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(54) **SHELF SUPPORT**

REGALTRÄGER

SUPPORT D'ETAGERE

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Description

This invention relates to a shelf support, i.e. a means of mounting a shelf to a wall or other support medium.

It is well known to provide a shelf support in the form of two or more spaced brackets to be attached directly to a wall or, more usually, each to be attached to a horizontal or vertical batten or strip which is attached to the wall. The brackets have a horizontal upper surface so as to receive a shelf across at least two spaced brackets and, for security, the shelf may be screwed or otherwise attached to each bracket.

With known supporting means, it is difficult to conceal all the fixing means, e.g. screws, that have to be employed. For example, a batten needs to be screwed to a wall at a number of points along its length, a bracket needs to be secured to the batten and a shelf may need to be secured to the bracket. Many different shelf supporting means have been previously proposed but none has entirely satisfactorily resolved this problem, which is of particular importance where the fixing means, i.e. battens and brackets, are of a decorative wood type.

The present invention has the object of eliminating or ameliorating this problem and will, therefore, be more specifically described below with reference to wooden battens and brackets, although it will be appreciated that it is not intended to be so limited.

In GB-A-2003724 is disclosed a bracket, e.g. of wood, having a bore to contain a reinforcement member slideably engaged therein and the reinforcement member having a portion with means to secure it to a wall. The portion may be a plate attached to the reinforcement member, the plate having a hole by which it may be screwed to the wall.

Accordingly in one aspect the invention provides a kit of parts for a shelf support means, the kit comprising a bracket for attachment to a batten, the bracket having a first bore opening in its face to contact the batten and a rod to extend within the first bore, characterised in that the bracket has a second bore which crosses the first bore, the rod is of length to extend within the first bore beyond the crossing with the second bore while extending beyond the opening for attachment to the batten, a hole is provided transversely through the rod positionable at the crossing, and a tapered dowel screw is provided to fit in the second bore and locate within the hole in the rod.

By 'tapered dowel screw' herein is meant a screw having a tapered shank portion, the shank adjacent the wider end being provided with a screw thread and the shank adjacent the narrow end being smooth, i.e. non-threaded. Preferably the shank is unthreaded for a major proportion of its length, i.e. the screw-threaded portion covers a minor proportion of the length of the screw. The screw preferably has a head with a slot to receive a screw driver.

The first bore is preferably a blind bore extending

for a sufficient distance through the bracket to accommodate a rod of the required length but not opening out in the face of the-bracket away from the batten in use.

The second bore may conveniently run transversely to the first bore. It is particularly preferred that the second bore opens out into the upper surface of the bracket when it is mounted in the desired position and this bore also may be a blind bore so that it is not visible in the surface of the bracket, usually the under or lower surface, opposite to that surface to receive the screw. By this means the screw or pin fitted into the second bore will be hidden by the shelf to be mounted on the bracket and the entire fixing means of bracket to batten is hidden. The taper is towards the blind end of the bore in this embodiment. It is also preferred that the second bore has a larger diameter at its open end than at its blind end. It may, therefore, be conveniently formed by counterboring to provide two sections of different diameters.

The kit may also include a threaded nut, e.g. a T-nut to be mounted in a hole in the batten, the nut being of size to receive a threaded end of the rod. The nut is preferably flanged with its flange shaped to firmly grip and locate the nut to the batten. This latter feature can give improved security against loosening of the assembled shelf support system.

The batten may be provided with through holes to receive plugs and/or screws whereby it can be mounted to a wall and the holes may conveniently be positioned to be covered by the bracket when it is attached to the batten or by thin cover strips to be applied later.

In another aspect the invention provides a suspended shelving comprising at least two spaced upright battens, a bracket attached to each batten whereby a shelf may be supported horizontally on the brackets each bracket having a first bore opening into its face that contacts its respective batten and a tapered second bore crossing the first bore, and containing a rod attached at one end to the batten and extending into the first bore beyond the crossing with the second bore, a hole through the rod receiving a tapered dowel screw fitted in the second bore.

The use of the tapered dowel screw fitting is particularly advantageous in providing security of the shelving assembly. In particular, after a period of use of the shelving, it is possible to remove the shelves and tighten the dowel screws further into their brackets, thereby counteracting any loosening or sagging that may have arisen under load. Thus the bore is preferably longer than the length of the tapered dowel screw.

The outer and/or lower surfaces of the bracket, particularly when made of wood, may be patterned, e.g. by three dimensional markings such as grooving to present a pleasing appearance when the bracket is in use.

The invention will be further described, by way of example only, with reference to the accompanying drawings in which:

Figure 1 is a diagrammatic illustration in perspective view of an assembled kit of parts of the invention but with the bracket not shown for clarity;

Figure 2 is a side view of the arrangement shown in Figure 1 with the bracket reinstated; and

Figure 3 is a section along line III-III of Figure 2.

A wooden bracket 10 (Figure 2) has an upper surface 11 to receive a shelf (not shown) an outwardly facing end surface (not shown), a lower surface 13 and an end surface 14 transverse to upper surface 11, end surface 14 being shown in contact with an upright batten 15 attached to a wall 16, and two side surfaces 17 (one of which is shown).

A blind bore 18 extends inside bracket 10 substantially parallel to its upper surface 11 and opens at opening 19 in end face 14. A rod 20 extends as a tight fit in bore 18 and at one end protrudes from the bore 18 into a corresponding hole 21 in batten 15. This protruding end of the rod is threaded and screws into the threaded bore of a T-nut 22 in hole 21, the T-nut being secured to the bracket by its prongs 22A.

A substantially vertical blind bore 23 extends in bracket 10 from upper surface 11 and crosses bore 18. Bore 23 has an upper portion 23A of larger diameter than its lower portion 23B.

Rod 20 has a through hole 24 which is positioned at the crossing of bores 18 and 23 so that it can be held firmly in position by a taper dowel screw 25 positioned in bore 23. Dowel screw 25 has an upper threaded portion 25A and a lower tapering portion 25B, which lower portion passes through and contacts the edges of hole 24 in rod 20 (See Figure 1).

Batten 15 is attached to wall 16 by one or more screws (not shown) and the screw holes in the batten can be positioned to be hidden by the bracket 10 when the latter is attached to the batten.

It may be found convenient after fixing the batten to the wall to then attach rod 20 by screwing its threaded end into nut 22 in the hole 21 in the batten.

The bracket 10 can then be offered to the rod and the assembly firmly locked together by dowel screw 25. This method of assembly will in fact be essential if the batten is recessed to receive end face 14 of the bracket.

The wedge effect of the tapered dowel through rod 20 provides good load bearing securement of the bracket to the batten and the upper threaded portion 25A ensures that the dowel screw is secured against a tendency to retract. This securement effect can be heightened if the two bores are not exactly in alignment so that the shank of the tapered dowel screw has to bear against part of an edge of the bore in the pin as it is positioned.

When a shelf is positioned to rest on bracket 20, none of the fixing means is visible in the final assembly.

It will be appreciated that the invention is not limited

to the embodiments shown.

Bores 18 and 23 need not extend transversely to each other. Bore 23 may extend from lower surface 13 upwardly.

Claims

1. A kit of parts for a shelf support means, the kit comprising a bracket (10) for attachment to a batten (15), the bracket (10) having a first bore (18) opening in its face (14) to contact the batten (15) and a rod (20) to extend within the first bore (18), **characterised in that** the bracket (10) has a second bore (23) which crosses the first bore (18), the rod (20) is of length to extend within the first bore (18) beyond the crossing with the second bore (23) while extending beyond the opening (19) for attachment to the batten (15), a hole (24) is provided transversely through the rod (20) positionable at the crossing, and a tapered dowel screw (25) is provided to fit in the second bore (23) and locate within the hole (24) in the rod (20).
2. A kit of parts according to Claim 1, in which the shank of the dowel screw (25) has a screw-threaded portion (25A) over a minor proportion of its length adjacent its wider end and is unthreaded over the major proportion of its length (25B).
3. A kit of parts according to Claim 1 or 2, in which the first bore (18) extends through the bracket (10) sufficiently to accommodate the rod (20) but is a blind bore so that it does not reach the face of the bracket away from the batten in use.
4. A kit of parts according to Claim 1, 2 or 3, in which the second bore (23) runs transversely to the first bore (18).
5. A kit of parts according to any preceding Claim, in which the second bore opens in the upper surface (11) of the bracket in use.
6. A kit of parts according to any preceding Claim, in which the second bore (23) is a blind bore.
7. A kit of parts according to any preceding Claim, in which the second bore (23) has a larger diameter at its open end than at its blind end.
8. A kit of parts according to any preceding Claim, in which the tapered dowel screw (25) has a head with a slot to receive a screw driver.
9. Suspended shelving comprising at least two spaced upright battens (15), a bracket (10) attached to each batten (15) whereby a shelf may be supported horizontally on the brackets (10),

each bracket (10) having a first bore (18) opening into its face (14) that contacts its respective batten (15) and containing a rod (20) attached at one end to the batten (15), **characterised in that** each bracket (10) has a second bore (23) which crosses the first bore (18), the rod (20) is of length to extend within the first bore (18) and beyond the crossing with the second bore (23), a hole (24) through the rod (20) receiving a tapered dowel screw (25) fitting in the second bore (23).

Patentansprüche

1. Ein Teilesatz für eine Regalauflage, wobei der Satz eine Konsole (10) zur Befestigung an einer Leiste (15) enthält, die Konsole eine erste Bohrung (18) aufweist, die sich zur Frontseite (14) hin öffnet, zum Kontakt mit der Leiste (15) und einer Stange (20), die in der ersten Bohrung (18) angeordnet ist, **dadurch gekennzeichnet, daß** die Konsole (10) eine zweite Bohrung (23) aufweist, welche die erste Bohrung (18) durchkreuzt, das die Stange (20) lang genug ist, um durch die erste Bohrung (18) und die Kreuzung mit der zweiten Bohrung (23) zu führen und gleichzeitig aus der Öffnung (19) zur Befestigung an der Leiste (15) herauszuragen, einem Loch (24), das quer durch die Stange (20) hindurchführt und in Höhe der Kreuzung zu positionieren ist und einer konischen Paßschraube (25), die in die zweite Bohrung (23) paßt und im Loch (24) in der Stange (20) angeordnet ist.
2. Ein Teilesatz gemäß Anspruch 1, in dem der Schaft der Paßschraube (25) einen Gewindeteil (25A) auf einem kleinen Teil seiner Länge an seinem dickeren Ende aufweist und auf dem größeren Teil seiner Länge (25B) kein Gewinde aufweist.
3. Ein Teilesatz gemäß Anspruch 1, in dem die erste Bohrung (18) genügend tief in die Konsole (10) hineinführt, um die Stange (20) aufzunehmen, jedoch eine Blindbohrung ist, so daß sie nicht aus der von der eingesetzten Leiste abgewandten Seite austritt.
4. Ein Teilesatz gemäß einem der Ansprüche 1, 2 oder 3, in dem die zweite Bohrung (23) quer zur ersten Bohrung (18) verläuft.
5. Ein Teilesatz gemäß jedem der vorstehenden Ansprüche, in dem die Öffnung der zweiten Bohrung in der Oberseite (11) der eingesetzten Konsole angeordnet ist.
6. Ein Teilesatz gemäß jedem der vorstehenden Ansprüche, in dem die zweite Bohrung (23) eine Blindbohrung ist.
7. Ein Teilesatz gemäß jedem der vorstehenden

Ansprüche, in dem die zweite Bohrung (23) einen größeren Durchmesser am offenen Ende als an ihrem Blindende aufweist.

8. Ein Teilesatz gemäß jedem der vorstehenden Ansprüche, in dem die konische Paßschraube (25) einen Kopf mit Schlitz zur Aufnahme eines Schraubendrehers aufweist.
9. Ein Hängeregale mit mindestens zwei in Abstand zu einander angeordneten senkrechten Leisten (15), einer an jeder Leiste (15) angebrachten Konsole (10), wobei ein Regal horizontal auf den Konsolen (10) aufliegen kann, jede Konsole (10) eine erste Bohrung (18) aufweist, mit einer Öffnung zur Frontseite (14), die in Kontakt mit der jeweiligen Leiste (15) steht und eine Stange (20) aufweist, die an einem Ende an der Leiste (15) befestigt ist, **dadurch gekennzeichnet, daß** jede Konsole (10) eine zweite Bohrung (23) aufweist, welche die erste Bohrung (18) durchkreuzt, das die Stange (20) lang genug ist, um durch die erste Bohrung (18) und über die Kreuzung mit der zweiten Bohrung (23) hinaus zu verlaufen und einem Loch (24) durch die Stange (20) zur Aufnahme einer konischen Paßschraube (25), die in die zweite Bohrung (23) paßt.

Revendications

1. Un lot de pièces pour un moyen de support d'étagère, le lot comprenant une patte (10) pour fixation à une latte (15), la patte (10) ayant un premier alésage (18) s'ouvrant dans sa face (14) pour entrer en contact avec la latte (15) et une tige (20) pour s'étendre à l'intérieur du premier alésage (18), caractérisé en ce que la patte (10) a un deuxième alésage (23) qui croise le premier alésage (18), la tige (20) est d'une longueur suffisante pour s'étendre à l'intérieur du premier alésage (18), au-delà du croisement avec le deuxième alésage (23) tout en s'étendant au-delà de l'ouverture (19) pour fixation à la latte (15), un trou (24) est prévu transversalement à travers la tige (20) positionnable au croisement, et une vis goupille conique (25) est prévue pour rentrer dans le deuxième alésage (23) et se positionner à l'intérieur du trou (24) dans la tige (20).
2. Un lot de pièces conformément à la revendication 1, dans lequel la queue de la vis goupille (25) a une portion filetée (25A) sur une petite partie de sa longueur au droit de son extrémité plus large et est non filetée sur la plus grande partie de sa longueur (25B).
3. Un lot de pièces conformément à la revendication 1 ou 2, dans lequel le premier alésage (18) s'étend à travers la patte (10) suffisamment pour recevoir la

tige (20), mais est un alésage borgne de sorte qu'il n'atteigne pas la face de la patte éloignée de la latte en service.

4. Un lot de pièces conformément à la revendication 1, 2 ou 3, dans lequel le deuxième alésage (23) passe transversalement par rapport au premier alésage (18). 5
5. Un lot de pièces conformément à toute revendication précédente, dans lequel le deuxième alésage s'ouvre dans la surface supérieure (11) de la patte en service. 10
6. Un lot de pièces conformément à toute revendication précédente, dans lequel le deuxième alésage (23) est un alésage borgne. 15
7. Un lot de pièces conformément à toute revendication précédente, dans lequel le deuxième alésage (23) a un diamètre plus grand à son extrémité ouverte qu'à son extrémité borgne. 20
8. Un lot de pièces conformément à toute revendication précédente, dans lequel la vis goupille conique (25) a une tête avec une fente pour recevoir un tournevis. 25
9. Étagères suspendues comprenant au moins deux lattes droites espacées (15), une patte (10) fixée à chaque latte (15) par quoi une étagère peut être supportée horizontalement sur les pattes (10), chaque patte (10) ayant un premier alésage (18) s'ouvrant dans sa face (14) qui entre en contact avec sa latte respective (15) et contenant une tige (20) fixée à une extrémité à la latte (15), caractérisées en ce que chaque patte (10) a un deuxième alésage (23) qui croise le premier alésage (18), la tige (20) est d'une longueur suffisante pour s'étendre à l'intérieur du premier alésage (18) et au-delà du croisement avec le deuxième alésage (23), un trou (24) à travers la tige (20) recevant une vis goupille conique (25) rentrant dans le deuxième alésage (23). 30
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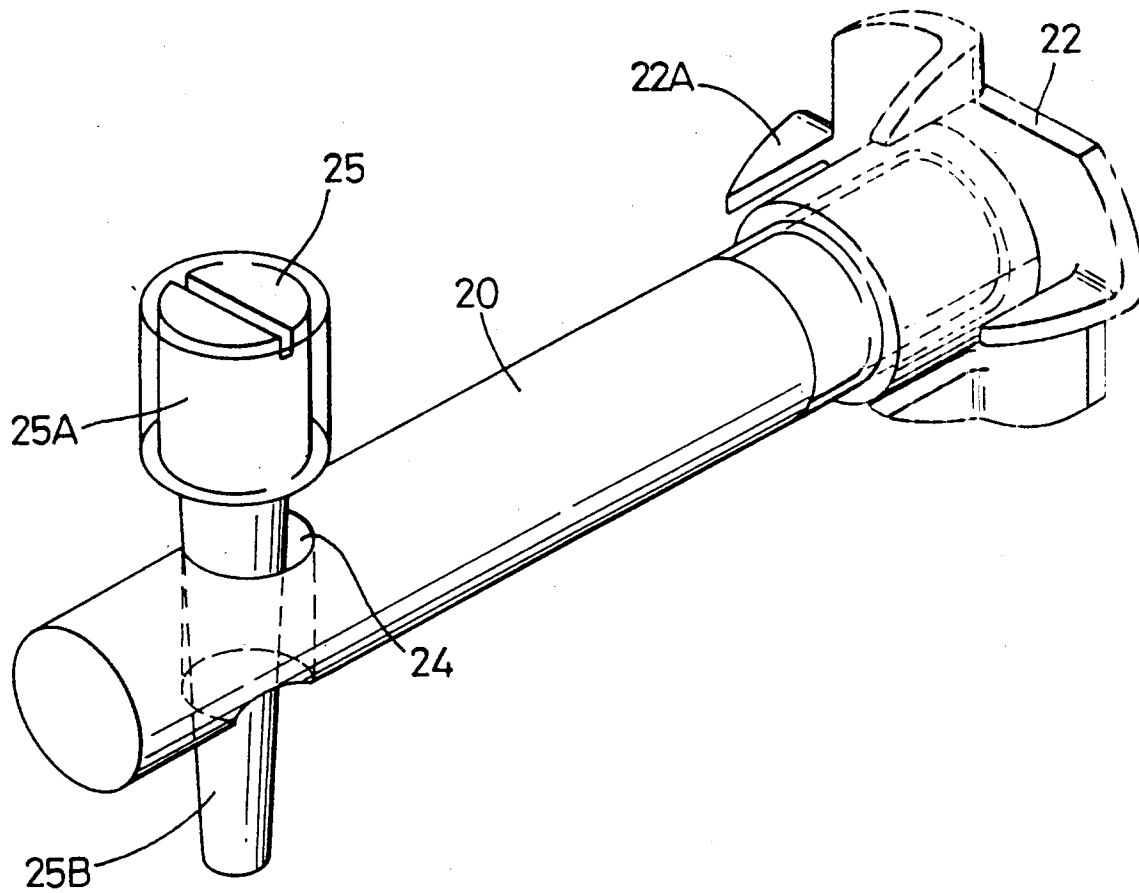


Fig. 1

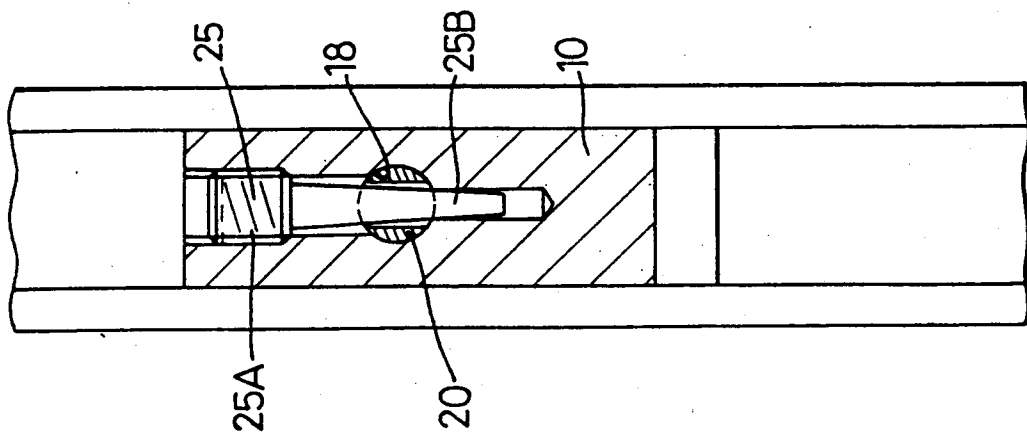


Fig. 3

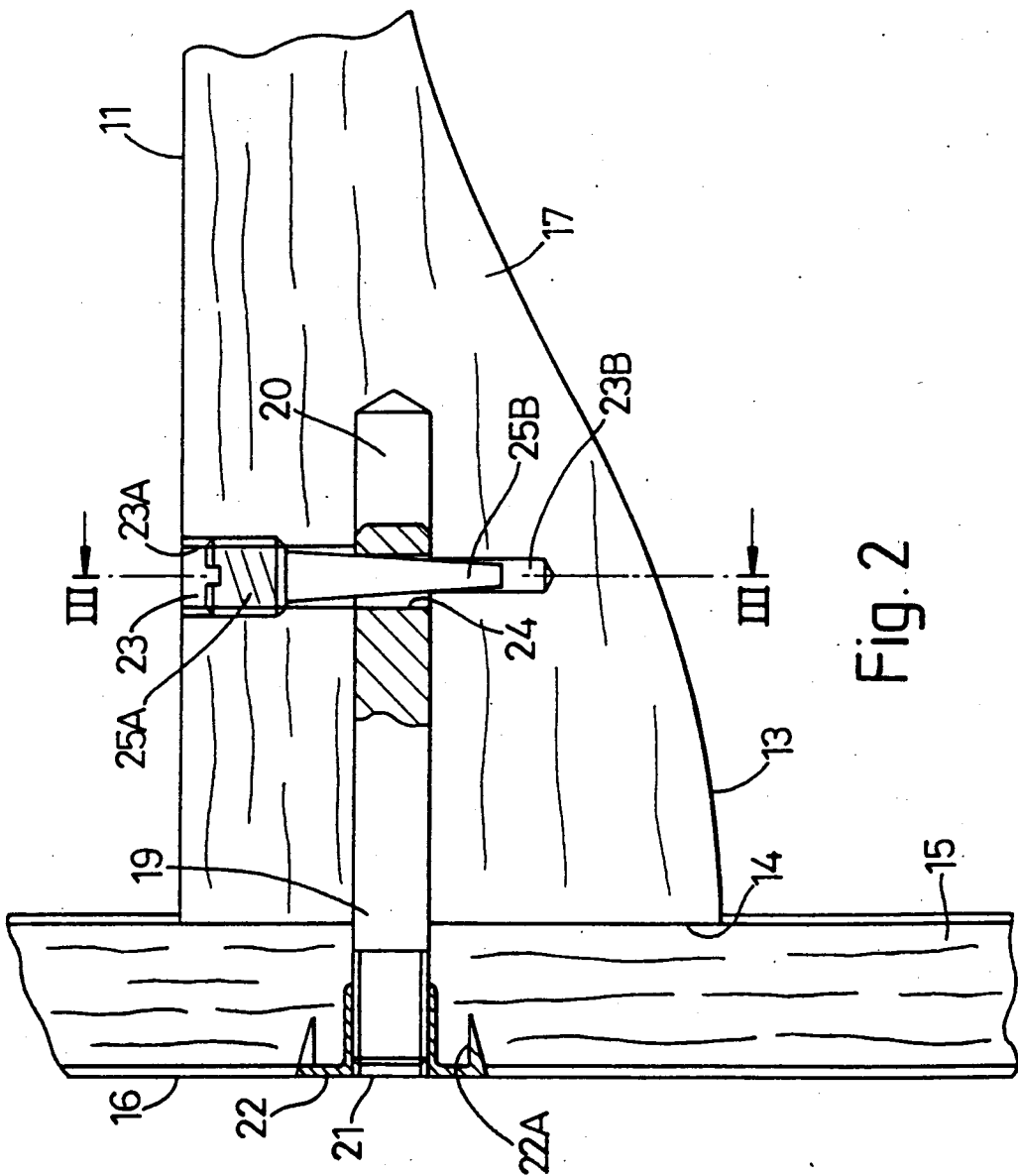


Fig. 2