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(54) **Base for a rack**

(57) Base for a rack which can be assembled in modular manner and placed freely on a base surface, comprising at least two feet which can support on this base surface and a support body which is coupled to these feet and which is provided with at least one cou-

pling element for coupling to an upright of this rack, wherein the support body is assembled from two profiled plate parts which are mutually coupled in each case by co-acting, local plastic deformations and which are for the greater part mutually overlapping, and the feet are received between the plate parts.

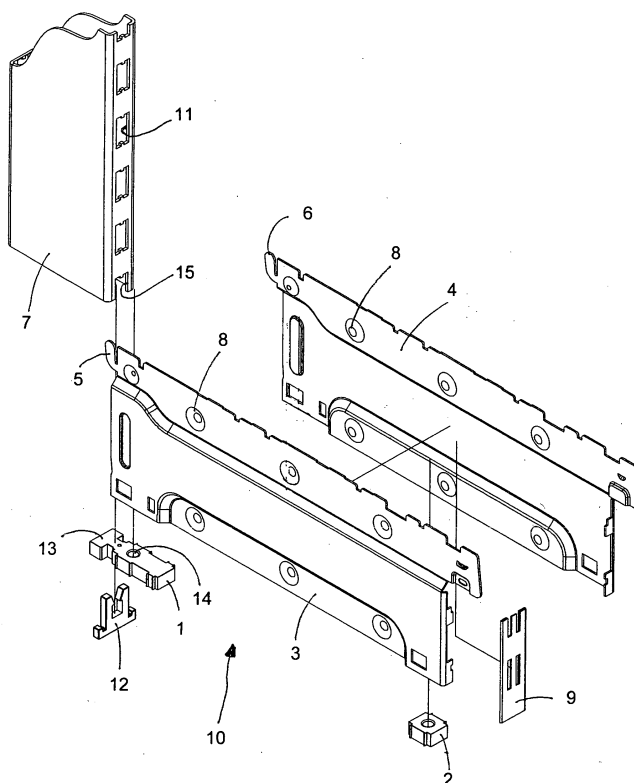


Fig. 1

Description

[0001] The invention relates to a base for a rack which can be assembled in modular manner and freely placed on a base surface. Such a rack is intended for placing along a wall or in a free space, for instance in a storage area, a DIY store or wholesaler, where it is used to form aisles such that warehouse employees or customers with a trolley can walk along the racks with goods displayed therein in order to collect goods.

[0002] Known from American patent no. 5 477 971 is a rack for modular assembly wherein a wall, formed by standards supporting a perforated wall plate, is fixedly connected to a table-like base.

[0003] It is seen as a drawback of the known rack that the table-like base takes up a relatively large amount of space during transport and storage, and as a result entails relatively high costs for transport and storage. A further drawback arises from the fixed connection between standards and base, which results in placing and removal of this rack being labour-intensive and therefore relatively expensive. The known base is not provided with separate feet, as a result of which it is difficult to correct the position of this base on a base surface which is not completely horizontal and flat.

[0004] It is an object of the invention to provide a base for a rack which takes up relatively little space in the disassembled state of this rack, and as a result can be transported or stored at relatively low cost.

[0005] It is a further object to provide a base with which a rack can be assembled in simple manner and within a short time, wherein the position of the base on a base surface which is not completely flat and horizontal can be corrected in simple manner.

[0006] It is also an object to provide such a base which can be manufactured in simple and efficient manner.

[0007] These objects are achieved, and other advantages gained, with a base for a rack which can be assembled in modular manner and placed freely on a base surface, comprising at least two feet which can support on this base surface and a support body which is coupled to these feet and which is provided with at least one coupling element for coupling to an upright of this rack, wherein the support body is assembled from two profiled plate parts which are mutually coupled in each case by co-acting, local plastic deformations and which are for the greater part mutually overlapping, and the feet are received between the plate parts.

[0008] The assembly of the support body from plate parts which are for the greater part mutually overlapping results in a compact form of the base, which has sufficient strength and rigidity as a result of the profiling. The coupling of the plate parts in each case by co-acting, local plastic deformations is carried out according to a method per se known from US-A-4 760 634, which is now generally designated Tox®-joining.

[0009] In a practically advantageous embodiment, the plate parts are manufactured from plate materials hav-

ing the same thickness.

[0010] In an embodiment of a base according to the invention, the base is provided with a mounting element for an accessory component arranged partially between the plate parts.

[0011] A skirting strip or a bumper edge can for instance be mounted on this mounting element.

[0012] The mounting element is for instance manufactured by bending a flat plate material.

[0013] The plate parts and the mounting element are preferably manufactured from plate materials which all have the same thickness.

[0014] In a simple embodiment, at least one foot is provided by a nut clamped between the plate parts and an adjusting screw co-acting therewith. Using the adjusting screw it is possible to change the position of a base placed on a non-horizontal or irregular base surface.

[0015] At least one foot is preferably provided by a solid body, a part of which extends outside the plate parts to allow an upright coupled to the support body to support against that part, which solid body is provided with a bore hole with screw thread for receiving therein an adjusting screw which can support on the base surface.

[0016] This embodiment of a base according to the invention is particularly advantageous in absorbing and redistributing static forces exerted on this base by an upright coupled to this base. It has been found that a substantial part of the force exerted on the base by an upright is absorbed by the part of the foot extending outside the plate parts, as a result of which a relatively small force is exerted on the part of the base manufactured from plate parts, whereby damage to this base resulting from static forces acting thereon is prevented.

[0017] In an embodiment of a base according to the invention for an elongate, hollow upright provided with at least one opening in longitudinal direction, the at least one coupling element comprises a hook-like part slidable into this opening and fitting round the wall of this upright, which hook-like part is preferably formed by two symmetrical parts extending in parallel manner from each of the plate parts.

[0018] The invention will be elucidated hereinbelow on the basis of exemplary embodiments, with reference to the drawings.

[0019] In the drawings

Fig. 1 shows an exploded view of a first embodiment of a base according to the invention with an upright coupled to this base, and

Fig. 2 shows a perspective view of a second embodiment of a base according to the invention with an upright coupled to this base.

[0020] Corresponding components are designated in the figures with the same reference numerals.

[0021] Fig. 1 shows a first embodiment of a base 10

according to the invention, the support body of which is assembled from two profiled plate parts 3, 4 which largely overlap each other and which are mutually coupled by co-acting local plastic deformations 8 according to the so-called Tox® technique. Prior to coupling of plate parts 3, 4 a nut 2, a solid block 1, a support plate 12 and a mounting plate 9 are arranged therebetween. The solid block 1 is provided with a bore hole 14 with screw thread for receiving therein a first screw (not shown) which can support on a base surface and which is preferably provided for this purpose with a wide head. A second screw (not shown) which can support on a base surface is received in nut 2. The solid block 1 is further provided with a T-shaped part 13 which extends outside the plate parts and which is for the greater part enclosed on its inner side by the U-shaped support plate 12. On the upper side of plate parts 3, 4 are formed symmetrical parts 5, 6 which extend outside plate parts 3, 4 and which form a hook 5, 6 after plate parts 3, 4 have been joined together. Hook 5, 6 fits into one of the H-shaped openings 11 formed in one of the narrow flat sides of a hollow upright 7, wherein the position of openings 11 is chosen such that in a working arrangement there is always one opening 11 with an upper side which corresponds with the underside of the upward-directed opening of hooks 5, 6. On the stated narrow side the upright 7 is provided at its bottom end with a downward directed recess 15. When upright 7 is mounted on base 10 which is being held in vertical position on a horizontal base surface, the correct opening 11 of upright 7 is first pushed onto hook 5, 6, whereafter upright 7 is placed in vertical position and is pushed downward, wherein the narrow wall of upright 7 is secured on its inner side by hook 5, 6 above the relevant opening 11 and is secured on its inside around recess 15 by support plate 12.

[0022] Fig. 2 shows a second embodiment of a base 20 which is suitable for racks with deeper shelves than is possible with the base 10 shown in fig. 1, by applying longer plates 3, 4.

[0023] It is noted that the inventive concept extends to other embodiments than those shown here, for instance to a base for a rack with an upright which is provided with a flat side, wherein the at least one opening is provided in this flat side, wherein the support body is provided with support surfaces bent out of the plate parts for allowing this flat side of a said upright coupled to the support body to support thereagainst. In such a base a substantial part of the forces being exerted by an upright on the base is absorbed by these support surfaces, as a result of which a relatively small force is exerted on the remaining part of the base manufactured from plate parts, whereby damage to this base resulting from static forces acting thereon is prevented.

Claims

1. Base (10, 20) for a rack which can be assembled in

modular manner and placed freely on a base surface, comprising at least two feet (1, 12; 2) which can support on said base surface and a support body (3, 4) which is coupled to said feet (1, 12; 2) and which is provided with at least one coupling element (5, 6) for coupling to an upright (7) of said rack, wherein the support body (3, 4) is assembled from two profiled plate parts (3, 4) which are mutually coupled in each case by co-acting, local plastic deformations (8) and which are for the greater part mutually overlapping, and the feet (1, 12; 2) are received between the plate parts (3, 4).

2. Base (10, 20) as claimed in claim 1, **characterized in that** the plate parts (3, 4) are manufactured from plate materials having the same thickness.
3. Base (10, 20) as claimed in claims 1-2, **characterized in that** it is provided with a mounting element (9) for an accessory part arranged partially between the plate parts (3, 4).
4. Base (10, 20) as claimed in claim 3, **characterized in that** the mounting element (9) is manufactured by bending a flat plate material.
5. Base (10, 20) as claimed in any of the claims 2-4, **characterized in that** the plate parts (3, 4) and the mounting element (9) are manufactured from plate materials which all have the same thickness.
6. Base (10, 20) as claimed in any of the claims 1-5, **characterized in that** at least one foot is provided by a nut (2) clamped between the plate parts and an adjusting screw co-acting therewith.
7. Base (10, 20) as claimed in any of the claims 1-5, **characterized in that** at least one foot is provided by a solid body (1), a part (13) of which extends outside the plate parts (3, 4) to allow an upright (7) coupled to the support body (3, 4) to support against said part (13), and which solid body is provided with a bore hole (14) with screw thread for receiving therein an adjusting screw which can support on the base surface.
8. Base (10, 20) as claimed in any of the claims 1-7 for a rack with an elongate, hollow upright (7) provided with at least one opening (11) in longitudinal direction, **characterized in that** the at least one coupling element comprises a hook-like part (5, 6) slidable into said opening (11) and fitting round the wall of said upright (7).
9. Base (10, 20) as claimed in claim 8, **characterized in that** the hook-like part is formed by two symmetrical parts (5, 6) extending in parallel manner from each of the plate parts (3, 4).

10. Base (10, 20) as claimed in claims 8-9 for an upright provided with a flat side, wherein the at least one opening is provided in said flat side, **characterized in that** the support body is provided with support surfaces bent out of the plate parts for allowing said flat side of a said upright coupled to the support body to support thereagainst.

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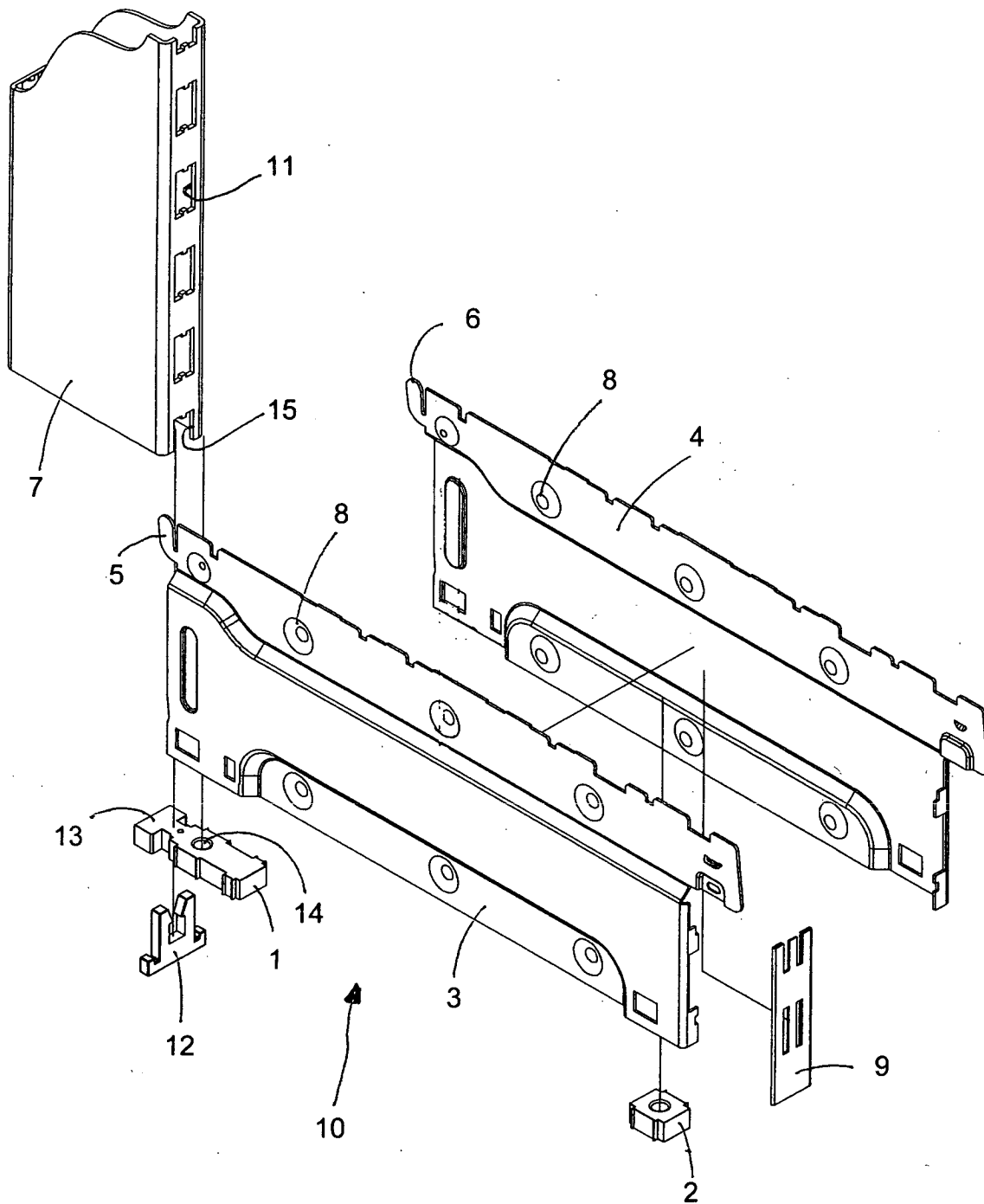


Fig. 1

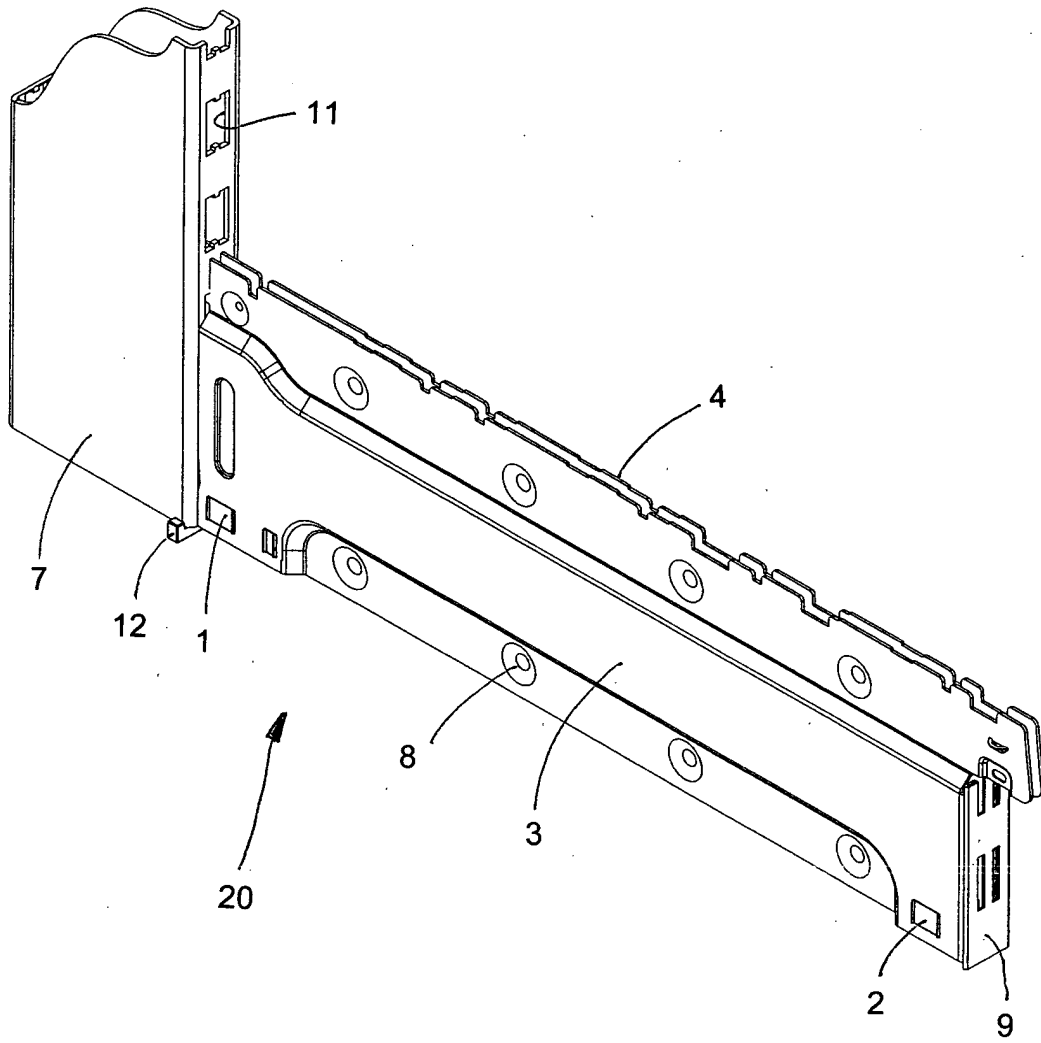


Fig. 2



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EUROPEAN SEARCH REPORT

Application Number
EP 04 07 7839

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.7)
A	EP 1 075 809 A (TEGOMETALL INT AG) 14 February 2001 (2001-02-14) * column 2, line 35 - column 3, paragraph 2; figures 1-3 *	1-3,6,8	A47B91/00 A47B47/02 A47F5/10
A	DE 30 28 552 A (BOHNACKER TEGOMETALL) 25 February 1982 (1982-02-25) * page 14, paragraph 2; claim 1; figures 1,2,6 *	1-3,7-9	
A	EP 0 363 036 A (BAXTER FELL NORTHFLEET LIMITED) 11 April 1990 (1990-04-11) * abstract; figures 1-3 * * column 5, paragraph 4 *	1-3,8,9	
A	US 5 785 287 A (HOSHINO YOSHIHIRO) 28 July 1998 (1998-07-28) * abstract; figure 1 *	1-3	
A	EP 0 497 741 A (ROSSS MARKET S N C DI BETTINI) 5 August 1992 (1992-08-05) * the whole document *	1	TECHNICAL FIELDS SEARCHED (Int.Cl.7) A47B A47F
The present search report has been drawn up for all claims			
Place of search The Hague		Date of completion of the search 1 February 2005	Examiner Jones, C
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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**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 04 07 7839

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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01-02-2005

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
EP 1075809	A	14-02-2001	DE 29913901 U1	21-12-2000
			AT 276687 T	15-10-2004
			DE 50007856 D1	28-10-2004
			EP 1075809 A1	14-02-2001
			HU 0003083 A2	28-05-2001
			PL 341955 A1	12-02-2001
			TR 200002335 A2	21-03-2001

DE 3028552	A	25-02-1982	DE 3028552 A1	25-02-1982

EP 0363036	A	11-04-1990	GB 2223816 A	18-04-1990
			EP 0363036 A2	11-04-1990

US 5785287	A	28-07-1998	JP 3073160 B2	07-08-2000
			JP 9313289 A	09-12-1997

EP 0497741	A	05-08-1992	IT 224417 Z2	30-04-1996
			AT 131015 T	15-12-1995
			DE 69206437 D1	18-01-1996
			DE 69206437 T2	02-05-1996
			DK 497741 T3	08-01-1996
			EP 0497741 A1	05-08-1992
			ES 2081600 T3	01-03-1996
			GR 3018324 T3	31-03-1996
