

June 1, 1937.

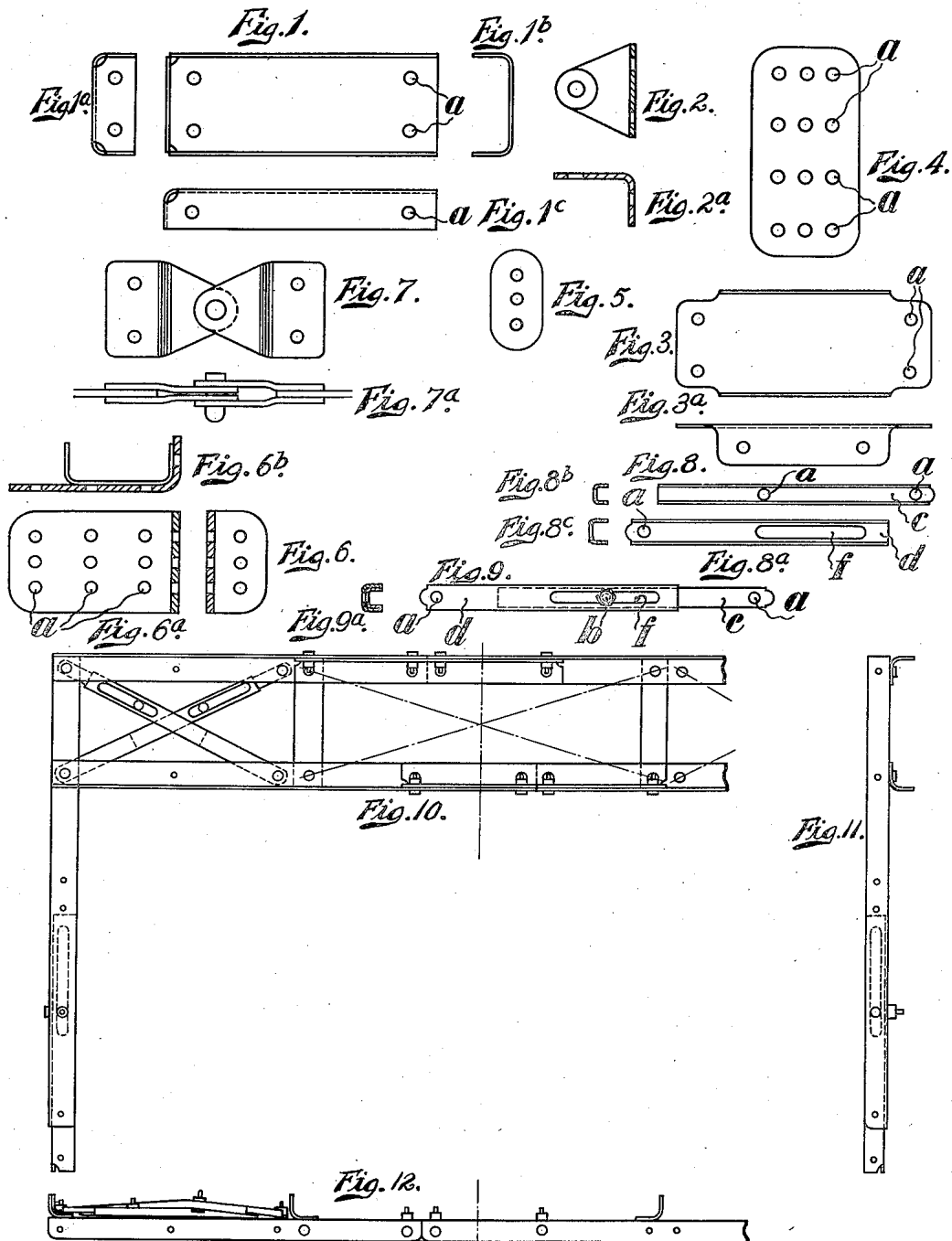
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2,082,138

METAL ELEMENT FOR USE IN ERECTING TOY BUILDING STRUCTURES

Filed July 21, 1934

3 Sheets-Sheet 1



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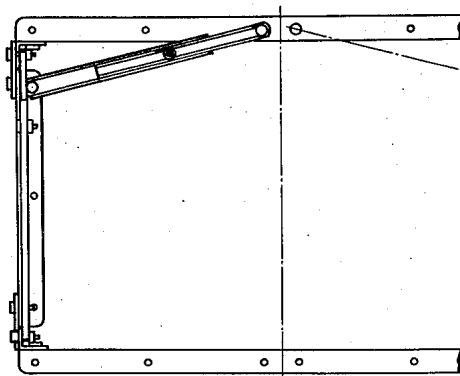
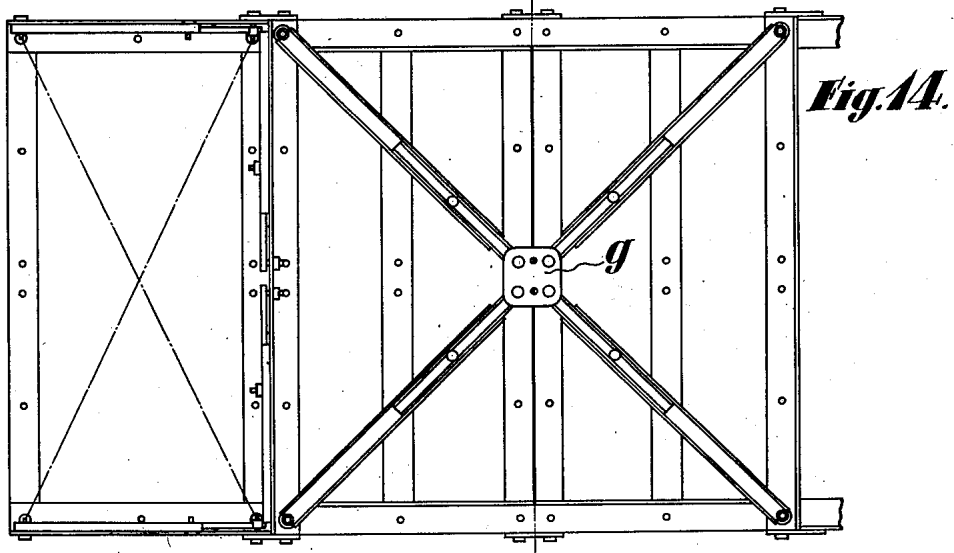
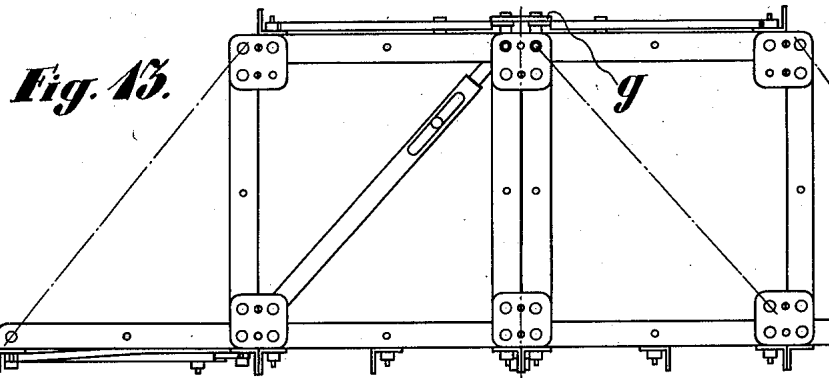
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METAL ELEMENT FOR USE IN ERECTING TOY BUILDING STRUCTURES

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3 Sheets-Sheet 2



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Fig. 16.

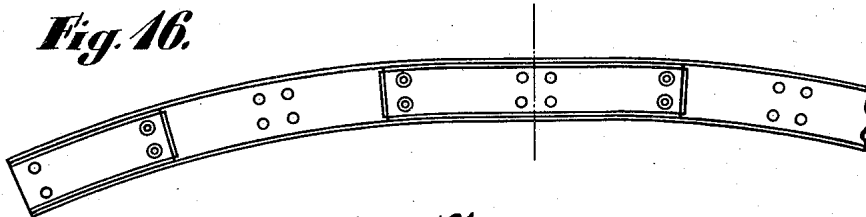


Fig. 17.

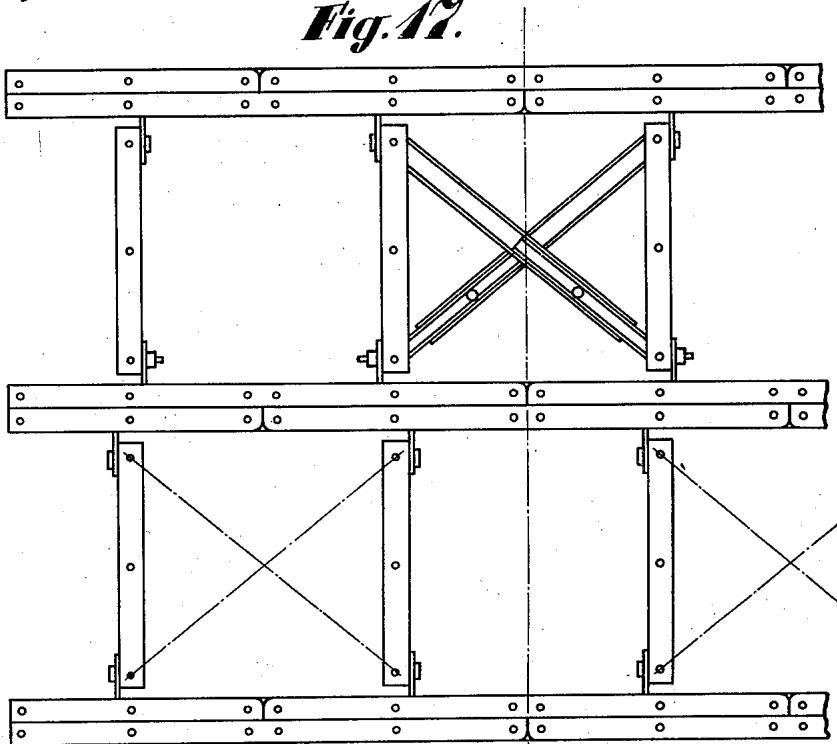
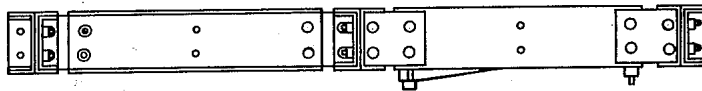


Fig. 18.



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UNITED STATES PATENT OFFICE

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METAL ELEMENT FOR USE IN ERECTING
TOY BUILDING STRUCTURES

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Application July 21, 1934, Serial No. 736,407
In France August 11, 1933

2 Claims. (Cl. 46—28)

The invention relates to improvements in metal elements or devices for use in erecting toy building structures or the like.

The invention consists in metal elements or devices for use in erecting model building structures or the like in which holes are provided in definite order which allow of assembling said elements by means of small bolts and nuts, some of said elements consisting in male and female members slidably connected together to form an element of adjustable length and maintained in the adjusted length by means of a single bolt extending through a slot of the one member and a hole of the other member.

The accompanying drawings illustrate a comparatively limited number of shapes and sizes of elements enabling a large number of quite different constructions both as regards type and dimensions, to be obtained.

Figure 1 is a plan view of one element of the toy of the present invention.

Fig. 1a is an end view of the element of Fig. 1. Fig. 1b is another end view of the element of Fig. 1.

Fig. 1c is a side view of the element of Fig. 1. Fig. 2 is a plan view of another element of the toy.

Fig. 2a is an end view of the element of Fig. 2.

Fig. 3 is a plan view of another element of the toy.

Fig. 3a is a side view of the element of Fig. 3.

Fig. 4 is a plan view of a plate used in the present invention.

Fig. 5 is a plan view of a connection.

Fig. 6 is a side view of an angle plate.

Fig. 6a is a plan view of the angle plate.

Fig. 6b is an end view of the angle plate.

Fig. 7 is a plan view of a connecting element of the present invention.

Fig. 7a is a side view of the connecting element.

Fig. 8 is a plan view of the inner member of an extensible element.

Fig. 8a is a plan view of the outer member of the extensible element.

Fig. 8b is an end view of the inner member of Fig. 8.

Fig. 8c is an end view of the outer member of Fig. 8a.

Fig. 9 is a plan view of the composite extensible member.

Fig. 9a is an end view of the member of Fig. 9.

Fig. 10 is a fragmentary elevational view of a structure constructed with the elements of the present invention.

Fig. 11 is an end view of the structure shown in Fig. 10.

Fig. 12 is a top view of the structure of Fig. 10.

Fig. 13 is a fragmentary side elevation of a bridge constructed with the elements of the present invention.

Fig. 14 is a top view of the bridge of Fig. 13.

Fig. 15 is an end view of the bridge of Fig. 13. Fig. 16 is a side view of an arch constructed with the elements of the present invention.

Fig. 17 is a plan view of the arch of Fig. 16.

Fig. 18 is an end view of the arch of Fig. 16.

Holes such as *a* are provided in the various elements in definite order of spacing enabling these elements to be connected in numerous ways with each other with the aid of small bolts and nuts such as *b*.

Another important feature is the arrangement of male *c* and female sliding bars *d* Fig. 8, respectively provided with a hole *a* and slot *f* and being united as shown in Fig. 9, so that together they compose an element the length of which can be regulated then fixed by simply screwing up a small nut such as *b*. The different figures of the drawings show how these extensible elements can be used by being united at their ends to other members of a building, diagonally for example, or crossed as shown in Fig. 17, or terminating at a central plate *g* as indicated in Fig. 14 etc.

In Figs. 10 and 11 each vertical strut is formed of two male and female slidable and adjustable elements which enable the height of the strut to be regulated and fixed. The elements indicated in the drawing suffice for erecting a number of very different constructions, but it is understood that the channel plate Fig. 1, the bracket Fig. 2, the crossbar Fig. 3, the plates Figs. 4 and 5, the angle plate Fig. 6, the support and link swivel Fig. 7 are only given by way of examples.

It will be clear from Figs. 9 and 9a that the two channel bars of a connected pair are of such cross-sectional dimensions that the bar of smaller cross-section can nest accurately in the bar of larger cross-section with the edges of the channel arms lying in one and the same plane, which is of great advantage in joining the connected bars to other elements in erecting a structure, particularly in technical models where the elements must be connected without bending. It will also be clear that the channel bar of smaller cross-section can be nested in the bar of larger cross-section with its middle web portion facing outwards, forming a box-like cross-section at the overlapping portions of the pair of bars; in this

case also the outer surface of the said middle web portion will lie in the same plane as the edges of the side walls of the larger channel, enabling the connected pair of bars to be connected to structural elements having surfaces lying in the same plane without bending any of the elements.

What I claim as my invention and desire to secure by Letters Patent of the United States is:—

1. A toy model building element, consisting of straight elongated nested male and female channel members slidably connected together to form a channel element of adjustable length, said nested members being of such relative sizes that the smaller member snugly and accurately fits into the larger and the external width of the side flanges of the inner channel member being equal to the internal width of the side flanges of the outer channel member so that the free edges of the flanges of the outer channel member will lie flush with and in the same plane as the outermost surface of the inner channel member, one of said members having a bolt hole provided therein and the other member having a slot provided therein adapted to register with the

bolt hole in all positions of adjustment, and means for maintaining said members of the element in adjusted positions consisting of a bolt extending through the slot of one member and through the hole of the other member.

2. A toy of the class described, consisting of a straight elongated structural assembly element of channel cross-section having spaced bolt-receiving apertures in its middle web portion, a similar element but of smaller cross-section nested in the element of larger cross-section with either side outwards and the external width of the side flanges of the inner channel member being equal to the internal width of the side flanges of the outer channel member so that the free edges of the flanges of the outer channel member will lie flush with and in the same plane as the outermost surface of the inner channel member, said nested elements being of such relative sizes that the smaller element snugly and accurately fits into the larger, and a single bolt uniting the two elements, at least one of the apertures in the pair of elements being elongated to enable the composite length of the connected elements to be slidably adjusted.

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