

Drawn

No. 847,807.

PATENTED MAR. 19, 1907.

H. OGBORN.
MACHINE DRIVING MECHANISM.
APPLICATION FILED AUG. 4, 1906.

2 SHEETS—SHEET 1.

Fig. 1.

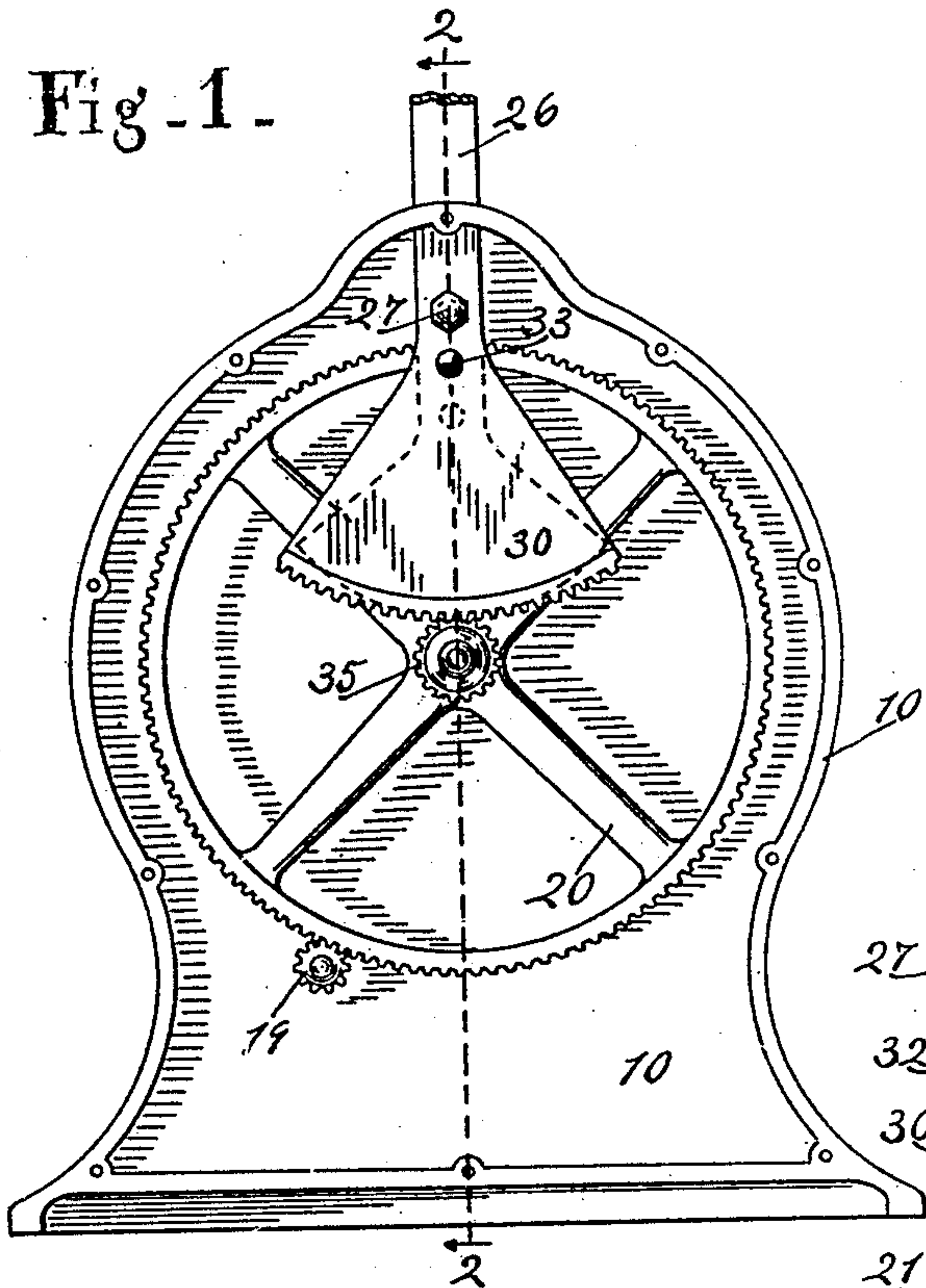


Fig. 3.

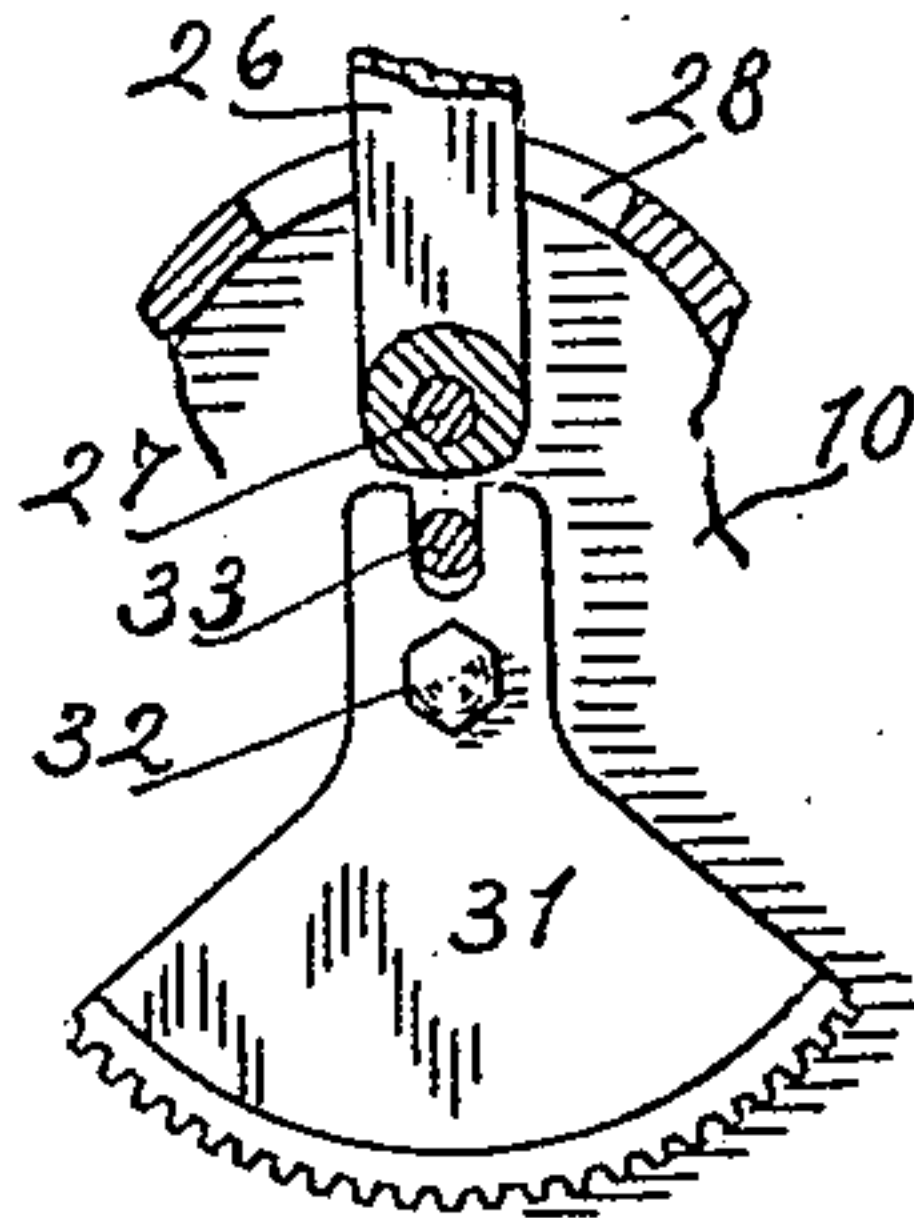


Fig. 2.

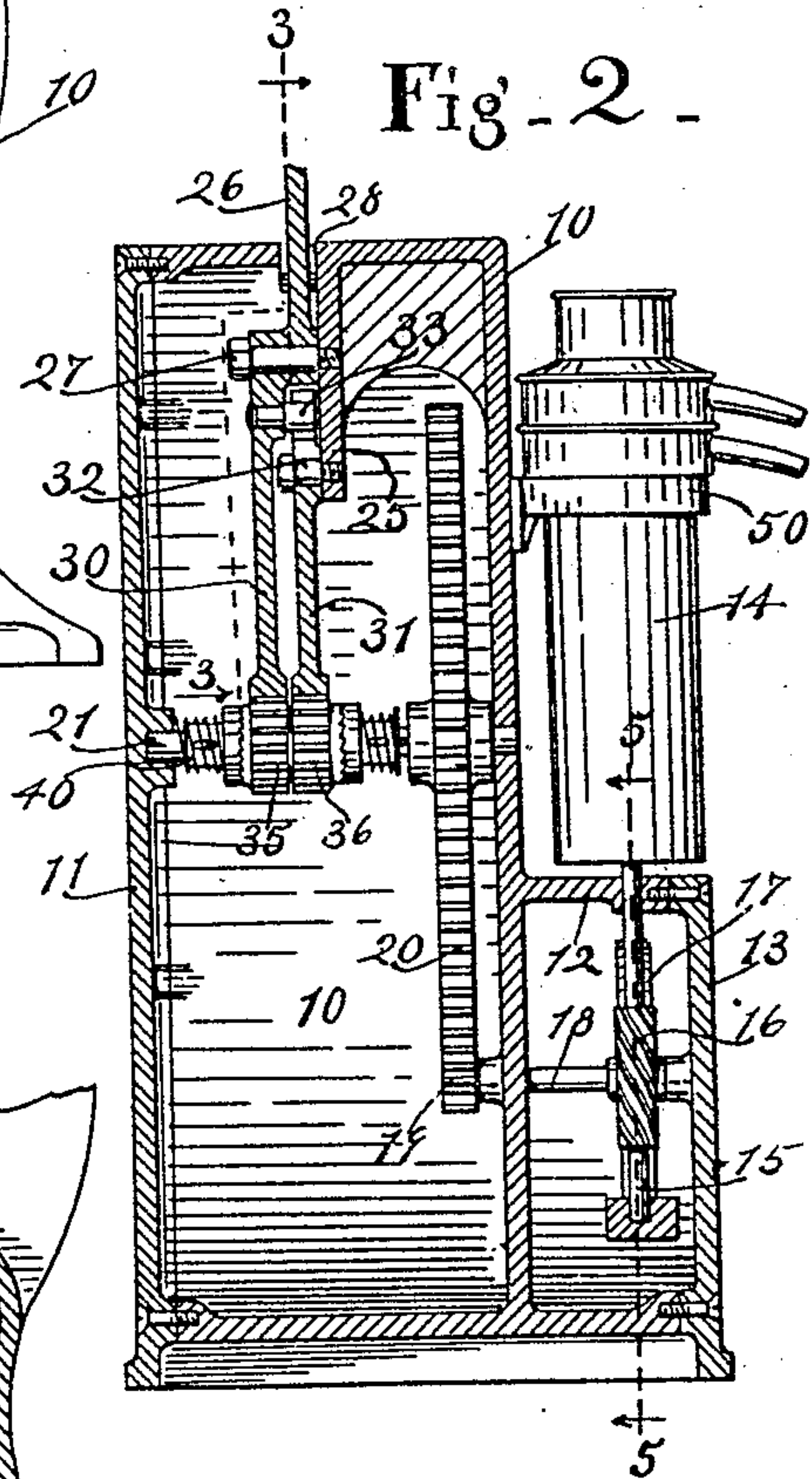


Fig. 4.

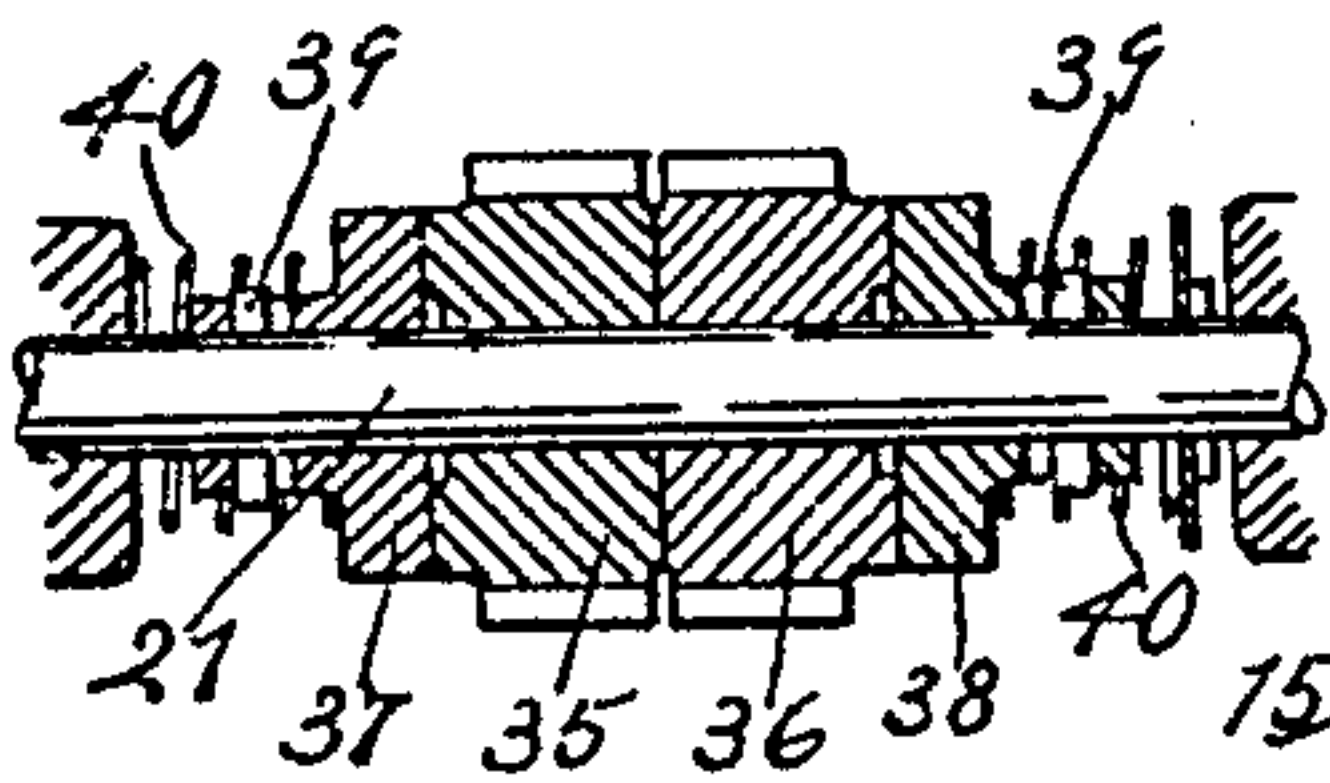
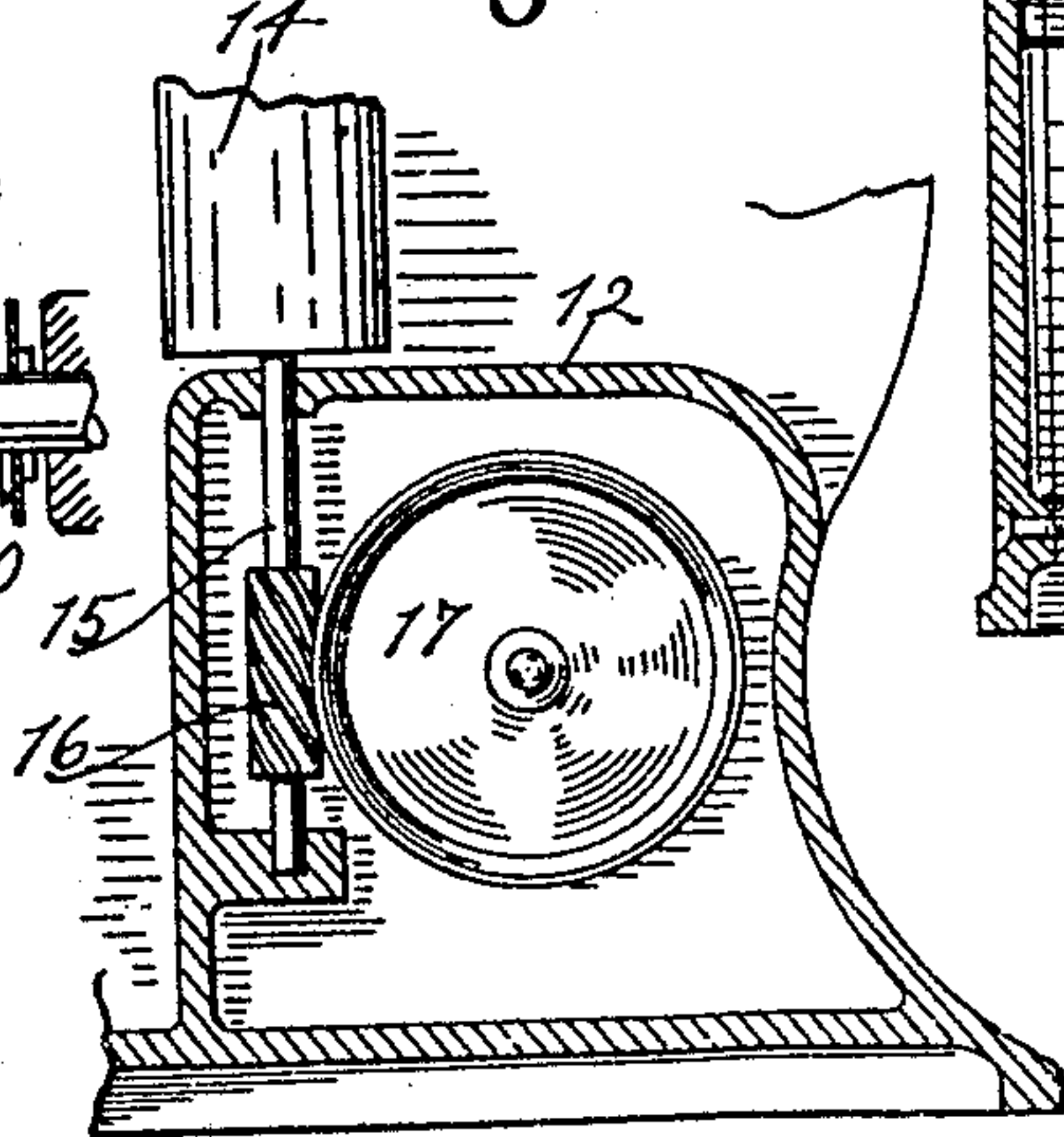


Fig. 5.



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2 SHEETS—SHEET 2.

Fig. 6.

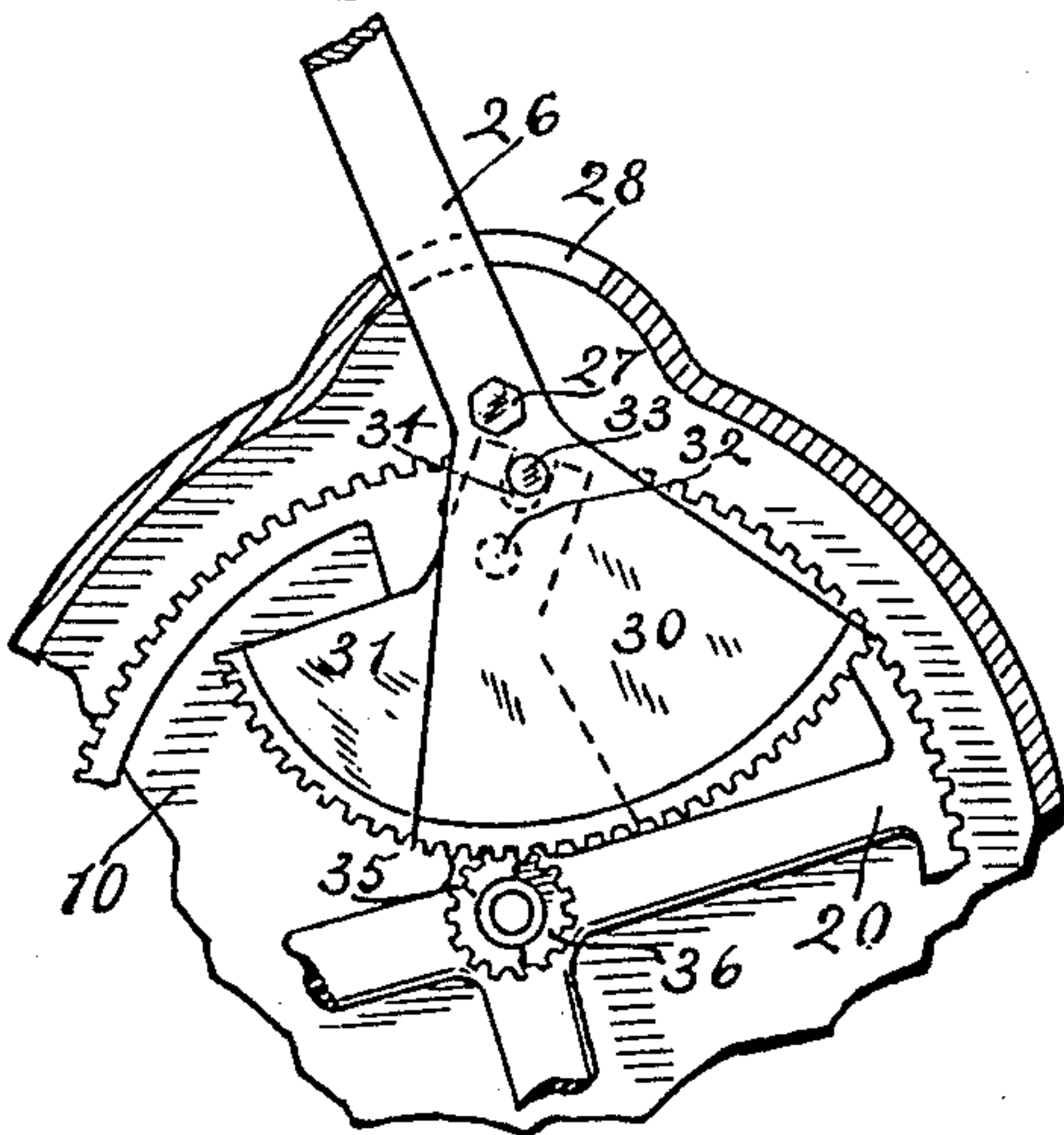
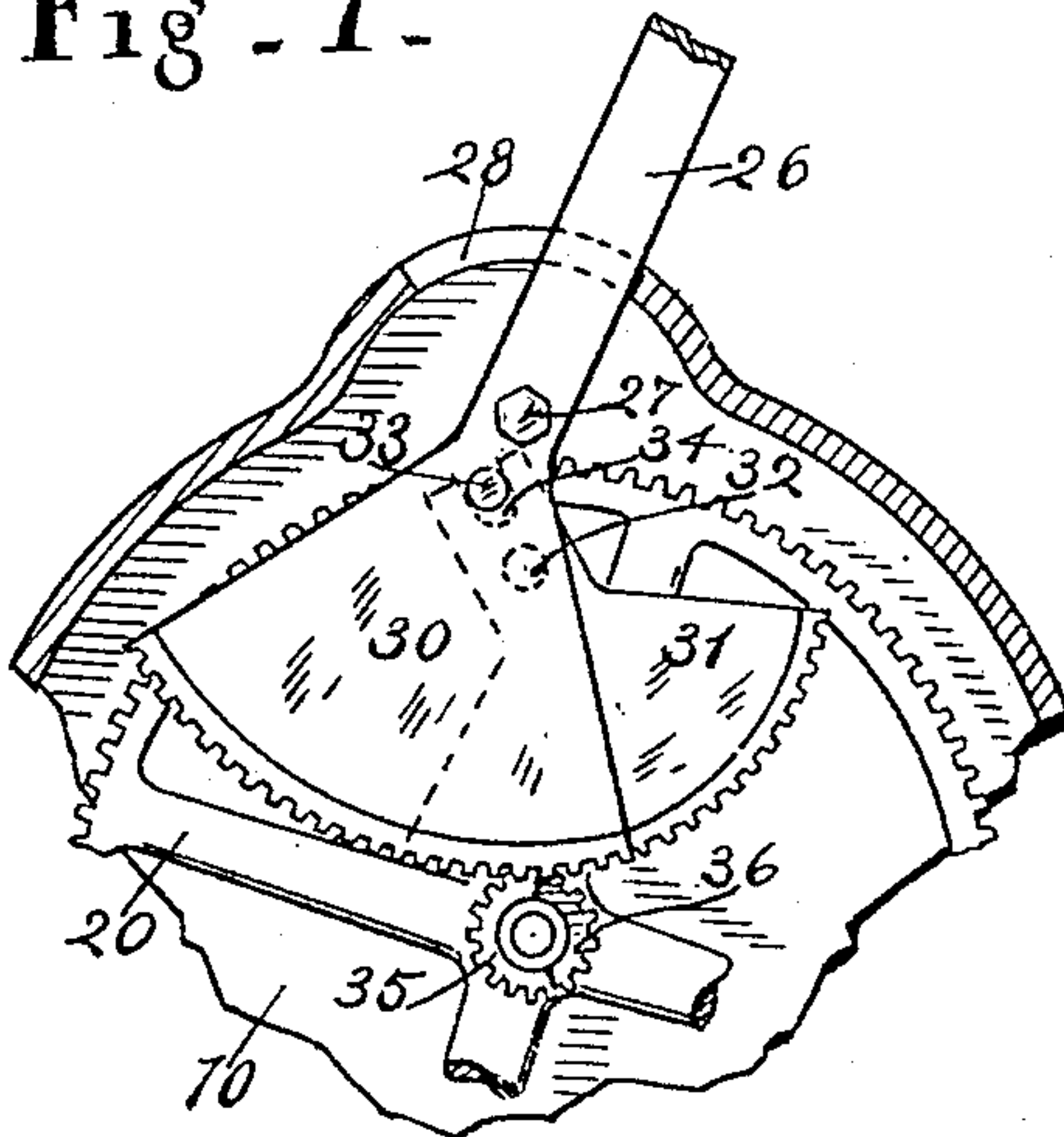


Fig. 7.



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HARRISON OGBORN, OF INDIANAPOLIS, INDIANA, ASSIGNOR, BY MESNE ASSIGNMENTS, TO THE CHAMPION LEVER MACHINE COMPANY, OF INDIANAPOLIS, INDIANA, A CORPORATION OF INDIANA.

MACHINE-DRIVING MECHANISM.

No. 847,807.

Specification of Letters Patent.

Patented March 19, 1907.

Application filed August 4, 1906. Serial No. 329,172.

To all whom it may concern:

Be it known that I, HARRISON OGBORN, of Indianapolis, county of Marion, and State of Indiana, have invented a certain new and useful Machine-Driving Mechanism; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, in which like letters refer to like parts.

The object of this invention is to provide a simple, economical, and efficient means, preferably hand-actuated, for driving machines. I have shown it herein for driving a cream-separator, as I have used it for that purpose; but I do not wish to be limited to the use of the invention with any particular device.

The chief feature of the invention consists in a pair of toothed segments oscillated simultaneously in opposite directions by a single means, such as a mere hand-lever, said segments engaging and actuating a pair of pinions loosely mounted on the driven shaft that is alternately clutched with said pinions, so the shaft will receive a constant forward rotary movement.

In carrying out said invention the hand-lever is preferably secured integrally or otherwise to one segment and a free actuating connection, such as a pin, provided between said segments intermediate their fulcrums, whereby the segments will oscillate simultaneously in opposite directions. The toothed portions of the segments register with each other side by side, so they will drive similarly-sized pinions on a single shaft. Stops are provided to limit the oscillation of the segments, so they will always overlap each other at the limits of movement and neither be permitted to leave the pinion.

In the drawings, Figure 1 is a side elevation of the device with the side plate of the frame-casing removed and the hand-lever partly broken away. Fig. 2 is a central vertical section through the device on the line 2 2 of Fig. 1, the hand-lever being partly broken away. Fig. 3 is a section on the line 3 3 of Fig. 2. Fig. 4 is a horizontal section through the driven shaft, the ends of the shaft being broken away. Fig. 5 is a section on the line 5 5 of Fig. 2. Figs. 6 and 7 are side elevations of the segments, showing them at their limits of movement, parts being in section and parts broken away.

A frame 10 in the form of a casing is provided and arranged to be secured in place—as, for illustration, secured to the floor. It has a removable side plate 11. An auxiliary casing 12 is secured, preferably, integrally to one side of the main casing, and it has a removable side plate 13. Above the auxiliary casing a rotary cream-separator 14 is mounted within a support 50 and is rotated by a shaft 15, which carries a screw 16, driven by a worm-wheel 17 on the shaft 18. This latter shaft has a pinion 19, driven by a spur-gear 20 on the shaft 21, referred to herein as the “driven” shaft. My invention consists in the means for driving this shaft regardless of what it in turn operates, although the large gear 20 and the cream-separator 14 perform the function of a fly-wheel or momentum-maintainer, but in themselves are not new.

The frame or main casing 10 has a depending plate 25, in which a vertical hand-lever 26 is fulcrumed by a bolt 27. Said casing 10 has a slot at 28, through which the hand-lever operates, and the ends of the slots constitute stops to limit the oscillating movement of the lever. The toothed segment 30 is integral with and forms a continuation of the hand-lever, as seen in Fig. 1, and one is offset from the other somewhat, as seen in Fig. 2, although this is not necessary. The other segment 31 is independent of segment 30 and is fulcrumed between its ends on a bolt 32, that is secured to the plate 25 and is in line with the hand-lever 26, but not necessarily. The segment 31 is oscillated by a pin 33, fast in segment 30 at a point below the fulcrum and extending into a slot at 34 in the segment 31 above its fulcrum.

From the foregoing it will be obvious that operation of the hand-lever will cause the segments to oscillate simultaneously in opposite directions, and the ends of the slot 28 or stops are so located that the segments will always overlap each other somewhat, even at the limits of movement, as shown in Fig. 6.

The toothed portions of the segments are parallel and coterminous, as seen in Fig. 2, so they will engage their respective pinions 35 and 36, that are mounted loosely on the driven shaft 21. These pinions are adjacent and their remoter sides are formed into oppositely-toothed clutch-faces to cooperate with the clutches 37 and 38, that are also reversely

toothed. The hub of each clutch is longitudinally slotted to receive a pin 39 in the shaft to permit movement of the clutch toward and away from its pinion. The clutch is pressed toward the pinion by a spring 40. With this arrangement each pinion 35 and 36 will actuate while revolving in one direction and be idle when reversed, and one pinion will be idle while the other actuates, and the movement of the shaft by both will always be in the same direction. Also as soon as the actuating movement of one segment and its pinion ceases by the reversal of the hand-lever the actuating movement of the other segment and pinion will at once begin. For this reason the forward movement of the shaft 21 will be constant. The operation is helped by some momentum-maintainer, such as a fly-wheel, or the means here shown, that performs incidentally a similar function.

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

1. In a driving mechanism, the combination with a shaft, a pair of pinions loosely mounted thereon, and reversely-operating clutches on the shaft engaging said pinions, of a pair of toothed segments independently mounted side by side and with parallel toothed peripheral portions engaging said pinions, said sections being provided with a single means for simultaneously oscillating said segments in opposite directions.

2. In a driving mechanism, the combination with a shaft, a pair of pinions loosely mounted thereon, and reversely-operating clutches on the shaft engaging said pinions, of a pair of toothed segments fulcrumed independently at different distances from their toothed peripheral portions and engaging said pinions, one segment having means for oscillating it, and a connection between the segments intermediate their fulcrums, whereby one segment will oscillate the other simultaneously in an opposite direction.

3. In a driving mechanism, the combination with a shaft, a pair of pinions loosely mounted thereon, and reversely-operating clutches on the shaft engaging said pinions, of a pair of toothed segments fulcrumed independently at different distances from their toothed peripheral portions and engaging said pinions, one segment having a hand-lever rigidly secured thereto, and a connection between the segments intermediate their fulcrums, whereby one segment will oscillate the other simultaneously in an opposite direction.

4. In a driving mechanism, the combina-

tion with a shaft, a pair of pinions loosely mounted thereon, and reversely-operating clutches on the shaft engaging said pinions, of a pair of toothed segments fulcrumed independently at different distances from their toothed peripheral portions and engaging said pinions, means for oscillating one segment, and a pin in one segment intermediate the fulcrums of the segments, the other segment being slotted to receive said pin, substantially as set forth.

5. In a driving mechanism, the combination with a shaft, a pair of pinions loosely mounted thereon, and reversely-operating clutches on the shaft engaging said pinions, of a pair of toothed segments independently mounted side by side and with parallel toothed peripheral portions engaging said pinions, a single means for simultaneously oscillating said segments in opposite directions, and stops for limiting the movement of said segments so that no segment can at any time leave its pinion.

6. In a driving mechanism, the combination with a shaft, a pair of pinions loosely mounted thereon, and reversely-operating clutches on the shaft engaging said pinions, of a pair of toothed segments engaging said pinions, a single means for simultaneously oscillating said segments in opposite directions, whereby the shaft will receive a constant forward rotary movement, and means for maintaining the momentum of said shaft during the reversals of said segments.

7. A driving mechanism comprising a frame with a vertical plate therein, a hand-lever fulcrumed to said plate, stops to limit the movement of said lever, said hand-lever having a toothed segment forming a continuation of the hand-lever below its fulcrum, a second toothed segment fulcrumed between its ends in said plate beside the first segment and slotted in its upper end, a pin in the first segment entering the slot in the second segment, a shaft in said casing at a right angle to planes through said segments, a pinion loosely mounted on said shaft to engage each segment, and reversely-operating clutches on said shaft for clutching said pinions alternately thereto, substantially as shown and described.

In witness whereof I have hereunto affixed my signature in the presence of the witnesses herein named.

HARRISON OGBORN.

Witnesses:

W. M. GENTLE,
N. ALLEMONG.