M. McGRATH.

DRAW-BRIDGES.

No. 193,825. Patented Aug. 7, 1877.

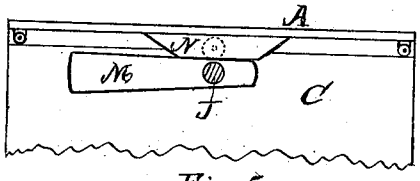

Fig. 5

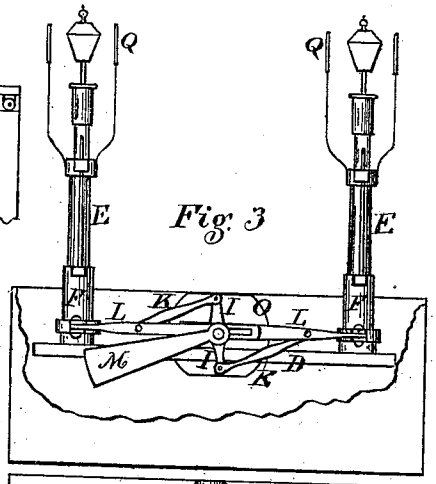

Fig. 3



Fig. 4.

Fig. 2.

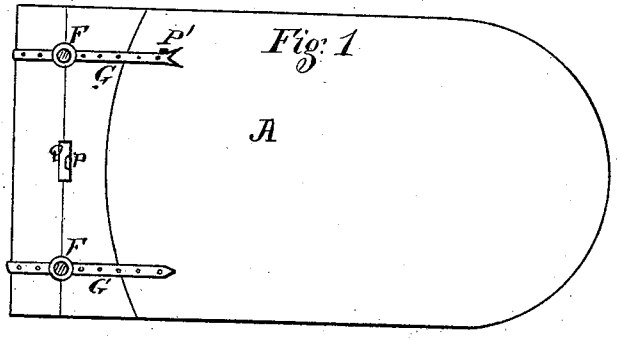

Fig. 1

Witnesses

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UNITED STATES PATENT OFFICE.

MICHAEL McGRATH, OF CLEVELAND, OHIO, ASSIGNOR OF ONE-HALF OF HIS RIGHT TO JOHN MAHON, JR.

IMPROVEMENT IN DRAW-BRIDGES.

Specification forming part of Letters Patent No. **193,825**, dated August 7, 1877; application filed November 10, 1876.

To all whom it may concern:

Be it known that I, MICHAEL McGRATH, of Cleveland, in the county of Cuyahoga and State of Ohio, have invented a new Bridge-Gate, of which the following is a specification:

This invention relates to gates for closing the roadway approach to swing-bridges; and consists of an apparatus located in the top or at any suitable distance in rear of the abutment or pier, to be operated automatically by the turning of the bridge for opening and closing the gates, all substantially as hereinafter fully described and claimed.

In the accompanying drawing, Figure 1 is a top or plan view. Fig. 2 is a side elevation. Fig. 3 is an end elevation with end of pier broken out, showing the working parts. Fig. 4 is a top view of the same. Fig. 5 shows the projection under the end of the bridge which operates the apparatus by tilting a weighted lever.

A represents the bridge, which turns on the center pier B. C is the end abutment or pier at the approach to the bridge. In the top of said pier, or at a suitable distance back of it, so as not to remove or disturb any of the masonry of the abutment, is made an open space for the operating parts which operate the gates, which consist of a bed-plate, D, firmly secured to the foundation. At each end of said bed-plate arise two round posts, E E, upon which the gates swing or turn. Upon these two posts, at their base, are placed sleeves F F, which reach above the surface of the road, and which support the gates G G.

The said sleeves are made to turn on the posts by means of cranks I I on a rock-shaft, J, having its bearings in the center of said bed-plate D.

Pitmen K K connect the cranks I I with slides L L, one end of each of which is connected with the said sleeves by a hinge-joint. The other ends of the slides have slots in them, which play upon the shaft J, thus serving as guides in the movements of the pitmen.

Attached to each end of the rock-shaft J are weighted levers M M. One swings in a recess in the abutment or underneath the road. The other swings on the outside of the abutment, the shaft reaching through for that purpose, and has its upper end projecting upward, so as to come in contact with a projection, N, on the under side of the bridge.

Upon the shaft J is placed a wheel or disk, O, which turns with a shaft in a slot in the floor over the same, and is designed for a latch to hold the gates when closed. The side of the disk that is uppermost when the gates are closed is cut off in a straight line, even with the top of the floor, having a projection, P, however, still above, for a stop, against which a projection, P′, on one of the gates would strike, and which prevents the gates being opened by hand, or otherwise than by the apparatus beneath the floor, so that the gates are effectually locked when the bridge is open.

When the gates are open that portion of the disk then uppermost is made flat, and fills the slot in the floor, so that no dirt can fall through.

The gates are as effectually locked when open as when closed.

The manner of operating these gates is as follows: When the bridge is closed the levers M are turned up, and held up by the projection on the under side of the bridge, and thus the gates are opened. When the bridge is turned, as soon as the projection passes the lever M, it drops perpendicularly, and thus the gates are closed, and remain so while the bridge is open.

Having described my invention, I claim—

The combination of the sleeves F F, slides L L, pitmen K K, cranks I I, shaft J, disk O, and levers M M with the posts E E, gates G G, and the bridge A, when constructed and arranged to operate substantially as and for the purpose set forth.

MICHL. McGRATH.

Witnesses:

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