(No Model.)

J. WAGNER.

POWER MECHANISM FOR PUMPS, &c.

No. 525,373. Patented Sept. 4, 1894.

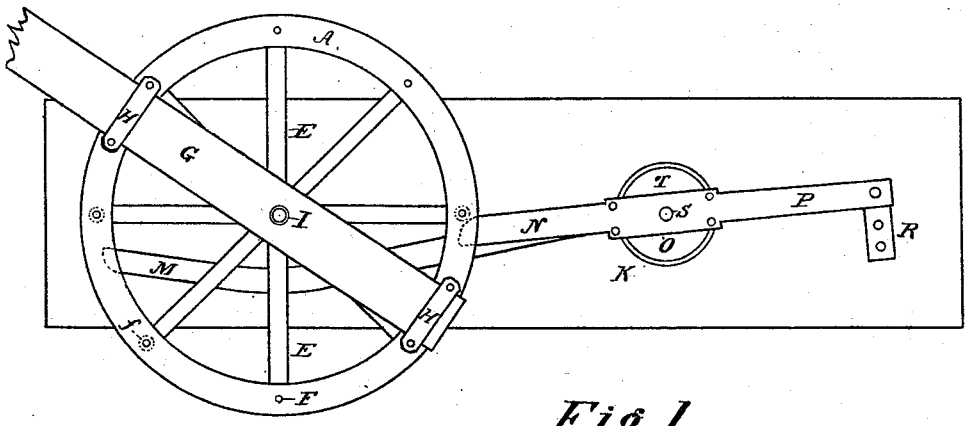

Fig. 1

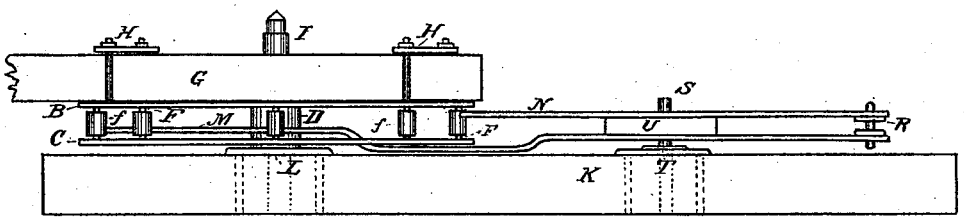

Fig. 2

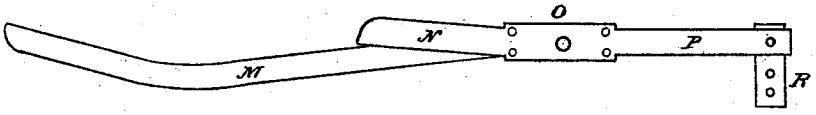

Fig. 3

Witnesses
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UNITED STATES PATENT OFFICE.

JACOB WAGNER, OF RIMINI, MONTANA, ASSIGNOR OF ONE-HALF TO NICKOLAUS WAGNER, OF SAME PLACE.

POWER MECHANISM FOR PUMPS, &c.

SPECIFICATION forming part of Letters Patent No. 525,373, dated September 4, 1894.

Application filed August 31, 1893. Serial No. 484,475. (No model.)

To all whom it may concern:

Be it known that I, JACOB WAGNER, a citizen of the United States, and a resident of Rimini, county of Lewis and Clarke, State of Montana, have invented a new and useful Improvement in Power Mechanism for Pumps, of which the following is a specification.

A simple machine, for securing power to work a pump, has long been desired among miners. The combination of simplicity, in number and construction of parts, with strength, and economy of power, is needed.

My invention is intended to supply such a machine.

It consists of a double-rimmed wheel, revolved by a sweep or other power, having pins carrying friction rollers, at equal distances around the circumference, between the rims, and a lever with two arms, a long arm and a short arm, secured together at the common fulcrum, the short one acted on by the pins on one side, and the long one by the pins on the opposite side, alternately, as the wheel revolves, producing a reciprocating motion in the lifting end of the lever.

Figure 1. shows a plan view of the whole mechanism. Fig. 2 shows a side elevation of same. Fig. 3. shows plan view of the lever.

Similar letters refer to similar parts in all the drawings.

The wheel A is constructed with an upper rim B having braces E, E, and lower rim C without spokes or braces and hub D. Around the circumference at equal distances, between the rim B and C are the pins F F carrying the friction rollers *f f*, which move freely on the said pins F F.

The wheel A may be revolved by horse power, by means of the sweep G, which is secured to the wheel A by the clips H H. The wheel A works on the pivot bolt I, which is firmly secured in the base plate K, being strengthened by the plate L.

The arms M and N of the lever are firmly bolted together at their fulcral point O and are one from there to their lifting end P, where a short connecting rod R is shown. The fulcrum of the lever is the pivot bolt S which is firmly secured in the base plate K, and is strengthened by the plate T. Bolted between the arms at the fulcral point O is the stiffening piece U. The long arm M is bent twice vertically, first to enable it to pass under the rim of the wheel A, and second to rise again to come in contact with the friction rollers *f f* on the farther side of the wheel A. It is also curved laterally so as to avoid the hub D of the wheel A. The end of the arm M, is beveled or curved to the left; the end of the arm N is beveled or curved to the right. The arm M is just long enough to clear the friction rollers *f f*, when they are in line with the pivot bolts I and S. The arm N is just long enough to clear one friction roller *f* at the time the long arm M comes in contact with one. It must be of such a length that it will only be carried the same proportion of the distance between two rollers as its own length is to the length of the arm M.

The mode of operation is as follows: The wheel and the arms M and N are adjusted on their respective pivots I and S, and power being applied to the wheel A by the sweep G the wheel A revolves, and as shown on Fig. 1, a roller *f* catches the short arm N and carries it a short distance. Just as the arm N slips from a roller *f*, another roller *f* catches the arm M and carries it to the point in line with the two pivots I and S. The arm M then slips from that roller and another roller catches the arm N, and so the motion continues, producing a reciprocating motion at the end P, which can be communicated by a bell crank lever or other suitable means to the piston of a pump.

The base plate K is not necessary, as the pivot bolts may be fastened in any way securing their stability and relative distance apart. The double rim of the wheel is not necessary, except for strength; nor are the friction rollers, except for economy of power. A wheel with pins on a single rim will work, if strong enough.

By the use of a strong timber bed-plate K, as shown, the machine can be readily mounted anywhere by preparing a suitable foundation. Outside of this bed plate and the sweep, the machine consists of only the two pieces, the wheel and the lever.

Power can be supplied by a crank, as well as a sweep, and the apparatus may be placed

upon its side, and so used, where much power is not needed. The power can be concentrated by increasing the ratios, of the length of the sweep G to the radius of the wheel A; and, also of the arms M and N to that of the arm O P.

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

In a power mechanism, the combination of a wheel, having pins on its circumference, and means for revolving said wheel, with a lever, having two arms from the fulcrum to the wheel, a long arm and a short arm, acted upon alternately in opposite directions, by the pins on opposite sections of the wheel.

In testimony that I claim the foregoing as my invention I have signed my name, in presence of two witnesses, this 24th day of August, 1893.

JACOB WAGNER.

Witnesses:
EDWARD C. RUSSEL,
JOHN STEINMETZ.