A shelf support pin arrangement or system is provided comprising stationary support pin assemblies which mount in predefined positions of a cabinet side wall. Each pin assembly comprises a bushing or plug body which fits into the cabinet and supports a retractable pin in threaded engagement. In use, the pin projects outwardly and engages and supports the side edge of the shelf. Preferably, the support pin arrangement also includes a shelf support bracket that slips over the pin head and is fastened thereby, wherein the bracket supports the shelf edge.
SHELF SUPPORT PIN ARRANGEMENT

FIELD OF THE INVENTION

[0001] The invention relates to a retractable shelf support pin assembly for removably supporting a shelf on a cabinet housing.

BACKGROUND OF THE INVENTION

[0002] In conventional storage cabinets, pins are mounted on the cabinet walls for supporting removable shelves thereon. Often, the cabinet walls are provided with vertically spaced rows of bores in which fixed length pins or other fasteners are removably inserted, on which pins a shelf is then positioned. While a plurality of vertically spaced positions are defined for mounting the shelf thereon, the rows of unused bores are constantly visible and can be unsightly. Further, the support pins typically are removed when not in use, but if left in place, such unused pins project into the cabinet interior and may also be unsightly.

[0003] It is an object of the invention to provide an improved system of support pins for cabinet shelves.

[0004] The invention relates to a shelf support pin arrangement or system comprising stationary support pin assemblies which mount in predefined positions of the cabinet side wall. Each pin assembly comprises a bushing or plug body which fits into the cabinet and supports a retractable pin in threaded engagement. In use, the pin projects outwardly and engages and supports the side edge of the shelf. Preferably, the support pin arrangement also includes shelf support bracket that slips over the pin head and is fastened thereby, wherein the bracket supports the shelf edge.

[0005] When not in use, the pin is rotated and thereby retracted into the housing. When retracted, the pin head and an exposed bushing face are provided which both have an aesthetically pleasing and acceptable finish, and remain exposed in the face of the cabinet wall whether in use or not. As such, no unsightly holes are left in the wall face, and the shelf pin assembly can serve as an aesthetic surface detail of the cabinet wall.

[0006] Other objects and purposes of the invention, and variations thereof, will be apparent upon reading the following specification and inspecting the accompanying drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

[0007] FIG. 1 is a front perspective view of a cabinet having a support pin arrangement comprising a shelf bracket and an associated support pin assembly of the invention.

[0008] FIG. 2 is an enlarged view of the cabinet wall and a pair of support pin assemblies.

[0009] FIG. 3 is an exploded view of the support pin arrangement comprising the support pin assembly and the shelf bracket with a support pin in an extended position.

[0010] FIG. 4 is a front view illustrating the support pin in the retracted position.

[0011] FIG. 5 is an exploded perspective view of the support pin assembly.

[0012] FIG. 6 is an end view of the support pin assembly.

[0013] FIG. 7 is a front view of the bushing.

[0014] FIG. 8 is a left end view thereof.

[0015] FIG. 9 is a right end view thereof.

[0016] FIG. 10 is a perspective view of the shelf bracket.

[0017] FIG. 11 is side view thereof.

[0018] FIG. 12 is a plan view thereof.

[0019] Certain terminology will be used in the following description for convenience and reference only, and will not be limiting. For example, the words “upwardly”, “downwardly”, “rightwardly” and “leftwardly” will refer to directions in the drawings to which reference is made. The words “inwardly” and “outwardly” will refer to directions toward and away from, respectively, the geometric center of the arrangement and designated parts thereof. Said terminology will include the words specifically mentioned, derivatives thereof, and words of similar import.

DETAILED DESCRIPTION

[0020] Referring to FIGS. 1 and 2, an open faced cabinet 10 is provided which is defined by bottom wall 11, upstanding side walls 12, and top wall 14. The inside faces 15 of the side walls 12 are provided with a shelf support arrangement 16 comprising a plurality of support pin assemblies 17 embedded in the thickness of the side walls 12 on which are supported one or more shelves 18. The support arrangement 16 further includes appropriate shelf brackets 19 (FIGS. 1 and 3) which respectively mount to the support pin assemblies 16 and support the shelf 18 thereon as will be discussed in further detail herein.

[0021] Referring to FIGS. 2-4, the support pin assemblies 17 comprise a support bushing or plug 21 which mounts in the cabinet wall 11 and retractably supports a support pin 22 which is threadedly engaged therewith. In use, the support pin 22 projects out of the support bushing 21 as seen in FIGS. 2 and 3, and is positioned to receive the shelf bracket 19 thereon for thereby supporting the shelf 18. When the shelf 18 is not present, the pin 22 is retracted as seen in FIGS. 2 and 4.

[0022] Referring to FIGS. 5-9, the bushing 21 is defined by a main barrel or body 24 that has a circumferential flange 25 at the outer end thereof. The barrel 24 and flange 25 are seated in a corresponding bore 26 (FIG. 3) formed in the cabinet wall 11. The flange 25 has an exposed face 27 which preferably is substantially flush with the wall face 15, and has an aesthetically pleasing finish that remains exposed during use.

[0023] The outer end of the barrel 24 includes a first outer chamber 29 (FIGS. 5 and 9), an inner chamber 30 and a threaded bore 31 which are all cylindrical and arranged coaxially with each other.

[0024] Referring to FIGS. 3, 5 and 6, the support pin 22 comprises a threaded end shaft 34 which threadedly engages the threaded bore 31, a support shaft or body 35 which fits in the inner chamber 30, and a pin head 36 which is sized to fit in the outer chamber 29. The head 36 includes a drive formation 37 preferably formed as a square bore to receive a square head driver. The drive formation 37 is formed in the head face 38, which face 38 also has an aesthetically pleasing finish which remains exposed during use.

[0025] By rotation of the pin 22, the pin 22 is movable inwardsly to the fully retracted position of FIG. 4 and the extended position of FIG. 3.

[0026] When retracted, the head face 38 and barrel face 27 lie flush with each other and are exposed as seen in FIGS. 1 and 2. The pin 22 is not in use and still provides an aesthetically pleasing appearance but remains available for use at all times, and may be extended by merely rotating the pin 22 to the extended use position.
When extended, the pin head 36 as well as a portion of the pin body 35 is exposed and available for supporting the shelf 18 thereon. If desired, the shelf 18 may be engaged directly with the projecting portion of the pin 22, for example, by providing the shelf 18 with edge recesses which receive the head 36.

Preferably, the shelf 18 is made of glass, and therefore, may require the supplemental shelf bracket 19. Referring to FIGS. 3 and 10-12, the bracket 19 includes a main wall 40 that projects vertically and has a mounting slot 41 on the bottom thereof which has a width dimensioned to closely fit over the diameter of the pin body 35 so as to be vertically supported thereby. When mounted on the pin 22, the pin 22 is rotated to clamp the bracket 19 in a fixed position by the enlarged diameter head 36.

The bracket wall 40 further includes horizontal flanges 42 and 43 which define a channel 44 in which the edge 45 of the shelf 18 is received. In this manner, the pin 22 supports the shelf 18 in a fixed elevational position.

Although a particular preferred embodiment of the invention has been disclosed in detail for illustrative purposes, it will be recognized that variations or modifications of the disclosed apparatus, including the rearrangement of parts, lie within the scope of the present invention.

What is claimed is:

1. In a cabinet having a shelf support arrangement for supporting a shelf on a wall of the cabinet, comprising the improvement wherein the shelf support arrangement includes a shelf pin assembly mounted to the cabinet wall, the shelf pin assembly comprising a main body mounted in the cabinet wall and having an open end opening through face of said cabinet wall, and a retractable pin which is retractably engaged with the main body and is movable between a retracted position within the main body and an extended position wherein a head of the pin projects outwardly of the main body, the shelf being removably engaged with the projecting pin head wherein the pin when retracted lies within the main body and has an exposed end face providing a finished surface appearance.

2. The cabinet according to claim 1, wherein said pin is threadedly engaged with the main body and rotation of the pin effects retraction or extension of the pin.

3. The cabinet according to claim 2, wherein said main body has an exposed end face that lies flush and exposed with said end face of said pin in said retracted position to define a finished surface appearance.

4. The cabinet according to claim 3, wherein said exposed end faces lie flush with said face of said cabinet wall.

5. The cabinet according to claim 1, wherein a shelf bracket is mounted on the pin head in the extended position to which said shelf is mounted.

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