No. 894,239. PATENTED JULY 28, 1908.

J. B. STRAUSS.

BASCULE BRIDGE.

APPLICATION FILED MAR. 28, 1907.

Fig. 5

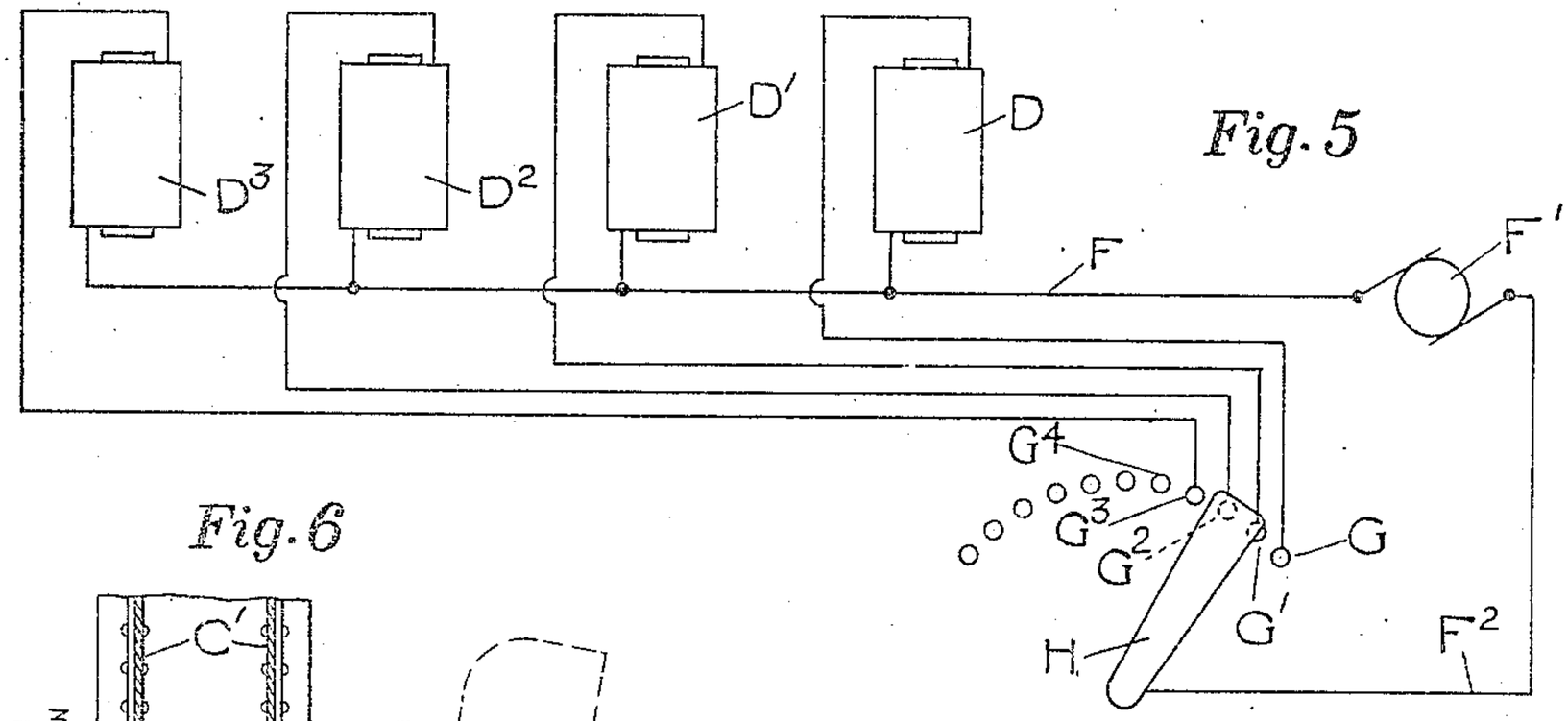

Fig. 6

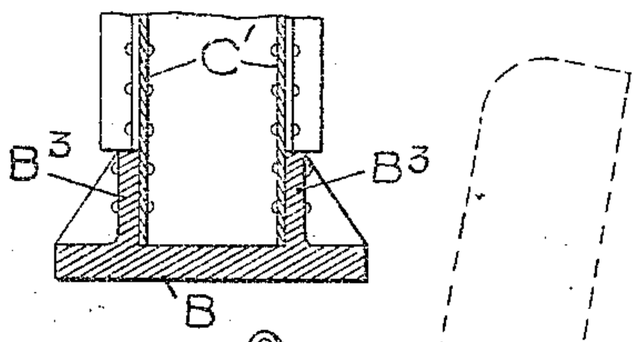

Fig. 4

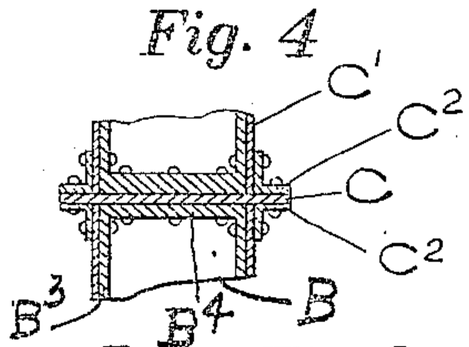

Fig. 1

Fig. 2

Fig. 3

WITNESSES:

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JOSEPH B. STRAUSS, OF CHICAGO, ILLINOIS.

BASCULE-BRIDGE.

No. 894,239. Specification of Letters Patent. Patented July 28, 1908.

Application filed March 28, 1907. Serial No. 365,179.

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 and improved bridge of this description.

Referring to the drawings, Figure 1 is a view showing one form of bridge embodying the invention; Fig. 2 is a sectional view taken on line 2—2 Fig. 1; Fig. 3 is a view of one of the sections of the bridge tread; Fig. 4 is a sectional view taken on line 4—4 of Fig. 2; Fig. 5 is a diagrammatic view showing the electro magnets and circuits; Fig. 6 is a view similar to Fig. 2 showing a modified construction.

Like letters refer to like parts throughout the several figures.

As shown in Fig. 1 there is a main span A. This main span is of the type known as the rolling lift bridge, the span rolling upon a suitable support when lifted instead of working upon trunnions. The tread of the bridge is made up of one or more sections B. The main span is provided with one or more straight supporting members C, and the sections B are each provided with a straight face B^1 and a curved face B^2. When a series of these sections are used they are placed end to end, and the curved faces form a continuous curve upon which the bridge rests and rolls. The sections B as shown in Figs. 2, 3 and 4 are made up of hollow pieces provided with flanges or radial projections B^3 and B^4 engaging with the supporting members C. The straight members C are inserted between the sections B as shown in Fig. 3. The main span is also provided with the plates or parts C^1 which are located between the members C. The plates C^1, straight members C and sections B are connected together. The sections B, as it were, form a tread for the main span and have curved outer faces. The parts C and C^1 may be connected together in any desired manner, as by means of the angle iron C^2, In Fig. 6 the sections B are arranged so that the flanges B^3 are on the outside of the part C^1 instead of between them, as shown in Fig. 2. The main span is preferably provided with radial projecting members C engaging with the sections B so as to better transmit the shear stresses. It will be seen that in this way the tendency of the track or tread to shear off under the action of the rolling movement is obviated and the most serious objection to this type of bridge thereby removed. It will also be evident that the tread may be removed in sections and worn out parts replaced.

Any suitable means may be used for lifting and lowering the bridge. As herein shown there is provided a series of electro magnets D, D^1, D^2, etc. arranged so as to coöperate with the main span. These electro magnets are placed upon the support E engaged by the tread of the main span. This tread acts, as it were, as an armature and when the electro magnets are successively energized the tread is attracted so as to roll and lift the bridge. Any suitable means may be used for energizing these electro magnets. As herein shown one end of the coil of each electro magnet is connected with a conductor F connected to a source of electric supply F^1. The other ends of the coils of the electro magnets are connected with contacts G, G^1, G^2, etc. A movable contact device H is connected with the source of electric supply F^1 by the conductor F^2. It will thus be seen that by moving the movable contact H along the contacts G, G^1, G^2, etc. the electro magnets D, D^1, D^2 etc. may be successively energized. It will further be seen that by properly proportioning the width of contacts G, G^1, G^2 and the movable contact H the parts can be arranged so as to have any number of the electro magnets energized at one time. It will be seen that by means of this construction the bridge is controlled without the use of gearing of any kind. Any suitable counterweight arrangement may be used. As shown in Fig. 1 the counterweight J is pivotally connected by link J^1 to a support J^2 and is also pivotally connected by the connecting piece K with the end of the main span A. It will be seen that by this arrangement the counterweight travels back with the main span as it is lifted.

It will be noted that the main span is provided with a plurality of connecting straight faces at an angle to each other opposite the support upon which the main span rolls, namely, the ends of the plates or parts C^1, and that the removable sections B have straight faces which engage the straight faces at the ends of the plates C^1 and are attached to said straight faces, being located

between the straight faces of the support. The opposite sides of the sections B are curved faces which engage the support upon which the bridge rolls.

The sections B, as it were, form a plurality of supporting sections for the main span, and the strain on said supporting sections is directly communicated to the web members of the main span. It will further be noted that the supporting sections are directly connected to the web members of the main span and act both as flange members and a track part.

I claim:

1. A bascule bridge comprising a main span, adapted to rest and roll upon a support, a tread for said main span comprising a sectional track part removably attached thereto and having a curved engaging face which engages the support.

2. A bridge comprising a main span, a support upon which it is adapted to rest and roll, said main span provided with a plurality of straight faces at an angle to each other, a plurality of removable sections having straight faces which engage the straight faces of the main span, the opposite sides of said sections being provided with curved faces which engage the support upon which the bridge rolls.

3. A bridge comprising a movable main span adapted to rest and roll upon a support, said main span provided with a plurality of connecting straight faces at an angle to each other opposite said support, a plurality of removable sections adapted to be attached to said straight faces and located between the straight faces and the support.

4. A bridge comprising a movable main span adapted to rest and roll upon a support, said main span provided with a plurality of connecting straight faces at an angle to each other opposite said support, a plurality of removable sections adapted to be attached to said straight faces and located between the straight faces and the support, and means for moving the main span so that said sections successively engage said support.

5. A bridge comprising a main span, a support upon which it rests and rolls, a tread on the main span for engaging said support having a curved face, said tread having radial projections engaging with the supporting members and which hold said tread in place.

6. A track part for rolling bridges consisting of a plurality of supporting sections, and means for transmitting the strain on said sections directly to the web members of the main span.

7. A track part for rolling bridges comprising a plurality of supporting sections adapted for direct connection to the web of the main span, and acting both as a flange member and a track part.

8. A track part for rolling bridges comprising a series of flange sections, one face adapted to be connected to the web of the main span, and the other adapted to form a rolling surface for the bridge.

9. A bridge comprising a main span adapted to rest and roll upon a support, a plurality of electro magnets associated with said main span, means for successively energizing said electro magnets so as to move the main span to its lifted position.

10. In a bascule bridge an operating mechanism for said bridge comprising a plurality of electro magnets located in the path of the moving main span, said main span adapted to act as the armature for said electro magnets, and means for successively energizing the electro magnets in either direction to lift and lower the bridge.

11. An operating device for bascule bridges comprising a movable part and a fixed part, an electro magnetic device on the fixed part, and an armature on the movable part, the two arranged so that the application of the current will open or close the movable part.

12. An operating device for bascule bridges comprising a power device adapted to act directly without the intervention of gearing upon the movable part to open or close it.

13. An operating device for bascule bridges comprising two magnetic parts, one connected to the movable part and the other adjacent thereto, the two parts adapted to interact so as to open and close the bridge.

14. A bridge comprising a movable part adapted to rest and roll upon a support, said movable part provided with a pivoted counterweight, a guide for said counterweight adapted to hold it in an approximately vertical position as the bridge moves.

15. A bridge comprising a movable span adapted to rest and roll upon a support, said span provided with a pivoted counterweight, a link associated with said counterweight, a fixed part to which said link is connected, the parts arranged so that the counterweight remains approximately vertical during all the various movements of the bridge.

16. The combination with a rolling lift bridge adapted to rest and roll upon a support, of a counterweight pivotally connected to the end of said bridge and adapted to move with the bridge as it rolls to its open and closed position.

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Witnesses:
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SOPHIE B. WERNER.