(No Model.)

G. A. JOHNSON.

GATE FOR DRAW BRIDGES.

No. 365,132. Patented June 21, 1887.

Fig. 1.

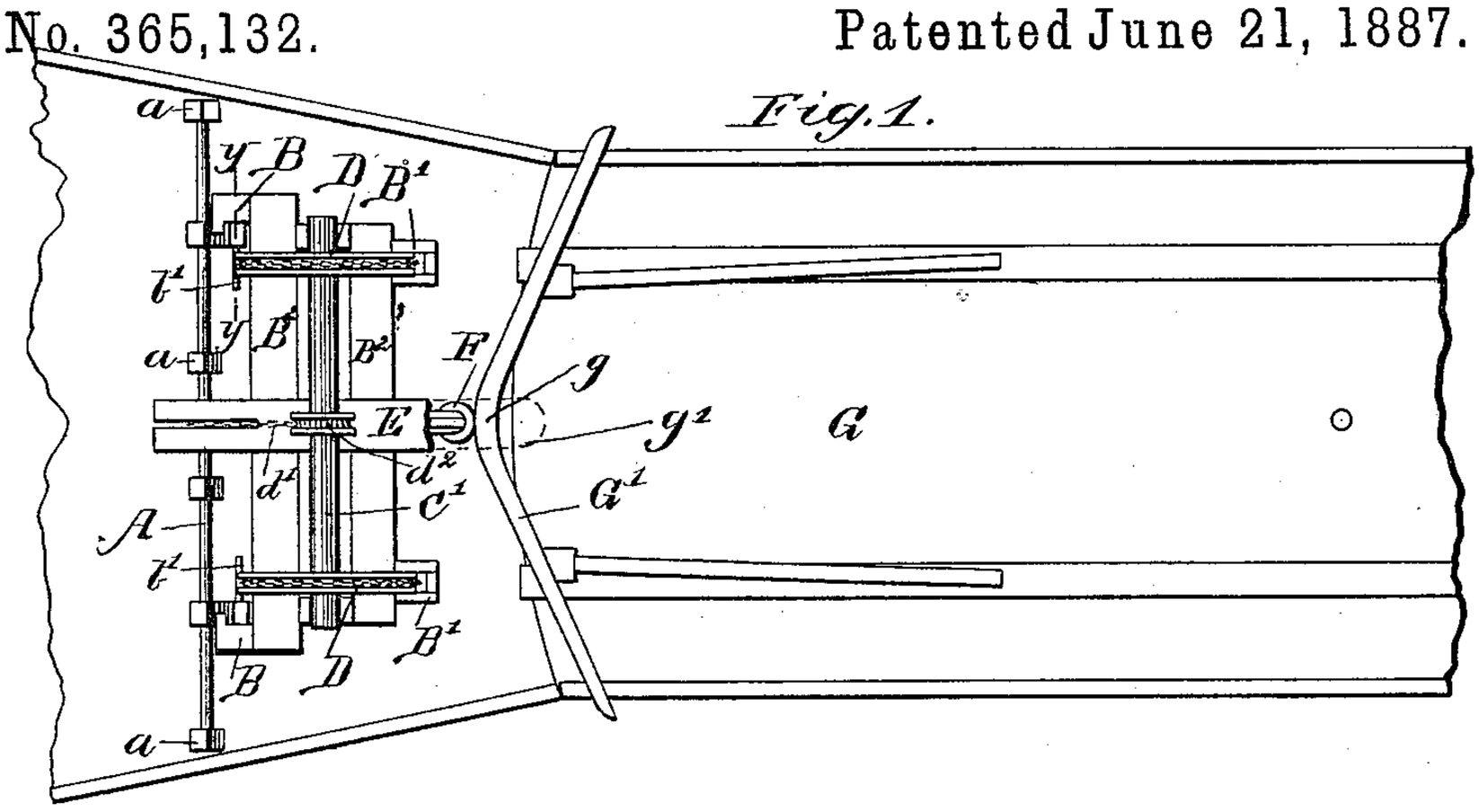


Fig. 2.

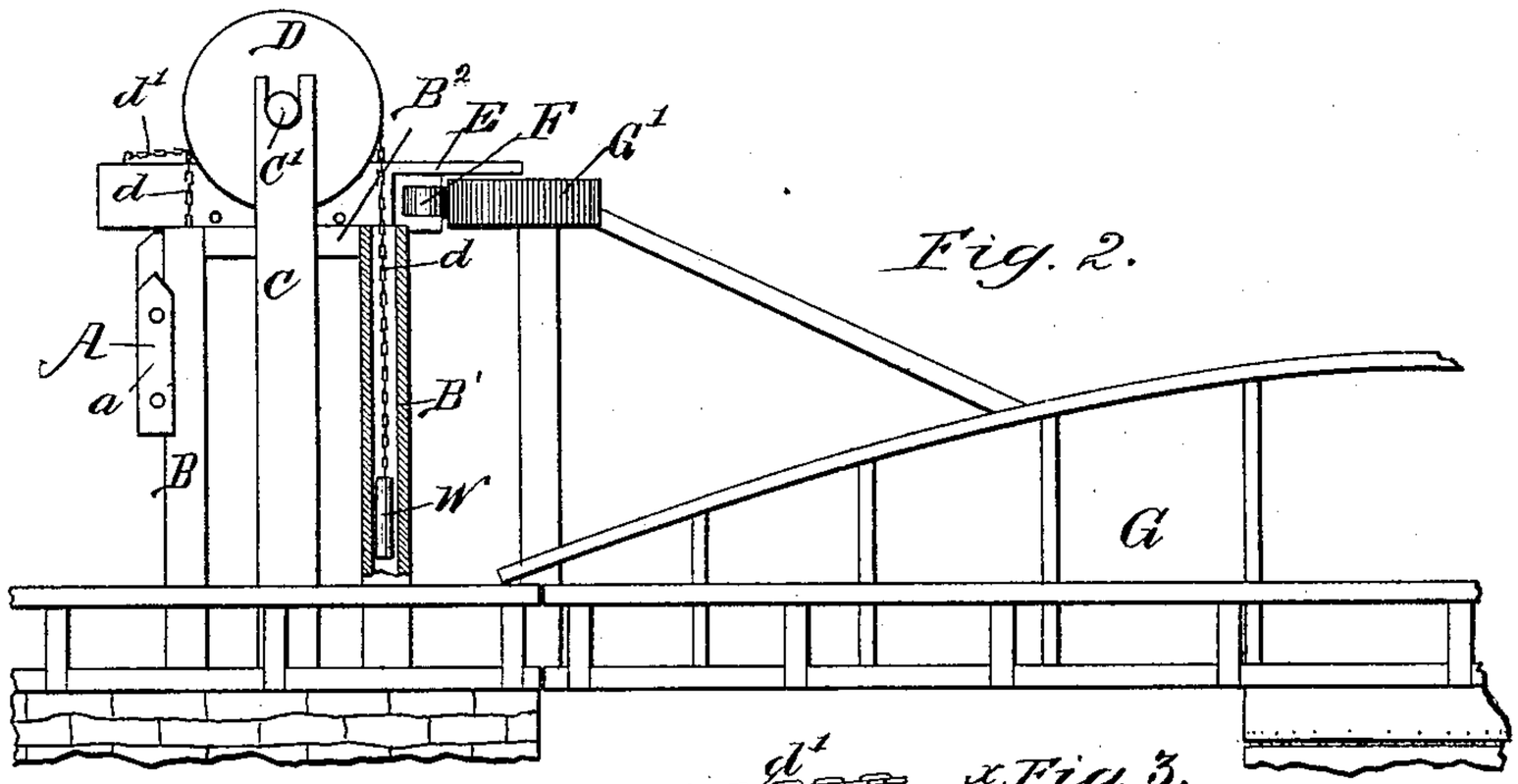


Fig. 3.

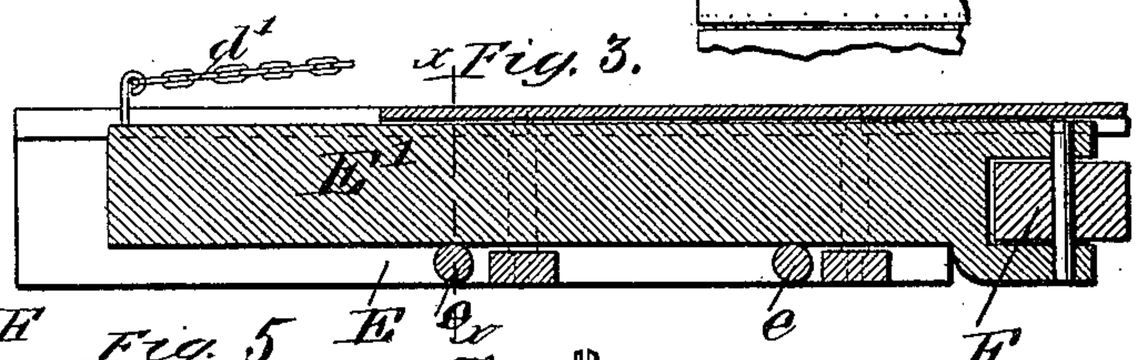


Fig. 4

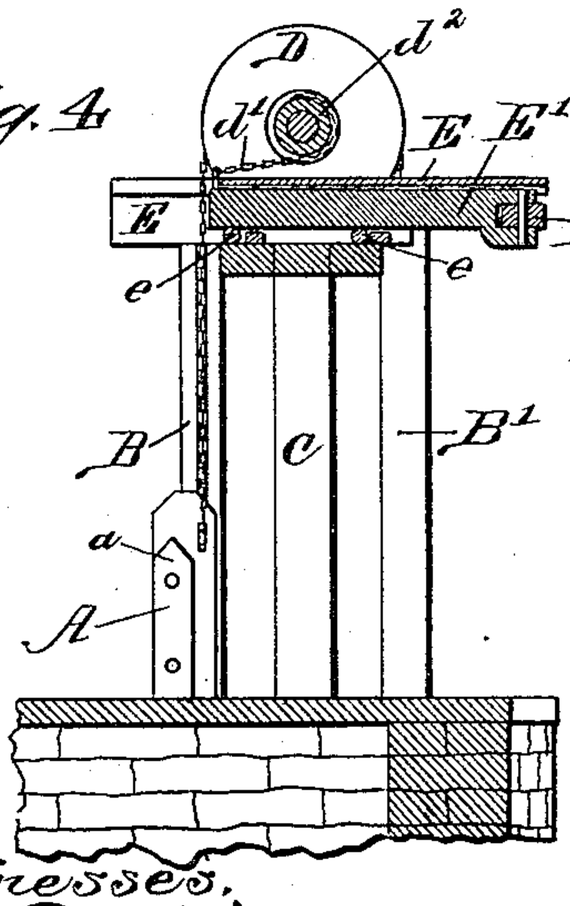


Fig. 5

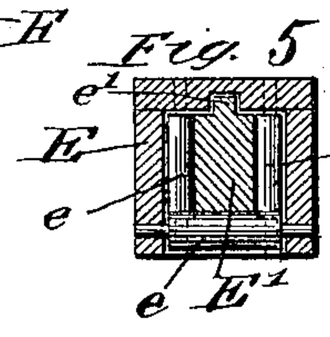
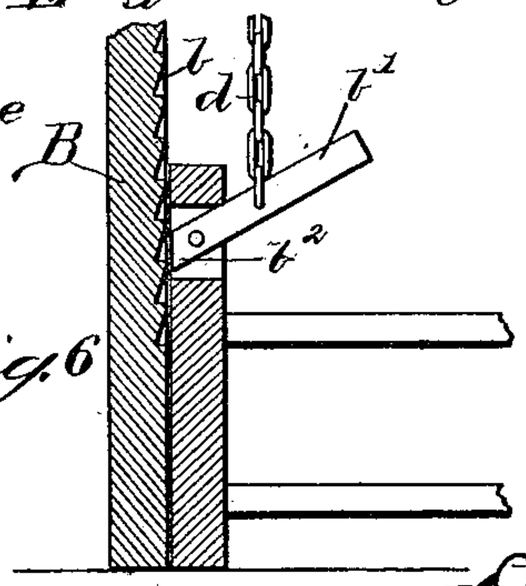


Fig. 6



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UNITED STATES PATENT OFFICE.

GUSTAVE A. JOHNSON, OF CHICAGO, ILLINOIS.

GATE FOR DRAW-BRIDGES.

SPECIFICATION forming part of Letters Patent No. 365,132, dated June 21, 1887.

Application filed April 4, 1887. Serial No. 233,542. (No model.)

To all whom it may concern.

Be it known that I, GUSTAVE A. JOHNSON, of Chicago, Illinois, have invented certain new and useful Improvements in Gates for Draw-Bridges, of which the following is a specification.

The invention relates to gates for draw-bridges which are designed to be operated automatically by the motion of the bridge; and the object of my improvements is to provide a gate which is to be located above the roadway and to be let down by the opening of the bridge and raised up out of the way by the closing of the bridge.

I attain the object by the mechanism illustrated in the accompanying drawings, of which—

Figure 1 is a plan view. Fig. 2 is a side elevation. Fig. 3 is an enlarged longitudinal section of a detail. Fig. 4 is a section on line *x x* of Fig. 1. Fig. 5 is a cross-section on line *x x* of Fig. 3, and Fig. 6 is an enlarged vertical section on line *y y* of Fig. 1.

A designates the gate, which may be of palings, bars, or lattice-work of any ordinary construction. The bars or pales are connected to posts *a* or connected together in the gate in any ordinary way.

The particular form of the gate is not material, except that it suitably closes the passage-way in the manner desired. Upon each side of the way or approach I erect a post, B, as a guide and rest for the gate, and a box or hollow post, B′. These are connected at the top to a frame, B^2 B^2.

C are upright posts carrying a winding-shaft, C′, to which there are affixed two pulleys, D D, over each of which a chain or cord, *d*, passes, to one end of which the gate is attached, and to the other end a weight, W. The weights almost counterbalance the gate. They are suspended in the hollow posts, and operate upon the gate at each end alike.

For the purpose of providing a safety-clutch for the gate, the guide-posts may be provided with racks *b* in the bottom of the guideways and have the chain attached to a pivoted arm, *b′*, of the gate, arranged so that the part to which the chain is attached will drop down and cause the inner end, b^2, to engage the rack as a pawl and stop the gate from falling in case the chain should break. On the top of the frame B^2 B^2, I place a guide, E, provided with rollers *e* at the bottom and sides and a groove, *e′*, at the top. In this guide is a sliding bar, E′, resting on the rollers *e* at the bottom and just fitting between those at the sides, and having a tongue at the top fitting the groove *e′*. One end of the sliding bar is provided with a pulley, F, and to its other end is attached a chain or cord, *d′*, which is also connected with a pulley, d^2, fixed to the shaft C′. The chain *d′* is wound on the pulley d^2 when the gate is let down through the rotation of shaft C′ by the friction of the chains *d* upon pulleys D D, the sliding bar being thereby extended or moved toward the bridge G. The bridge is provided with an angular cam-rod, G′, the angle *g* of which rests against the pulley F and holds the sliding bar in against the weight of the gate. As the bridge is drawn, the gate being slightly heavier than the weights gradually goes down until it rests its lower edge on the roadway. The pulleys D and d^2 are so proportioned as to require only a slight extension of the sliding bar to let the gate down and a slight movement back to raise the gate to a proper height above the roadway. As the bridge is closed, the outer end of the cam-rod comes in contact with the pulley F and slides the bar in. This unwinds the chain *d′*, and so raises the gate. I prefer to make the cam-rod straight between the central angle and the ends, though this is not an essential feature. The gate being nearly balanced requires only slight pressure on the sliding bar to raise it.

The dotted lines at *g′*, Fig. 1, show the extent of movement of the sliding bar when the pulleys are proportioned as shown in the drawings.

What I claim is—

1. The combination, with the gate A, pulleys D, cords *d*, and weights W, of the sliding bar E′, pulley d^2, and cord *d′*, as and for the purpose specified.

2. The combination, with the gate A, pulleys D, cords *d*, weights W, and sliding bar E′, of the bridge provided with cam-rod G′, as and for the purpose specified.

3. The combination, with a winding-shaft, as C′, weighted cords *d*, sliding bar E′, and cord *d′*, of a draw-bridge provided with a cam-rod, G′, as and for the purpose specified.

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Witnesses:
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