KNEE SPACE FLOATING SHELF FOR DESKS

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Fig. 1

Fig. 2

Fig. 3

Fig. 4

Fig. 5

Fig. 6

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KNEE SPACE FLOATING SHELF FOR DESKS
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ABSTRACT OF THE DISCLOSURE

A floating shelf mounted in the knee space of a pedestal desk, the shelf being provided with rollers which coast on rails secured to the inner walls of the pedestals. The inner walls of the pedestals are provided with apertures and the rails are mounted on the pedestals by means of hook bolts which may be passed from the knee space through the aperture and hooked behind a flange of the pedestal whereupon they are secured by tightening a nut on the hook bolt. The shelf is provided with a rubber mounted handle by means of which it may easily be reached for moving the shelf in or out.

This invention relates to a knee space floating shelf for desks and more particularly to the arrangements for mounting such a floating shelf and handle means actuating it.

Desks have heretofore been provided wherein within the kneehole space a shelf was provided, which shelf operated on rollers riding in tracks so that the shelf could be pushed back into the kneehole space to a point where it would not interfere with the legs of one sitting at the desk and the shelf could be withdrawn outwardly so that access could be had to articles stored on the shelf.

In such shelves, various handle structures have been provided, some of which have been quite complex and others quite simple, but in none of them has the handle been mounted so that it could be easily reached and so that it could be disposed out of the way when desired. Furthermore, the mountings of such shelves have left much to be desired.

It is therefore an object of the present invention to provide such a floating shelf and a mounting means therefor such that a shelf of a given size may be mounted in the kneehole space of desks wherein the kneehole space may cover a range of widths. Another object of the invention is the provision of a novel mounting arrangement whereby the runners for the floating shelf may be installed in a completed desk or removed therefrom without the use of special tools in a very simple manner. Yet another object involves the provision of a handle which is flexibly mounted and also swivelable so that the greatest possible convenience in operating the desk may be achieved.

Yet another object of the invention lies in the provision of locking means whereby the floating shelf may be locked in its retracted position and whereby the pedestal drawers are concurrently locked as in a conventional desk having a center drawer and pedestal drawers.

These and other objects of the invention which will be described in greater detail hereinafter are accomplished by that certain construction and arrangement of parts of which the following describes an exemplary embodiment.

Reference is made to the drawing forming a part hereof and in which:

FIG. 1 is a perspective view of a typical floating shelf and showing the suspension arrangement and the handle structure.

FIG. 2 is a fragmentary elevational view of a runner as seen from within the kneehole portion of the desk, with a portion of the floating shelf shown in position.

FIG. 3 is a fragmentary cross sectional view showing the mounting of the runners to the top of the shelf.

FIG. 4 is a fragmentary cross sectional view on an enlarged scale taken on the line 4—4 of FIG. 2.

FIG. 5 is a fragmentary cross sectional view taken on the line 5—5 of FIG. 1 on an enlarged scale.

FIG. 6 is a front elevational view of a portion of a desk showing the relationship of the floating shelf and the kneehole space.

FIG. 7 is an elevational view of a runner or housing for use in a single pedestal desk on the side where there is no pedestal.

FIG. 8 is a fragmentary cross sectional view thereof taken on the line 8—8 of FIG. 7.

FIG. 9 is a front elevational view of the locking arrangement for the floating shelf.

FIG. 10 is a plan view thereof.

FIG. 11 is a fragmentary perspective view of the floating shelf showing the locking arrangement in place.

FIG. 12 is a plan view of a pedestal with the top of the desk removed showing the pedestal drawer locking arrangement.

FIG. 13 is a cross sectional view of the same taken on the line 13—13 of FIG. 12.

FIG. 14 is a fragmentary cross sectional view thereof taken on the line 14—14 of FIG. 12.

FIG. 15 is a fragmentary cross sectional view taken on the line 15—15 of FIG. 12.

Briefly, in the practice of the invention a pair of runners are secured, one on each side of the desk, in the kneehole space and a floating shelf structure having rollers arranged to ride on the runners is suspended from these runners. Generally speaking, the floating shelf in its front to back dimension is approximately one-half the depth of the kneehole space, so that when it is in its rearmost position, it does not interfere with the knees of the person sitting at the desk; and the height of the floating shelf is such that the feet of a person sitting at the desk may extend under the floating shelf.

Referring in greater detail to the drawing, the shelf according to the invention is generally indicated at 10. Its particular construction is not of a critical nature except that it must be small enough to fit within the kneehole space of the desk with which it is intended to be used.

To the top of the shelf structure on each side there is attached an angle member having an arm 11 lying on top of the shelf top and an arm 12 extending downwardly over the side of the shelf structure. Rollers 13 are mounted on the portion 12 of the angle member just referred to. The portions 11 of the angle members are provided with the holes 10b and the top member 10u of the floating shelf is provided with the slots 14. A bolt member 15
having a flat tab 16 spot welded to the portion 11, passes through the slot 14 and the hole 10b and is held in place by a nut 17. From the foregoing description, it will be clear that the lateral extent or position of the rollers 13 may be adjusted within the limits of the extent of the slots 14 so as to make the shelf fit in spaces of different widths.

The runner on which the rollers 13 ride is indicated in FIG. 2 generally at 20 and it has the bottom track 21, a side wall 22 and a top flange 23. The pedestal wall 25 will have an interrupted flange 25 as is common in desk construction generally for strengthening purposes. The bottom member 21 will be provided with front and rear humps 28 for engagement by the rollers 13 in the foremost and rearmost positions of the shelf to hold it yieldingly in one or the other of these positions.

A hook bolt 30 having the hook element 31 passes through the member 24 and is provided with the knurled nut 33. Two such arrangements are provided for each of the runners and it will be seen that all that is necessary to mount the runners is to engage the hook portion 31 of the hook bolt over the flange 26 of the pedestal and then tighten the nut 33.

In FIG. 6 the right-hand pedestal of the desk is indicated generally at 35 and the desk top at 36. The floating shelf is suspended from the channels 20 as has been described.

In order to pull the floating shelf out for ready access or to push it back in, a handle member 40 is provided. This handle member is secured to the top member 10b of the desk as best seen in FIG. 5. The mounted end of the handle member is flattened as at 41 and is secured to the member 10b by means of an element known as a Lord Mount. This is a flexible coupling wherein threaded studs 42 have their heads or flanges 43 bored into a cylindrical rubber ring 44. One of the studs 42 is secured to the member 10b by means of a nut 45 and the other stud 42 secures the flattened portion 41 of the handle by means of a nut 46. The nut 46 may be a self-locking nut so that it need not be tightened and will permit swiveling movement of the handle member 40 to the right or left. Up and down movement of the handle 40 is permitted by the flexible coupling 44.

Depending upon the angular condition of the handle member 40, the handle will be in a convenient position to be grasped by one sitting at the desk upon reaching the kneehole space. The handle can then be used to pull the shelf structure out for use and then be swiveled aside. During the pulling in or out, the handle may be raised or lowered as is convenient for the user and when it is released, it returns to its original position by virtue of the flexible coupling.

Since the runners or housings for the floating shelf have been described as hung from the pedestals by means of the bolts, it will be understood that reference has been made to a double pedestal desk. Where the desk is of the style having but a single pedestal, the above described mounting means for the runner or housing cannot be used. In such case, a runner is used as shown in FIGS. 7 and 8. This runner again has the bottom track 21 provided with the humps 28, a back wall 22, and a top flange 23. In this case, an angle member having the legs 50 and 51 is spot-welded or otherwise suitably fastened to the back wall 22 of the runner or housing. The leg 51 is secured to the desk top by means of bolts 52 and clamp elements 53 as shown in FIG. 8.

In a conventional kneehole desk having a center drawer, locking means are usually provided for locking the center drawer in closed position and arrangements are also provided whereby when the center drawer is locked in its closed position, all the drawers in the pedestals are concurrently locked. Since the floating shelf herein described is usually open, there is really no purpose in locking it except thereby to be able to lock the pedestal drawers all at one time rather than individually.

In FIGS. 12 to 15 inclusive, a conventional drawer locking mechanism is illustrated. Within the pedestal 35 and at the rear thereof, is pivotally mounted a rod 54 having a crank portion 55. In the kneehole space, the rod is bent downwardly at right angles as at 56 (FIGS. 14, 15, 16). Suspending from the crank portion 58 is a channel member 57 which is arranged to extend vertically behind the drawers in the pedestal as best seen in FIG. 13 and the channel 57 carries a number of pivoted hook elements 58. These are spring urged by means of the spring 59 so that they may be pivoted counterclockwise and are provided with a cam nose 60 so that if the center drawer is accidentally left open, it may be pushed in and will cam the hook member 58 counterclockwise and when the drawer is fully closed, the hook member 58 will spring back in a clockwise direction and engage under a lip in the drawer.

Spring means 61 are provided to bias the channel 57 downwardly to unlocked position.

From the foregoing description, it will be understood that when the center drawer is pushed in a conventional desk it abuts the lever 56 thereby rocking the rod 54 in a counterclockwise direction as seen in FIG. 15, whereby the crank element 55 will engage the channel 57 to locking position. When the center drawer is unlocked and pulled out slightly, the spring 61 returns the parts to their unlocked condition.

With the object in mind of enabling this locking mechanism to be used when the center drawer has been removed, member 40 is provided. This member is secured to the top member 10b of the desk at best seen in FIG. 5. The mounted end of the handle member is flattened as at 41 and is secured to the member 10b by means of an element known as a Lord Mount. This is a flexible coupling wherein threaded studs 42 have their heads or flanges 43 bored into a cylindrical rubber ring 44. One of the studs 42 is secured to the member 10b by means of a nut 45 and the other stud 42 secures the flattened portion 41 of the handle by means of a nut 46. The nut 46 may be a self-locking nut so that it need not be tightly tightened and will permit swiveling movement of the handle member 40 to the right or left. Up and down movement of the handle 40 is permitted by the flexible coupling 44.

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just above said flange, rails secured to the respective pedestal walls by hook bolts passing through said apertures and engaged over said flanges, said apertures being of a size to permit passage of the hook portion of said hook bolts into said pedestal from said knee space, said hook bolts having threaded shanks and being provided with tightening nuts, whereby said rails may be removably hooked to, and tightened onto, said pedestals without the use of special tools.

2. A desk according to claim 1, wherein a handle member is secured to said shelf structure means of a flexible coupling whereby it is yieldingly held in a central position but may be moved laterally or vertically in pushing in or pulling out said shelf structure.

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