

[54] **FRAMEWORK CONNECTOR**
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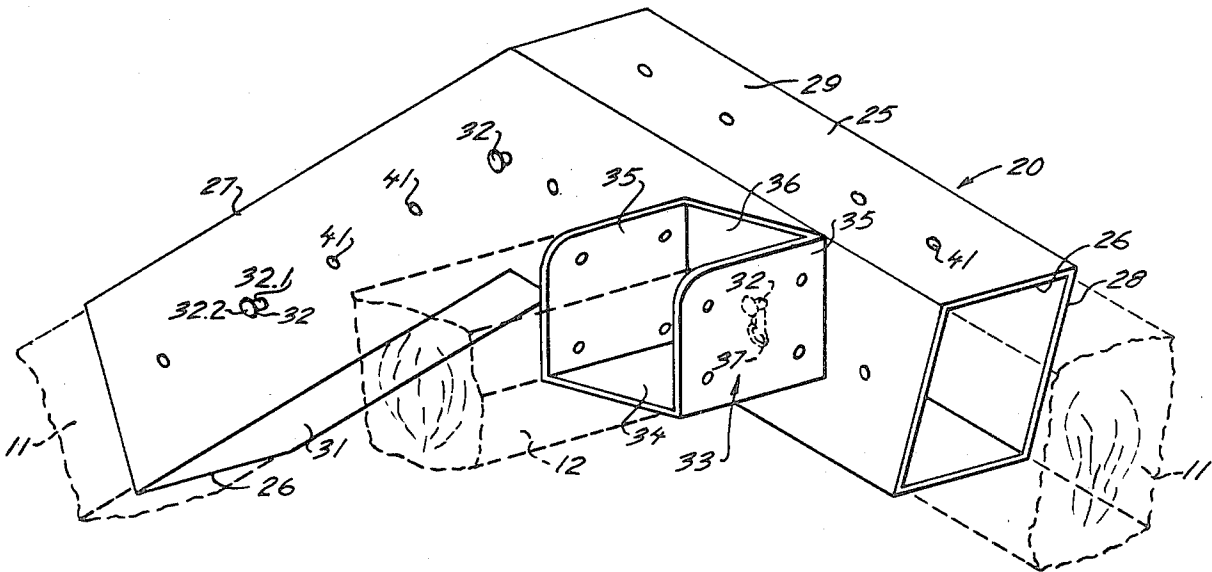
[21] Appl. No.: **316,123**

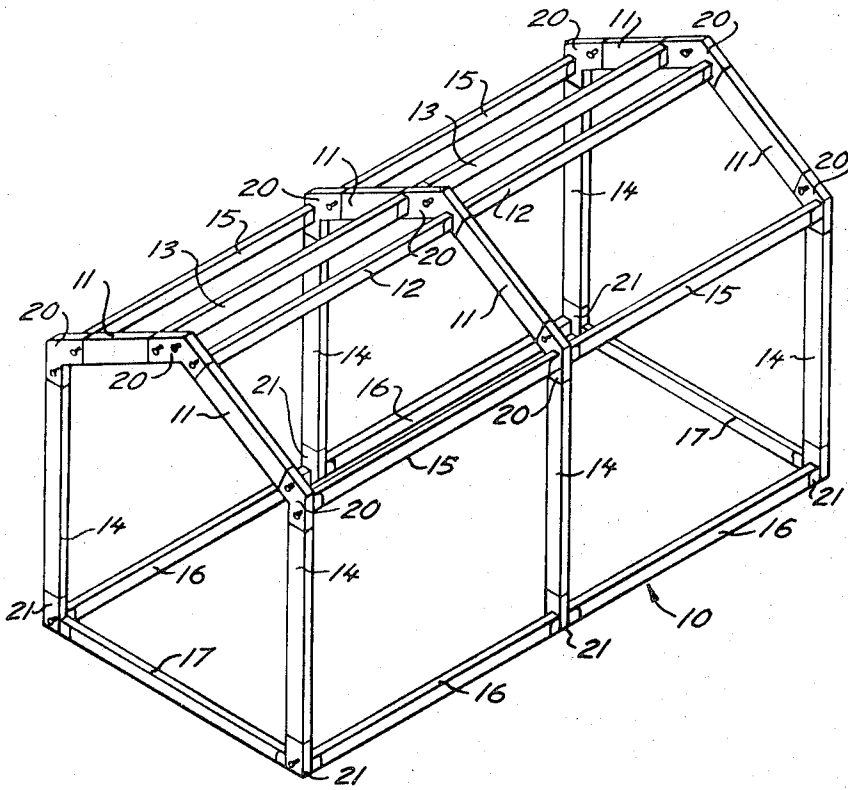
[52] U.S. Cl. **403/218, 52/752, 52/753 D**
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[57] **ABSTRACT**
 A connector assembly connecting frame members of a frame structure having a sleeve into which an end of one frame member slidably fits. The sleeve has a plurality of longitudinally spaced buttons each of which can releasably engage a chair which receives an end portion of another frame member for connecting both frame members at right angles to each other.

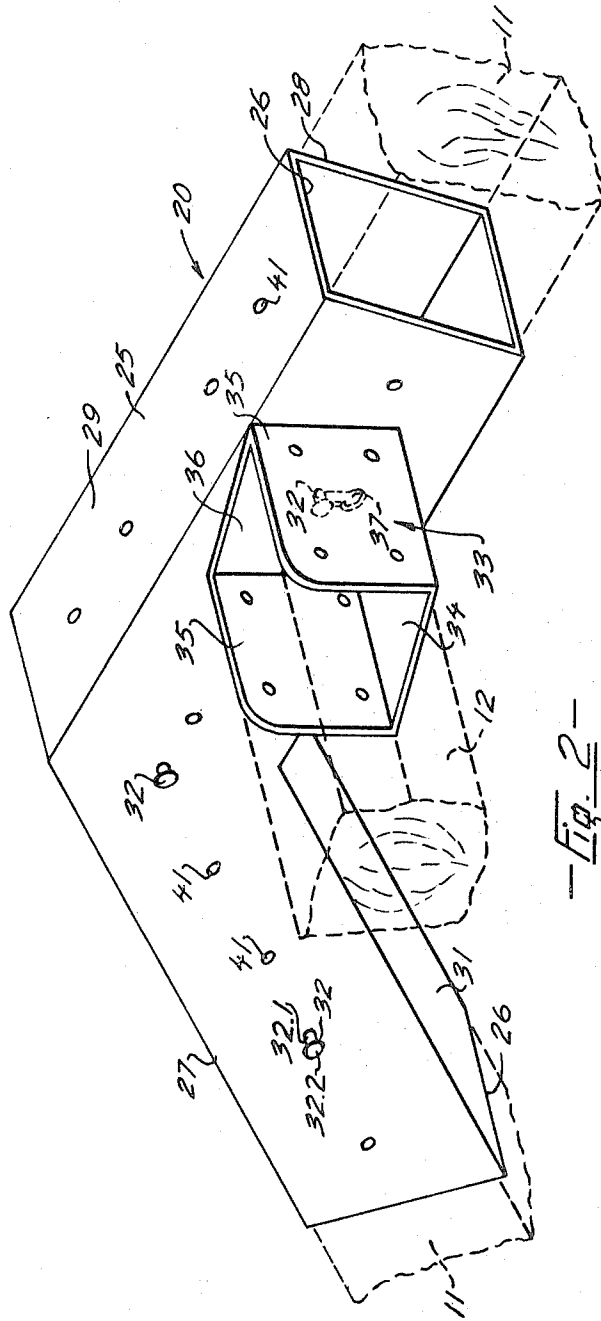
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2 Claims, 3 Drawing Figures

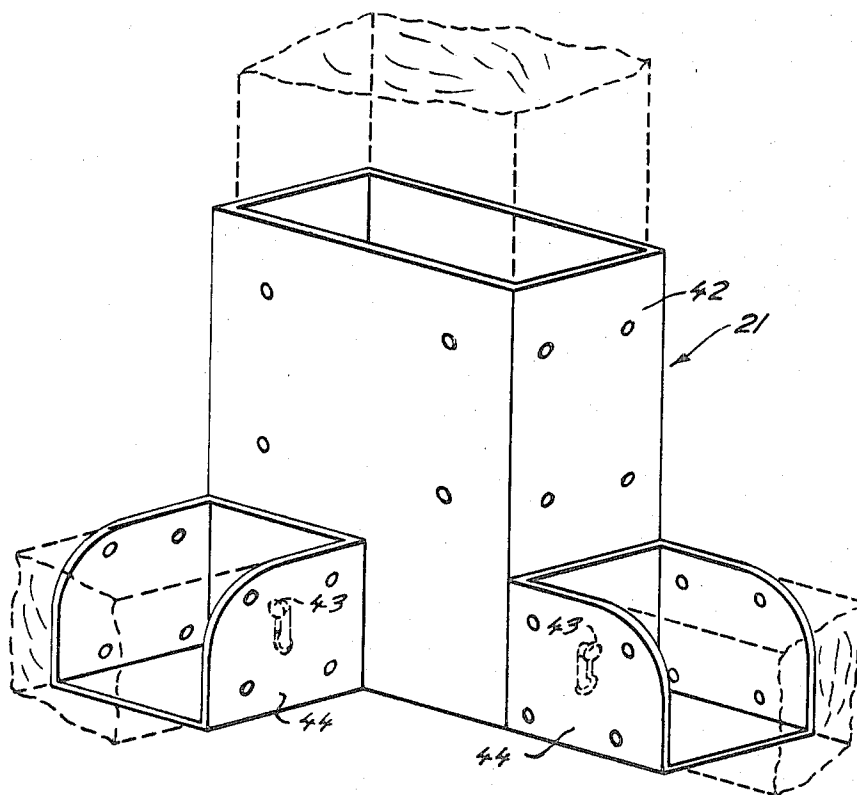




- Fig. 1 -



-Fig. 2-



-Fig. 3-

FRAMEWORK CONNECTOR

BACKGROUND OF THE INVENTION

1. Field of the Invention

This invention relates to the art of building construction and in particular to connectors for fastening together frame members of a frame structure to provide sufficient rigidity of the structure prior to cladding.

2. Prior Art

In the construction of light buildings it is common practice to first erect a skeleton frame to which cladding is then applied. The frame need only be sufficiently rigid to stand by itself while the cladding is being applied. Normally the cladding, after it is applied, provides strength required to avoid collapse of the building under normal stresses.

Cutting and assembly of frame components of even a simple frame structure poses difficulty for those who are not skilled carpenters, particularly where gabled roofs are concerned. This problem has largely been reduced by supplying the erector with the frame structure in a pre-cut knockdown condition. Suppliers of frame structure of this type have also included connectors of one form or another by means of which the pre-cut members of the frame structure can be fitted together easily and quickly.

Connectors of the prior art have not been entirely satisfactory and many have lacked sufficient strength to the erected frame structure to enable the structure to stand unsupported. Furthermore, where gable roof structures are concerned suppliers have had to supply a multiplicity of types of connectors in view of the multiplicity of corner configurations of joined frame members.

SUMMARY OF THE INVENTION

The present invention provides a connector assembly for light frame structures which results in marked reduction of number of types of connectors required and which, furthermore, lend sufficient strength to the frame structure to enable the structure to stand relatively unsupported until cladding is applied.

The connector assembly of the present invention, includes, in one aspect, a sleeve member which accepts an end portion of one frame member, a chair member for accepting an end portion of a second frame member and connecting means on the sleeve member cooperating with connecting means on the chair member for providing a releasable rotatable connection of the chair member and the sleeve member.

In another aspect of the invention the sleeve member is open at opposite ends for receiving end portions of the pair of frame members to be joined in end-to-end coplanar relationship.

A detailed description following, related to the drawings, gives exemplification of preferred embodiments of the invention, which, however, is capable of expression in structure other than that particularly described and illustrated.

DESCRIPTION OF THE DRAWINGS

FIG. 1 is an isometric view of assembled frame structure, frame members of which are joined by connector assemblies of the invention,

FIG. 2 is an isometric view of one embodiment of the connector assembly,

FIG. 3 is an isometric view of another embodiment of connector assembly.

DETAILED DESCRIPTION

With reference to the drawings, FIG. 1 shows an assembled frame structure generally 10 of the gabled type, frame members of which include rafters 11, double ridge poles 12 and 13, studs 14, longitudinal eave members 15 and longitudinal and transverse base members 16 and 17, respectively.

The rafters, studs, ridge poles and longitudinal eave members are interconnected by connector assemblies 20, being one embodiment of the invention, and the longitudinal and transverse members are connected to the studs by connector assemblies 21 being another embodiment of the invention.

Referring to FIG. 2, the connector assembly 20 includes a metal elbow sleeve 25 which is open at opposite ends 26—26 and which is bent intermediately of its length to provide an interior angle of 120°. Dimensions of the sleeve are such that end portions of the rafters, shown in broken outline, have a snug slidable fit therein.

The metal sleeve which can be cast as an integral unit or which can be formed of sheet metal suitably bent and welded, has opposite continuous side plates 27 and 28 and continuous upper and lower plates 29 and 31 respectively. Button connectors 32, having shanks 32.1 and heads 32.2 project laterally from the side plate 27. One of the button connectors can be disposed centrally of the side plates and the other two near the outer ends of the side plate. Button connectors, not shown, also extend from the side plate 28 and are disposed so to correspond to the button connectors extending from the side plate 27.

The connector assembly also includes chairs 33, one being shown in FIG. 2, which can be releasably secured to the connector buttons of the sleeve. Each of the chairs has a base 34, parallel wing walls 35—35 and an end wall 36. The end wall has a centrally disposed inverted key-hole shaped slot 37 which accepts any of the button connectors for releasably locking the chair on the sleeve. The chair, it is seen, is secured against swinging movement relative to the sleeve but can be rotatably positioned relative thereto. The chair accepts the end portions of the structural members 12, 13, 15, 16 or 17.

Both the chairs and the sleeves have holes 41 through which nails can be driven into the ends of the frame members adjacent thereto so as to lock the members in place.

FIG. 3 shows, in detail, the other embodiment 21 of the connector assembly of the invention.

The connector assembly 21 has a metal sleeve 42 dimensions of which are such as to offer a snug slidable fit for lower ends of the studs and has, projecting laterally from its end and side walls, connector buttons 43 which are similar to the button connector 32 on which chairs 44 similar to chairs 33 can be connected. USE

The connector assemblies 20 are used for connecting the rafters in pairs at the gable and for connecting the rafters to the studs at the eave line as the internal angle between the frame members at each location is the same, being 120°. The connector assemblies 21 are

used at the lower corners of the buildings and along the sides. As the button connectors are disposed on all four sides of the sleeve the chairs for securing the longitudinal transverse base members can be located on their associated sleeves accordingly.

In erection of the frame structure the studs and rafters are first interconnected, providing laterally stable identical frames which are then disposed in an upright position and the longitudinally extending ridge poles and eave and longitudinal base members then positioned between the several frames and secured to their respective chairs. Temporary internal bracing can be used between adjacent frames to provide longitudinal stability until cladding is applied to the frame structure.

It will be appreciated that instead of two ridge poles as shown in FIG. 1, one ridge pole can be used by fitting chairs to the central button connectors.

Further, although, as described, the sleeve of the connector assembly 20 is preferably, bent at an angle of 120° so as to fit at both the eave line and the ridge line, sleeve bent at various angles can be used to suit varied angular dispositions of building members to be

joined.

It is seen that with use of the connector assemblies of the invention the frame structure can easily and quickly be erected and that dimensional exactitude is achieved automatically.

I claim:

1. A connector assembly for connecting frame members of a frame structure including:

- a. a sleeve member for accepting an end portion of one frame member,
- b. at least one button connector having a cylindrical shank and a head extending laterally from a side of the sleeve member,
- c. a chair member adapted to accept an end portion of a second frame member and having a base provided with a key-hole slot for releasably accepting the button connector so as to connect the two frame members and enable the second frame member to be rotatably positioned about its own axis.

2. A connector assembly as claimed in claim 1 in which the sleeve member is open at each end and is bent at its midlength to an internal angle of 120°.

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