R. M. STALKER.

KNOCKDOWN BUILDING STRUCTURE.

APPLICATION FILED NOV. 25, 1913.

1,111,040.

Patented Sept. 22, 1914.

2 SHEETS—SHEET 1.

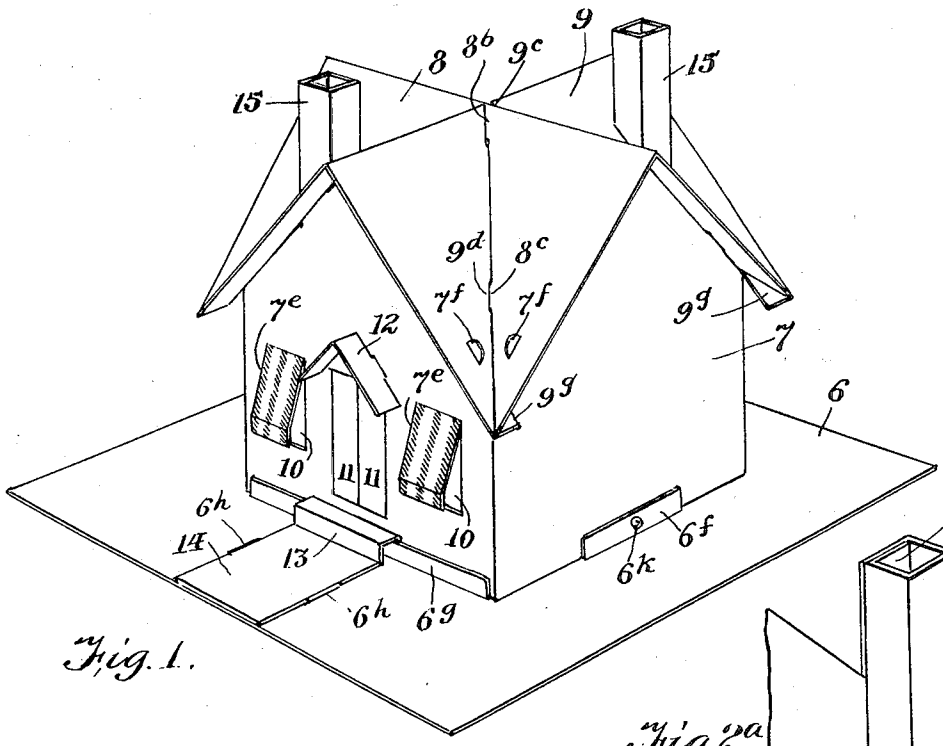


Fig. 1.

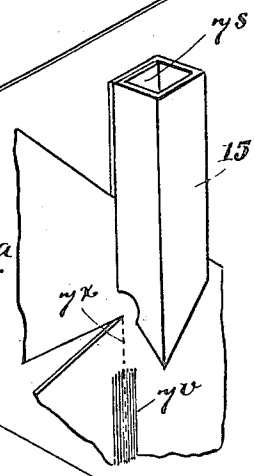


Fig. 2a.

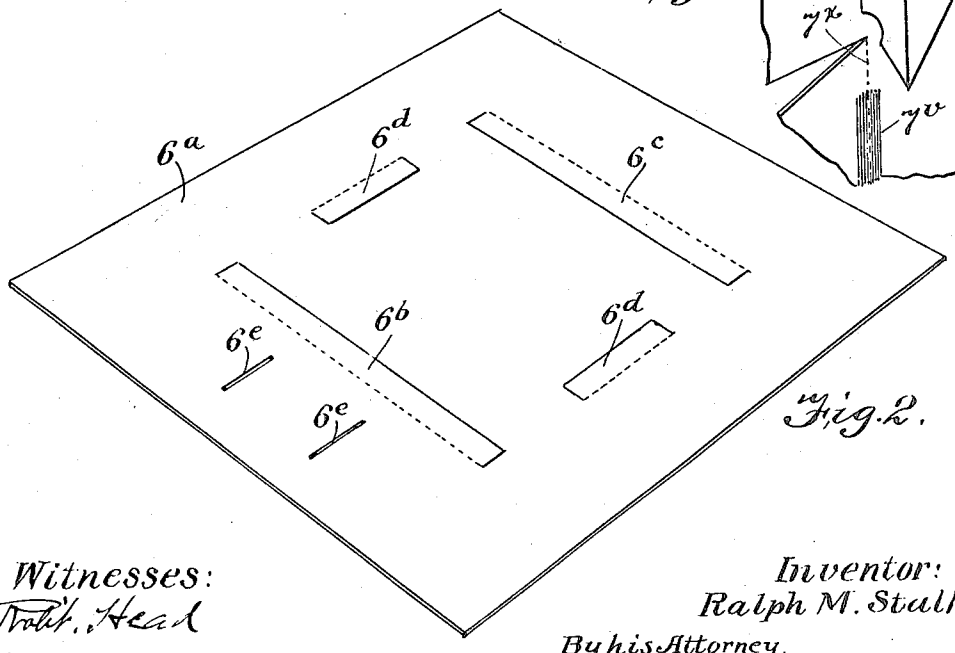


Fig. 2.

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2 SHEETS—SHEET 2.

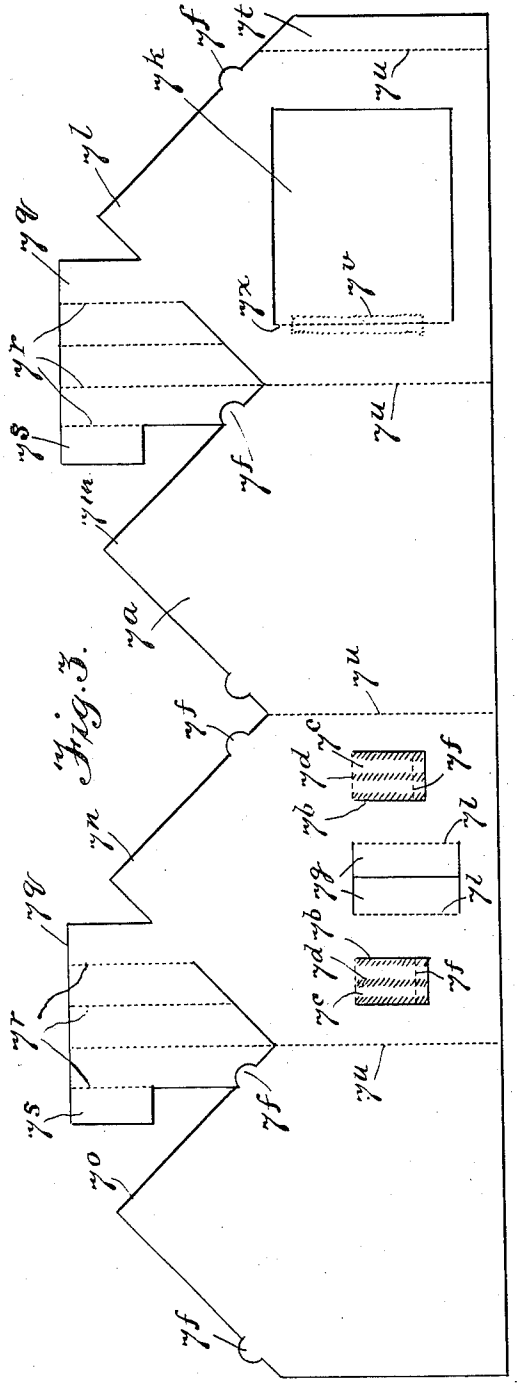


Fig. 3.

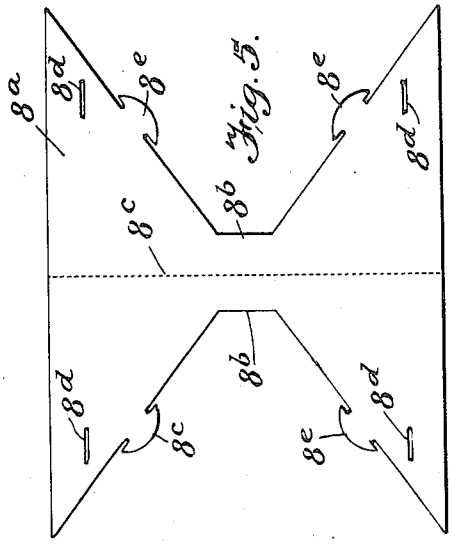


Fig. 5.

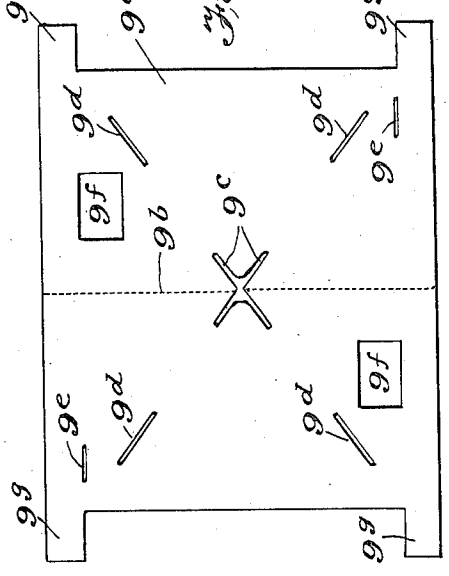


Fig. 4.

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UNITED STATES PATENT OFFICE.

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KNOCKDOWN BUILDING STRUCTURE.

1,111,040. Specification of Letters Patent. Patented Sept. 22, 1914.

Application filed November 25, 1913. Serial No. 802,859.

To all whom it may concern:

Be it known that I, RALPH M. STALKER, a citizen of the United States, and resident of Bogota, in the county of Bergen and State of New Jersey, have invented new and useful Improvements in Knockdown Building Structures, described and claimed in the annexed specification.

My invention relates to knockdown building structure—that is building structures specially adapted to be put up and taken down quickly—the work of erection being accomplished without the aid of nails, screws, rivets or other fastenings of a type causing undue multilation of the parts as generally employed in building structure to secure the parts thereof permanently together.

More particularly stated, my invention comprehends a knockdown building structure, suitable for use as a toy house, or as a portable house of rather small size, the device being made of comparatively few parts, constructed of sheet material, and so arranged as to be self-locking, and also to afford exceptional strength and durability when assembled.

Reference is made to the accompanying drawings forming a part of this specification, and in which like letters indicate like parts.

Figure 1 is a perspective of my knockdown building structure, as assembled and ready for use. Fig. 2 is a perspective of the blank of sheet material used for the base of the device. Fig. 2[a] is a fragmentary perspective of one of the chimneys and parts immediately associated therewith. Fig. 3 is a plan view of the blank employed for forming the walls of the building structure. Figs. 4 and 5 show the two blanks which are used in forming the roof of the structure.

Mounted upon and secured to a base 6 are the walls 7, constructed from sheet material as hereinafter described, and resting upon the body portion thus formed is the roof, consisting of two crossed gable shelters 8 and 9, interlocked together and secured to the body portion in the manner described below. The body portion of the structure is provided with windows 10, doors 11, and awnings 12 and a step 13, this step being provided with a continuation 14 simulating a concrete walk. The building structure is provided with chimneys 15 integral with the walls, and extending through different portions of the roof so as to further brace the roof and lock the same to the body portion of the building.

I make the base 6 from a single blank 6[a] of sheet material, having the form indicated more particularly in Fig. 2. The blank is provided with a pair of flaps 6[b], 6[c], made comparatively long and narrow, and between these flaps are two shorter flaps 6[d] disposed as indicated in Fig. 2. The blank is further provided with two slots 6[e] arranged parallel with each other. When the body portion 7 is placed upon the blank 6[a] the flaps 6[b], 6[c], 6[d], are bent upwardly and lodged against its outer surface at the bottom thereof, thus forming base boards 6[f], 6[g] as will be understood from Fig. 1.

The step 13, and walk 14 forming practically a continuation of it, are made in a single piece of sheet material which is provided with two tongues 6[h]. These tongues are thrust downwardly through the slots 6[e], the step 13 being hooked over the base board *g*, so as to brace the same to some extent and also brace the adjacent wall of the building. Fastenings 6[k], preferably split pins, are thrust through the base boards 6[f] and adjacent portions of the walls for holding the latter firmly in relation to the base, as will be understood from Fig. 1.

The body portion 7 is made from a single blank 7[a], of the form shown in Fig. 3. This blank is cut at 7[b] to form windows, the flaps 7[c], thus partly severed yet remaining integral with the blank, being provided with stripes 7[b] and with score lines 7[f]. The flaps thus formed are bent or sprung outwardly to form awnings 7[e] for the windows 10, as shown in Fig. 1. The blank 7[a] is further provided with two doors 7[g], formed integral with it and adapted to bend or swing, the blank being provided with score lines 7[h] to facilitate this purpose. The blank is further provided with a large flap 7[k] suitable for use as a door, as will be understood from Fig. 3. The blank 7 is provided with a number of angular portions 7[l], 7[m], 7[n], 7[o], to serve as gables, and is further provided with tongues 7[p] which I designate as knives, and which are adapted to be thrust through the slots 8[d] and 9[e], and thus serve as anchors for holding the roof members upon the body portion of the building. The blank 7[a] is further provided with two flaps 7[q], integral with it, each of these flaps be-

ing provided with a number of score lines 7^r to enable it to be bent, in order to form the chimney, which is shown at 15. Because the flaps 7^q are used in forming the chimneys, I conveniently designate them as chimney flaps. Each of them is provided with a comparatively narrow portion 7^s, which, when the chimney flap is bent around to form a chimney, is secured to the inner surface of the chimney thus formed, preferably by pasting or gluing. The blank 7^a is also provided with a marginal portion 7^t (see right of Fig. 3) and with a number of score lines 7^u to facilitate the bending of the blank.

The two roof members 8 and 9 are formed respectively from the blanks 8^a and 9^a. The blank 8^a has the proximate form of two triangles having their apices joined together and formed into a waist portion 8^b. The blank is also provided with a score line 8^c extending directly across it as shown in Fig. 5. At 8^d are four slots of proper size to receive the tongues 7^p, which, however, should fit tightly within them. The blank is further provided with four tongues 8^e, of the type sometimes designated in this art as mushroom knives, for securing the two roof members together. The blank 9^a is provided with a score line 9^b, extending entirely across it, and with a pair of crossed slots 9^c, together forming practically a single slot having the form of an X. The blank 9^a is also provided with a number of slots 9^d, radiating from the center of the blank, as indicated in Fig. 4. These slots being of proper size to receive the mushroom knives 9^e, which should fit tightly within them. The blank 9^a is also provided with two slots 9^e each of a size to receive one of the tongues 7^p shown in Fig. 3. Integral with the blank 9^a are four tongues 9^g, adapted to extend slightly beyond the adjacent portion of the wall, and thus serve as a cornice as indicated in Fig. 1.

The device as assembled is as follows: The blank 6^a is laid down, and the blank 7^a is then bent or creased upon the various score lines with which it is provided, the body portion 7 of the building being thus formed. This body portion is now placed upon the base, and secured as above described. The chimney flaps 7^q are now bent around so as to form the chimneys 15, the latter each having the form of a square tube. Next the blanks 8^a and 9^a are brought together, the waist portion 8^b of the blank 8^a being inserted within the X slot of the blank 9^a, and bent at its middle, upon the score line provided for this purpose. The mushroom knives 8^e are thrust through the slots 9^d. This leaves the roof members firmly secured together. The roof as a whole is next let down upon the body portion 7, so that the chimneys 15 are thrust through the chimney holes 9^f. Next the tongues 7^p are thrust through the slots 8^d and 9^e, the roof as a whole being now securely mounted upon the body portion or wall portion of the building. The awning 12 is next placed in position, and the awnings 7^e are prepared as above described. The large door 7^k is provided with a cloth hinge 7^v, and by aid of this hings swings upon the score line 7^x. The provision of the cloth hinge is to allow the large door to be opened and closed indefinitely without injury to its mountings.

The operation of my device is as follows: The blanks being formed of sheet material, as above described, they are each bent or creased in the manner stated, and then they are assembled so as to form the building structure as a whole.

If the device is used as a doll house or as a play house, the various parts are preferably given such size and weight as to be readily handled by children. For purposes of a Christmas toy, the various parts may be formed of card or paste board, the entire structure thus being adapted for sale at a price comparable with that of other toys.

For purposes of a small building for temporary occupancy the blanks should be made of heavier material such as tar board or sheet metal.

While my invention admits of many different uses, and may assume an infinite variety of related forms, it is specially adapted for purposes of a toy house. In this connection it will be noted that children, in selecting their toys, oftentimes prefer something of a semi-mechanical nature. That is to say, they like a toy which can be taken apart and put together without undue labor. My device satisfies this requirement. It has a few movable parts and just about such ingenuity is required, in assembling the structure or taking it apart, as will render the work interesting, as well as instructive, to a child of average intelligence.

I do not limit myself to the precise arrangement shown, as variations may be made therein without departing from the spirit of my invention.

I claim:

1. In a knockdown building structure, the combination of a body member having walls and a plurality of gable ends, and a pair of separate roof members each made of a single piece of sheet material, one of said roof members being provided with a folding line extending across it and with a substantially X shaped slot, the other of said roof members being provided with a folding line extending across it and with a narrow waist portion through which said last mentioned folding line extends, the roof members being crossed and fitted upon said gable ends so that said folding lines are in substantially the same plane.

2. In a knockdown building structure, the combination of a body member having walls and gable ends, and a pair of separate roof members each made of a single piece of sheet material and having a folding line across it, one of said roof members having a slot through which its folding line extends, the other of said roof members having a narrow waist portion through which its folding line extends, said waist portion being shaped to fit into said slot when said roof members are fitted together and crossed, said roof members being provided with self-locking fastenings for holding said roof members together when they are in position to fit upon said gable ends, and means for locking said roof members to said gable ends.

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