

May 3, 1938.

J. M. CHAMPLIN

2,116,301

BUILDING TOY

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2 Sheets-Sheet 1

Fig. 1.

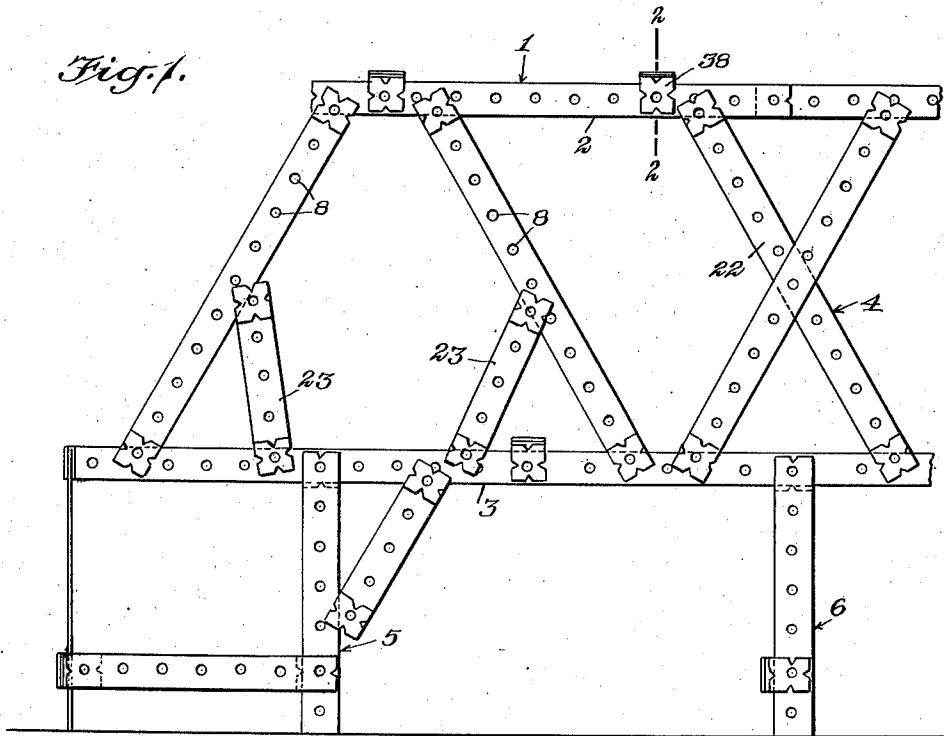


Fig. 2.

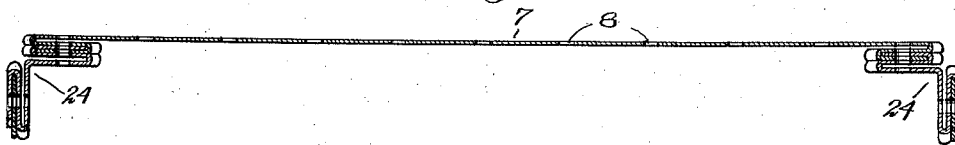
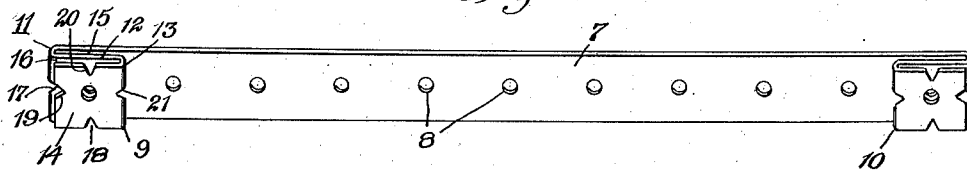


Fig. 3.



WITNESSES

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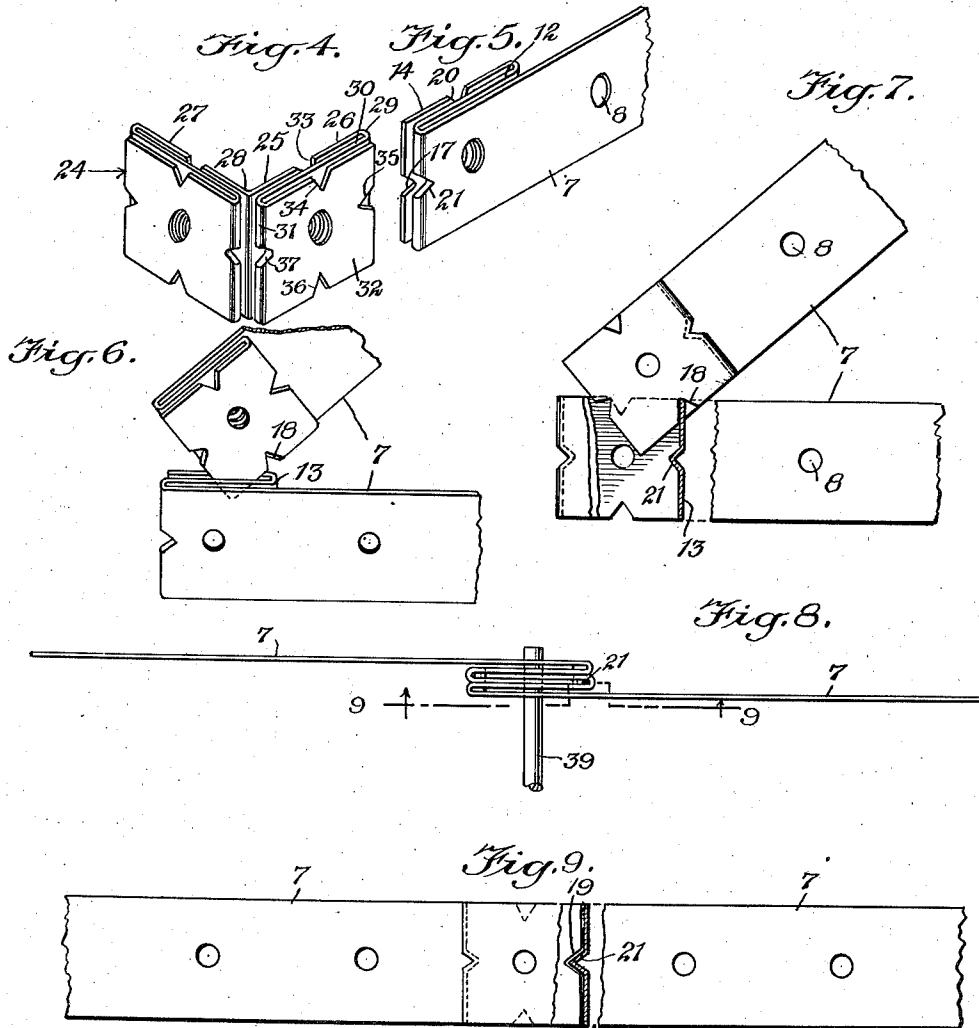
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2 Sheets-Sheet 2



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2,116,301

BUILDING TOY

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Application January 23, 1937, Serial No. 121,920

2 Claims. (Cl. 46—28)

This invention relates to an improved building toy, and has for an object to provide a construction which may be used in building bridges or other devices without the use of auxiliary fastening means.

Another object of the invention is to provide an improved building toy which is provided with interlocking clamping means at the ends so that two or more toys may be clamped together at a desired angle without the use of bolts, screws or other auxiliary fastening means.

An additional object, more specifically, is to provide a building toy structure formed of two parts, one being a straight bar section having clamping and gripping means at the ends and the other being a corner section formed with gripping means at each end.

In the accompanying drawings:

Fig. 1 is a side view of part of a bridge built with building toys embodying the invention;

Fig. 2 is a horizontal sectional view through a plurality of building toys embodying the invention;

Fig. 3 is a perspective view of the bar shown in Fig. 2;

Fig. 4 is a perspective view on an enlarged scale of the angle piece shown in Fig. 2;

Fig. 5 is a perspective view of one end of the bar shown in Fig. 3;

Fig. 6 is a perspective view showing how two of the bars illustrated in Fig. 3 may be interlocked so that one will extend at an angle to the other;

Fig. 7 is an elevation of the structure shown in Fig. 6 with certain parts broken away to illustrate how the notched formation functions;

Fig. 8 is a top plan view of interlocked adjacent ends of two bars formed as shown in Fig. 3 together with a single rod extending through the interlocked parts;

Fig. 9 is a sectional view through Fig. 8 approximately on the line 9—9.

Referring to Fig. 1, 1 indicates a girder formed with a top boom 2, a bottom boom 3, and webbing members 4. Supporting members or tiers 5 and 6 are also shown in side elevation in this figure. In the entire structure disclosed there is no auxiliary fastening means, but the respective members are held in the desired set-up position by the interlocking or clamping end structures. The building toy embodying the invention may be used to build a bridge as shown in Fig. 1, or used to build other structures without departing from the spirit of the invention. It will therefore be understood that the bridge structure is merely to

illustrate how the toy members may be used in forming a construction.

Referring to Fig. 2, it will be observed that a straight bar 7 is disclosed having a number of apertures 8 distributed along its entire length and with one of these apertures in the respective clamping end structures 9 and 10. As the structures 9 and 10 are identical but merely face in opposite directions, the description of one will apply to both. As shown at the left in Fig. 3, the body of the bar 7 is bent at 11 to form the bent back section 12, which in turn is bent at 13 to form the outer clamping section 14. The parts 12 and 14 may be called inner and outer clamping sections as they function to clamp other bars when in use. It will be understood that there is a groove or space 15 between section 12 and bar 7, while between sections 12 and 14 there is a groove or space 16 adapted to receive a bar or other object.

In bend 11 there is provided a notch 17, while in section 14 there are provided notches 18, 19 and 20. In the bend 13 an indented part 21 is provided as shown particularly in Fig. 7. It will be evident that the bar 7 may be made of any length so as to provide comparatively long bracing members 22 as shown in Fig. 1 or short bracing members 23. It of course will be evident that the various bars 7 may be made all the same length or of different lengths, according to the wish of the manufacturer.

Coacting with the bars 7 is a corner piece 24 as shown in Fig. 4. This corner piece is preferably of the same width as bar 7 and made of the same material. In regard to the material used it will be evident that metal, rubber, fiber or other material may be used without departing from the spirit of the invention. As shown in Fig. 4, the corner piece 24 is provided with a body 25 having the respective parts 26 and 27 extending at right angles to each other with the bend 28 at the center. The respective parts are bent at 29 to form an inner section 30, which inner section is bent at 31 to provide an outer section 32. These sections function in a similar manner to the sections shown at the left in Fig. 3. In this form of the invention the parts 26 and 27 are provided with top and bottom notches 33, while the outer sections 32 are provided with notches 34, 35 and 36 together with a pressed-in portion 37, said pressed-in portion being similar to portion 21 shown in Fig. 7.

In regard to the pressed-in portion 21, it will be seen from Fig. 9 that the same accommodates the notch 19 of the adjacent bar so that when the

parts are interlocked as shown in Figs. 8 and 9 the respective bars 7 can not slide up and down or transversely to their length. This permits two or more bars 7 to be arranged in alignment to provide a long boom as shown at the bottom of Fig. 1. The various notches 18, 19 and 20 and also the notches 34, 35 and 36 are used as illustrated in Figs. 6 and 7. These notches engage the respective bends in the end clamping structures as illustrated particularly in Fig. 7 when one bar is arranged at an angle to the other. This prevents any slipping action and thereby causes the bar to act as a proper brace.

When an article is formed from a number of the building toys, the respective end clamping or gripping structures are positioned in the manner illustrated in Fig. 1. However, in order to present transverse braces for the top and bottom booms or other parts, an angle piece 24 is interlocked with the respective ends of a bar and then these angle pieces are fitted over the boom or other piece as illustrated at 38 in Fig. 1. In building bridges or other structures, sometimes wires or rods are desired, and consequently the various apertures 8 have been provided. As shown in Fig. 8, a rod 39 extends through the aligned apertures of the two clamping end structures.

It will therefore be seen that clamping struc-

tures are presented which permit the various bars of the toy to be interlocked or connected together without the use of screws, bolts or other auxiliary fastening means. It will also be noted that there are only two parts to the building toy, namely, bar 7 and corner piece 24. With these two parts provided in proper quantity, a bridge may be built or other desired structure. Also no tools are necessary to build a bridge or other structure, and after it has been built it may be taken down without the use of tools, and all the toy bars and corner pieces used to build something else.

I claim:

1. A building toy including a bar formed from flat material having at the end a double bent back end structure formed with inner and outer clamping sections, said outer clamping section having a centrally positioned notch in each side, one of said notches having material pressed inwardly to form a V-shaped stop.

2. A building toy including a bar formed from flat material having at the end a double bent back end structure formed with inner and outer clamping sections, said outer clamping section having a substantially centrally positioned notch in each of its sides.

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