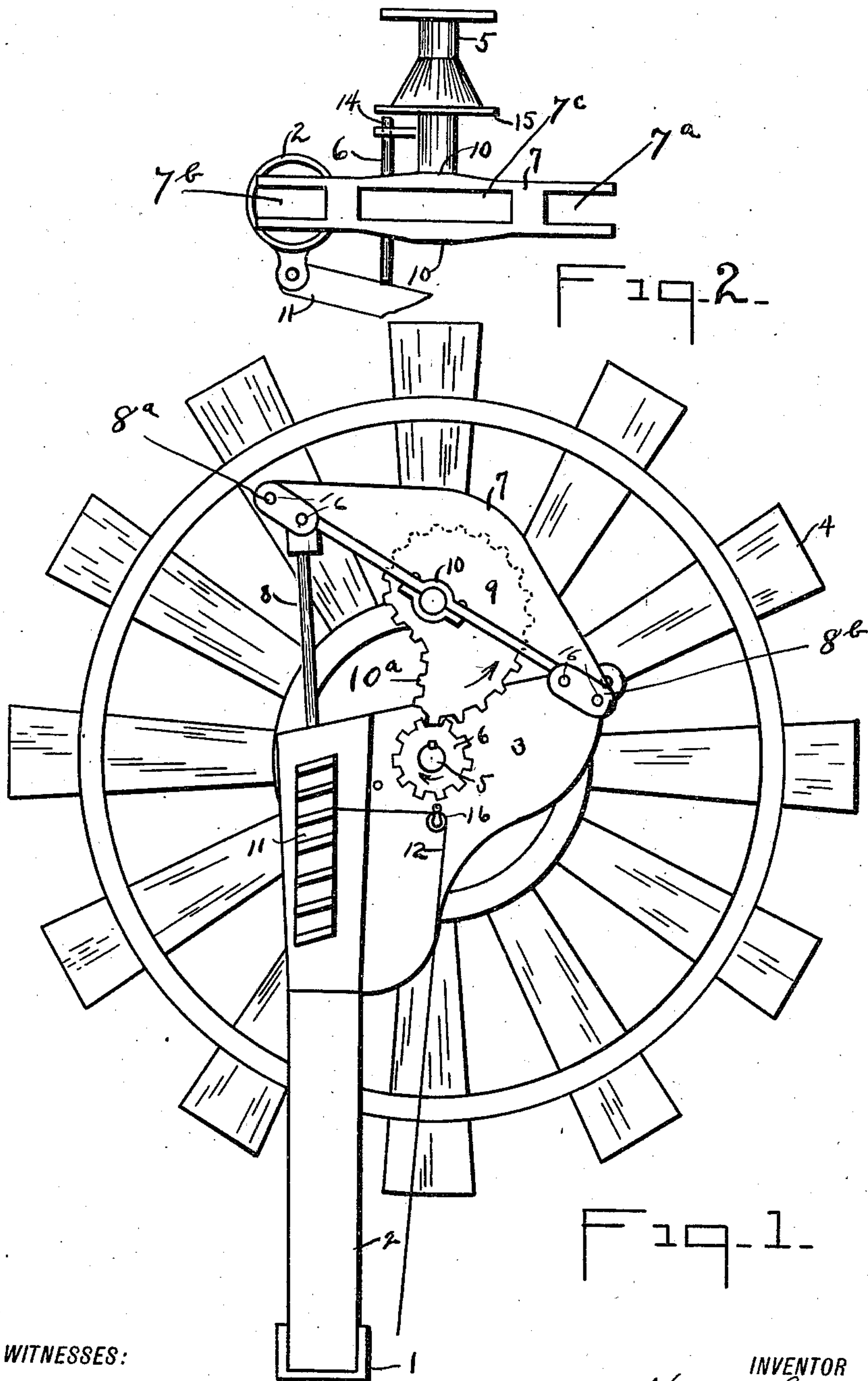


H. LINNARTZ.
PUMP OPERATING MECHANISM.
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996,777.

Patented July 4, 1911.



WITNESSES:
Wm. A. Cather
Ernest H. Guy

INVENTOR
Hugo Linnartz
BY
Edward V. Hardaway
ATTORNEY

UNITED STATES PATENT OFFICE.

HUGO LINNARTZ, OF HOUSTON, TEXAS.

PUMP-OPERATING MECHANISM.

996,777.

Specification of Letters Patent.

Patented July 4, 1911.

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To all whom it may concern:

Be it known that I, HUGO LINNARTZ, a citizen of the United States, residing at Houston, in the county of Harris and State of Texas, have invented certain new and useful Improvements in Pump-Operating Mechanism, of which the following is a specification.

My invention relates to new and useful improvements in a pump operating mechanism and more particularly to that operating mechanism of pumps that are mechanically driven.

The illustration shows the improved device applied to a pump which is operated by a windmill.

The object of the invention is to provide a device of the character described which will increase the speed of the downward stroke of the pump piston and thereby increase the capacity of the pump.

Another novel feature resides in the provision of means for locking the operative mechanism against movement.

Finally the object of the invention is to provide a device of the character described that will be simple in construction and effective in operation and one that will be easily kept in working order.

With the above and other objects in view my invention has particular relation to certain novel features of construction and operation an example of which is given in this specification and illustrated in the accompanying drawings, wherein:—

Figure 1 is a view in elevation of a windmill with my improved mechanism attached thereto. Fig. 2 is a top plan view of the mechanism, detached.

Referring to the drawings wherein like reference characters denote similar parts throughout the several views: 1 denotes a derrick upon which is mounted a support 2, the latter provided at its upper end with a lateral extension 3 having journaled therein intermediate its ends a shaft 5. Fixed to one end of the shaft 5 on one side of the extension 3 is a wind wheel 4 and fixed to the other end of the shaft 5 on the opposite side of the extension 3 is a pinion 6.

The reference character 8 denotes a pump piston connecting rod which is reciprocated by an oscillatory lever 7. The lever 7 at each end is bifurcated as at 7^a, 7^b and inter-

mediate its ends provided with a pocket 7^c. The bifurcated end 7^b is pivotally and adjustably connected as at 8^a to the upper end of the rod 8. The bifurcated end 7^a of the lever 7 is pivotally and adjustably connected to the upper outer corner of the extension 3 as at 8^b. The bifurcated ends 7^a and 7^b of the lever 7 are provided with openings 16 to enable the lever to be adjustably connected to the rod 8 and extension 3 to regulate the piston stroke. The lever 7 is provided centrally of its ends with a shaft 10 which extends across the pocket 7^c and rotatably mounted upon the shaft 10 and located in said pocket 7^c and depending from the lever 7 is a cam 9 somewhat in the shape of a pear and which has the entire edge thereof toothed as at 10^a. The cam 9 meshes with the pinion 6.

When the shaft 5 is revolved through the medium of the wheel 4 the cam 9 will be revolved as the pinion 6 meshes therewith. When the cam 9 revolves in the direction indicated by the arrow, the piston connecting rod will be gradually elevated until the extremity of the cam is reached and the acting parts will then assume the position shown in Fig. 1. A further movement of the cam then permits the same to suddenly descend and forces the rod 8 downwardly. The downward stroke of the rod 8 is quicker than the upstroke and by such operation the pumping is facilitated. In the operative mechanisms now in general use, the stroke is uniform. The downward stroke consumes as much time as the upward stroke.

The windmill is provided with the usual guide 11, which is secured to support 2 by suitable hinges so that the same may be opened or closed. A suitable cable 12 is attached to this guide and passes around pulley 16, secured to casting 3, and is suspended down within reach of the operator. By a pull upon this cable the guide 11 may be closed, as shown in Fig. 2. When the guide is closed it rests firmly against brake rod 13 which has a lateral play in suitable bearings carried by the supporting casting 3. This brake rod 16 carries a suitable brake 14 which is thus forced into friction with the rim 15 of the wind wheel and the same thus held against rotation.

A pump operating mechanism constructed in accordance with the foregoing descrip-

tion will be found to be simple and practical and will greatly increase the efficiency and capacity of the pump operated thereby.

What I claim is:—

- 5 A pump operating mechanism comprising a support provided with a lateral extension, an oscillatory lever having each of its ends bifurcated and further provided intermediate its ends with a pocket, a shaft carried by
10 the lever and extending across said pocket, a piston connecting rod, means for pivotally and adjustably connecting one of the bifurcated ends of said lever to the upper end of said rod, means for adjustably and pivotally
15 connecting the other bifurcated end of said lever to the upper outer corner of said lateral extension, a substantially pear-shaped

toothed cam mounted upon said shaft and extending within and depending from said pocket, a driven shaft journaled in said extension and having one end arranged below said cam, said cam depending at one side of said extension, and a pinion fixed to the driven shaft and meshing with said cam for revolving the latter thereby imparting an
25 oscillatory movement to said lever and reciprocating said connecting rod.

In testimony whereof I have hereto set my hand this the 22nd day of July A. D. 1909.

HUGO LINNARTZ.

In the presence of—

WM. A. CATHEY,

E. C. GUY.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."