

No. 771,754.

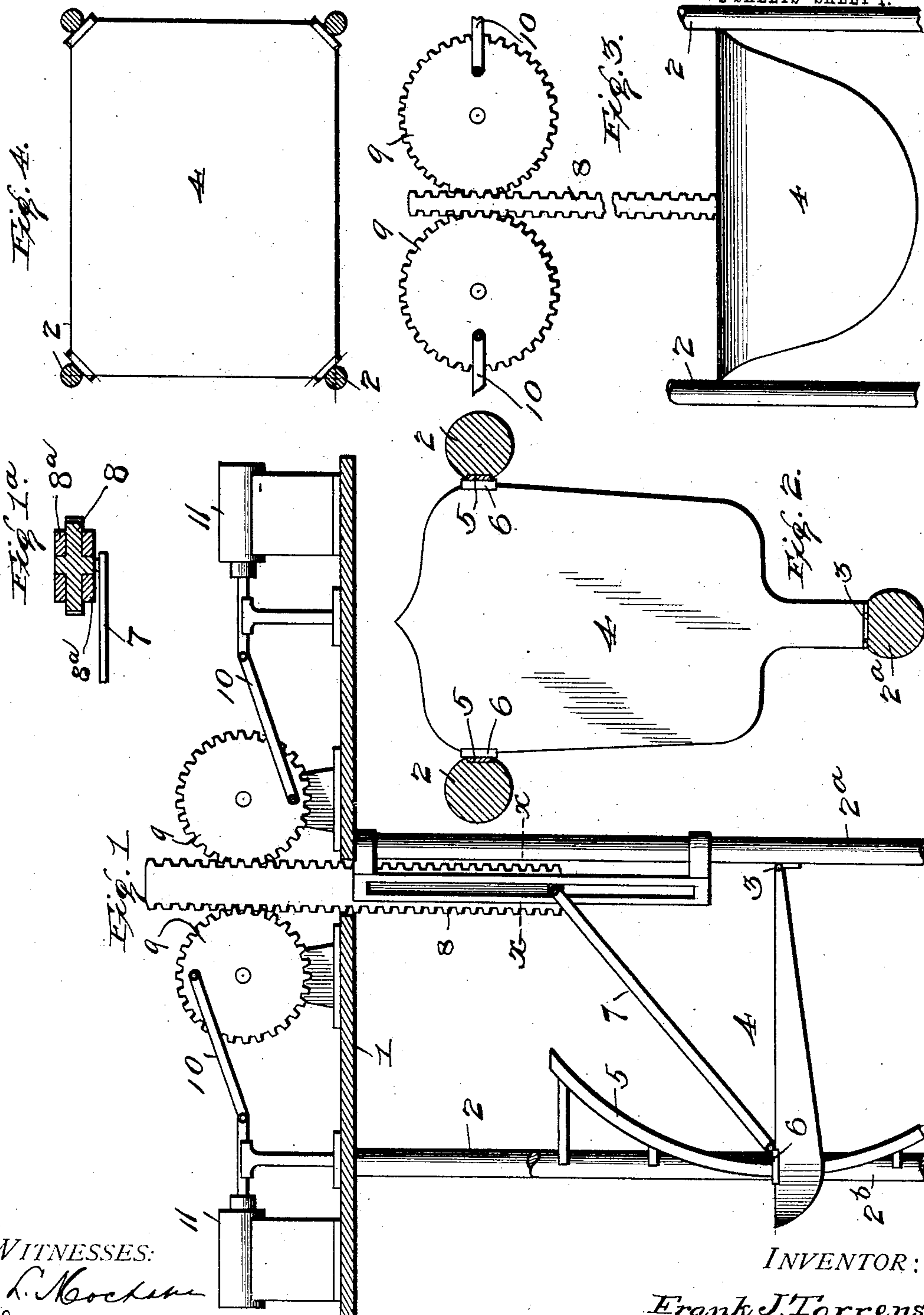
PATENTED OCT. 4, 1904.

F. J. TORRENS.
WAVE MOTOR.

APPLICATION FILED NOV. 11, 1903.

NO MODEL.

2 SHEETS—SHEET 1.



WITNESSES:
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C. E. Schnell

INVENTOR:
Frank J. Torrens,
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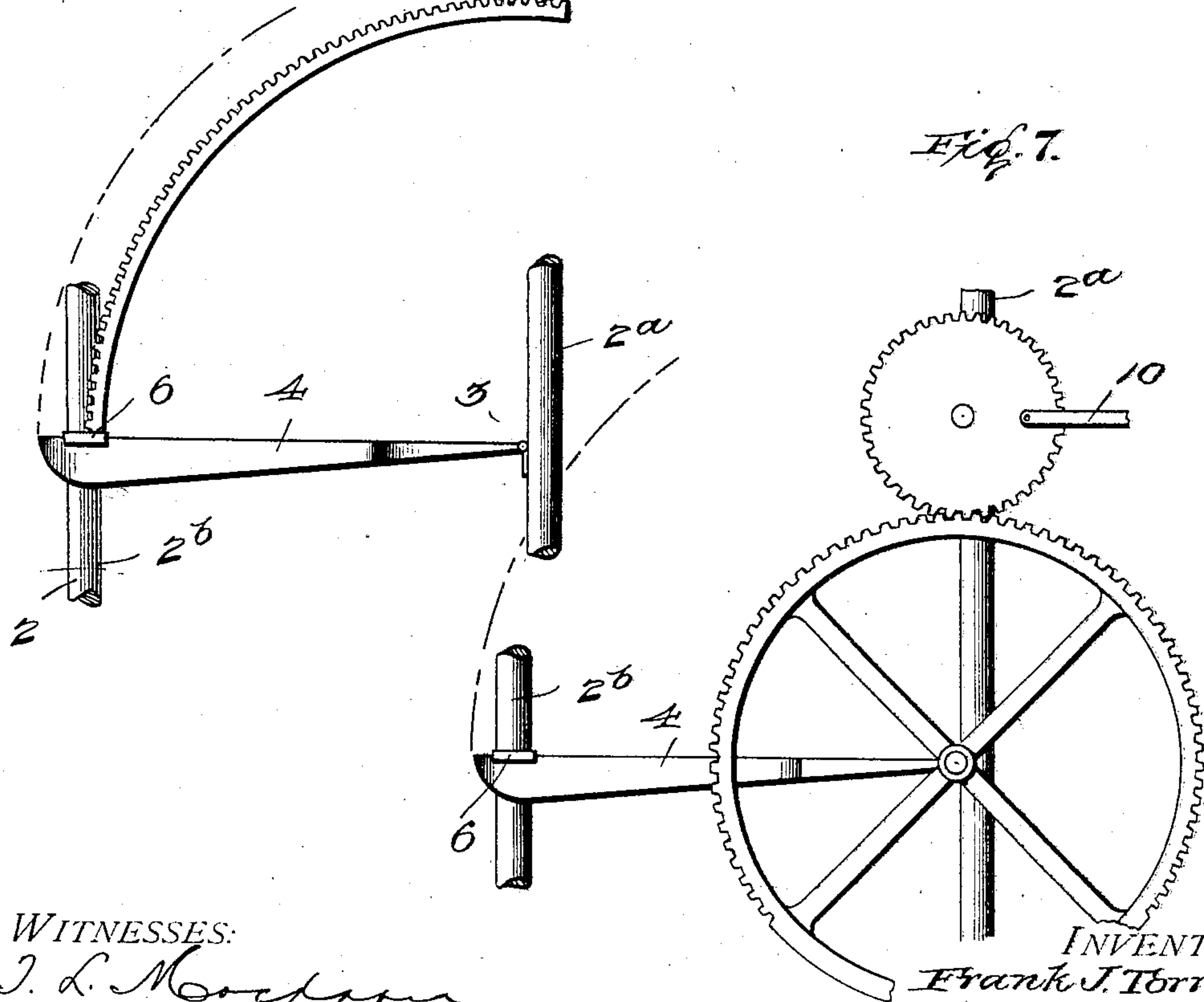
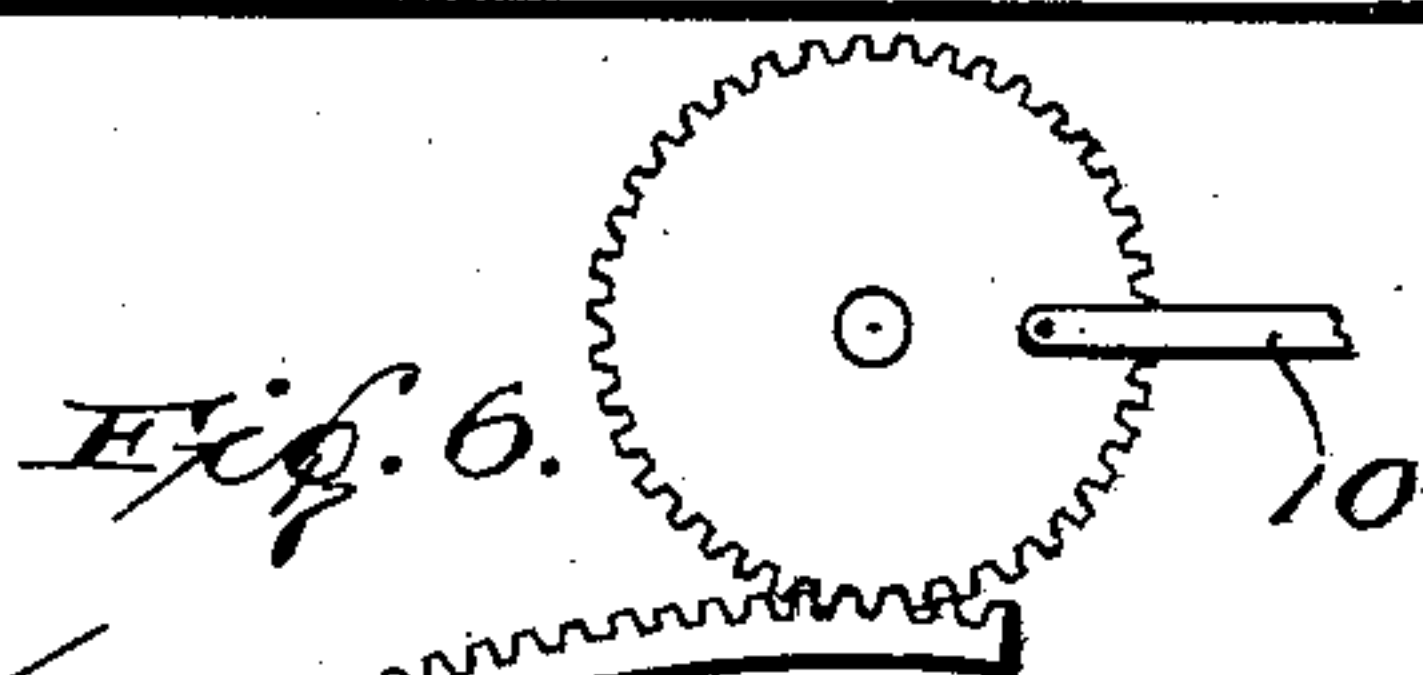
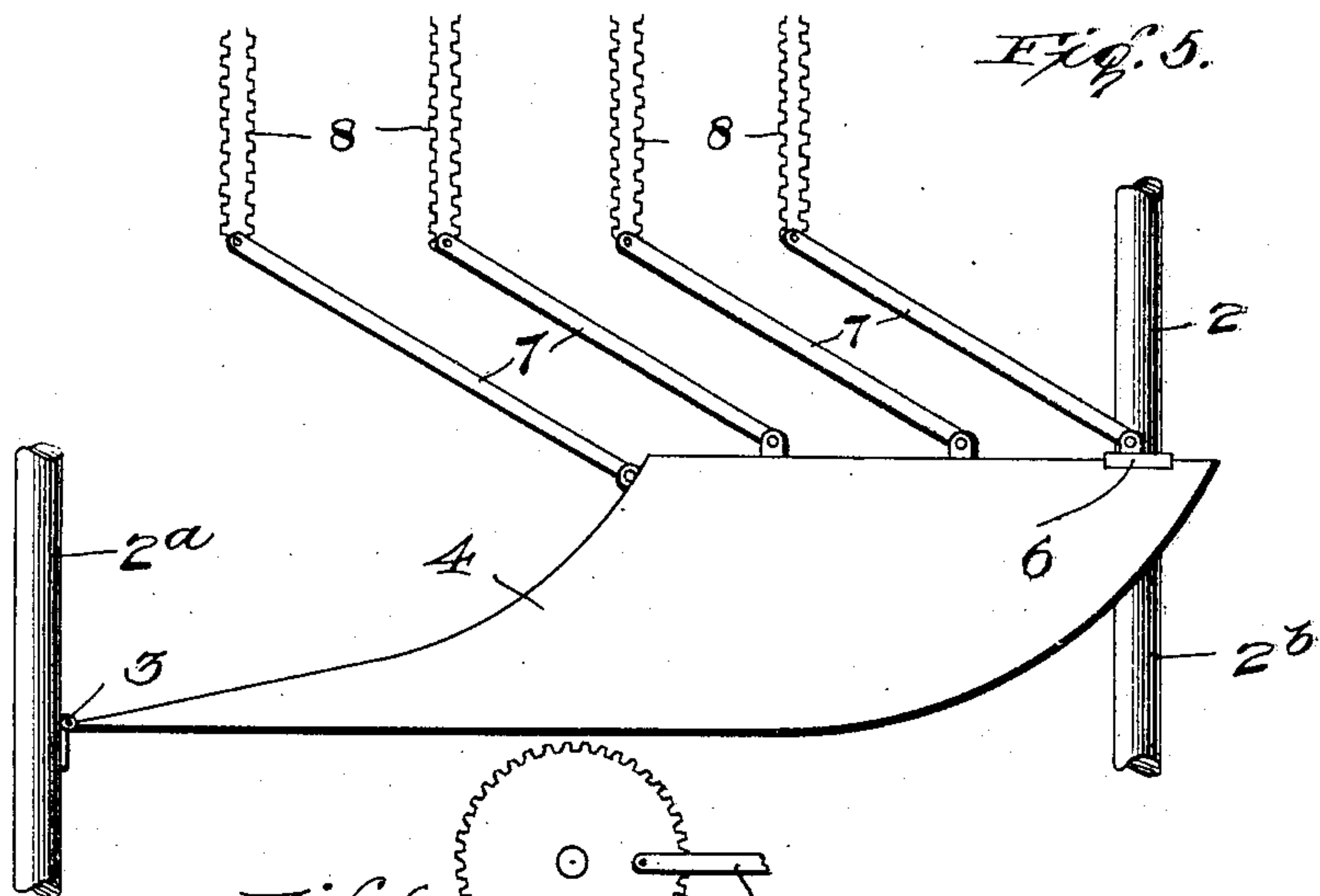
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UNITED STATES PATENT OFFICE.

FRANK J. TORRENS, OF PHILADELPHIA, PENNSYLVANIA.

WAVE-MOTOR.

SPECIFICATION forming part of Letters Patent No. 771,754, dated October 4, 1904.

Application filed November 11, 1903. Serial No. 180,759. (No model.)

To all whom it may concern:

Be it known that I, FRANK J. TORRENS, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Wave-Motors; 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 appertains to make and use the same.

This invention relates to that class of wave-motors which utilize the force of the waves and swell of the water by means of a buoyant float; and the object thereof is to provide a simple and efficient motor for operating an air-compressor or other source of power that is comparatively inexpensive in construction and operation.

The invention consists in the construction and combination of parts hereinafter described, and more particularly pointed out in the claims.

In the accompanying drawings, illustrating the preferred embodiment of the invention, Figure 1 is a side view of my wave-motor, the platform being in section and part of one of the track-supporting piles broken away. Fig. 1^a is a section through rack-bar and guide on line *x x*, Fig. 1. Fig. 2 is a plan view of the float. Fig. 3 is a detail side view of a modified form of float. Fig. 4 is a plan view thereof. Fig. 5 is a side view of another modified form of float. Fig. 6 is a modified form of the rack-bar adapted for use with one wheel, and Fig. 7 is still another modification showing a wheel used in place of the rack-bar.

Referring more particularly to the drawings, a suitable platform 1 rests preferably upon piles 2, to one of which, 2^a, is adjustably pivoted or hinged at 3 the rear end of the float 4. Said float is made of wood, hollow metal, or any other suitable material and is preferably the shape of a surf-boat at the bow and gradually tapering toward the stern about three-quarters of its length, where it narrows abruptly to about four inches in width, at the end of which narrow portion it is connected, as above described, to one of the

supports or to a framework arranged between two or more of said supports. The bow of said float is arranged, preferably, between two supports 2^b, upon each of which is arranged a framework or trackway 5, conforming to the path of the bow of said float as it is raised and lowered by the swell of the sea. The float is provided with small rollers 6, which engage these guide or track ways, thereby providing for a freer operation of said float and doing away with all friction. To the bow end of the float is pivoted a connecting-rod 7, connected at its upper end to the double rack-bar 8, guided in guide-plates 8^a, said rack-bar passing up through an aperture in the platform and meshes with two gear-wheels 9, one on each side thereof. To each gear-wheel is connected eccentrically a pitman-rod 10, operating the piston of preferably an air-compressor 11. It is obvious that this motor can be used to communicate power to any desired apparatus or machinery, &c.

It will be readily seen that as the waves or swell raises the float the rack-bar will be forced upward by means of the communicating rod, causing the gear-wheels to revolve and operate the compressors. When the float is raised, the wave will pass under it past the narrow stern end of the same without being materially retarded thereby or causing any damage to the float, which is sufficiently weighted or is of itself of sufficient weight to cause it to fall after each wave.

I do not restrict myself to the preferred form of float as shown herein, as I may use other shapes, such as those shown in Figs. 2 and 3. I may connect the rack-bar directly to the float, as seen in Fig. 2, and I may increase the size of the float as in Fig. 3, to suit any requirement and provide a series of connecting and rack bars, thereby multiplying the number of compressors used and greatly increasing the power generated, or I may do away with the rack-bars entirely and secure the free end of the float to the rim of a gear-wheel, as shown in Fig. 7. Therefore I do not limit myself to the details of construction and proportions of parts described, as shown herein, as they may be varied at

will and the spirit of my invention remain intact and be protected.

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

1. In a device of the character described, a supporting-frame, a float pivoted directly to said frame and a trackway for guiding the movement of the free end of said float.
2. In a device of the character described, a supporting-frame, a float pivoted directly to said frame and a trackway for guiding the movement of the free end of said float and means connected up with said float for transmitting power.
3. In a device of the character described, a supporting-frame, a float pivoted directly to said frame and a trackway conforming to the path of the free end of said float for guiding the same.
4. In a device of the character described, a supporting-frame, a float pivoted directly to said frame and a trackway guiding the free end of said float, said float having rollers engaging said trackway.
5. In a device of the character described, a supporting-frame, a float pivoted at one end to said frame, a rack-bar connected to said

float for engaging a gear-wheel operating a source of power.

6. In a device of the character described, a supporting-frame, a float pivoted to said frame, a rack-bar, a connecting-rod for said rack-bar and float, said rack-bar engaging a gear-wheel operating a source of power.

7. In a device of the character described, a platform raised on suitable supports, a float pivoted to a support, a trackway supported by one or more of said supports for guiding the free end of said float in its upward and downward movement, said float having rollers engaging said trackway and a double rack-bar connected to said float to engage two gear-wheels, one on each side, each of said wheels operating a source of power.

8. In a device of the character described, a supporting-frame, a float pivoted to said frame, and a curved rack-bar connected to said float for engaging a gear-wheel operating a source of power.

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

FRANK J. TORRENS.

Witnesses:

ALLEN M. STEARNE,
EDWIN STEARNE.