L. A. MANWARING.

TOY CONSTRUCTION.

APPLICATION FILED OCT. 1, 1918.

1,298,240. Patented Mar. 25, 1919.

Fig. 1

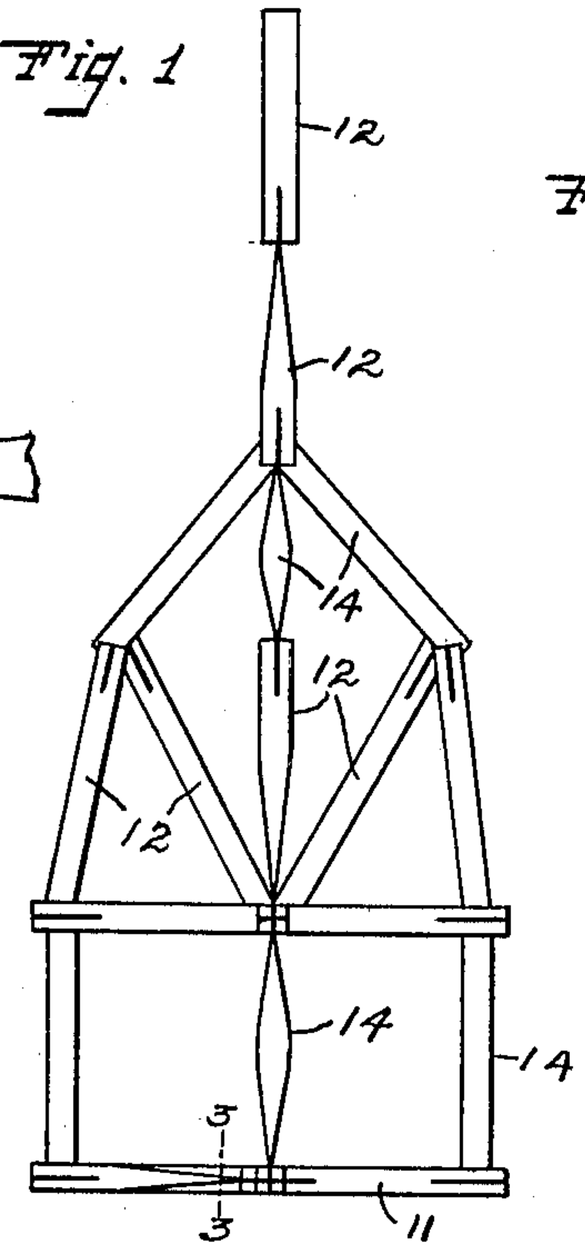


Fig. 3

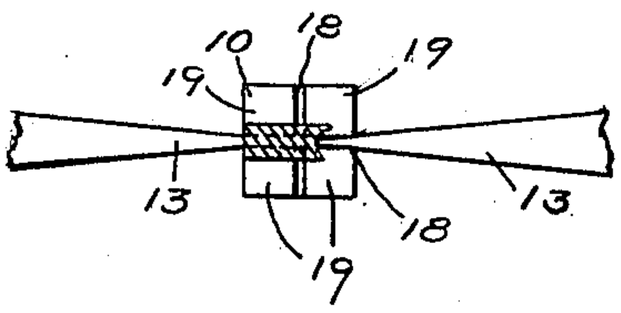
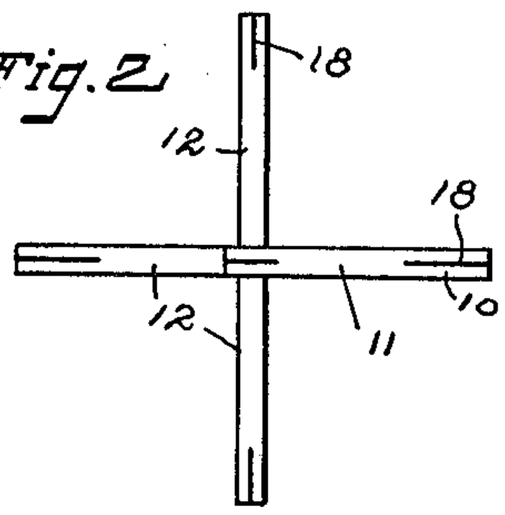


Fig. 2



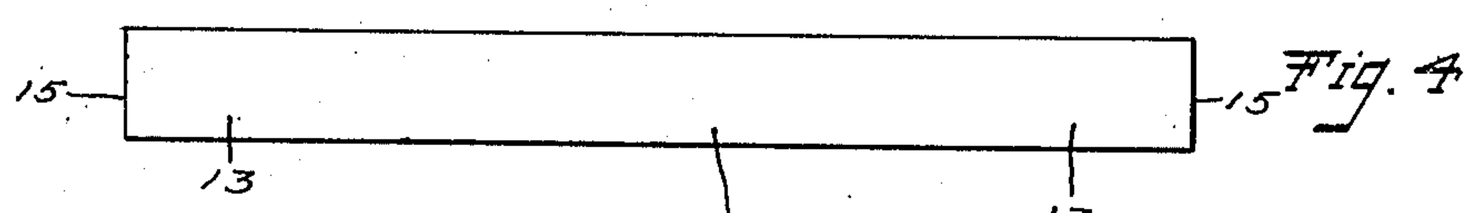


Fig. 4

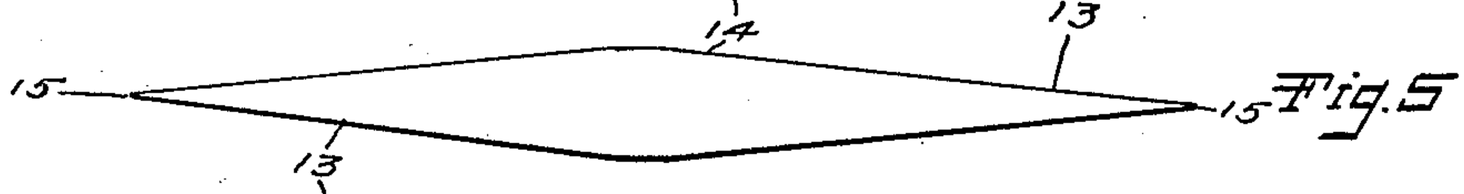


Fig. 5

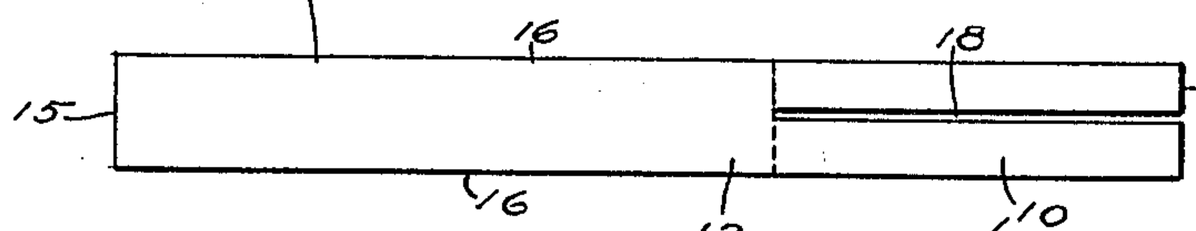


Fig. E

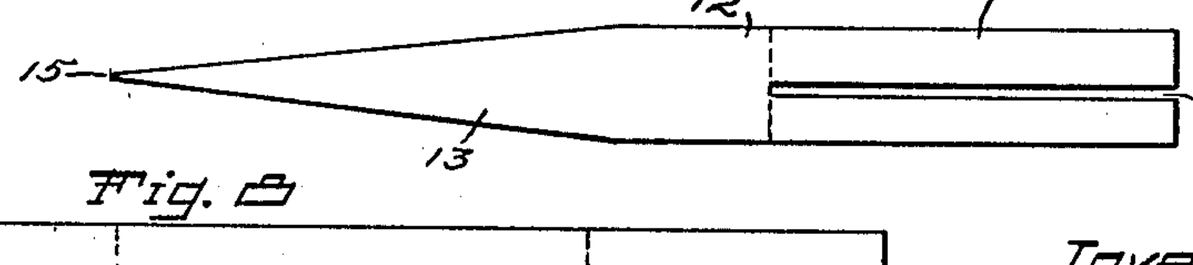
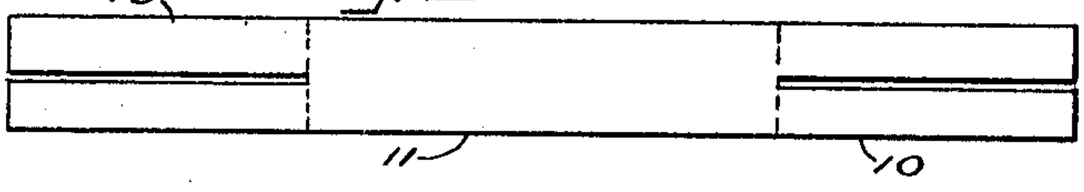


Fig. 7

Fig. 8



Inventor

Leverett Augustine Manwaring.

By Louis M. Schmidt.

Atty.

UNITED STATES PATENT OFFICE.

LEVERETT AUGUSTINE MANWARING, OF MIDDLETOWN, CONNECTICUT.

TOY CONSTRUCTION.

1,298,240. Specification of Letters Patent. Patented Mar. 25, 1919.

Application filed October 1, 1918. Serial No. 256,384.

To all whom it may concern:

Be it known that I, LEVERETT AUGUSTINE MANWARING, a citizen of the United States, residing at Middletown, in the county of Middlesex and State of Connecticut, have invented certain new and useful Improvements in Toy Construction, of which the following is a specification.

My invention relates to improvements in toy construction, having reference to pins shaped and slotted in peculiar form so as to be suitable for being assembled in various ways for building skeleton and imaginative structures of different kinds, such as houses, bridges, boats, windmills, and the like, and the object of my improvement is to provide a plurality of pins of any number desired that are composed of a very few forms or styles, each individual pin being a duplicate of one of the said forms or styles, and such forms or styles being adapted for use in such building or assembling by small children.

In the accompanying drawing:—

Figure 1 is a front elevation of a structure built of a set of building pins according to my invention.

Fig. 2 is a bottom view of the structure shown in Fig. 1.

Fig. 3 is a sectional view on the line 3—3 of Fig. 1, being on an enlarged scale and in part broken away.

Fig. 4 is a side elevation of the member of my improved set of pins having a wedge form at each end.

Fig. 5 is a plan view of the same.

Fig. 6 is a side elevation of the member having the wedge form at one end and having at the other end two cross slots, one at right angles to the other, and extending an appreciable distance inwardly from the end.

Fig. 7 is a plan view of the same.

Fig. 8 is a plan view of the member having at both ends the slotted structure as described for the other end of the pin shown in Fig. 6 and Fig. 7.

The building pins that are used to compose a complete set according to my invention are made in three different forms or styles, as shown, there being a plurality of pins of each form, the number used of each form being varied according to the form of structure that is made by assembling the pins, as may suit the fancy of the user. All of the three forms I find to be necessary generally for building a structure that has an appreciable number of parts, and I find that for the most part the proportion for the different forms used would run about three individual pins of the double squared ended and slotted form shown in Fig. 8 and three dozen of the form shown in Figs. 6 and 7, having the wedge at one end and the square and slotted end at the othere end to one dozen pins of the form shown in Figs. 4 and 5, having the wedge at each end.

All of the three forms, as shown, have a square form of cross section at the middle, and this form of cross section is continued uniformly from the middle to the end in each case having the butt end square, with the slotted end structure, as will be described, and which corresponds to one of the forms for the end structure.

The square and slotted end structure mentioned, and which may be designated generally by the character 10, is provided at the two ends of the pin 11 shown in Fig. 8, and which pin may be designated briefly as the double-clamp pin, and the said structure is provided at one end of the pin 12 shown in Figs. 6 and 7.

The other end of the said pin 12 shown in Figs. 6 and 7 has a structure in the form of a wedge, such structure being designated generally by the character 13, and the said pin 12 may be conveniently designated as the clamp-wedge pin.

The pin 14, shown in Figs. 4 and 5, has the wedge form of structure, designated as 13, at both ends, and the said pin 14 may be referred to as the double-wedge pin.

The wedge form of structure or wedge 13 is formed from material of square form of cross section by slabbing off the two sides so that the tip edge 15 will be in an axial plane and at right angled position relatively to the top and bottom faces 16.

The square and slotted end structure 10 is formed from material of square cross section by cutting off the butt end 17 at right angles to the axis and then slotting the material from the said butt end 17 inwardly along two axial planes at right angles, one to the other, and each plane being individually at right angles to the corresponding side faces, the said slots being designated individually by the character 18. The said slots 18 extend an appreciable distance inwardly along the pin in each case, and extend across the material, and thereby serve to divide the end structure into four separate, parallel separate mem-

bers 19, each of square cross section, and arranged in pairs, and suitable for coöperating as clamping members.

Thus on each side face there is a pair of clamping members 19 separated by the slot 18, suitable for receiving and clamping the end portion 15 of the wedge 13 from a lateral direction, and at the ends the tip end portion 15 of the wedge 13 may be entered either in the vertical or the horizontal position in one or the other of the slots 18 with the pins in longitudinal alinement.

The pins 11, 12, and 14 are preferably made of uniform length and may be made of any suitable material. I find wood to be satisfactory, such as pine or hard maple, and a slight application of resin to the contacting parts adds to the holding qualities of the joints.

All joints are made by entering one of the wedges 13 into a slot 18.

The parts are constructed and arranged so that two wedges 13 can be entered into opposite sides of a slot 18 and held in position by the clamping members without having the two opposed tip ends 15 meet and interfere one with the other.

The manner of use of the pins described is manifold, the structure shown in Fig. 1 being one of many, so that a detailed description of the said structure is not necessary for the understanding of my invention.

In Fig. 3 is shown a joint structure, the wedges 13 being entered in the slots 18 of the clamp structure 10.

I claim as my invention:

A set of building pins composed of three pins, one pin having the two ends similar and each end being of square cross section and provided with two cross slots that extend inwardly from the butt end, the two slots being positioned at right angles, one to the other, a second pin having one end similar to the two ends of the first mentioned pin and having the other end of wedge form, and a third pin being similar in formation at the two ends, and such formation being of wedge form.

LEVERETT AUGUSTINE MANWARING.