(No Model.) 2 Sheets—Sheet 1.

C. T. PICARD.

BRIDGE GATE.

No. 440,366. Patented Nov. 11, 1890.

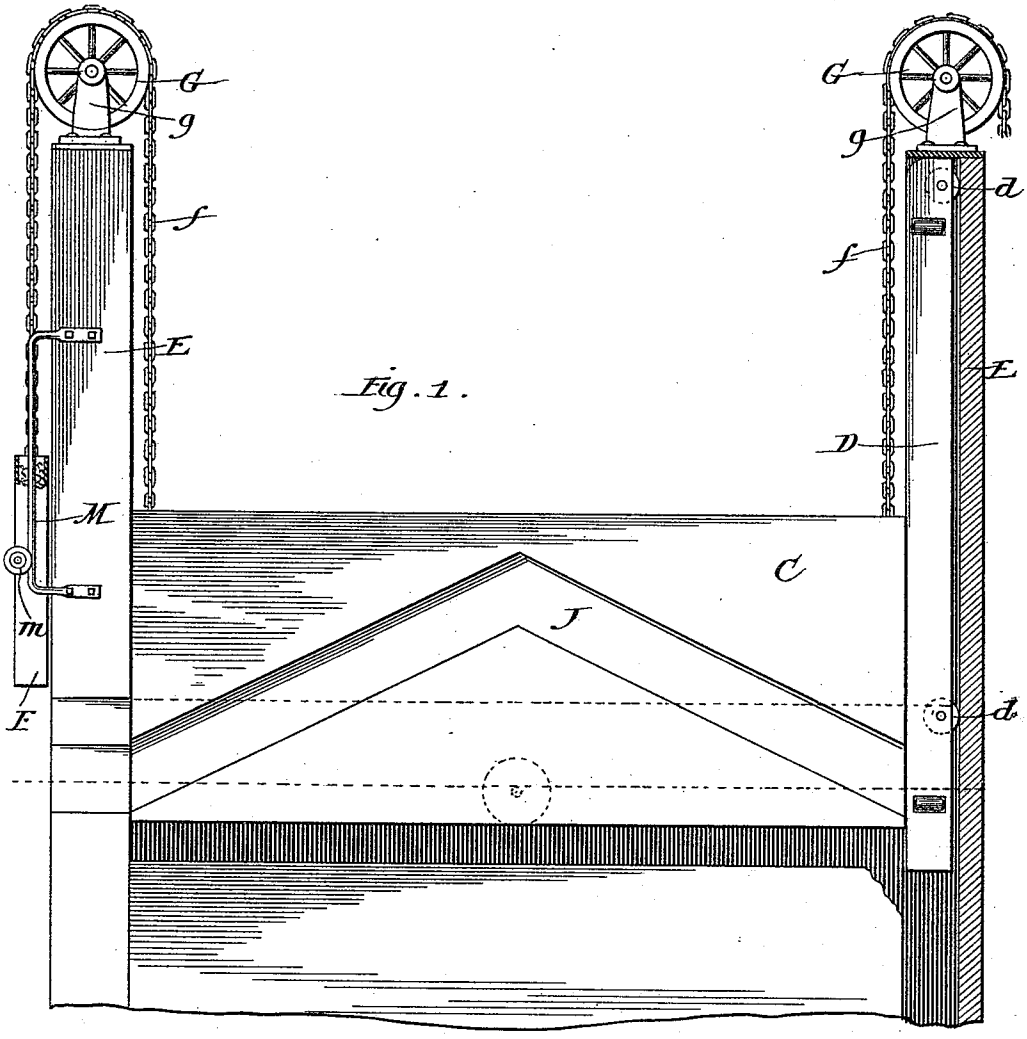

Fig. 1.

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(No Model.) 2 Sheets—Sheet 2.

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Fig. 4.

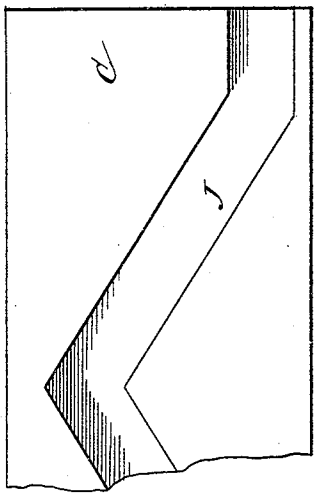


Fig. 5.

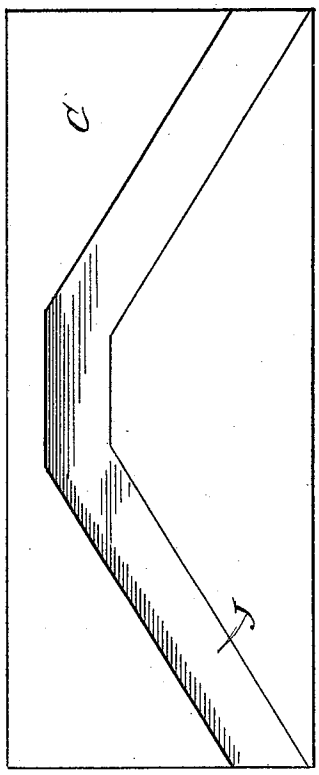


Fig. 3.

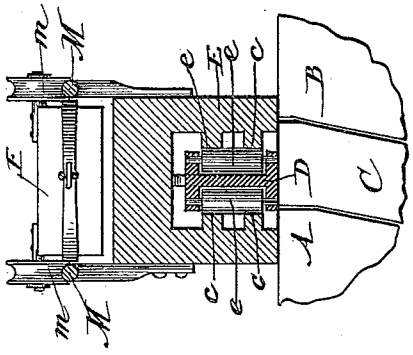
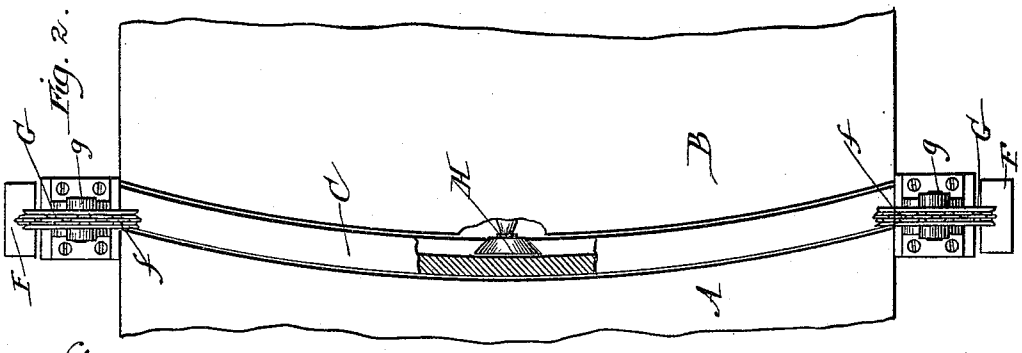


Fig. 2.



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UNITED STATES PATENT OFFICE.

CHARLES T. PICARD, OF CHICAGO, ILLINOIS, ASSIGNOR TO HIMSELF AND LOUIS J. DEMERS, OF SAME PLACE.

BRIDGE-GATE.

SPECIFICATION forming part of Letters Patent No. 440,366, dated November 11, 1890.

Application filed August 26, 1890. Serial No. 363,152. (No model.)

To all whom it may concern:

Be it known that I, CHARLES T. PICARD, residing at Chicago, in the county of Cook and State of Illinois, and a citizen of the Dominion of Canada, have invented a new and useful Improvement in Bridge-Gates, of which the following is a specification, reference being had to the accompanying drawings, in which—

Figure 1 is an elevation of the approach and gate. Fig. 2 is a plan view of the gate and a portion of the approach and the bridge. Fig. 3 is a detail, being a horizontal section through one of the guide-posts. Fig. 4 is a detail showing a modified form of the cam-groove, and Fig. 5 is a detail showing another modified form of the cam-groove.

This invention relates to gates for guarding the approach of swing-bridges when the bridge is open.

The object of my invention is to provide an improved gate and improved guides for said gate, and improved mechanism for raising and lowering said gate, which I accomplish as illustrated in the drawings and as hereinafter described.

That which I claim as new will be pointed out in the claims.

Similar letters refer to similar parts throughout the several views.

A indicates the approach to the bridge.

B indicates a swing-bridge. As shown in Fig. 2, the ends of the bridge B and of the approach A are curved, as this is the common and necessary construction.

C indicates a gate. This gate C is curved, as shown in Fig. 2, so that it corresponds to the curve at the end of the bridge B. By curving the gate C greater strength is given to the gate to resist strains or blows caused from unmanageable teams or railway-trains approaching the gate C when it is raised, as it forms an arch for such purposes. The ends of the gate C are each provided with a vertical guide-block D. Each vertical guide-block extends upwardly a considerable distance, as shown at the right in Fig. 1.

E indicates a guide-post at each end of the gate C. Each post E is recessed to receive a guide-block D, as shown in Fig. 3. Each guide-block D is provided with two rollers *d*, one at the top and one at the bottom, adapted to engage with the rear wall of the post E, as shown in Figs. 1 and 3. Each block D is also provided with two pairs of rollers *e*, one pair at the top and one at the bottom, which are adapted to engage with flanges *c* in the post E, and the flanges *c*, as shown in Fig. 3, are a short distance apart, leaving a space through which any dirt or stones may fall that find entrance to these parts. The long guide-blocks D, with their rollers *d* and *e*, prevent the gate from being twisted and hold it in proper position and at the same time allow it to be raised and lowered with very little friction.

F indicates a weight or weights for counterbalancing the gate C. The weight F is connected to the gate C by a chain or cable *f*, as best shown in Fig. 1. This chain *f* passes over a roller G, mounted in brackets *g* at the top of the post E. The weight F is provided with rollers *m*, adapted to engage with the guides M, as shown in Figs. 1 and 3, so that the weight will not be liable to swing out of position and will rise and fall with little friction. I prefer to use two weights F, one at each end, as indicated in Fig. 1; but a single weight may be used in some cases where the approach is narrow, and in some cases more than two weights may be used. I prefer to use a hollow casing containing stones or other weights, so that the amount of the weight F can be varied according to the weight of the gate C. A housing or casing may be placed over the posts E, rollers G, and counter-balances F, if desired. It will thus be seen that the gate C can be raised and lowered vertically, that when in the raised position it will close the approach, and when in the lowered position vehicles or cars can pass over it.

H indicates a roller mounted upon a suitable journal secured to the bridge.

J indicates a cam way or groove in the gate C, and is adapted to receive the roller H. This cam way or groove J is preferably made in the form shown in Fig. 1.

When the bridge is open, the gate occupies the elevated position shown in Fig. 1. As the bridge closes, the roller H will enter the groove J at one end, and its engagement with said groove will cause the gate C to descend, and when the bridge is closed the gate C will

be lowered to its lower position, the roller H being at the center, as indicated by dotted lines in Fig. 1. When the bridge commences to open, the roller H will travel in the groove J toward the end of the gate, thereby raising the gate until the roller H leaves the groove J, at which time the gate will be in its elevated position. The counter-balance F keeps the gate in its elevated position until the bridge closes, when the engagement of the roller will lower the gate, as before described. In some cases the outer ends of the groove J may be straight, as shown in Fig. 4, and in some cases, if desired, the highest portion of the groove J may be horizontal for a short distance to allow the bridge to get in motion before the roller G begins to act upon the cam-groove J, as shown in Fig. 5.

As shown in Fig. 2, I prefer to make the roller H beveled, which will cause it to act to draw the gate toward the bridge rather than to push it from the bridge.

The construction described provides an improved gate, which is readily opened and closed, which is able to resist great pressure, and which is both opened and closed by the motion of the bridge.

I do not claim, broadly, the lowering of the gate by a cam; but

What I claim as new, and desire to secure by Letters Patent, is—

1. The combination, with a swing-bridge and a beveled roller H thereon, of a vertically-sliding gate provided with a cam-groove in its side adapted to be engaged by said beveled roller and counter-balance for said gate, the arrangement of the roller and groove being such that the gate is drawn toward the bridge, substantially as specified.

2. The combination, with a swing-bridge and a roller thereon, of a vertically-sliding gate C, a cam-groove J thereon, elongated sliding blocks D, vertical posts E, rollers *d* and *e*, and a counter-balance F, substantially as and for the purpose specified.

CHARLES T. PICARD.

Witnesses:
HARRY T. JONES,
JOHN L. JACKSON.