

No. 684,100.

Patented Oct. 8, 1901.

F. A. RICHTER.  
TOY BRIDGE.

(Application filed May 18, 1901.)

(No Model.)

Fig. 1.

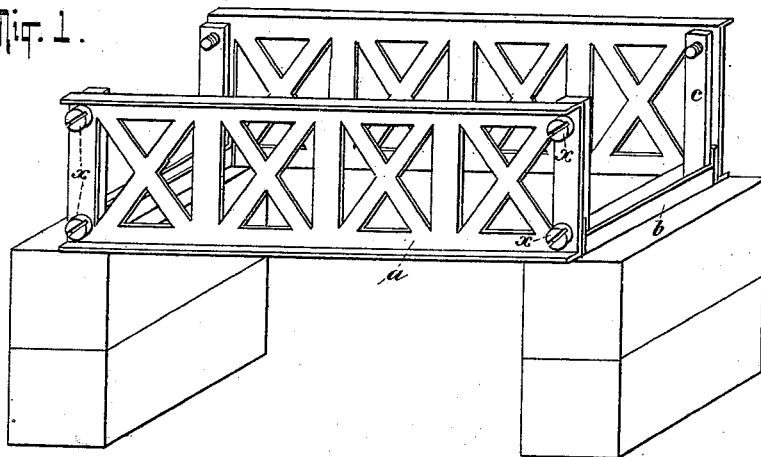


Fig. 2.

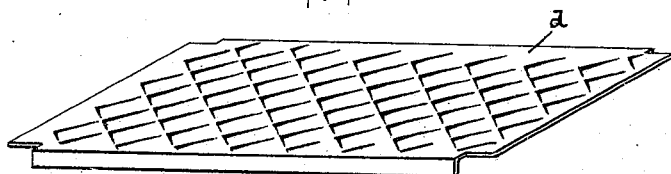


Fig. 5.

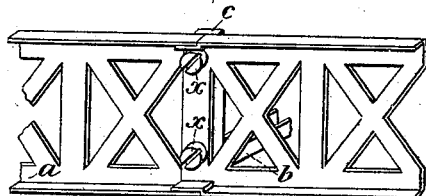


Fig. 6.

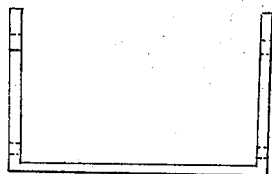


Fig. 3.

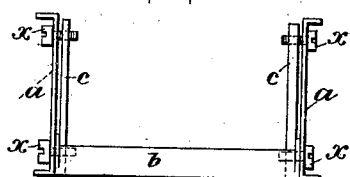
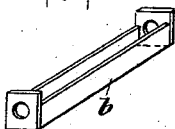


Fig. 4.



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# UNITED STATES PATENT OFFICE.

FRIEDRICH ADOLF RICHTER, OF RUDOLSTADT, GERMANY.

## TOY BRIDGE.

SPECIFICATION forming part of Letters Patent No. 684,100, dated October 8, 1901.

Application filed May 18, 1901. Serial No. 60,815. (No model.)

*To all whom it may concern:*

Be it known that I, FRIEDRICH ADOLF RICHTER, a subject of the King of Bavaria, residing at Rudolstadt, Germany, have invented certain new and useful Improvements in Toy Bridges, of which the following is a specification.

My invention relates to the structure of toy bridges composed of several parts, and has for its object to produce a structure which may be readily put together and taken apart by children and which will be stronger and better able to resist tension in the direction of breadth and length than toy bridges made up to the present time.

In order to make the present specification more easily intelligible, reference is had to the accompanying drawings, in which similar reference-letters define similar parts throughout the several views.

Figure 1 is a perspective view of my toy bridge, in which the rail-plate or foot-plate has been removed. Fig. 2 shows the foot-plate. Fig. 3 is an end view of the bridge. Fig. 4 is a detail view of one of the connecting-ties. Fig. 5 shows the manner in which several sections of my bridge are united when it is desired to make a bridge of greater length than the simple form as shown in Fig. 1. Fig. 6 is a detail view of another connecting-tie.

The piers of the bridge are composed of stone or wooden building-blocks laid one upon the other, but preferably of the well-known anchor-blocks. The bridge structure itself is composed of sheet metal stamped into suitable shapes or of other material which is completely of permanent rigidity. The girders *a*, (shown in Fig. 1,) provided with perforations for the passage of the screw-thread, are stamped out, so as to present a decorative unit. Their upper and lower edges are bent over, so as to flare outwardly, thus forming a protection for the screw-head *x*, furnishing a smooth base fitting exactly upon the building-blocks of the piers and preventing injury to the hand of the child, which would be caused by the sharp edges. The two girders are connected by the cross piece or tie *b*. (Shown in detail in Fig. 4.) These ties are

U-shaped in section, so that the two sides flare upwardly. The ends are also bent over and are provided with perforations for the passage of the screw. A bar *c*, fitting snugly in its upright position within the tie *b*, is screw-threaded at its upper and lower portions. This bar or brace *c* is preferably so constructed that the flaring sides of the tie *b* exert slight spring-pressure on it, so that it will stand upright and be maintained in this position without being specially held by hand. When these three parts—the girders, tie, and bars—are put together, as shown in Figs. 1 and 3, the perforations of the three parts correspond, so that a screw *x* passes readily through them, and by reason of its bite the bar or brace *c* holds the parts firmly together. When both ends of the girders have been thus connected, the structure presented in Fig. 1 will be complete, whereupon the rail-plate or foot-plate *d*, Fig. 2, having its lateral edges bent over downwardly, as shown, is placed upon the ties *b* in Fig. 1, and the complete bridge structure results. The connection of the girders can, however, be made easier, and in place of the ties and braces another connection made out of one piece can be employed, as shown in Fig. 6. This connection consists in a rail the ends of which are bent upward in the shape of the letter **U**. Both ends, which are bent upward, are provided with screw-holes corresponding to the respective holes in the girders. These cross-girders out of one piece render the braces and ties, as precedingly described, dispensable.

In case it is desired to produce a bridge of greater length than that shown in Fig. 1 a second set of girders is provided, as shown in Fig. 5, corresponding in all respects to the girders shown in Fig. 1 except that their flaring edges at one side are slightly stamped inward, as shown in Fig. 5. This leaves an additional thickness of metal for the screw to pass through, and the screws are of sufficient length to combine the two overlapping girders, the tie, and the brace, as shown in Fig. 5.

When the screws are removed, the parts can all be packed in a small flat space and be shipped with the building-blocks conven-

iently for children to handle. A small screw-driver is usually inclosed for the sake of convenience.

In the drawings I have shown a toy bridge  
 5 comprising my invention in the form of a truss-bridge; but it will be understood that the construction may be varied without departing from the spirit of my invention by stamping the girders into other forms, thus  
 10 instead of a truss-bridge a cantaliver, suspension, or tower bridge might be erected. There might also be modifications in other respects—as, for instance, in a suspension-  
 15 bridge the tops of the girders might be connected by an additional tie, in the same manner as the girders in Fig. 1 are connected, for the purpose of gaining greater strength for the whole structure.

I claim as my invention—

20 1. In a toy bridge, the combination of the girders *a* and the ties *b*, braces *c* connecting

the ties and girders and a loose foot-plate *d*, substantially as and for the purposes described.

2. In a toy bridge, the combination of gird- 25 ers, braces extending vertically and secured to said girders, and ties connecting the braces.

3. In a toy bridge the combination of gird- ers, braces extending vertically and secured to said girders and ties connecting the braces 30 and integral therewith.

4. In a toy bridge, the combination of gird- ers, braces extending vertically and secured to said girders, ties connecting the braces, and a foot-plate having its lateral edges bent 35 over.

Rudolstadt, May 1, 1901.

FRIEDRICH ADOLF RICHTER.

Witnesses:

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