

(No Model.)

2 Sheets—Sheet 1.

J. BEERMAKER.  
SEA AND WAVE POWER.

No. 442,939.

Patented Dec. 16, 1890.

Fig. 1.

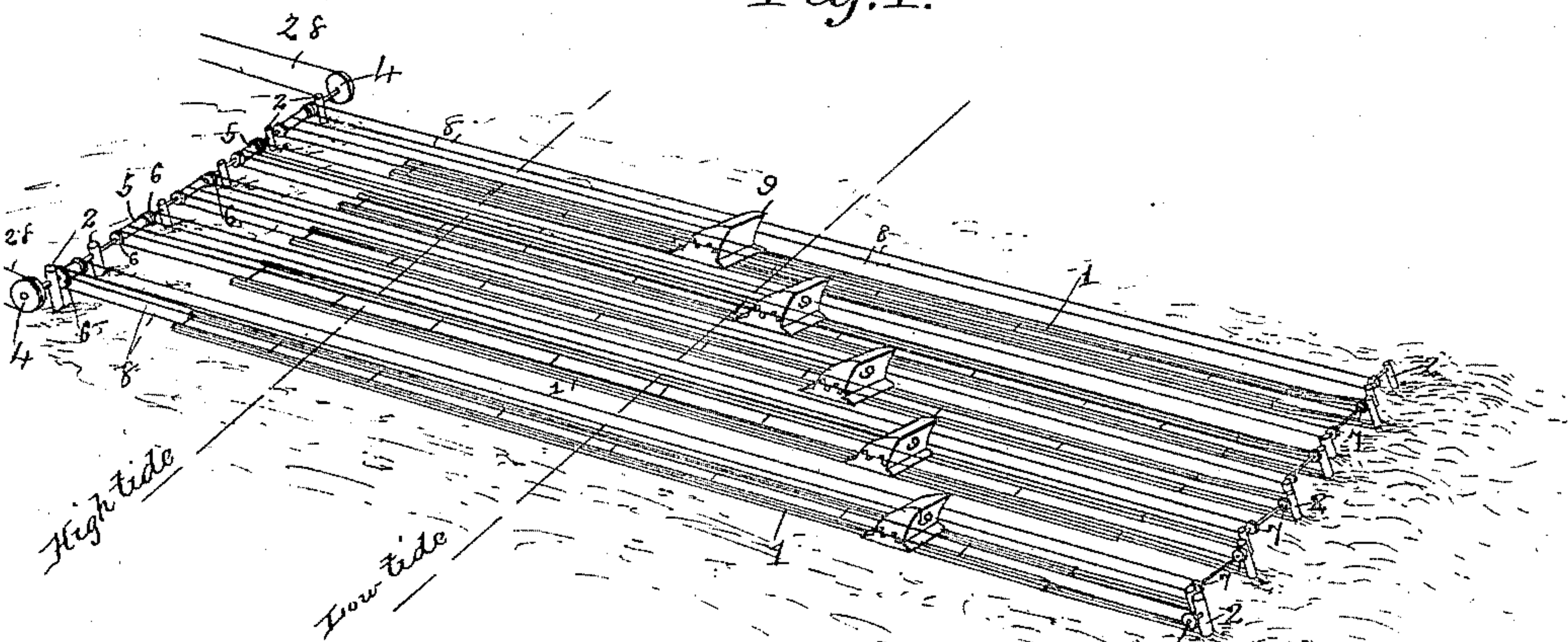
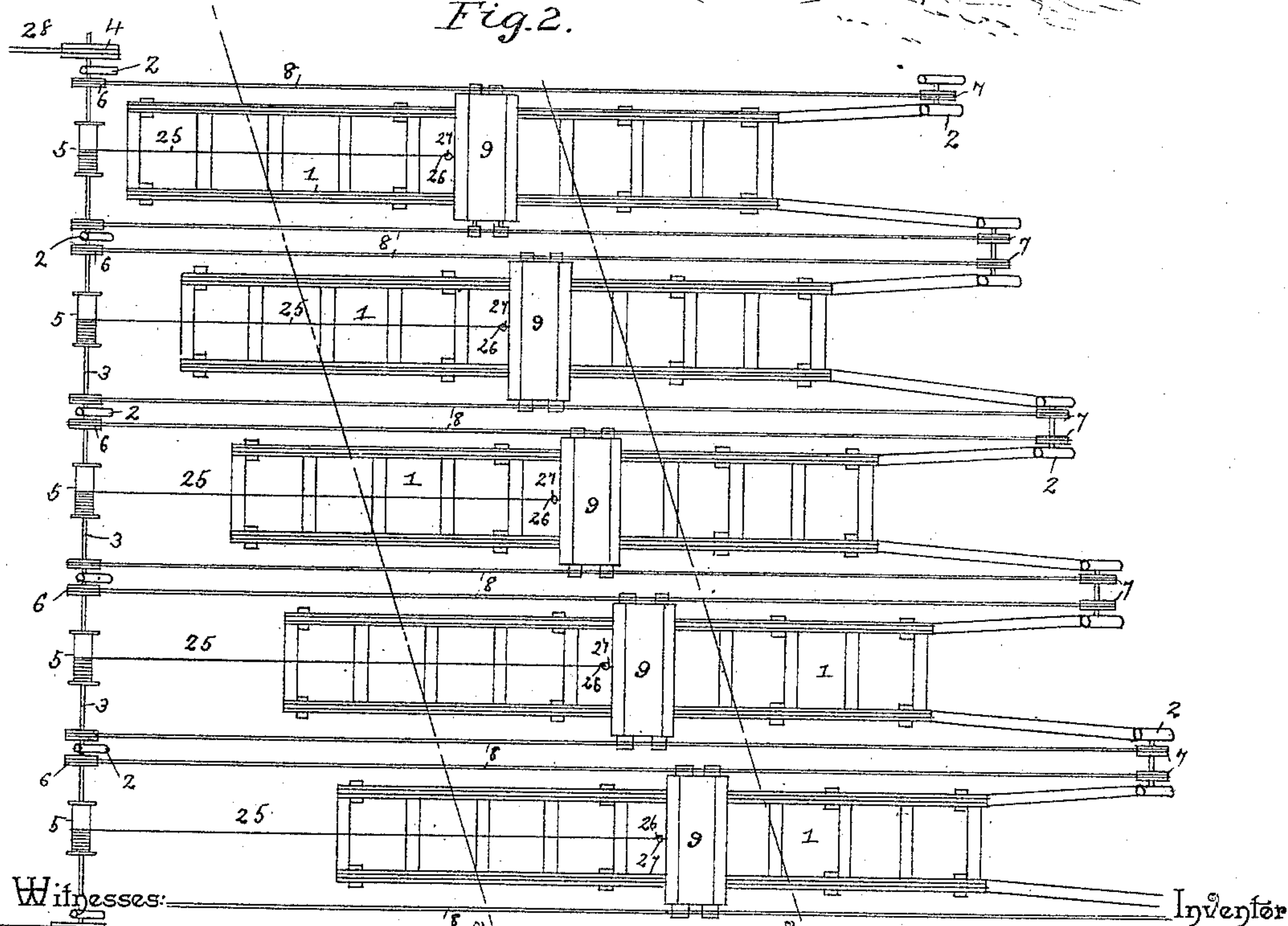


Fig. 2.



Witnesses:

James L. McLathran

W. J. Duval

By his Attorneys,

John Beermaker

C. A. Snow & Co.

(No Model.)

2 Sheets—Sheet 2.

J. BEERMAKER.  
SEA AND WAVE POWER.

No. 442,939.

Patented Dec. 16, 1890.

Fig. 3.

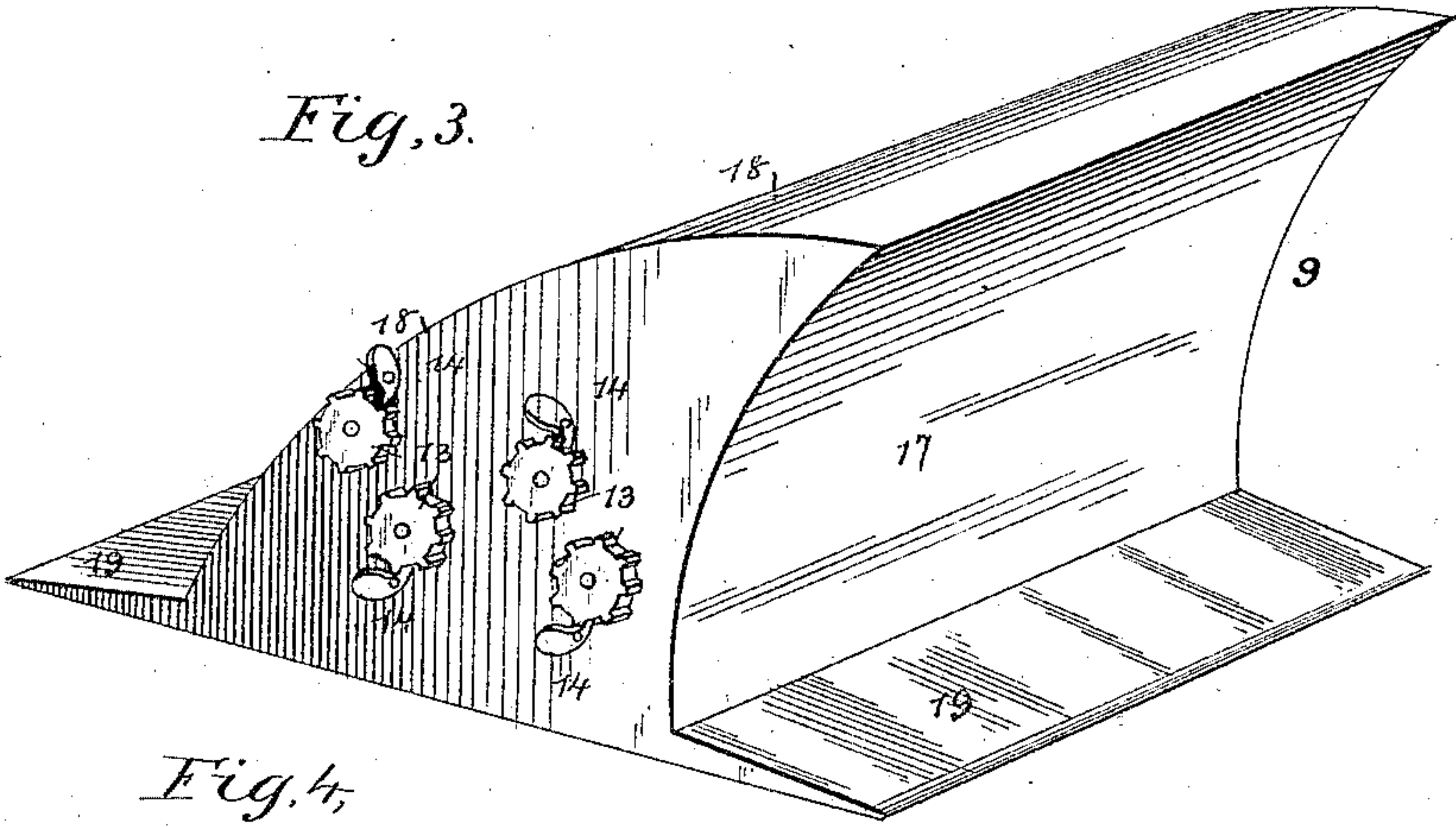


Fig. 4.

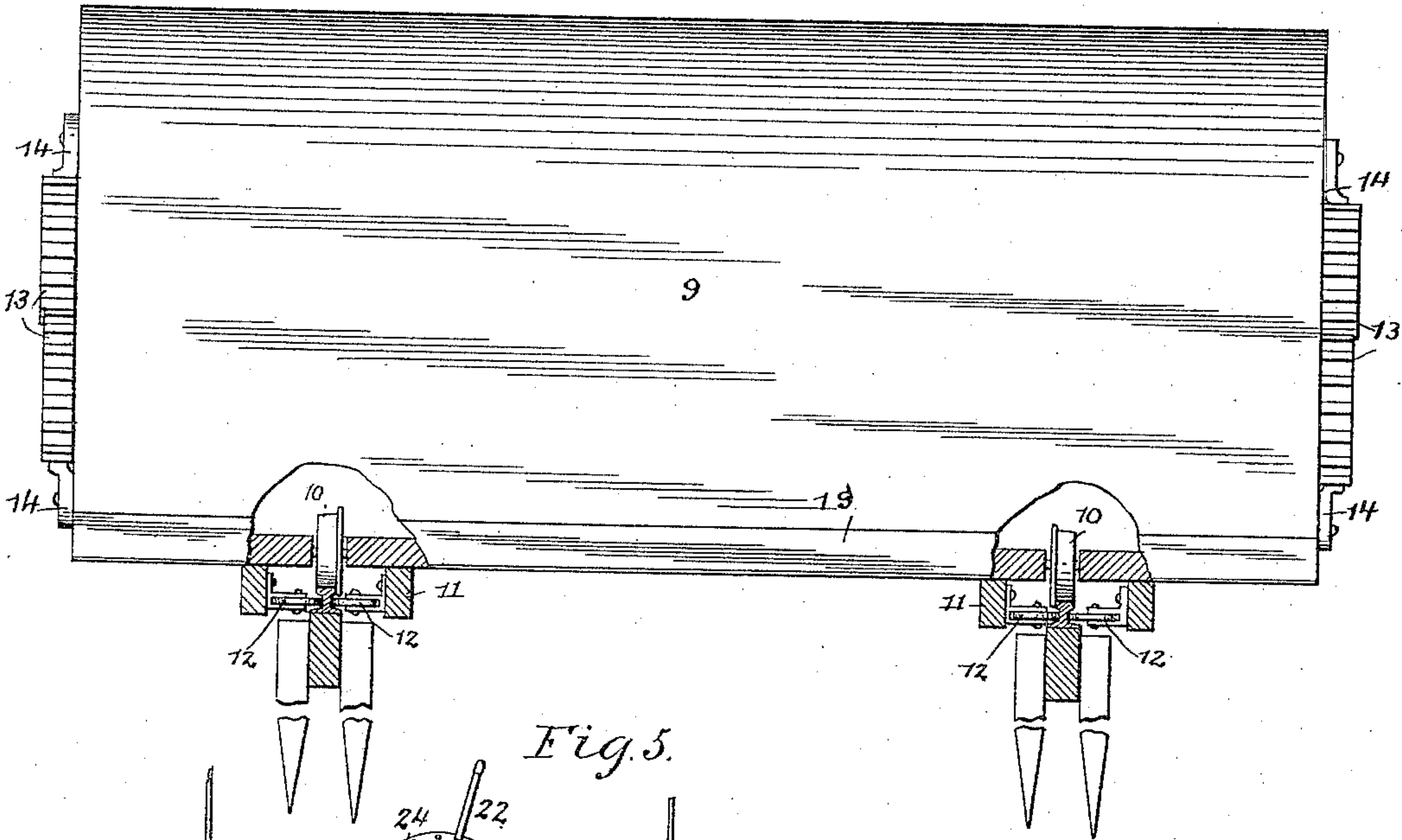


Fig. 5.

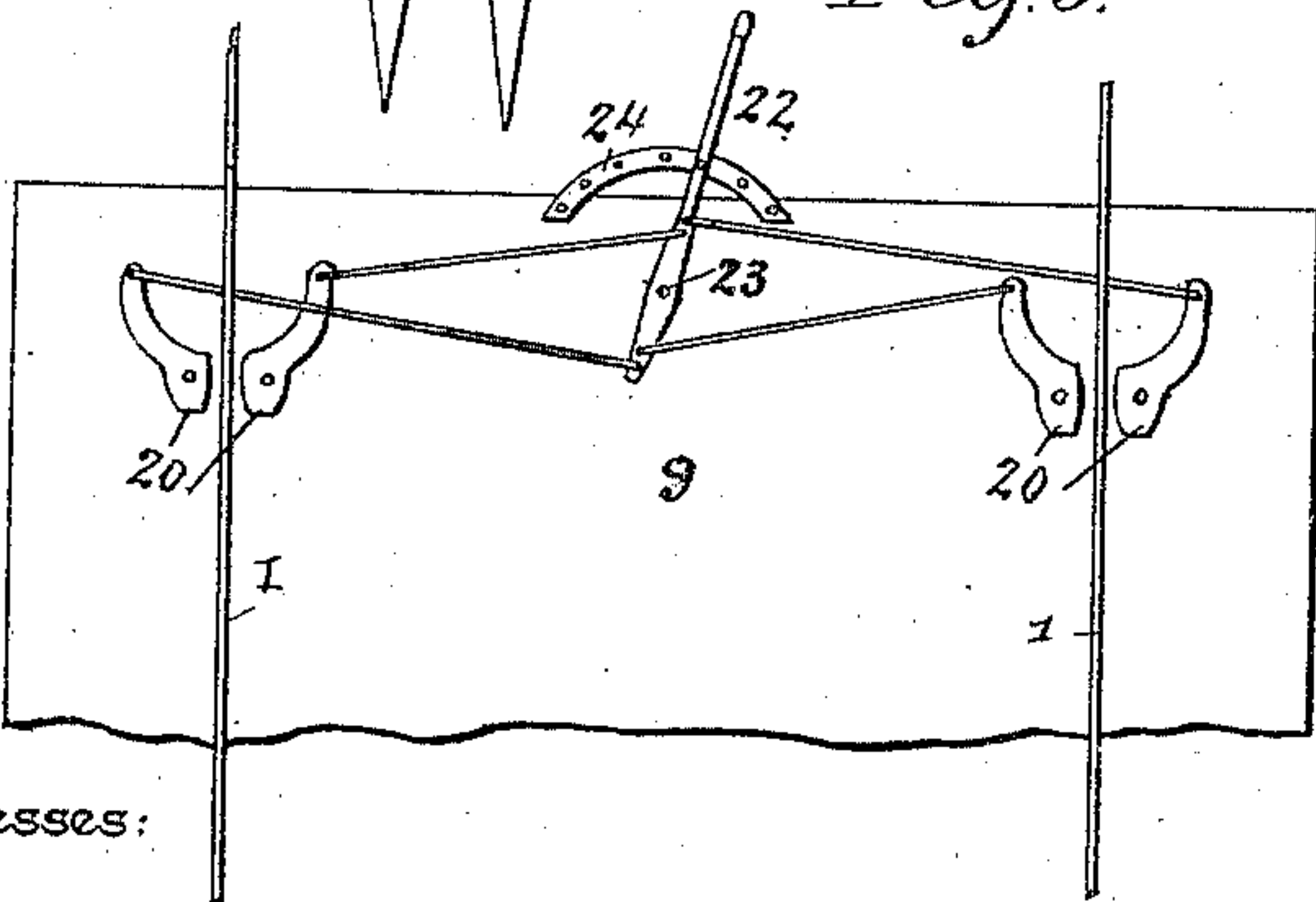
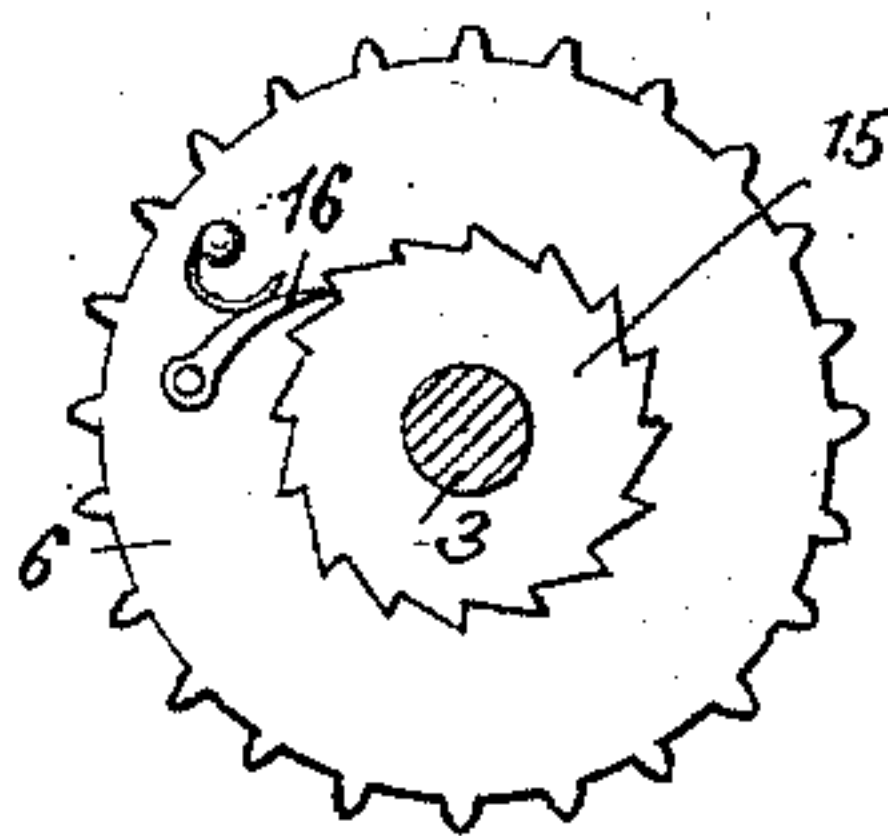


Fig. 6.



Witnesses:

Jas. R. McLathran

W. S. Duval

By his Attorneys,

C. A. Snow & Co.

Inventor

John Beermaker



# UNITED STATES PATENT OFFICE.

JOHN BEERMAKER, OF SANTA BARBARA, CALIFORNIA.

## SEA AND WAVE POWER.

SPECIFICATION forming part of Letters Patent No. 442,939, dated December 16, 1890.

Application filed August 20, 1890. Serial No. 362,524. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN BEERMAKER, a citizen of the United States, residing at Santa Barbara, in the county of Santa Barbara and State of California, have invented a new and useful Sea and Wave Power, of which the following is a specification.

This invention has relation to hydraulic motors; and the objects in view are to utilize the wave-power upon a body of water, and when either high or low water mark, for the purpose of furnishing power for any machinery whatever. Furthermore, to provide means for increasing or diminishing said power and for wholly stopping the same when desired.

Various other objects of the invention will appear in the following description, and the novel features thereof will be particularly pointed out in the claims.

Referring to the drawings, Figure 1 is a perspective of a plant constructed in accordance with my invention. Fig. 2 is a diagrammatic view of the same. Fig. 3 is a perspective of one of the cars or floats. Fig. 4 is a front elevation of the same. Fig. 5 is a bottom plan of a portion of one of the cars or floats. Fig. 6 is a transverse section in detail taken through the main shaft at one side of the ratchet-pulleys.

Like numerals of reference indicate like parts in all the figures of the drawings.

In practicing my invention I locate the plant hereinafter described upon the shore of a body of water.

In carrying out the invention I support upon a suitable trestle a series of tracks 1, in this instance five in number, but which may be increased or diminished to any desired extent in accordance with the power and speed required. Beginning at either end of the series, it will be observed that the tracks are graduated or extended toward the opposite end of the series and therefore projected farther out into the body of water. Each track, however, extends beyond the low-water or tide line, and at their upper ends extend beyond the high-water tide-line.

Upon the shore and at a right angle to the series of tracks 1 there is arranged a series of bearing-posts 2, provided with bearings in which there is mounted for rotation a shaft 3, provided at its extremities beyond the posts

with large master-gears or pulleys 4. Between the posts opposite each track the shaft is provided with a drum 5, loosely mounted on the shaft, and at each side of the drum with sprocket-wheels 6, so that there is a pair of sprockets beyond the front end of each track. The outer ends of the tracks, or rather their trestles or supports, are each provided with similar sprockets 7, and the two sprockets at the outer ends of each track are connected to the sprockets at the inner end of said track by means of a pair of sprocket-chains 8.

Upon each of the tracks is mounted a car 9. The cars 9 are provided with track-wheels 10, which ride upon the tracks, and at each side of said wheels is provided with a beam 11. Journaled in bearings formed in the beams 11 are inwardly disposed the guide-wheels 12, which embrace the track-rails at opposite sides and under the heads thereof, so that the cars are prevented from being floated off from their respective tracks.

Each end of each car is provided with two pairs of sprocket-wheels 13, which are engaged by ratchets 14, pivoted adjacent to the wheels, and which prevent the wheels from turning in but one direction. Between the pairs of wheels pass the lower portions of the endless sprocket-chains 8, so that any movement upon the parts of the cars in an upward direction or toward the shore causes a similar movement upon the parts of the sprocket-chains, while at the same time the cars may move outward or toward the water, and the sprocket-wheels will revolve, so that the chains remain undisturbed. Each of the sprocket-wheels 6 is loose upon the shaft 3, and has arranged upon one side of the same a ratchet-wheel 15, designed to be engaged by spring-pressed pawls 16, pivoted upon the faces of the sprockets. The cars are provided at their outer sides with a vertical concave wall 17 and at their rear sides with a convex wall 18. The front and rear ends of the cars are provided with scoops 19, so as not to be influenced by any under-tow.

The cars may be provided with any suitable brakes. In this instance I locate under the car, near one end and opposite each track, a pair of cam-levers 20, designed to bite or bind upon the webs of the rails, and connect



said levers at their free ends at each side of the pivot 23 of a lever 22, said lever being designed to be locked in any of its adjusted positions by a perforated locking-bar 24.

5 Upon each of the drums 5 is wound a rope 25, one end of which terminates in a hook 26, adapted to connect removably with an eye 27 upon the opposite car. By connecting the ropes 25 to the cars the entire series or a portion of the series of cars may be drawn up out of the way and locked above high-water mark and the reach of the waves by means of the brake mechanism with which each car is provided. It will be understood that this  
10 brake mechanism may be of any desired form, as may also any other detail features of construction, I herein only having shown one simple manner of operating my invention. When in operation, the ropes 25 are disconnected from the cars.  
20

In operation each of the cars is permitted to run down the end of its inclined track. An incoming wave or breaker strikes the first car, or the one whose track extends farthest  
25 into the water, and forces the same up said track. The wave then comes into contact with the second car, the third, fourth, and fifth consecutively. As each car moves up its track, its sprocket-wheels grip the chains at the sides of the car, and said chains are thereby moved and transmit motion to the sprockets 6, which, by means of their pawls engaging the ratchets 15, impart motion to the shaft 3, which shaft carries the pulleys 4, and  
35 the motion is carried from the pulleys to any machinery by means of belts 28. After a wave has struck the first car, has passed beyond the same and struck the second car, the first car will have returned to its first position and will have met a succeeding wave, which repeats the operation and passes on throughout the series of cars.  
40

It is obvious that where an exceedingly great number of tracks and cars are employed  
45 the tracks may be graduated, as shown, and their graduation may be reversed at the opposite side of the first or longest track.

From the above construction it will be apparent that an immense and unlimited power  
50 for the purpose of running heavy machinery may be secured at absolutely no cost, except the cost of the machinery by which the power is converted and transmitted. By reason of the successive movements upon the parts of the cars the rotation of the shaft 3 is  
55 continuous and uninterrupted.

Having described my invention, what I claim is—

60 1. A track located upon a shore, inclined and extending into a body of water, in combination with a pair of pulleys located at opposite ends of the track, a car mounted upon the track and adapted to move thereover, grips

upon the ends of the car, endless chains connecting each opposite pair of pulleys and  
65 adapted to be gripped by the grips when said car moves inshore and released when the cars move in an opposite direction, and means for transmitting motion from the pulleys to a point upon the shore, substantially as specified.  
70

2. The combination, with a series of tracks inclined and mounted upon a shore and having their outer ends extending different distances into the water, a shaft arranged in  
75 front of the tracks, a pair of pulleys mounted upon the shaft opposite each track, and a pair of pulleys mounted at the opposite end of each track, chains connecting the pulleys at one end of the track with those at the opposite end, ratchet-wheels rigidly mounted upon the shaft and engaged by pawls mounted upon the said pulleys and belts leading from the said shaft, of a series of cars mounted upon wheels and adapted for movement upon  
85 the track, and sprocket-wheels mounted upon the sides of the cars and provided with pawls for preventing their movements in one direction and permitting movement in the opposite or outer direction, substantially as specified.  
90

3. The combination, with the tracks and the cars mounted thereon, of the opposite cam-levers located at each side of a track, the pivoted brake-lever, chains connecting the free ends of the lever with the brake-lever at each  
95 side of the pivot of the latter, and means for locking said brake-lever, substantially as specified.

4. In a hydraulic motor, the combination, with a series of tracks and a transverse shaft  
100 mounted at the inner ends of the tracks and provided with pulleys, of a series of cars located upon the tracks and adapted to be operated by wave-power, means for transmitting the movements in one direction of the  
105 cars to said shaft, drums loosely mounted on the shaft, and ropes wound upon the drums and adapted for connection with the cars, substantially as specified.

5. In a hydraulic motor, the combination,  
110 with a series of tracks extending to various distances into the water and inclined toward their outer ends, of a series of cars mounted upon the tracks and adapted to be successively operated by a wave, and means for  
115 transmitting their successive movements to a point along the shore, substantially as specified.

In testimony that I claim the foregoing as my own I have hereto affixed my signature  
120 in presence of two witnesses.

JOHN BEERMAKER.

Witnesses:

C. A. HUNT,

MATTIE WALBRIDGE.