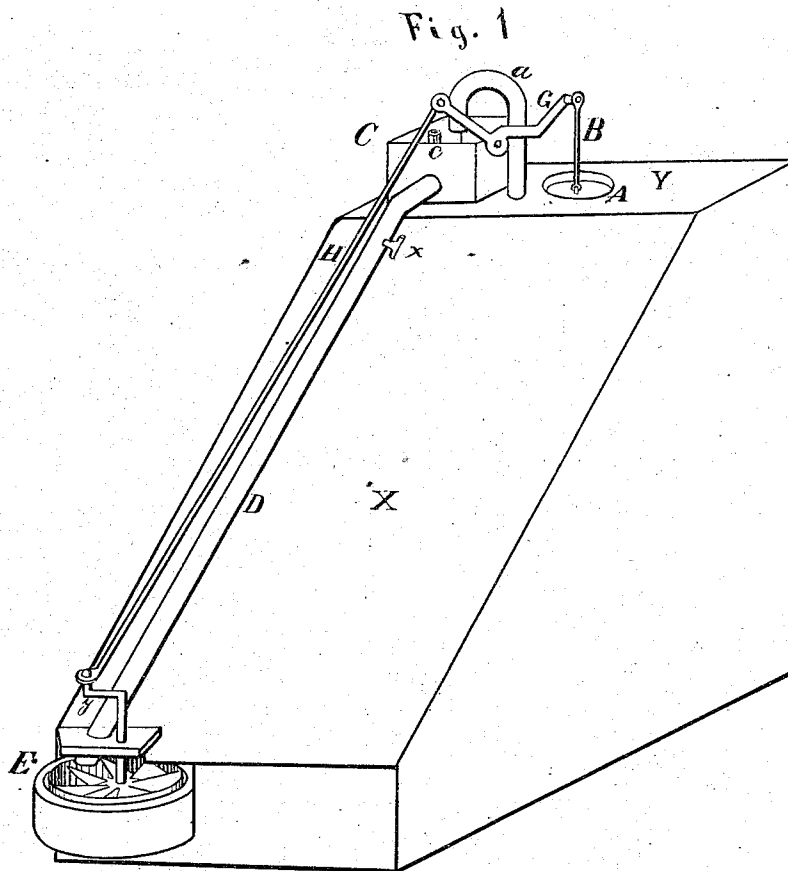


C. MONSON.
Water-Power.

No. 161,146.

Patented March 23, 1875.



WITNESSES

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UNITED STATES PATENT OFFICE.

CHARLES MONSON, OF NEW HAVEN, CONNECTICUT.

IMPROVEMENT IN WATER-POWERS.

Specification forming part of Letters Patent No. **161,146**, dated March 23, 1875; application filed May 19, 1874.

To all whom it may concern:

Be it known that I, CHARLES MONSON, of New Haven, in the county of New Haven and State of Connecticut, have invented certain new and useful Improvements in Water-Power; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use it, reference being had to the accompanying drawing, which forms a part of this specification.

The object of my invention is to raise water from wells, mining-shafts, and other places situated on elevated ground where the water in the same is at a higher level than the surface of the ground at a distance, in such a manner that a portion of the water may be withdrawn at the mouth of the well, and be utilized for irrigation, domestic, or other purposes, while the remainder of the water passes to a lower level than the level of the bottom of the well, and operates as a power to raise the water to the surface.

I desire especially to present this device as revealing a power greater than sufficient for the working of its own apparatus—a general water-power, deriving its water from underground springs beneath our hill-slopes. Upon many of those slopes, where no water at all can be found upon the surface, it is sufficiently abundant—say, at forty or fifty or sixty feet below—if we can but use it. I declare that we can use it, both to bring itself to the surface and as a general mechanical power, the amount of which will be proportioned to the perpendicular distance between the two levels—that of the water-supply and that of its discharge. The water under the earth, as well as upon the surface, is found at various levels—sometimes called the upper and the lower springs—and though the upper may be temporarily exhausted the lower are not easily even diminished. The volume of our descending column may be large or small, according to the water-supply. That supply is often very copious at, say, forty or fifty feet under the surface of some of our hill-sides; and the difference between the level of the water-supply to the level of its convenient discharge is not unfrequently so great that the descending

column will have a fall of more than double the height of the rising one—sometimes many fold greater. I desire it to be understood, therefore, that my device includes among its results not only an overflowing well, with all its many benefits, but also a general mechanical power.

In the drawing, X is intended to represent a section of a hill-side, and Y the summit of the hill. A is a well, the bottom of which is only one-half as far below the summit Y as is the level of the outlet of the pipe D. In the well A I insert a forcing-pump, B, having the side pipe *a*, or any other suitable apparatus, for raising water. At the mouth of the well A I provide a reservoir, C, to receive the water as it is raised. The reservoir C is furnished with a pipe, *c*, passing through its bottom, so that when the water in the reservoir rises to its top it will flow through it, and can be diverted for any purpose desired. Attached to the bottom of the reservoir C is the pipe D, which extends down the hill-side X until it reaches a level far enough below the bottom of the well that the difference between the level of the bottom of the well and the level of lower end of the pipe D shall form a head to drive the water-wheel E to operate the forcing-pump B, which supplies the reservoir C with water. The pipe D is provided with a stop-cock, *x*, for shutting off and letting on water to the wheel E. The wheel E is furnished with the crank Y, to which one end of the connecting-rod H is attached. The other end of the rod H is attached to one end of the piece G, or to a bent end of the pump-handle, and the piston-rod is attached to the other end of the piece G or to the straight end of the pump-handle. The reservoir C should have a capacity double that of the pipe D.

To put my invention in operation, I fill the reservoir C to the top of the pipe *c* with water and open the stop-cock *x*. The wheel will revolve as soon as the water reaches it and operate the pump to keep up the supply in the reservoir C. When the wheel is stopped by shutting off the water the reservoir C contains a supply of water for starting the wheel again when the stop-cock *x* is opened. As columns of water of equal height balance each other, and as in a given case the perpendicular height

of the reservoir C above the water in the well may be thirty feet and sixty feet above the outlet of the pipe D, it is obvious that this difference (thirty feet) in the height of the two columns of water is available as a head to drive a water-wheel to raise water to flow out through the pipe c.

I do not confine myself to any particular form of water-wheel, nor to any particular apparatus for raising water. The above well-known wheel and pump are most easily understood, but the wheel I prefer in practice is Barker's Mill, so called, and the kind in which the arms only revolve. This wheel is easily fitted onto the lower end of the pipe D. As a device for

raising water I prefer an endless chain running over pulleys, to which suitable cups or buckets are attached.

All the elements I employ in my combination are old, but the combination is novel and produces a new result.

I claim as my invention—

The combination of the reservoir C, provided with the pipe c, pipe D, wheel E, having the crank Y, connecting-rod H, and pump B, as and for the purposes set forth.

CHARLES MONSON.

Witnesses:

GEORGE TERRY,
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