

(12) **EUROPEAN PATENT APPLICATION**

(21) Application number: 82830091.3

(51) Int. Cl.³: **A 47 B 57/54**
A 47 B 57/48

(22) Date of filing: 13.04.82

(30) Priority: 14.04.81 IT 2113081

(43) Date of publication of application:
20.10.82 Bulletin 82/42

(84) Designated Contracting States:
AT CH DE FR GB LI NL

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(54) **Metal structure for storing articles and making shelvings.**

(57) The present invention relates to a metal structure for storing articles and making shelvings, which comprises side walls (1), provided with a pair of side uprights (2), coupled by cross-members and diagonal braces, (14, 15).

The vertical uprights (2) are provided with a substantially C-shaped cross section, having turned edges (3), at the free ends of the legs (4) thereof.

On the turned edges (3) there are formed two perforation sets (6), spaced at a determined pitch, for removably engaging lug portions (7) of a plate (8) pair, effective to couple the cross-members and diagonal braces (14, 15).

The plates (8) are provided with through holes (11), opposite to one another, therewith bolts (12) engage for fixing the cross-members and diagonal braces.

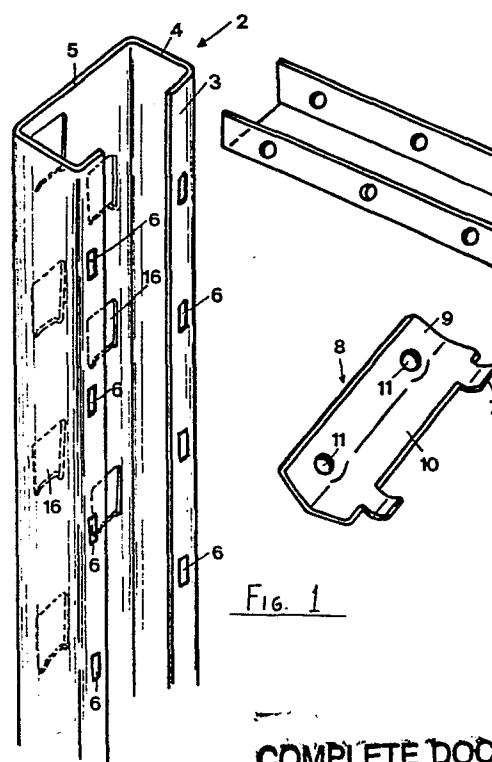


Fig. 1

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COMPLETE DOCUMENT

The present invention relates to a metal structure, for storing articles and making shelvings and the like.

As it is well known, the side walls of shelvings and the like, for storing bulky and heavy articles, generally consist of a upright pair, coupled to one another by welding, diagonal braces and cross-members.

This approach, though it is a satisfactory one, for a structural standpoint, presents however the drawback of generating tedious problems, in the side wall transportation and storing steps, since the latter have to be shipped to the use place in a completely assembled condition.

Moreover, in order to meet the most different requirements of the market, it is necessary to provide for the making of a large dimension range, both depending on the height and the width of the shelvings to be built.

Yet another drawback of the known shelvings is that the making of a side wall requires a lot of welding labour, thereby the formed product is a highly expensive one.

Accordingly the task of the present invention

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is to provide a shelving structure, provided with side walls which can be easily obtained by removably coupling the component elements thereof to one another, and which are effective to eliminate all of the thereinabove mentioned drawbacks.

Within the scope of this task, a main object of the present invention is to provide shelving side walls effective to be assembled to any desired size, by using simple sections effective to be cut to size at the assembling step.

Yet another object of the present invention is to provide such a structure which, in addition to having a simple mounting, is also effective to provide great reliability and safety use characteristics.

Yet another object of the present invention, is to provide such a structure which, owing to its modularity characteristics, is effective to solve all of the storing problems, both during the production and the transportation steps.

According to one aspect of the present invention the thereinabove mentioned task and objects, as well as yet other objects which will become more apparent hereinafter, are achieved by a metal structure for storing articles and making shelvings, characterized

in that it comprises side walls, consisting of a side upright pair, having a substantially C-shaped cross-section, provided with turned edges at the free ends of the legs thereof, on said turned edges there being formed perforation sets, spaced at determined pitch from one another, therein may be removably engaged the lug portions of a plate pair for fixing cross-members and diagonal braces, said plates being provided with oppositely located through holes, therewith bolts engage for fixing said cross-members and diagonal braces.

Further characteristics and advantages of the invention will become more apparent hereinafter from the following detailed description of a preferred, though not exclusive, embodiment of a metal structure, being illustrated by way of an indicative example in the accompanying drawings, where:

fig.1 is a perspective exploded view illustrating the component elements of a side wall;

fig.2 is a perspective view illustrating a upright thereto the plates are coupled, before the fixing of a cross-member;

fig.3 illustrates, by a partially broken

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away view, the coupling of the plates to a upright;
and

fig.4 is a schematic view illustrating
the procedure for making a side wall.

With reference to the number references
of the figures of the accompanying drawings,
the metal structure for storing articles and making
shelvings, according to the present invention,
comprises two side walls or panels, indicated general-
ly at 1, which consist of a vertically extending
upright pair 2, which latter are made of a suitable
gauge section. Each upright 2 has a substantially
C-shaped cross-section with turned edges 3, at the
free ends of the legs 4. More specifically, the turned
edges 3 are arranged substantially parallel with
respect to the central portion 5 and face to one
another.

Moreover the upright pair, as a side wall
is built, are so arranged that the turned edges 3
thereof are located adjoining one another.

A main feature of the invention is that
on the edges 3 perforation sets 6 are formed, which

are arranged at a determined pitch from one another, and cyclically repeat all along the length of the uprights 2. With the holes 6 slanted lug portions 7 of a clamping plate pair 8 may be engaged, said plates 8 being preferably provided with a flat fin or web 9 and a slanted fin 10 which latter defines, on the free end thereof, the aforesaid lug portions 7.

On the flat wing 9 of said plates 8 there are formed through holes 11, thereinto bolts 12 can be inserted, provided with nuts 13 for fixing the cross-members 14 and diagonal braces 15 coupling the two uprights, thereby allowing for a side wall to be erected. At the central portion 5, there are provided windows 16, of known type, and arranged offset to one another for coupling side walls to one another and the related shelves.

The making of the shelvings, by the thereinabove disclosed method, is a very simple operation. Infact the user, for example, may buy the uprights 2 by meters and cut the latter, to the desired size, as they are assembled.

In order to assemble the cross-members and

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diagonal braces 15 it is sufficient to apply, at the desired zones, the plates 8 and clamp the latter by means of the bolts 12.

Moreover the width of the made side walls may be easily adjusted, depending on the contingent needs, by simply changing the length and type of cross-members and diagonal braces, or possibly by varying the slanting of the diagonal braces. In particular the fact is to be pointed out that the possibility of carrying out the mounting of the side wall by a simple bolting operation, instead of using a welding procedure, allows for the storing costs to be drastically reduced, as well as those related to the side walls shipping.

In addition to the above, the user can directly assemble the side walls, depending on his needs. Finally the use of the plates 8, for fixing the cross-members and diagonal braces, affords the possibility of employing uprights of comparatively simple size; thus they are of low cost and may be easily assembled.

Another important aspect of the present invention is the great flexibility of the system which also

affords the possibility of easily disassembling a side wall, as it is required, and easily recovering for re-use the components thereof.

The invention as disclosed is susceptible to several modifications and variations, all falling within the scope of the invention. Moreover all of the details can be replaced by other technically equivalent elements.

In practicing the invention, the used materials, though they are compatible to the intended application, as well as the contingent shape and size may be any, depending on the needs.

C L A I M S

1- A metal structure for storing articles and making shelvings, characterized in that it comprises side walls(1), consisting of a side upright pair(2), having a substantially C-shaped cross-section, provided with turned edges (3) at the free ends of the legs (4) thereof, on said turned edges there being formed perforation sets(6), spaced at a determined pitch from one another, therein may be removably engaged the lug portions(7) of a plate (8) pair for fixing cross-members (14) and diagonal braces (15), said plates being provided with oppositely located through holes (11), therewith bolts(12) engage for fixing said cross-members (14) and diagonal braces (15).

2- A metal structure according to the preceding claim, characterized in that said turned edges (3) are substantially parallelly arranged, with respect to the central portion of said C-shape, and are facing to one another.

3- A metal structure, according to the preceding claims, characterized in that said turned edges (3) of a said upright(2) pair are arranged in such a way as to face one against the other.

4- A metal structure according to one or more of

the preceding claims, characterized in that it comprises a plurality of perforations (6), cyclically formed all along the length of said uprights (2).

5- A metal structure according to one or more of the preceding claims, characterized in that said plates (8) are provided with a flat fin, therein said through holes (11) are formed, and with a slanted fin (10) on the free edge whereof there are formed said lugs (7).

6- A metal structure according to one or more of the preceding claims, characterized in that said side walls (1) are effective to be directly assembled by the user.

7- A metal structure for storing articles and making shelving, according to one or more of the preceding claims and substantially as disclosed and illustrated for the intended objects.

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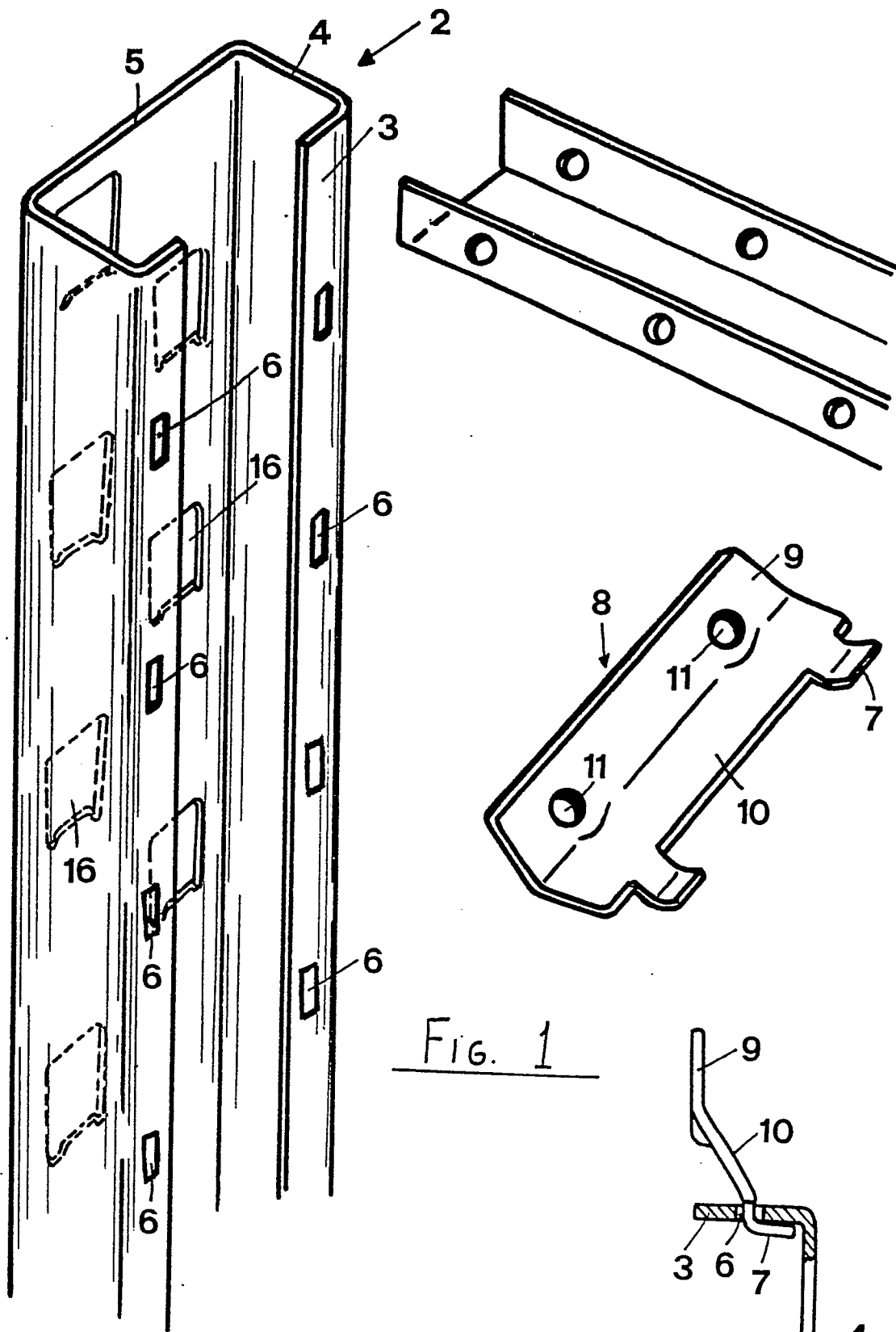


Fig. 1

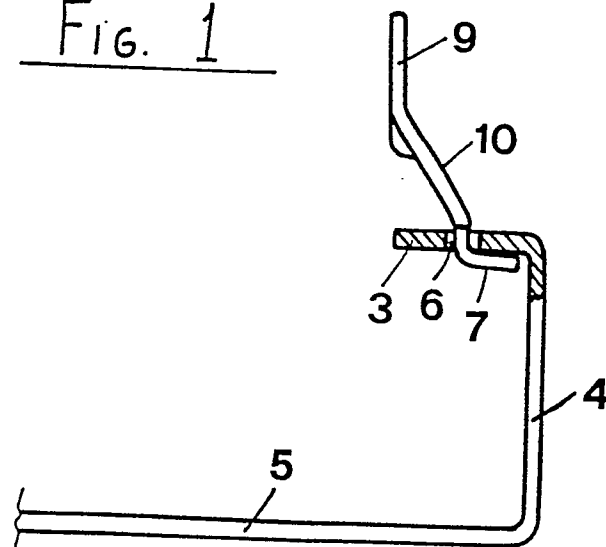
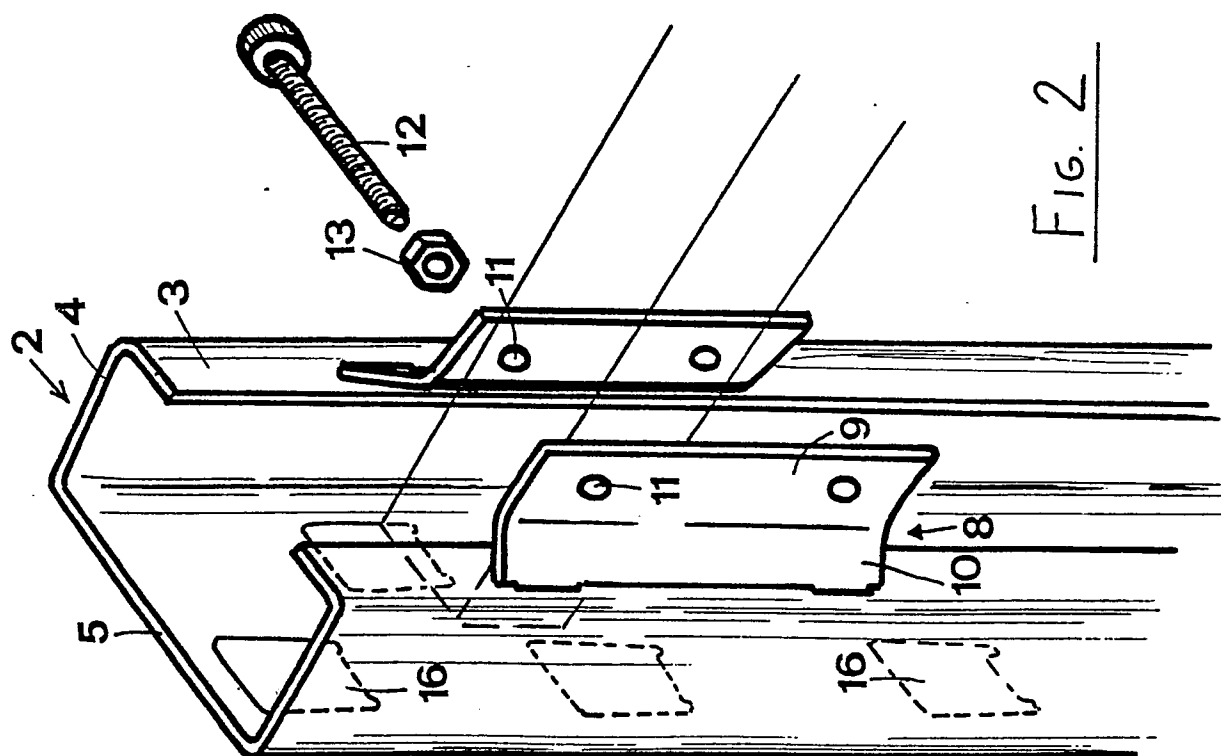
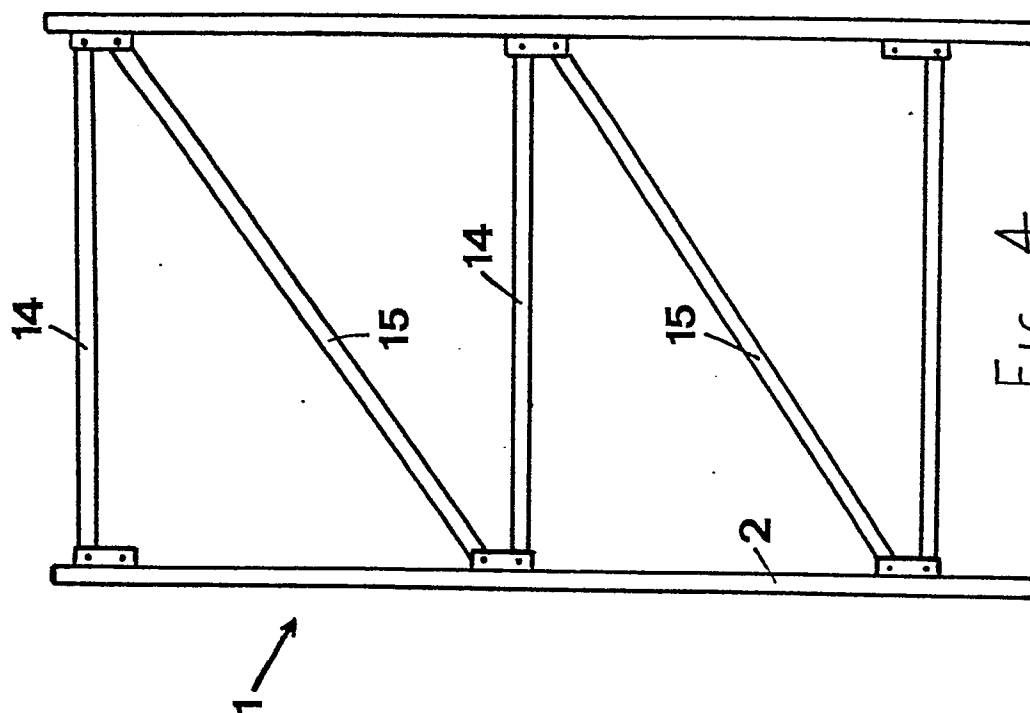


Fig. 3





European Patent
Office

EUROPEAN SEARCH REPORT

0063107

Application number

EP 82 83 0091

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl. 3)
X	FR-A-2 301 719 (LUCHAIRE) *Figures 2-4*	1-4, 6	A 47 B 57/54 A 47 B 57/48
A		5	
P, X	--- EP-A-0 044 282 (BIANCH & RESTELLI) *Figures 17, 18*	1-4, 6	
A		5	
A	--- FR-A-1 364 697 (KIEFFER) *Figures 2, 3*	1, 4, 5	
A	--- US-A-4 236 642 (H. KLEIN) *Figures 2, 3*		TECHNICAL FIELDS SEARCHED (Int. Cl. 3)
A	--- FR-A-2 375 847 (LAHET) *Figure 1*		A 47 B F 16 B

The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 19-07-1982	Examiner CURZI D.
CATEGORY OF CITED DOCUMENTS			
X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document		T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document	