

No. 620,032.

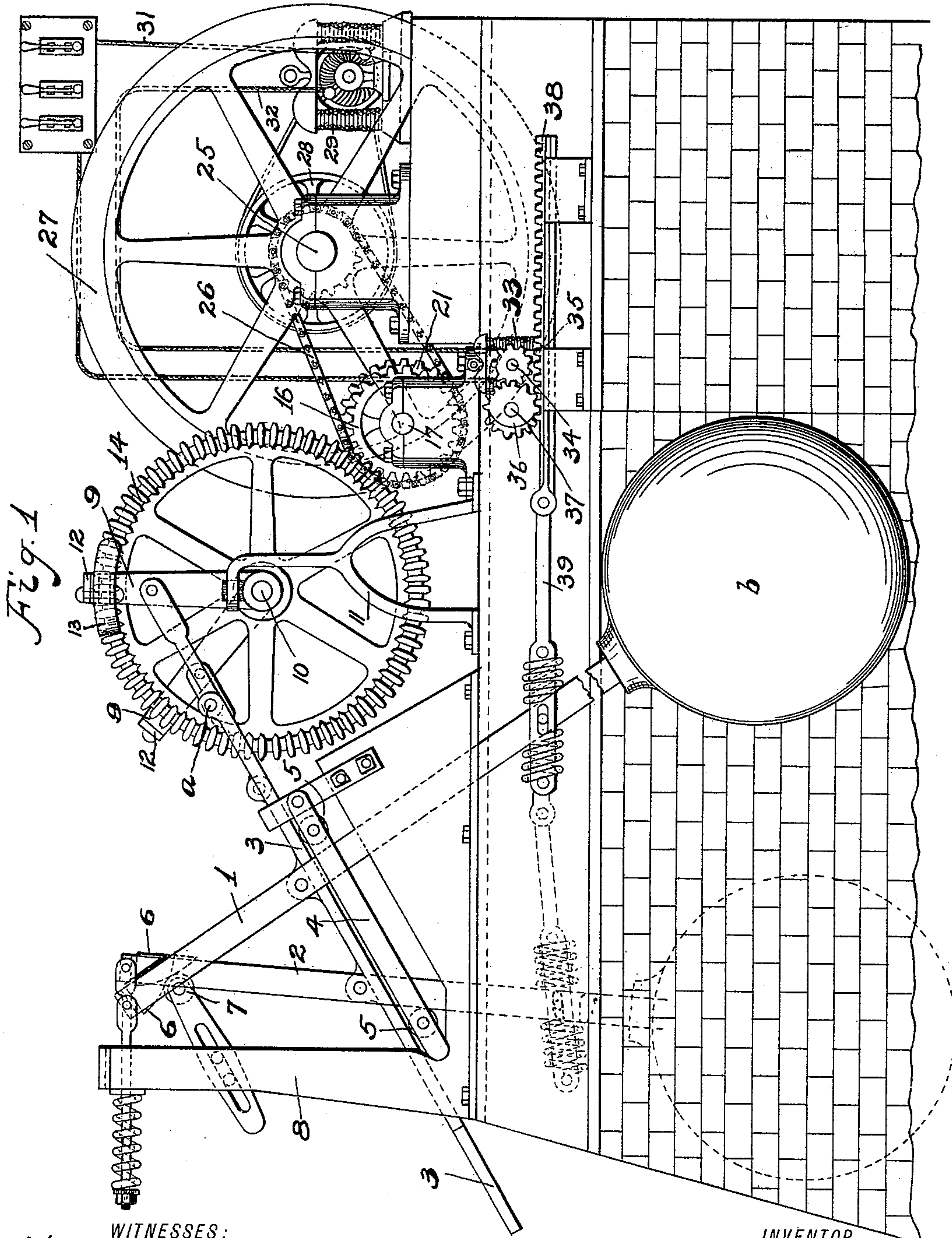
Patented Feb. 21, 1899.

W. L. HARVEY.  
OSCILLATING GRAVITY MOTOR.

(Application filed July 6, 1897.)

(No Model.)

3 Sheets—Sheet 1.



WITNESSES:

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*E. A. Williams*

INVENTOR

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BY

*John H. Roney*  
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ATTORNEY.

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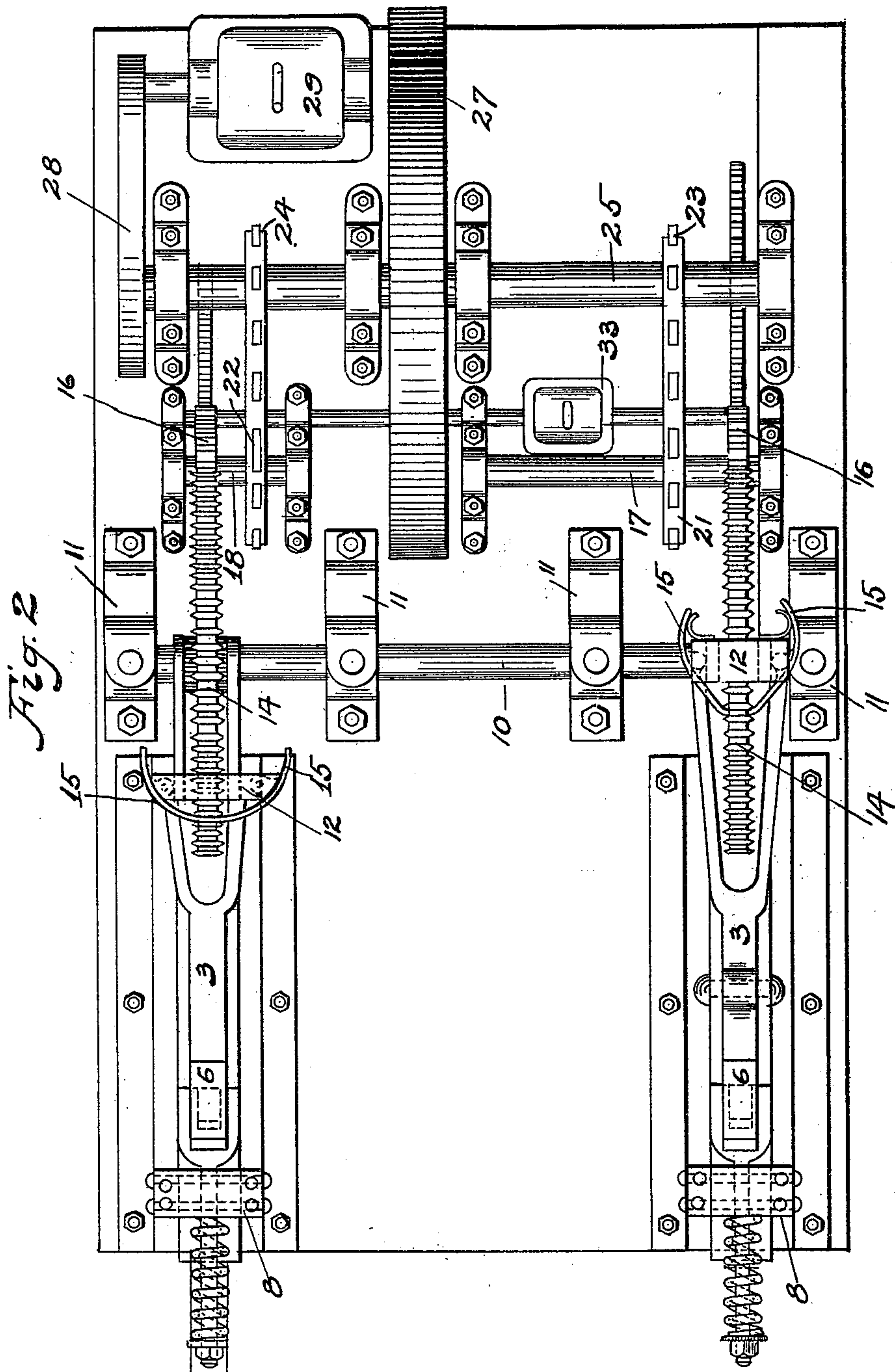
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3 Sheets—Sheet 2.



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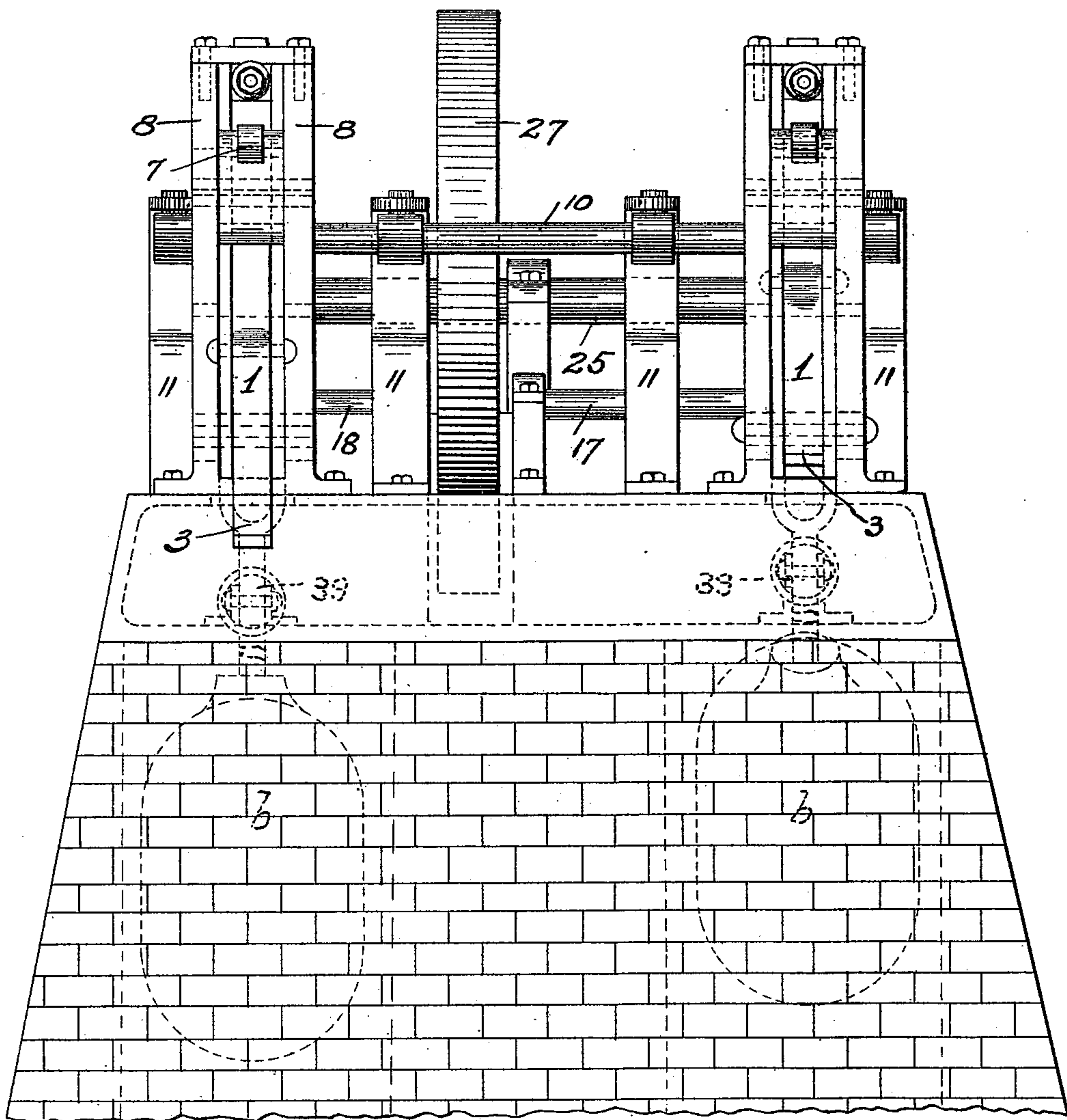
**W. L. HARVEY.**  
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**3 Sheets—Sheet 3.**

Fig. 3



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# UNITED STATES PATENT OFFICE.

WILLIAM LEVANT HARVEY, OF GOSFORD, PENNSYLVANIA, ASSIGNOR  
OF FIVE-TWELFTHS TO JAMES H. CANFIELD AND JACOB P. NILL, OF  
McKEESPORT, AND DANIEL WALDSCHMIDT AND HENRY F. WALK-  
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## OSCILLATING GRAVITY-MOTOR.

SPECIFICATION forming part of Letters Patent No. 620,032, dated February 21, 1899.

Application filed July 6, 1897. Serial No. 643,657. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM LEVANT HARVEY, a citizen of the United States, residing at Gosford, in the county of Armstrong and State of Pennsylvania, have invented certain new and useful Improvements in Oscillating Gravity Motors or Engines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification, in which—

Figure 1 indicates a side elevation of my improved oscillating gravity-engine. Fig. 2 is a plan view of the same. Fig. 3 is an end view of the same.

My invention relates to mechanical motors; and my object is to produce a device which, with the expenditure of a comparatively small power, a largely-augmented force or power is generated, and to this purpose consists, primarily, in the use of two heavily-weighted oppositely-oscillating levers fulcrumed upon a reciprocating incline plane, combined and arranged as hereinafter more specifically set forth, reference being had to the accompanying drawings, forming part hereof, in which like letters and numerals indicate similar parts wherever they occur.

Referring to said drawings, 1 and 2 are respectively levers, beams, or pendulums, the lower ends of which are provided with heavy weights *b* and are pivotally fulcrumed upon arms or pitmen 3 3, adapted to be reciprocated up and down the incline planes 4 4, which are suitably secured to the frame of said machine over antifriction-rollers 5 5, secured in said incline plane by the oscillation of said levers. The upper ends of said levers, on both sides of the same, are provided with impact-blocks 6 6, the outer edges of which are curved, as shown, which, engaging upon and operating over the roller 7, secured in the outer ends of the brackets 8 8, secured to the frame of said machine, serve to reciprocate said pitmen 3 3 by the oscillation of said levers. The outer

or upper ends of said pitmen terminate in a clevis or yoke pivotally connected at *a* to the lever 9, which is mounted upon the shaft 10, journaled in bearings in the standard 11, which is bolted or otherwise suitably secured to the bed-plate of the machine. The upper ends of said levers are connected by a plate 12, and upon the inner sides of the same are pivotally secured pawls 13 13, adapted to mesh with the teeth arranged upon the upper edges of the large gear-wheel 14, mounted on the shaft 10, whereby the said wheel is rotated by said pitmen on their downward stroke, as hereinafter specified, said pawls being held in engagement with teeth on said wheels by the outward pressure of the springs 15 15, and being adapted to trip over said teeth on the upward stroke of said pitmen, as hereinafter specified. Said wheels 14 14 are also provided with teeth in the periphery thereof, which mesh with and communicate power to spur-wheels 16 16, mounted, respectively, upon the shafts 17 and 18, which are suitably secured in bearings 19 and 20, secured to the bed-plate of said machine. Power communicated to said shafts 17 and 18 is transmitted through the sprocket-wheels 21 and 22, mounted on said shafts, respectively, to the sprocket-wheels 23 and 24, mounted on the shaft 25 by means of the chains or other suitable gearing 26, and thence to the fly-wheel 27, mounted on said shaft 25. A drum or belt pulley 28 is also mounted on said last-mentioned shaft 25 for the purpose of transmitting power to the dynamo 29 by means of the belt 30. Electrical current generated by said dynamo is conveyed through suitable conductors 31 and 32 to the electric motor 33. A shaft 34, operated by said motor, is provided with a cog 35, which meshes with and transmits power to a larger cog-wheel 36, mounted upon the shaft 37. Said cog 36 is of considerable width, one half of the periphery of the same having the teeth removed, the cogs on the other half of the periphery being adapted to engage the teeth on the rack 38, whereby said rack is caused to move in one direction until the continued revolution of said cog 36



presents the cut-out portion thereof, which, releasing said rack, enables the oscillating levers, connected to the outer end of said rack by means of the rods 39 39, to move or reciprocate said rack in an opposite direction until the continued revolution of the cog again meshes therewith, whereby said levers, in conjunction with its own momentum, are oscillated backward and forward, a much less percentage of the power generated by said oscillating levers being required to keep the same in motion when started.

Having described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In a mechanical motor or engine, the combination of two oppositely-oscillating levers, the lower ends of which are heavily weighted; pitmen connected to the upper ends of said levers; an incline plane upon which said pitmen are adapted to reciprocate; upwardly-projecting levers; means to connect said pitmen and said levers, and suitable gearing adapted to be connected to said levers, substantially as set forth.

2. In a mechanical motor or engine, the combination of two oppositely-oscillating levers, the lower ends of which are heavily weighted; pitmen connected to said levers near the upper ends thereof, incline planes upon which said pitmen are adapted to reciprocate by the oscillation of said levers; upwardly-projecting levers mounted on a shaft and adapted to

be connected with the upper ends of said pitmen; gear-wheels having teeth arranged upon both sides the rim thereof, adapted to be engaged by pawls carried by said upwardly-projecting levers; and suitable mechanism connecting said gear-wheels with a dynamo and motor, substantially as set forth.

3. In a mechanical engine or motor, the combination of two oppositely-oscillating levers, the lower ends of which are provided with heavy weights and the upper ends with impact-blocks; rollers suitably secured in the frame of said machine; pitmen connected to said levers near the upper ends thereof; incline planes upon which said pitmen are adapted to reciprocate; upwardly-projecting levers mounted on a shaft and connected to the outer end of said pitmen; gear-wheels mounted on the same shaft as said upwardly-projecting levers and adapted to mesh with pawls carried by said levers; means to communicate power to said gear-wheels to a dynamo and motor; a rack adapted to be driven by said motor and connected to said oscillating levers near the lower end thereof, substantially as described.

In testimony that I claim the foregoing I hereunto affix my signature this 24th day of April, A. D. 1897.

WILLIAM LEVANT HARVEY. [L. S.]

In presence of—

C. O. WILLIAMS,  
GEO. B. PARKER.