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(54) **Metal support for manipulating and stacking doors**

(57) Metal support for manipulating and stacking doors (4) which comprises a plurality of support units, each of which consists of a metal sheet wherein several orifices have been made for adjustment thereof to the door along its edge, by conventional joining means, and whereon T-shaped tubular supports are welded, wherein

the end of the support has been equipped with a U-shaped profile, in such a way that said profile serves as a support for another support unit that is arranged on top, resting on the lower part of the end of the support; the assembly can be equipped with a tightening key that allows adjustment, compression and extension of the support.

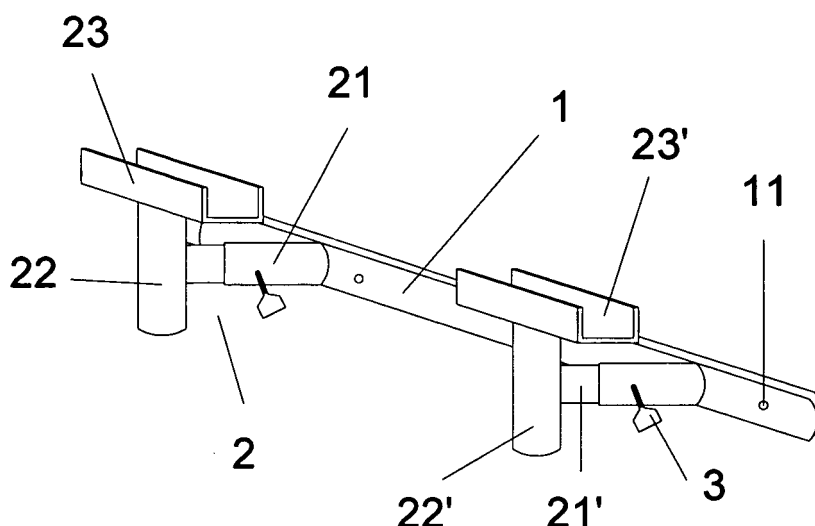


FIG. 1

Description

DESCRIPTION

[0001] Metal support for manipulating, transporting, and handling doors.

OBJECT OF THE INVENTION

[0002] The present invention relates to metal supports for manipulating, transporting, and handling doors, in such a way that said doors are not in contact with any surface that hampers work thereon. Thus, it allows painting thereof on both sides, without having to wait for them to dry, they are not scratched or marked during manipulation, and do not suffer blows or move during transport.

BACKGROUND OF THE INVENTION

[0003] Due to a large extent to the size of doors, manipulation thereof is not very comfortable in many aspects. Transport, for example, can often be difficult, specially if several doors are to be transported at the same time, as, the doors being in contact and susceptible to movement, transport can cause deterioration thereof due to friction itself. Additionally, when painted, they cannot be stacked on until dry, thereby taking up a large amount of space.

[0004] Door transport systems are known to exist such as, for example, Patent ES 2156789, which discloses a device for moving doors or blocks, consisting of a slider or skid which, arranged on two points removed from the door, allows dragging thereof along the factory or warehouse without suffering damage. It consists of at least two L-shaped elements, the base of which is arranged underneath the lower edge of the door, while its vertical wing is arranged closing each lower corner of the door or block and/or sideways to allow even a slight tilt towards the corresponding side. This system, despite allowing easy transport, does not allow more than one door to be moved at the same time. Additionally, the device is in contact, along its vertical side, with the side of the door, due to which it will cause problems if a door which has just been painted must be transported, and can even cause damage to that area.

[0005] The proposed invention solves the previously expounded problems in such a way as to allow several doors to be transported simultaneously, avoiding contact therebetween, in addition to maintaining these perfectly joined together to avoid movements during transport thereof. Additionally, and given that the device is at no point in contact with the sides of the door, it allows transport thereof even when it has just been painted.

DESCRIPTION OF THE INVENTION

[0006] The invention consists of a metal support for manipulating, transporting, and handling doors, which al-

lows doors to be safely worked on, avoiding possible blows due to undesired movements, in addition to avoiding damage thereto by the supports arranged thereon.

[0007] The support comprises an elongated metal sheet wherein orifices have been made for the joining means between the support and the edge of the door. The aforementioned support has been designed in such a way that it is coupled to the edge of the door, avoiding any contact with the sides thereof and without causing any type of damage thereto. T-shaped tubular supports have been welded onto the metal sheet, on the upper part of which an open U-shaped profile has been arranged for each of these, also welded, and which allows the supports to be stacked on each other. In this way, several doors can be transported simultaneously without their being in contact with each other, arranging the lower part of a support on the U-shaped profile of a lower support, where necessary. Additionally, in a variant of the invention, the tubular supports are extendable, in such a way that an inner tube of the T-shaped support extends from the interior of the tube that is coupled to the metal bar, achieving greater separation between the edge of the door and the support. This is very useful, specially when several doors of different sizes are to be simultaneously transported. Both tubes are fixed by means of a tightening key, which allows the extension to be upheld, in addition to modifying it whenever necessary by screwing or unscrewing thereof. Adjustment by means of a tightening key is of utmost importance, not so much if the support is only used for stacking and storage of the doors but rather during transport thereof, as the slightest movement can entail the risk of sliding or collapsing.

DESCRIPTION OF THE DRAWINGS

[0008] In order to complete this description and with the object of better understanding the characteristics of the invention, a set of drawings in accordance with a preferred example of practical embodiment thereof has been included as an integral part of said description, wherein the following has been represented in an illustrative and non-limiting way:

Figure 1 shows a perspective view of a preferred embodiment of the support of the invention, wherein the profiles (23, 23') are arranged parallel to the metal sheet (1).

Figure 2 shows a view of a preferred embodiment of only the tubular supports (2), wherein said supports have been represented unextended in the figure on the left and fully extended in the figure on the right, the supports (23, 23') being arranged parallel to the metal sheet(1).

Figure 3 shows one of the door (4) stacking possibilities with the supports of the invention, with the supports (23, 23') arranged parallel to the metal

sheet (1) when all the doors are of the same size.

Figure 4 shows another door-stacking possibility.

Figure 5 shows a preferred embodiment of the invention wherein the supports (23, 23') are arranged perpendicular to the metal sheet (1) and the supports (21, 21') are not extended.

PREFERRED EMBODIMENT OF THE INVENTION

[0009] The invention consists of a metal support for manipulating, transporting, and handling doors that comprises a plurality of support units, each of which consists of a metal sheet (1) wherein several orifices (11) have been made for adjustment thereof to the door (4) along its edge, by conventional joining means. In this way, and on adjusting the mechanism along the edge, all contact thereof with the sides of the door is avoided, not scratching or damaging the visible surface of said door. T-shaped tubular supports (2, 2') are welded onto the metal sheet (1), wherein the upper end of the support (22, 22') has been equipped with a U-shaped profile (23, 23'), in such a way that said profile (23, 23') serves as a support for another support unit that is arranged on top, resting on the lower part of the end of the support (22).

[0010] In this way, in a preferred embodiment of the invention, the profile (23) is arranged perpendicular to the metal sheet (1), in such a way that, given its length, it allows stacking of doors of different heights. However, when the doors are of different widths, the previously described supports are inconvenient, as the position of the tubular supports (2, 2') must be changed to different orifices in order to adapt it.

[0011] In order to avoid this limitation, in another preferred embodiment of the invention the profile (23) is arranged parallel to the metal sheet (1), in such a way that doors (4) of different sizes can be stacked without having to change the position of the tubular supports (2, 2').

[0012] The size of the profile (23) is greater than that of the support (22), its length always being greater than the diameter of the support (22), in such a way that, on also being parallel to the sheet metal, it allows not only vertical but also tilted door stacking, wherein the support (22) of a support unit can be arranged on a side of the profile (23) but not in the centre thereof, as in the case of vertical stacking, and doing the same with the next support unit. This allows obstacles on the ground, walls or ceiling to be overcome, saving space for storage.

[0013] Each of the tubular supports (2, 2') can be extendable in its supports (21, 21'). Thus, a tightening key (3) that allows adjustment, compression, and extension thereof has been arranged on the support (21, 21'). The advantage of this embodiment is the possibility of transporting and stacking doors of different sizes, extending the supports for smaller doors and compressing them for larger doors, in such a way that all supports (22, 22') can be arranged on the profiles (23, 23'), without having to

change the tubular supports (21) to different orifices.

[0014] Provided that that characteristics of the invention are not altered, all the elements of each support unit may vary in terms of shape, size, configuration and materials, the foregoing description being of a non-limiting nature.

Claims

1. Metal support for manipulating, transporting, and handling doors, **characterised in that** it comprises a plurality of support units, each of which consists of a metal sheet (1) wherein several orifices (11) have been made for adjustment thereof to the door along its edge, by conventional joining means, and wherein T-shaped tubular supports (2, 2') are welded, wherein the upper end of the support (22, 22') has been equipped with a U-shaped profile (23, 23'), in such a way that said profile (23, 23') serves as a support for another support unit that is arranged on top, resting on the lower part of the end of the support (22, 22').
2. Metal support for manipulating, transporting, and handling doors, according to claim 1, **characterised in that** the profile (23, 23') is arranged perpendicular to the metal sheet (1).
3. Metal support for manipulating, transporting, and handling doors, according to claim 1, **characterised in that** the profile (23, 23') is arranged parallel to the metal sheet (1).
4. Metal support for manipulating, transporting, and handling doors, according to claims 1 and 3, **characterised in that** a tightening key (3) which allows adjustment, compression and extension of the support (21) over the support (21') has been arranged on the tubular support (21, 21'), enabling transport and stacking of doors of different sizes.
5. Metal support for manipulating, transporting and handling doors, according to the preceding claims, **characterised in that** the length of the profile (23, 23') is substantially greater than the support diameter (22, 22'), allowing the support (22, 22') of another support unit to be arranged along the entire length thereof.

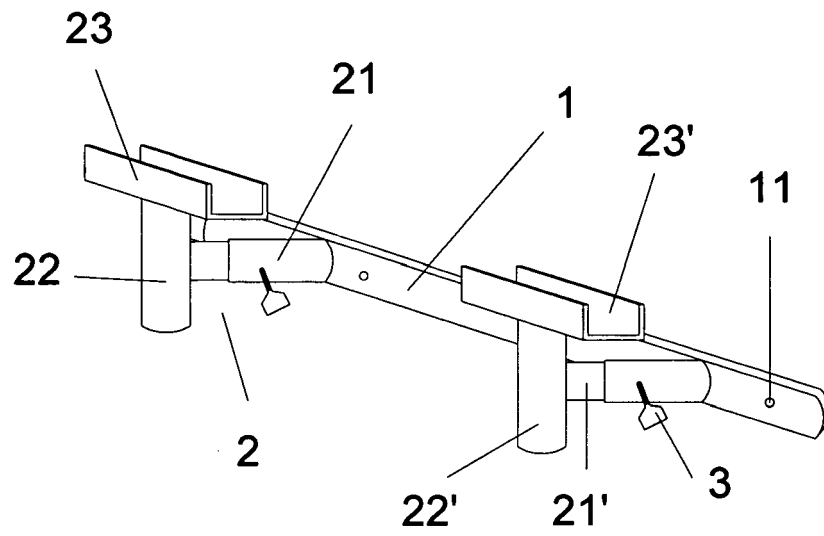


FIG. 1

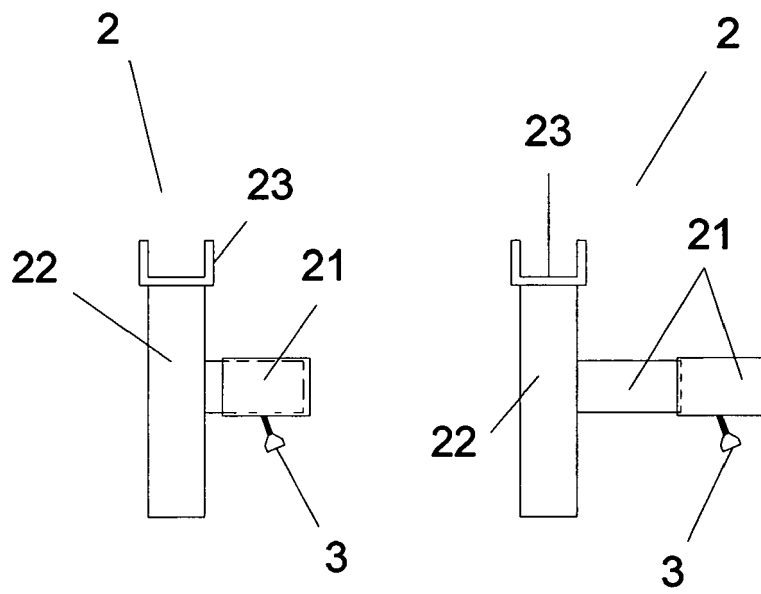


FIG. 2

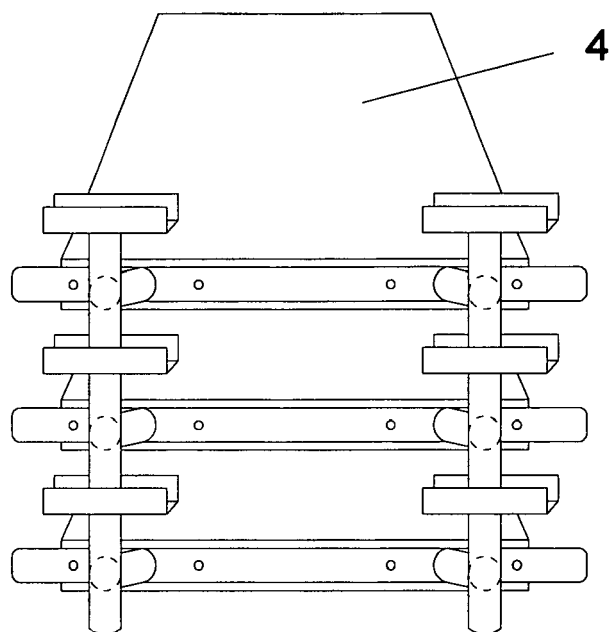


FIG. 3

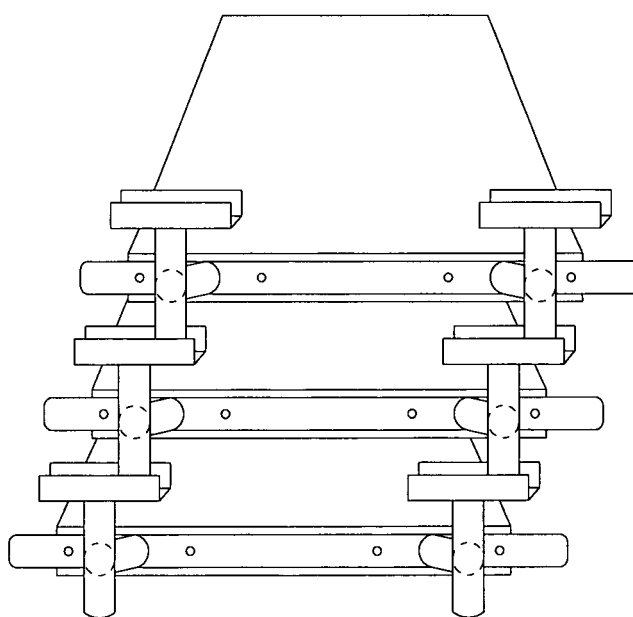


FIG. 4

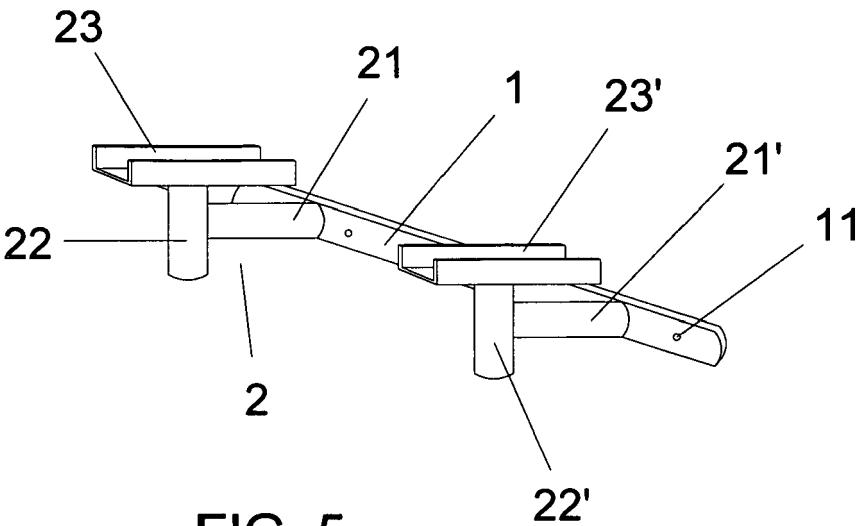


FIG. 5



EUROPEAN SEARCH REPORT

Application Number
EP 09 01 0903

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
A	US 6 090 204 A (SPEED RICHARD LEWIS [US] ET AL) 18 July 2000 (2000-07-18) * the whole document *	1	INV. B05B13/02 F26B25/18
A	DE 100 07 578 A1 (FINNENKOETTER WERNER [DE]) 13 September 2001 (2001-09-13) * column 2, line 43 - line 57; figure 2 *	1	
A	DE 92 13 004 U1 (MEZGER) 4 March 1993 (1993-03-04) * claim 1; figures *	1	
			TECHNICAL FIELDS SEARCHED (IPC)
			B05B F26B
The present search report has been drawn up for all claims			
Place of search		Date of completion of the search	Examiner
The Hague		3 March 2010	Schneider, Marc
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			

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EPO FORM 1503 03.82 (P04C01)

**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 09 01 0903

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
The members are as contained in the European Patent Office EDP file on
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03-03-2010

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
US 6090204	A	18-07-2000	NONE	
DE 10007578	A1	13-09-2001	NONE	
DE 9213004	U1	04-03-1993	NONE	

REFERENCES CITED IN THE DESCRIPTION

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Patent documents cited in the description

- ES 2156789 [0004]