Nov. 17, 1925. 1,561,671

J. B. STRAUSS

BASCULE BRIDGE

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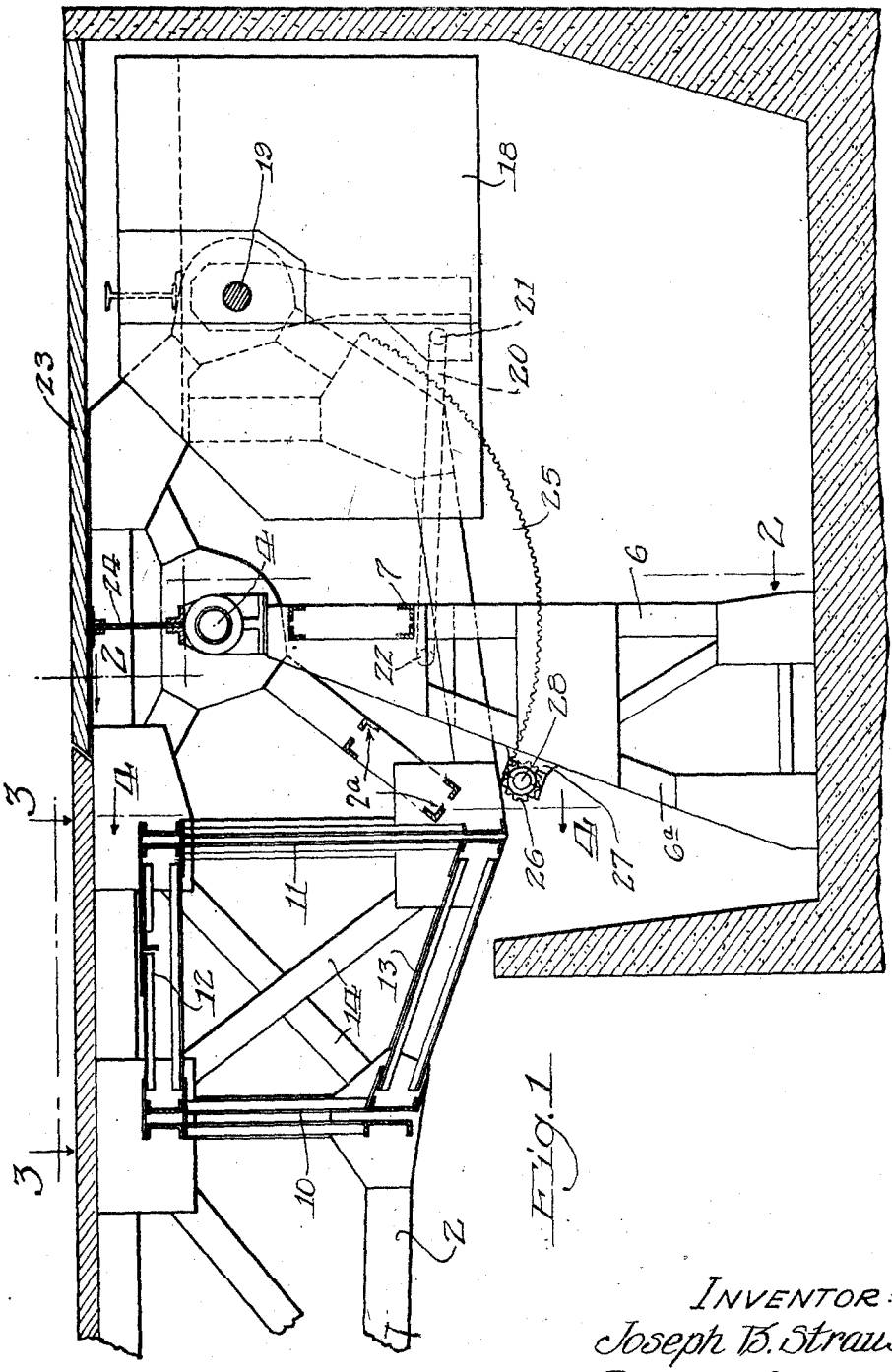

Fig. 1

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Fig. 2

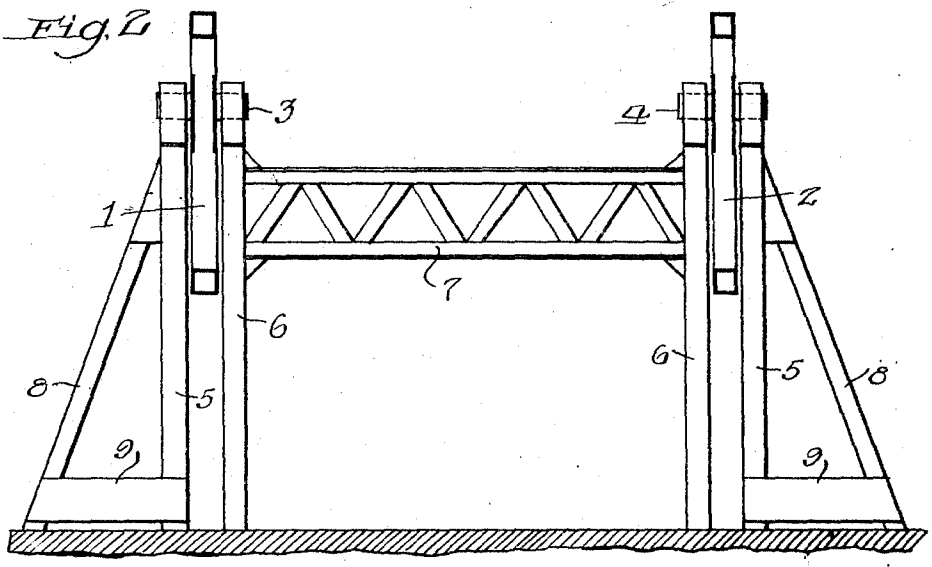

Fig. 3

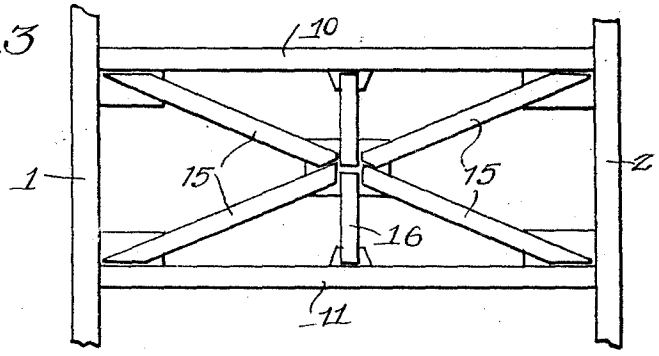

Fig. 4

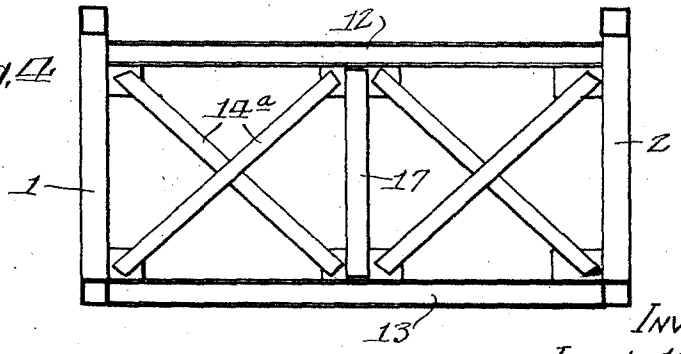

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Fig. 5.

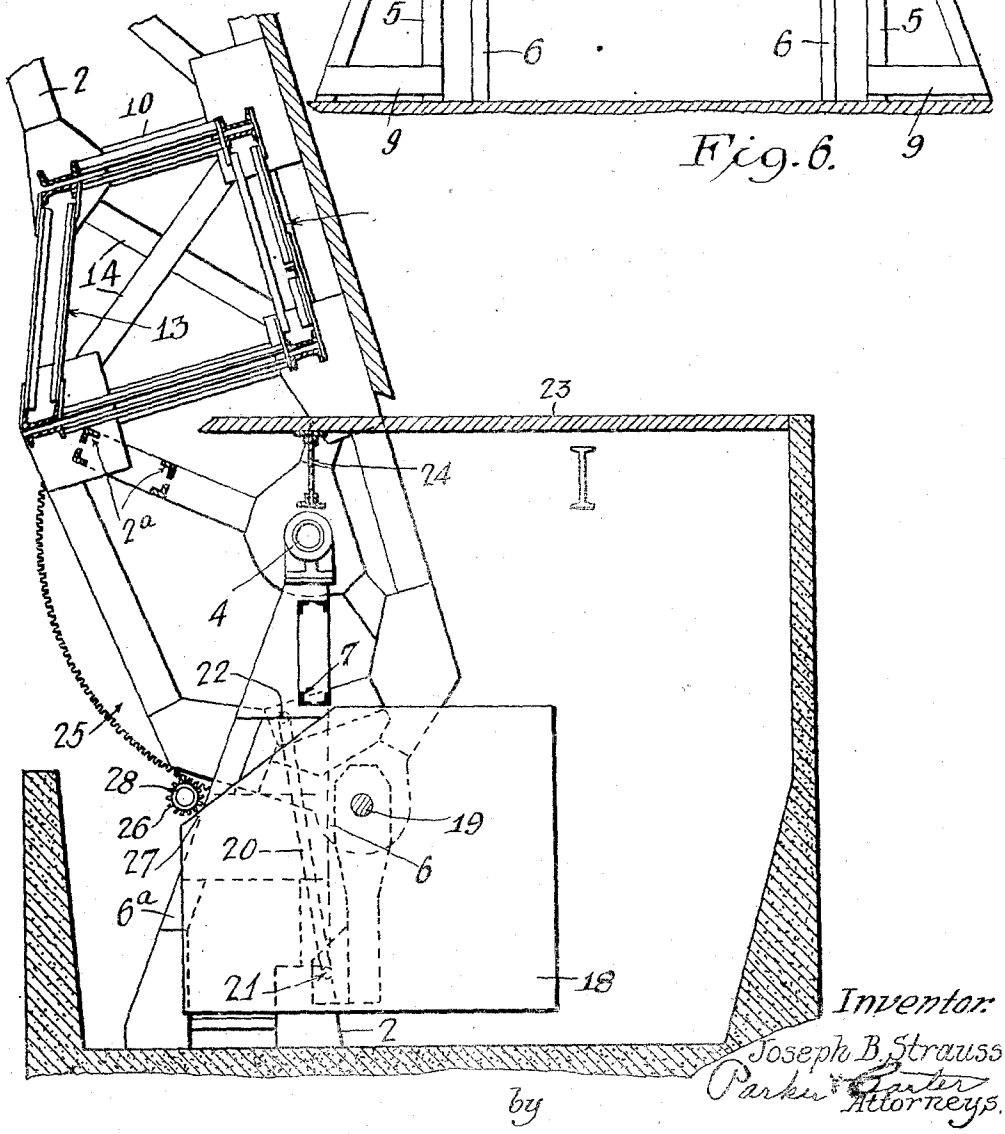
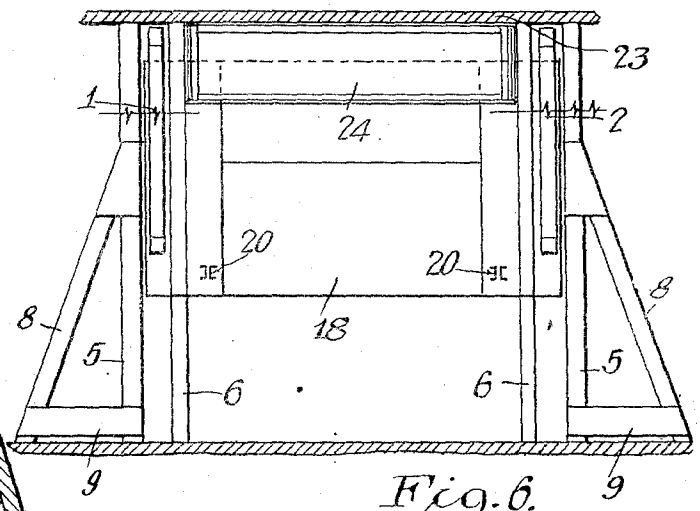


Fig. 6.



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Patented Nov. 17, 1925. 1,561,671

UNITED STATES PATENT OFFICE.

JOSEPH B. STRAUSS, OF CHICAGO, ILLINOIS.

BASCULE BRIDGE.

Application filed January 9, 1924. Serial No. 685,078.

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 bridges and has for its object to provide a new and improved bascule bridge. The invention has as a further object to provide a means for strengthening the movable leaf. The invention has as a further object to provide an efficient means for supporting the movable leaf. The invention has further objects which are more particularly pointed out in the accompanying description.

Referring now to the drawings:

Fig. 1 is a vertical sectional view of the bridge intermediate the two side trusses.

Fig. 2 is a sectional view taken on line 2—2 of Fig. 1.

Fig. 3 is a view taken on line 3—3 of Fig. 1 with the floor removed.

Fig. 4 is a sectional view taken on line 4—4 of Fig. 1.

Fig. 5 is a view similar to Fig. 1 showing the main leaf in its open position.

Fig. 6 is a sectional view taken on line 2—2 of Fig. 1 as seen in the direction opposite to the direction indicated by the arrows.

Like numerals refer to like parts throughout the several figures.

Referring now to the drawings, the bridge is provided with a main leaf having two separated trusses 1 and 2. These trusses are mounted upon trunnions 3 and 4. Each truss is located between the supports 5 and 6, these supports carrying the trunnions. The inside supports 6 are braced by a cross bracing member 7 between the trusses which braces them against displacement, this cross bracing taking the horizontal forces on the trunnions. The outside vertical supports 5 are provided with braces 8 which are connected at the bottom to the vertical supports by the members 9. The two separated trusses of the main leaf are provided with a cross bracing member which extends across between them in front of the trunnions and is preferably in the form of a quadrilateral. As herein shown, it is provided with the side members 10 and 11, the top member 12 and the bottom member 13 suitably cross braced vertically by the members 14 and horizontally by the members 15. There are central bracing members 16 and 17. The members 10, 11, 12, and 13 are preferably girders connected together at spaced points so that there is provided a series of girders extending crosswise of the span between the trusses and adjacent to the trunnions and in front of them which braces the leaf. These girders form a four sided or quadrilateral construction, there being transverse bracing between the girders. There is also provided cross bracing on the leaf extending from the lower flange of the truss toward the trunnions, such bracing as herein shown consisting of a cross box girder 2^a. This gives a rigid structure without rigid bracing in the rear and so as to leave ample room for the counterweight. The counterweight 18 at the rear end of the trusses extends across from truss to truss and is pin connected to the trusses by pins 19 and is provided with links 20 which are pin connected at 21 with the counterweight and at 22 with the trunnion support. The approach floor 23 is supported on the trunnion supports by means of suitable supporting members 24. The main leaf is provided with one or more racks 25. Mounted upon the diagonal member 6^a of the trunnion supports are the driving pinions 26 being connected thereto by the bearings 27, said pinions mounted on the shaft 28 which is driven by the motor. When the pinions are rotated the main leaf is lifted and lowered. In this construction the counterweight clears the supports; that is, the trunnion posts and trunnion post bracing when the leaf is opened and closed. The leaf bracing also clears the trunnion posts and trunnion post bracing. This construction therefore makes it unnecessary to brace the trusses at the rear of the trunnions and therefore provides proper space for the counterweight permitting the counterweight to be located in the space between the trusses and to extend across this space.

I claim:

1. A bascule bridge comprising a cantilevered lifting section or bascule leaf having trusses mounted on trunnions, a counterweight at the rear end of said trusses, a support for the leaf comprising vertical trunnion posts at the trunnions and supporting said trunnions, cross bracing on the leaf extending from the lower flange of the trusses

toward the trunnions, bracing for the trunnion posts to take the horizontal forces on the trunnion, said bracing adapted to clear the leaf and its bracing as the leaf is opened and closed.

2. A bascule bridge comprising a cantilevered lifting section or bascule leaf having trusses mounted on trunnions, a concrete counterweight at the rear end of said trusses and extending from truss to truss, a support for the leaf comprising vertical trunnion posts at the trunnions and supporting said trunnions, cross bracing on the leaf to take the lateral forces to the trunnions, bracing for the trunnion posts to take the horizontal forces on the trunnions, the counterweight and leaf bracing clearing the trunnion post and trunnion post bracing as the leaf is opened and closed.

3. A bascule bridge comprising a cantilevered lifting section or bascule leaf having trusses mounted on trunnions, a concrete counterweight at the rear end of said trusses and extending from truss to truss, a support for the leaf comprising vertical trunnion posts at the trunnions and supporting said trunnions, cross bracing on the leaf to take the lateral forces to the trunnions, bracing for the trunnion posts to take the horizontal forces on the trunnions, the counterweight pin-connected to the trusses, a link to guide the counterweight, said link pin-connected to the counterweight and to the trunnion post, the counterweight and leaf bracing clearing the trunnion post and trunnion post bracing as the leaf is opened and closed.

4. A bascule bridge comprising a cantilevered lifting section or bascule leaf having trusses mounted on trunnions, a counterweight at the rear end of said trusses, a support for the leaf, bracing for the leaf comprising a series of girders adjacent to the trunnion and in front of it, two of said girders vertical and two other girders connected to said first mentioned girders at separated points.

5. A bascule bridge comprising a cantilevered lifting section or bascule leaf having trusses mounted on trunnions, a counterweight at the rear end of said trusses, a support for the leaf, bracing for the leaf comprising a series of girders adjacent to the trunnion and in front of it, two of said girders vertical and two other girders connected to said first mentioned girders at separated points, and transverse bracing between said girders.

6. A bascule bridge comprising a main leaf having two separated trusses, trunnions for said trusses, supports for said trunnions, a four sided cross member between said trusses located in front of the trunnions and consisting of top and bottom braced members and side braced members.

7. A bascule bridge comprising a main leaf having two separated trusses, trunnions for said trusses, supports for said trunnions, a cross bracing member between said trusses located in front of said trunnions and formed in the shape of a quadrilateral.

Signed at Chicago county of Cook and State of Illinois, this 29th day of December 1923.

JOSEPH B. STRAUSS.