G. HUEBNER.

BRIDGE CONSTRUCTION.

APPLICATION FILED JUNE 2, 1914.

1,122,504. **Patented Dec. 29, 1914.**

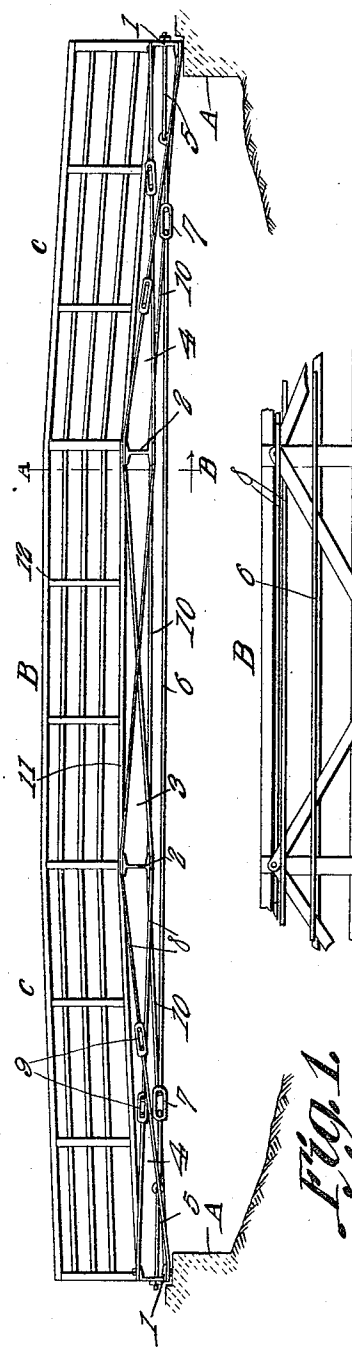


Fig. 1.

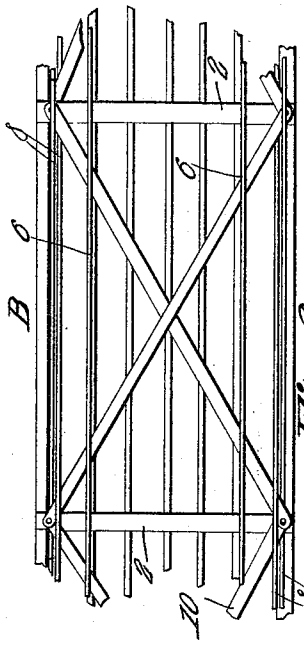


Fig. 2.

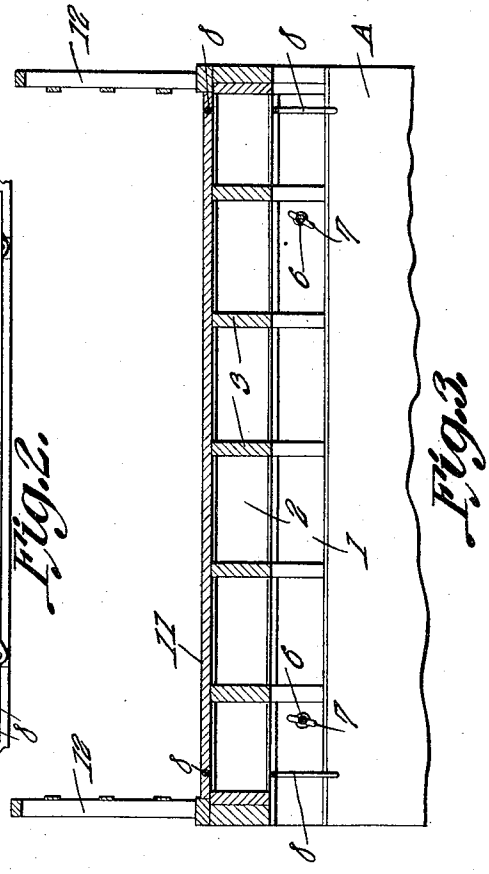


Fig. 3.

Witnesses

J. R. Somers

S. Willard

G. Huebner,
Inventor

by C. A. Snow & Co.
Attorneys

UNITED STATES PATENT OFFICE.

GEORGE HUEBNER, OF LAGRANGE, TEXAS.

BRIDGE CONSTRUCTION.

1,122,504. Specification of Letters Patent. Patented Dec. 29, 1914.

Application filed June 2, 1914. Serial No. 842,430.

To all whom it may concern:

Be it known that I, GEORGE HUEBNER, a citizen of the United States, residing at Lagrange, in the county of Fayette and State of Texas, have invented a new and useful Bridge Construction, of which the following is a specification.

This invention relates to bridge construction especially designed for use in the building of small bridges of the arch or span type, one of the objects of the invention being to provide simple means whereby the bridge is braced so as to be held against sagging, buckling or swaying, the parts of the bridge being easily assembled and being of such a nature as to render the cost of construction comparatively small.

With the foregoing and other objects in view which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed, it being understood that changes in the precise embodiment of the invention herein disclosed, can be made within the scope of what is claimed, without departing from the spirit of the invention.

In the accompanying drawings the preferred form of the invention has been shown.

In said drawings: Figure 1 is a side elevation of a bridge constructed in accordance with the present invention. Fig. 2 is a bottom view of one span of the bridge and showing the means employed for preventing swaying. Fig. 3 is an enlarged transverse section, said section being taken on the line A—B Fig. 1.

Referring to the figures by characters of reference A designates the piers or abutments on which are mounted caps 1 preferably formed of channel beams the flanges of which are extended toward each other. The bridge is made up of a middle span B and two end spans C. At the meeting ends of the spans B and C are arranged transverse I-beams or caps 2 and extending between the upper and lower flanges of these caps are the ends of the stringers 3 of the middle span. The stringers 4 of the end spans are seated at one end in the caps 1 and at their other ends in the caps 2. The stringers 4 are inclined upwardly toward the stringers 3 while said stringers 3 are disposed horizontally. Bolts 5 are adjustably connected to the end caps 1 and a tie cable 6 connects these bolts, said cables being made up of sections adjustably connected together by means of turn buckles 7. These ties serve to prevent the end caps 1 from moving from each other.

For the purpose of preventing the structure from buckling under any weight to which it may be subjected, equalizing cables are employed. Preferably two of these cables, indicated at 8, are provided at each side of the bridge. One of the cables 8 is secured to the top of one of the end caps while the other cable is secured to the bottom of said end cap. The said cables are then crossed at the side of one end span and pass over and under the near cap 2. The cables are then again crossed and passed over and under the next cap 2 after which they are crossed for a third time and then secured to the upper and lower sides of the other end cap 1. These equalizing cables may be provided with turn cables 9 whereby slack can be taken up and a rigid structure produced. Crossed braces 10 are arranged under each span of the bridge, these braces being bolted at their ends to the caps and serving to prevent the bridge from swaying. A floor 11 can be secured in any desired manner upon the stringers 3 and 4 and a railing 12 can be erected along each side of the bridge.

It has been found that a bridge structure such as herein described can be readily set up, is inexpensive, and will withstand any ordinary blows and strains to which it may be subjected, the bridge thus being especially adapted for use over small streams and depressions. Importance is attached to the fact that all of the truss or bracing structure is located below the floor of the bridge so that the appearance of the bridge is not marred by an unsightly showing of rods and braces. As a matter of fact, and as shown in Fig. 3, the bridge can be so built as to conceal a large portion of the cables, bolts, etc., forming the truss.

What is claimed is:—

1. A bridge construction including I-beams constituting "intermediate caps" and channel beams constituting end caps, stringers seated at their ends between the flanges of the beams, ties connecting the end caps, and crossed equalizing elements connected at their ends to the end caps and extending over and under the intermediate caps, said

intermediate caps being of a length equal to the width of the bridge and constituting stringer supporting floor beams.

2. A bridge construction including I-beams constituting intermediate caps and U-beams constituting end caps, stringers seated at their ends between and supported by the flanges of the caps, said intermediate caps being of a length equal to the width of the bridge and constituting floor beams, the stringers between the end caps and the adjacent intermediate caps being inclined upwardly toward each other and the stringers between the intermediate caps being horizontal, tie devices connecting the end caps, and equalizing members secured at their ends to the end caps and extending over and under the intermediate caps, said members being crossed between said intermediate caps and between said intermediate caps and the end caps.

3. A bridge construction including I-beams constituting intermediate caps and U-beams constituting end caps, stringers seated at their ends between and supported by the flanges of the caps, said intermediate caps being of a length equal to the width of the bridge and constituting floor beams, the stringers between the end caps and the adjacent intermediate caps being inclined upwardly toward each other and the stringers between the intermediate caps being horizontal, tie devices connecting the end caps, and equalizing members secured at their ends to the end caps and extending over and under the intermediate caps, said members being crossed between the intermediate caps and between said intermediate caps and the end caps, and crossed braces secured at their ends to the caps for holding the bridge against swaying.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

GEORGE HUEBNER.

Witnesses:
OLIVIA WILBRICH,
J. F. TAYLOR.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."