No. 706,698. Patented Aug. 12, 1902.

L. SPRAGUE.

CURRENT MOTOR.

(Application filed Feb. 11, 1902.)

(No Model.)

Fig. 3.

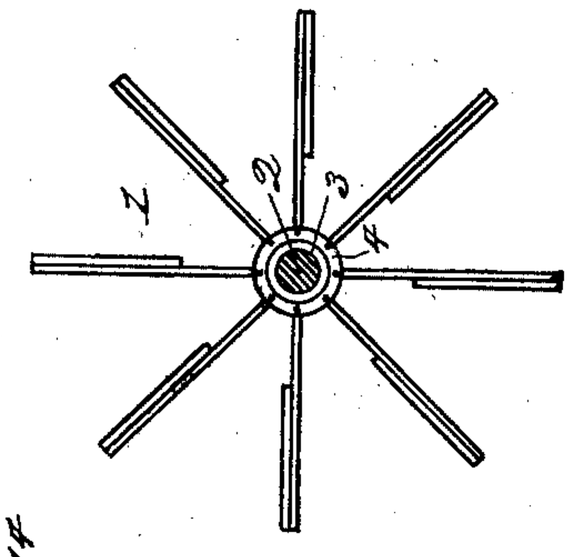

Fig. 1.

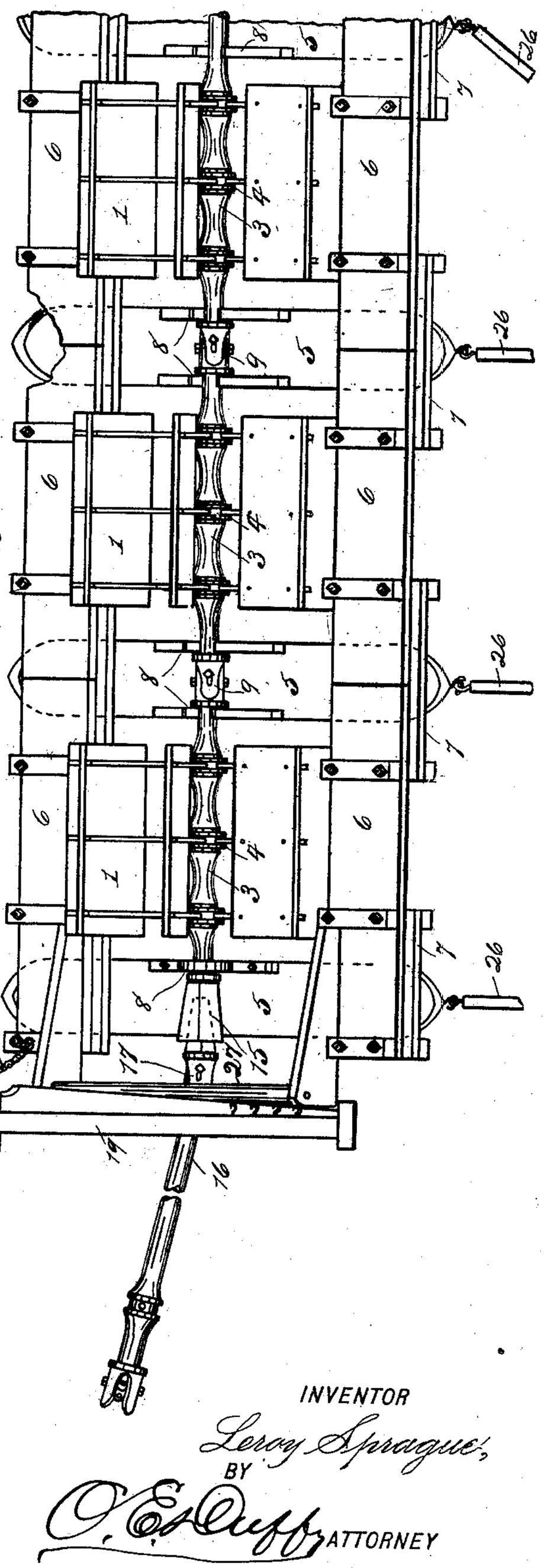

Fig. 7.

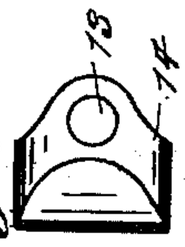

Fig. 6.

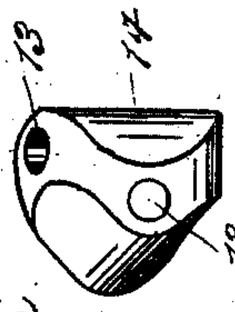

Fig. 4

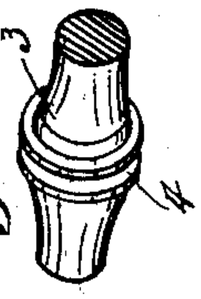

Fig. 5.

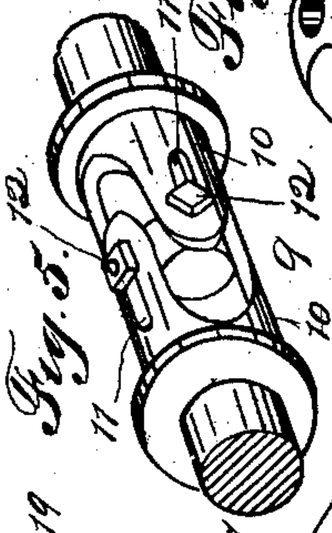

Fig. 2

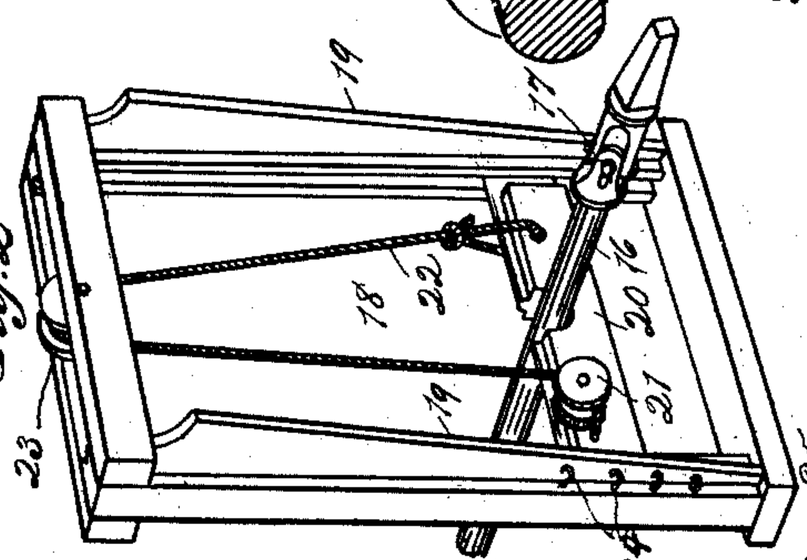

Fig. 8

WITNESSES:

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UNITED STATES PATENT OFFICE.

LEROY SPRAGUE, OF MILAN TOWNSHIP, ALLEN COUNTY, INDIANA.

CURRENT-MOTOR.

SPECIFICATION forming part of Letters Patent No. 706,698, dated August 12, 1902.

Application filed February 11, 1902. Serial No. 93,532. (No model.)

To all whom it may concern:

Be it known that I, LEROY SPRAGUE, a citizen of the United States, residing in Milan township, in the county of Allen and State of Indiana, 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 hydraulic motors, and has for its object to provide a device of this class which is simple in construction, easy and positive of operation, and composed of a minimum number of parts.

A further object of my invention is to provide a hydraulic motor the power of which can be increased or diminished at will.

A further object of my invention is to provide a floating hydraulic motor which is so arranged that the rise or fall of the water will not interfere with the transmission of power.

With all these objects in view my invention consists in the novel arrangement of the connections of my water-wheels.

My invention also consists in the novel manner of connecting the water-wheels with the power-shaft.

My invention further consists in the arrangement and construction of my power-shaft rest.

Referring to the accompanying drawings, Figure 1 is a perspective of my motor in an operative position. Fig. 2 is a perspective of my frame and power or land shaft rest. Fig. 3 is a side elevation of one of my water-wheels, showing central shaft in section. Fig. 4 is a perspective of one of the hubs. Fig. 5 is a perspective view of one of my flexible or knuckle joints. Fig. 6 is a perspective view of one of the knuckles. Fig. 7 is a top plan of the same. Fig. 8 is a fragmentary view of a part of my running-board and fastening.

1 indicates my water-wheels mounted on shafts 2 by means of hubs 3 and collars 4, said hubs being keyed to the shafts and the spokes of the wheels securely bolted to the collars.

5 indicates the boats, which are connected together fore and aft by means of the running-planks 6, which are secured together by fastenings 7, rigidly secured on the decks of the boats, while the ends of the planks 6 abut and are loosely connected to planks 7 by eye-bolts, as shown in Fig. 8.

8 indicates the journal-boxes, secured to the boats, within which the water-wheel shafts revolve and which support the same.

9 indicates my flexible or knuckle joints, composed of the stubs 10, provided with two elongated slots 11, through which pins 12 pass, said pins entering the holes 13 in the knuckle 14.

15 indicates a socket-joint, the entering member being secured to the power or land shaft 16, while the socket is secured to first water-wheel shaft.

17 indicates flexible or knuckle joints in said power or land shaft identical with the flexible or knuckle joints before described, said power or land shaft running up the bank and transmitting the power of the wheels.

18 indicates my power or land shaft frame, the sides 19 being grooved so as to carry a rest 20 for the said power or land shaft. Secured to said rest 20 is a pulley 21 and a cable 22, which passes over a pulley 23 in the top of the frame. By this means the rest is raised or lowered to conformity with the height of the water. Fastened in the sides of said frame are hooks 24, to which are adapted to be secured a chain to first boat.

25 indicates a chain secured to the rear running-board and fastened to the frame.

26 indicates anchoring-timbers which float on the water and which are suitably connected to an anchoring means on the bank. In order to shut down the motor, the anchoring-timbers are disconnected from the boats, and the boats and wheels are allowed to swing around with the current, which immediately disconnects the socket-joint between the first water-wheel shaft and the power or land shaft, the chain fastened to the rear running-plank holding the motor.

27 indicates a roller secured to the motor and adapted to work on the sides 19.

When it is desired to start up, the motor is pulled around into position by a windlass or other suitable means, and the anchoring-tim-

bers are connected to the boats, the socket-joint is again connected, and the motor is once more in operation.

It will be seen that with my construction the running-planks will allow the boats to play vertically, but not horizontally, while my flexible or knuckle joints will allow the motor to operate even though the boats should not be in direct line with one another.

My arrangement of the socket and flexible joint between the water-wheel shaft and the power or land shaft will allow the motor to operate successfully even though the power or land shaft be at an angle of twenty-five degrees with the water-wheel shaft.

When the water rises, the land-shaft rest is raised, and the front of the frame 19 being inclined the roller 27, carried by the motor, runs up said inclines and pushes the motor farther out into the stream, and when the water drops the said rest is correspondingly lowered.

It can be further seen that the power of a motor constructed in accordance with my invention is almost unlimited as one wheel can be added to the others as often as may be required, or one, two, or three may be detached when desired.

Having thus described my invention, I do not wish to be understood as limiting myself to the exact construction herein set forth, as various slight changes may be made therein by those skilled in the art which would fall within the limit and scope of my invention, and I consider myself clearly entitled to all such changes and modifications.

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

1. In a current-motor the combination with boats of water wheels and shafts supported thereby, flexible joints connecting said shafts, a land or power shaft, flexible joints therein, a socket-joint connecting said land-shaft with the water-wheel shaft, a vertically-slidable rest supporting said shaft and adapted to be raised or lowered in conformity with the motor, substantially as described.

2. In a current-motor the combination with boats of water wheels and shafts supported thereby, a land-shaft connected to said water-wheel shafts, a vertically-slidable rest adapted to be raised or lowered in conformity to the motor, substantially as described.

3. In a current-motor, the combination with boats of water wheels and shafts supported thereby, a land-shaft connected to said water-wheel shafts, a sliding joint between the two and means for raising and lowering said land-shaft in conformity to the motor.

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

LEROY SPRAGUE.

Witnesses:
RONALD DAWSON,
HOMER C. UNDERWOOD.