

[54] **COUPLING FOR CONNECTING
TOGETHER BUILDING UNITS**

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[58] **Field of Search**.....**287/56, 54 A, 54 C, 124, 52.08,**
287/189.36 H, 53 H

[56] **References Cited**

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FOREIGN PATENTS OR APPLICATIONS

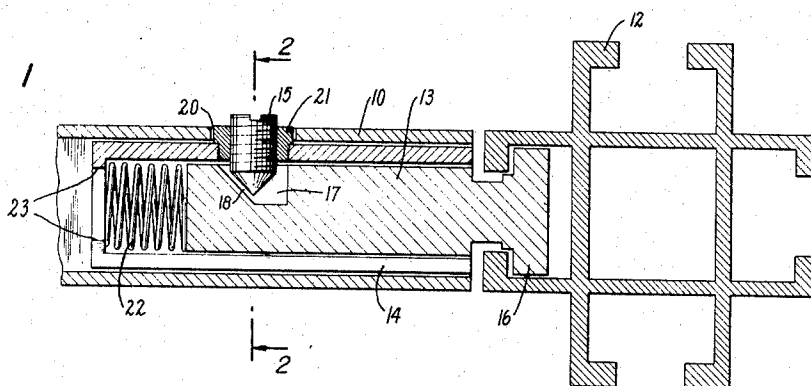
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[57] **ABSTRACT**

As described herein, a coupling member for building units includes a ram member which is movably mounted within one of the building units and which has an end adapted for placement within the open end portion of the other building unit. The ram member is provided with a surface in the form of two sloping planes arranged at right angles to each other and obliquely positioned in the longitudinal direction of the ram member. Also provided is a screw member which is adapted to abut either of the sloping planes of the ram member to thereby effectively lock the ram member in either of two positions. The other end of the screw member is adapted to project into a hole arranged in the building unit.

2 Claims, 2 Drawing Figures



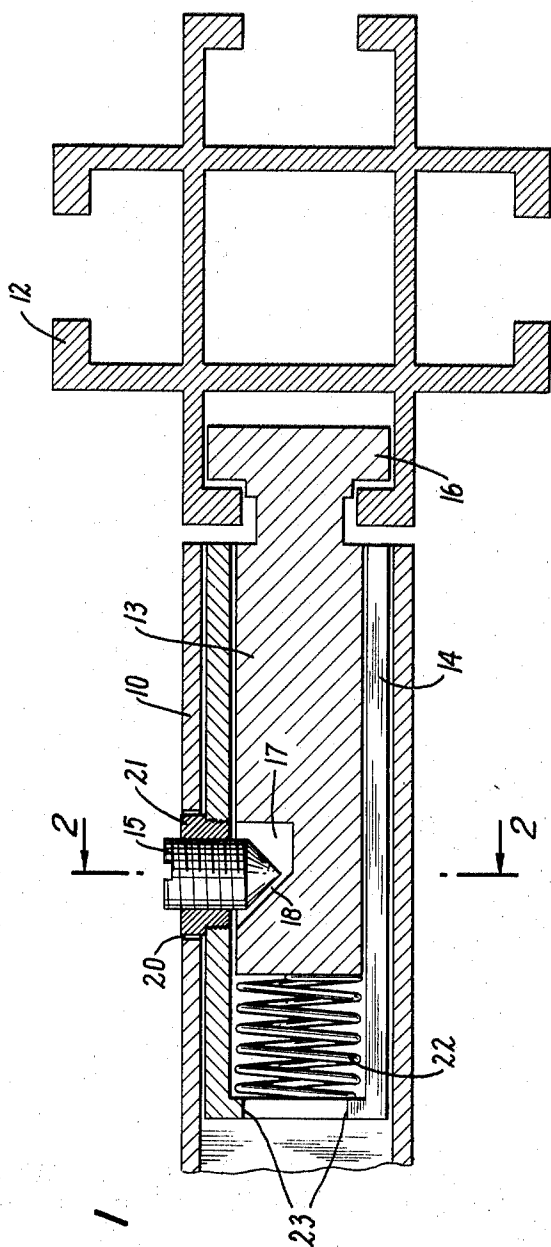


FIG. 1

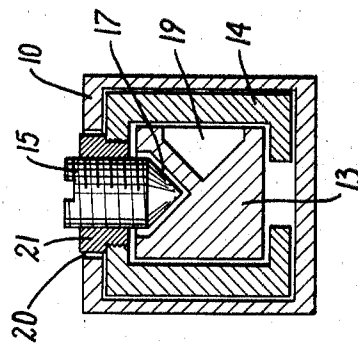


FIG. 2

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COUPLING FOR CONNECTING TOGETHER BUILDING UNITS

BACKGROUND OF THE INVENTION

The present invention relates to means for coupling building units together in the form of sections which are provided with skirts or grooves and which are mainly intended for use in assembling structures utilized for exhibition and business purposes, temporary dwellings, erection of partitions and the like.

Building units for use in this connection are previously known and the requirements placed upon such units are principally that they are (1) easy to handle, (2) readily assembled and dismantled, (3) capable of providing a durable and stable structure even after repeated erection and dismantling, and (4) that they include as few parts as possible.

To satisfy the above-mentioned requirement of easy handling, the building units are usually designed in the form of light-metal sections or bars, which by means of special couplings can be assembled to form an easily dismantled structure. The coupling means used for this purpose are usually screw couplings; the requirements of which being that they are capable of providing a stable structure even after being erected and dismantled a number of times and, furthermore, that they include as few parts as possible with as many variations of coupling as possible.

The coupling disclosed in my recently issued U.S. Pat. No. 3,537,736 entitled "Means for Joining Together Building Units," satisfies to a great degree the requirements of stability and easy handling. However, the member of the coupling which functions as a ram and which is provided with a guide shoulder is capable of being locked only in one position which limits its utility.

SUMMARY OF THE INVENTION

It is an object of the present invention to overcome the foregoing drawback in my prior coupling member.

This and other objects of the present invention are accomplished by providing a coupling means comprising a member which functions as a ram and which is intended to be placed within the open end portion of the building unit and a screw cooperating with the ram member. The ram member is provided with a surface in the form of two sloping planes arranged at right angles to each other and obliquely positioned in the longitudinal direction of the ram member. One end of the screw is adapted to abut either of the sloping planes of the ram member to thereby effectively lock the ram member in two positions. The other end of the screw member is adapted to project into a hole arranged in the building unit.

BRIEF DESCRIPTION OF THE DRAWINGS

In the Drawings:

FIG. 1 illustrates a longitudinal section of the coupling together with the ram member and associating screw, as well as portions of two building units coupled together by means of the coupling means arranged according to the present invention; and

FIG. 2 illustrates a cross-sectional view of the coupling means along the line 2-2 of FIG. 1 and looking in the direction of the arrows.

DESCRIPTION OF THE PREFERRED EMBODIMENT

In an illustrative embodiment of the coupling means of the present invention, as shown in FIG. 1, the coupling means is inserted in a building unit 10 which is to be connected to another building unit 12. The coupling comprises a ram member 13, a casing 14 and a screw 15 cooperating therewith. The ram member 13 is provided at its outer end with a guide shoulder 16 intended to engage in a guide way on the building

unit 12. The ram member 13 is also provided with a recess 17 presenting a surface 18 in the form of a sloping plane obliquely positioned in the longitudinal direction of the ram member 13 and of the screw 15.

As illustrated in FIG. 2, the ram member 13 is provided with another recess 19 presenting a similar surface (not shown) at right angles to the surface 18 and obliquely positioned in the longitudinal direction of the ram member.

The casing 14 is provided with an internally threaded hole 10 which when the casing and the ram member 13 are inserted in the building unit 10 is located right before a hole 20 in the building unit 10 and above the recess 17 in the ram member.

When the screw 15 is screwed in the threaded hole of the casing 14 against the sloping plane 18 in the recess 17, the ram member 13 is drawn further into the building unit 10. Because the guide shoulder 16 of the ram member engages in a guide way on the unit 12 to be connected to unit 10, the said unit 12 is drawn in towards the unit 10.

In order to prevent the edges of the hole 20 in unit 10 from being deformed by the threads of the screw 15, the casing 14 is provided with an internally threaded tube 21 extending up through the hole 20. The tube being either welded to or forms an integral part of the casing 14 and being placed concentrically with the hole in the casing.

In the rear end of the ram member 13 there is a spring 22 which at its one end abuts the ram member and at its other end an abutment 23 of the casing 14. When the screw 15 is loosened the spring 22 urges the ram member 13 outwards and the two building units can be dismantled.

In accordance with the invention, the ram member 13 is provided with the two recesses 17 and 19 which make the ram member 13 capable of being locked in two positions at right angles to each other.

The invention is not limited only to involve the feature shown in the drawing. Thus a plate or a disk can be substituted for the casing 14, which plate is provided with an internally threaded hole similar to that of the casing. When the plate is inserted for use it is located on the ram member with its hole above the recess and right before the hole of the unit 10. The casing form, however, is more advantageous when the building units are subjected to a particularly great stress.

What is claimed is:

1. In apparatus for connecting building units having open end portions, at least one of said units having a first opening formed lengthwise therein extending from the open end portion and including a second opening formed in one side of the unit and extending into the first opening, the improvement comprising a ram member disposed within the first opening of the one of the building units and including engagement means for engaging the other of the building units, means forming recesses in at least two sides of the ram member, one of the recesses providing a surface in the form of a sloping plane obliquely positioned in the longitudinal direction of the ram member and the other recess providing a similar surface at right angles to the sloping plane surface of the one recess and obliquely positioned in the longitudinal direction of the ram member, a casing member engaging the ram member and having an opening formed in one side thereof to provide a passageway between the second opening of the building unit and either one of the recesses formed in the ram member, and a screw cooperating with the openings formed in the building unit and the casing, the screw adapted to abut either of the sloping plane surfaces of the recesses formed in the ram member when the engagement means of the ram member engages the other of the building units.

2. The improvement according to claim 1 further comprising spring means connected between the ram member and the casing for urging the engagement means of the ram member out of engagement with the other of the building units.

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