

(No Model.)

A. J. SMITH.
BRIDGE GATE.

No. 474,420.

Patented May 10, 1892.

Fig. 1.

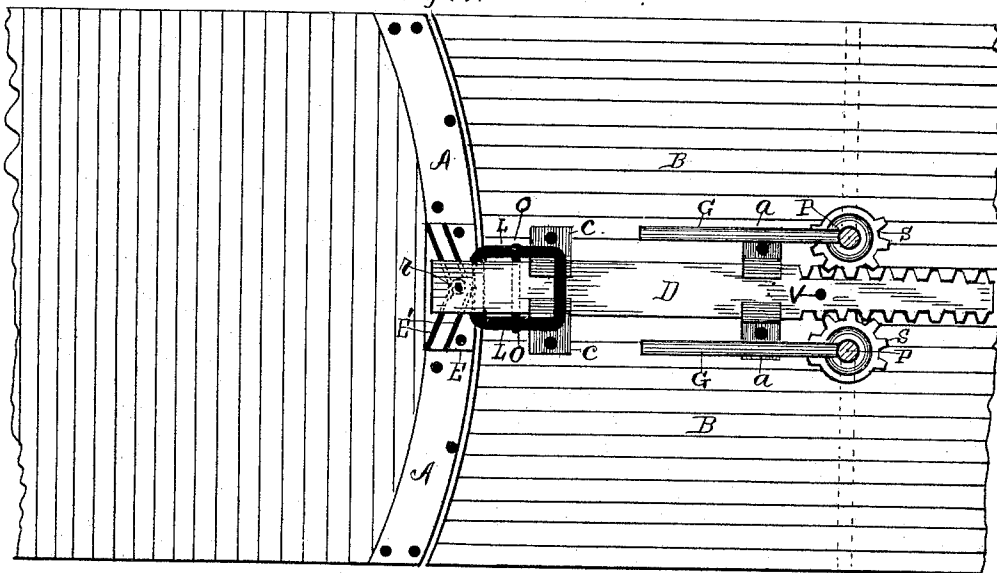


Fig. 2.

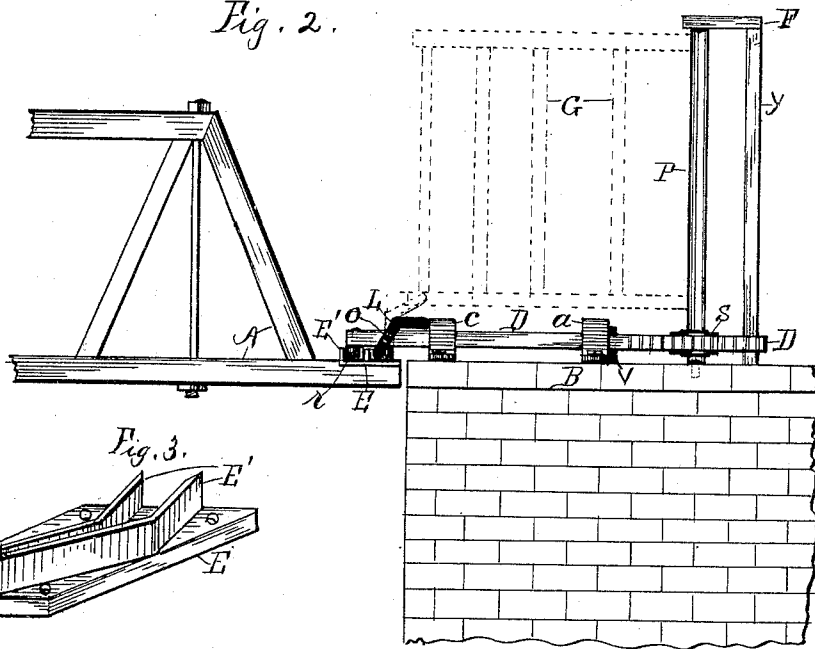
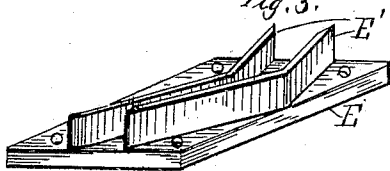


Fig. 3.



Witnesses

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BRIDGE-GATE.

SPECIFICATION forming part of Letters Patent No. 474,420, dated May 10, 1892.

Application filed August 14, 1891. Serial No. 402,622. (No model.)

To all whom it may concern:

Be it known that I, AUSTIN J. SMITH, a citizen of the United States of America, residing at Coal City, in the county of Grundy and State of Illinois, have invented certain new and useful Improvements in Bridge-Gates, of which the following is a specification, reference being had therein to the accompanying drawings and the letters of reference thereon, forming a part of this specification, in which—

Figure 1 is a top plan view of a section of a swing-bridge, showing one end and one of the approaches to the bridge provided with one of the bridge-gates and the parts connecting it with the bridge and in the position it would be in when the bridge is open to travel. Fig. 2 is a side elevation of a section of a swing-bridge and of one of its approaches and one of the bridge-gates and the parts connecting it with the bridge, the bridge being shown as approaching the extending end of the sliding bar on the approach, so the cams on the bridge may raise the latch and release said slide and move it rearward to turn the gates. Fig. 3 is a perspective view of the cam-guides for moving the rack-bar for turning the gates.

This invention relates to certain improvements in bridge-gates for use in connection with a swing-bridge and adapted to close the approaches to travel when the bridge is closed to travel and adapted to be operated by the bridge as it swings, which improvements are fully set forth and explained in the following specification and claims.

Referring to the drawings, A represents a section of a swing-bridge, showing one end.

E is a plate secured on the end of the bridge on its upper side at about its center and has on its upper side the two cam-guides E', arranged parallel with each other and transversely with the bridge, and together forming a guideway for a friction-roller *r*, arranged to pass between them.

D is a reciprocating rack-bar arranged to slide in the boxes *a* and *c* on the approach B. The outer end of said rack-bar is provided on its under side with the friction-roller *r*, arranged to pass between the guides E' for throwing the rack-bar D in either direction as the bridge turns. The inner end of the rack-bar D is toothed on each side, forming racks for meshing, respectively, with the pinions S

S, arranged, respectively, on the hinge-posts P P of the gates G G.

v is a pin passing through said rack-bar D and is for the purpose of preventing said rack-bar from being carried too far forward by means of the cam-guides E', and for such purpose said pin may engage box *a*, as shown in Fig. 2, or any other convenient object.

L is a latch for locking said rack-bar D and holding it from backward movement when the roller *r* is disengaged from the cam-guides E' and for holding the gates across the roadway when the cam-guides E' are disengaged from said roller *r* and rack-bar D. The latch L is formed as shown in the figures and consists of a rectangular frame and is pivoted at *o* to the rack-bar in such manner that its rear cross-bar passes under said rack-bar and its inner cross-bar passes over the rack-bar and in such manner that its rear cross-bar will fall behind the box *c* of the rack-bar when the said rack-bar has been moved out, as shown in Fig. 2. The outer cross-bar of said latch below the rack-bar is adapted to be engaged by the cam-guide E' when the bridge is swung to be open to travel, and by means of such engagement its inner end is elevated, so as to not be in contact with box *c*, as shown in broken lines in Fig. 2, so the cam-guides E' may move the rack-bar rearward and open the gates G G. The hinge-posts P P of said gates are stepped in suitable boxes in the approach B and their upper ends are boxed in a suitable frame F, supported by the post *y*; but, however, the gates may be supported by means of any other suitable device so they may operate as shown.

In operation, supposing the bridge to have been swung around parallel with the stream and closed to travel and it is desired to change it to the position shown in Fig. 1, the bridge and its cam-guides E' E' approach the outer end of the rack-bar D, as shown in Fig. 2, so its roller *r* may enter between the guides E' and so the latch L may be simultaneously engaged by said guides to raise the inner end of said latch up, as shown in the broken lines in said figure, and disengage it from box *c*, so the cam-guides may move the rack-bar D to the position shown in Fig. 1, when the gates G G will be opened and the bridge A be open to travel. It is intended to have such a cam-guide applied to each end of the bridge, so

the bridge may be turned completely around and operate the gates, as stated, from either end simultaneously and operate a pair of gates located on each approach.

5 Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is as follows, to wit:

1. The combination, with the swing-bridge A and its approach B, of the cam-guides E' E',
10 rack-bar D, having the roller *r*, pin *v*, boxes *c* and *a*, latch L, gates G P, and segment-pin-

ions S S, all arranged to operate substantially as and for the purpose set forth.

2. In the bridge-gate shown and described, the combination, with the swing-bridge A, of 15 the cam-guides E' E', rack-bar D, having the pin *v* and roller *r*, and the latch L, substantially as and for the purpose set forth.

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Witnesses:

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