Aug. 9, 1960 B. COOPER 2,948,364

INTERLOCKING BUILDING SECTIONS AND METHOD OF MAKING BUILDINGS

Filed Feb. 6, 1956 2 Sheets-Sheet 1

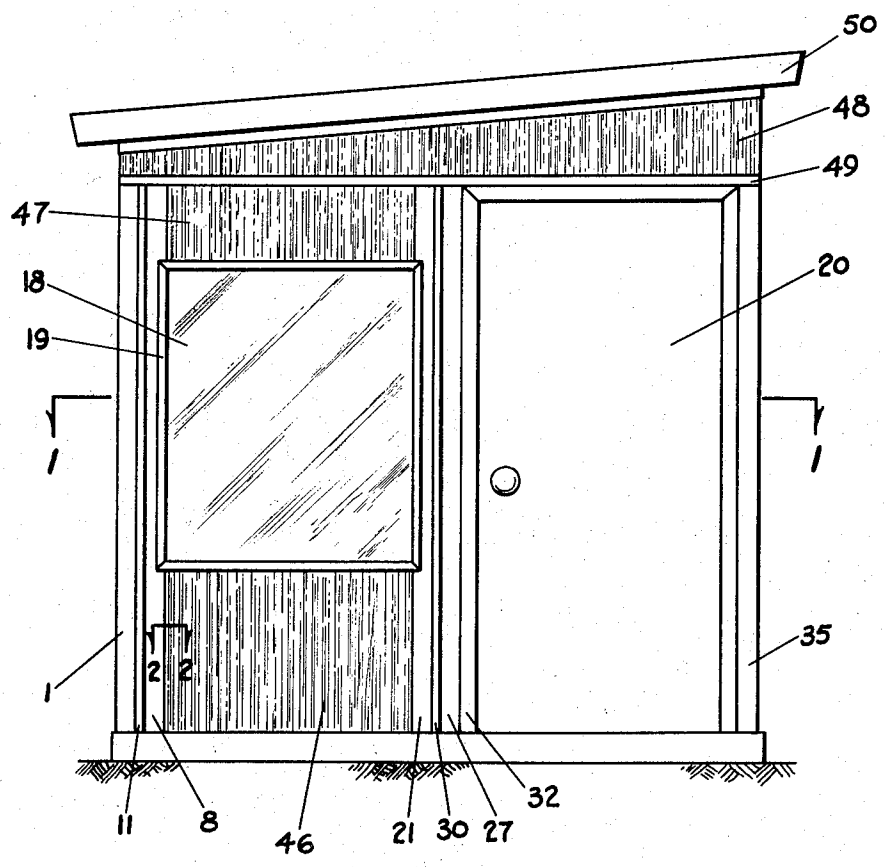


FIG. 1

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INTERLOCKING BUILDING SECTIONS AND METHOD OF MAKING BUILDINGS

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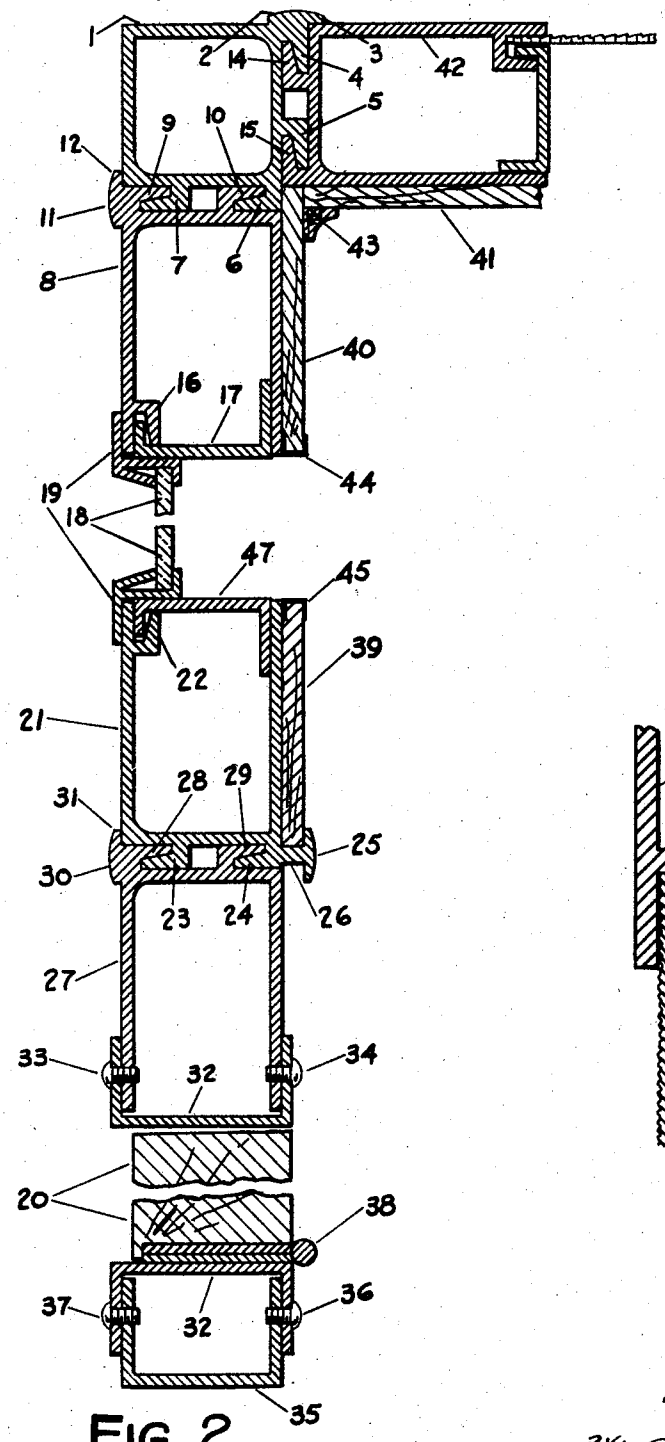


FIG. 2

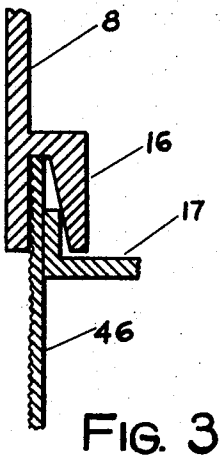


FIG. 3

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INTERLOCKING BUILDING SECTIONS AND METHOD OF MAKING BUILDINGS

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1 Claim. (Cl. 189—34)

My invention relates to sections for buildings and more particularly to portable sections adapted to fit quickly together and to be disassembled quickly and without a number of tools for easy economical transportation from one location to another and to the method of making buildings from interlocking sections.

In particular I have observed that people who live in house trailers use a variety of methods of enlarging the living space by buildings along side such trailers or constructing alongside thereof various enclosures which are referred to variously as cabanas, or as lanais, or other similar terms. Such structures in general consist of roofed and enclosed areas usually enclosed on three sides with one side open to the trailer so that easy access may be had to the trailer from such structure, which I shall refer to throughout the balance of this application as a cabana.

It is usually desirable that such structure be economical, be quickly transportable, easily assembled and disassembled by unskilled persons (frequently elderly persons) and that such structure provide reasonable insulation qualities and reasonable living comfort. I have observed many structures of this nature and I have observed many types of portable buildings and building panels.

It is not my intention to limit this invention to the use of such panels in building cabanas for trailers. My invention can just as readily be used to accomplish complete construction on all four sides of a building and can also be used where desirable to construct merely one or two walls for dividing rooms and the like.

I have observed many pre-formed building panels for such cabana use including building panels of metallic material which may be interlocked by a variety of means usually based upon a sliding channel or tongue and groove type structure. Such structures are difficult for the average person to assemble and usually require, in addition to other difficulties, a large number of bolted or otherwise screwed or connected panels in various connections. Further than this, it is frequently necessary to have special panels and expensive structure in connection with the hanging of doors and door frames of such units.

I have devised a method of interlocking of such building panels which can be easily assembled by ordinary individuals, including elderly persons and persons with little mechanical knowledge or aptitude.

In my invention I make use of basic corner posts having certain lug arrangements attached thereon and of certain basic panels having thereon certain specified lug attachments and interlocking arrangements.

My experience has shown that aluminum is an excellent and preferable type of material for such panels although this is not the exclusive material for such use. Any type metallic, plastic, or other substance which may be formed into the appropriate shape may be used.

Basically, in my invention, individual building panels are designed having at each end thereof interlocking lugs. Said lugs are so designed as to slide together from the side and firmly engage each other. At the other edge of

such panels I have provided on one end a decorative molding which is integral with the panel and which has a slight overlap to engage the next joining panel. On the opposite side of each panel and catercorner from said molding is another molding which, in cross section, has a mushroom appearance and which stands up and above the paneling a distance to engage a decorative panel which slides behind it. This molding is so placed that the decorative panel, when behind said molding, acts as a lock so that the panels as they have been put together cannot then disengage until this decorative panel is removed. At the corner or end of said decorative panel there is one key decorative molding strip which is placed in position to hold such panels in the locked position and such key decorative molding strip is either attached with screws, clips or otherwise and holds the entire structure together.

My invention will be most completely understood and easily recognized and understood by those skilled in the art by reference to the attached drawings in which:

Figure 1 is an elevation of one side of such a building;

Figure 2 is a sectional view of the section **1**—**1** of Figure 1;

Figure 3 is a fragmentary section through the plane **2**—**2** of Figure 1.

Referring in more detail to Figure 1, there is illustrated a side of a building consisting of corner section **1**, interlocking sections **8**, **21**, and **27**, with decorative moldings **11** and **30**, window **18** in frame **19**, door frame **32**, door **20**, end section **35**, outer wall "skin" **46**, **47**, and **48**, decorative strip **49** and roof **50**.

Referring in more detail to Figure 2 of the drawings the corner post **1**, seen here in cross sections, is composed of a hollow lengthy section, preferably an aluminum extrusion, having formed thereon at one corner thereof, and extending the length thereof, a decorative molding **2** with an overhanging lip **3**. Lugs or flanges **4** and **5** are formed on one edge of said corner section **1** and lugs **6** and **7** are formed upon the edge at 90 degrees to the edge containing lugs **4** and **5**, all of said lugs extend the length of said corner post **1**. Another lengthy section **8**, preferably an extrusion, contains lugs or flanges **9** and **10** extending the length thereof, which lugs are cooperable with lugs **6** and **7** and may be slid into position with said lugs. Extending the length of section **8** is a decorative molding **11** with a lip **12**, corresponding to the molding **2** with lip **3** on the corner post **1**. The corresponding section **42** on the other corner of the corner post **1** contains as a part thereof the lugs **14** and **15** extending the length of said section **42**, which interlock with lugs **4** and **5** on corner post **1**. Section **8** has a lug **16** extending the length thereof, into which one leg of a channel **17** fits. The channel **17** fits into the open side of section **8** as shown, extends about the window **18** and forms a closure therein into which the window **18** in its frame **19** fits. The window **18** is broken for conservation of space in this drawing, as is the door **20**. Section **21** is similar to section **8** and the lug **22** corresponds to the lug **16**, the lugs **23** and **24** correspond to the lugs **9** and **10**; all of said lugs extending the length of said section **21**. Section **21** contains an added element of molding **25** on a stem **26**. Section **27** engages with section **21** by the lugs **28** and **29** extending the length of said section **27**. The molding **30** with the lip **31**, both extending the length of section **27**, holds the section firmly. The channel **32** is fastened to section **27** by screws **33** and **34** or other suitable means. The channel **32** extends up the sides and on the top of the door **20** and is fastened to one end section **35** by screws **36** and **37** or other suitable means. The door **20** is fastened to the channel **32** by suitable hinges **38**. The interior of the wall is covered by panels **39**, **40**, and **41**, of plywood, or other suitable material. Exposed edges of such panels, as at

the window opening are covered by a small channel of metal or other material 44 and 45. Molding 43 holds the corner of panels 40 and 41.

Figure 3 illustrates the method of holding the outer wall 46 "skin" of combed aluminum or other suitable material in place in the lug 16 of section 8 and joined in by channel 17 within said lug.

In above description there is seen a description of the manner in which the various portions of this unit fit together. However, it must be observed that the foregoing description does not indicate the manner of fitting these units together. Therefore, this additional explanation is provided. Again referring to Figure 2 it is seen that the corner post 1 has fitted on to it by use of the interlocking lugs the sections 8 and 42. These sections quite obviously slide inward into the corner post and thusly lugs 9 and 10 and 14 and 15 come into sliding engagement with the lugs 6, 7, 4, and 5 on the corner post 1. The lips 3 and 12 of the decorative moldings 2 and 11 serve as stops and when they come in contact with the edge of the interlocking unit of course can slide no further. The decorative panels 40 and 41 are used on the interior of the walls. These panels, as it will be seen, slide against the interior of the sections 42 and 8, and by being held in place by a corner molding 43, which may be in any of a number of shapes including a simple angular shape.

In further examination of the drawing Figure 2 it will be noted that section 21 which is used on the opposite of the window 18 has a decorative molding 25 standing upon a stem 26. The interior decorative panels 39 are slid behind this molding 25. The panel on the opposite side of the molding 25 from the panel 39 has purposely been omitted from Figure 2 so that there will be no confusion in showing exactly how the interlocking system works.

In operation and practical application the building formed by the use of these materials is formed very quickly and simply by making four foot wide sections or sections of any other convenient width and sliding them together by means of the interlocking arrangement as indicated. It will be observed that one section would be formed by the sections 8 and 21 with the window 18. Another such section will be formed by the sections 35 and 27 with the door 20.

It will be observed that instead of the corner post 1 in its position that other complete building unit panels similar to the one composed of sections 8 and 21 and the window 18 could be slid on to this unit and so on indefinitely to make a wall of any length whatsoever. In addition a door section can be interspersed at any desired time.

It will be observed that the basic principle involved in this building is the principle of forming basic sections as heretofore set forth consisting of two of the interlocking units with a window or with a door in place and then interlocking these together with other sections.

The corner posts 1 provide the means by which the direction of the wall is changed by 90 degrees to form an angular or rectangular enclosure.

It will be quite clear to anyone skilled in the art that the preferable method of manufacturing the basic sections 1, 8, 21, etc. will be by extrusion. However, this is not to be construed to limit my application and it is clear that any other means of forming may be used. In addition it will be observed that the exact shape of the lugs by which the interlocking arrangement is obtained is immaterial and that a wide variety of lug shapes may be designed. The essential here is that they may be slid together without the necessity of lifting one panel to put it into cooperative juncture with another panel.

The outer metallic "skin" 46 is deemed a desirable type of outer wall arrangement since it does not require upkeep and is easy to handle. However, it is quite clear that wood or any other substance might be used rather than this metallic "skin" as is indicated in the drawing.

It will be observed that the method of forming a wall by the use of these interlocking sections is the most simplified and speedy method of forming a wall of any predetermined length. A number of illustrations have been indicated for forming a complete building by attaching various building panels to my basic building posts or sections.

By merely adding or taking away sections it is possible to build a building almost as large as desired with virtually no lost time.

It is felt that the process of forming a building from these sections has been adequately described however, it will be clear to anyone skilled in the art that the various procedures might be reversed and the sequence of operation changed without affecting the teaching and scope of my invention. For example the window 18 might be placed in position at any time and need not be placed in position prior to forming of the sections together. Likewise it will be observed that the direction of the interlocking lugs might be reversed and that a channel 32 might be reversed in such a manner that they fasten on the inside rather than the outside of the sections 27 and 35.

It will be observed also that the basic building sections 1, 8, 21, etc. are in general of relatively small size (about 2 inches wide and approximately 8 feet high) that any height might be used and any size might be used within rather large limitations. Such, of course, will not in any manner affect the scope or teaching of my invention and it is intended that my invention include all such limitations. It is to be observed that the method of interlocking of my wall sections together contemplates all similar methods by which basic wall sections might be slipped together and quickly fastened together with or without the aid of a large number of screws, nuts, bolts, and the like.

It is clear that a number of modifications and variations of the present invention as described may occur to those skilled in the art after a careful study of my disclosure herein. All such modifications and variations properly within the sphere, scope and teaching of my invention are intended to be included and comprehended herein as fully as if they had been described, illustrated and claimed herein. For example, among other things, the shape of the lugs, and whether one, two, three, or four, or any number of lugs might be used is inmaterial, and in addition the shape and exact construction and configuration and whether upon the right, left, front, or back side of the panel of the various molding edges indicated are inmaterial. Further than this, the exact shape and size of the panels and the exact means of mounting together are immaterial to the function and cooperation of the various elements concerned.

It is not intended that any of the limitations which might apparently exist in the drawings should be considered as limitations but merely that the present illustration is for illustrative purposes only and is intended to nowise limit the scope of the invention which must be interpreted in the light of the prior arts and inventive claim with due consideration for the doctrine of equivalents.

The exact composition, configurations, constructions, positioning and cooperative relationships of the various component parts are not critical and may be modified to a large degree within the sphere of and without altering the scope of the present invention.

I claim:

Portable building structure units comprising: a lengthy hollow corner column having a square cross-section; a decorative molding strip formed integrally on one corner of said column and extending the length thereof, said molding strip being parallel with one face of said column and having an overhanging lip extending outwardly parallel to said face of said column and in the same plane thereof; an L-shaped flange extending the length of said

column, said flange having one leg tapered, depending outwardly, and with the narrow tapered end extending away, from said molding strip so as to form a wedge shaped groove the length of the face of said column perpendicular to said molding strip; an L-shaped flange formed integrally with said face of said column perpendicular said molding strip, said flange having one leg tapered and depending in the same direction as said tapered leg of said flange on said molding strip at a spaced distance therefrom to form a second wedge shaped groove the length of said column; a pair of L-shaped flanges extending the length of and on the outside edge of the face of said corner column parallel to the face upon which said molding strip is located, each of said flanges having its leg parallel to the column tapered so that the pair of flanges forms a pair of wedge shaped grooves along the length of said face of said column; a first U-shaped lengthy column having a pair of flanges integrally formed thereon on the intermediate face thereof, each of said flanges having a tapered leg directionally opposed to each of the tapered legs on the flanges on the face of said corner column adacent the molding strip formed thereon adapted to engage the said flanges on said corner column in a wedged relationship; a tapered flange on the inner-side of one of the exterior legs of said U-shaped column forming a tapered groove therein; a second U-shaped column adapted to fit within the legs of the first U-shaped column having flanges thereon, said second U-shaped column having one leg adapted to be engaged in the tapered groove formed on one leg of said first U-shaped column and to wedge into position an outer sheet of building material; and a third U-shaped column having a pair of flanges each flange having a tapered leg thereon adapted to engage the pair of flanges upon the face of said corner column parallel the face having the molding strip, said third U-shaped column having a decorative molding strip extending parallel with one of its legs and having a lip thereon adapted to engage the outer edge of said corner column where said columns meet said leg upon which said molding strip is formed, having formed at the other end thereof and on the interior thereof an L-shaped flange with one leg tapered to form a wedge shaped groove along the interior of one leg of said third U-shaped column and a last U-shaped column adapted to fit within the legs of said third U-shaped column one leg of said last U-shaped column fitting within said wedge shaped groove on one leg of said third U-shaped column and fastening by wedge action a sheet of building material therein.

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