J. B. STRAUSS.

BASCULE BRIDGE.

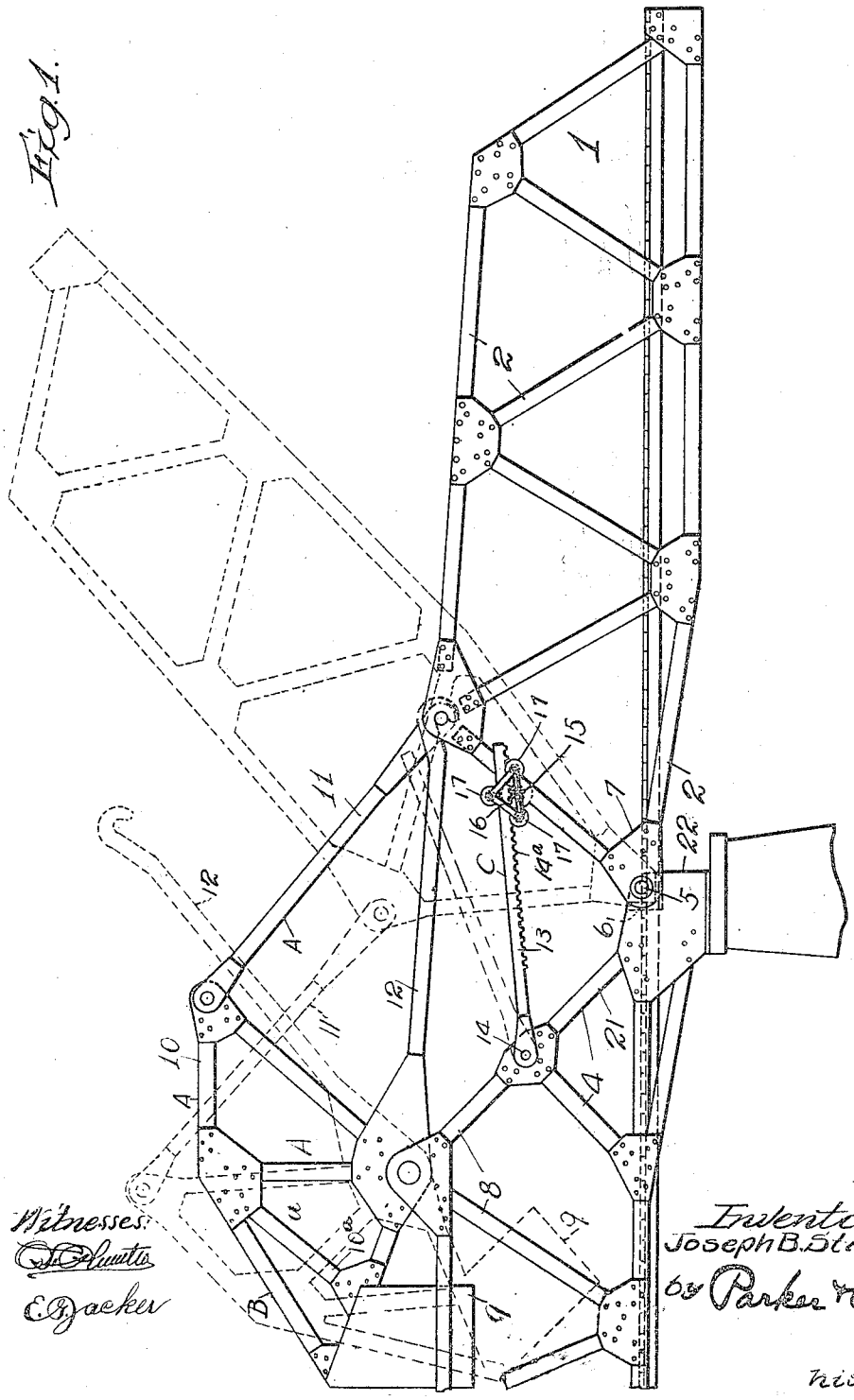
APPLICATION FILED DEC. 26, 1911.

1,211,639.

Patented Jan. 9, 1917.

3 SHEETS—SHEET 1.

Fig. 1.



Witnesses:
[illegible]
E. Baecker

Inventor
Joseph B. Strauss.
by Parker & Burton
his Attys.

J. B. STRAUSS.

BASCULE BRIDGE.

APPLICATION FILED DEC. 26, 1911.

1,211,639.

Patented Jan. 9, 1917

3 SHEETS—SHEET 2.

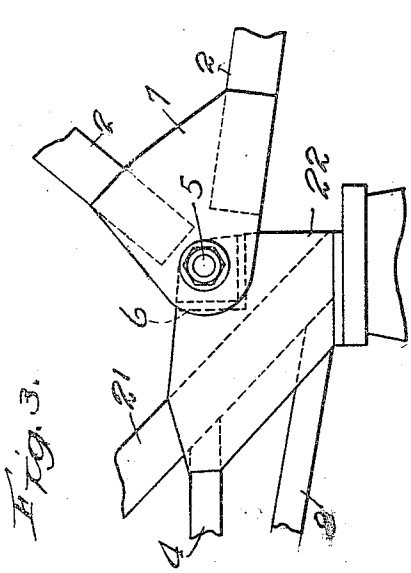


Fig. 3.

Fig. 2.

Witnesses:

E. J. Jacker

Inventor

Joseph B. Strauss

By Parker & Carter

his Attys.

J. B. STRAUSS.

BASCULE BRIDGE.

APPLICATION FILED DEC. 26, 1911.

1,211,639.

Patented Jan. 9, 1917.

3 SHEETS—SHEET 3.

Fig. 4.

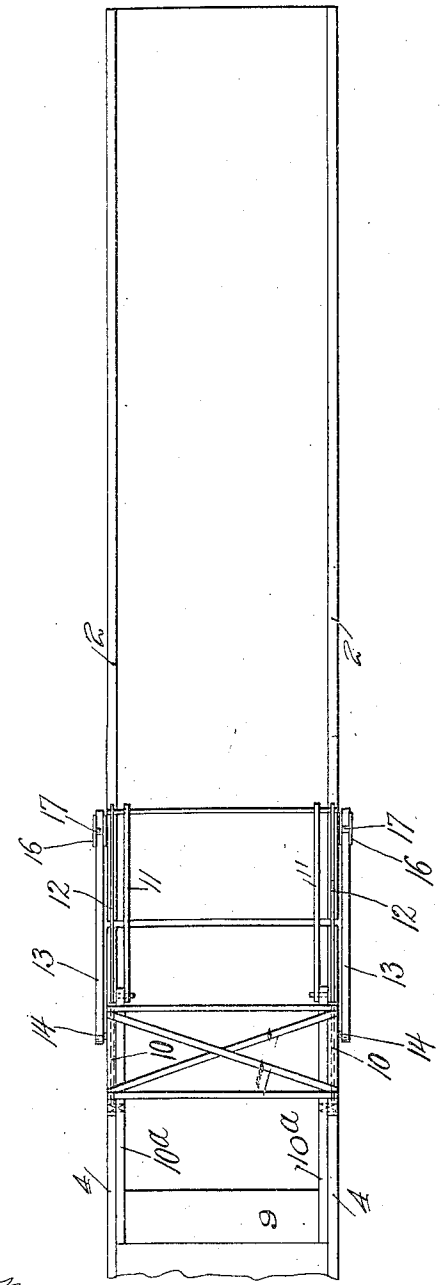


Fig. 6.

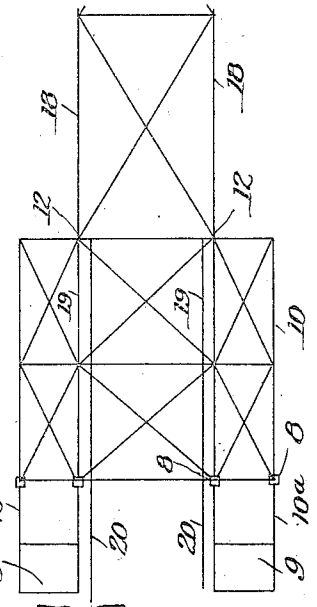
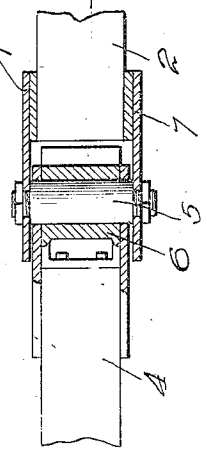


Fig. 5.



Witnesses:
C. L. Plumtree
Edward T. Wray.

Inventor
Joseph B. Strauss.
By Parker & Carter
Attys.

UNITED STATES PATENT OFFICE.

JOSEPH B. STRAUSS, OF CHICAGO, ILLINOIS.

BASCULE-BRIDGE.

1,211,639. Specification of Letters Patent. Patented Jan. 9, 1917.

Application filed December 26, 1911. Serial No. 667,616.

To all whom it may concern:

Be it known that I, JOSEPH B. STRAUSS, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Bascule-Bridges, of which the following is a specification.

This invention relates to bascule bridges and has for its object to provide a new improved bridge of this description.

The invention is illustrated in the accompanying drawings, wherein—

Figure 1 is a view showing one form of the bridge embodying the invention. Fig. 2 is a view showing a modified construction. Fig. 3 is an enlarged view showing the connection between the movable span and the fixed support. Fig. 4 is a plan view of the bridge in Fig. 1. Fig. 5 is a horizontal sectional view through one of the trunnions. Fig. 6 is a plan view of the device shown in Fig. 2, with parts omitted.

Like numerals refer to like parts throughout the several figures.

Referring now to the Figs. 1, 3, 4 and 5, there is illustrated a bascule bridge comprising a movable span 1 provided with trusses 2, said movable span being pivotally connected with a fixed support, said fixed support having trusses 4 which are in the same vertical plane as the trusses 2 of the movable span. The ends of the trusses of the fixed support and the movable span abut, and there is a turning connection contained within the limits of the movable span and fixed support and movably connecting them together. This construction is illustrated in Fig. 5 where the abutting ends of trusses 2 and 4 are shown. In the same line with these trusses is a pivot or trunnion 5 which works in a bearing 6. The trunnion is held in place by the inclosing piece 7 connected with the trusses 2. Associated with the main span is a supporting frame 8 for supporting the counter-weight 9. This counter-weight is connected with the counter-weight frame which is pivotally mounted upon the fixed tower or supporting frame 8. The counter-weight frame has two portions, 10 and 10^a. The part 10 containing the counter-weight frame trusses is in the same vertical plane containing the trusses of the movable span and fixed support and the portion 10^a containing a part of the members of the counter-weight frame is on one side of the vertical plane containing the trusses of the movable span and the fixed support. The counter-weight frame is connected with the movable span by means of a link 11. One or more hooks 12 are connected with the frame 10 and are adapted to be hooked over a suitable member at the top of the movable span 1 so as to hold said movable span against further movement when it reaches its proper horizontal position. These hooks 12 act as anchors to anchor the moving span to the fixed tower or supporting frame 8 and are preferably in the same vertical plane containing the trusses of the movable span and fixed support. These hooks form an anchoring device or part separate from the link through which the counterweight effect is transmitted to the movable span. This anchoring part being connected with the counterweight frame 10 automatically disengages from the movable span when the movable span is opened, as shown in dotted lines in Fig. 1, and automatically engages the movable span when the movable span is closed, as shown in full lines in Fig. 1. An operating strut 13 is pivotally connected at 14 with the supporting frame 8 and is provided with a rack 14. A pinion 15 mounted on the movable span engages said rack, said pinion being operated by any suitable motor device. Mounted upon the operating strut 13 is a frame 16 provided with engaging wheels 17 which engage said strut. This frame is preferably mounted upon the shaft of the pinion 15 so as to be fastened to the movable span and slide upon the strut 13.

In Fig. 2 I have shown a double deck construction wherein the movable span 1 is provided with an upper floor 18. The counter-weight frame 10 is extended toward the front and is provided with a floor portion 19 which forms a connecting part between the movable span and the fixed part, said fixed part also having an upper floor 20. The counter-weight as shown in Fig. 6 is divided into two sections, one at each side and these sections pass on opposite sides of the roadway 20. It will be noted that when the bridge is closed, the floor 19 spans the space between the floor 18 and the movable span and the floor 20 of the fixed part.

It will further be noted that in both of these constructions, the hook 12 is disengaged and moved up when the movable span is open and automatically engages the movable span when it is lowered to its closed

position. It will be noted that the movable span 1 is outside of the boundary line of the end post 21 of the counter-weight supporting frame 8. This construction is clearly shown in Fig. 3 where the inclined post 21 is provided with an extension 22 adjacent to the movable span, said movable span being mounted upon said extension. This construction permits the main span to open fully without striking the end post of the counter-weight supporting frame 8, and thus permits a minimum length of the movable span for a given opening. The construction with the trusses of the main span and fixed support in alinement permits the shortening of the floor members of the main span and of the approach span, and permits the use of a smaller foundation, thereby greatly cheapening the construction. It also decreases the weight of the movable span and hence of the counter-weight, which in a large bridge is a very important factor. This construction also permits two bridges to be placed side by side and to be made much closer together than with the ordinary construction, and from this point of view is particularly valuable in railway construction, as it thus avoids the spreading of the tracks.

I claim:

1. A bascule bridge comprising a movable span having trusses, a support for said movable span having trusses, the trusses of the movable span and support on the same side being in the same vertical plane and an operative connection between the trusses of the movable span and the support, in the same vertical plane as said trusses, whereby the weight transmission from the movable span to the support, while the movable span is being opened and closed, is effected within the plane of the trusses of the movable span and the support.

2. A bascule bridge comprising a movable span trusses at each side thereof, a support for said movable span having trusses at each side thereof, a counter-weight frame having trusses at each side thereof, the trusses of the movable span, support and counter-weight frame on the same side being in the same vertical plane, a counterweight connected with said counter-weight frame, part of the members of the counterweight frame being on one side of the vertical plane containing the trusses of said movable span and support and a weight transmitting connection between the trusses of the movable span and the support, and located in the vertical plane of said trusses.

3. A bascule bridge comprising a movable span provided with trusses, an approach span provided with trusses, the approach span provided with counter-weight supporting parts, a counter-weight frame connecting with said supporting parts, the trusses of the movable span and approach span being in alinement and trunnions interposed between the ends of the adjacent trusses of said movable span and support, and in the plane of said trusses for movably connecting them together.

4. A bascule bridge comprising a movable span provided with trusses, a supporting part therefor provided with trusses, the ends of the trusses of the movable span and supporting part abutting, a weight transmitting connection contained within the limits of the trusses of the movable span and supporting part and connecting them together so that they may move relative to each other to permit the movable span to be opened and closed.

5. A bascule bridge comprising a movable span, a fixed part associated therewith, a counterweight frame rotatably mounted on said fixed part so that the parts thereof move in vertical planes and a counterweight connected with said counterweight frame for balancing the movable span, a bridge way from the movable span to the fixed part, the counterweight frame in the closed position acting as support for said bridgeway, the counterweight being behind the bridgeway when the bridge is closed.

6. A bridge comprising a movable span, a fixed part associated therewith, a counterweight frame mounted thereon, and a counterweight connected with said frame for balancing the movable span, said counterweight frame provided with a portion separate from the counterweight and detached from the main span when the main span is open but which engages the movable span when closed to limit its further movement, said portion of the counterweight frame and the said counterweight being opposite sides of the point of support of the counterweight frame.

7. A bridge comprising a movable span, a fixed part associated therewith, a counterweight frame mounted on said fixed part, a counterweight connected with said frame for balancing the movable span, a link connecting the counterweight frame and the movable span and through which the counterweight effect is transmitted to the movable span, an anchoring part separate from said link and connected with said counterweight frame and engaging the movable span when in its closed position and anchor it against further downward movement, said anchoring part automatically disengaging and engaging said movable span when it is opened and closed.

8. A bascule bridge comprising a movable span, a counterweight support, an inclined end post forming part thereof, a rotative connection at the point of connection between said movable span and said counterweight support, said rotative connection be-

ing located outside of the boundary line of the end post of said counterweight support.

9. A bridge comprising a movable span, a fixed approach span, each provided with trusses, the trusses being in alinement, an anchoring device for anchoring the top chord of the movable span to the approach span, the bottom chord of the movable span abutting the bottom chord of the approach span and means for separating the anchoring device from the movable span as the movable span is opened.

10. A bridge comprising a movable span and an approach span, an inclined post forming a part of said approach span and adjacent to the movable span, an extension on said post, said movable span mounted on said extension.

11. A bridge comprising a movable span having trusses, a fixed tower part associated therewith, a member extending longitudinally from the trusses of the movable span in its closed position toward the trusses of the fixed tower part and movable relative thereto, said member forming an anchor anchoring the movable span to the fixed tower part at a point near the plane of the top chord of the movable span and adapted to automatically adjust itself to the open and closed position of the trusses, said member and fixed tower part being disconnected when the bridge is open.

12. A bridge comprising a movable span and an approach span, an inclined post forming a part of said approach span and adjacent to the movable span, a support for said inclined post, an extension connected with said post and projecting forwardly therefrom, said movable span mounted on said extension at a point above the lower end of said inclined post, and means for resisting the movement produced by the eccentric application of the load.

13. A bascule bridge comprising a movable span, trusses at each side thereof, a support for said movable span having trusses at each side thereof, the trusses of the movable span being in the same vertical plane as the trusses of the support, trunnions intermediate the trusses of the movable span and the trusses of the support and movably connecting them together, said trunnions being contained within the vertical boundary planes of said trusses.

Signed at Chicago, Illinois, this 16th day of December, 1911.

JOSEPH B. STRAUSS.

Witnesses:
MINNIE M. LINDENAU,
LILLIAN G. ROSS.