S. F. EUBANK.

PUMP DRIVING GEAR.

APPLICATION FILED APR. 5, 1912.

1,040,912. Patented Oct. 8, 1912.

Fig. 1.

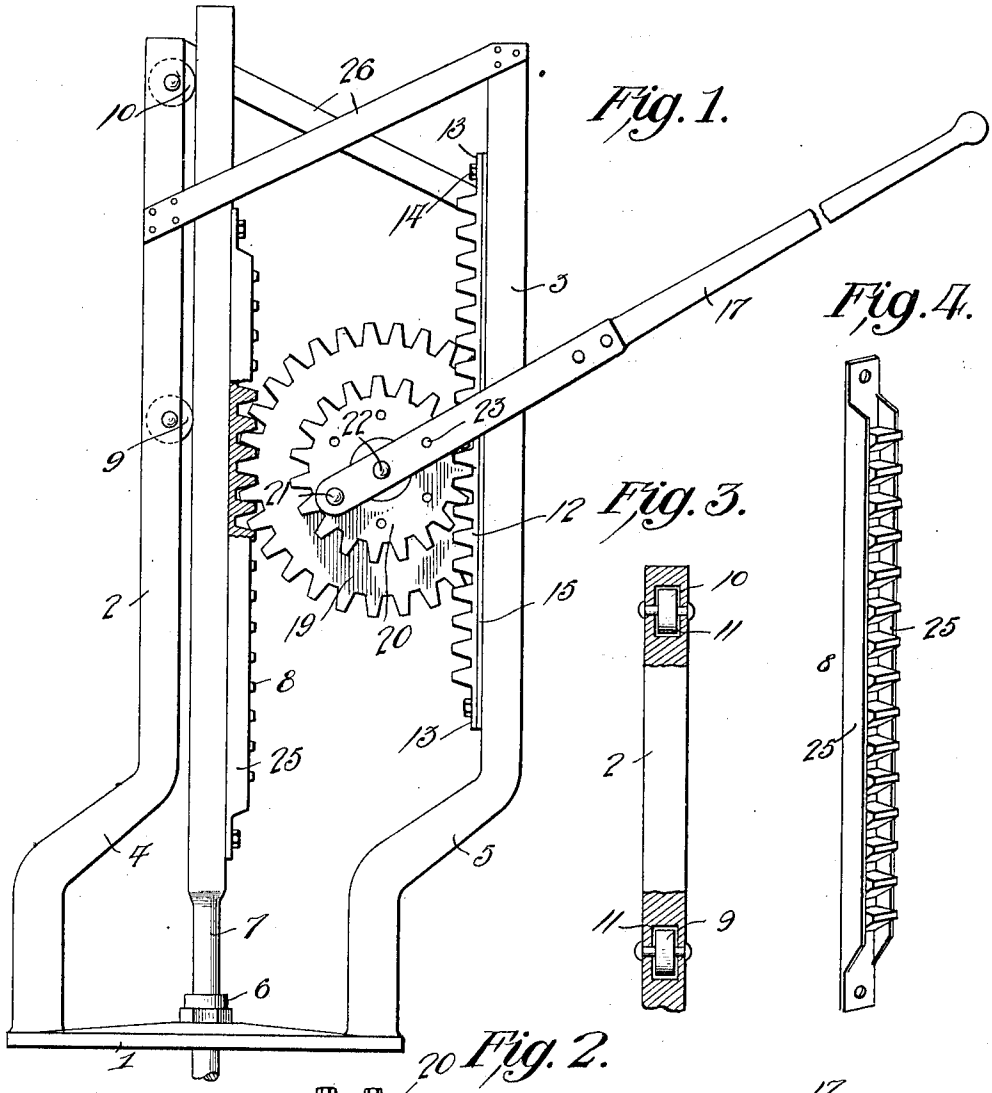


Fig. 4.

Fig. 3.

Fig. 2.

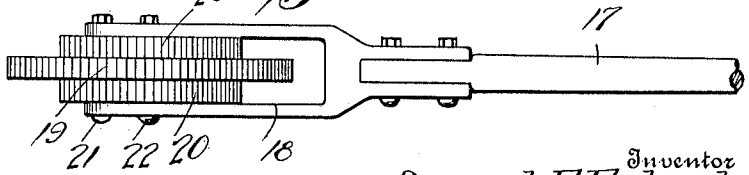
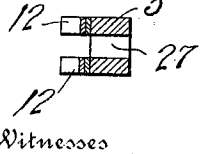


Fig. 5.



Witnesses

Carroll Bailey.

P. M. Smith.

Inventor

Samuel F. Eubank,

By Victor J. Evans

Attorney

COLUMBIA PLANOGRAPH CO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

SAMUEL F. EUBANK, OF COLUMBIA, KENTUCKY, ASSIGNOR OF ONE-THIRD TO W. R. LYON, OF CAMPBELLSVILLE, KENTUCKY.

PUMP-DRIVING GEAR.

1,040,912. Specification of Letters Patent. Patented Oct. 8, 1912.

Application filed April 5, 1912. Serial No. 688,720.

To all whom it may concern:

Be it known that I, SAMUEL F. EUBANK, a citizen of the United States, residing at Columbia, in the county of Adair and State of Kentucky, have invented new and useful Improvements in Pump-Driving Gear, of which the following is a specification.

This invention relates to pump driving gear, the object of the invention being to provide driving gear of the class described of a very simple character, which will work with the least possible friction, and give a stroke to the pump rod.

Another object of the invention is to provide for renewing the working parts of the pump gear, so that the same may be maintained in perfect working order at all times, at a minimum expense.

With the above and other objects in view, the invention consists in the construction, combination and arrangement of parts, as will be hereinafter more fully described, illustrated in the accompanying drawings, and pointed out in the claim hereunto appended.

In the accompanying drawings: Figure 1 is a side elevation of the pump gear. Fig. 2 is a detail plan view of the pump lever. Fig. 3 is a detail section through one of the parallel bars, showing the bearing rollers. Fig. 4 is a detail view of the flanged rack. Fig. 5 is a detail cross section through the bar carrying the fixed rack.

The pump gear contemplated in this invention embodies a base 1, which is shaped to fit over the top of the well or pump casing. Extending upward from said base are two parallel bars 2 and 3, both of which bear a fixed relation to each other and to the base 1. The bar 2 is offset, as shown at 4, where it is connected to the base, in order to bring the upper portion of said bar close to the center of the base, so as to form a bearing for the pump rod hereinafter described. The other stationary bar 3 is also offset, as shown at 5, to locate said bar at a sufficient distance from the bar 2 to provide for the working of the pinion, hereinafter described.

Extending through a central opening in the base 1, which opening is preferably protected by means of a bushing 6, is the pump rod 7 having secured to its outer face a rack 8 extending lengthwise thereof. The upper portion of the pump rod 7 is preferably square or rectangular in cross section, adapting the rear face thereof to bear against anti-friction rollers 9 and 10 journaled on suitable shafts in apertures 11 formed in said bar 2. This provides for the frictionless travel of the pump rod up and down.

To the inner face of the opposite bar 3, there is secured a pair of racks 12, extending lengthwise of said bar, and provided at their extremities with extensions or flanges 13 adapted to receive bolts 14, which will admit of the loosening of the rack 12, and the placing of shims or liners 15 back of the racks, for the purpose of allowing for any wear between the racks and the pinions meshing therewith.

17 designates the pump lever which has its inner end forked, as shown at 18, adapting it to straddle the bar 3. Mounted in the forked end of the lever is a gear wheel, embodying a large central toothed section or member 19, and smaller twin members or pinions 20 located at opposite sides thereof and bearing a fixed relation thereto. This gear wheel is provided with a plurality of bolt holes adapted to receive bolts 21 and 22 adapted to be inserted through corresponding holes 23 in the forked arms of the lever, so as to rigidly connect the lever and gear wheel, any desired number of holes 23 being provided in the lever to enable the same to be shifted with relation to the gear wheel, the object being to vary the length and leverage of the lever 17. One of the bolts 22 passes through the center of the pinion in which is arranged a relatively rotatable core, said core having a central opening for the bolt 22.

The rack 8 is provided at opposite sides with projecting longitudinal flanges 25, between which the teeth of the central member 19 work, thereby preventing any possibility of the gear wheel getting out of mesh with the rack on the pump rod. The upper ends of the parallel bars 2 and 3 are connected and relatively supported by means of cross braces 26.

The stationary bar 3 is provided with a central longitudinal slot 27, on opposite sides of which the racks 12 are secured, the slot being adapted to permit the marginal portion of the central gear wheel or member 19 to work between the racks 12.

From the foregoing description, taken in connection with the accompanying drawings, it will be understood that as the pump lever 17 is worked up and down, the gear wheel will move up and down on the fixed racks 12, and at the same time will mesh with the rack 8 on the pump rod and give a relative accelerated movement and throw to the pump rod, the fulcrum of the lever 17 being at the point of engagement between the teeth of the pinions and the teeth of the racks 12. Therefore, such fulcrum is continuously shifting upward to downward, and it is for this reason that an accelerated movement is imparted to the pump rod. Its throw may be changed by shifting the bolts 21 and 22, above referred to, where they pass through the lever and the pinion.

What is claimed is:

Pump driving gear, embodying stationary bars, one of which is provided with a longitudinal slot, stationary racks secured in fixed relation to the slotted bar and arranged at opposite sides of the slot therein, a pump rod, a rack fastened to the pump rod, a pump lever, and a gear wheel connected to said lever and having three toothed faces meshing with said racks, the central or larger member of the gear wheel working in the slot in the stationary bar.

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

SAMUEL F. EUBANK.

Witnesses:

JNO. W. F. CONNER,

W. R. SQUIRE.

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