F. REISS.

TOY BUILDING ELEMENT.

APPLICATION FILED JULY 19, 1916.

1,241,281. Patented Sept. 25, 1917.

Fig. 1.

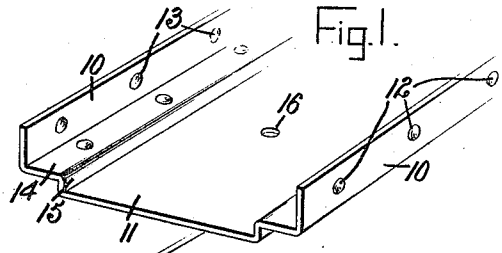


Fig. 2.

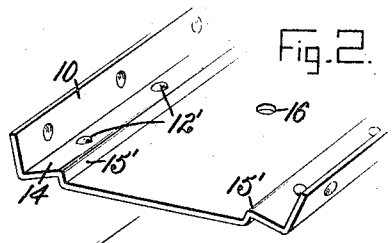
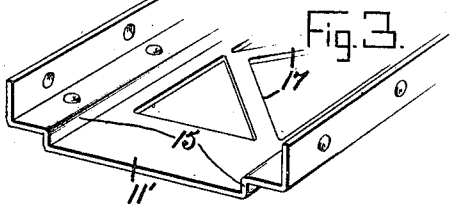


Fig. 3.



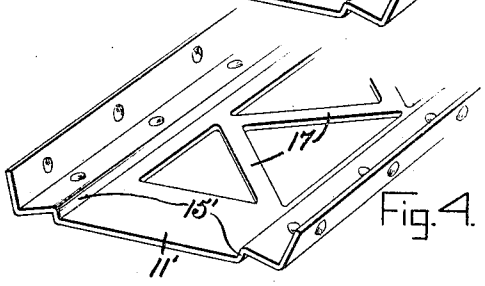


Fig. 4.

Fig. 5.

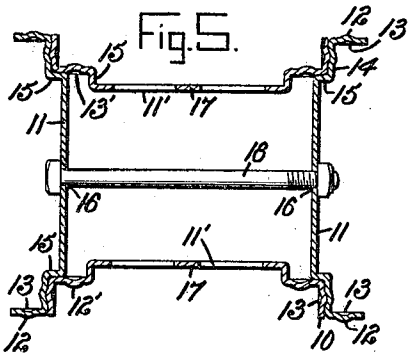


Fig. 6.

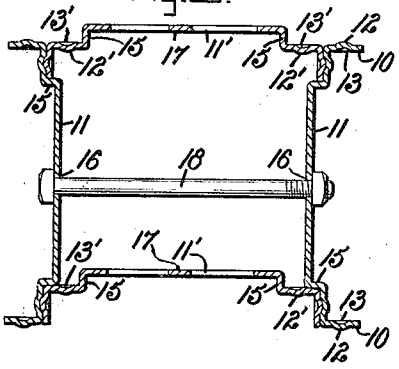


Fig. 7.

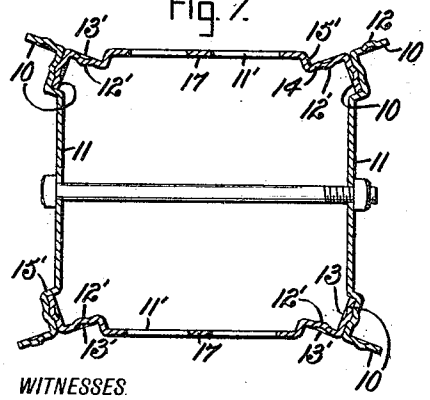


Fig. 8.

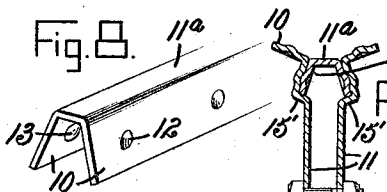
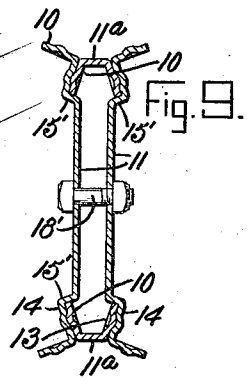


Fig. 9.



WITNESSES.

C. F. Reichenbach.

Geo. L. Beeler

INVENTOR

Franklin Reiss

BY Munn & Co

ATTORNEYS

UNITED STATES PATENT OFFICE.

FRANKLIN REISS, OF CAMDEN, NEW JERSEY.

TOY BUILDING ELEMENT.

1,241,281. Specification of Letters Patent. Patented Sept. 25, 1917.

Application filed July 19, 1916. Serial No. 110,035.

To all whom it may concern:

Be it known that I, FRANKLIN REISS, a citizen of the United States, and a resident of Camden, in the county of Camden and State of New Jersey, have invented new and Improved Toy Building Elements, of which the following is a full, clear, and exact description.

This invention relates to structural metal building materials adapted particularly for toy construction.

Among the objects of the invention is to provide a multiplicity of similar or analogous beam elements, all or practically all of which are of uniform construction and providing for the assemblage of a certain number of them into a single hollow beam.

Another object of the invention is to provide beam elements having peculiar interlocking features or devices which serve to assist in holding the parts together in the beam construction.

With the foregoing and other objects in view the invention consists in the arrangement and combination of parts hereinafter described and claimed, and while the invention is not restricted to the exact details of construction disclosed or suggested herein, still for the purpose of illustrating a practical embodiment thereof reference is had to the accompanying drawings, in which like reference characters designate the same parts in the several views, and in which

Figures 1 to 4 indicate as many different perspective views of different modified forms of beam elements;

Fig. 5 is a transverse sectional assemblage of these forms of beam elements indicated in Figs. 1 and 3;

Fig. 6 is a similar view of the same elements differently assembled;

Fig. 7 is a view similar to Fig. 5, but indicating a beam made up from elements as shown in Figs. 2 and 4;

Fig. 8 is a detail perspective of the end of another beam element; and

Fig. 9 is an assemblage in cross section of the elements shown in Figs. 2 and 8.

Referring now more particularly to the drawings, I show in all forms of the beam elements a device formed of comparatively cheap thin sheet metal including a pair of edge flanges 10 and a web 11 between the same. The connecting means between the flanges provides together with the flanges a sort of channel member of unitary rigid structure. The flange members 10 are formed at regular intervals along their lengths with outwardly pressed projecting lugs 12. The formation of the lugs causes a corresponding number of sockets or depressions 13 on the inner faces of said flanges. The projections 12 of one element are designed to fit or interlock into certain sockets or depressions of other elements in making up the beam structure.

In nearly all of the forms of the elements indicated, the web 11 is connected indirectly to the edge flanges 10 by an offset portion or shoulder 14 which is preferably formed at right angles to the adjacent flange 10 and which may be either parallel to the web 11, as indicated in Figs. 1 and 3, or at an oblique angle thereto, as indicated in Figs. 2 and 4. In other words, the bead 15 of Figs. 1 and 3 is formed at right angles to both the shoulder 14 and the web, while the bead 15′ of Figs. 2 and 4 is formed at right angles only to the shoulder portion 14.

In the stamping or rolling of the beam elements, the shoulder portions 14 are formed with inwardly projecting lugs 12′, forming incidentally thereby corresponding sockets 13′ with which the outwardly projecting projections or lugs 12 of the flanges 10 of their beam elements coöperate and interlock in assembling the beam, as shown in Figs. 5, 6, 7, and 9. It will be understood that these sockets and lugs are equally spaced from one another and also from the edges of the parts in or on which they are formed.

In Fig. 5, the web portions of the elements are all arranged inwardly toward the longitudinal central axis of the beam and the flanges 10 of two of the elements lie in the angle formed between the beads 15 and the shoulder portions 14 of the other elements, the flanges 10 being projected outwardly. In Fig. 6, however, is indicated how the first two opposed elements may be either disposed to have their flanges 10 projecting inwardly or outwardly without departing from the same interlocking effect due to the lugs 12 and sockets 13′. The same assemblage operation may be carried out in connection with Figs. 2, 4, and 7 as just described in connection with Fig. 5.

As shown in Figs. 1 and 2, the webs 11 may be solid except for bolt holes 16, while

in Figs. 3 and 4, I indicate the webs 11′ being cut out to simulate the diagonal braces 17 of an ordinary bridge girder.

After the four elements are assembled or during the assemblage thereof, a removable fastener indicated as a bolt or screw 18 is passed through the holes or openings in two of the opposite elements or those elements which have their shoulder portions 14 lying on the outside of the flanges 10 of the other two elements. This removable fastener 18 in the standard forms, or 18′ in the special form of Fig. 9, together with the interlocking lugs and sockets make a secure connection for the elements in each beam. Obviously the beams may be built up to form buildings, bridges or other structures in a manner well understood, the same *per se* constituting no part of my present improvement.

In Figs. 8 and 9, the web 11^a connecting the flanges 10 is narrow and has no intermediate connecting features, making thereby a finished beam of a comparatively thin structure.

I claim:

The herein described toy building beam comprising an assemblage of four channel members arranged opposite each other in pairs, each channel comprising a web, outwardly projecting beads arranged along the edges of the web, shoulder portions extending outwardly from the outer edges of the beads and outer free edge flange portions extending outwardly with respect to the median line of the beam from the outer edges of the shoulder portions, the shoulder and flange portions having interlocking lugs and depressions, the lugs of the free flange portions of one pair of channels projecting outwardly into the sockets formed in the shoulder portions of the outer pair of channels, while the free flange portions of the latter pair of channels extend outwardly from and beyond the lines of coöperation between the parts aforesaid having the lugs and depressions coöperating with each other, and means extending between the channels of the latter pair holding all of the parts together.

FRANKLIN REISS.

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