J. E. RENK.

Canal-Lock Gate.

No. 165,178. Patented July 6, 1875.

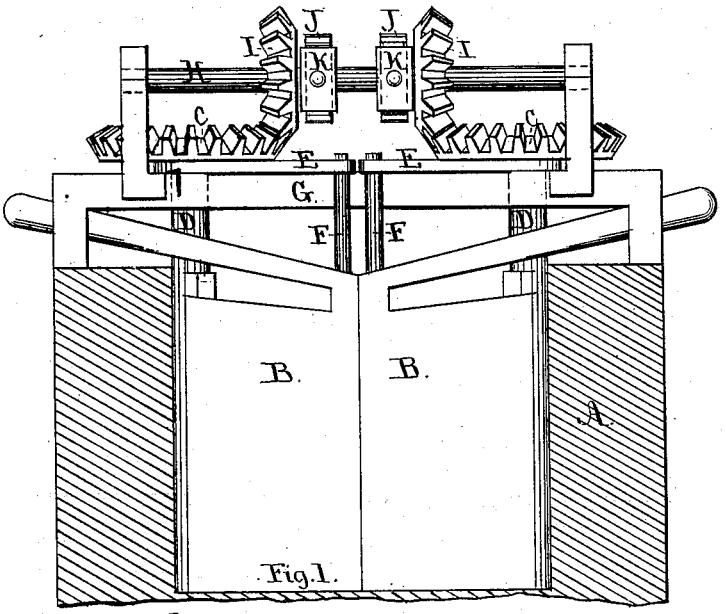

Fig. 1.

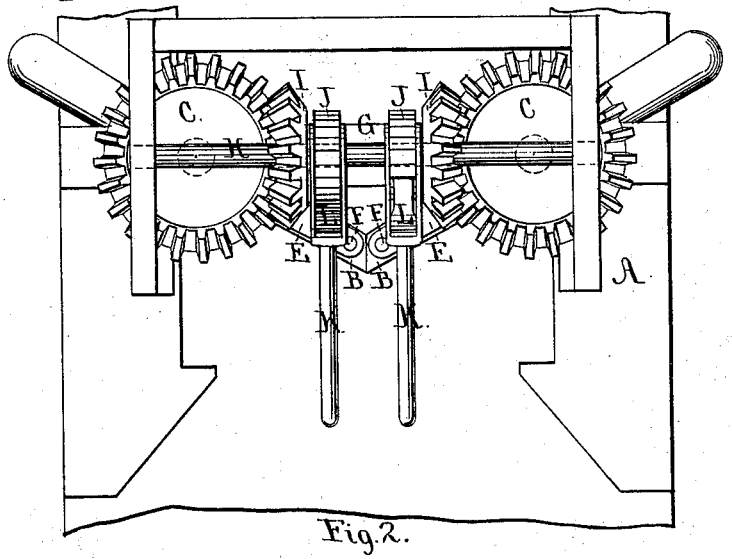

Fig. 2.

Witnesses

William H. Low

Sanford R. Haskell

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Joseph E. Renk

UNITED STATES PATENT OFFICE.

JOSEPH E. RENK, OF ALBANY, NEW YORK.

IMPROVEMENT IN CANAL-LOCK GATES.

Specification forming part of Letters Patent No. **165,178**, dated July 6, 1875; application filed April 14, 1875.

To all whom it may concern:

Be it known that I, JOSEPH E. RENK, of the city and county of Albany, and State of New York, have invented a new and useful Improvement on Canal-Lock Gates, of which the following is a specification:

My invention consists in operating the gates by means of the mechanism herein shown and described, whereby I effect the simultaneous movement of the two parts of the gate during the operation of opening and closing.

In the accompanying drawing, which forms a part of this specification, Figure 1 is a front elevation of one pair of the gates, and Fig. 2 a plan view of the same.

As shown in the drawing, A represents the stone-work of the lock for receiving the gates, built in the usual form. B B are the gates, constructed in the ordinary manner. C C are bevel-gear wheels secured to the heads of the posts D D, which form the pivots upon which the gates turn. E E are arms attached to the wheels C C, and extending to near the joint formed by the two parts of the gate, where they receive the studs F F, secured to the gates, for the purpose of relieving the posts D D of a portion of the strain that would otherwise be thrown upon them by the wheels C C in opening or closing the gates. G is a frame-work erected above the gates, for the purpose of supporting the posts D D, and forming the bearings for the horizontal shaft H. I I are bevel-pinions secured to the shaft H, and gearing into the wheels C C. J J are ratchet-wheels, also secured to the shaft H, and arranged in such manner that the angles of the teeth of one wheel will stand in a reversed direction in relation to the teeth of the other wheel. K K are forked levers, provided with the pawls L L, for engaging in the teeth of the ratchet-wheels J J.

The opening of the gates is effected by throwing the pawl of the proper lever for opening them into contact with its ratchet-wheel, and by applying sufficient power thereto, the force of which is transmitted through the pinions I I and wheels C C to the two parts of the gates B B, causing them to open simultaneously. The closing is effected by disengaging the pawl of the lever used for opening from its ratchet-wheel, and throwing the other pawl into contact with its ratchet-wheel, and imparting motion to the shaft H in a reversed direction.

By operating the gates in the manner herein described the opening and closing of them can be effected in one-half of the time required for operating them separately in the manner generally adopted.

Instead of attaching the two ratchet-wheels J J to the shaft H, and operating them by two separate levers, as herein shown and described, a single toothed wheel, operated by means of a lever carrying a double pawl, may be substituted therefor, and arranged to turn the shaft in either direction, the construction of such a lever and double pawl being so well known and understood by all mechanicians as to render a description thereof unnecessary. Preferably I construct these parts as herein shown and described.

I claim as my invention—

The gates B, in combination with the wheels C, pinions I, shaft H, ratchet-wheels J, levers K, and pawls L, when arranged to operate in the manner and for the purpose herein specified.

JOSEPH E. RENK.

Witnesses:

WILLIAM H. LOW,

SANFORD R. HASKELL.