

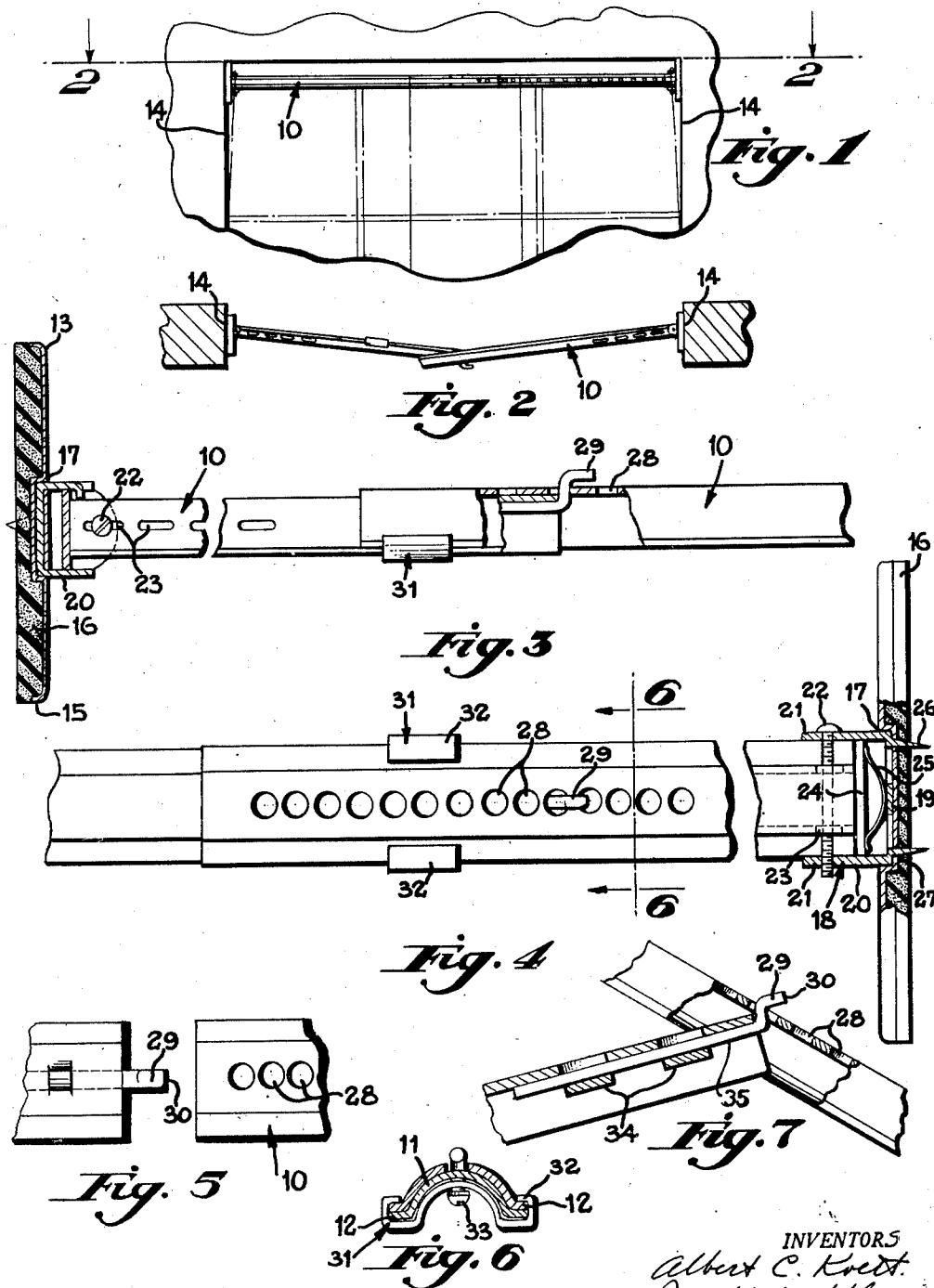
Feb. 20, 1951

A. C. KOETT ET AL

2,542,964

SUPPORT BAR

Filed July 30, 1947



INVENTORS
Albert C. Koett.
BY Joseph W. Ulmer
Wm. Avey, Heron & Evans
ATTORNEYS

UNITED STATES PATENT OFFICE

2,542,964

SUPPORT BAR

Albert C. Koett and Joseph W. Ulmer,
Cincinnati, Ohio

Application July 30, 1947, Serial No. 764,738

2 Claims. (Cl. 211-123)

1

This invention relates to supports and particularly to devices of the type consisting of a bar or rod adapted to support garments in a clothes closet or adapted to be used as an exercising support bar. In fact, the invention is in the structure of the bar or rod and it is intended for use for any purpose desired.

It has been the object of the present inventors to provide a bar or rod type of support which is readily extensible, that is to say which may be adjusted as to length and which will thereby readily fit in between the end walls of a closet or the frame of a door or which may be utilized between the walls of an automobile. The features of extensibility are such that the rod may be quickly and easily fitted to the space in which it is inserted.

It has been a further object of the present inventors to provide an extensible rod, the sections of which may be adjusted to substantially the correct length to fit between the walls or door frame, and which, when fully extended after adjustment, will exert pressure endwise so as to be wedged tightly in position. In the accomplishment of this objective, the rod has been constructed so that its sections will snap to extended, aligned and fitted positions. Further the device is inclusive of locking means for preventing accidental release or displacement from fitted position.

It has been a further object of the present inventors to provide an extensible rod or bar of this character which is inclusive of end members which are capable of making frictional contact with the walls or the door frame and which will not require the use of any attaching means which would otherwise mar or damage the walls or door frame. It is intended, however, that as an alternative in those cases where some slight indentations will not be noticeable or, where the rod is more or less permanently placed in position, that spurs may be incorporated which will supplement the frictional holding action of the end members.

It has been a still further object of the present inventors to provide a bar structure of this character which is exceedingly strong, that is in which the cross-section and the interrelation of the sections making up the rod is such that the rod is exceedingly stiff and reinforced.

Other objects relate to the specific structure of the device wherein there is flexibility between the end members and the bar sections which will permit the installation of the bar by the act of placing the respective sections in approximate position, latching them together centrally and exerting pressure centrally and laterally of the

2

rod so as to cause endwise pressure and to cause wedging of the sections in position when they are aligned.

Further objects and advantages will be more fully set forth in the description with reference to the accompanying drawings in which

Figure 1 is a fragmentary view of the upper part of the door frame or cupboard space illustrating the bar in position.

Figure 2 is a sectional view taken on line 2-2, Figure 1, showing the sections of the bar in position about to be installed, that is just prior to the exertion of pressure centrally of the members and before alignment thereof.

Figure 3 is a fragmentary enlarged view of the device, certain of the parts being broken away and shown in section for more clearly illustrating the structure.

Figure 4 is a fragmentary front view of the device illustrating the means for connecting the sections and further detailing the structure of the end plates.

Figure 5 is a fragmentary view showing the adjacent ends of the sections and illustrating the latching means.

Figure 6 is a sectional view taken on line 6-6, Figure 4, detailing the cross-section of the bar sections and detailing the locking clip which holds them in assembled relationship.

Figure 7 is a fragmentary view illustrating the adjacent ends of the sections in hooked position just prior to alignment and locking.

Referring to the drawings, the respective sections of the device are generally indicated at 10. In order to provide adequate rigidity and stiffness, the sections are fabricated of channel members. As shown in Figure 6, the cross-section of the bars is curved as at 11 and longitudinal flanges 12 are included. Each of the sections includes at one end an abutment or clamping plate 13 presenting a fairly large area for engagement with the walls 14 or frame of the door (Figures 1 and 2). These end plates are pressed from sheet metal to provide ribbing and to provide a marginal lip 15. A sheet 16 of sponge rubber constituting a facing is secured to the outer face of each end plate. Adhesive may be used for securing these rubber facing elements in position.

Each plate includes a depression 17 centrally thereof, this depression being rectangular in shape and having an attaching bracket or member 18 seated therein. Each attaching bracket includes a bottom portion 19 and side walls 20. Opposite side walls are extended as at 21 to provide ears which receive the outer end of the bar section. A screw 22 is passed through these ears

3

and through slots 23 in the curved portions of the bar sections immediately adjacent their ends. Through this arrangement the bar may shift toward and from the end plate. The end of the bar is in contact with a plate element 24 and a curved leaf spring 25 is inserted between the plate 23 and the base portion 18 of the bracket. The purpose of these spring elements will be more fully apparent later.

If desired, spurs 26 may be struck from the base 19 of the brackets 18 at opposite sides thereof. These spurs project through apertures 27 in the end plates. The spurs are of sufficient length so that they pass through and slightly beyond the sponge rubber facing. These spurs can be utilized for additionally anchoring the end plates in position where added attachment means are required. The spurs, however, are not necessary for the large area of sponge rubber facing is sufficient to frictionally hold the bar in position when endwise pressure is exerted on the plates as will be described later.

One of the sections includes a series of apertures 28 disposed along its length centrally of the curved portion thereof. The other rod or bar section includes a latching hook 29 (Figure 7). This hook element is secured in position by having its shank portion 35 extending through traversing loops 34 struck up from the curved central portion of the bar. In other words, these loop portions are pressed out a sufficient distance to permit insertion and fastening of the shank of the hook member. The extended end of the hook member curves outwardly, that is laterally of the bar and then endwise as at 30. The shape of the hook enables it to be inserted readily in any one of the series of apertures in the other bar as illustrated in Figure 7.

A locking element 31 which is in the nature of a clip is slidably mounted on the bar section which includes the hook. This locking clip is of the same general cross-section as the bar section, that is it fits or nests in the section. It includes overhanging flanges 32 which retain it in position on the side lips or flanges of the bar. The flanges 32 are spaced from the body of the clip a sufficient amount to permit the clip to overhang the flanges of both sections (Figure 6). Thus, the clip may be slid into position overhanging the flanges of both sections and, in conjunction with the hook, will latch or lock the sections against lateral displacement. A set screw 33 is provided in the clip for securing it relative to the sections when the clip has been slid to locking position as shown.

In mounting the device in position, the user selects a desired aperture and the latching pin is inserted therein as shown in Figure 2. The sections are at this time disposed with their end plates in contact with the frame of the door or the end walls of the closet. By exerting lateral pressure centrally of the connected sections they are pressed into alignment. This is possible since the bar sections may move relative to the plates and may exert pressure against the leaf springs, the spring pressure being exerted through the bracket into the end plates and being responsible for causing a frictional engagement with the door frame or wall. It will be observed that the sections, when pushed to aligned position, tend to snap into place. When they are thus aligned the user slides the locking clip into position overhanging both sections. In placing the device in position the flanges of the sections are disposed vertically so that the device is exceedingly rigid

4

and the assembled relationship or nested position of the sections tends to further reinforce the device.

Thus, it will be apparent that the user may quickly and conveniently install the bar or support rod at any height desired in the closet or in the door frame. This is of great advantage in that the bar may be adjusted to suit the height of children and makes it possible for them to place clothes hangers on the bar. Also, the device may be used in an automobile by utilizing smaller end plates. Further, it may be used as an exercising bar and will easily support the weight of a person. The range of extensibility obviously is variable depending upon the length of section employed. In any given assembly, however, the extensibility may vary from substantially half to full length.

Having described our invention, we claim:

1. An extensible support bar for mounting between walls comprising; a pair of parallel channel sections adapted to be nested together, one of said sections including a series of apertures and the other including a hook element adapted to be selectively engaged in any one of said apertures, bracket members at the respective outer ends of said sections, said bracket members including means for pivotally mounting the respective outer ends of said sections, end plate members adapted to seat said bracket members, said end plate members including resilient facing elements adapted to provide frictional contact with walls between which the bar is mounted, and spring members mounted between said bracket members and the ends of said sections whereby lateral pressure exerted centrally of the assembled sections will be distributed to said resilient facing elements of said end plates through said spring members.

2. An extensible support bar for mounting between walls comprising; a pair of parallel channel sections adapted to be locked in nested relationship, one of said bar sections including a series of apertures and the other including a hook element adapted to be selectively engaged in any one of said apertures, said sections including slotted apertures near the ends thereof, bracket members at the respective outer ends of said sections, said bracket members including pin means engaging with said slotted members of said sections for pivotally mounting said sections therebetween, end plate members adapted to seat said bracket members, said end plate members including resilient facing elements adapted to provide frictional contact with walls between which the bar is mounted, and spring members mounted between said bracket members and the ends of said sections whereby lateral pressure centrally of the assembled sections will be distributed to the said spring members within the limits of travel defined by said slots and therebeyond distributed to said resilient facing elements of said end plates.

ALBERT C. KOETT.
JOSEPH W. ULMER.

REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
446,480	Stebbins	Feb. 17, 1891
1,793,035	Whitney	Feb. 17, 1931