

March 28, 1933.

O. H. MERZ ET AL

1,903,122

KNOCKDOWN ASSEMBLAGE

Filed Nov. 16, 1931

2 Sheets-Sheet 1

Fig. 1.

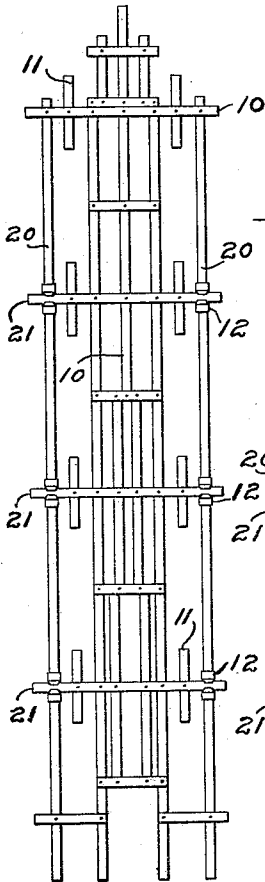


Fig. 2.

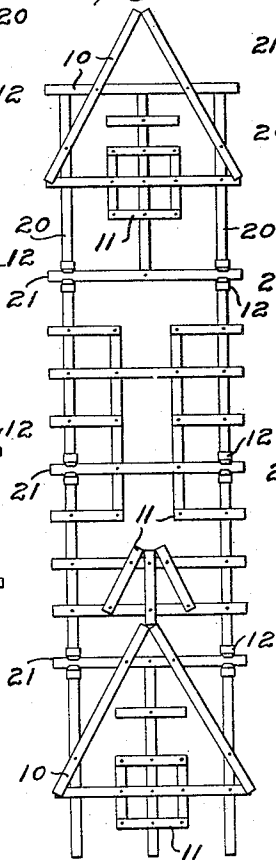


Fig. 3.

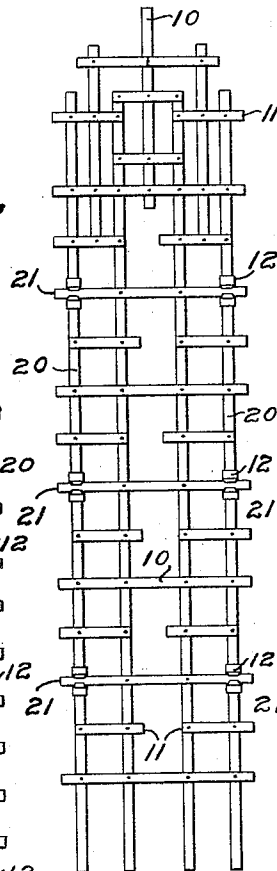
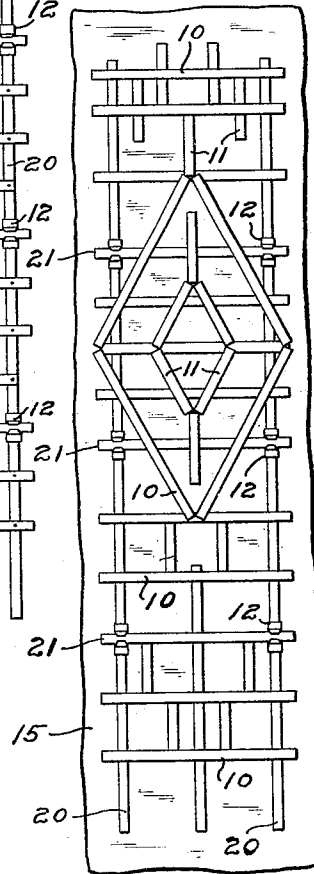


Fig. 4.



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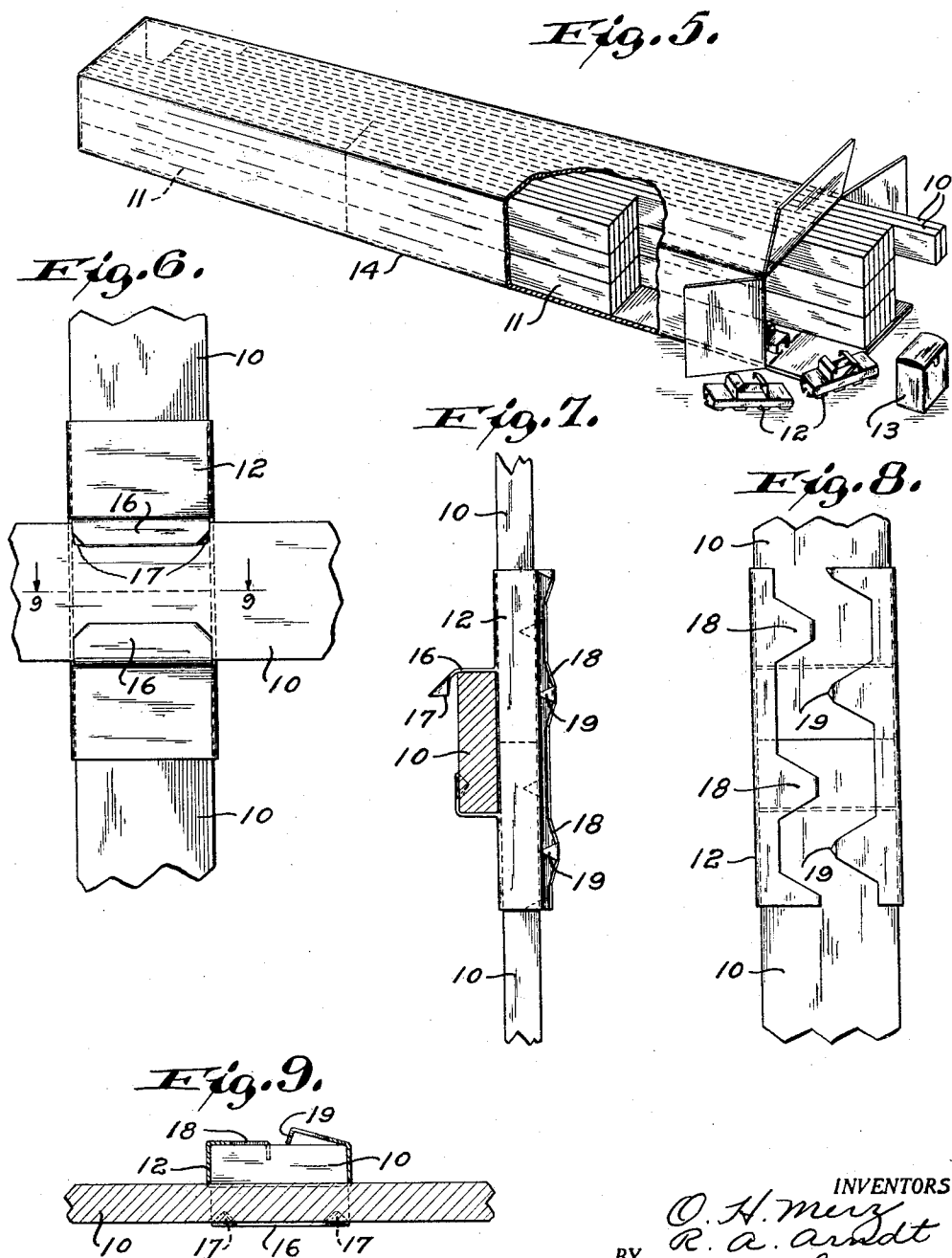
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2 Sheets-Sheet 2



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UNITED STATES PATENT OFFICE

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KNOCKDOWN ASSEMBLAGE

Application filed November 16, 1931. Serial No. 575,282.

The present invention relates in general to improvements in the art of producing and merchandising knockdown assemblages, and relates more specifically to improvements in the manufacture, transportation and assembly of trellis-work for vines, or of similar structures.

An object of the invention is to provide an improved method of producing and of effecting transportation of knockdown structures such as trellises.

Another object of the invention is to provide new and useful articles of manufacture, such as trellises and means for effecting rapid assembly thereof.

In the manufacture of certain commodities such as windows and doors, from wood, there is always a certain amount of lumber wasted, and the bulk of this waste material consists of strips of substantially uniform width but of various lengths and thicknesses. These wooden strips are mostly clear lumber about one and one-quarter inches wide, thus possessing considerable strength, and they can readily be dressed to uniform thickness of about five-sixteenths of an inch and to lengths of from eight inches to two feet. The waste material because of its high grade, is too valuable for use as kindling wood, but is now being utilized largely as such, because of the absence of other more profitable uses therefor, by the mills in which the waste is produced.

It is a more specific object of the present invention to provide a simple and efficient method of utilizing such waste material for the manufacture of trellis-work.

Another specific object of the invention is to provide an improved trellis structure which is simple in construction and which may be readily assembled to produce a substantial assemblage of pleasing appearance.

A further object of the invention is to provide an improved knockdown assemblage which can be readily transported by mail and which may also be conveniently assembled with moderate intelligence.

Still another object of the invention is to provide a knockdown structure capable of being assembled to produce a variety of stand-

ard trellis designs, and improved instrumentalities for effecting assembly of the structure.

A further specific object is to provide a single package comprising a selected number of dismantled elements, and means in the form of a full sized master design for enabling convenient assembly of the elements in each package.

Another specific object of the invention is to provide simple and highly effective means for quickly and rigidly uniting a number of adjoining strips.

These and other objects and advantages will be apparent from the following detailed description.

A clear conception of the several steps constituting the improved method of manufacturing trellises, and of the detailed construction of several trellis designs built in accordance therewith, may be had by referring to the drawings accompanying and forming a part of this specification in which like reference characters designate the same or similar parts in the various views;

Fig. 1 is a front view of one design of trellis-work formed of wood strips of selected lengths;

Fig. 2 is a front view of another design of trellis-work similarly formed;

Fig. 3 is a similar view of still another design of trellis-work formed of strips of selected length;

Fig. 4 is a front view of another design of trellis-work formed of wood strips, showing a master pattern used in assembling the trellis-work.

Fig. 5 is a perspective view of one form of standard package used in the handling and shipment of the improved trellis while in dismantled condition;

Fig. 6 is an enlarged rear view of one of the improved clamping elements or end connectors for connecting three of the strips of a trellis;

Fig. 7 is a side view of one of the clamping elements;

Fig. 8 is a front view of one of the improved clamping elements; and

Fig. 9 is a transverse section through one

of the improved clamping elements, the section being taken along the line 9—9 of Fig. 6.

While the invention will be described herein as being specifically applied to the manufacture, shipment and assembly of trellis-work for vines, it will be apparent that some of the novel features are more generally applicable. The improved clamping element, for example, is capable of use wherever it is desired to connect two or more adjoining strips of wood, and while this clamping element is especially adapted for application in the construction of trellis-work, it is capable of more general use.

In accordance with the invention, it is preferable to utilize clear waste lumber such as results from the construction of windows, doors, cabinets, interior building trim, or other objects, in the manufacture of trellis-work. This waste or excess material is cut into strips of definite predetermined dimensions, and the strips are subsequently assorted in groups and placed in standard packages convenient for handling and shipment, as specifically shown in Fig. 5. Each of the standard packages may contain a predetermined number of long strips 10, a predetermined number of short strips 11, a selected number of metal end connectors 12 of special construction, a box 13 of small nails or brads, and a cardboard or fiber housing box 14 for concealing the trellis-forming elements. The housing box 14 may also contain a chart or circular, not shown, illustrating a number of designs including those shown in Figs. 1 to 4 inclusive and others, which are capable of being produced with the contained structural elements. The housing box 14 may also contain a master chart 15 such as shown in Fig. 4 formed of paper and having thereon a full sized drawing of one design of trellis-work capable of being assembled from the contained elements.

It has been found that the available waste resulting from certain classes of millwork, will permit re-cutting thereof into long strips 10 two feet in length, and short strips 11 eight and three quarters inches in length with minimum final waste of material. All of these strips 10, 11 may be one and three-sixteenths inches wide and five-sixteenths of an inch in thickness, and the clamps or connectors 12 are constructed to cooperate effectively with strips of such cross section.

Each of the clamps or connectors 12 is formed of a single sheet of metal with the aid of punches and dies as clearly illustrated in Figs. 6 to 9 inclusive. The connector 12 is provided with rearwardly extending ears 16 extending perpendicular to the body of the connector and bent laterally to overlap an adjacent strip 10. The laterally extending ends of the ears 16 are provided with grip points 17 which are adapted to be driven into an adjacent strip 10 as shown in Figs. 7 and

9, after the strip has been properly positioned within the ears 16. Before the laterally extending portions of the ears 16 have been bent into locking position, the strips 10 are freely slidable through the space between the ears 16, without interference by the grip points 17. The front portion of the body of each connector 12 is provided with staggered teeth 18 as clearly shown in Figs. 7 and 8, each of these teeth likewise being provided with a grip point 19 adapted to be driven into an adjacent strip 10. The strips 10 are freely slidable past the grip points 19 before the latter are driven home and when positioned as shown to the right of Figs. 7, 8 and 9, and the length of the body of the connector 12 is somewhat greater than double the width of the pieces with which it is to cooperate. When the grip points 17, 19 have been driven into the adjacent strips 10, these strips are relatively immovable and are rigidly interconnected.

In assembling a trellis-work such as shown in Figs. 1 to 4 inclusive, a master pattern 15 of selected design may be utilized. The main uprights 20 are first formed by endwise connecting long strips 10 with the aid of connectors 12, there being four long strips in each of the uprights 20. These uprights 20 may then be positioned upon the master pattern and utilized as a base for building the remainder of the structure. The cross strips 21 are next applied to the connectors 12 thereby rigidly positioning the uprights 20 with respect to each other and to the cross strips 21. The cross strips 21 are of the long type, and other cross strips 10 may subsequently be applied to the uprights during further assembly. The short strips 11 may be subsequently applied, the nails from the box 13 being utilized to connect these additional cross strips 10 and short strips 11 to the base structure. After the trellis-work has been fully assembled, it may be painted or otherwise decorated.

From the foregoing description it will be apparent that the invention provides a simple and profitable method of utilizing waste material for the purpose of producing trellises of substantial and artistic design. While the standard package illustrated in Fig. 5 comprises twenty-four long strips 10 and eighteen short strips 11, this number of strips may be varied to meet different conditions. If the waste material available is such as to permit variation in the lengths of the strips and in the shape thereof, this may readily be done, and in some cases curved strips may also be included in the package. The standard packages can be readily supplied with any desired number of structural elements, and may be conveniently transported at moderate cost, by mail. While the master patterns 15 will permit more rapid and accurate assembly of the trellis-work, it

is not essential to furnish one of these master patterns with each package, as mechanically inclined individuals may be able to assemble the trellises merely with the aid of a circular showing various designs. The master chart 15 may therefore be furnished separate from the package and selected by the purchaser who is unable to do without it, at the time of making the purchase of the package.

The improved clamps or connectors 12 may be manufactured at minimum cost and serve to effectively inter-connect the strips after the grip points 17, 19 have been driven home. In fact, these grip points so firmly inter-connect the adjacent strips 10, 11 that separation of the strips is only possible by mutilation or breakage thereof. Any number of these clamps or connectors 12 may be included in a standard package and any other type of fasteners such as screws may be substituted for the box 13 of nails. The entire assemblage may be produced and sold at minimum cost and one standard package may be utilized to construct numerous designs of trellises. It will also be apparent that other lengths of strips than those described may be included, and that the specific disclosures are merely illustrative of one embodiment of the invention.

It should be understood that it is not desired to limit the invention to the exact details of construction and to the precise steps of manufacturing and of assembling the trellises shown and described herein, for various modifications within the scope of the claims may occur to persons skilled in the art.

It is claimed and desired to secure by Letters Patent:

1. A trellis-work comprising, uprights formed of rigidly end united strips of equal length, and cross strips of the same length inter-connecting said uprights at the unions between said upright-forming strips.

2. A trellis-work comprising, uprights formed of rigidly end united strips of equal length, cross strips of the same length inter-connecting said uprights at the unions between said upright-forming strips, and still other strips attached to said uprights and to said cross strips to complete the trellis structure.

3. A trellis-work comprising, uprights formed of rigidly end united strips of equal length, cross strips of the same length inter-connecting said uprights at the unions between said upright-forming strips, and other strips of definite length less than that of said upright-forming and cross strips attached to the latter to complete the trellis structure.

4. A trellis-work comprising, end coacting alined strips, a strip extending across the end plane of said end coacting strips, and a

single fastener for rigidly connecting all of said strips.

5. A trellis-work comprising, end coacting alined strips, a strip extending across the end plane of said end coacting strips, and a distortable fastener having grip points adapted to be driven into said strips to rigidly unite the same.

6. A trellis-work comprising, a pair of strips extending cross-wise of each other, and a distortable sheet metal fastener embracing both of said strips and having grip points adapted to be driven into the same to firmly unite the strips.

7. A trellis-work comprising, uprights formed of end coacting alined strips, cross strips overlapping the adjoining ends of said upright strips, and a single fastener rigidly inter-connecting the overlapping portion of each cross strip and the adjacent ends of said upright strips at each junction of said strips.

8. A trellis-work comprising, parallel uprights formed of end coacting alined flat strips, cross strips having flat end portions disposed in close proximity to the adjoining ends of said upright strips, and a single fastener rigidly inter-connecting the end portion of each cross strip and the adjacent ends of said upright strips at each junction of said strips.

9. A trellis-work comprising, an upright formed of end coacting alined strips, a cross-strip having a portion disposed in close proximity to the ends of said upright strips, and a single distortable fastener for rigidly connecting all of said strips.

10. A trellis-work comprising, parallel uprights formed of end coacting flat wooden strips, flat wooden cross strips overlapping the adjoining ends of said upright strips, metallic fasteners rigidly inter-connecting the adjoining ends of said upright strips with each other and with the adjacent cross strips, and other strips attached to said upright and cross strips to complete the trellis structure.

In testimony whereof, we affix our signatures.

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