(No Model.) 2 Sheets—Sheet 1.

L. SVANSON.

GUARD GATE FOR SWING BRIDGES.

No. 264,969. Patented Sept. 26, 1882.

Fig. 1

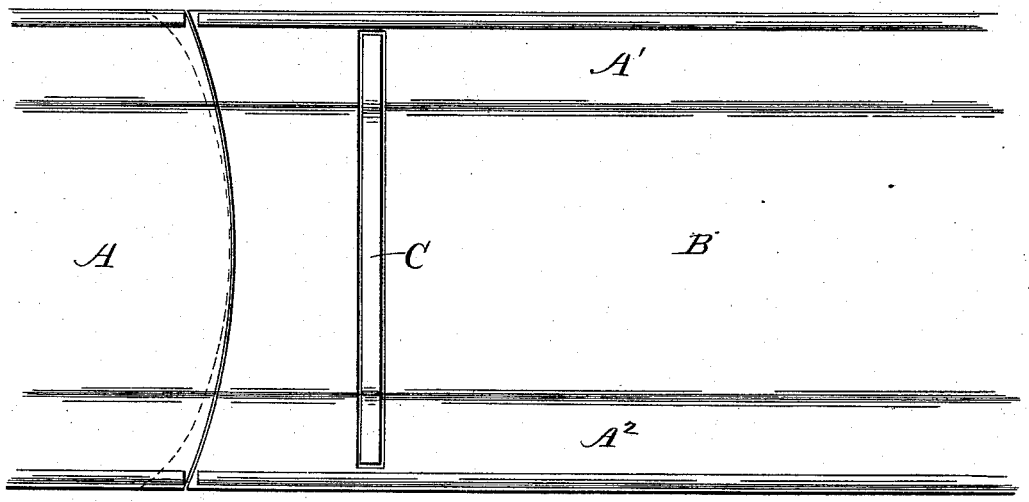
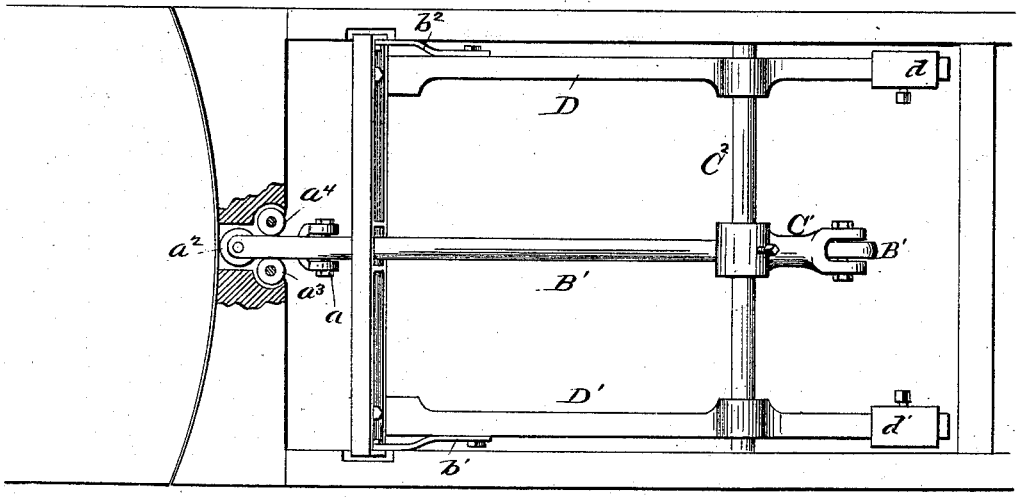


Fig. 2.



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(No Model.) 2 Sheets—Sheet 2.

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GUARD GATE FOR SWING BRIDGES.

No. 264,969. Patented Sept. 26, 1882.

Fig. 3.

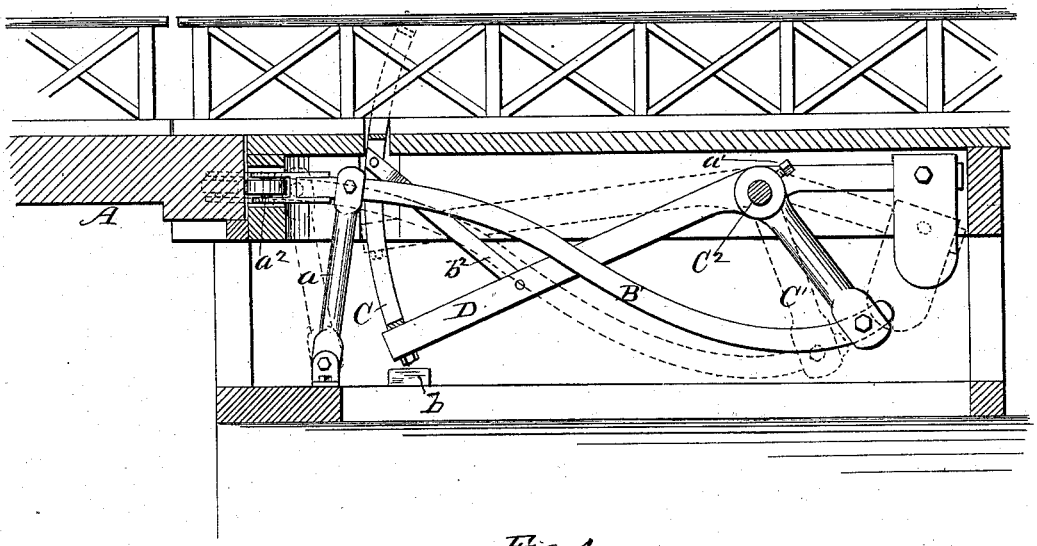
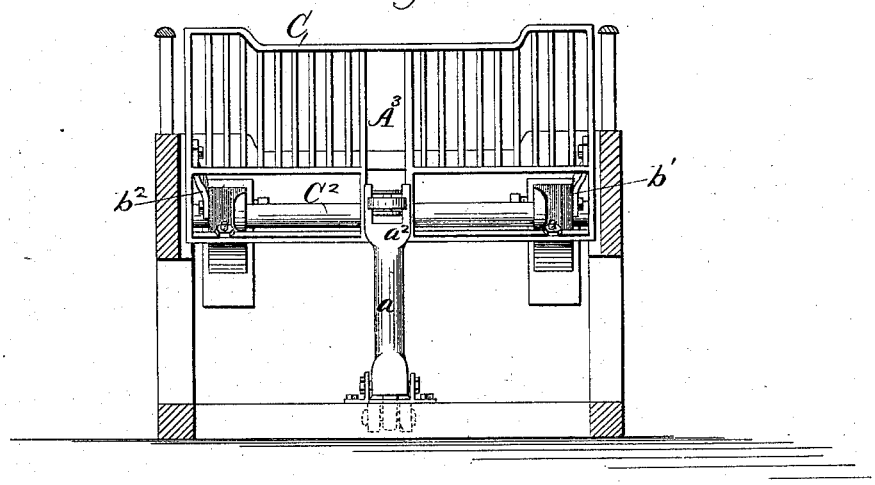


Fig. 4.



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UNITED STATES PATENT OFFICE.

LUDVIG SVANSON, OF CHICAGO, ILLINOIS.

GUARD-GATE FOR SWING-BRIDGES.

SPECIFICATION forming part of Letters Patent No. 264,969, dated September 26, 1882.

Application filed April 18, 1882. (No model.)

To all whom it may concern:

Be it known that I, LUDVIG SVANSON, of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Guard-Gates for Swing-Bridges; and I do hereby declare the following to be a full, clear, and exact description of the invention, that will enable others skilled in the art to which it appertains to construct and operate the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, forming a part of this specification.

This invention relates to that class of gates which are placed upon bridge-approaches to prevent accidents when the draw is open, the gate being automatically operated by the movement of the bridge, all as will be hereinafter more fully set forth in detail, and pointed out in the claims.

Figure 1 is a top view, showing the relative position of the bridge, bridge-approach, and guard-gate. Fig. 2 is a top view of the gate and operating mechanism with the paved roadway removed. Fig. 3 is a vertical longitudinal section; and Fig. 4 is an end view, looking from the bridge.

Referring to the drawings, A represents the bridge; B, the bridge-approach and driveway; A′ A^2, the footway on each side, and C the guard or safety-gate.

The gate and operating mechanism are located in a compartment underneath the bridge-approach, as shown in Fig. 3 of the drawings, the gate having a vertical movement in the arc of a circle. Fig. 3 illustrates the position of the gate and mechanism when the bridge is closed, and the dotted lines the position when the draw is open.

The gate is provided with the central opening, A^3, (shown in Fig. 4 of the drawings,) for the reception of the front end of the main curved operating-lever B′.

At a point between the gate and the bridge is placed the post *a*, having bifurcated ends and suitable bearing-pins. The upper end of this post is connected with and supports the front end of the lever B′, and is adapted to have an oscillating movement, in order to conform to the changed position of the gate. The rear end of the lever B′ is curved downward and connected with the lower bifurcated end of the rocker-arm C′, the upper end of which is adjustably secured on the rock-shaft C^2 by means of the set-screw *a′*. The ends of this rock-shaft are provided with suitable bearings in the inclosing walls. The front projecting end of the operating-lever B′ is bifurcated for the reception of the pulley a^2, which has frictional contact with the end of the bridge and rotates in a horizontal plane. The guide-rollers a^3 a^4, placed on each side of and at the front end of the lever B′, serve to lessen the friction and impart a free movement to the mechanism. The end of the bridge is curved or rounded, and is grooved for the reception of the friction-pulley a^2, as indicated by the dotted lines in Fig. 1 of the drawings. By this arrangement the movement of the gate is regular and gradual and simultaneous with that of the bridge, the gate reaching the highest point at the moment the rounded corner of the bridge loses contact with the friction-roller a^2, and reaching the lowest or opposite point when the bridge is completely closed. The rubber or elastic cushion *b* serves to ease and support the gate when the same is returned to its normal position. The front ends of the balance-levers D D′ are attached to the lower part of the gate, and have a fulcrum-bearing on the rock-shaft C^2, as shown in Fig. 2 of the drawings. The rear extensions of these balance-levers are provided with the counterbalance-weights *d d*, which may be adjusted to keep the gate and operating mechanism properly balanced. The braces *b′* b^2 connect the gate and balance-levers, and serve to strengthen and steady these parts.

By this form of construction and arrangement the mechanism operating the gate is more positive and direct than in those cases where ropes or chains are used to connect the gate with the operating mechanism. The use of independent side gates for closing the footway is entirely dispensed with, the one gate in this case closing the entire approach to the draw. No posts are in the way to obstruct the approach or mar the appearance of the surroundings, the operating mechanism being all out of sight and out of the way.

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

1. In a guard-gate, the combination, with

the bridge A and the gate C, of the operating-lever B′, the friction-roller a^2, the guide-rollers a^3 a^4, and the oscillating post a, substantially as described.

2. In a guard-gate, the combination, with the bridge A and the gate C, of the operating-lever B′, the rocker-arm C′, and the rock-shaft C^2, substantially as described.

3. In a guard-gate, the combination, with the gate C, of the balance-levers D D′, the balance-weights d d^2, and the rock-shaft C^2, substantially as described.

LUDVIG SVANSON.

Witnesses:
L. M. FREEMAN,
L. B. COUPLAND.