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J. L. WEST ETAL

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FILE SUPPORT FRAME

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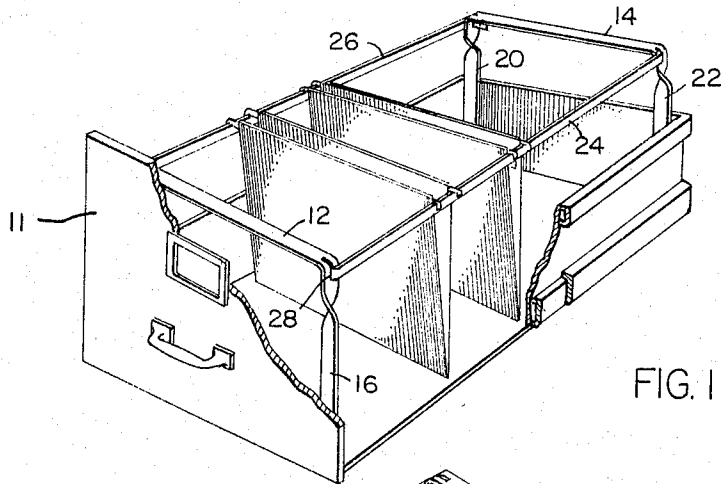


FIG. 1

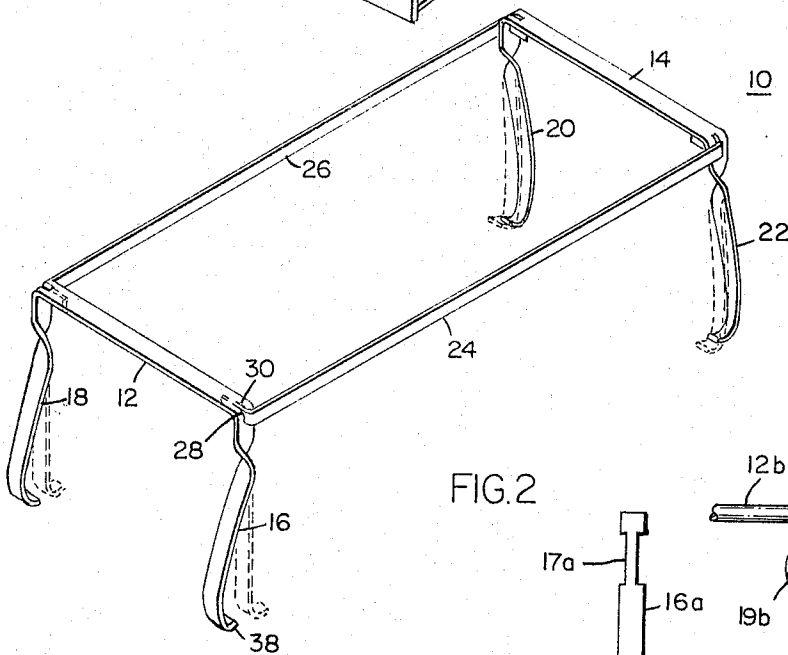


FIG. 2

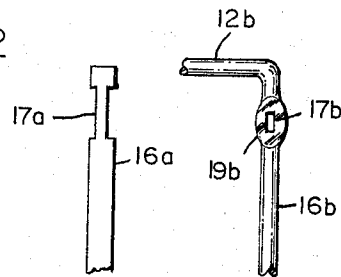


FIG. 4

FIG. 5

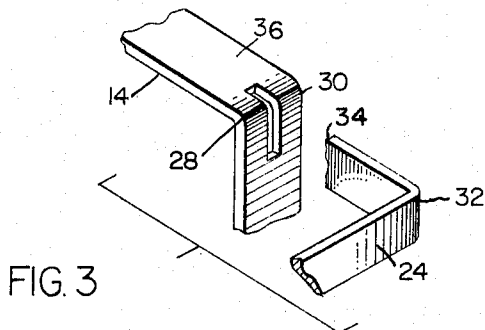


FIG. 3

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FILE SUPPORT FRAME

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2 Claims. (Cl. 129-16)

This invention relates generally to office devices and in particular to an improved file support frame adapted for insertion within file drawers, to enable files or folders to be supported therefrom.

In the office equipment field there are a variety of support frames utilized to support files, the majority of which are assembled by screws, bolts, wing nuts or the like, or using complicated inter-locking structures. Since file drawers are manufactured in a variety of lengths and widths universability becomes important to avoid stocking a range of sizes of support frames.

Therefore, it is an object of this invention to provide a file support frame which is novel, useful, practical and inexpensive whereby problems present in the office equipment field are effectively and simply solved.

It is a further object of this invention to provide a file support frame that is universally adapted for use with a variety of lengths and widths of file drawers.

It is another object of this invention to provide a file support frame which may be assembled without the use of screws, bolts, or complicated inter-locking mechanisms, or tools.

Other objects of this invention will in part be obvious, and will, in part, appear hereinafter.

Broadly stated, one feature of this invention is to provide an improved file support frame having a minimum number of components and which may be assembled prior to insertion within the file drawer without the use of screws, nuts and bolts or the use of any tools whatsoever. The assembled file support frame may be adjusted as to width and as to length by merely bending the legs in the desired direction so that they abut with the side and end walls of the file drawer.

To the accomplishment of this and the foregoing related ends, the present invention then consists of the means hereinafter fully described and particularly pointed out in the claims, the annexed drawings and the following descriptions setting forth in detail certain means in the carrying out of the invention, such disclosed means illustrating, however, but one of the various ways in which the principles in this invention may be employed.

In the drawings:

FIG. 1 is a view in perspective of the file support frame embodying the features of this invention installed within the file drawer.

FIG. 2 is a view in front elevation of the support frame illustrating the positioning of the legs.

FIG. 3 is an enlarged view of the inter-locking features of the file support frame.

FIG. 4 is a view of a modified form of the invention.

FIG. 5 is a view of another modified form of the invention.

Reference is now to be had to the drawings wherein an illustrative embodiment of the file support frame, construction made in accordance with the present invention and designated by the reference numeral 10 is shown. The file support frame 10 is adapted for insertion and retention within the file drawer 11 as shown in FIG. 1. The frame is composed of opposing end members 12 and 14, each having downwardly depending leg members 16, 18, 20 and 22. The end members 12 and 14 are connected by opposing longitudinal side members 24 and 26 which engage the end members in a manner to be set forth more fully hereinafter.

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There is illustrated in FIG. 2 one form of the invention where each of the leg members 16 to 22 is twisted at a 90° angle at a point spaced from the right angular bend or bight portion 28. The medial lateral portions of the end members 12 and 14 and the leg members 16, 18, 20 and 22 are slotted at 30 across the bight portion 28 with the length of the slot being slightly greater than the width of the side members 24 and 26. The side members 24 and 26 as illustrated in FIGS. 2 and 3 have a sharp angular bend 32 adjacent each of the distal ends 34 at substantially a right angle. The slot 30 extends from the upper section 36 of the ends 12 and 14 downwardly into the leg members, 16, 18, 20 and 22 across the bend 28.

The terminal ends of the leg members 16, 18, 20 and 22 may be rounded into foot portions 38 providing a four-point stable support for the frame as shown in FIG. 2.

The frame 10 is assembled by slipping the distal ends 34 of the side members 24 and 26 into the slots 30 of the end members to form a loose rectangular framework. In this form, the planar area contained within the ends of the legs 16-20 is longer and wider than the planar area of the drawer bottom. The leg members are so constructed, however, that they are flexible in a longitudinal as well as transverse direction.

The frame is installed in the drawer by first flexing the rear legs 20 and 22 inward in the direction of the forward legs 16 and 18 at the bottom and then passing them into the drawer cavity at the back of the drawer. Next, the front legs 16 and 18 are grasped and flexed inward and toward the rear of the drawer so that they also can be made to pass into the cavity of the drawer. Installation is completed by grasping the side members 24 and 26 and forcing the assembly downward until the four legs rest on the drawer bottom.

When installed, the components of the frame are maintained in a coordinated and rigid membership at the slots by friction resulting from forces which arise when the assembled frame is sprung or flexed into the drawer. Hence, once installed, the framework is relatively rigid and fits the drawer snugly.

The frame is removed simply by pulling upward until it is free of the drawer. When thus freed, the spring forces are relaxed and the frame may be disassembled by slipping the side members 24 and 26 out of the slots in the end members 16-20.

Should the drawer be so large that the initial dimensions of the planar area contained within the leg ends is shorter and/or narrower than the planar area of the drawer bottom, the legs can be bent easily by hand in the proper direction to enlarge the area contained therein.

Legs constructed of materials having properties suitable to allow flexibility in the longitudinal, as well as transverse, direction (relative to the drawer) may be produced in many ways. Three presently preferred methods are described herein. The first method (FIGS. 1 and 2) consists of legs made of flat stock with a 90° twist in the vicinity of the top of the leg member.

As depicted in the drawing, significant longitudinal flexibility is provided by the leg segments below the twist where the narrow cross-section of the leg is in the flexing plane. Significant transverse flexibility is provided by the leg segment above the twist and across the lateral medial portion of the frame end where the narrow cross-section of the stock is in the flexing plane.

Without the twist, the legs would have ample flexibility in a transverse plane but be relatively rigid longitudinally. Therefore, an alternative method of achieving longitudinal flexibility in an end member made of flat stock is to reduce the section of a portion of the leg 16a in a

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longitudinal direction as shown in FIG. 4 and indicated by the numeral 17a.

FIG. 5 further illustrates another modification wherein the end member 12b and the leg member 16b are formed of wire stock. A section 17b of the leg member 16b is flattened and an aperture 19b formed adapted to receive the side members.

The uniformly narrow cross-section of the wire provides sufficient flexibility in both the transverse and longitudinal directions; however, when supported by the drawer the frame becomes sufficiently rigid to accomplish its function.

It will be clear from the foregoing that a frame consisting of only four components can be easily and simply assembled without the use of tools or skilled personnel and in a minimum of time. Furthermore, by virtue of legs which are bendable with a reasonable amount of force a universal frame is available which can readily be adapted for various lengths and widths of file drawers.

While there have been described herein what are at present considered preferred embodiments of the invention, it will be obvious to those skilled in the art that modification and changes may be made therein without departing from the essence of the invention. It is therefore to be understood that the exemplary embodiments as are illustrative and not restrictive of the invention, the scope of which is defined in the appended claims, and that all modification that comes within the meaning and range of equivalency of the claims are intended to be included herein.

We claim:

1. A file support frame adapted to be inserted into and retained in a file drawer and comprising a pair of end members and a pair of side members, each end member being formed of a flexible flat horizontal bar with its end

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portions bent downwardly to form a pair of flexible legs, the upper portion of each leg being slotted longitudinally for a short distance downwardly from and into the bight between it and the horizontal bar, each leg being twisted through an angle of 90° immediately below the slotted portion, and each side member being formed of a longitudinal bar having flat ends extending at right angles from the bar the cross sectional shape and size of said flat ends, being substantially the same shape and size as the slots formed in the slotted portion of each leg, said flat ends extending into said slots with their upper edges engaging under the underside of said horizontal bars, said legs of each pair diverging downwardly relative to each other and relative to the legs of the opposite pair whereby said end and side members are maintained in locked and rigid association at the slots by friction resulting from forces which arise when the assembled frame is sprung or flexed into a drawer.

2. The file supporting frame of claim 1, in which each side member is in the form of a flat bar whose ends are bent at right angles to the bar and adapted to be frictionally retained in the slots of the end members.

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