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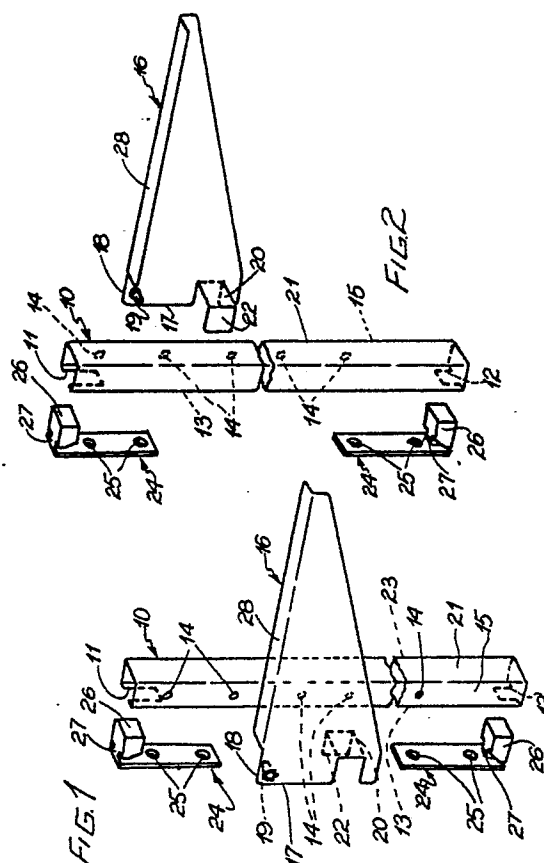
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54 **Shelving &c. systems with releasable supporting arm.**

57 A shelving or like system has upright members - (10) with upper and lower notches (11, 12) in rear faces (13) to engage heads (26) with necks (27) on wall plates (24) with fixing holes (25).

Support arms (16) for a shelf have pegs (19) for selective engagement with holes (14) in one side - (15) of each upright member (10), and brackets (20, 22) for abutting the front faces (21) and other side faces (23) of the upright members (10), to support the support arms in cantilever and prevent unintentional disengagement of the pegs (19) from the holes (14).



## SHELVING &C. SYSTEMS

This invention relates to shelving &c. systems of the type in which at least one elongate upright member is adapted to be secured to a wall or other structural member and at least one support arm for a shelf or rack or commodity packages adapted to be removably engaged with the upright member at any of a number of positions along its length.

One object of the invention is to provide novel means for removably engaging a support arm with an upright member as aforesaid.

Another object is to provide means whereby an upright member as aforesaid can be readily removed from a wall or other structural member, for cleaning and/or decorating purposes, and as readily resecured.

According to one aspect of the present invention, a shelving or like system comprises at least one elongate upright member having means at spaced positions on a rear face for securing of the upright member to a wall or other structural member, and a number of holes in at least one adjacent side face; and at least one support arm of plate form having adjacent one end and an upper edge a lateral peg for releasable engagement with any one of the holes in the upright member, and having adjacent that same end and below the peg a bracket consisting of a first portion for abutting a front face of the upright member when the peg is engaged with a hole and a second portion for abutting the opposite side face to prevent withdrawal of the peg from the hole.

Thus, the support arm is presented downwardly inclined to the upright member with the second portion of the bracket clear of the front face until the peg has been engaged with a hole, then the support arm is lowered to swing the second portion of the bracket alongside the upright member and the first portion into abutment with the front face, to support the support arm in cantilever. For removal, the support arm is lifted to swing the second portion of the bracket clear of the front face of the upright member to permit the support arm to be moved laterally to disengage the peg from the hole.

A round peg and an L-shaped sheet metal bracket may be welded to a sheet metal support arm, or the bracket (and possibly the peg) may be formed integral with the support arm by punching and bending an appropriately shaped portion thereof.

The upper edge of the support arm may be formed with a flange for supporting a shelf, which may extend to a similar support arm on a similar upright member (or mirror images thereof), and the flange may be provided with holes for readily re-

movable engagement by pegs on the underside of the shelf. Alternatively, or in addition, the support arm may be provided with a stop plate perpendicular to the end remote from the peg and bracket, to facilitate retention of a shelf or commodity packages with slots or hangers slidable over the support arm. Again, the upper edge of the support arm may be provided with a number of notches, for engagement by rack bars or by hangers of commodity packages.

According to another aspect of the present invention, a shelving or like system comprises at least one elongate upright member of hollow square or rectangular section having a notch in each end of a rear face, with one upper notch appreciably longer than the other lower one; a pair of wall plates having holes for screws or bolts for securing them to a wall or other structural member, and each having a head joined to the plate by a neck, which head can enter an end of the upright member when the neck enters the notch at that end, the difference in the length of the notches affording a lost motion facility whereby the upright member can be engaged with first the upper wall plate and then the lower wall plate or disengaged from first the lower wall plate and then the upper wall plate by simple vertical sliding movements; and at least one support arm adapted to be removably engaged with the upright member at any of a number of positions along its length, and preferably in accordance with the first aspect of the present invention.

A central wall plate may be provided, with a head and neck of sufficient height to be able to be engaged simultaneously by the upper end of the upper notch of a lower upright member and the lower notch of an upper upright member (of a pair of upright members affording extended height to the system), and the head and neck may be pivotable about an axis perpendicular to the wall plate to facilitate fitting of the lower upright member.

All the components of the system (i.e., the or each upright member, the or each support arm, and the or each shelf if provided) are preferably formed of stainless steel, for hygienic reasons.

Both aspects of the invention will now be described with reference to embodiments shown, by way of example only, in the accompanying drawings, in which:-

Figure 1 is an exploded general view of left-hand components of a shelving or like system in accordance with both aspects of the invention;

Figure 2 corresponds to Figure 1 but shows similar right-hand components of the shelving or like system;

Figure 3 corresponds to the upper part of Figure 1 but with the components assembled together and supporting one end of a shelf;

Figure 4 shows a modified construction of the support arm shown in Figure 2;

Figure 5 corresponds to Figure 3 but shows a sloping shelf;

Figure 6 is a perspective view of part of a shelving or like system in accordance with the first aspect of the invention, provided with rack bars;

Figure 7 is a fragmentary view showing part of a shelving or like system in accordance with the invention, provided with a wire basket; and

Figure 8 shows a central wall plate for simultaneous engagement by upper and lower upright members in a shelving or like system in accordance with the second aspect of the invention.

In Figure 1 and 2, a shelving or like system comprises a pair of elongate upright members 10 of hollow square section, with upper notches 11 double the length of lower notches 12, the notches constituting means at spaced positions on rear faces 13 for securing of the upright members 10 to a wall or other structural member (not shown) as will be described presently, and a number of holes 14 are provided in an adjacent side face 15 of each upright member 10. The illustrated system also comprises a pair (or two or more pairs) of support arms 16 of plate form each having adjacent one end 17 and an upper edge 18 a lateral peg 19 for releasable engagement with any one of the holes 14 in the respective upright member 10, and also having adjacent that same end 17 and below the peg 19 a bracket consisting of a first portion 20 for abutting a front face 21 of the respective upright member and a second portion 22 for abutting the opposite side face 23 to prevent withdrawal of the peg from the hole (see Figure 3).

Although not illustrated, it will be readily appreciated that each support arm 16 is presented downwardly inclined to the respective upright member 10 with the second portion 22 of the bracket clear of the front face 21 until the peg 19 has been engaged with a hole 14, then the support arm is lowered to swing the second portion 22 of the bracket alongside the face 23 opposite the face 15 with the holes 14, and to bring the first portion 20 of the bracket into abutment with the front face 21, to support the support arm in cantilever (again see Figure 3). For removal, the support arm 16 is lifted to swing the second portion 22 of the bracket clear of the front face 21 of the upright member 10 to permit the support arm to be moved laterally to disengage the peg 19 from the hole 14.

Referring again to Figures 1 and 2, the shelving or like system also comprises a pair of wall plates 24 having holes 25 for each upright member 10, with screws or bolts (not shown) for securing them to a wall or other structural member (not shown), and each wall plate has a head 26 joined to the plate by a neck 27, which head can enter an end of the upright member 10 when the neck enters the notch 11 or 12 at that end, the difference in the length of the notches affording a lost motion facility whereby the upright member can be engaged with first the upper wall plate and then the lower wall plate or disengaged from first the lower wall plate and then the upper wall plate by simple vertical sliding movements. The wall plates 24 are all identical, with the heads 26 tapered adjacent the necks 27 to provide a lead-in for the upper ends of the rear faces of the upright members into the necks of the upper wall plates. Alternatively, the head 26 and neck 27 of each upper wall plate may be pivotable about an axis perpendicular to the wall plate 24 to facilitate fitting of the upper end of the respective upright member 10 until full engagement of the upper longer notch 11 with the neck 27 allows the lower end of the upright member to be swung into position over the head 26 of the lower wall plate 24.

In Figures 1 and 2, the upper edge 18 of each support arm 16 is formed with a flange 28 for supporting a shelf 29 (again see Figure 3), and the flange 28 may be provided with holes (not shown) for readily removable engagement by pegs (likewise not shown) on the underside of the shelf.

In Figure 4 a round peg 19 and an L-shaped metal bracket 20, 22 are welded to a sheet metal support arm 16, whereas in Figures 1 to 3 the bracket 20, 22 is formed integral with the support arm by punching and bending an appropriately shaped portion of the sheet metal support arm 16. Also in Figure 4, the support arm 16 is shown with a stop plate 30 perpendicular to the end 31 remote from the peg 19 and bracket 20, 22, to facilitate retention of a shelf or commodity packages (not shown) with slots or hangers slidable over the support arm 16.

In Figure 5 a support arm 16 is shown having a sloping flange 28 on its upper edge to support a sloping shelf 29 with a rail 31 along its front edge to prevent goods displayed thereon from sliding off.

Each support arm 16 in Figure 6 has its upper edge 18 provided with a number of notches 32 - (instead of -but possibly in addition to -the flange 28), for engagement by rack bars 33 or by hangers (not shown) of commodity packages.

Figure 7 shows a support arm 16 with a lower sloping flange 34 (in addition to the flange 28 along its upper edge) to support a hanger 35 at one end of a wire basket 36, the other end being similarly supported.

Finally, Figure 8 shows a central wall plate 37 with fixing holes 38 and provided with a head 39 and neck 40 of sufficient height to be able to be engaged simultaneously by the upper end of the upper notch 11 of a lower upright member 10 and the lower notch 12 of an upper upright member 10 (of a pair of upright members affording extending height to the system), the head and neck being pivotable about an axis 41 perpendicular to the wall plate 37 to facilitate fitting of the lower upright member before the upper upright member, upper and lower wall plates 24 being used as described above to secure the upper end of the upper upright member and the lower end for the lower upright member respectively.

### Claims

1. A shelving or like system comprising at least one elongate upright member having means at spaced positions on a rear face for securing of the upright member to a wall or other structural member, and a number of holes in at least one adjacent side face; and at least one support arm of plate form having adjacent one end and an upper edge a lateral peg for releasable engagement with any one of the holes in the upright member, and having adjacent that same end and below the peg a bracket consisting of a first portion for abutting a front face of the upright member when the peg is engaged with a hole and a second portion for abutting the opposite side face to prevent withdrawal of the peg from the hole.

2. A system as in Claim 1, wherein a round peg and an L-shaped sheet metal bracket are welded to a sheet metal support arm.

3. A system as in Claim 1, wherein the bracket is formed integral with the support arm by punching and bending an appropriately shaped portion thereof.

4. A system as in any one of Claims 1 to 3, wherein the upper edge of the support arm is formed with a flange for supporting a shelf.

5. A system as in Claim 4, wherein the flange is provided with holes for readily removable engagement by pegs on the underside of the shelf.

6. A system as in any one of Claims 1 to 5, wherein the support arm is provided with a stop plate perpendicular to the end remote from the peg and bracket, to facilitate retention of a shelf or commodity packages with slots or hangers slidable over the support arm.

7. A system as in any one of Claims 1 to 6, wherein the upper edge of the support arm is provided with a number of notches, for engagement by rack bars or by hangers of commodity packages.

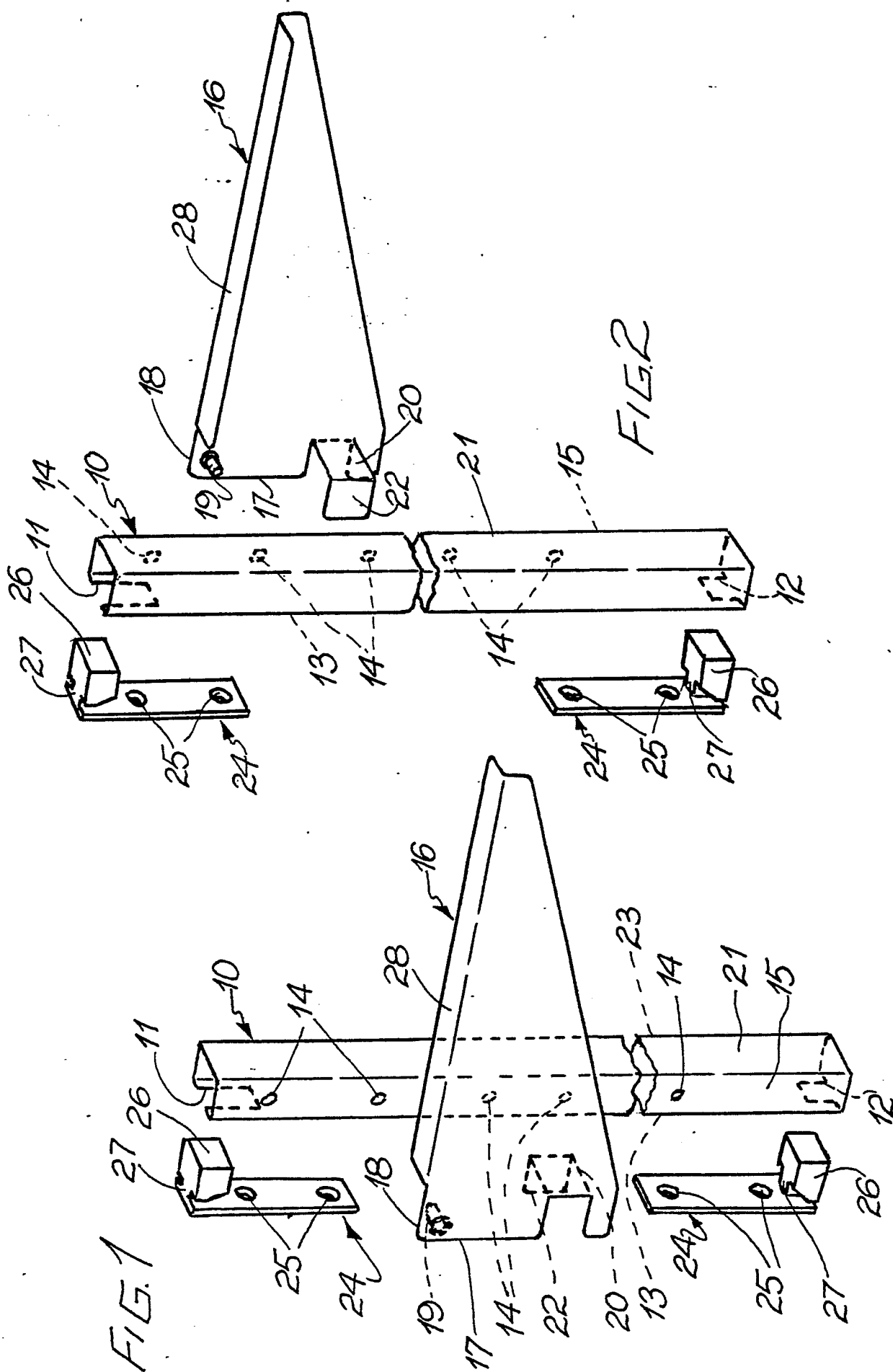
8. A shelving or like system comprising at least one elongate upright member of hollow square or rectangular section having a notch in each end of a rear face, with one upper notch appreciably longer than the other lower one; a pair of wall plates having holes for screws or bolts for securing them to a wall or other structural member, and each having a head joined to the plate by a neck, which head can enter an end of the upright member when the neck enters the notch at that end, the difference in the length of the notches affording a lost motion facility whereby the upright member can be engaged with first the upper wall plate and then the lower wall plate or disengaged from first the lower wall plate and then the upper wall plate by simple vertical sliding movements; and at least one support arm adapted to be removably engaged with the upright member at any of a number of positions along its length.

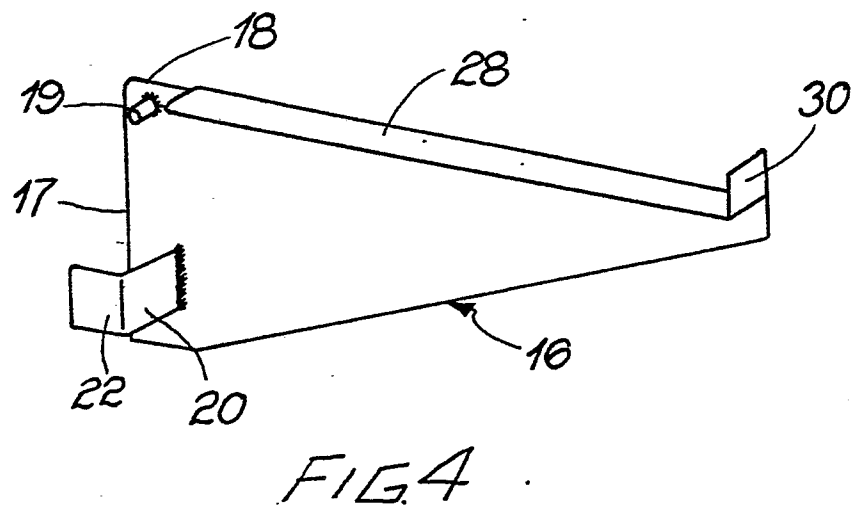
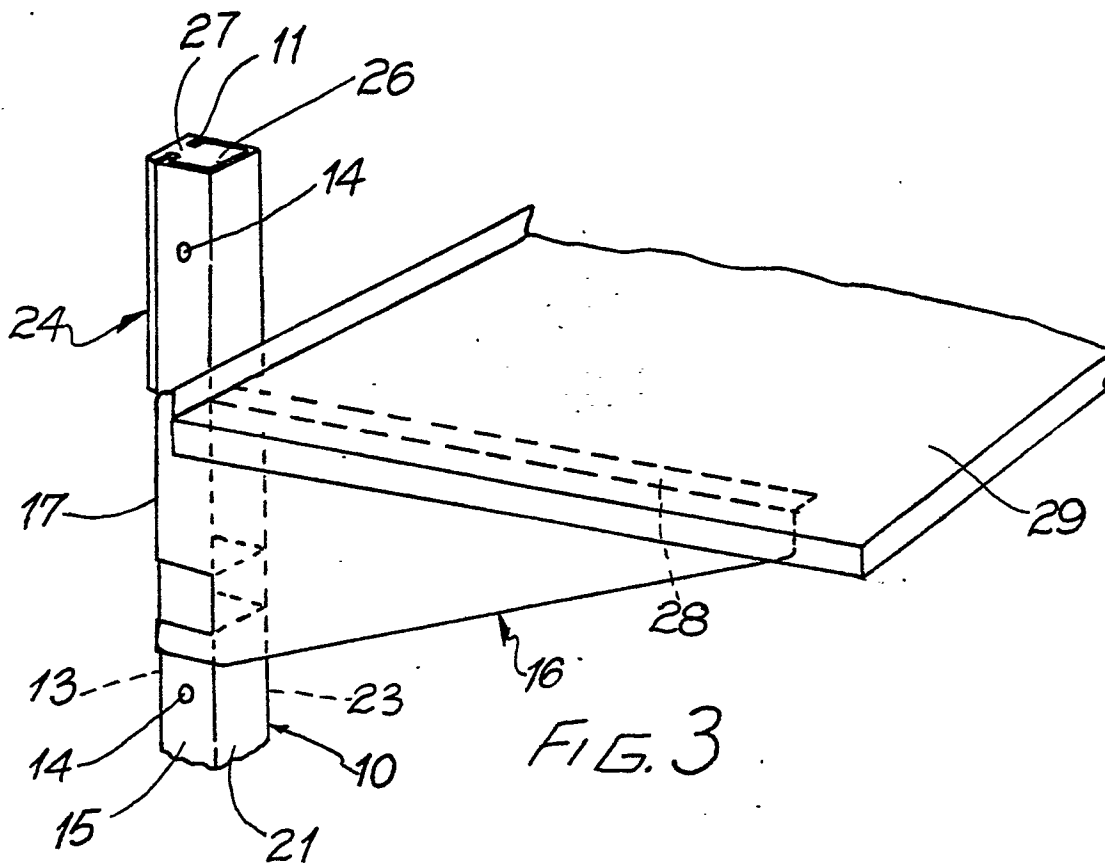
9. A system as in Claim 8, wherein the means for removably engaging the at least one support arm with at least one upright member is in accordance with Claim 1.

10. A system as in Claim 8 or Claim 9, wherein a central wall plate is provided, with a head and neck of sufficient height to be able to be engaged simultaneously by the upper end of the upper notch of a lower upright member and the lower notch of an upper upright member.

11. A system as in Claim 10, wherein the head and neck of the central wall plate are pivotable about an axis perpendicular to the wall plate to facilitate fitting of the lower upright member.

12. A system as in any one of the preceding Claims, wherein all the components are formed of stainless steel.





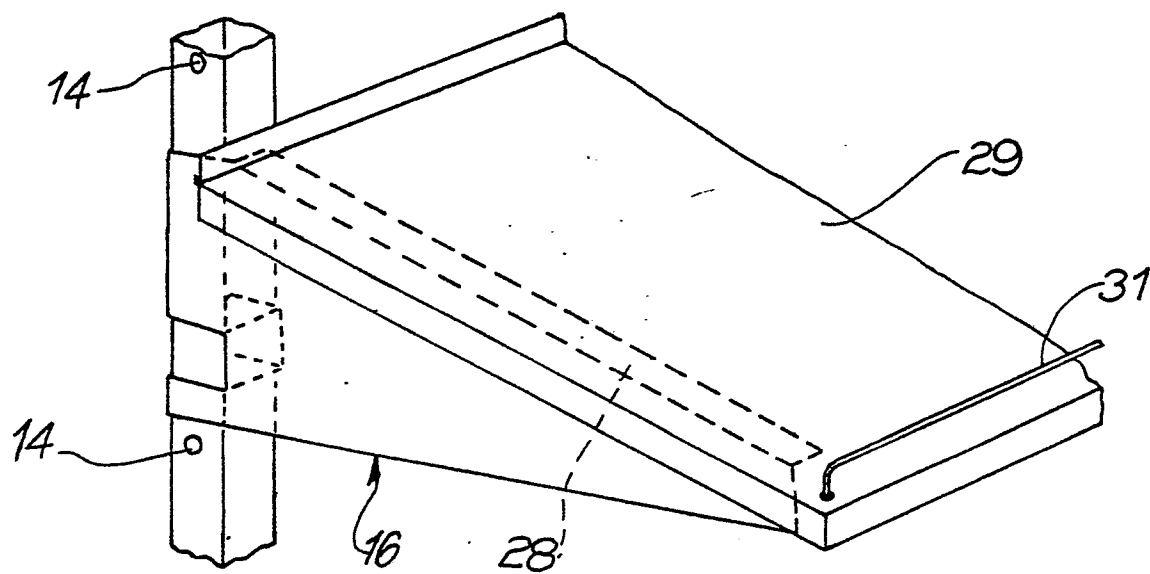


FIG. 5

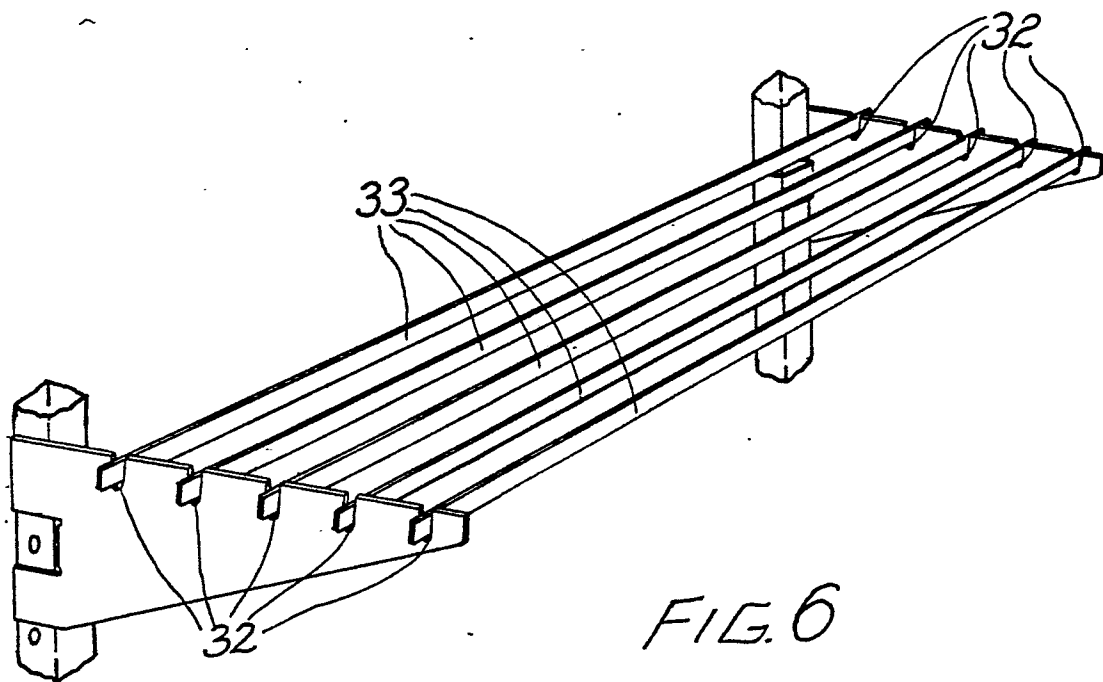


FIG. 6

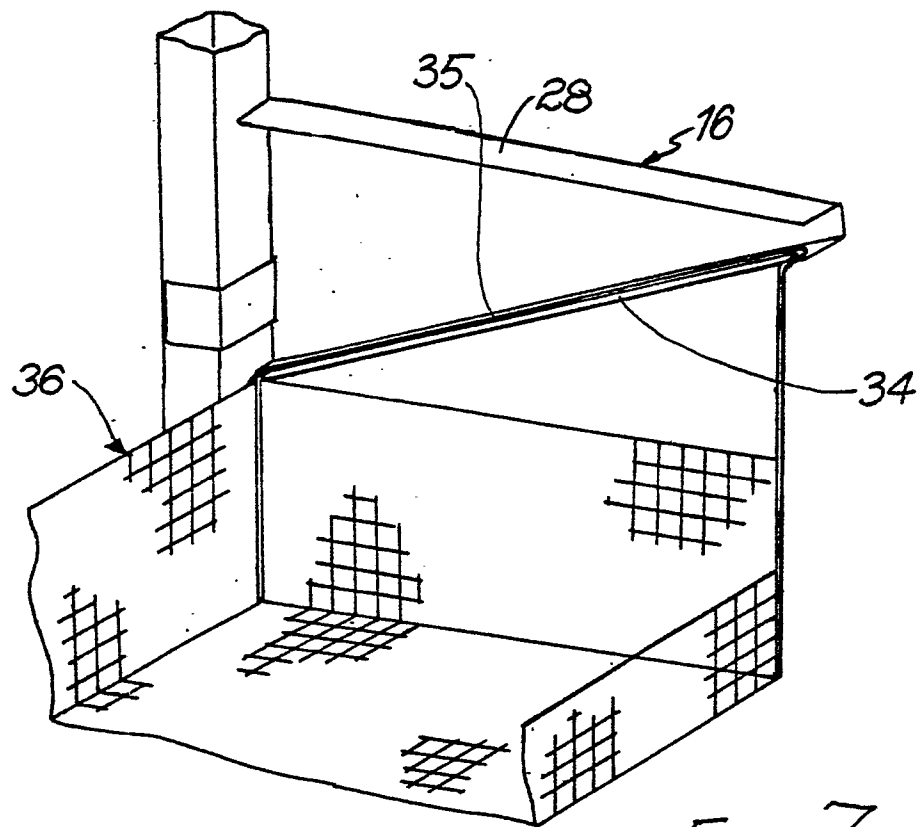


FIG. 7

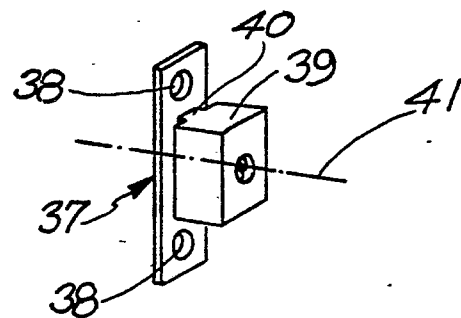


FIG. 8