This invention relates to bed tray tables, and more specifically to an improved construction of supporting device for trays and the like, an object of the invention being to provide a device of this character which will support the tray either in a horizontal or in an inclined position and which is capable of folding or collapsing into a very small space for storage and shipment.

In employing the term “tray” it is to be understood that this term is used in its broadest possible sense to include any device which may be supported, but it is, of course, within the scope of the invention to support not only a tray on which food or a book may be located, but the device may be utilized for many purposes; the primary use of the device is in connection with the comfort or treatment of invalids or others in bed, as the supporting device is particularly adapted to rest upon the bed and allow the occupant thereof to have access to the contents of the tray or other device.

With these and other objects in view, the invention consists in certain novel features of construction and combinations and arrangements of parts, all of which will be more fully hereinafter described and pointed out in the claims.

In the accompanying drawing—

Figure 1 is a perspective view illustrating my improved device in position to support a tray at an angle;

Figure 2 is a similar view illustrating a device in position to support a tray in horizontal position;

Figure 3 is a perspective view of the device folded or collapsed;

Figure 4 is a fragmentary perspective detailed view; and

Figure 5 is a fragmentary perspective detailed view illustrating a modification.

My improved device includes an open frame 1 which is of the desired shape to support the tray or other article thereon; assuming that the device is to support the ordinary tray indicated by the dot and dash lines in Figure 1 the frame 1 is of oblong shape and is provided at each end with supporting members 2, 2. These supporting members are preferably, although not essentially, of somewhat W-shape, and they may be composed of a single bar or strip bent into the desired shape, and the ends of these supporting members are pivotally connected to the sides of the frame 1 adjacent the ends thereof by means of rivets 3 or other suitable devices which permit a pivotal movement of the supporting members relative to the frame. On these rivets or pivots 3 angular fingers 4 are likewise pivoted and secured and these angular fingers extend under the frame 1 so that when the supporting members are moved to their open or operative position their pivotal movements will be stopped by the angular fingers 4, so that these fingers interposed between the supports 2 and frame 1 will act to prevent any possible further pivotal movement of the supporting members. It will be noted that when the supporting members are in their normal operative position they are at an acute angle to the frame 1 so that there is no possibility of the collapse of the device when in use, but it is perfectly obvious that this pivotal movement of the frame members can be regulated or controlled in positioning the device on the bed to cause one supporting member to take a different angular position to the other in order to compensate for unevenness in the bed surface.

An angular ball 5 is pivoted at its ends to the ends of the frame 1 by means of rivets or other suitable pivots 6, and on these pivots 6 angular fingers 7 are likewise pivoted and projected over the upper edge of the frame 1. These fingers have a double function; they not only serve to limit the pivotal movement of the ball 5 but they also serve as clamping or securing means for a tray when the latter is in horizontal position on the frame.

Figure 1 illustrates the function of these fingers 7 as holding the angular ball 5 in a position at an acute angle to the frame 1 when it is desired to support a tray at an angle to the frame 35 as, for example, when the occupant of the bed desires to support a book or other device on the tray. When the device is in the position shown in Figure 2 and a tray is located on and within the frame 1 the fingers 7 can be sprung or snapped over the ends of the tray and secure the tray against accidental movement in the frame. It is to be understood that this springy or resilient movement of the fingers may be compensated for in many ways. In the simplest form it is compensated for by the fact that the metal or other material of the frame is such that it will permit the fingers a certain resiliency so as to allow them to be forced outwardly in position in the tray, and then sprung inwardly over the ends of the tray. It is also to be noted that the ball 5 may serve as a handle to carry the support and the tray thereon, and it is also useful as a prop over which a napkin or other device may be located to protect the articles on the tray.
In Figure 5 I illustrate a modification in which it will be indicated that the supporting members may be adjustable to vary their length and correspondingly regulate the height of the tray. In this modification the supporting members are composed of sections 6 and 8. These sections are provided with registering perforations 10 in which any suitable securing devices may be located to hold the supports at any position of adjustment.

When the device is not desired for use the supporting members 7, 2, may be swung inwardly on their pivots so as to lie close to the frame as clearly indicated in Figure 3 of the drawing, and the device will occupy very little space for storage or shipment.

It is, of course, impossible to enumerate the many uses to which a device of this character may be put, and I desire to cover the device broadly for any use to which it may be put, but while I have illustrated what I believe to be the preferred embodiment of my invention it is to be distinctly understood that various slight changes may be made with regard to the form and arrangement of parts without departing from my invention, and hence I do not limit myself to the precise details set forth but consider myself at liberty to make such changes and alterations as fairly fall within the spirit and scope of the claims.

I claim:

1. A device of the character stated, including an open frame adapted to receive a tray or other device thereon, supports pivotally connected to the frame, a ball pivotally connected to the frame, and angular fingers connected to the pivots of said supports and said ball and projecting across the frame, so that said fingers limit the pivotal movement of the supports and ball.

2. A device of the character stated, including an open frame adapted to receive a tray or other device thereon, supports pivotally connected to the frame, a ball pivotally connected to the frame, and angular fingers connected to the pivots of said supports and said ball and projecting across the frame, so that said fingers limit the pivotal movement of the supports and ball, the angular fingers on the pivots of the ball capable of a certain lateral movement whereby when a tray or other device is located on the frame said last mentioned fingers will spring over the tray and secure the same in the frame.

3. A collapsible support for trays and the like including an open frame, end supports of general W-shape pivotally connected to the sides of the frame, an angular ball pivotally connected to the ends of the frame, and angular fingers connected to all of said pivots and projecting in the plane of the frame so as to limit the pivotal movement of the supports and the ball.

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