rotating the tumbling barrel shaft, and gearing arranged without the frame, for oscillating said shaft.
5. The combination with a combined rotating and oscillating shaft having a tumbling barrel at each end thereof, of a frame in which said shaft is journaled, a rotary shaft on which the frame is mounted, gearing arranged within the frame for rotating the tumbling barrel shaft, and gearing arranged without the frame for oscillating said shaft, said oscillating gearing being arranged to equalize the speed of the rotary gearing.

JOHN HENDERSON.

Witnesses:

SAMUEL W. CHAPMAN,
LAURA B. CHAPMAN.