STRUCTURAL ASSEMBLY KIT
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A principal object of this invention is to provide, in the form preferably of a single, integral blank that may be readily separated into clearly indicated component parts, all of the elements required for construction of a bird house or other fabricated structure, said blank being characterized by certain novel devices for facilitating said separation.

The invention contemplates a blank of the stated character that is adapted primarily for the use of children as a craft project well within the capacity of the small child as to manipulation of the simple tools required both for separation of the blank and subsequent assembly of the component parts into the particular structure.

To this end, the invention contemplates a novel device for defining the lines along which the blank is to be separated, said device being of a character to define clearly the course of the cutting tool and to provide also a guide for the cutting tool tending to maintain the tool in the proper course.

Still another object is to provide a blank of the stated character which is laid out in such manner that only straight linear cuts are required to separate the blank into the component sections, and preferably also so that each of the cuts will extend continuously from one edge of the blank to another.

A further object of the invention is to provide a blank wherein the said component elements are provided with means indicating the points at which nails or other securing elements may be driven to assemble the component elements after separation from the blank into the finished structure, such indicating means preferably being in the form of recesses of a character to hold the nails in position for initiating the driving operation.

The invention contemplates also a blank of the character set forth which lends itself readily to production from relatively inexpensive wood or from artificial board materials and also from scrap materials which would otherwise constitute waste; said blank being of a character also to lend itself to merchandising in kit form including the tools for separating the blank and for assembling the parts into the finished structure, the materials to effect assembly and also to decorate the finished structure and to render it adequately proof against exposure to the weather.

In the attached drawings:
Fig. 1 is a view in perspective of a preferred form of blank made in accordance with the invention;
Fig. 2 is a fragmentary enlarged sectional view on the line 2—2, Fig. 1;
Fig. 3 is a view in perspective of the finished structure;
Fig. 4 is a fragmentary face view of a modified form of blank within the scope of the invention including also a means for indicating the points at which the nails may be driven to secure the component parts together;
Fig. 5 is a sectional view on the line 5—5, Fig. 4;
Fig. 6 is a fragmentary sectional view showing still another modification, and

Fig. 7 is a fragmentary sectional view showing still another modification of the present invention.

With reference to Figs. 1 and 2 of the drawings, the blank therein illustrated has an embodiment of my invention, and indicated generally by the reference numeral 1, consists in the present instance of a flat piece of quarter inch plywood of a form calculated to yield a bird house of the character shown in Fig. 4. The blank is distinguished by the provision of a plurality of weakened portions in the form of kerfs or grooves 2 which in the present instance are of the form, shown clearly in Fig. 2, which would be produced, for example, by the cutting action of a circular saw blade or like cutter. In each instance, the weakened portion 2 follows a straight linear line and with the exception of the weakened portion 2a at the upper end of the blank extends continuously from one edge of the blank, designated 3 in the present instance, to an opposite edge 4. The weakened portion, such as the groove or kerf 2a at the top while initiating in the upper end edge 5 of the blank terminates in the proximate cross groove or kerf 2, and it is apparent that if the blank were separated along the latter kerf the groove 2a would then extend continuously from one free edge to another. The significance of this arrangement will be shown hereinafter.

As indicated above, the form of the blank is dictated by the nature of the finished structure which the blank is designed to yield. In the present instance, the structure is a bird house and the blank, therefore, comprises sections which individually will constitute the four walls of the house, the floor, and the respective roof panels. Thus, the sections 6 and 7 at the upper end of the blank, clearly defined by the aforesaid weakened portions, are designed to constitute the back and front panels of the house respectively, and the section 7 is preferably provided with an opening 8 which will afford access to the interior of the house. The section 9 of the blank which immediately adjoins the sections 6 and 7 constitutes the floor panel; the sections 11 and 12 jointly form the peaked roof; and the sections 13 and 14 are the two opposite side wall panels of the house. It will be noted that in the present instance, the floor section 9 is of somewhat greater length than the side sections 13 and 14 so that in the finished structure the floor will project at the front of the house as indicated at 15 in Fig. 4, and in the present instance also the front wall section 7 which in assembly seats on the upper surface of the floor panel 9, is of lesser height than the back wall section 6 which in assembly abuts the rear edge of the floor panel and extends to the lower surface of the latter. The roof sections 11 and 12 are of somewhat greater length than the side sections 13 and 14 so that in assembly, the roof will have the conventional slight overhang at the front and rear of the house.

The manner in which the parts fit together is well illustrated in Fig. 3 which shows the sections of the blank assembled and nailed together to form the finished structure. In this structure the rear wall panel 6 is nailed or otherwise attached to the rear edge of the floor panel 9, and the floor panel is similarly attached to the lower edge of the front wall panel 7. The side wall panels 13 and 14 are nailed or otherwise attached to the side edges of the front and rear wall panels and also to the side edges of the floor panel which they overlap. The roof panels 11 and 12 are nailed or are otherwise attached to the upper inclined edges of the front and rear panels 7 and 6, and the upper part of panel 12 to the upper edge of panel 11 which it overlaps. This mode of assembly produces a strong and rigid house structure.

It is evident that if desired the roof panel 12 may be hinged to the upper edge portion of panel 11 and be
left otherwise unattached, so as to afford a means of access to the interior of the house for cleaning. It will be apparent from the foregoing description that the blank is of a character to simplify and facilitate division into its component parts along clearly indicated lines represented by the grooves 2 and 2a. In particular the blank is designed for separation by hand operation by means of a suitable cutting blade, for example, a hand saw, and by children or others lacking experience in craft work and familiarity with the use of even simple tools such as saw and hammer. To this end, the blank is formed so that it may be divided by simple straight cutting operations along clearly marked lines and points where the nails may be driven into the blank and terminate in another so that there is no requirement for the accuracy required for cutting to an interior terminal point. As an additional aid to the cutting operation, rendering the device well suited for use as a craft project for the younger children, the course of the lines is marked by means of portions of sufficient depth and width to afford a definite guiding and supporting action to the cutting blade tending to maintain the blade in the proper position for the desired straight line cut. I have found that in the approximate width of the saw blade and \( \frac{1}{4}'' \) in the depth is sufficient for such purposes. Obviously kerfs of greater depth would afford a still more effective guide and support for the blade during the cutting operation.

While the aforesaid grooves are preferred, I have found that the marking of the lines of cut by means of a longitudinal series of perforations or of recesses of substantial depth, such as illustrated in Figs. 5 and 7 constitute a highly effective means for directing the cutting blade in the desired course. When the lines are so defined, the blank will take the form illustrated in Fig. 4, the perforations 16 being spaced for example approximately \( \frac{3}{4}'' \) to \( \frac{1}{2}'' \) apart and passing completely through the blank as illustrated in Fig. 5, or only partially through the blank as illustrated in 16a in Fig. 7. It being understood that when recesses 16 are employed they are also spaced, for example, approximately \( \frac{1}{4}'' \) to \( \frac{1}{2}'' \) apart, and that when perforations 16 or recesses 16a are employed to constitute the indicating means, the spacing of approximately \( \frac{3}{4}'' \) to \( \frac{1}{2}'' \) apart causes the cutting blade, when in normal cutting operation during the dividing operation, to simultaneously engage at least two of said perforations 16 or recesses 16a. In other respects, the blank illustrated in Fig. 4 conforms to the blank illustrated in Fig. 1 with the exception that in the Fig. 4 form of my present invention, I have provided indication means for securing the component parts of the blank in the assembled structure. As illustrated in Fig. 4, these indications are constituted by perforations or recesses 17 of sufficient depth and size to afford a stable support for the nail in starting the driving operation. In the forms of blank wherein the lines or portions of said component parts are indicated by the perforations 16 or recesses 16a, such perforations or recesses may be produced by gang-drilling operation, and the provision for the perforations or recesses 17 for the nails, as described above, would require no necessary independent operation.

The weakened portions referred to above have sufficient depth and width to receive the cutting edge of a cutting blade of a width corresponding approximately to the width of the said weakened portions to thus direct the cutting blade in the desired course and to afford support for the sides of the cutting blade during the dividing operation.

In the finished structure and as previously set forth, the floor panel is extended at the front of the house under the entrance aperture 8, and I prefer to provide at a point immediately below the said opening 8 and also in the front panel, a pail or peg which may provide a perch for birds nesting in the house at the outside of the latter. The blank may contain a socket for this perch element as indicated at 18 in Fig. 4.

As previously stated, this device lends itself to production from various sheet materials such as plywood, pressed wood or other artificial sheet material having the general working characteristics of wood. The blank is particularly well suited for sale in kits including the essential tools such as a small saw, a hammer and nails, together with paints in quantities sufficient to decorate the finished structure externally and to give it a protective coating against the weather. While the invention has been illustrated in conjunction with a bird house, which has a specific utility and which offers particular interaction in use on one side to the other, it will be apparent that the principle may be employed for production of other toy or model structures such as churches, play houses and the like. It will be apparent also that the device is subject to modification in detail without departure from the invention, such for example as to provide the form of groove 19 which might if desirable be substituted for the form of groove 2, shown in Fig. 2, and which might be found more suitable, particularly for guiding cutting tools other than a saw.

I claim:

1. A blank composed of wood or like material of a character and thickness adapted for division by hand cutting operation, said blank being designed to yield by division and subsequent assembly of the component parts thereof a structure of pre-determined form and being shaped in accordance with the requirements of said structure, said means for indicating on a face of said blank the lines of division on which the blank may be separated into said component parts, said indicating means comprising weakened portions having sufficient depth and width to receive the cutting edge of a cutting blade of a width corresponding approximately to the width of said weakened portions to thus direct the cutting blade in the desired course and to afford support for the sides of the cutting blade during the dividing operation.

2. A blank according to claim 1 wherein said weakened portions which constitute the indicating means each consist of a linear series of cutting blade receiving and guiding recesses in sufficiently close proximity in the said linear series that said cutting blade, when in normal cutting position during the dividing operation, will simultaneously engage at least two of said recesses in said linear series.

3. A blank according to claim 2 wherein each of said linear series of cutting blade receiving and guiding recesses extends in a straight linear line from one edge to another of said blank.

4. A blank composed of wood or like sheet material of a character and thickness adapted for division by hand sawing operation, said blank being designed to yield by division and subsequent assembly of the component parts a structure of pre-determined form and being shaped in accordance with the requirements of said structure, and means for indicating the lines of division on which the blank may be separated into said component parts, said means comprising grooves each in the nature of a saw kerf adapted to contain the tooth edge of the blade of a handsaw used in the dividing operation and constituting an effective guide for said blade in the sawing operation.

5. A blank according to claim 4 wherein said grooves extend continuously in straight linear lines from one edge to another of said blank.

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