

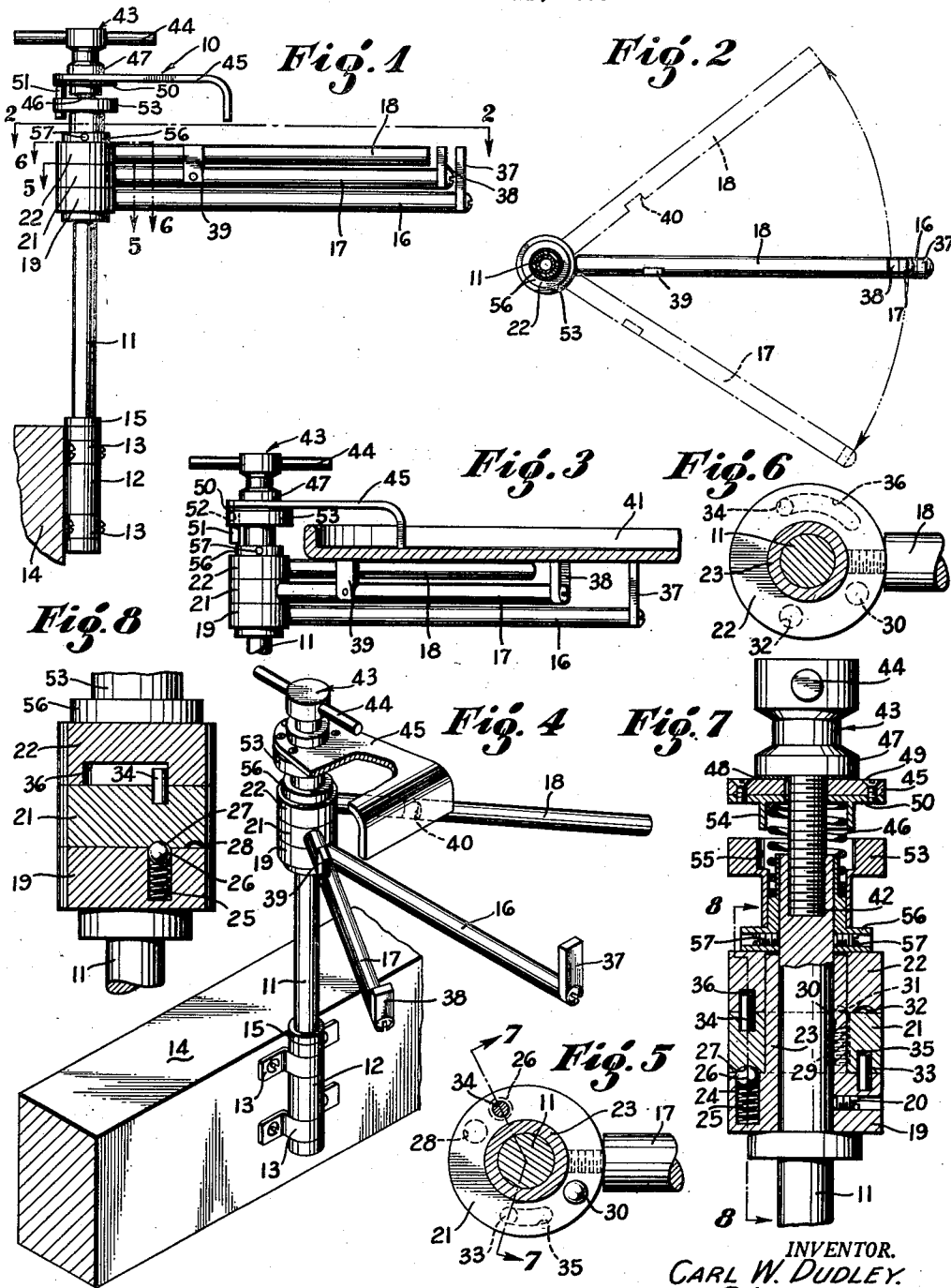
July 7, 1953

C. W. DUDLEY

2,644,660

TRAY SUPPORT

Filed June 21, 1950



INVENTOR.  
CARL W. DUDLEY.  
BY *Lyon & Lyon*  
ATTORNEYS

## UNITED STATES PATENT OFFICE

2,644,660

## TRAY SUPPORT

Carl W. Dudley, Beverly Hills, Calif.

Application June 21, 1950, Serial No. 169,502

5 Claims. (Cl. 248—282)

1

2

This invention relates to devices for supporting eating trays and has particular reference to a tray support adapted to be attached to chairs, beds and the like.

One of the principal objects of my invention is to provide a novel tray support which may quickly and easily be attached and removed from a chair, bed or other article of furniture.

Another object of my invention is to provide a novel tray support device which may be folded or collapsed into a small unit for storage.

Another object of my invention is to provide a device of the character described which is light in weight and of neat appearance yet which will provide a steady support for a food tray or the like.

Another object of my invention is to provide a tray support device which is simple in construction and adapted to be manufactured inexpensively on a quantity basis.

Further objects of the invention will appear hereinafter.

In the drawings:

Figure 1 is a side elevation of a preferred embodiment of my invention;

Figure 2 is a sectional elevation taken substantially on the line 2—2 of Figure 1;

Figure 3 is a detail view of the device illustrating an eating tray supported thereby;

Figure 4 is a perspective view illustrating the device, in the open position, attached to a member of a chair, bed or the like;

Figure 5 is a sectional elevation taken substantially on the line 5—5 of Figure 1;

Figure 6 is a sectional elevation taken substantially on the line 6—6 of Figure 1;

Figure 7 is a sectional elevation taken substantially on the line 7—7 of Figure 5; and

Figure 8 is a diagrammatic sectional elevation taken substantially on the line 8—8 of Figure 7.

The device embodying my invention is especially adapted for use in Pullman cars and in airplanes, since it is light in weight, attractive in appearance, and may be easily stored away in a minimum of space.

Referring now to the drawings, the tray support device, generally indicated 10, includes a standard or post 11 adapted to be received in a cylindrical socket member 12 which is secured with brackets 13 to a frame member 14 of a chair, bed or the like. If desired, the socket member 12 may be secured to a protruding portion of the wall or bulkhead of a Pullman car or airliner. A collar 15 is secured to the post 11 to

maintain the post in the desired position with respect to the socket member 12. The post 11 is freely rotatable with respect to the socket member so that the device may be rotated to any desired location.

Tray support arms 16, 17 and 18 are mounted on the post 11 substantially normal to the axis of the post. The lowermost arm 16 is mounted on a collar 19 which is secured to the post 11 by means of set screw 20. Arms 17 and 18 are threadedly secured to sleeves 21 and 22, respectively, which are turnably mounted on the post 11 so that the arms may be swung to the operative position shown in Figures 2, 3 and 4, or to the inoperative position for storage as shown best in Figure 1. A cylindrical extension 23 of the collar 19 serves as a bearing surface for the sleeves 21 and 22. Means are provided to lock the arms 17 and 18 in the open and closed positions and, as shown in the drawings, these means may include the bore 24 in the collar 19 in which bore is inserted a coil spring 25. The spring 25 urges a spherical member or ball 26 against the end of the sleeve 21, the ball tending to seat in a shallow depression 27 in the sleeve 21 when the arm 17 is in the closed position shown in Figure 1 and in the shallow depression 28 when the arm 17 is moved to the open or operative position shown by the phantom lines of Figure 2. A similar spring 29 and ball 30 is provided in the sleeve 21 engageable with the depressions 31 and 32 to lock the arm 18 in either one of the two positions. It will be noted that since substantially less than one-half the surface of the spherical members engages in the depressions, disengagement is accomplished by a lateral force on the arms sufficient to overcome the force of the springs.

Stop means may be provided to limit the swing of the arms 17 and 18 and, as shown in the drawings, these means may include the pins 33 and 34 mounted on collar 19 and sleeve 21, respectively. These pins extend respectively into arcuate grooves 35 and 36 in sleeves 21 and 22, the length of the grooves determining the turning arc of the sleeves and hence of the arms 17 and 18.

Tray-contacting elements 37 and 38 extend laterally from the ends of arms 16 and 17, respectively, to define, with the upper surface of the arm 18, a plane normal to the axis of the post 11. The elements 37 and 38 may be rubber-tipped if desired. A stop member 39 is secured intermediate the ends of the arm 17 and co-operates with a transverse groove 40 in the arm

3

18 to assist in maintaining the arms in the closed position when the device is carried about or is in storage. This stop member may terminate in the plane defined by the arm 18 and elements 37 and 38 to provide a four-point support for the tray 41 as shown.

Clamp means are provided to maintain the eating tray 41 or any similar object in position on the support arms. As shown in the drawings, an axial threaded opening 42 is provided in the upper end of the post 11. A threaded element 43 is engaged therewith and is provided with a hand lever 44 for raising or lowering the clamp member 45. A coil spring 46 urges the clamp member upwardly against the flanged end 47 of the element 43, a washer 48 being interposed between the flange 47 and the clamp member 45. Secured to the clamp member by means of screws 49 is a disk member 50 which carries a depending pin 51 slidably engaged in an aperture 52 in the flanged sleeve 53, thus preventing rotation of the clamp member. A cylindrical axial extension 54 is provided on the disk member 50. The extension 54 may be slidably engaged with a counter bore 55 in the flanged sleeve 53. The flanged sleeve 53 is assembled in press fit relationship with a holding collar 56 which is secured to the post 11 by means of set screws 57 to prevent disassembly of the collars 21 and 22.

In operation, the device 10 is easily set up by inserting the post 11 into the socket member 12 which is attached in the desired location. The arms 17 and 18 are then swung out to the extended position shown in the drawings, the tray 41 placed in position, and held there by means of clamp 45. The device is likewise easily removed and folded for storage.

While I have shown and described a specific embodiment of my invention, I do not limit myself to the exact details of the construction set forth, and the invention embraces such changes, modifications and equivalents of the parts and their formation and arrangement as come within the purview of the appended claims.

I claim:

1. In a support device for a food tray, a post member, a first arm secured to said post member and extending outwardly substantially normal thereto, and second and third arms turnably secured to said post member and extending outwardly substantially normal thereto, each of said second and third arms having a tray contacting element extending upwardly therefrom, said arms being secured to said post member one above the other whereby said second and third arms may be turned to a first position relative to said first arm wherein said first arm and tray contacting elements of said second and third arms define a plane normal to the axis of said post for supporting a food tray and whereby said second and third arms may be turned to a second position substantially coplanar with the axis of said post and said first arm for storage of said support device.

2. In a support device for a food tray, a substantially vertical post member; a collar rigidly secured to said post member; a first arm extending horizontally from said collar; a first sleeve turnably carried on said post member above said collar; a second arm extending horizontally from said first sleeve; a second sleeve turnably carried on said post member above said first sleeve; a third arm extending horizontally from said second sleeve, the said second and third arms being turnable with respect to the post

4

member to a first position to define a plane normal to the axis of said post for supporting a food tray and to a second position substantially coplanar with the axis of said post member; and locking means whereby said second and third arms may be selectively maintained in said first or said second position, said locking means including a first spring-loaded spherical member on said collar adapted to seat in depressions in said first sleeve, and a second spring-loaded spherical member on said first sleeve adapted to seat in depressions in said second sleeve.

3. In a support device for a food tray, a substantially vertical post member; a collar rigidly secured to said post member; a first arm extending horizontally from said collar; a first sleeve turnably carried on said post member above said collar; a second arm extending horizontally from said first sleeve; a second sleeve turnably carried on said post member above said first sleeve; a third arm extending horizontally from said second sleeve, the said second and third arms being turnable with respect to the post member to a first position to define a plane normal to the axis of said post for supporting a food tray and to a second position substantially coplanar with the axis of said post member; and stop means limiting the turning arc of said second and third means, said stop means including a first pin mounted on said collar and extending into an arcuate groove in said first sleeve, and a second pin mounted on said first sleeve and extending into a second arcuate groove in said third sleeve.

4. In a support device for a food tray, a substantially vertical post member; a collar rigidly secured to said post member; a first arm extending horizontally from said collar; a first sleeve turnably carried on said post member above said collar; a second arm extending horizontally from said first sleeve; a second sleeve turnably carried on said post member above said first sleeve; a third arm extending horizontally from said second sleeve, the said second and third arms being turnable with respect to the post member to a first position to define a plane normal to the axis of said post for supporting a food tray and to a second position substantially coplanar with the axis of said post member; locking means whereby said second and third arms may be selectively maintained in said first or said second position, said locking means including a first spring-loaded spherical member on said collar adapted to seat in depressions in said first sleeve, and a second spring-loaded spherical member on said first sleeve adapted to seat in depressions in said second sleeve; and stop means limiting the turning arc of said second and third means, said stop means including a first pin mounted on said collar and extending into an arcuate groove in said first sleeve, and a second pin mounted on said first sleeve and extending into a second arcuate groove in said third sleeve.

5. In a support device for a food tray, a post member, a first arm secured to said post member and extending outwardly substantially normal thereto, second and third arms turnably secured to said post member and extending outwardly substantially normal thereto, each of said second and third arms having a tray contacting element extending upwardly therefrom, said arms being secured to said post member one above the other whereby said second and third arms may be turned to a first position relative to said first arm wherein said first arm and tray contacting elements of said second and third arms define

5

a plane normal to the axis of said post for supporting a food tray and whereby said second and third arms may be turned to a second position substantially coplanar with the axis of said post and said first arm for storage of said support device, and clamp means operably connected to said past member for holding a tray on said arms.

CARL W. DUDLEY.

6

## References Cited in the file of this patent

## UNITED STATES PATENTS

Number	Name	Date
363,648	Keehner -----	May 24, 1887
871,951	Baker -----	Apr. 17, 1906
943,910	Brudlove -----	Dec. 21, 1909
1,529,231	Arnold -----	Mar. 10, 1925
1,797,847	Vandagriff -----	Mar. 24, 1931