

E. DELIA.  
BRIDGE GATE.

No. 488,755.

Patented Dec. 27, 1892.

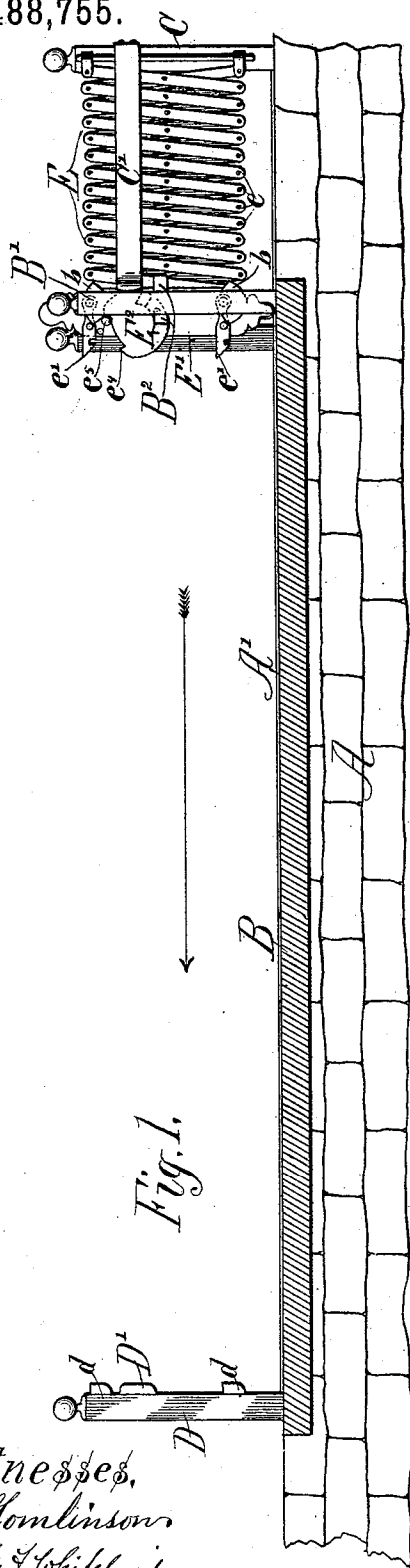


Fig. 1.

Witnesses,  
C. H. Tomlinson  
and M. F. Whitehead.

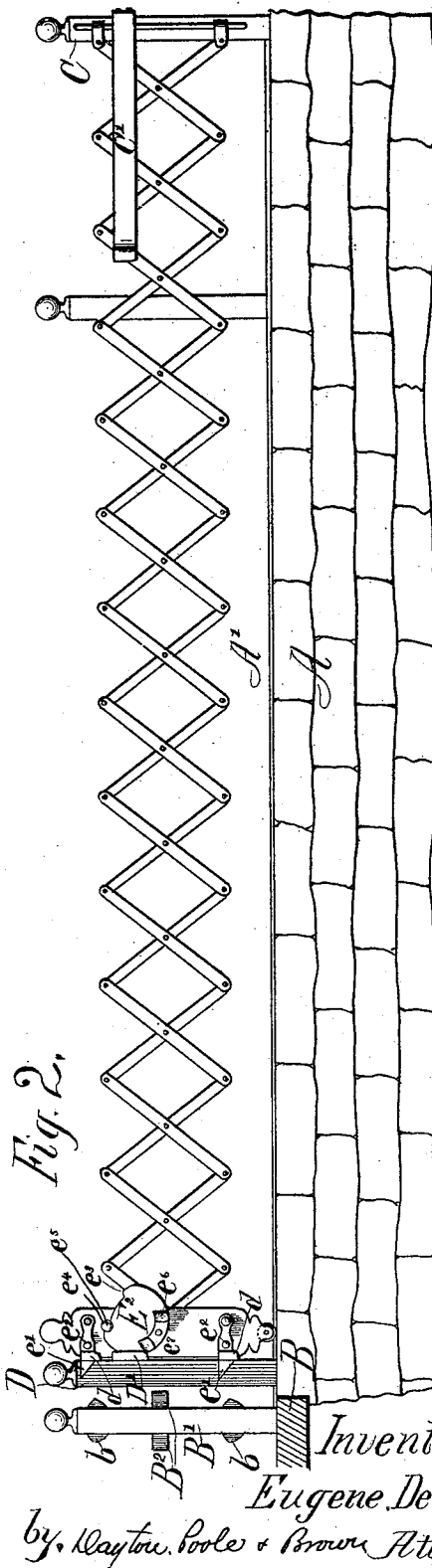


Fig. 2.

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Fig. 3.

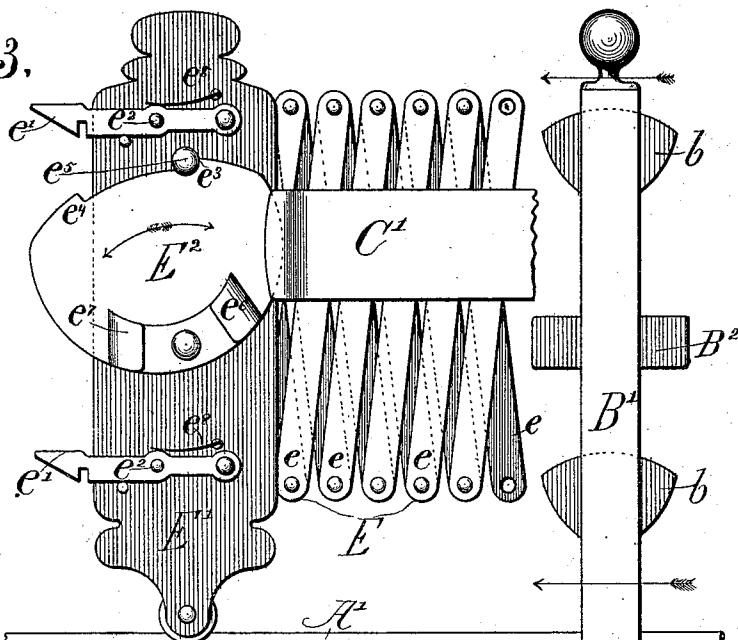


Fig. 4.

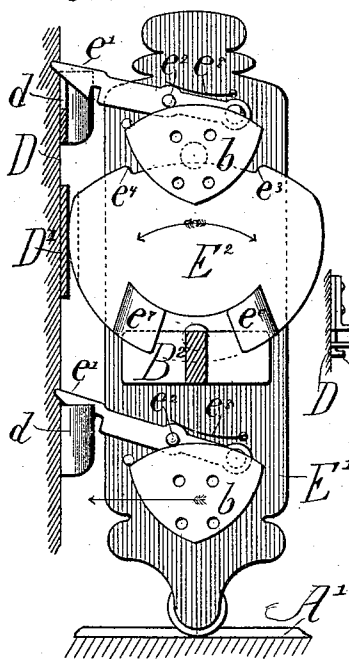
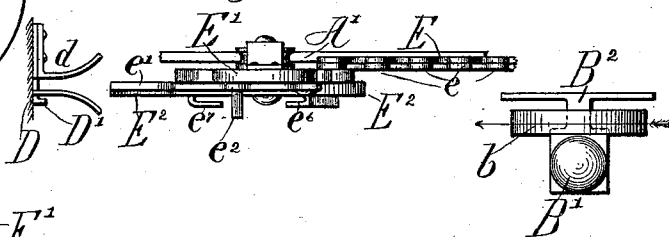


Fig. 5.



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# UNITED STATES PATENT OFFICE.

EUGENE DELIA, OF CHICAGO, ILLINOIS.

## BRIDGE-GATE.

SPECIFICATION forming part of Letters Patent No. 488,755, dated December 27, 1892.

Application filed July 8, 1892. Serial No. 439,352. (No model.)

*To all whom it may concern:*

Be it known that I, EUGENE DELIA, of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful  
5 Improvements in Bridge-Gates; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which  
10 form a part of this specification.

This invention relates to gates for closing the approaches to draw bridges.

The object of the invention is to provide a gate which will be simple and inexpensive in  
15 construction, and will be operated automatically by the opening or closing of the bridge.

The invention consists in the matters to be hereinafter described and particularly set forth in the appended claims.

20 In the accompanying drawings: Figure 1 is a side elevation of a bridge gate embodying my improvements, the same being shown in its open position, as when the bridge is closed for traffic. Fig. 2 is a similar view, the gate  
25 being shown in its closed position and the draw moved away from the approach. Fig. 3 is a view, on a larger scale, showing the free end of the gate in elevation, and the end of the draw in section. Fig. 4 is an elevation  
30 showing in detail the operating devices of the gate and bridge posts. Fig. 5 is a top plan of the same.

In said drawings A denotes the bridge approach or abutment, and B the bridge or the  
35 pivoted draw thereof, the end of which swings horizontally away from and toward the abutment A, in the usual manner. At the extreme end of the abutment A are two posts C and D, one on either side, to one of which, say C,  
40 is secured the fixed end of a folding or extensible gate E constructed of slats  $e$  pivoted together after the manner of a "lazy tongs" and operating correspondingly. The slats at the other or free end of the gate are connected  
45 with a post  $E'$  provided at its lower end with one or more rollers or casters adapted to travel upon a guide rail  $A'$  secured upon the end of the abutment A between the posts C and D. This guide rail  $A'$  is curved in an arc, having  
50 the pivot of the draw B as a center. To the outer face of the post  $E'$ , and near the upper and lower ends thereof, hooks or latches  $e'$  are pivoted, their free ends being adapted to engage keepers  $d$  secured to or forming part of

the post D, said latches being provided between their pivoted and free ends with horizontally projecting studs  $e^2$  arranged in the  
55 paths of latch-operating devices carried by the draw, and presently to be described. A shiftable plate  $E^2$  is also pivoted at its lower  
60 edge to the post  $E'$ , the upper edge thereof being provided with two shoulders  $e^3$  and  $e^4$  arranged to abut against a stop pin  $e^5$  which is attached to the post  $E'$ , said plate  $E^2$  being  
65 shifted on its pivot at each limit of movement of the gate, by contact with one or the other of two rigid stops  $C'$  and  $D'$  projecting respectively from the posts C and D. Projecting  
70 from the face of the shiftable plate  $E^2$ , at opposite sides of its pivotal point, are recessed lugs  $e^6$  and  $e^7$ , the recessed sides of which face each other, and the pivot of the plate, as best  
shown in Figs. 3, 4 and 5, their arrangement with relation to the other parts described  
75 being such that when the plate  $E^2$  has, by contact with the stop  $C'$  of post C, been shifted on its pivot to bring the shoulder  $e^3$  thereof in contact with the stop pin  $e^5$ , the recessed  
80 lug  $e^7$  of the plate will be in horizontal alignment with the pivot, and the lower edge of the lug  $e^6$  will be above said pivot, as shown in Figs. 1 and 3. Upon closing the gate E the plate  $E^2$  will, by contact with the stop  $D'$  of  
85 post D, be shifted on its pivot to its opposite limit of movement, thus bringing the shoulder  $e^4$  in contact with the stop pin  $e^5$ , the recessed  
lug  $e^6$  in a horizontal plane with the pivot of the plate, and the lug  $e^7$  above said pivot, as  
90 illustrated in Fig. 2. The end of the bridge or draw B is provided at one side with a vertical post  $B'$ , said post being located, when the gate E is open, and the draw B closed for  
95 traffic, opposite, or nearly so, to the post C of the approach A to which the fixed end of said gate is secured. Near the upper and lower  
ends of this post  $B'$ , and on that side thereof which faces the abutment or approach A, are  
100 secured trip blocks  $b$ , their upper faces projecting such a distance from the post  $B'$  (see Fig. 5) that they will pass beneath the ends of the studs  $e^2$  of the hooks or latches  $e'$  as the draw B is swung on its pivot. The upper  
105 faces of these trip blocks have the form of a semi-ellipse or a double incline, the highest point thereof being at the center of the block whereby, as the trip blocks pass beneath the studs  $e^2$  of the latches  $e'$ , said studs riding upon the surface of the trip blocks will raise

the free ends of the latches to a height sufficient for their engagement with or disengagement from the keepers  $d$  of the post D. A carrier stud  $B^2$  is also secured to the face of the post  $B'$ , being located about midway between the trip blocks  $b$ , and in a horizontal plane with the pivot stud of the shiftable plate  $E^2$  on the gate. This stud  $B^2$  is here illustrated as T-shaped, the horizontally projecting ends being designed to engage the recesses of the lugs  $e^6$  and  $e^7$  of the plate  $E^2$  as the bridge or draw is swung to open or close, this engagement resulting in carrying the post  $E'$  across the width of the approach or abutment A, and so opening or closing the gate, as will be understood. To illustrate, we will suppose that the draw B is closed and the gate open, the relative positions of the parts being shown in Fig. 1. Upon swinging the draw upon its pivot in the direction of the arrow to open the same, it will be seen that one end of the carrier stud  $B^2$  will engage the recessed lug  $e^7$  of plate  $E^2$  and that as the pressure of said stud upon the lug is horizontal with relation to the pivot stud of said plate, the plate will retain the position shown, and being moved forward by the stud  $B^2$ , will carry with it the free end of the gate E. As the post  $E'$  of the gate approaches the post D of the abutment A the forward edge of the shiftable plate  $E^2$  will be brought into contact with the stop  $D'$  on said post D and the plate will thus be shifted upon its pivot sufficiently to release the recessed lug  $e^7$  from the carrier stud  $B^2$ , thus freeing the draw from engagement with the gate, the latches  $e'$  being meanwhile raised by the trip blocks  $b$  to engage the keepers  $d$  of post D and released from said trip blocks as the draw moves forward, the parts being now in the position shown in Fig. 2. It will be understood of course that in closing the draw the described operation will be reversed, that is to say, the trip blocks will disengage the latches  $e'$  from the keepers  $d$ , the carrier stud  $B^2$  meanwhile engaging the recessed lug  $e^6$ , thus moving the post  $E'$  of the gate toward the other side of the abutment and folding the gate. The carrier stud will be released from the recessed lug  $e^6$  in the same manner as has been heretofore described with relation to the lug  $e^7$ .

While the latches  $e'$ , as here illustrated, will under ordinary circumstances operate satisfactorily as gravity latches, I prefer to secure upon the post  $E'$  springs  $e^8$  arranged to bear upon said latches with their free ends in order to make the operation of the latches more positive. In some instances, as in bridging a narrow stream, the well known pivot bridges are frequently used, and in positions where the pier which carries the pivot of the bridge can be located centrally between the abutments or approaches to the bridge it is sometimes customary to swing the bridge end for end in opening and closing. To provide for such contingencies a supporting post may be located centrally between the sides of an abutment A, and a gate such as herein described,

supported at its center upon such post, the gate in such case being a double one, or double ended. At each side of the abutment a post similar to that marked D should be secured and the gates should be provided at each end with a post similar to that marked E, said post carrying all the attachments here shown as connected therewith. Under such an arrangement it will be seen that upon the engagement of the carrier stud  $B^2$  with a recessed lug on one of the posts of the gate, both of said posts  $E'$  will be moved in opposite directions or away from each other and thereby caused to approach the fixed posts at the opposite sides of the abutment and the latches be caused to engage with the keepers on said fixed posts.

What I claim is:

1. The combination with a bridge approach or abutment, and a horizontally movable pivoted bridge or draw, of an extensible gate secured to a fixed post on the abutment and provided at its end with a post carrying a shiftable plate having projecting lugs, and a carrier stud connected with the end of the draw to engage the lugs of the shiftable plate of the gate, substantially as described.

2. The combination with a bridge approach or abutment, and a horizontally pivoted bridge or draw, of an extensible gate secured to a fixed post on the abutment and provided at its free end with a centrally pivoted shiftable plate having projecting lugs at opposite sides of its pivotal axis, and a carrier stud secured to a fixed part of the draw and adapted to engage the projecting lugs of said shiftable plate, substantially as described.

3. The combination with a bridge approach or abutment, and a horizontally movable pivoted bridge or draw, of an extensible gate secured at one end to a fixed post on the abutment and provided at its other end with a latch and a shiftable plate having recessed lugs, said draw being provided with a carrier stud and a trip block to engage the recessed lugs and the latch respectively, substantially as described.

4. The combination with a bridge approach or abutment, and a horizontally pivoted bridge or draw, of an extensible gate secured to a fixed post on the abutment and provided at its free end with a pivoted plate shiftable upon its pivot and provided with stops to limit its movement, said plate having also projecting lugs arranged at opposite sides of the pivot which lie in a horizontal plane with said pivot when the plate is at its opposite limits of movement, and a carrier stud secured to a fixed part of the draw adapted to engage said lugs, substantially as described.

In testimony that I claim the foregoing as my invention I affix my signature in presence of two witnesses.

EUGENE DELIA.

Witnesses:

TAYLOR E. BROWN,  
C. A. NEALE.