(No Model.) 3 Sheets—Sheet 1.

S. B. GOFF.

WATER MOTOR.

No. 393,897. Patented Dec. 4, 1888.

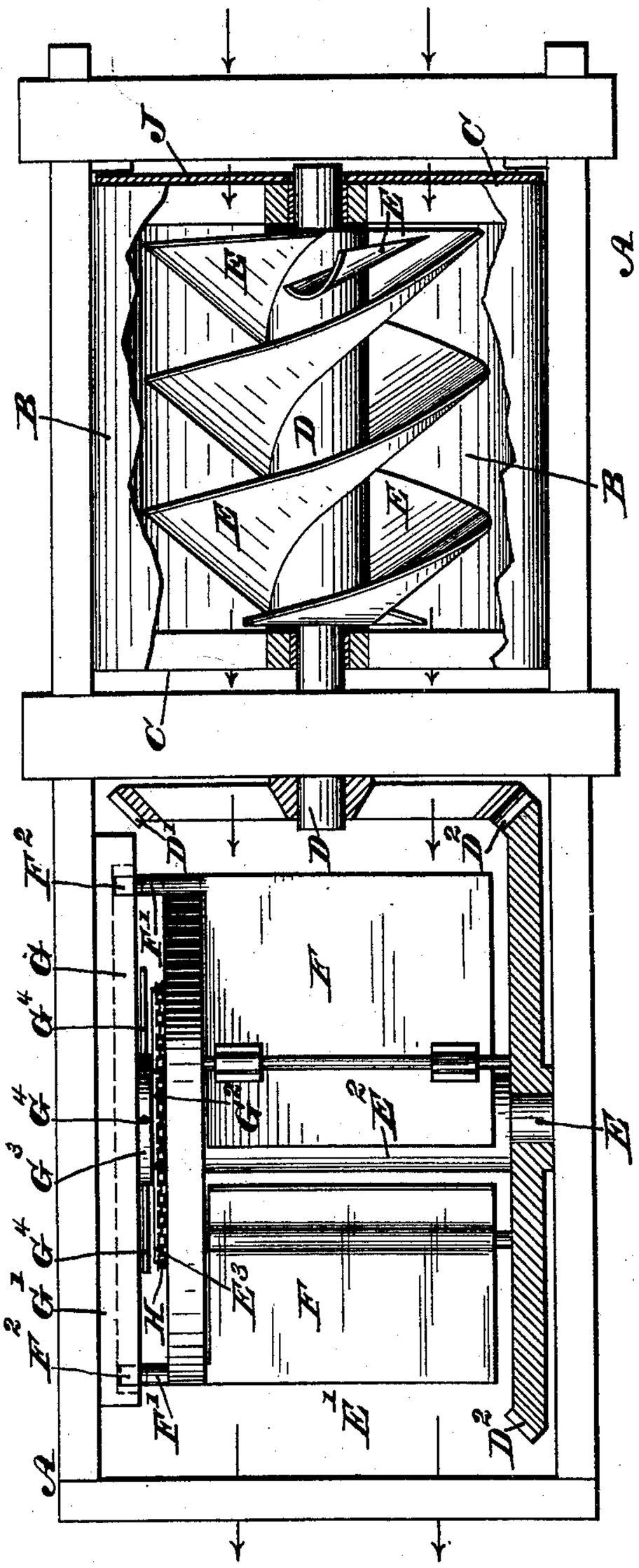

Fig. 1.

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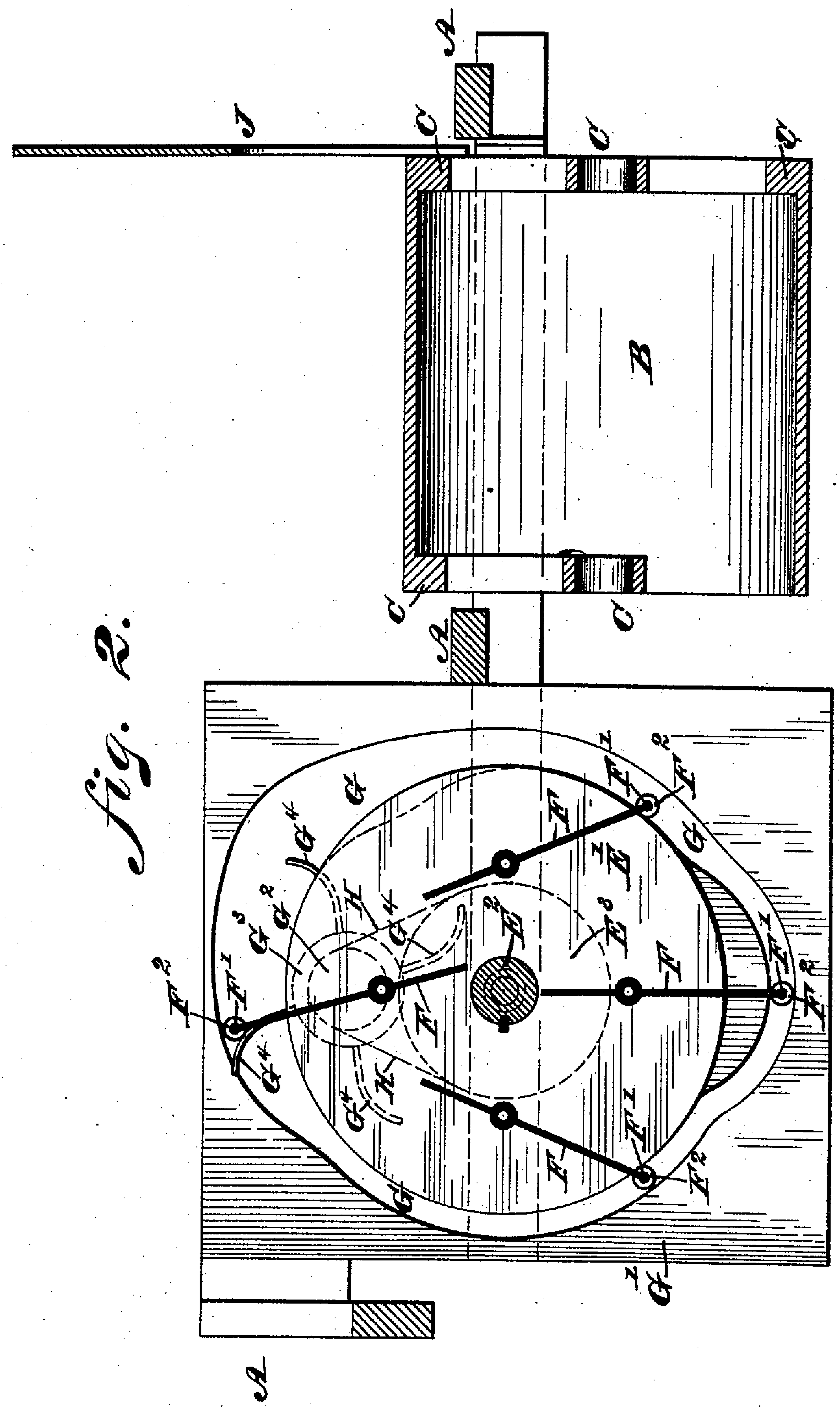

Fig. 2.

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(No Model.) 3 Sheets—Sheet 3.

S. B. GOFF.

WATER MOTOR.

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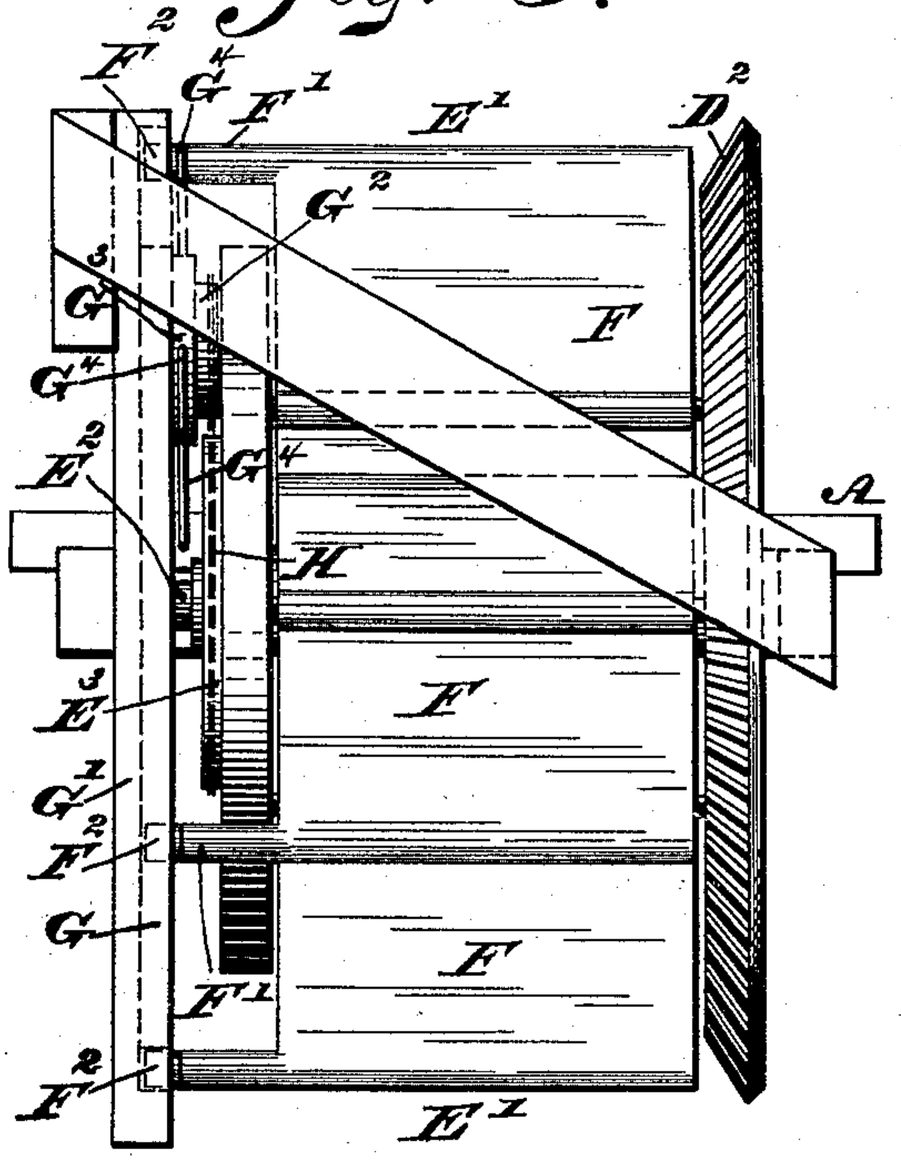
fig. 3.



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UNITED STATES PATENT OFFICE.

SAMUEL B. GOFF, OF CAMDEN, NEW JERSEY.

WATER-MOTOR.

SPECIFICATION forming part of Letters Patent No. 393,897, dated December 4, 1888.

Application filed June 11, 1888. Serial No. 276,668. (No model.)

To all whom it may concern:

Be it known that I, SAMUEL B. GOFF, a citizen of the United States, residing in the city and county of Camden, State of New Jersey, have invented a new and useful Improvement in Water-Mills, which improvement is fully set forth in the following specification and accompanying drawings.

My invention relates to motors operated by a current of water; and it consists of a case, a screw journaled therein, a wheel geared with said screw, floats carried by said wheel and having rods at their outer ends, a groove in which said rods traverse, and a sprocket-wheel rotated by the wheel which is operated by the screw, said sprocket-wheel having tappets or arms for striking the rods on the floats.

It further consists of the combination of parts, as herein set forth and claimed.

Figure 1 represents a top plan view of a water-motor embodying my invention, partly broken away to disclose the construction of the screw. Fig. 2 represents a longitudinal sectional view thereof, the screw being removed. Fig. 3 represents an end view thereof.

Similar letters of reference indicate corresponding parts in the several figures.

Referring to the drawings, A designates the frame of the motor which is moored or anchored in the stream.

B designates a horizontally-arranged case secured to the frame and having its ends open.

C designates open heads secured in the ends of the case, and in said heads is journaled a shaft, D.

E designates a screw secured to the shaft D, as shown in Fig. 1 of the drawings.

D′ designates a bevel-gear on the inner end of the shaft, which engages the bevel gear-teeth D^2 on the water-wheel E′.

E^2 designates the shaft of the water-wheel, which passes through the frame of the machine and forms the axis for said wheel.

E^3 designates a sprocket-wheel secured or formed with one of the heads of the wheel E′ thereof, the purpose of which will be seen.

F designates a series of floats or paddles pivoted near their inner ends to the inner faces of the heads of the water-wheel. From this construction it will be noticed that a greater amount of the weight of the float or paddles is on the outer ends, causing said ends to descend or drop down. To the outer ends of said floats or paddles are secured radial rods F′, the ends thereof carrying friction-rollers F^2, which travel in a cam groove or way, G, in the upright G′.

G^2 designates a sprocket-wheel having a journal-bearing in the standard G′, and which carries the wheel G^3, having the tappet-arms G^4. Around the sprocket-wheels G^2 and E^3 passes an endless chain, H, for transmitting motion from the wheel E′ to the tappet-wheel, the purpose of which will be described.

J designates the gate of the motor for regulating the flow of water.

The operation is as follows: The motor is moored or anchored in a stream. The water enters the outer open end of the horizontally-arranged case and revolves the screw, which screw, through the medium of the bevel gear-wheel on its shaft meshing with the bevel gear-teeth on the periphery of one of the heads of the water-wheel, causes said wheel to revolve and transmit power by means of a pulley or other device on its shaft; also, as the wheel revolves it carries the floats or paddles with it, and the ends of the rods which are struck by the tappet-arms on the tappet-wheel, which is operated by the sprocket wheels and chain, throwing the floats or paddles quickly downward, and presenting their surfaces to the body of water passing from the case after operating the screw therein, thus imparting additional power to the wheel. It will also be observed that the ends of the rods carried by the floats have the friction-rollers thereon, which travel in the cam groove or way, and serve to keep the blades or wings always in upward position while in the water, and the rollers serve to prevent the rods from binding in the said groove.

It will thus be seen that I provide a motor which will transmit a geat amount of power for any desired purpose.

I have described the motor as being operated by water; but it is evident that it can be operated by the force of wind.

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

1. In a water-motor, the combination of the

screw, the water-wheel, the floats or paddles carrying rods, uprights having cam-grooves in which said rods ride, and a sprocket-wheel having tappet-arms for striking the said rods, substantially as described.

2. In a water-motor, a water-wheel having paddles or floats pivoted thereon, rods carried by said floats having anti-friction rollers at one end, an upright provided with a cam-groove in which said rollers move, a sprocket-wheel carried by the water-wheel, a sprocket-wheel having tappet-arms adapted to strike the rods on the floats, and a chain connecting said sprocket-wheels, said parts being combined substantially as described.

3. The combination of a case with open heads, a screw journaled therein, a water-wheel with paddles or floats pivoted near one end to said water-wheel, rods secured to said floats, a sprocket-wheel secured to the axle of the water-wheel, a second sprocket-wheel journaled above said first sprocket-wheel and provided with tappet-arms adapted to strike the said rods on the floats, a chain connecting said sprocket-wheels, and an upright with grooved ways in which said rods ride, substantially as and for the purpose set forth.

SAMUEL B. GOFF.

Witnesses:
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WM. N. MOORE.