

[54] **BRIDGE CONSTRUCTION SET**

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[51] Int. Cl.² **A63H 33/06; G09B 19/00**

[58] Field of Search **46/16, 17; 35/16**

[56] **References Cited**

UNITED STATES PATENTS

249,448 11/1881 Barnes 46/17

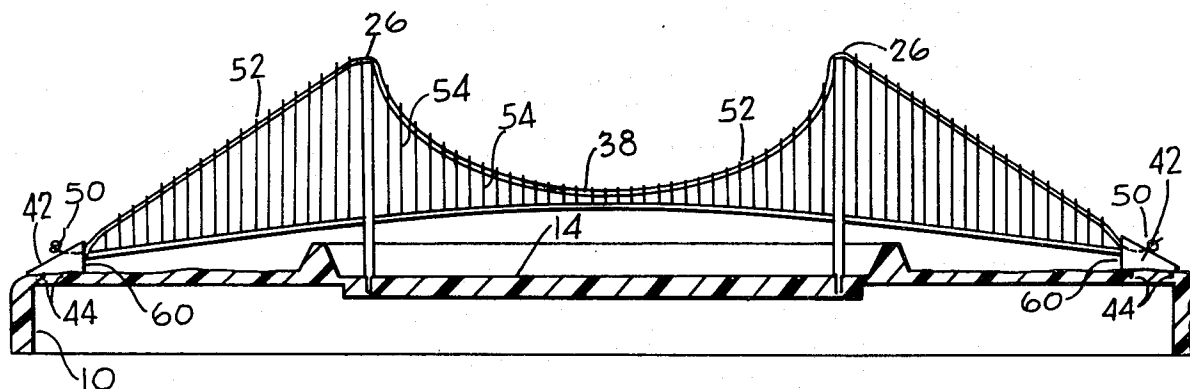
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[57] **ABSTRACT**

Described is a bridge construction set or kit for erecting toy suspension bridges and including a base on each end of which are mounted abutments receiving the ends of a roadway and of bridge cables. Towers over which pass the cables are mounted on the base. Link wires are also provided for suspending the roadway to the bridge cables. By changing the number, appearance and size of the component parts, models of various well-known bridges can be erected.

4 Claims, 7 Drawing Figures



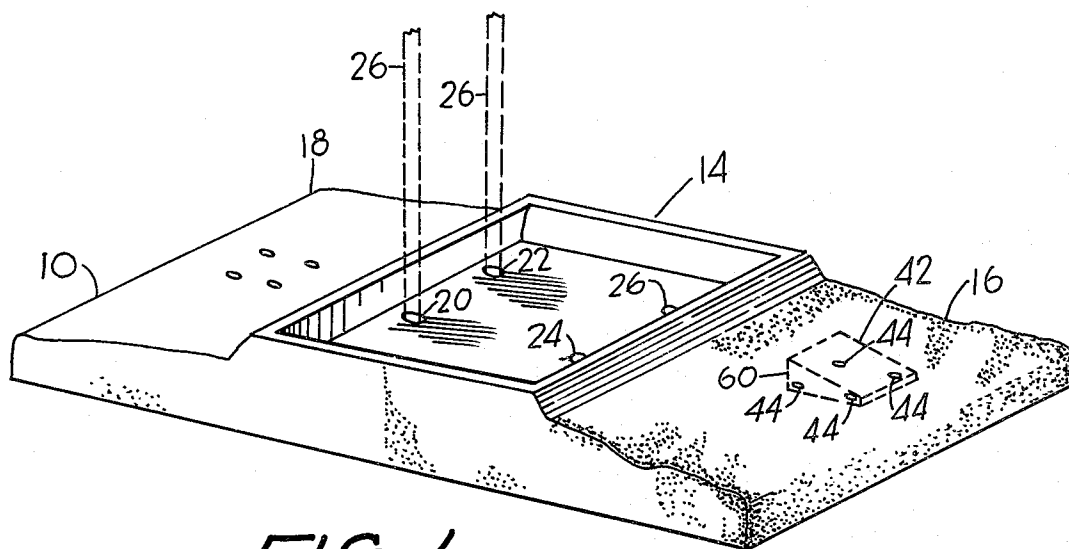


FIG. 1

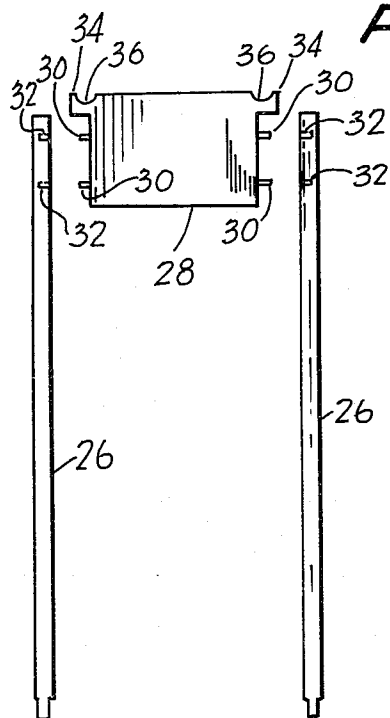


FIG. 2

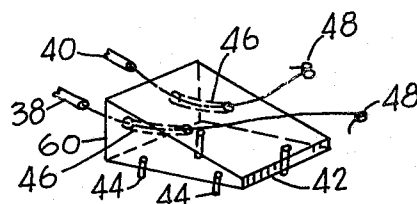


FIG. 3

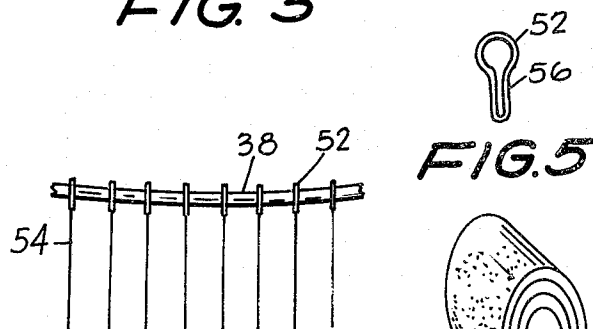


FIG. 4

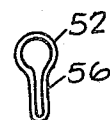


FIG. 5

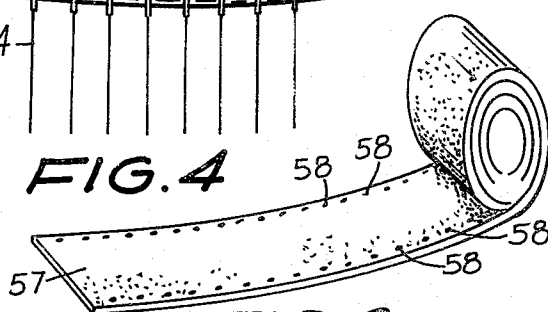


FIG. 6

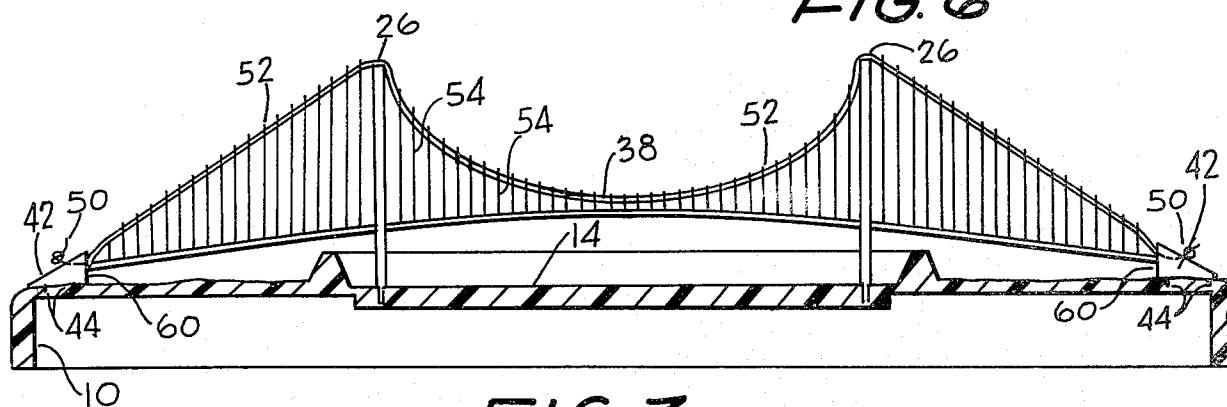


FIG. 7

BRIDGE CONSTRUCTION SET

BACKGROUND OF THE INVENTION

1. Field of the Invention

This invention relates to a kit or set containing parts for constructing toy bridges. More specifically, the invention relates to means for making models of bridges, in particular, of famous bridges and is intended for the use of adults, and/or, children.

2. State of the Art

The art to which this invention relates is aware, inter alia, of the following U.S. Pat. Nos: 2,635,303; 3,453,949; 2,044,735; 1,309,240; 3,077,696. The structures described therein are not designed specifically for making bridge models according to predetermined plans or instruction.

The principal object of this invention is to provide means for constructing an article of this character which combines simplicity, strength and durability in a high degree, together with inexpensiveness of construction.

Other objects of this invention will in part be obvious and in part hereinafter pointed out.

The invention accordingly consists in the features of construction, combinations of elements, and arrangement of parts which will be exemplified in the construction hereinafter described, and of which the scope of application will be indicated in the following claims.

In the accompanying drawing, in which is shown one of the various possible illustrative embodiments of this invention wherein like reference character identify the same or like parts:

FIG. 1 is a perspective view showing a base element for a bridge-building kit in accord with the invention;

FIG. 2 is a front elevation of a tower element;

FIG. 3 is a perspective view of an abutment;

FIG. 4 is a fragmentary view of suspending means for the roadway;

FIG. 5 is a front elevation of a thimble for securing link wires to the bridge cables;

FIG. 6 is a perspective view of the roadway element; and

FIG. 7 is a front elevation partly in section of a finished bridge according to the invention.

Referring to FIG. 1, the base 10 for the model bridge is generally rectangular with a flat central cavity 14 intermediate end portions 16 and 18 which can have undulated upper portions so as to resemble the natural contour of the approaches to a bridge. Base 10 is hollow as shown in FIG. 7 and can be made of plastic, wood, metal or of any of a variety of durable materials. The entire assembly can be colored as desired.

Spaced pairs of openings 20, 22, 24 and 26 are drilled in the center of the base for receiving the lower ends of uprights 26 which together with cross piece 28 form the towers of the bridge. As shown in FIG. 2, member 28 has a pair of pins 30 on each side which fit in openings 32 in uprights 26. Member 28 has side wings 34 which rest on the top of uprights 26 when the towers are assembled. Each wing has a rounded cut out 36 in its upper part in which the upper bridge cables 38, 40, are received.

As shown in FIGS. 1 and 3, a pair of triangular abutments 42 are mounted on the ends of base 10 by means of screws 44. Abutments 42 have upwardly curved openings 46 which receive the ends of cables 38 and which contain therein inner cables 48 which are passed

through and out of the back of the abutments. As shown in FIG. 7, the ends of the inner cables are knotted together at 50 to make the cables taut.

In assembling model bridges according to the invention, abutments 42 are first mounted on the base and then the tower elements 26 and 28 are secured in place. The ends of inner cables 48 are passed through openings 46 of one of the abutments and tied together. A plurality of key hole-shaped links 52 (FIG. 5) each having a guide wire 54 secured to its lower end 56 are threaded on outer bridge cables 38 and 40 to serve as suspending means for roadway 57 (FIG. 6).

Next, cables 38 and 40, with links 52 and depending guide wires in mutually spaced relation, are passed over the towers to be supported in cut outs 36 therein. The free ends of inner cables 48 are passed through the openings in the other abutment and tied loosely. Then, roadway 57 which has a pair of longitudinal openings 58 is placed between the abutments 42 with its ends in contact with the straight inner ends 60 to which they may be glued or otherwise secured at a point immediately below the outer ends of bridge cables 38 and 40 as shown in FIG. 7. The depending end of each guide wire 54 is later inserted in its respective opening 58 in the roadway and secured therein by gluing, heat sealing or otherwise. Finally, the bridge cables are tightened by pulling on the ends of inner cable 38 and 40 on the side where they were loosely tied.

It will be appreciated that any number of the construction elements above described can be provided in a set or kit embodying the concept of the invention so as to enable one to build model bridges of one's own design. Similarly, the elements may be designed and shaped specifically to build a scale model of a famous bridge such as the Golden Gate or George Washington Bridges. Such bridges can have several towers and superposed roadways. Furthermore, bridges of other designs such as turn bridges, concrete arch, cantilever, floating, steel arch, cable stayed, continuous truss, and draw bridges, etc., can be built according to modifications of the invention.

The operation and use of the invention hereinabove described will be evident to those skilled in the art to which it relates from a consideration of the foregoing.

It will thus be seen that there is provided a device in which the several objects of this invention are achieved, and which is well adapted to meet the conditions of practical use.

As various possible embodiments might be made of the above invention, and as various changes might be made in the embodiment above set forth, it is to be understood that all matter herein set forth or shown in the accompanying drawing is to be interpreted as illustrative and not in a limiting sense.

Having thus described my invention I claim as new and desire to secure by Letters Patent:

1. A kit for constructing toy bridges, comprising a base member having spaced openings therein; at least one roadway element for spanning said base; abutment means adapted for juxtaposition with each end of said base; a plurality of vertical towers fitting in said openings in said base member and intermediate said abutments; a plurality of shaped bridge cables adapted to be stretched between said abutments and to be supported by said towers; and a plurality of vertical wires depending from said cables for holding said roadway in spaced relation with respect to said base member, said kit mak-

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ing possible the erection of models of various bridges when the number, appearance and size of the aforesaid components are changed.

2. The kit of claim 1, wherein said base member is generally rectangular and has a flat central cavity intermediate the end portions thereof, and undulated upper portions simulating the natural contour of the approaches to a bridge.

3. The kit of claim 1, wherein said towers include a pair of vertical members and a connecting member se-

cured to the upper end thereof; said member having projecting end portions extending above and abutting the upper ends of said vertical members; said end portions having in the upper end thereof a rounded opening receiving said bridge cables.

4. The kit of claim 1, further including a plurality of links adapted to be threaded on said cables and having the upper end of said wires secured to the lower end of said links.

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