Hurlburt & Thompson.

Operating Canal Lock Gates.

No. 30,323. Patented Oct. 9, 1860.

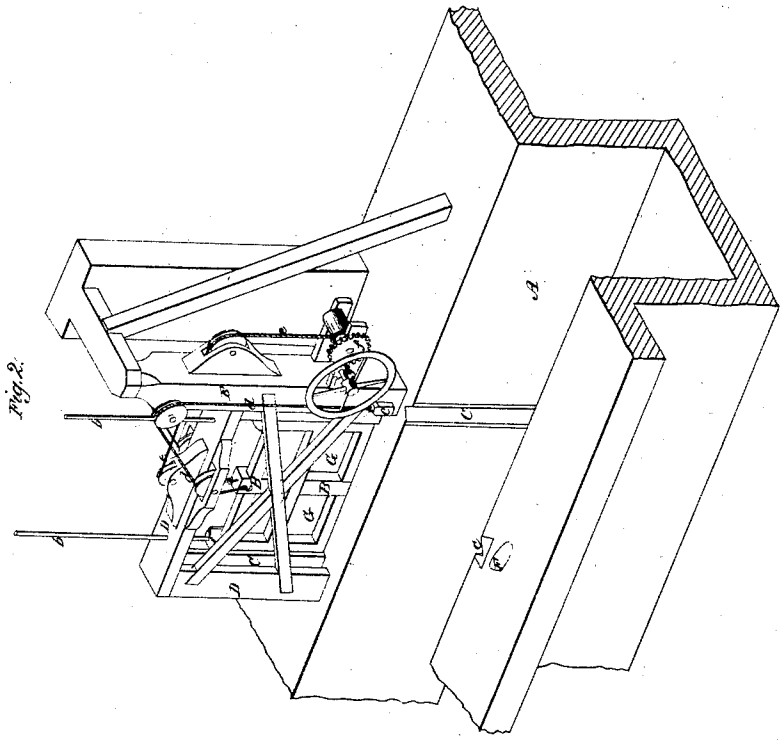


Fig. 2.

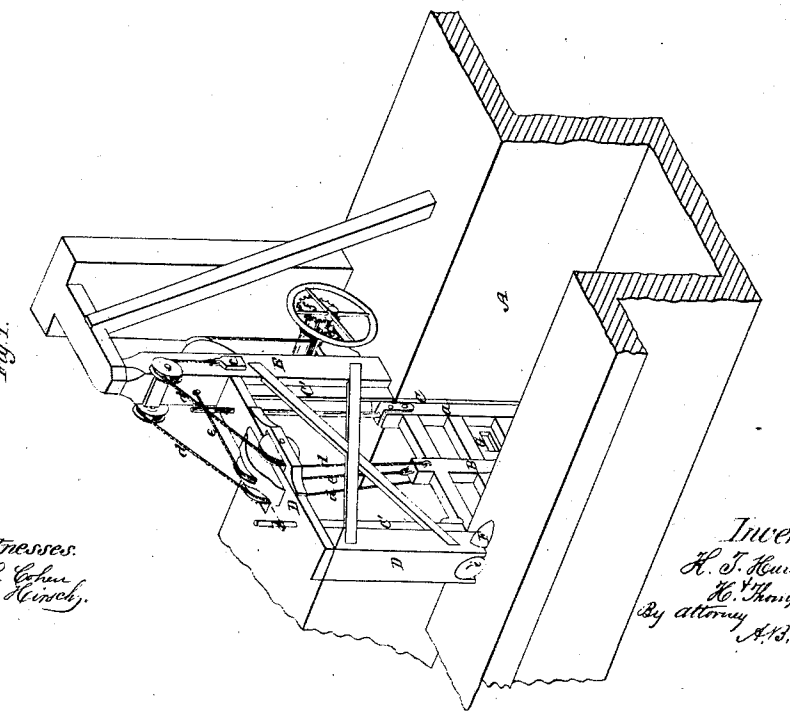


Fig. 1.

Witnesses.
E. Cohen
J. Hirsch.

Inventors.
H. J. Hurlburt
H. Thompson
By attorney
A. B. Stoughton

THE GRAPHIC CO. PHOTO-LITH. 39 & 41 PARK PLACE, N.Y.

UNITED STATES PATENT OFFICE.

K. T. HURLBURT AND H. THOMPSON, OF PORT BYRON, NEW YORK.

OPERATING GATES OF CANAL LOCKS, &c.

Specification of Letters Patent No. 30,323, dated October 9, 1860.

To all whom it may concern:

Be it known that we, KELLOGG T. HURLBURT and HOWARD THOMPSON, of Port Byron, in the county of Cayuga and State of New York, have invented a new and useful improvement in the manner of operating lock and other similar heavy gates in water-navigation; and we do hereby declare the following to be a full, clear, and exact description of the construction and operation of the same, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 represents in perspective a portion of a canal lock, with one of the gates in place in the chamber, and the mechanism for raising and swinging said gate, when the lock is to be used for passing a boat. Fig. 2 represents in perspective the same parts as they appear when the lock gate is raised up, and swung out of the way.

Similar letters of reference where they occur in the separate figures denote like parts of the apparatus in both the drawings.

Lock gates have been variously hung in the lock chamber, so as to be swung backward or downward on quoin-posts either vertical or horizontal. They have also been made in horizontal sections so as to drop vertically one section behind the other. Others have been run back into a recess in the lock walls. But we are not aware that, a lock gate has ever, before our invention, been raised up and swung entirely out of the chamber and in such manner as to readily replace it again when necessary to do so.

Our invention therefore consists in so hanging lock gates, as that they may be raised up vertically out of the lock chamber, and then swung around out of the line of the chamber of the lock to allow vessels to pass.

To enable others skilled in the art to make and use our invention we will proceed to describe the same with reference to the drawings.

A, may represent the lock chamber, and B, a gate therein, which may be straight, and extends entirely across the lock chamber, and supported in guides, or guide posts C, made in, or attached to the lock walls. The heel-posts *a*, *a* of the gate are made to snugly fit, and slide in these guides, or guiding ways C.

Immediately over the gate B, and supported upon the top of the lock wall or otherwise, is a frame D, which has a continuation of the guides or guide posts C′ made in it, into which the gate may be raised by any known arrangement of hoisting and lowering machinery. This frame D, is hung to a turning post E, that has a spindle at its lower end working in a step in, or on, the lock wall, while its upper end is properly braced or supported and also furnished with a spindle and step or any other ordinary means for allowing the post to freely turn on its supports or spindles. When the lock-gate is raised up into this frame D the frame is swung around on its heel post E, entirely out of the way of any passing boats or vessels as seen in Fig. 2.

When the gate is to be replaced across the lock chamber the frame is swung around into proper position—a stop or guide F, on the lock wall catching and holding it, so that the ways or guides C, C′, shall stand in line with each other, and the lock gate may then be let down into the chamber.

The lock-gate may have the usual appliances of wickets G and means of operating them. We have also shown guide rods *b* running from the lock-gate, up through the cross arm of the frame D, so as to keep the gate and frame in line with each other. Also counterpoise weights *c* connected to chains *d*, to aid in raising, and to retard the lowering of the gate. The chain *e*, and the gearing *f g*, are for raising and lowering the gate.

i, is a friction wheel designed for holding the frame up from the lock wall, and allowing it to swing freely.

It is unnecessary to describe in detail the devices by which a lock gate may be thus operated, but we have shown one way of doing it, and other well known ways will be obvious to mechanicians.

When double locks are used, as is the case on some canals—the frame D, may be so placed between them as that one frame will serve for two locks.

A lock gate operated in this manner has many advantages—a prominent one being that when it is to be repaired or renewed, or the wickets in it repaired or renewed, the gate can be raised up and out of the lock. No other lock gate of which we have knowledge affords such facilities for repairs, or renewal, which are common to locks.

We have described and represented our contrivance as used for locks only. It is equally applicable to dry docks, or basins, or elsewhere where boats or vessels are to be raised or lowered from one water level to another water level, and carried into a chamber or inclosure for that purpose, or for repairs. And instead of one swinging frame to serve for double locks—the tower on which the frame swings, may be so placed as to hang two frames on—one for each lock.

Having thus fully described our invention, what we claim therein as new, and desire to secure by Letters Patent is—

In combination with a vertically rising and falling lock-gate, a moving frame for receiving and carrying said gate around out of the way of passing boats or craft, substantially as described.

KELLOGG T. HURLBURT.
HOWARD THOMPSON.

Witnesses:
JOHN MITCHELL,
JULES S. ASHBY.