

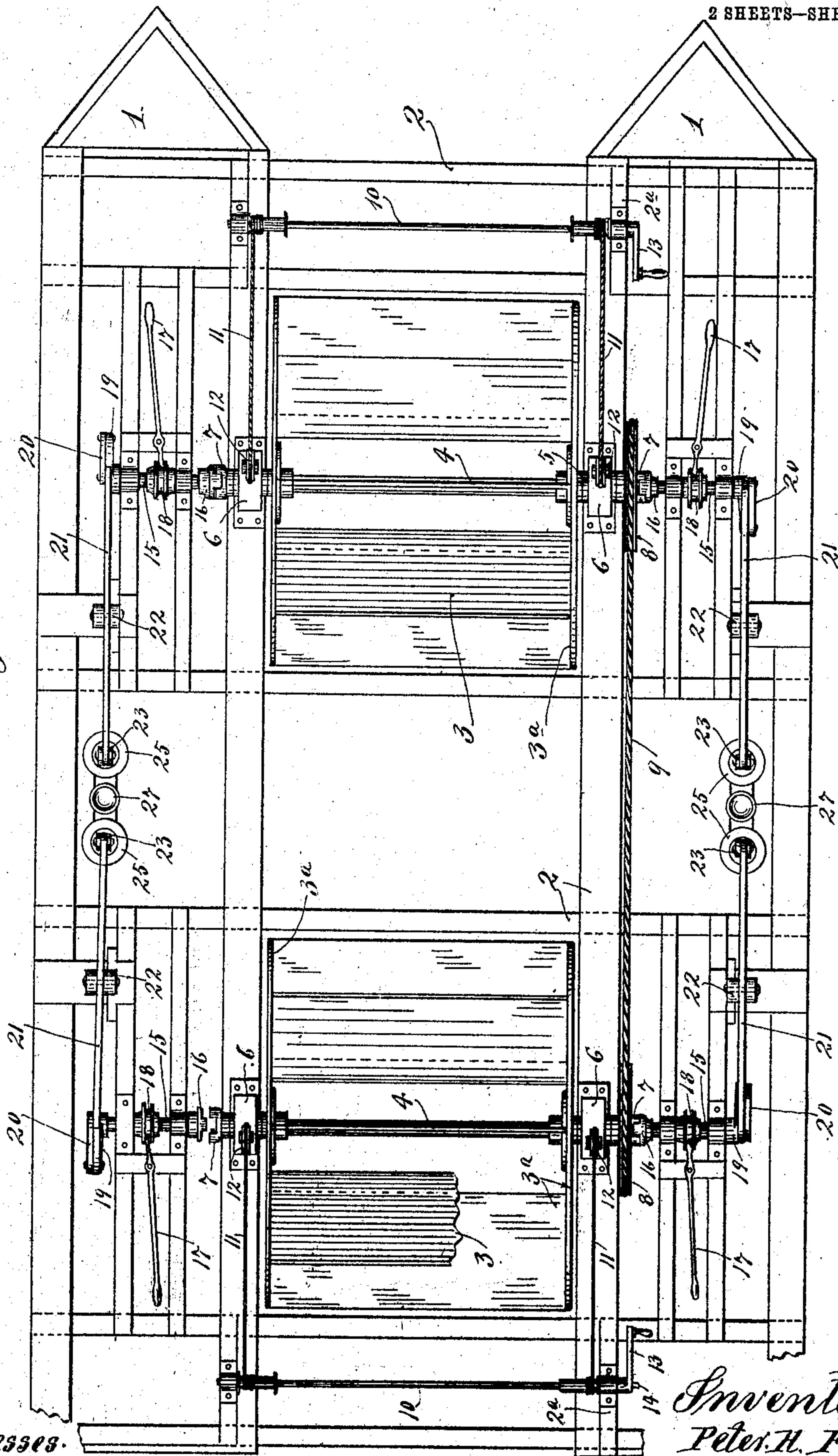
No. 806,249.

PATENTED DEC. 5, 1905.

P. H. FOY.  
CURRENT MOTOR.  
APPLICATION FILED MAR. 6, 1905.

2 SHEETS—SHEET 1.

Fig. 1.



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2 SHEETS—SHEET 2.

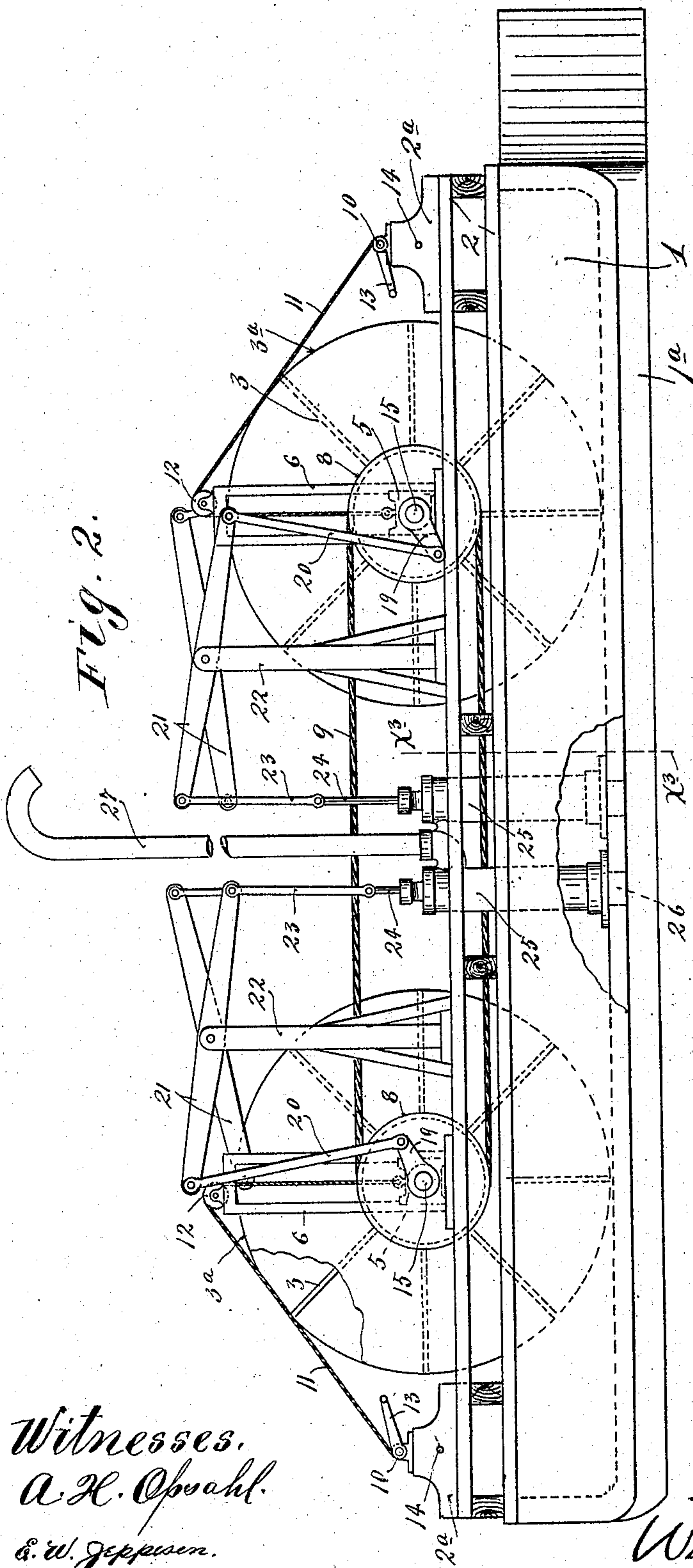


Fig. 2.

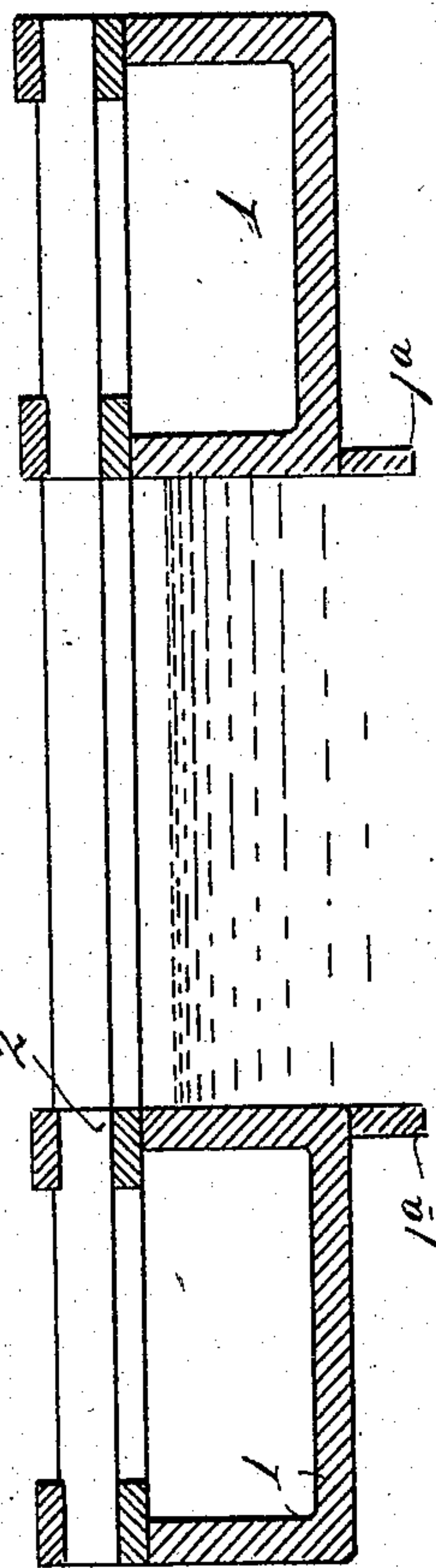


Fig. 3.

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# UNITED STATES PATENT OFFICE.

PETER H. FOY, OF MINNEAPOLIS, MINNESOTA.

## CURRENT-MOTOR.

No. 806,249.

Specification of Letters Patent.

Patented Dec. 5, 1905.

Application filed March 6, 1905. Serial No. 248,504.

*To all whom it may concern:*

Be it known that I, PETER H. FOY, a citizen of the United States, residing at Minneapolis, in the county of Hennepin and State of Minnesota, have invented certain new and useful Improvements in Current-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.

My invention relates to current-motors, and has for its object to improve the construction of the same in the several particulars hereinafter named.

The invention consists of the devices and novel combinations of devices hereinafter described, and defined in the claims.

In the accompanying drawings, which illustrate my invention, like characters indicate like parts throughout the several views.

Figure 1 is a plan view showing the complete device with some parts thereof being broken away. Fig. 2 is a side elevation of the parts in Fig. 1, some parts being broken away; and Fig. 3 is a transverse section taken on a line  $x^3 x^3$  of Fig. 2, some parts being removed.

All of the running parts of the device are mounted on a floating support made up of a pair of boats or long floats 1 and a skeleton platform 2, rigidly tying together the two boats in such manner that a channel is formed between them. Preferably the inner sides of the boats 1 are extended downward at 1<sup>a</sup> to increase the depth of the channel between the two boats. Those ends of the boats which are pointed up-current are preferably beveled, as shown in Fig. 1.

I preferably employ two water-wheels 3, which are mounted to work one ahead of the other in the channel formed between the two boats, their shafts 4 being journaled in suitable bearings 5. These bearings 5 are mounted to move vertically in bifurcated uprights 6, rigidly secured on the platform 2, and at their ends the shafts 4 are provided with half-clutches 7. Also said shafts 4 are provided, as shown, at one end with alined sheaves 8, over which an endless cable 9 is mounted to run to cause the two wheels to rotate in unison. If desired, a sprocketed chain-drive may be used to couple together the two shafts 4. For each water-wheel there is a windlass-shaft 10, mounted in suitable bearings on the platform 2 and connected to cables 11, which cables are run over guide-sheaves 12 on the

upper portions of the upright 6 and are attached at their lower ends one to each of the vertically-movable bearings 5. Each windlass-shaft 10 is provided with a crank 13, which is adapted to be held against rotation by a pin 14, removably fitted into a seat formed in one of the bearings 2<sup>a</sup>. By means of the windlass-shafts and connections described the bearings 5 may be raised into such positions that the water-wheels will be carried above the surface of the water in the channel between the two boats, and thus of course rendered inoperative. When the wheels are lowered into operative positions, as indicated in Fig. 2, their shafts 4 aline with short crank-shafts 15, mounted in suitable fixed bearings on the platform 2 with freedom for rotary and for slight endwise movements. At their inner ends the counter-shafts 15 are provided with half-clutches 16, that are adapted to be engaged and disengaged with the corresponding half-clutches 7 of the shafts 4 by endwise movements of said counter-shafts. Such endwise movements of the counter-shafts are adapted to be imparted by means of shipper-levers 17, pivoted to the platform 2 and engaging with grooved collars 18 on said counter-shafts. At their outer ends the counter-shafts 15 are provided with cranks 19, that are connected by pitmen 20 to walking-beams 21, pivoted to upright 22, supported by the platform 2. The inner ends of the walking-beams 21 are connected by links 23 to piston-rods 24 of upright force-pumps 25, the cylinders of which pumps are, as shown, rigidly secured to the bottoms of the boats 1 and receive water through openings 26 in the bottoms of said boats. By reference particularly to Fig. 1 it will be seen that two pumps are mounted on each boat and that the cylinders of the two pumps on the same boat are connected to a common upwardly-extended discharge-pipe 27. The two discharge-pipes 27 are preferably formed with downturned ends, which adapt them to discharge into a common delivery-spout. (Not shown.) If desired, the discharge-pipes 27 may discharge into a flexible hose, and such hose may be carried to any suitable point where the water is to be discharged.

It is evident that by means of the clutch devices described any number of pumps from one to four may be thrown into action at will, according to the amount of water which is required. It is further evident that both water-wheels may be rendered effective to drive but one pump in case it is necessary to force water



to a very great height and where but one wheel would not have sufficient power to run the pump. Again, one of the wheels may be raised into inoperative position, or out of the water, and the other may be left in action, or subject to the current. Again, as is evident, all of the pumps may be thrown out of action without raising the wheels out of the water and without stopping the rotation of the wheels. The water which is caught in the channel between the two boats is confined in such manner that it is caused to operate with great force on the wheels. The water-wheels are provided with blades which extend entirely across the channel between the two boats and are preferably provided with disk-like end plates 3<sup>a</sup>, that coöperate with the blades of the wheels to form trough-like pockets adapted to catch the water and return it.

A device of the character described is especially adapted for use to pump water for irrigating purposes, but is adapted for more general use and may be used for transmitting power from a running current for various purposes.

The device described is of course capable of modification within the scope of my invention as herein set forth and claimed.

What I claim, and desire to secure by Letters Patent of the United States, is as follows:

1. In a device of the character described the combination with a support, of a crank-shaft mounted on said support, a pump mounted on said support and driven from said crank-shaft, a vertically-adjustable water-wheel mounted on said support, means for adjusting said wheel vertically, and means for connecting and disconnecting the shaft of said wheel to said crank-shaft when said wheel is lowered into an operative position, substantially as described.

2. A combination with a floating support of

a counter-shaft mounted thereon, connections for transmitting power from said shaft to a part to be driven, a water-wheel mounted on said support with freedom for vertical movement from an operative into an inoperative position, means for adjusting said wheel vertically, and means for coupling said counter-shaft to the shaft of said water-wheel when the latter is lowered into an operative position, substantially as described.

3. The combination with a floating support, of a water-wheel mounted on said support, with freedom for vertical movements to and from an operative position, counter-shafts alined with the shaft of said water-wheel when the latter is lowered into an operative position, clutch devices for coupling the said shafts, of pumps driven from said counter-shafts, and means for raising and lowering said water-wheel, substantially as described.

4. The combination with a floating support, made up of a pair of boats spaced apart to form a channel, said boats having vertical inner walls, of a pair of water-wheels mounted on said support and working one ahead of the other in the channel between said boats, a driving connection causing said two wheels to rotate together, means for independently raising and lowering said two wheels, a plurality of crank-shafts mounted upon said support, means for coupling said crank-shafts to the shafts of said wheels when the latter are lowered into operative position, and pumps driven from said crank-shafts, substantially as described.

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

PETER H. FOY.

Witnesses:

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