(No Model.)

R. P. LAMONT.

BRIDGE.

No. 544,733. Patented Aug. 20, 1895.

Fig. 1.

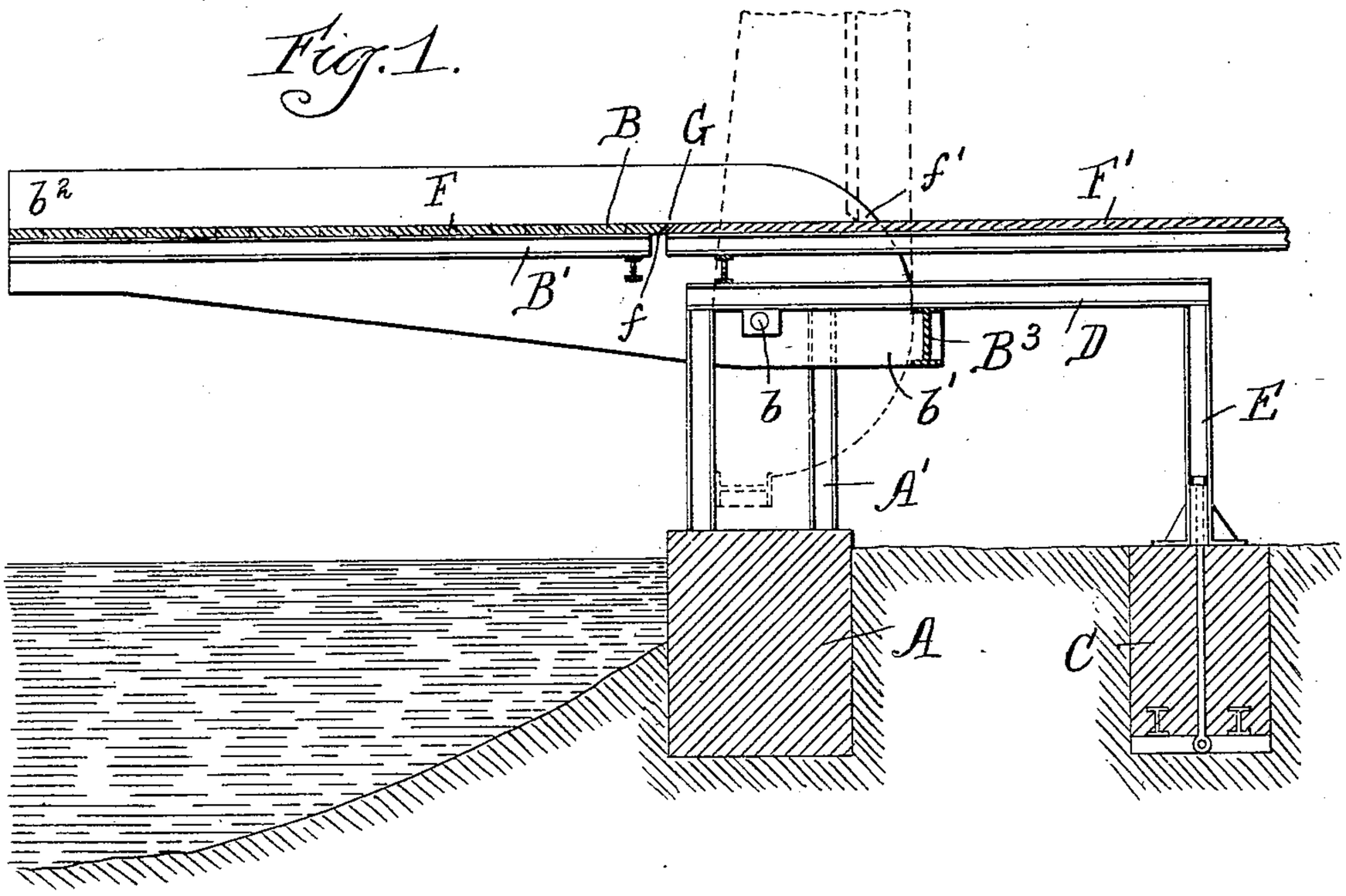
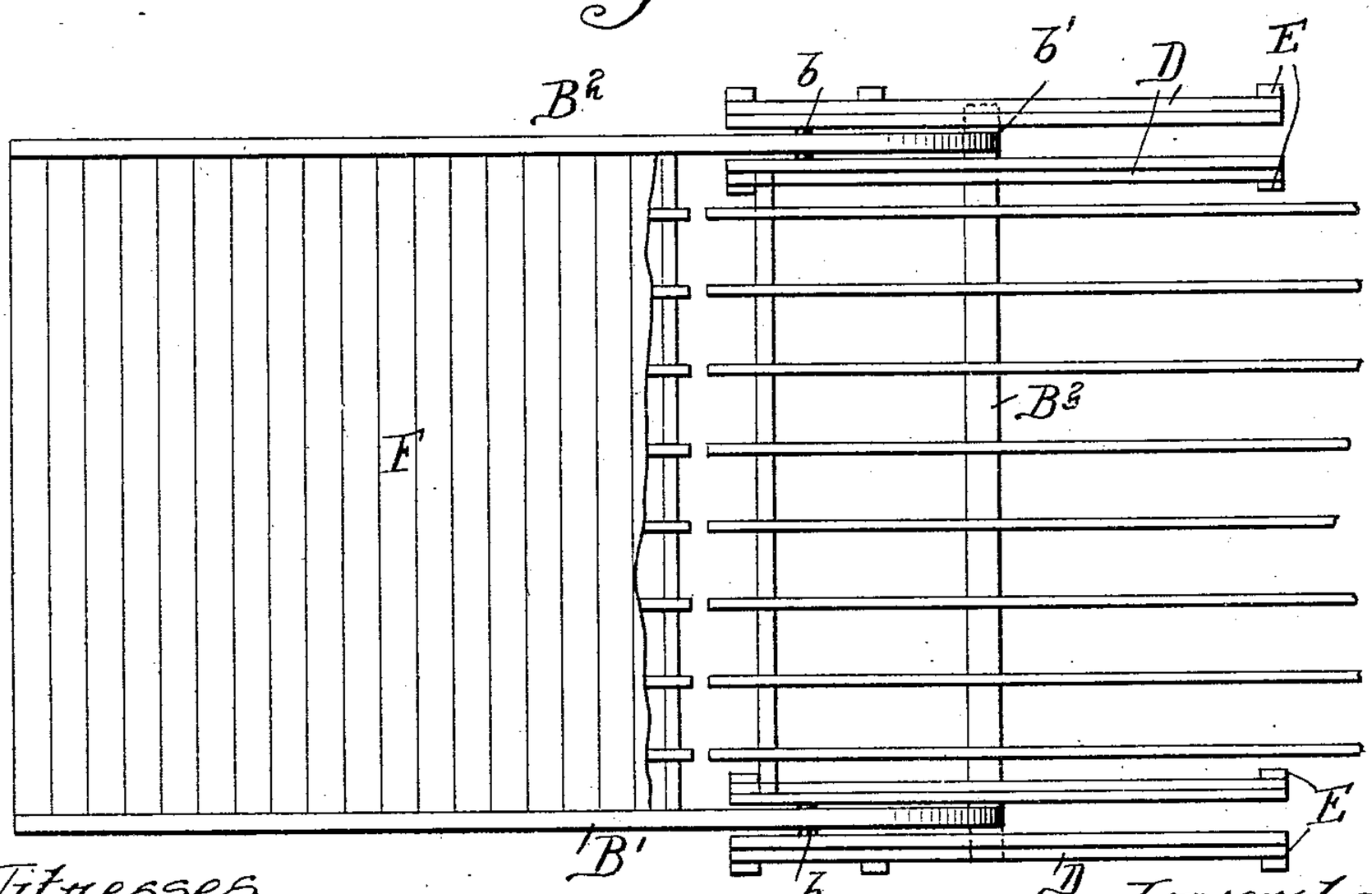


Fig. 2.



Witnesses
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UNITED STATES PATENT OFFICE.

ROBERT P. LAMONT, OF CHICAGO, ILLINOIS.

BRIDGE.

SPECIFICATION forming part of Letters Patent No. 544,733, dated August 20, 1895.

Application filed January 5, 1895. Serial No. 533,901. (No model.)

To all whom it may concern:

Be it known that I, ROBERT P. LAMONT, a citizen of the United States, residing at Chicago, county of Cook, State of Illinois, have invented a certain new and useful Improvement in Bridges; and I 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 pertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification.

One of the principal objections heretofore raised to that class of bridge known as the "Bascule bridge," as well as to other forms of tilting bridges, has been in the fact that that portion of the bridge which is depressed must be of comparatively great length in order to increase the leverage sufficient to permit the anchorage to sustain and hold the outer or elevated end when heavily loaded, as is often the case. In long spans, particularly where the leverage length of the span or outer portion is great, the inner or depressed end is of necessity made so long that it is difficult to provide a way or space into which it can be depressed, often necessitating a very deep excavation, thus materially increasing the cost and time of construction. Again, in this type of tilting bridges it has heretofore been customary to provide both portions of the bridges—that is, both the portion that is elevated and the portion that is depressed—with flooring, and thus make both portions a part of the roadway when the bridge is closed or in its normal position; but the great objection to this is that when the bridge is opened a space normally filled by the depressible end is left between the stationary flooring and the elevated portion.

My invention has two objects, first, to so locate the anchorage for the depressed end that the latter may, in proportion to the outer or span end, be materially shortened, thus practically obviating the necessity of deep excavations, and, second, to obviate the objectionable space above referred to. These objects I accomplish by a combination of devices hereinafter described and claimed.

Figure 1 is a side elevation; Fig. 2, a plan view of a bridge embodying my invention.

In carrying out my invention, A represents the abutment or pier on which the bridge is supported and pivoted, and A′ the supporting-posts extending upward therefrom and to which the bridge-section is directly pivoted. In the above drawings I have shown but a single section. Obviously there might or might not be a corresponding section on the opposite side of the space to be bridged.

B represents the bridge proper, pivoted at *b* to the posts A′.

The particular construction of the framework of the bridge is immaterial, and I have herein shown only sufficient to illustrate the carrying out of my invention.

B′ B² are the main side girders of the bridge, connected together at the inner or depressed end *b′* by the cross-beam B³.

C represents the masonry constituting the anchorage of the end *b′*.

D are beams substantially on a level with the bridge when in its normal position, and E are tie-rods connecting the ends of the beams D with the anchorage C. The opposite ends of the beams D are engaged to the abutment A. It will be observed that the anchored ends of the beams D are a considerable distance back from the ends *b′* of the bridge and are located above the cross-beam B³, which, when the bridge reaches a horizontal position, comes into contact with the beams D and forms a stop to prevent the further elevation of the end *b′* and consequently the depression of the end *b*². The advantage of this feature of my invention will now be apparent. The shortening of the end *b′* to the proportions shown herein would be practically impossible if the anchorage was directly under the end of the portion *b′*, since while the anchorage might be sufficient while there was no load on the outer end *b*², yet when heavily loaded, as is often the case, the leverage would be so great on the anchorage as to make it liable to give, as well as an enormous strain on the pivot and other parts. By moving this anchorage back, however, and causing the end *b′* of the bridge to bear on the beams D, the leverage length of the portion *b′* when horizontal is practically from the pivotal point *b* to the tie-rods E instead of from the pivotal point *b* to the end of the portion *b′*, as would be the case if the beams D were not provided. As above explained, the por-

tion *b'* can thus be materially shortened, deep excavations are obviated, and an extremely simple yet strong trusswork is obtained.

I will now describe the second feature of my invention.

F represents the flooring of the bridge proper—that is, the movable portion or tilting section, and F' the flooring of the approach. It will be observed that the rear or depressible end *b'* of the bridge is not floored, but that the flooring F' of the approach extends to a point beyond the vertical plane of the pivotal point of the bridge and terminates at G. The flooring of the bridge proper begins at this point, so that when the bridge is closed there is a continuous roadway. When the bridge is opened, as shown by dotted lines, Fig. 1, the end *f* of the flooring on the bridge describes a semicircle and comes to a point closely adjacent to the stationary-approach flooring, as at *f'*, thus forming an effectual bridge-guard and yet leaving an unbroken surface up to the pier.

What I claim is—

1. In a tilting bridge the combination with the inner or depressible end, of the anchorage for the same located out of the same vertical plane with said end, and one or more beams or levers engaged to the anchorage against which the said bridge end may bear, substantially as described.

2. In a tilting bridge the combination with the bridge abutment on which the bridge is pivoted, and the inner or depressible end of the bridge, of the anchorage located out of the vertical plane of the said end, and levers or beams engaged to the anchorage and to the abutment, and stops on the said bridge adapted to engage said beams, substantially as described.

3. In a tilting bridge the combination with the bridge section and its flooring, of the approach and its flooring the latter extending above and beyond the pivot on which the bridge tilts, substantially as described.

In testimony whereof I sign this specification in the presence of two witnesses.

ROBERT P. LAMONT.

Witnesses:
W. H. CHAMBERLIN,
FLORENCE KING.