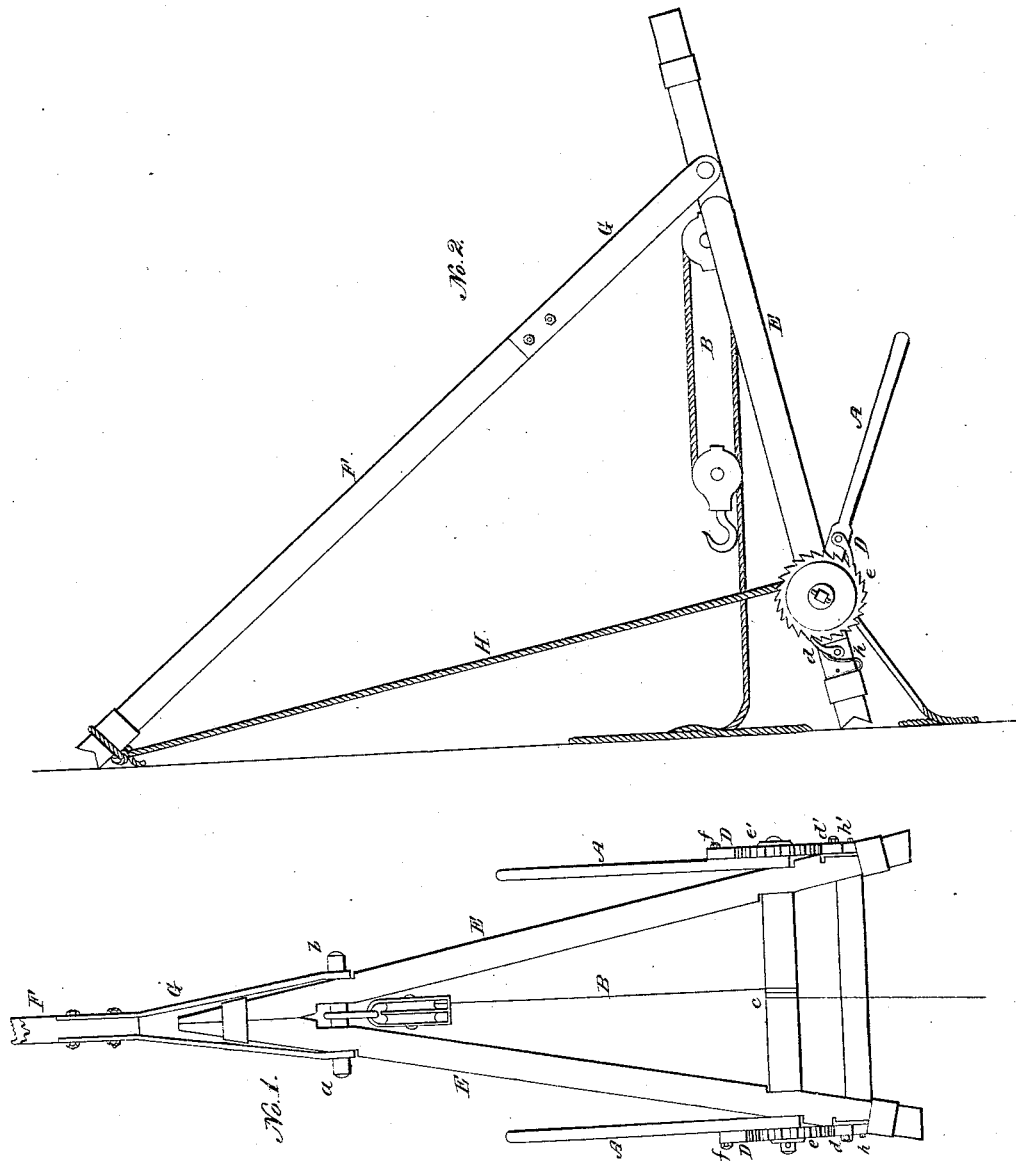


W. Thomas.

Raising and Lowering Lock Gates.

N^o 47,139.

Patented Apr. 4, 1865.



Witnesses:

*J. H. Brown.
J. H. Mackler.*

Inventor.

Wm Thomas.

UNITED STATES PATENT OFFICE.

WILLIAM THOMAS, OF OTTAWA, ILLINOIS.

IMPROVED DEVICE FOR RAISING CANAL-LOCK GATES.

Specification forming part of Letters Patent No. 47,139, dated April 4, 1865.

To all whom it may concern:

Be it known that I, WILLIAM THOMAS, of Ottawa, in the county of La Salle and State of Illinois, have invented a new and useful Machine for Raising or Hoisting Lock-Gates or other Heavy Bodies, called a Canal-Lock-Gate Derrick; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, in which—

Figure 1 represents the machine as it lies across the lock or canal in position to be used, and Fig. 2 is a side view of said machine in position to be used and operated.

The machine being constructed of light wooden beams put together in the form represented in each of the drawings accompanying this specification, two of the beams being placed together in the form of an inverted letter V, the other being fastened at the point *a b* by a bolt, which bolt can be removed whenever the machine is desired to be transported from one canal-lock to another, or from one place to another. The other end of the beam *F*, fastened by said bolt, rests on one side of the lock. The other ends of the two beams *E E'* rest on the opposite side of the lock or canal.

The machinery attached to the frame described as above is as follows: A combination of a common block and tackle, *B'*, the iron roller *C*, to each end of which roller is fastened the two iron ratchet-wheels *e* and *e'*, which are fastened stationary to the roller *C* and rotate with it. There is also fastened to said roller *C* at each end the two iron levers *A* and *A'*. To each of said levers is attached at the points *f* and *f'* the iron pawls *D* and *D'*, said pawls working in the ratchet-wheels. Also, to the frame below, attached in the same manner, are two other iron pawls, *d* and *d'*. The two last-mentioned pawls are for the purpose of preventing the ratchet-wheels and roller from recoiling, which two last-mentioned pawls are kept up in the cogs of said ratchet-wheels by means of the steel springs *h* and *h'*.

When it is desired to put the machine in position for use, as in Fig. 2 of the annexed drawings, a rope or line is fastened to the end of the beam *F*, the rope or line, represented by *H* of the annexed Drawing No. 2, carried

across and wrapped or wound around the roller. By then revolving the roller, the slack of the rope or line being kept up, the machine is raised in position to be used. (See Fig. 2.) The derrick being in this position, the line or rope *H* is taken off. The block and tackle is then suspended on the bolt *a b*, the hook on the lower block fastened to the lock-gate or other body desired to be raised. The rope or line ordinarily used or held in the hand in using the block and tackle is then wound around the roller *C*, as represented by the red-colored line in Fig. 1 of the annexed drawings. One man then works each of said levers, and one is required to keep up the slack of the rope or line wound around the said roller by holding the loose end of the rope taut, and when thus worked, as rapidly as the roller is turned by the men at the levers the lock-gate or body is raised by this machine.

Lock-gates weighing from ten to fifteen tons are raised out and repaired by three men, (only that number are required in using the machine,) when formerly as many as eight men were necessary to do the same work. By thus combining the lever-power and roller with the block and tackle three men—one man keeping the rope taut, the other two at the levers—can raise a weight of many more tons than the weight of the lock-gates, as before stated. The frame of the derrick can be constructed of light timbers from the fact that all the strain on the frame comes on the ends of the two beams put in form of inverted letter V, and it is so constructed that the roller, ratchet-wheels, and levers can be taken off in separate pieces by the ends of the roller being framed square and the hole through the ratchet-wheels being mortised square. By being so constructed it can be with little trouble transported from place to place.

What I claim, and desire to secure by Letters Patent, is—

The combination of the block and tackle, the roller, levers, ratchet-wheels, the pawls, the springs, and frame of the machine being operated and used as hereinbefore set forth, for the uses and purposes aforesaid.

WM. THOMAS.

In presence of—

F. F. BROWER,
S. C. WALKER.