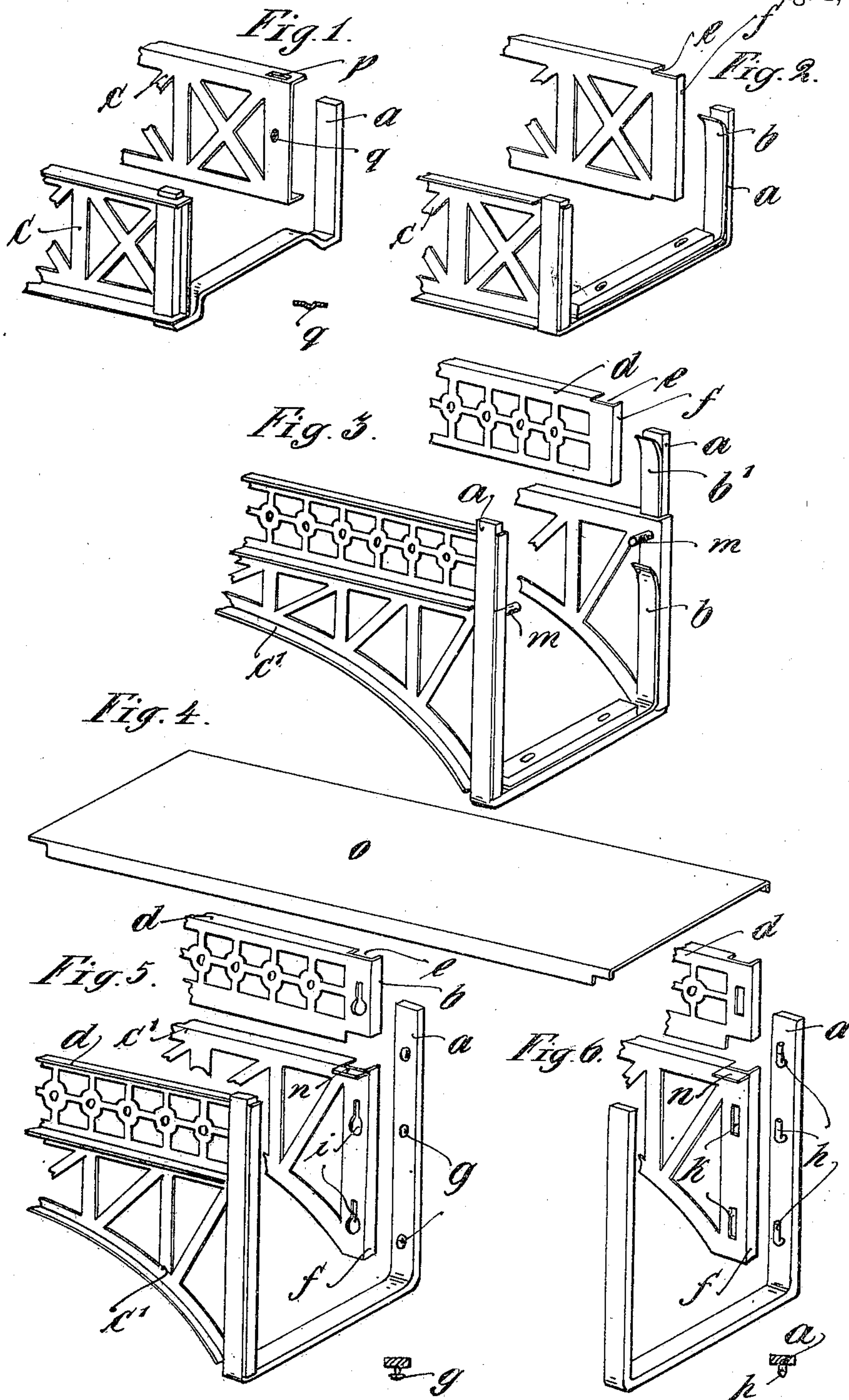


999,466.

F. A. RICHTER.
TOY BRIDGE.
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Patented Aug. 1, 1911.



Witnesses:
Fritz Jügel
G. V. Rasmussen

Inventor:
Friedrich Adolf Richter
by Priesen Thunath
Attorneys

UNITED STATES PATENT OFFICE.

FRIEDRICH ADOLF RICHTER, OF RUDOLSTADT, GERMANY.

TOY BRIDGE.

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Specification of Letters Patent.

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To all whom it may concern:

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

My invention relates to toy bridges and has for its object to provide a bridge composed of several parts which may be readily assembled and put together in a simple manner without the aid of screws, splints, pegs and the like, and which is readily taken apart and is distinguished for its great stability and rigidity.

Bridges constructed according to my invention are specially adapted for use by children, owing to their simplicity of construction and the readiness with which the different parts may be connected and assembled and as readily disconnected.

Reference is to be had to the accompanying drawings in which—

Figure 1 is a perspective view of one form of my improved bridge construction, Fig. 2 is a similar view of another form of my invention, Fig. 3 is a similar view of still another form, Fig. 4 is a perspective view of a bridge section, and Figs. 5 and 6 are perspective views of two additional forms of my invention.

In the drawings *a* represents preferably U-shaped bows of angular cross section arranged to form substantially a foundation on which the bridge is constructed and supported. In the particular form of construction shown in Fig. 1, the bridge girders *c* are formed with angular flanges which extend lengthwise thereof at opposite edges and each of which is provided with an aperture *p* located near its opposite ends, it being understood that the apertures *p* of each flange at each end, are in alinement with each other. These apertures *p* are of a size and shape to be readily slipped over the upwardly extending members of the bow *a*, as clearly shown in Fig. 1. Each of said girders *c* is further provided near its opposite ends with lugs *q* which frictionally engage the upwardly extending members of the bows *a*, when the parts are assembled and prevent accidental displacement thereof. A bridge section *o* is supported on the horizontal members of the bows *a* in the finished structure. To assemble this form of bridge the apertures *p* of the girders

are slipped over the upright members of the bows *a* and the bridge section *o* is set upon the horizontal portion of said bows *a*. The apertures *p* cooperating with the upright members of the bows prevent any relative movement of the girders other than a vertical one.

In the form of my invention shown in Fig. 2, each bow *a* is provided with resilient members *b* suitably secured in position thereon and extending parallel with and adjacent to the upright members of said bow. In this illustration, the girders *c* are formed with flanges similar to the longitudinal flanges on the girders shown in Fig. 1, with the exception that said flanges in Fig. 2 terminate short of the ends of said girders. The said girders further have their ends preferably turned or bent to form vertical flanges *f*, which, with the horizontal flanges hereinbefore referred to, form recesses *e*. In assembling this form of my invention, the girders *c* are slipped between the upright members on the bows *a* and the resilient members *b* in which position they are firmly held against displacement by the pressure of said resilient members. Lengthwise movement of said girders *c*, is prevented through the medium of the flange *f* and the horizontal flanges which engage opposite edges of the upright members of the bows *a*. In other words the said upright members extend between the flanges *f* and the ends of the respective horizontal flanges into the recesses *e* and secure the said girders in position. In this form the bridge section *o* may be supported directly on the horizontal members of the bows *a* which in this case are provided with a reinforcing piece as shown in Fig. 2, or if desired the said girders may be provided with lugs similar to the lugs *q* for supporting said bridge section *o*.

In Fig. 3 the girders *c'* are constructed in the same manner as the girders *c* in Fig. 2, and are secured to the bows *a* by means of similar resilient devices *b*. The bows *a* in this form, however, are made with upright members of increased length and are provided with additional resilient holding devices *b'* for the accommodation of railings *d*. The said railings are secured in position on the bows between the resilient members *b'* and the upright members of the bows *a* and set upon the upper edge of the girders *c'*. Lengthwise movement of these

railings is also prevented by means of flanges *f* and horizontal flanges or in other words the recesses *e*, in the same manner as described with regard to the girders *c* in Fig. 2. Pins or projections *m* are located on the girders *c'* near the upper edges thereof and serve to support the bridge section *o*.

The construction shown in Fig. 5 differs from those already described in that the upright members of the bows *a* are provided with spaced projections *g* which cooperate with slots *i* preferably of a key hole type on the girders *c'*, to support said girders in position. Railings *d* are also provided and have a similar key hole slot arranged to cooperate with the uppermost projections *g* to secure said railings in position. Otherwise this form of construction may be the same as that shown in Figs. 2 and 3. The bridge proper in this case is supported on projections *n*, located at the upper edge of said girders *c'* and preferably integral therewith although this is not absolutely necessary.

In Fig. 6 upwardly projecting pins *h* have been substituted for the projections *g* of Fig. 5 and slots *k* have been substituted for the slots *i*, otherwise this form of my invention is the same as that shown in Fig. 5.

In Fig. 5 the girders and railings are prevented from slipping from the projections *c* by means of the heads thereof, the shanks of said projections extending through the reduced portions of said slots, while in Fig. 6 the upwardly extending portions of the pins *h* prevent such displacement of the girders and railings. It is to be understood that the heads of the projections *c* are of a size to be easily slipped through the enlarged portions of the slots *i* but are too large to pass through the reduced portion thereof. Thus to disengage said girders it is first necessary to raise them to bring the enlarged portions of the slots *i* and the heads of the lugs *c* into registry with each other after which said girders may be removed by a simple lateral movement.

It will thus be seen that in all the forms of my invention, the several parts constituting the finished structure, are all easily and

quickly assembled without the aid of screws or other similar fastening devices, and when so assembled, are firmly held in position against accidental displacement or dislocation. In order to prevent the bridge section *o* from slipping from the various supporting mediums, that is the lugs *g* and projections *m* and *n* the said bridge section *o* is formed with longitudinal downwardly extending flanges at opposite edges. These flanges terminate short of the ends of the bridge section *o* and the ends thereof abut against the said lugs *g* and projections *m* and *n* so that lengthwise movement of the bridge section *o* is absolutely prevented.

Various changes in the specific constructions shown and described may be made within the scope of the claims without departing from the spirit of my invention.

I claim:

1. A toy bridge comprising supporting end members, removable side members slidably mounted thereon and a bridge section removably connected therewith.

2. A toy bridge comprising U-shaped end members, removable side members slidably mounted on the upright portion of said end members and a bridge section removably connected therewith.

3. A toy bridge comprising side members provided with openings, U-shaped end members adapted to extend into said openings and a bridge section connected with said end members.

4. A toy bridge comprising side members, flanges extending lengthwise of said side members and each provided with openings, U-shaped end members adapted to extend into said openings, projections on said side members adapted to frictionally engage said end members and a bridge section removably connected with said end members.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

FRIEDRICH ADOLF RICHTER.

Witnesses:

HENRY HASPER,

ARTHUR SCHROEDER.