(No Model.)

W. E. ASTON.

DRAW BRIDGE AND AUTOMATIC GATE THEREFOR.

No. 567,875. Patented Sept. 15, 1896.

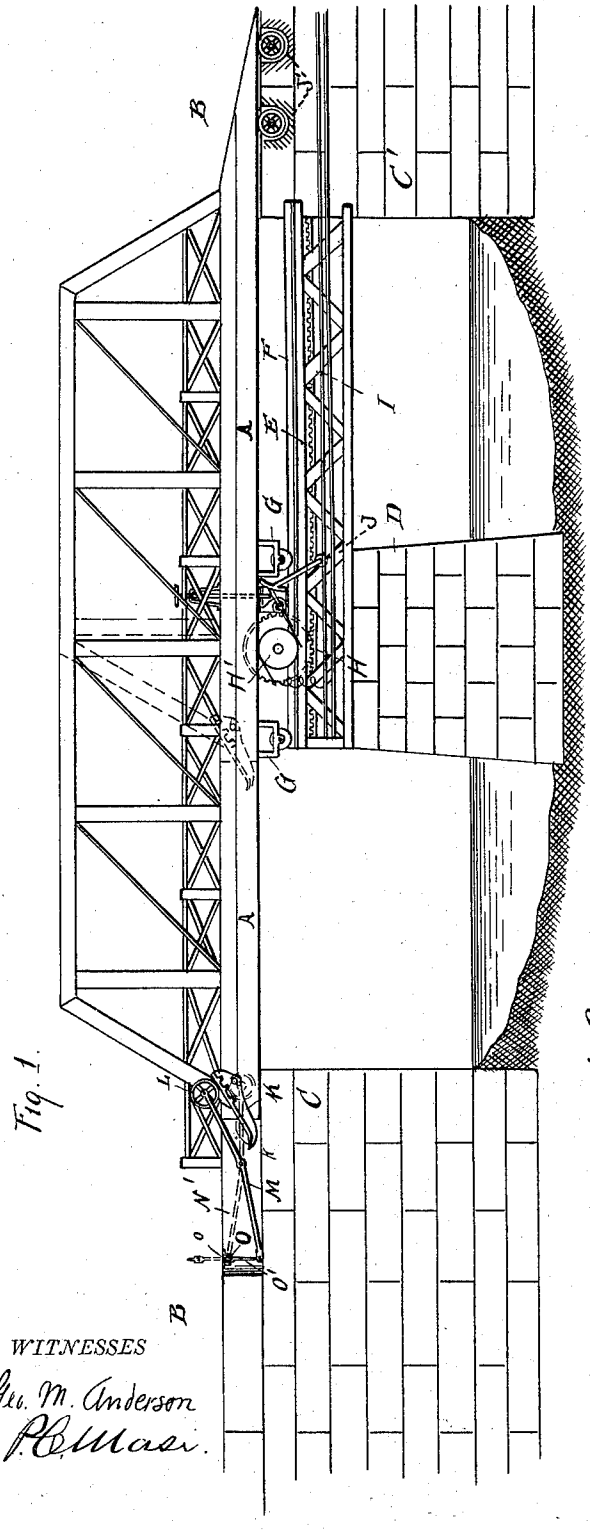

Fig. 1.

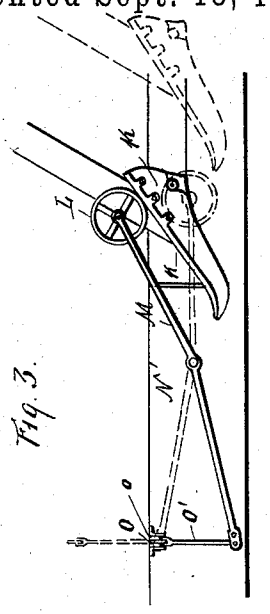

Fig. 3.

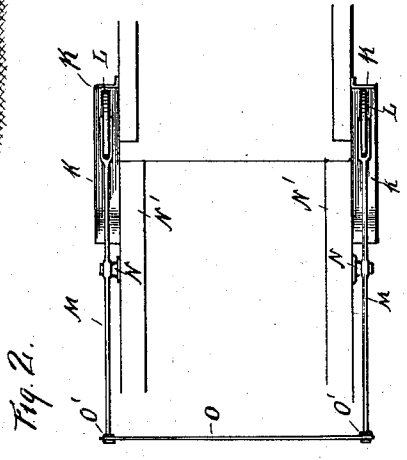

Fig. 2.

WITNESSES

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UNITED STATES PATENT OFFICE.

WILLIAM E. ASTON, OF BROOKLYN, NEW YORK.

DRAWBRIDGE AND AUTOMATIC GATE THEREFOR.

SPECIFICATION forming part of Letters Patent No. 567,875, dated September 15, 1896.

Application filed January 30, 1896. Serial No. 577,452. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM E. ASTON, a citizen of the United States, and a resident of Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Drawbridges and Automatic Gates Therefor; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

Figure 1 of the drawings is a side view of invention as in application, motor shown diagrammatically and parts in section. Fig. 2 is a plan view of that end of bridge having guard, parts being removed to show levers, &c., in full lines. Fig. 3 is a detail side view to show operation of gate.

This invention has relation to certain new and useful improvements in drawbridges and automatic gates for guarding the approaches to the same when the draw is open.

The object of this invention is to provide a drawbridge of improved character wherein the draw moves back and forth in the line of the bridge, and which is capable of being speedily operated; also to provide a gate whose operating mechanism is of simple character and not likely to get out of order and thereby fail to operate.

Referring to the accompanying drawings, the letter A designates the draw or movable portion of the bridge; B, the approaches thereto; C C′, the abutments for the draw; D, the central pier, which, together with the abutment C′, supports a platform E, upon which the bridge moves. F designates a track on said platform, and G the trucks of the bridge, which travel on said track. The track is preferably somewhat inclined, as indicated, in order that, as the draw opens, the end thereof will rise and clear the roadway.

H indicates rack-gear for moving the bridge; H′, an electric motor for operating such gear; I, a trolley-wire which supplies current to the motor, and J a trolley which takes the current from the wire to the motor.

J′ designates sunken rollers upon which the bridge bears as it is run onto and off from the approach.

On that end of the draw which rests upon the abutment C, at each side, I secure rigidly a shoe K, having an upper downwardly and rearwardly inclined surface *k*, upon which is designed to travel a wheel L. These wheels L, there being one at each side, are carried on the upwardly-bent arms of levers M, which are journaled intermediately of their ends to stud-brackets N, which are secured to the timbers N′ or to other suitable supports at the sides of the approach. The forward arms of these levers are usually forked, and the wheels L are journaled in the forks.

The rear and normally depressed arms of the lever M support the transversely-extending gate O, which is normally below the level of the road-bed of the approach, and is designed to move up and down through the slot *o*. Said gate in the present instance, or that portion thereof which guards the road-bed, is shown as consisting of a transverse bar supported by the vertical arms or posts O′, which are connected to the levers M. It may, however, be of any suitable character, such as latticed work.

The operation is as follows: As the draw opens, the gravity of the levers M and wheels L is such that the latter run downwardly on the upper surfaces of the shoes K as the latter move out from under the wheels. This raises the opposite arms of the levers and thereby elevates the gate above the road-bed. When the draw closes, the lower rear ends of the shoes, which are slightly upturned, as indicated, catch underneath the wheels L, raising them, together with the levers, to their original positions, thereby depressing the gate. The approach of the opposite side of the bridge needs no guard, since the draw itself moves back over the said approach.

The bridge above described is especially adapted for narrow streams, but may be used over streams or rivers which are of considerable width.

An important feature of the bridge consists in the great rapidity with which it is capable of being operated by means of the motor.

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

1. The combination with a drawbridge having a back-and-forth movement in the line of the bridge, and means for operating the same, of the shoes connected to the rear end portion of the draw, one at each side, and having downwardly and rearwardly inclined upper surfaces, the pivoted levers, one at each side of the approach, the wheels journaled in the forward arms of said levers and arranged to travel on the said shoes, and the gate supported by the rear arms of the said levers, substantially as specified.

2. The combination with the abutments at each side of the stream, the central pier and the tracks extending from said pier to one of said abutments, of the draw having depending trucks which run upon said tracks, and the inclined approach B at one end, the stationary rack, the gear carried by the draw and engaging said rack, the electric motor for operating said gear, the sunken rolls underneath the said approach, the vertically-movable gate which guards the opposite approach when the draw is open, and mechanism whereby said gate is automatically raised to "guard" position by the opening of the draw, and is returned to normal position by the closing of the draw, substantially as specified.

In testimony whereof I affix my signature in presence of two witnesses.

WILLIAM E. ASTON.

Witnesses:
PHILEMON TILLION,
EDWIN B. BARKER.