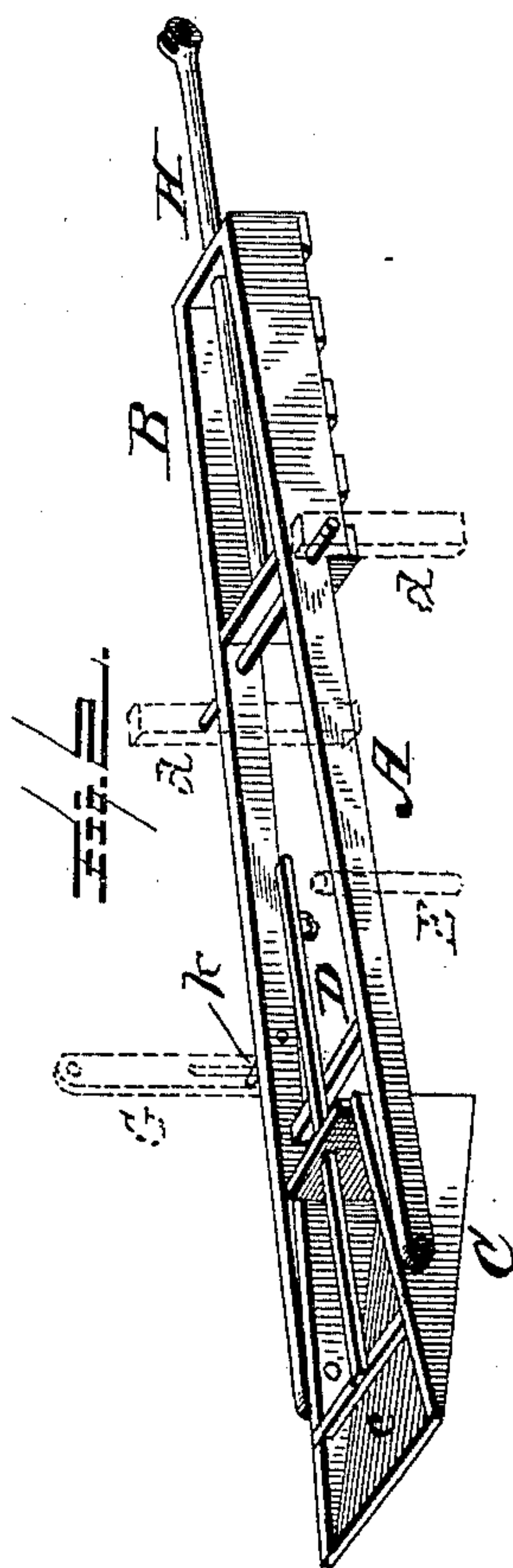
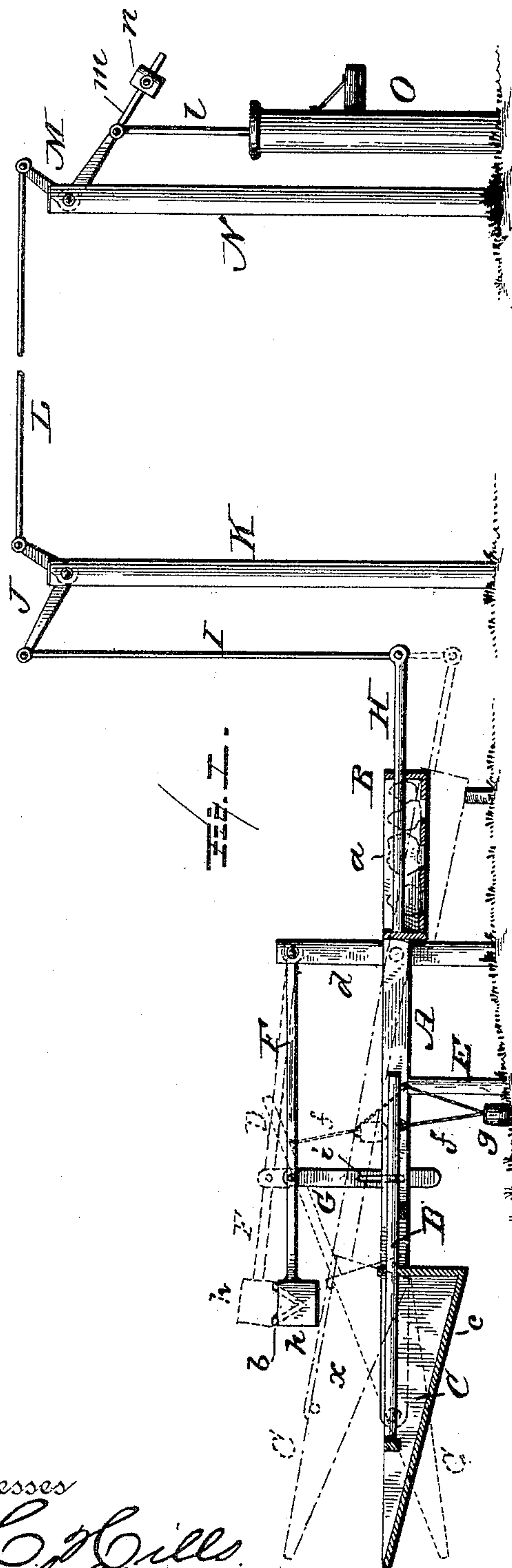


(No Model.)

W. H. DAVIS.
HYDRAULIC MOTOR.

No. 442,424.

Patented Dec. 9, 1890.



Witnesses

L. C. Hills.
Wm. C. Grant

Inventor

William H. Davis.

per Chas. H. Fowler
Attorney

Attorney

UNITED STATES PATENT OFFICE.

WILLIAM H. DAVIS, OF DAISY, MARYLAND, ASSIGNOR OF ONE-HALF TO
HARRY S. DAVIS, OF SAME PLACE.

HYDRAULIC MOTOR.

SPECIFICATION forming part of Letters Patent No. 442,424, dated December 9, 1890.

Application filed August 19, 1890. Serial No. 362,367. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM H. DAVIS, a citizen of the United States, residing at Daisy, in the county of Howard and State of Maryland, have invented certain new and useful Improvements in Hydraulic 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 drawings, making a part of this specification, and to the letters of reference marked thereon.

Figure 1 of the drawings is a side elevation of my invention, partly in section, and showing it in operative position in dotted lines; and Fig. 2, a perspective view in detail of the rectangular frame, pivoted trough, and weight-receptacle.

The present invention has relation to that class of hydraulic motors operated by a body of flowing water, the liquid emptying into a suitable trough upon one end of a lever which has at its opposite end a weight, the alternate filling and emptying of the trough and the weight at the opposite end of the lever keeping up a continued oscillating motion to the lever, and by suitable intermediate connections with it and a pump-piston the necessary power is obtained to work it.

To this class of motors my invention has particular reference; and the object thereof is to materially improve the construction of the motor, whereby it is rendered more effective as a medium for obtaining power and also greater certainty in its action obtained, which objects are attained by the construction substantially as shown in the drawings, and hereinafter described and claimed.

In the accompanying drawings, A represents a suitable frame of any desirable size and shape, but preferably rectangular, as shown, and provided at one end with a weight-receptacle B and at the other or opposite end with a pivoted trough C. The receptacle B receives the weights *a*, usually ordinary stone picked up around the field, and the trough C receives the water from a spout *b*, which in turn receives its supply from a suitable dam. The weight-receptacle B, as well as the trough C, may be of any desirable size and shape; but the trough is preferably made with an inclined bottom *c* when in a horizontal position,

so that its greatest depth will be at its inner end. The trough is suitably pivoted at one extremity of the frame A, and said frame is pivoted between posts *d*, extending up from the ground, as shown, Fig. 1.

To the trough C is connected a trip-lever D, which extends out beyond the rear end of said trough, and has secured near its end one end of a chain or rope *f*, the opposite end thereof being secured to the upper end of a trip-post E, secured in the ground. The chain or rope *f* has connected to it a suitable weight *g*, and to one of the posts *d* is pivoted one end of a lever F, which carries upon its free end a cut-off *h*, to govern or stop entirely the flow of water from the spout into the trough. To the lever F is pivoted a slotted hanger G, and in the slot *i* of said hanger works a pin *k*, which projects from the side of the frame A, as shown in Fig. 2, the purpose of which will be hereinafter described.

To the weight-receptacle B of the frame is secured a rod H, and to the end of the rod is pivoted a rod I, which in turn is pivoted at its upper end to a bell-crank lever J, said lever being pivoted to the upper end of a post K. To this bell-crank lever is connected a second rod L, which also is pivoted thereto and to a bell-crank lever M, said lever being pivoted to a post N and the lever to the end of the piston-rod *l* of a pump O. The bell-crank lever M has an arm *m* extending therefrom, upon which is an adjustable weight *n*, said weight assisting the lever in drawing back the rod L. It should be understood that there are a number of posts, which are supported in the ground at suitable distances apart, to support the rod between the two end posts, the number of posts used depending entirely upon the distance of the motor from the pump.

In operation the motor, when in position shown in dotted lines *x*, Fig. 1 of the drawings, the cut-off *h* is open and the water from the spout *b* is discharged into the trough C until there is sufficient therein to overcome the weighted receptacle B. At this point the trough C and that part of the frame A forward of its pivotal support will commence to descend. Now through the medium of the pivoted lever F and the slotted hanger G and pin *k*, as the trough and frame come to

a horizontal position, as shown in full lines, the cut-off will close the open end of the spout *b*, as shown in full lines. Through the medium of the rods and bell-crank levers hereinbefore described, which form a connection with the pump piston-rod, said rod is on its downward stroke. As the trip-lever *D* comes in contact with the trip-post *E* in its descent it will cause the trough *C* to be tipped sufficient to discharge the water therein, as shown in dotted lines. The chain or rope *f* and the weight *g* assume the position shown in dotted lines, and when the trough *C* is emptied of its contents the weight will bring it back to the position as shown in full lines. The weighted receptacle *B* will now overcome the weight of the trough *C*, which will again assume the position shown in dotted lines *x*, and the pin *k*, striking the upper extremity of the slot *i* in the hanger *G*, will force up the pivoted lever *F*, and with it the cut-off *h*, to allow the water from the spout to flow into the trough, when the operation of emptying it is again repeated and the pump-piston given the desired reciprocating motion.

I desire it understood that many modifications may be made in the details of construction, and such changes as would come within ordinary mechanical skill, without departing from the principle of my invention.

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

In a hydraulic motor, a pivoted frame carrying a weighted receptacle and a pivoted trough having a trip-lever, a trip-post connected therewith by chain or cord and a weight suspended therefrom, and a cut-off to control the supply of water from a spout to the trough and operating by the action of the pivoted frame, with which it is connected, 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.

WILLIAM H. DAVIS.

Witnesses:

CHAS. H. FOWLER,
ALEX. S. STEUART.