

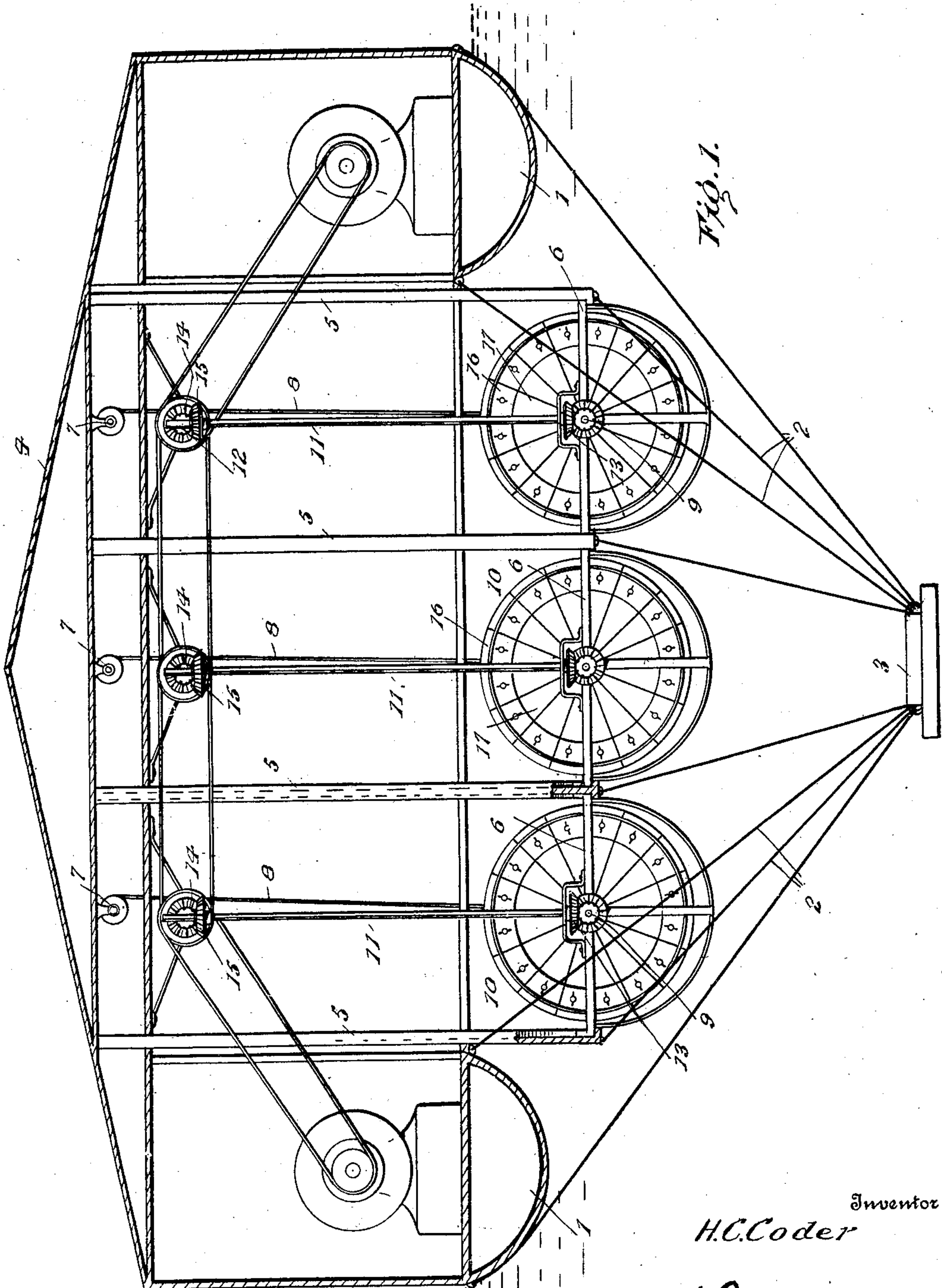
No. 897,876.

PATENTED SEPT. 8, 1908.

H. C. CODER.
CURRENT MOTOR.

APPLICATION FILED MAY 24, 1907.

3 SHEETS--SHEET 1



Witnesses

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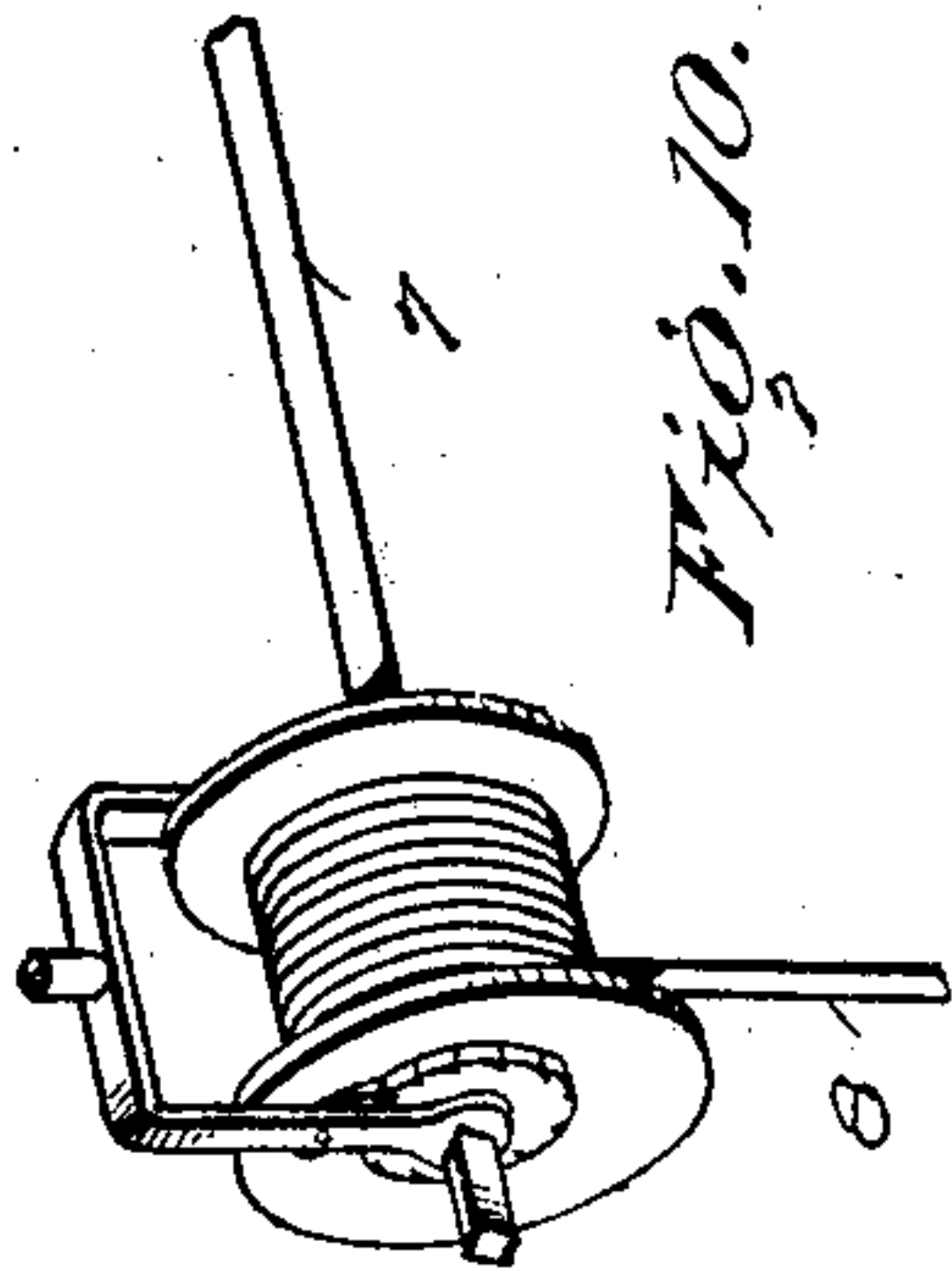


Fig. 10.

Fig. 2.

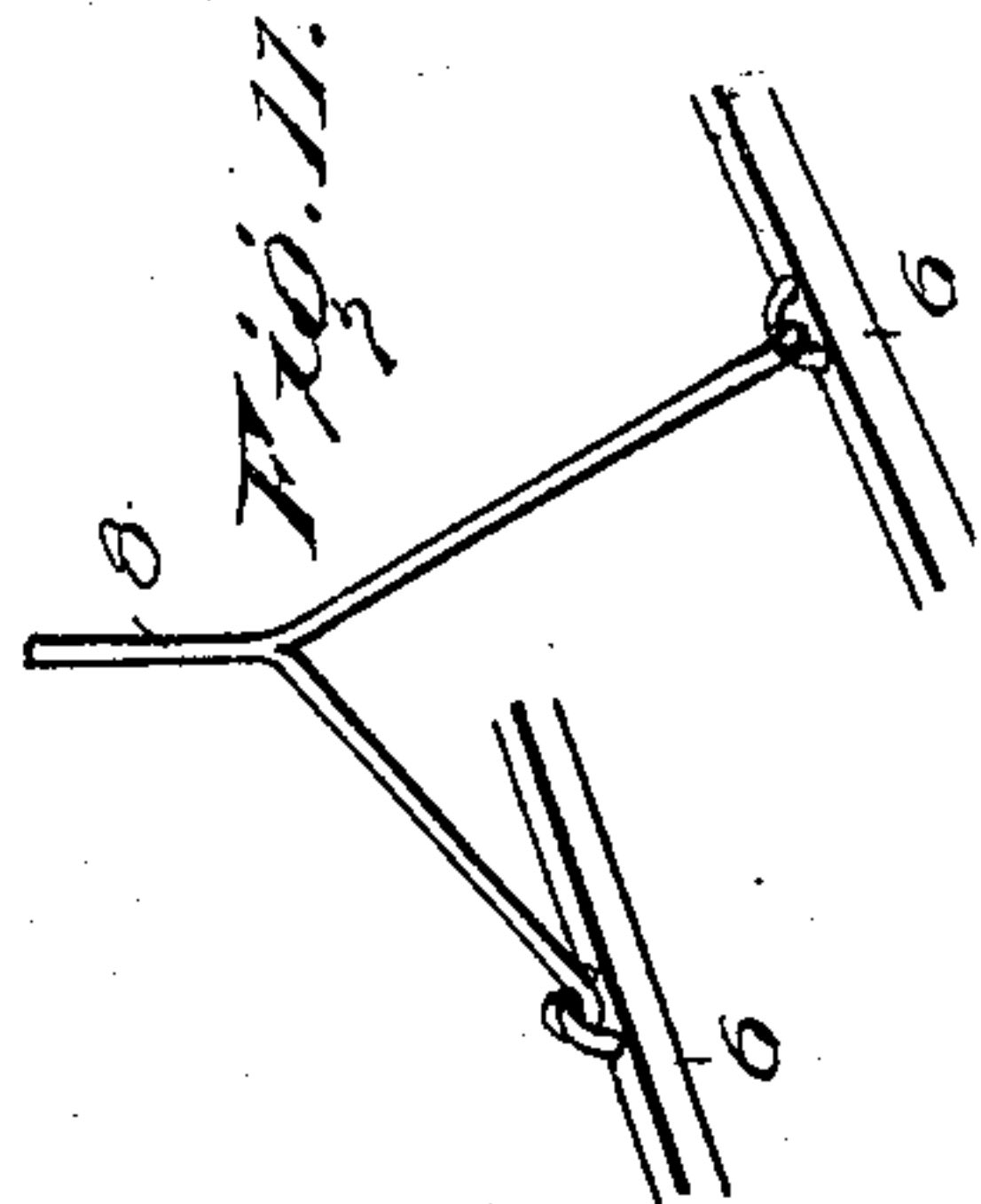
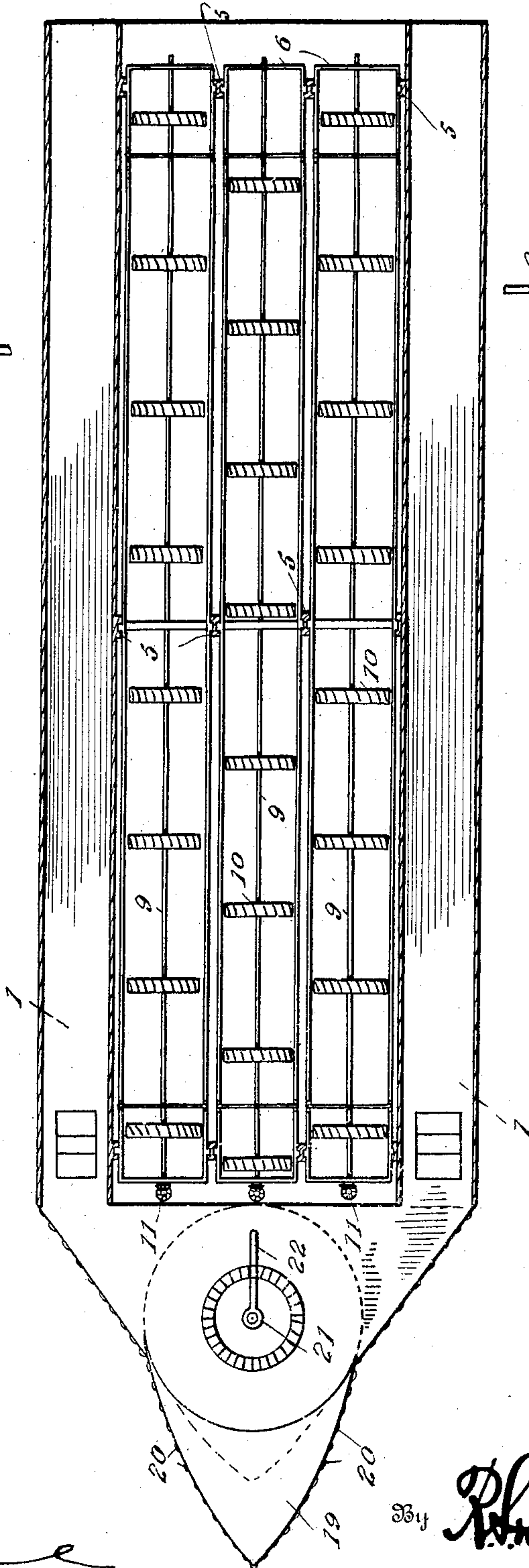


Fig. 11.

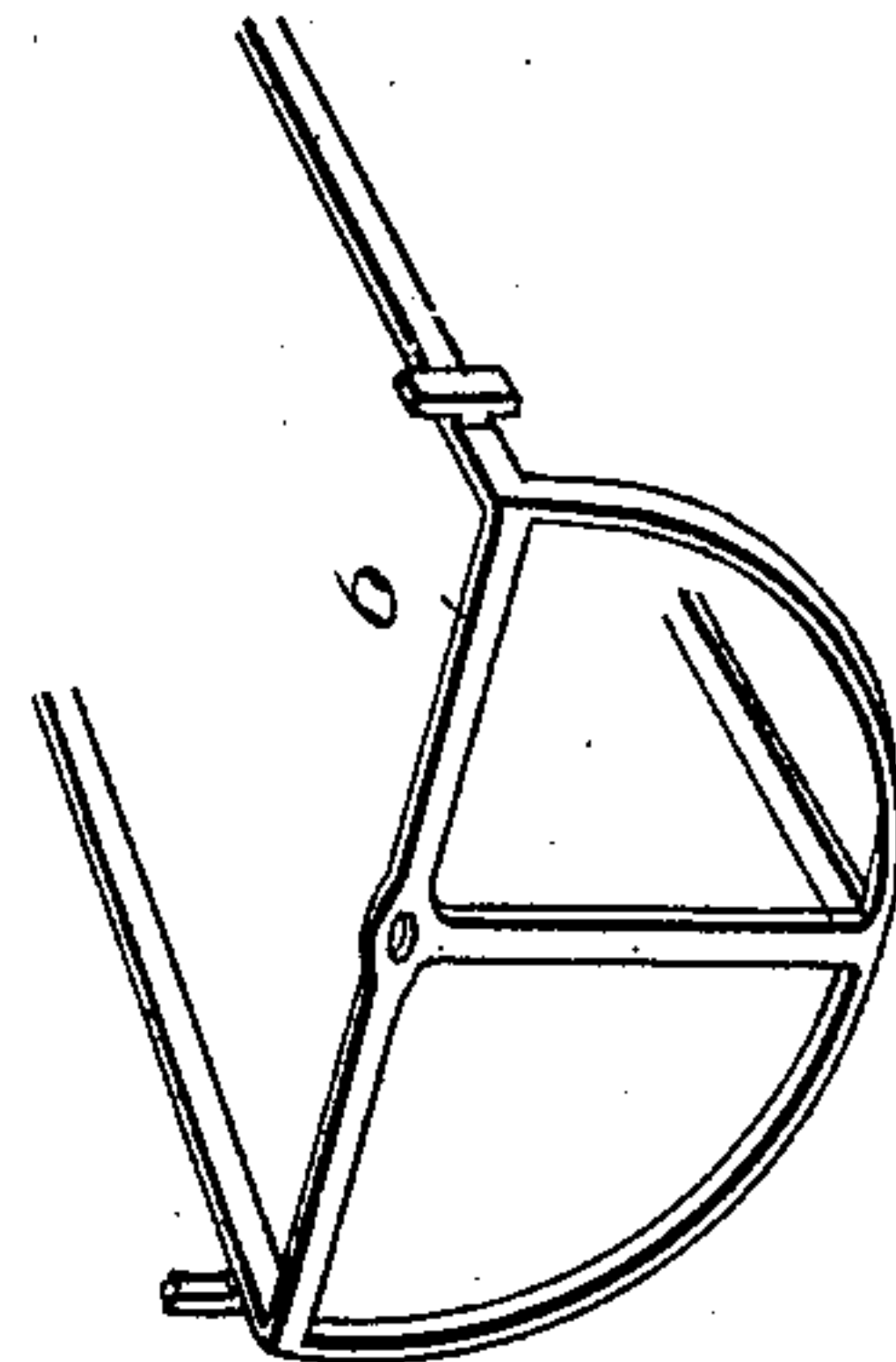


Fig. 9.

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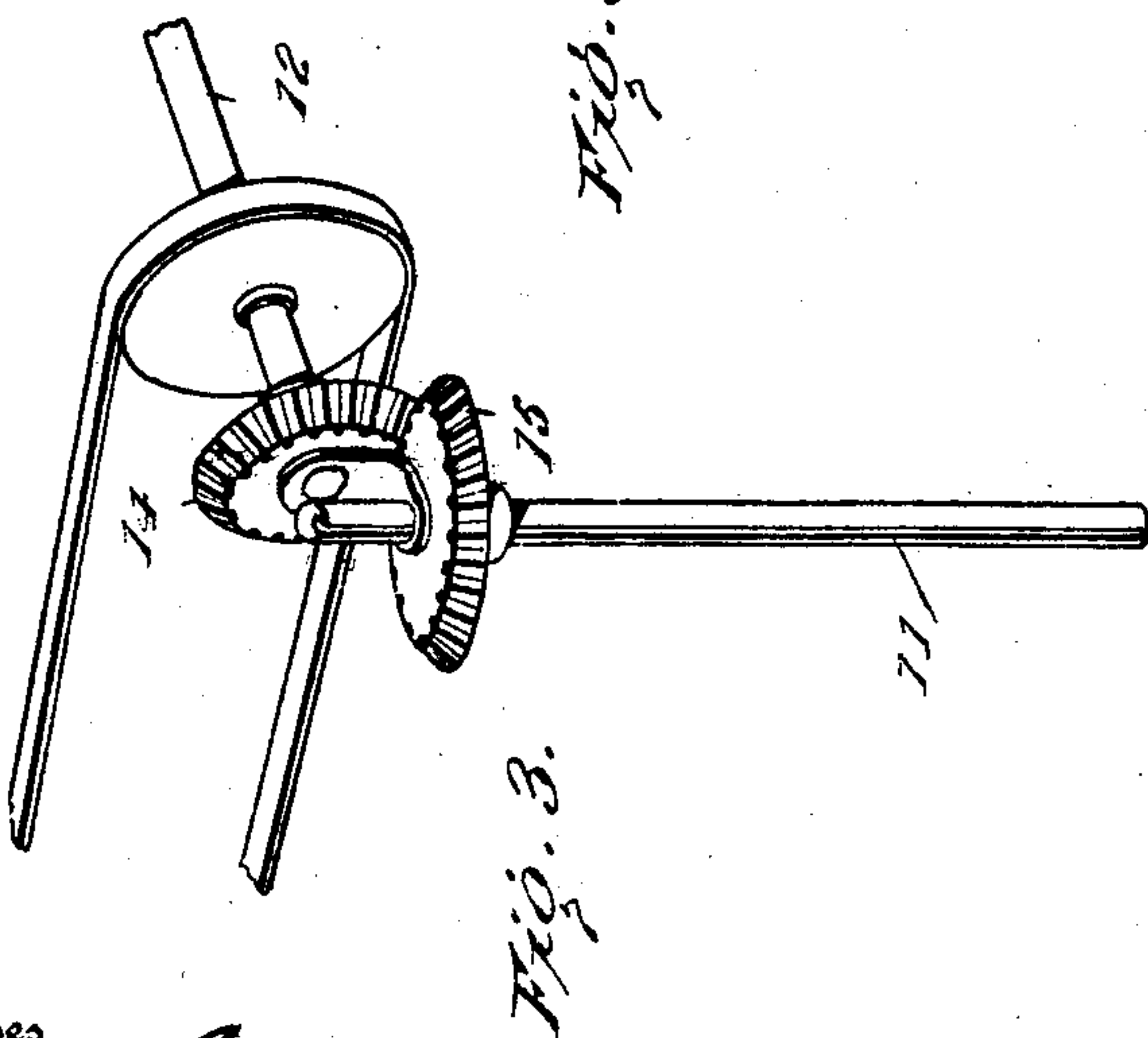
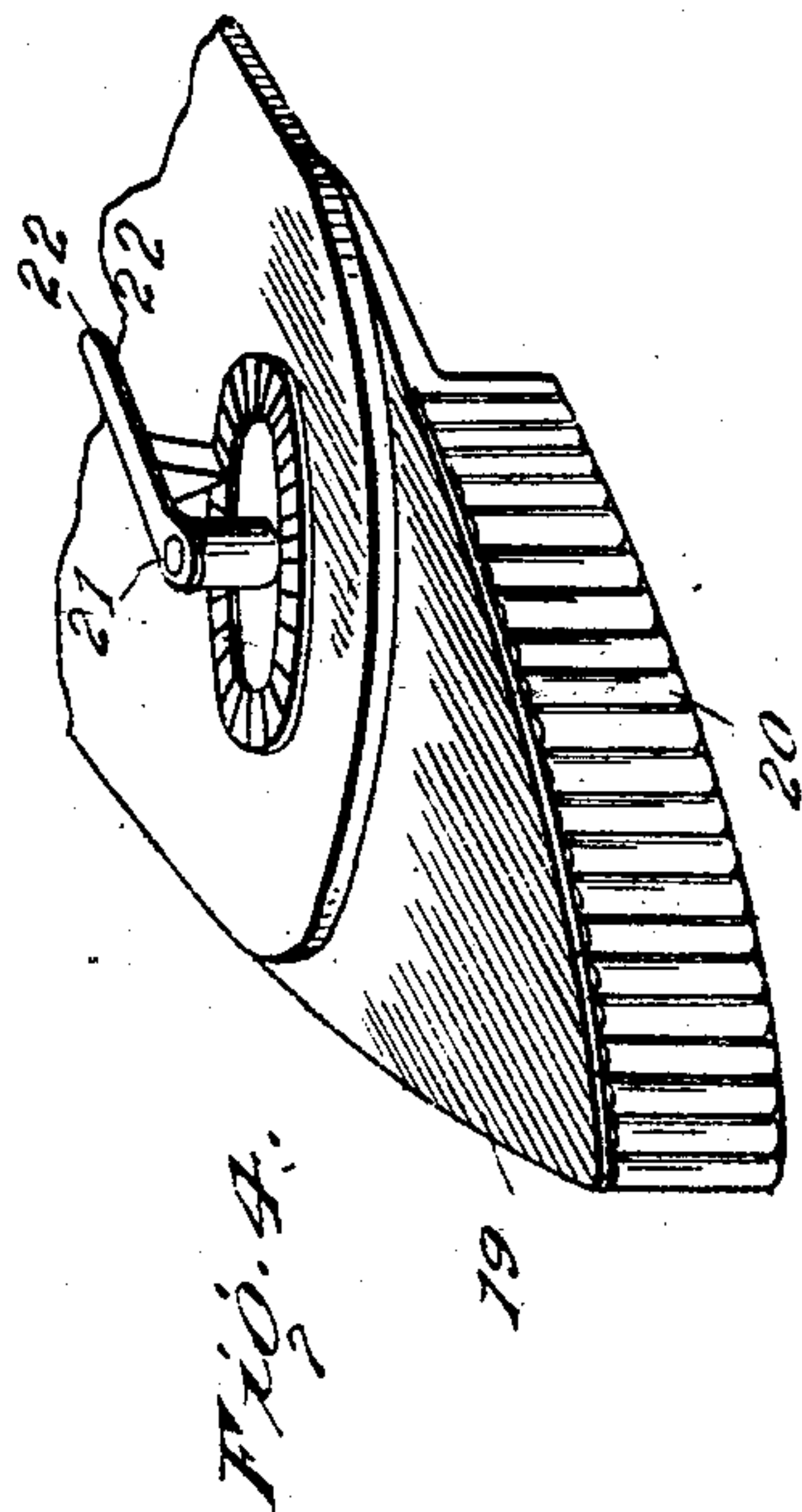
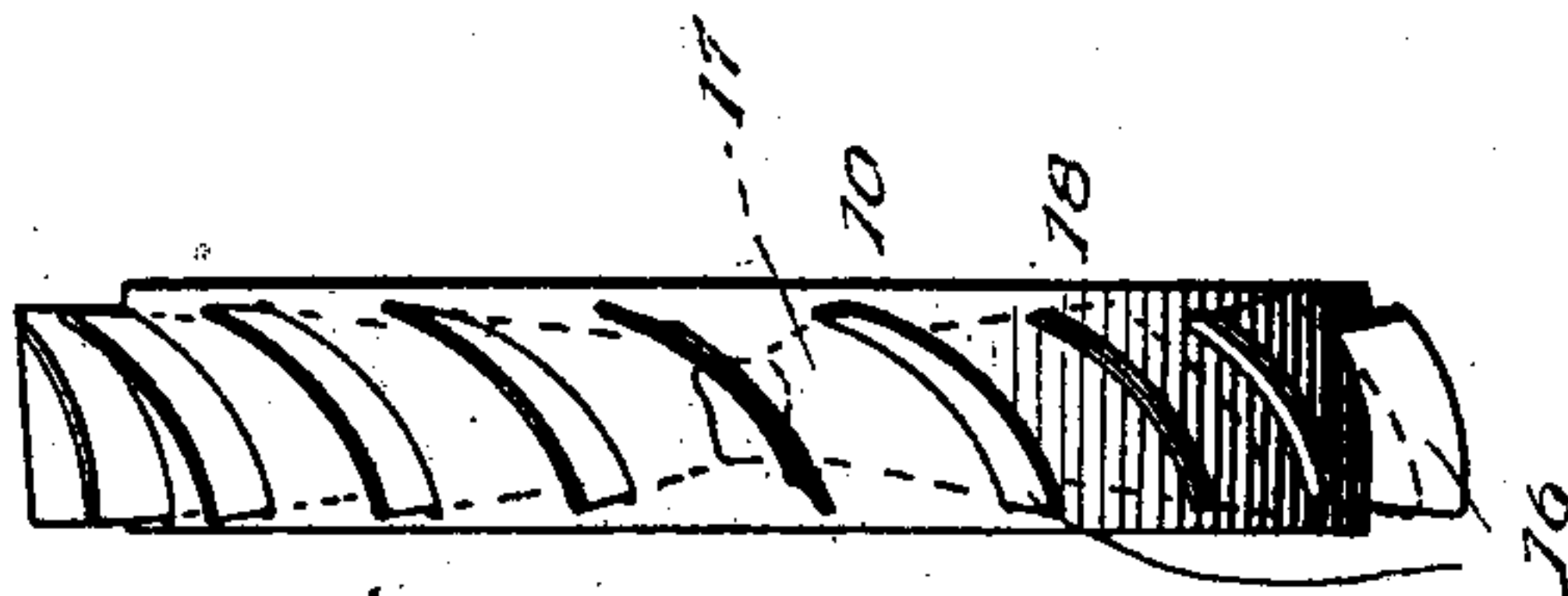
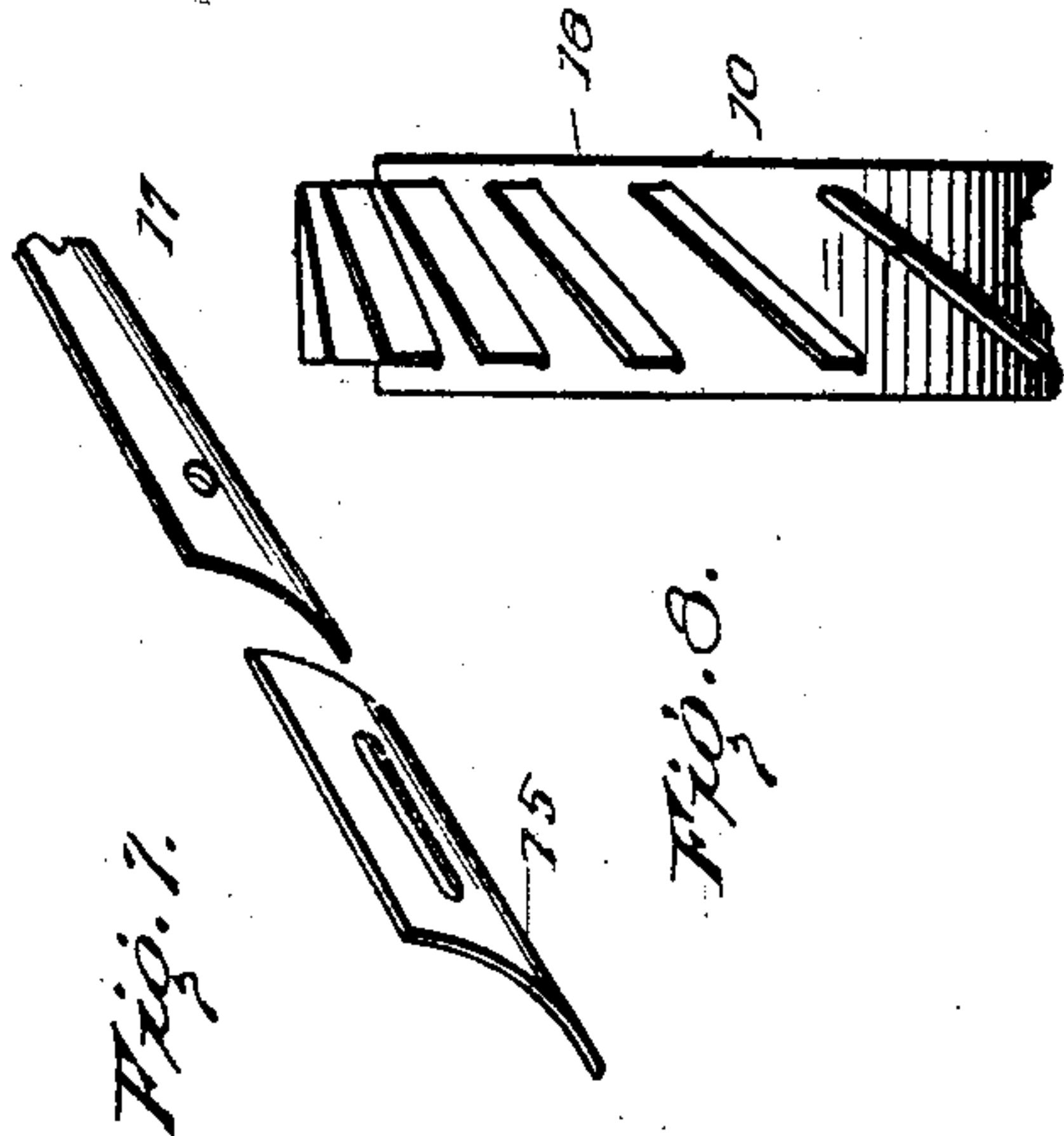
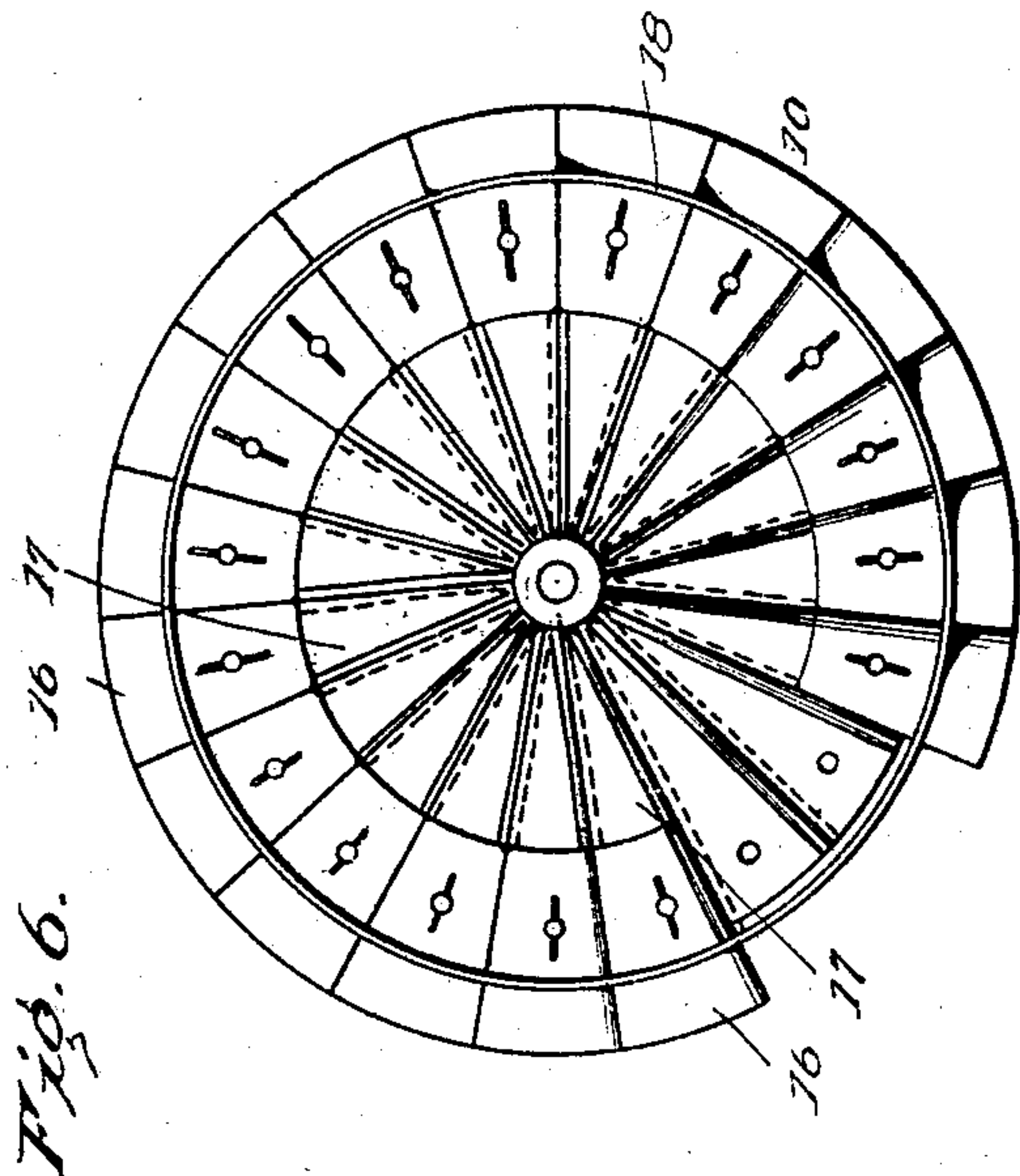
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3 SHEETS—SHEET 3.



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UNITED STATES PATENT OFFICE.

HARVEY C. CODER, OF KANSAS CITY, MISSOURI.

CURRENT-MOTOR.

No. 897,876.

Specification of Letters Patent.

Patented Sept. 8, 1908.

Application filed May 24, 1907. Serial No. 375,489.

To all whom it may concern:

Be it known that I, HARVEY C. CODER, citizen of the United States, residing at Kansas City, in the county of Jackson and State of Missouri, have invented certain new and useful Improvements in Current-Motors, of which the following is a specification.

This invention has for its object to devise novel means for utilizing currents of water and ebb and flow tide for driving machinery or for other purpose in the industrial arts where motive power is required for operating moving parts.

For a full understanding of the invention and the merits thereof and also to acquire a knowledge of the details of construction and the means for effecting the result, reference is to be had to the following description and accompanying drawings.

While the invention may be adapted to different forms and conditions by changes in the structure and minor details without departing from the spirit or essential features thereof, still the preferred embodiment is shown in the accompanying drawings, in which:

Figure 1 is a transverse section of a current or water motor embodying the invention. Fig. 2 is a horizontal section of the motor above the water line. Fig. 3 is a detail view of the means for transmitting motion from one shaft to another and yet admit of their relative movement. Fig. 4 is a detail perspective view of the guard or protector. Fig. 5 is an edge view of one form of motor wheel. Fig. 6 is a side view of the form of motor wheel shown in Fig. 5. Fig. 7 is a detail view of an adjustable plate. Fig. 8 is a detail view of a modified form of motor wheel. Fig. 9 is a fragmentary view in perspective of a frame in which a shaft is mounted. Fig. 10 is a detail view of means for raising and lowering a frame. Fig. 11 is a detail view of a portion of the frame and the housing means connected therewith.

Corresponding and like parts are referred to in the following description and indicated in all the views of the drawings by the same reference characters.

The framework of the motor embodies a boat, scow or kindred float, the same being of any shape and size according to the design and capacity of the motor. The center portion of the boat, float or the like is left open to receive the vertically adjustable frames,

guides and adjunctive parts. As shown in Figs. 1 and 2, the boat or float is of the catamaran type and comprises two buoyant members 1 which are lashed or connected at opposite ends in any substantial way. The float or boat is anchored or otherwise secured in the desired position. When anchored cables, chains or like means 2 connect the float or boat with the anchor 3, which latter may be of any structural type. The connecting means 2 extend from the anchor 3 to different parts of the boat or float, which is indicated most clearly in Fig. 1. A roof 4 covers the structure to protect the same from inclement weather and sunshine. Vertical guides 5 connect the roof structure with the deck, floor or hull of the boat or float, and also serve to direct frames 6 which are adjustable vertically and support the motor wheels and cooperating parts. The inclosed spaces located above the buoyant members 1 are utilized as rooms for receiving the machinery for utilizing energy derived from the force of the water currents by the mechanism.

The machinery may be of any type, dynamos being preferred, whereby the force transformed into electrical energy may be conserved by storage batteries for future use and at any desired location. This is only one way of utilizing the power of the water currents transformed into useful energy.

As indicated there are a series of frames 6 each being vertically adjustable independently of the other. It is to be understood that the number of frames 6 may be varied and that the construction may be modified to meet conditions and requirements. By having the frame adjustable the motor wheels are rendered accessible for repairs, inspection or for other purpose. Any suitable means may be employed for raising and lowering the motor frames. As indicated a shaft 7 is located at or near the top of the structure and a cable or chain 8 is adapted to wind thereon, the same being connected at its lower end with the motor frame. The shaft 7 may be rotated either by hand or by any positively operated part of the mechanism. By having a series of motor frames and motor sections any one may be elevated or thrown out of action without disturbing the others, so that one section may be repaired or thrown out of action for any purpose without interfering with the operation of the

other sections, which may conserve or utilize power represented by the water currents.

Each motor frame is provided with one or more shafts 9 upon which a series of motor wheels 10 are mounted, the said motor wheels each comprising a rim and a hub connected by radial spokes. A vertical shaft 11 transmits motion from the motor shaft 9 to countershaft 12, the latter being mounted in bearing overhead and adapted to be connected in any manner with the dynamo or other mechanism to be operated. The lower end of the shaft 11 is geared to the motor shaft in any way, preferably by means of bevel gearing 13. The countershaft 12 is provided with a bevel gear 14 which is in mesh with a companion bevel gear 15, the latter having a feather and spline connection with the shaft 11 or connected with said shaft in any way to admit of the shaft moving vertically through the bevel gear 15, while at the same time imparting rotary movement thereto.

As shown in Fig. 2, the motor wheels upon one shaft are arranged opposite the spaces between the motor wheels of the adjacent shaft, thereby preventing interference of one set of motor wheels with the other, while at the same time providing for utilization of a maximum amount of current force. The motor wheels may be of any type and their blades made straight, as shown in Fig. 8, or curved, as indicated in Figs. 5 and 7. In order to provide for varying the diameter of the motor wheels, the blades are constructed to be lengthened and shortened and are formed of sections 16 and 17, the latter being fixed and the former slidable. The blades are supported and braced near their outer ends by means of a rim 18 which is connected by radial spokes to the hub of the wheel and slots are formed in said rim for the outer sections 16 of the blades to slide through. Suitable fastenings are employed for securing

the sections 16 in the required adjusted position.

For the purpose of preventing injury to the motor wheels by drift wood a guard member 19 is provided and the said guard member is mounted to swing about a vertical axis 21. An operating lever 22 is provided for adjusting the guard which can be swung laterally to accommodate itself to the direction of the current. Any suitable means such as the rack shown upon the drawing as cooperating with a tooth upon the operating lever may be utilized for locking the guard member in position. The two sides of this guard member are composed of outwardly converging series of vertical rollers 20 which serve to readily deflect any drift wood or like material which would tend to injure the motor wheels should it enter the space between the floats 1.

Having thus described the invention, what is claimed as new is:

1. A motor wheel comprising a rim having slots therein, and blades formed in sections, the inner sections being rigid with the wheel while the outer sections pass loosely through the slots in the rim and are adjustably connected to the inner sections.

2. In a current motor, the combination of a float, a motor wheel mounted upon the float, and a guard for the motor wheel, the said guard being mounted to swing bodily about a vertical axis.

3. In a current motor, the combination of a float, a motor wheel mounted upon the float, and a guard for the motor wheel, the said guard being formed with a series of rollers and being mounted to swing bodily about a vertical axis.

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

HARVEY C. CODER.

Witnesses:

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W. C. MILLER.