

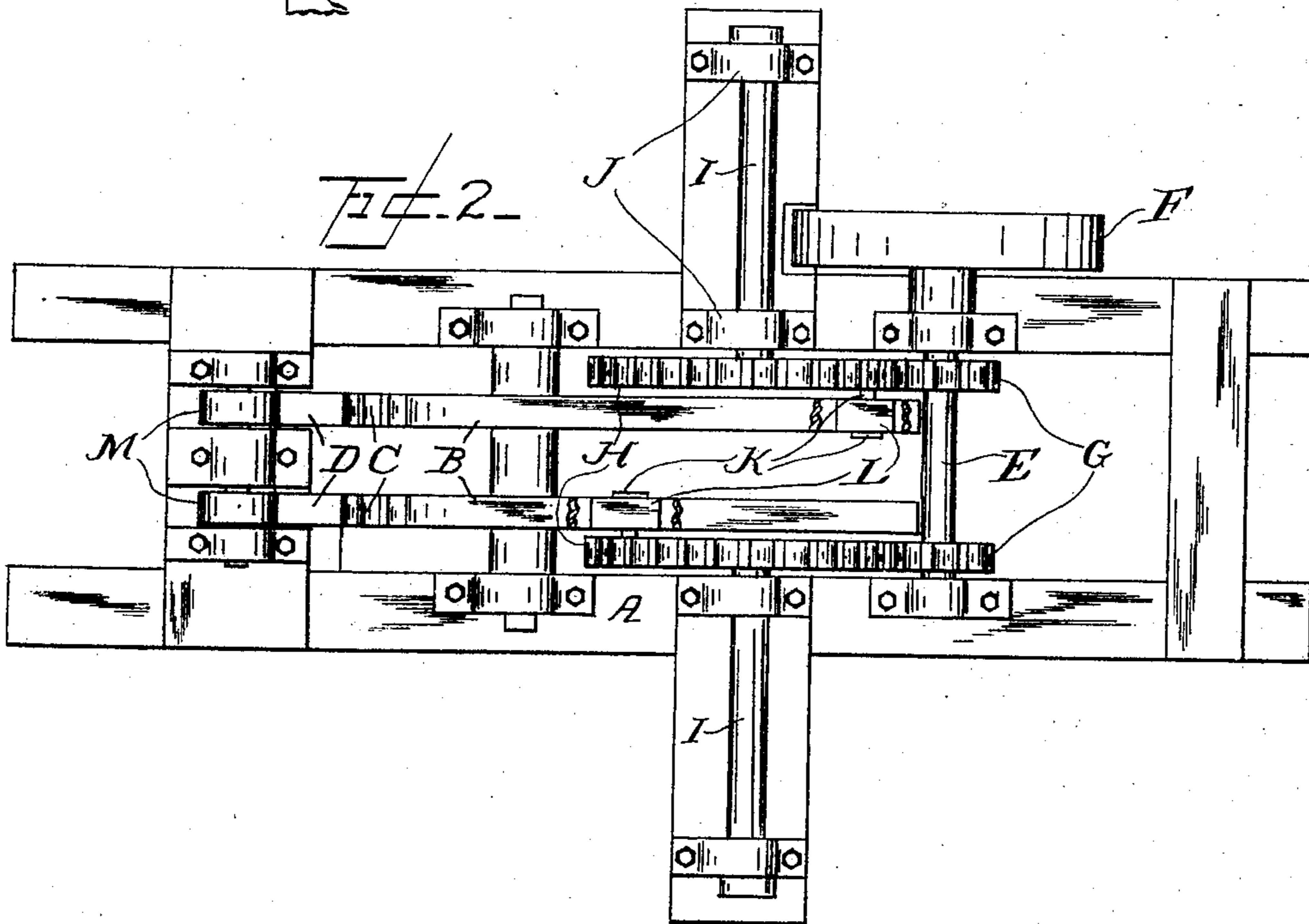
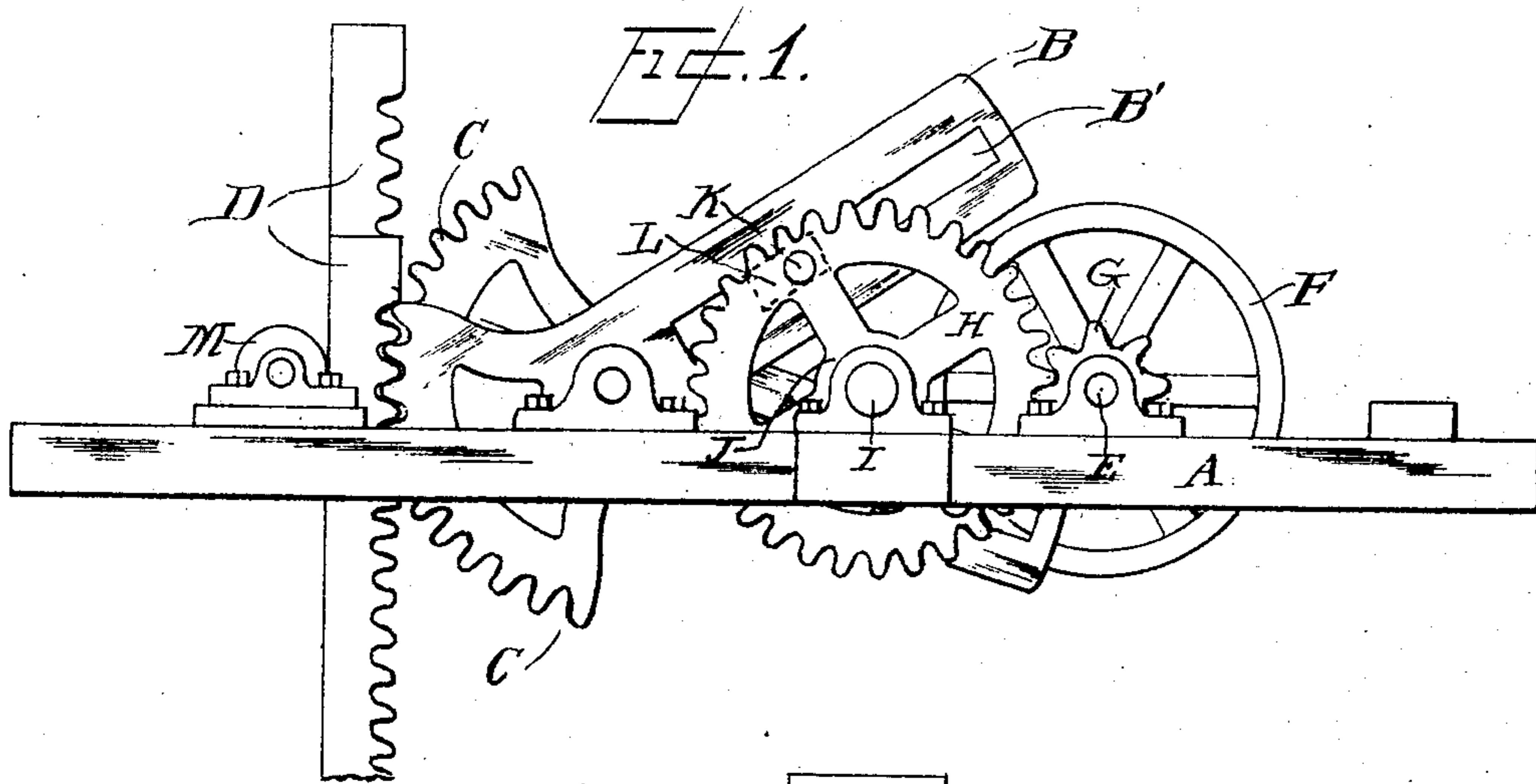
No. 753,771.

PATENTED MAR. 1, 1904.

J. C. WHITMER.
DRIVING MECHANISM FOR PUMPS.

APPLICATION FILED SEPT. 15, 1903.

NO MODEL.



Witnesses
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UNITED STATES PATENT OFFICE.

JOHN C. WHITMER, OF LORDSBURG, CALIFORNIA.

DRIVING MECHANISM FOR PUMPS.

SPECIFICATION forming part of Letters Patent No. 753,771, dated March 1, 1904.

Application filed September 15, 1903. Serial No. 173,326. (No model.)

To all whom it may concern:

Be it known that I, JOHN C. WHITMER, a citizen of the United States, residing at Lordsburg, in the county of Los Angeles, State of California, have invented new and useful Improvements in Driving Mechanism for Pumps, of which the following is a specification.

My invention relates to driving mechanism for a double-acting pump; and the object thereof is to provide means for operating the same to produce a continuous flow of water with a minimum expenditure of power. I accomplish this object by the mechanism described herein, and illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation of my driving mechanism, and Fig. 2 is a plan of the same.

In the drawings, A is the frame, on which are pivotally mounted the slotted levers B, which carry on their short end the toothed sectors C, which mesh with rack-bars D, to which the pump-rods (not shown) are connected. In the frame is mounted the driving-shaft E, on one end of which is pulley F for the reception of a belt, (not shown,) by means of which power is applied to the driving-shaft. Any other means of applying power may be adopted. On the driving-shaft are rigidly mounted pinions G, which mesh with gear-wheels H, which are mounted in bearings secured to the frame. I have shown these gear-wheels mounted on shafts I, which have two bearings J secured to the frame; but only one bearing is necessary. These gear-wheels are provided with crank-pins K, which carry slide-blocks L, that move in slots B' of the slotted levers. These crank-pins are arranged on opposite sides of the shafts on which the gears are mounted, so that on the rotation of the gears one of the slotted levers is at the end of its upward movement a little after the other slotted lever is at the extreme limit of its downward movement and after it has started on its upward movement, and the distance from the fulcrum of these slotted levers to the end of the movement of the slide-block in the slots therein is preferably twice as great as the distance from the fulcrum to the contact-point between the toothed sector end thereof and the rack-bar. By this arrangement when

power is applied to drive the levers the strain of lifting the rack-bars commences and is completed during the time that the slide-block is going outwardly or away from the fulcrum and back from the point at which the crank-pin reaches a line which runs tangent from the fulcrum to the path of revolution of the crank-pin. The downward movement is effected during the remainder of the revolution of the crank-pin. As the downward movement of the rack-bar is accomplished in less time than the upward movement at every stroke for a short period of time, both rack-bars move upward together, thereby always insuring a constant motion in the upward flow of the water. At the back of the rack-bars are placed roller-bearings M to reduce the frictional contact of the rack-bars in their movement through the guide N, fixed to the frame.

It will be observed that when the crank-pin is at and very close to the point at which a line projected from the fulcrum is tangent to its line of revolution the rack-bar has but very slight if any movement, which gives the valves of the pump ample time to seat themselves before the upward stroke commences.

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

1. In a driving mechanism, a frame; two levers pivoted intermediate their ends in said frame; each of said levers having at one end a toothed sector, and a longitudinal slot in the other end; rack-bars meshing with said sectors and adapted to be moved thereby; gears mounted in said frame at a point crossed by the oscillation of the slotted end of said levers; crank-pins affixed to said gears at points on the opposite sides of the shafts on which the gears are mounted, said crank-pins passing into the slots in said levers; means to operate said gears.

2. In a pumping mechanism a frame; two levers pivotally mounted in said frame intermediate their ends so that the distance from the pivot to one end shall be greater, than the distance to the other end, said levers being in parallel planes and each having on the shorter end a tooth-sector and in the longer end a lon-

itudinal slot, said slots being twice as long
as the distance from the sector-face to the
pivot or fulcrum and extending nearly to the
fulcrum; rack-bars meshing with said sectors
5 and adapted to be moved thereby; gears
mounted on axles rotative in said frame at a
point crossed by the center of the slots as the
levers move in said frame; slide-blocks in said
slots; crank-pins affixed to said gears at points
10 on the opposite sides of the axles on which

the gears are mounted, said crank-pins being
operatively connected to said slide-blocks;
means to operate said gears.

In witness that I claim the foregoing I have
hereunto subscribed my name this 8th day of 15
September, 1903.

JOHN C. WHITMER.

Witnesses:

L. C. MEREDITH,

W. S. CARSON.