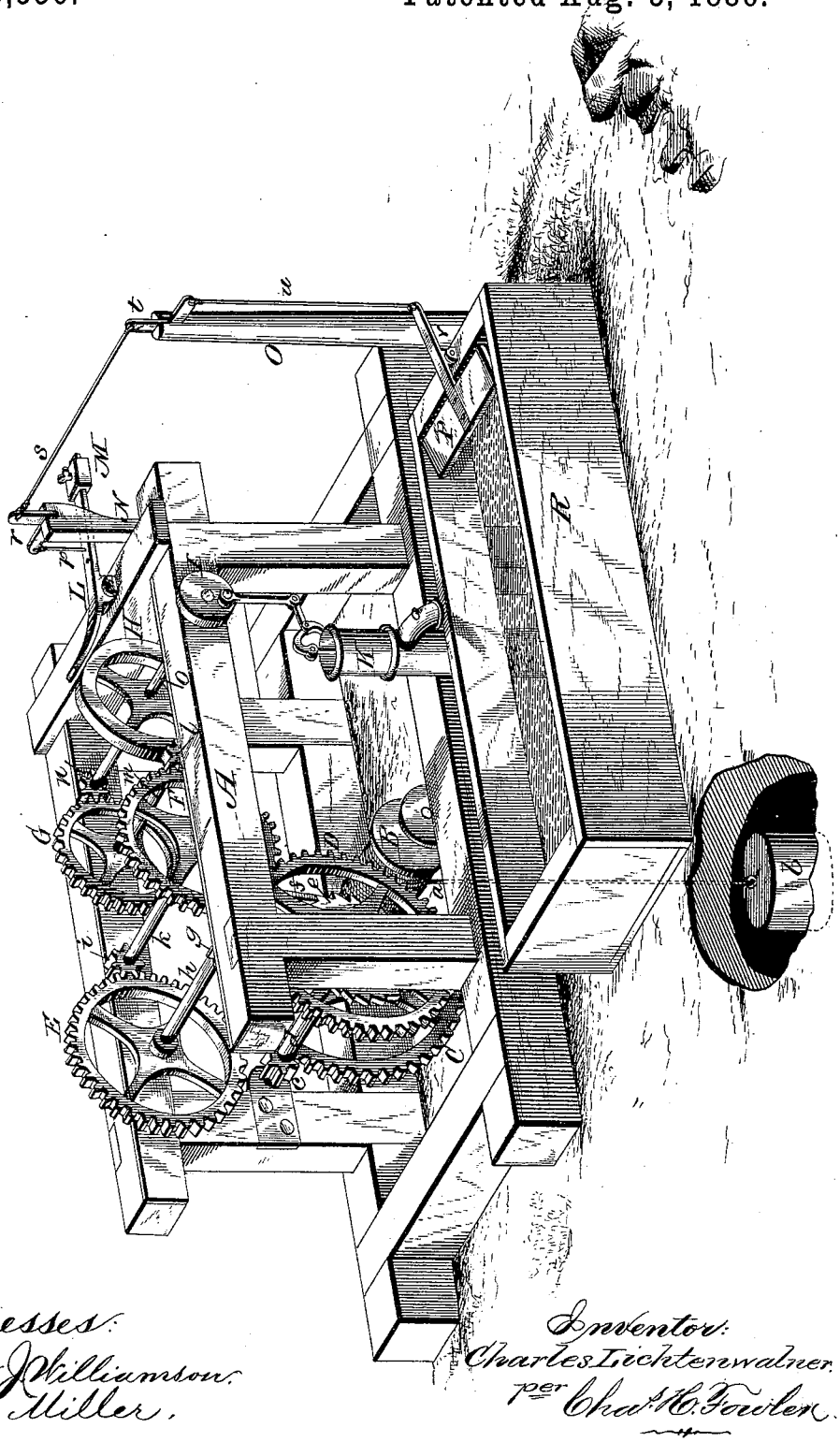
(No Model.)

C. LICHTENWALNER.

BRAKE FOR MOTORS.

No. 346,556. Patented Aug. 3, 1886.



Witnesses:
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UNITED STATES PATENT OFFICE.

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BRAKE FOR MOTORS.

SPECIFICATION forming part of Letters Patent No. 346,556, dated August 3, 1886.

Application filed March 10, 1886. Serial No. 194,747. (No model.)

To all whom it may concern:

Be it known that I, CHARLES LICHTENWALNER, a citizen of the United States, residing at Macungie, in the county of Lehigh and State of Pennsylvania, have invented certain new and useful Improvements in Brakes for Motors; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawing, making a part of this specification, and to the letters and figures of reference marked thereon.

The present invention has relation to that class of motors in which a train of gear-wheels are employed, operated by a weight attached to a chain or rope passing around a drum or windlass, and by suitable connections attached to the piston-rod of a pump for operating it.

The object of the invention is to improve the construction of this class of motors, to render it especially adapted to the pumping of water in a trough or tank, as will be hereinafter described and claimed.

In the accompanying drawing, A represents a suitable frame preferably placed over the well, and has connected to it a windlass or drum, B, over which is wound a rope, *a*, having at one end a weight, *b*, extending down in the well, as shown. The drum B may be of any suitable form and construction, and is provided at one end with a large gear-wheel, C, which meshes with the teeth of a pinion, *c*, on one end of a shaft, *d*. This shaft, upon its opposite end, is provided with a gear-wheel, D, ratchet *e*, and pawl *f*, and meshes with a pinion, *g*, on a shaft, *h*, arranged above it, the opposite end of the shaft having a gear-wheel, E, engaging a pinion, *i*, on a shaft, *k*. The opposite end of the last-mentioned shaft carries the gear-wheel F, which meshes with a pinion, *l*, on shaft *m*, the opposite end of the shaft having attached thereto the gear-wheel G, meshing with a pinion, *n*, on the main shaft *o*, which carries the fly-wheel H. This arrangement of gearing may be variously modified or changed at pleasure without departing from the spirit of my invention. Therefore I do not desire to be confined to the number and arrangement of gear-wheels shown and described.

To the end of the shaft *o* is attached a crank-wheel, I, which is connected to the piston-rod of the pump K by a pitman-rod, in the usual manner.

A brake, L, is pivoted to the frame A and extends over the periphery of the fly-wheel H, the outer end of the brake having connected to it an adjustable counter-weight, M. The brake L is connected by rod *p* to a bell-crank lever, *r*, pivoted to a post, N, said lever being connected, by means of rod *s*, to a similar lever, *t*, pivoted to a post, O, said lever, in turn, being connected to a float, P, by means of rod *u*. The float P is located within a watering trough or tank, R, and is provided with an arm, *v*, which is pivoted to the end of the tank.

In the operation of the motor, the rope *a* being wound up on the drum B, the gravity of the weight *b* will turn the drum, and by means of the gear-wheel C on the end thereof, and the pinion *c* on shaft *d*, the gearing constituting the motor is set in operation, the weight on the end of the rope gradually descending in the well as the rope is unwound, and by means of the crank-wheel I and pitman-connection with the piston of the pump, water is pumped into the trough or tank R. As the water fills the trough or tank, the float P rises, and in doing so pulls down on rod *u*, and by means of the bell-crank levers and their connections with the brake L the rear end of the brake is elevated and the opposite end brought down against the periphery of the fly-wheel H with sufficient pressure to stop the motor. As soon as any water is taken from the trough or tank, the float descends, thereby freeing the brake from contact with the fly-wheel and starting the motor, the adjustment of the weight on the end of the brake regulating the degree of pressure thereof on the fly-wheel.

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

In a motor, the combination, with the gearing thereof, the fly-wheel, and float, of a brake mechanism consisting of a pivoted brake adapted to bear on the periphery of the fly-wheel and provided at its outer end with an adjustable weight, and bell-crank levers pivoted to upright posts and connected together and to the brake and float by rods, substantially as and for the purpose set forth.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

Witnesses: CHARLES LICHTENWALNER.
GEORGE HANSMAN,
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