

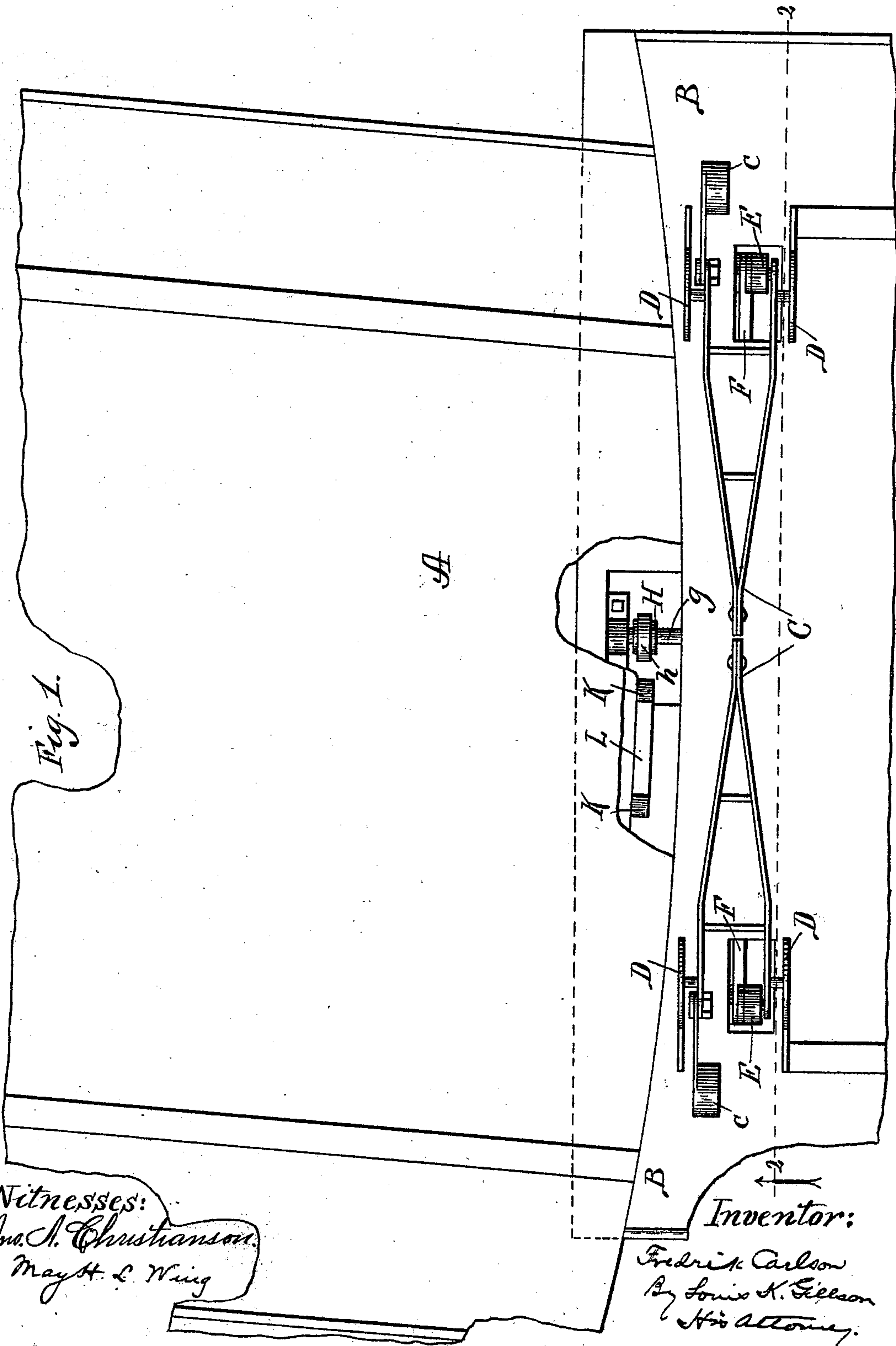
(No Model.)

2 Sheets—Sheet 1.

F. CARLSON.  
BRIDGE GATE.

No. 514,064.

Patented Feb. 6, 1894.



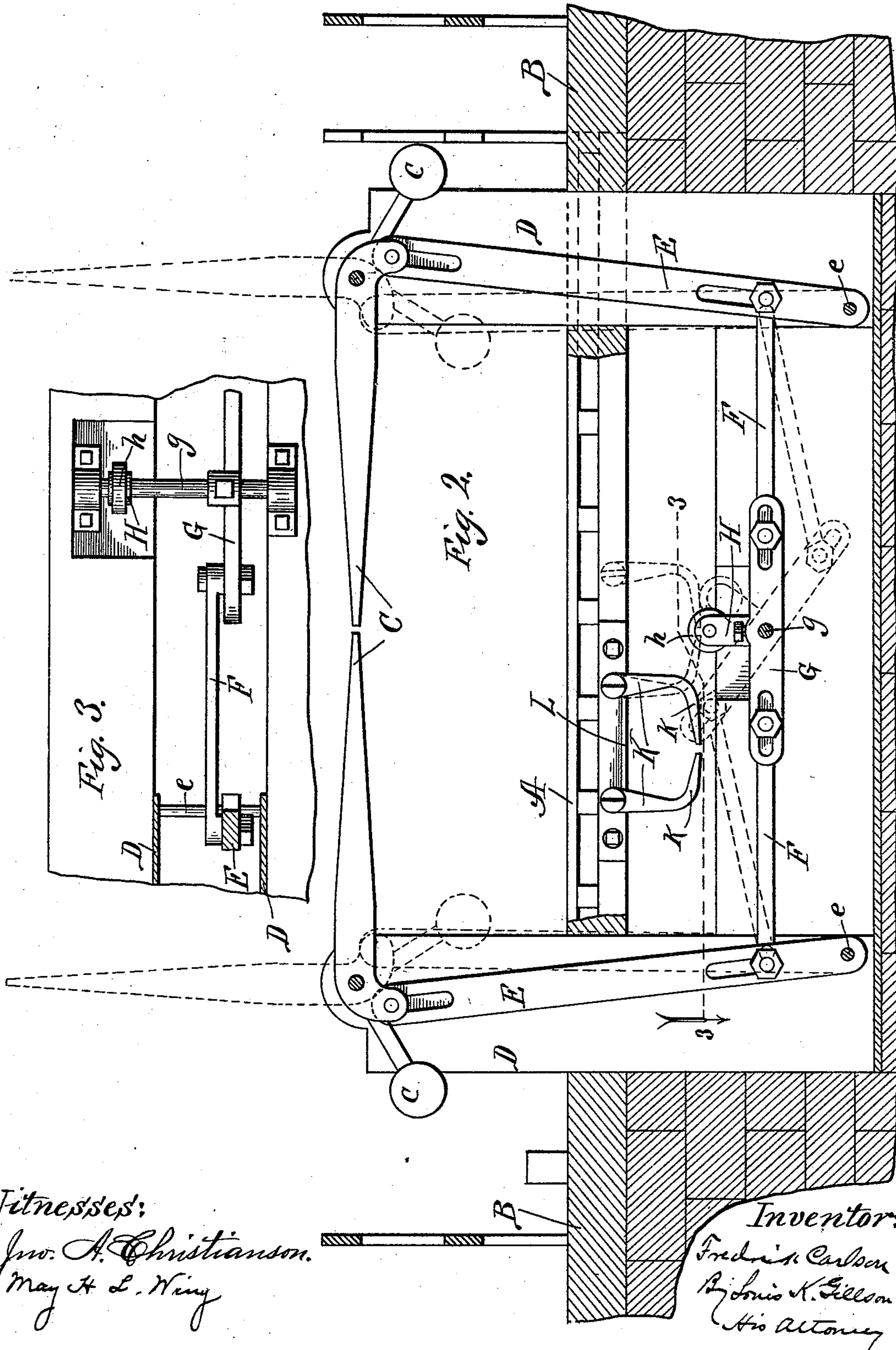
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Witnesses:

Jno. A. Christianson.  
May H. L. King

Inventor:

Fredrick Carlson  
By Louis K. Gilson  
His Attorney



# UNITED STATES PATENT OFFICE.

FREDRIK CARLSON, OF CHICAGO, ILLINOIS.

## BRIDGE-GATE.

SPECIFICATION forming part of Letters Patent No. 514,064, dated February 6, 1894.

Application filed September 2, 1893. Serial No. 484,801. (No model.)

*To all whom it may concern:*

Be it known that I, FREDRIK CARLSON, a subject of the King of Sweden and Norway, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Bridge-Gates; 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 the letters of reference marked thereon, which form a part of this specification.

My invention relates to automatic bridge gates, its object being to provide an improved mechanical connection between the bridge and the mechanism for operating a pair of sweep gates.

The invention consists of a pair of cams carried at the end of the bridge and adapted to swing away from each other in such manner that the closing of the bridge from either direction brings one of the cams to bear upon a lever adapted to elevate the gates—the latter being weighted so as to fall when released from the action of the cam, by the opening of the bridge.

In the accompanying drawings, Figure 1, represents a plan view of the end of the swing bridge and the adjacent abutment—my improved gates being in use thereon. Fig. 2, is a transverse section on the line 2—2, of Fig. 1. Fig. 3, is a plan section on the line 3—3 of Fig. 2.

I represent at A, a portion of an ordinary swing bridge and at B, the abutment co-operating therewith. A pair of sweep gates are shown at C, being pivotally supported upon standards D, D, one upon each side of the road-way, in the usual manner. A counter weight *c*, extends backwardly from each of the gates. The construction is such, however, that the gates tend to maintain a horizontal position, the weight being used for the purpose of bringing them sufficiently near to an equipoise to prevent violent action when they are released as hereinafter described.

The swinging lever E, is pivotally attached to a lateral arm of each gate, this lever being

pivoted at its opposite end at a fixed point *e*, below the surface of the roadway. A rocking lever G, is pivoted midway of its length, below the middle of the roadway, and being located transversely to the road. Each of the ends of the lever G, is connected by a link F, with one of the levers E,—the link being attached to the lever E, between its fulcrum point and the point of its attachment to the gate. When the lever G, is horizontal it brings the least strain upon the levers E, and consequently the gates are allowed to fall. The parts are so adjusted that with the lever in this position the gates assume a horizontal position, so that any movement of the lever G, on its pivot, tends to elevate them.

The pivot pin, or shaft *g*, of the lever G, and to which the lever is fixed, extends outwardly under the end of the bridge, and near its outer end is located an upwardly projecting arm H, carrying at its upper end a friction roller *h*. A pair of L-shaped cams K, swing by their stems from the end of the bridge and are of such length that their lateral arms *k*, *k*, bear upon the roller *h*, so as to depress the arm H. These cams are but a short distance apart and are so placed that the lateral arm of each projects toward the other. The angle of the cams is rounded. A stop block L, is fastened to the end of the bridge between the two cams and limits their approach to each other beyond the perpendicular.

When the bridge is opened the gates fall by their own weight. When the bridge is closed the advancing cam strikes the roller *h*, and rocks the lever G, thereby elevating the gates. The length of the arm *k*, of the cam K, is such that it does not release the lever G, until after the bridge commences to open in the other direction so that as long as the bridge remains closed the gates are elevated. The cams being free to swing backwardly, the rearward cam, which ever way the bridge may be moving does not in any manner affect the gates.

The pivotal connection between the gate and the lever E, should be by means of a slot in the lever, within which the pivot pin may slide, vertically. Means for adjusting the

several parts of the device are provided by slotting the levers G and E, for the adjustment of the link F, at a greater or less distance from the fulcrum of the lever E.

5 What I claim as my invention, and desire to protect by Letters Patent, is—

The combination with the bridge A and the gates C, of the swinging levers E, and the rocking lever G, the links F, for connecting  
10 such levers, the upwardly projecting arm H, fixed to the pivotal shaft of the lever G, the L-shaped cams K, swinging from the bridge

and having their lateral arms toward each other and adapted to engage the arm H, and a stop piece L, fixed to the bridge for limiting  
15 the movement of the cams toward each other to the perpendicular, substantially as described and for the purpose specified.

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

FREDRIK CARLSON.

Witnesses:

L. K. GILLSON,

L. A. GARDINER.