Sept. 2, 1958

R. A. DAWSON

2,850,077

FURNITURE SEATS

Filed March 9, 1954

2 Sheets-Sheet 1

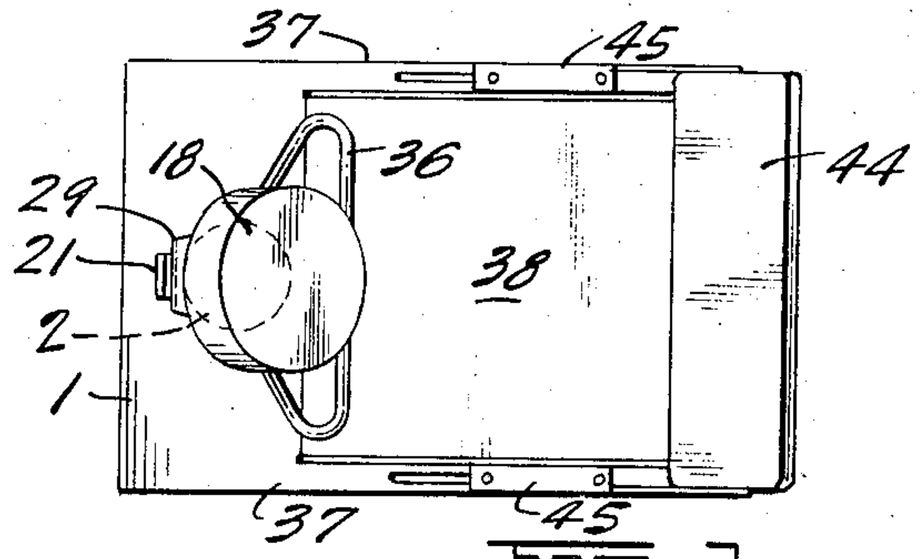

FIG-1-

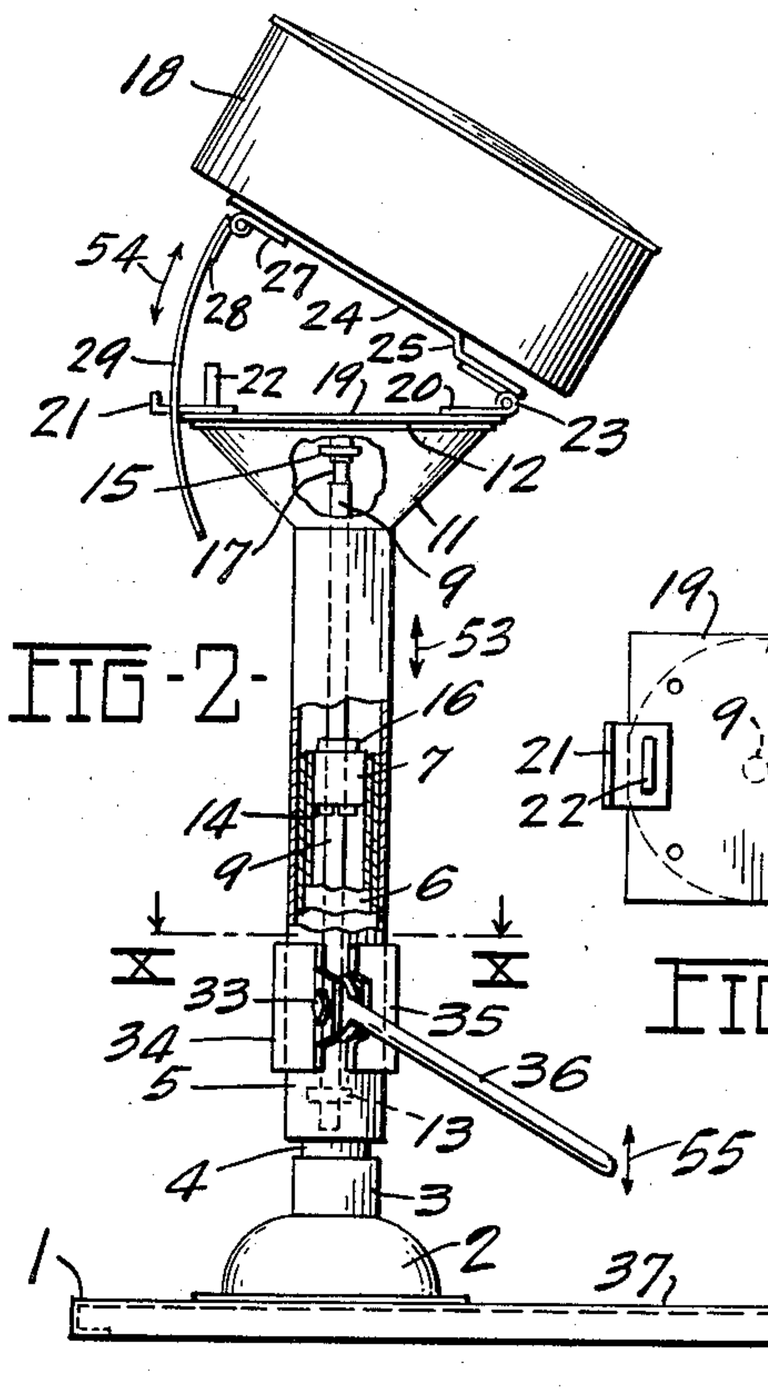

FIG-2-

FIG-3-

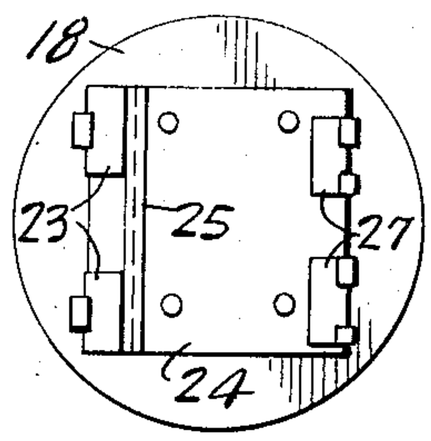

FIG-4-

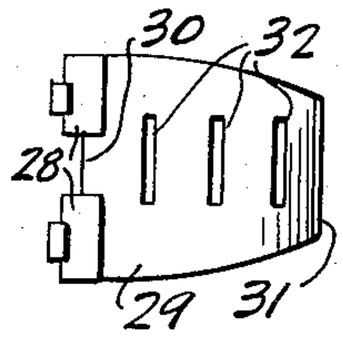

FIG-5-

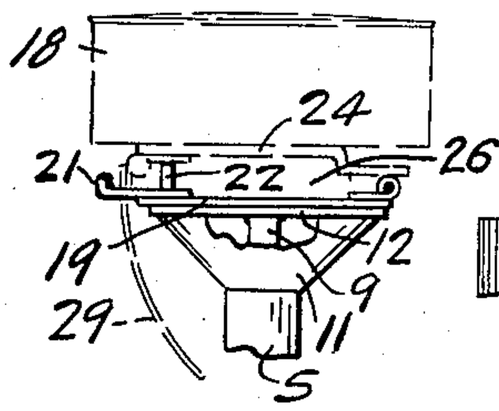

FIG-6-

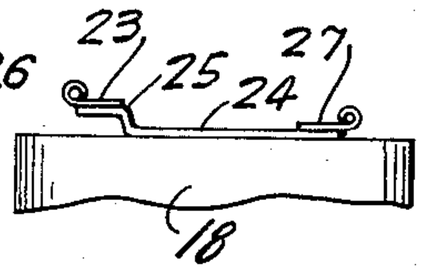

FIG-7-

FIG-8-

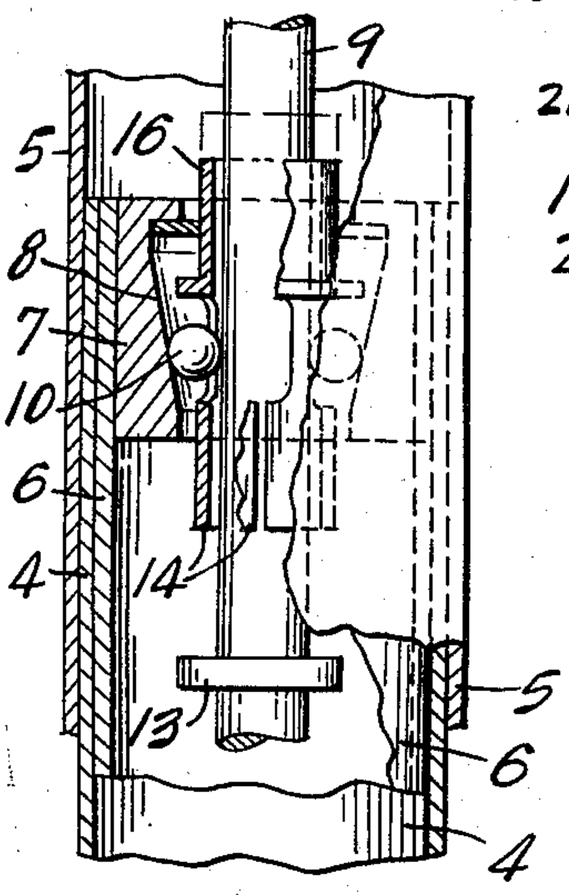

FIG-9-

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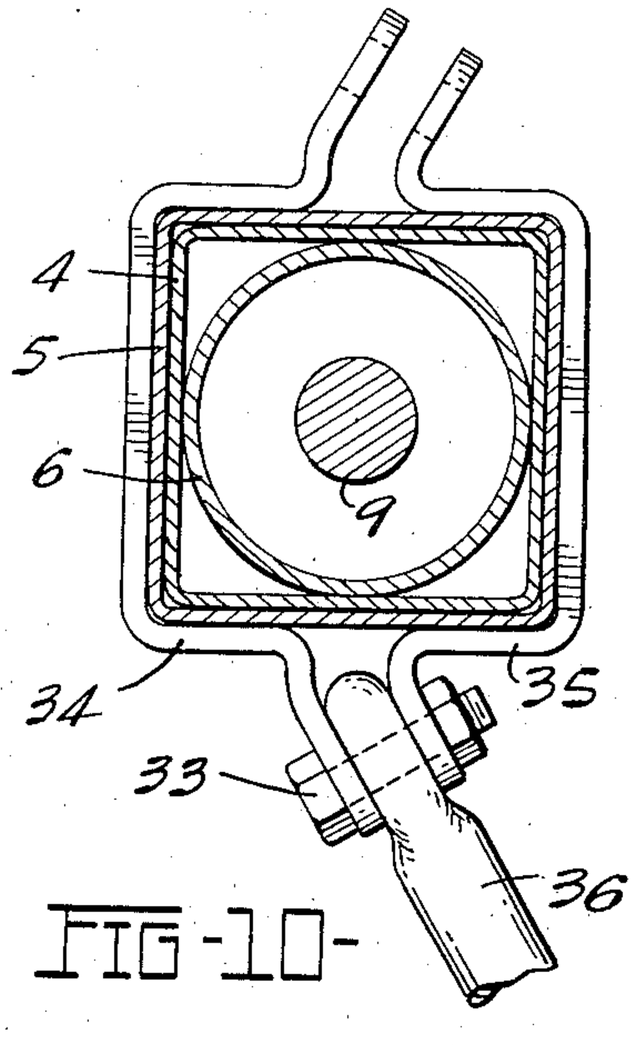

FIG-10-

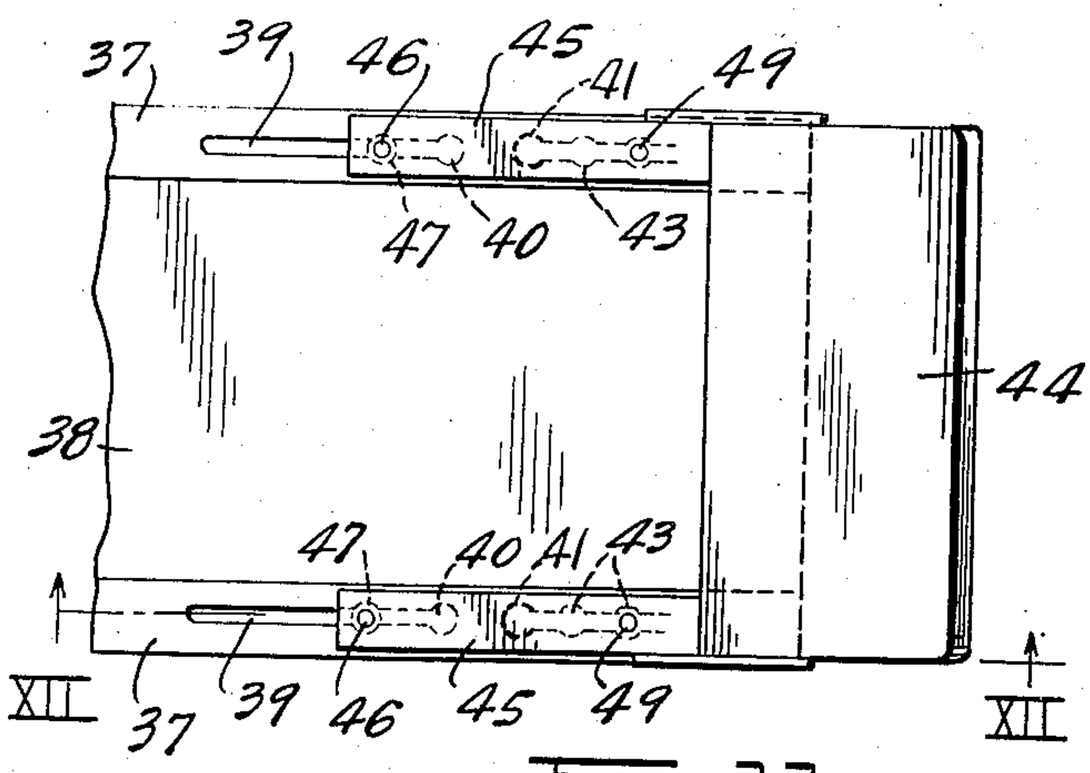

FIG-11-

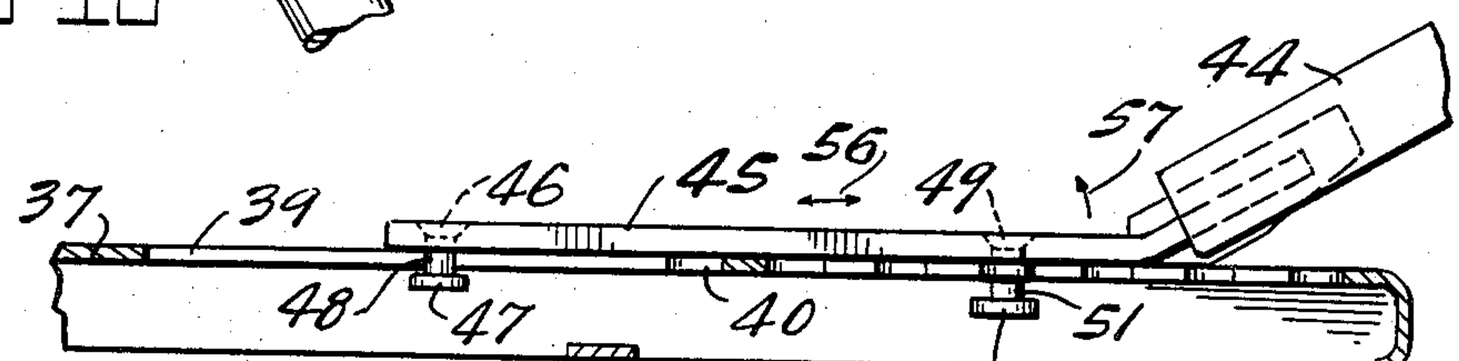

FIG-12-

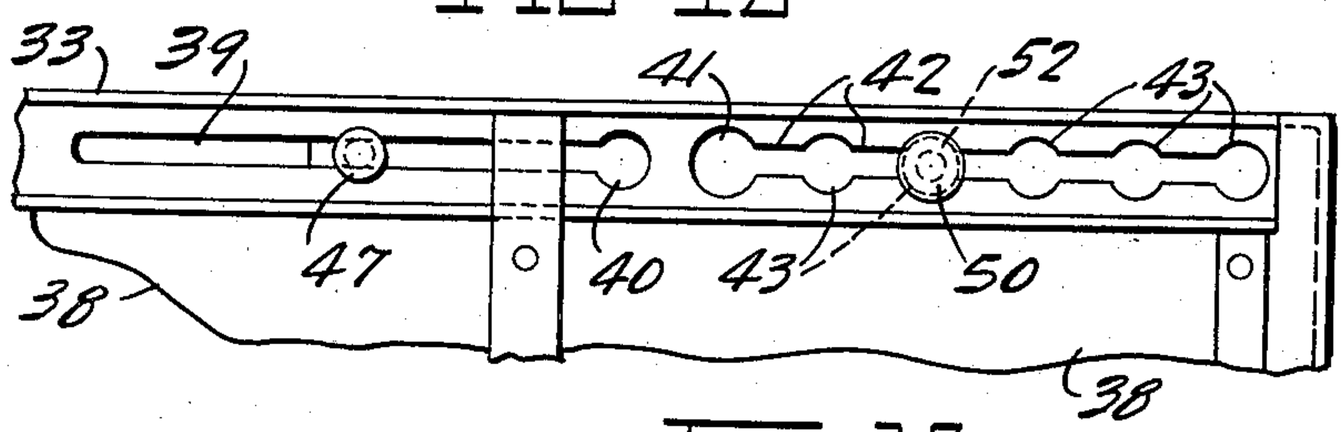

FIG-13-

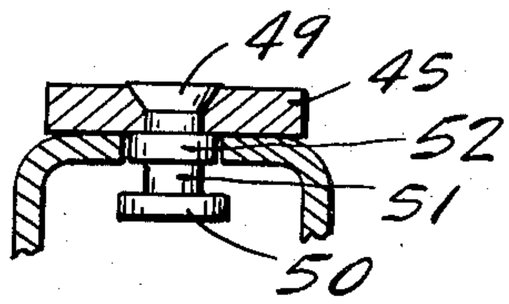

FIG-14-

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FURNITURE SEATS

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10 Claims. (Cl. 155—90)

This invention relates to stable comfort supports for individuals for advantageously locating or positioning one at work or carrying through in the performance of peculiar or special services.

This invention has utility when incorporated in pedestal type of stools, especially with height and pitch adjustment for the seat, heel rest height adjustment relative to the seat, together with footrest or prop adjustment relative to the pedestal, these adjustments being coplanar.

Referring to the drawings:

Fig. 1 is a plan view of a stool and footrest embodiment of the invention;

Fig. 2 is a side elevation, on an enlarged scale of the showing in Fig. 1, with an inclined positioning for the seat, parts being broken away;

Fig. 3 is a plan view of the top plate on the pedestal, for hingedly mounting the seat;

Fig. 4 is a bottom plan view of the seat for the stool, show the complementary plate for the plate of Fig. 3;

Fig. 5 is a side view of the swing arc strut for setting the seat at different angles of tilting as to the pedestal;

Fig. 6 is an edge view of the plate of Fig. 3, showing the seat and pedestal in relation thereto, and disclosing clearance to obviate finger pinching by one using the seat;

Fig. 7 is an edge view of the seat bottom plate of Fig. 4;

Fig. 8 is an edge view of the arc strut of Fig. 5;

Fig. 9 is a fragmentary view, on an enlarged scale, of the details of the clutch as concentric with the pedestal for up and down positioning of the seat;

Fig. 10 is a section along the line X—X, Fig. 2, showing the adjustable mounting on the rectangular pedestal for the heel rest;

Fig. 11 is a plan view of the footrest, at an adjusted position on the pedestal carrying platform or base;

Fig. 12 is a section on the line XII—XII, Fig. 11, with the footrest in elevation;

Fig. 13 is a fragmentary bottom plan view of the base in the region of the showing in Fig. 12; and

Fig. 14 is a side elevation of the foot-rest adjustment holding stop adapted to engage and be released from the base seats in locating the footrest at different distances from the pedestal.

The pedestal

Base 1 (Figs. 1, 2) has welded therewith a flare boss 2 with a central riser flange 3. While the boss 2 is circular, the flange 3 has a rectangular or square cross-section. Welded with the base 1 and the flange 3, is a square tube 4 projecting upwardly to have a telescopic slide fit within tube 5 of square cross-section. Welded with the base 1, as well as supplementally attached to the inner walls of the tube 4 is a cylindrical tube 6. The upper ends of the tubes 4, 6, have anchored therein an outer clutch member or housing 7 (Fig. 9). A taper face 8 in the member 7 is concentric with a rod 9. An annular series of clutch balls 10 coact between the cylindrical outer face of the rod 9 and the concentric conical face 8. At the upper end of the outer sleeve 5 is a top flare 11 and pedestal top plate 12, to which plate the rod 9 is fixed. The rod 9 slides with a ring or washer 13 fixed thereon in the tube 6. In this extension of the pedestal for height adjustment of the seat, the ring 13 is engaged by a split sleeve 14 downwardly protruding from

the member 7, and with which member 7 this sleeve 14 is frictionally held. However, as the ring 13 engages the sleeve 14, the sleeve is thus moved upward in the member 7 sufficiently to thrust clutch balls 10 clear of biting engagement between the face 8 and rod 9. To restore clutching with downward shifting of the plate 12 relative to the base 1, the rod 9 now unclutched from the housing 7, rides down for plate or flange 15 to thrust sleeve 16 against the balls 10 which fall into reduced diameter portion 17 (centrally of the flare 11 Fig. 2 as shown broken away) of the rod 9.

There has thus been effected first a full declutching. The seat or top pedestal plate 12 with seat 18 may now be lifted to a desired height spacing from the base 1. Weight then lodged on the seat 18 at once results in clutch setting to hold the pedestal at the elected height therefor.

The tilt seat

On the circular top of the pedestal plate 12 (Fig. 2) is anchored a rectangular plate 19 (Figs. 2, 3) having a pair of axially aligned leaf hinge plates 20 with the axis approximating tangency to the rim top of the flare 11, and remote therefrom a wide short hook tongue 21. Set back from the hook of rigid tongue 21 is a riser stop block or lug 22.

Complementary to the hinge leaves 20, are leaves or hinge plates 23 fixed to a seat bottom plate 24 anchored to the under side of upholstered or cushion seat 18. An offset 25 for the leaves 23 as to the plane of the main portion of plate 24 insures clearance 26 between the rigid plates 19, 24. Especially with adjustable tilt for the seat, there is tendency for the one occupying such seat to grasp the cushion sides with the finger tips extending inward at the under side. The weight of one then on the seat, in the assembly herein disclosed, does not result in pinching or other annoyance or hazard to ones digits, for the clearance 26 is a safeguard against trouble from such source.

The cushion bottom plate 24, remote from the hinge leaves 23 has a pair of axially aligned hinge leaves 27. Complementary thereto are hinge leaves 28 on arc strut plate 29. There is thus a swing mounting for the plate 29 to coact with the plates 24, 19, which has a clearance 30 for the tongue 21. To effect up tilt limit for the seat 18 it is necessary for free end 31 of plate 29 to seat between the up-turn of the tongue 21 and the lug 22. However, in normal use, maximum comfort is in intermediate tilt angles as provided by seat slots 32 located with the tongue 21 protruding through the elected slot and there held by the tongue upturn end from casual release. The seat tilt is upward at the rear.

It is to be noted that the in-turn of the arc plate 29, has an inward dip toward the pedestal 5. There is thus avoided outward projection which might tend to snag one passing.

The heel rest

Bolts 33 clamp channel sections 34, 35, at elected embracing position vertically along the rectangular pedestal section or tube 5. Simultaneous with this clamping a U-shaped heel rest 36 is fixed with this clamp. This fixed clamping for rigidity may not only have range of spacing from the base 1, but there may be elected a pitch direction as downward, horizontal or upward in the direction taken by the legs of the U extending from the rectangular pedestal section 5.

The footrest

From the region of the base 1 carrying the boss 2 there extends a pair of parallel downwardly open channels 37 as lateral bounds for a tread region 38. Remote from the boss 2, the channels 37 have slots 39 with en-

trance ports **40**. Therebeyond and in alignment with these slots **39** are entrance ports **41**, and connecting ways **42** between a succession of seats **43**.

A footrest **44** has rigid therewith a pair of arms **45** locating the footrest proper at an upward pitch, of say 30°, as the arms **45** ride on the web portions of the channels **37**. Remote from the footrest section **44**, the arms **45** have fixed therewith pins **46** having heads **47** adapted to enter the ports **40**, and shanks **48** to ride along the slots **39** (Fig. 12). Remote from the pins **46**, are pins **49** in the arms **45**. Heads **50** of the pins **49** may enter the ports **41** with shanks **51** adapted to ride along (Fig. 14) the connecting ways **42**, and then as load is placed on the footrest **44**, shoulder **52** comes in register with a seat **43** and locks the footrest at some distance from the pedestal (Fig. 12).

To adapt the device for comfort, the pedestal has adjustment up and down as indicated by an arrow **52** (Fig. 2) and the seat has tilt or inclination adjustment, as suggested by an arrow **54**. The heel rest **36** has adjustments relatively to the pedestal and base as shown by an arrow **55**. The toward and from pedestal re-locations for the footrest **44**, are identified by an arrow **56**, while for release of the footrest for resetting, an arrow **57** indicates course to lift the shoulder **52** out of the engaged seat **43**, so that in moving the footrest in either direction therefrom the way **42** may direct toward a desired seat **43** for the shoulder **52** to re-engage. In this lift for the footrest **44**, the head **50** precludes lifting other than to the shank **51** so that the footrest assembly may be maintained. However, as there is register for the head **50** with the port **41**, additional outward or upward tilt may be achieved. Then if there is need to have the footrest fully removed, as for shipping, or replacement with a differently configured substitute structure, the head **47** may be cleared through the port **40**.

It is to be noted that throughout, there is stability in the re-arrangement or adjustment. The rectangular pedestal supports the tilted seat against tipping, even when pressing thereagainst from one foot on the footrest and the other at the heelrest. Thus rigidity is maintained for the tilt of the seat **18**. The long axes for the hinges definitely locate the plates **19**, **24**, against any side sway. The length of the slots **32** and their extent for full length coaction with the tongue **21** maintains this stabilization. The wide spacing between the footrest arms **45** and there definite locking positively anchor the footrest against response to off-center stresses thereon.

Individuals rendering service, for efficiency, many times find it desirable not to remain fully seated, as for height range in mail distribution. At bank windows, as well as other places of business, there is a wide use for the device in this disclosure.

What is claimed and it is desired to secure by Letters Patent is:

1. An article of furniture comprising a base, a tubular pedestal extending upwardly from the base to an outwardly flaring inverted conical top having a circular plate, a hinge element thereon tangentially of the circular plate, a support plate, a complemental hinge element fixed with the underside of said support plate, said hinge elements as assembled defining an axis outwardly offset from the tubular pedestal in a plane parallel to the axis of said pedestal, and, diametrically from said hinge, a plate hinged to said support plate and having means thereon in adjustment coaction with means on said circular plate to fix the upward tilt of the circular plate aft from the hinge, said tubular pedestal comprising telescopic sections and housing therein a length adjustment device, said device embodying a plurality of concentric circular elements one of which has a conical face, and an annular series of balls adapted frictionally to seat between the circular elements and thereby provide friction clutch holding of said support plate at pedestal length from said base.

2. An article of furniture comprising a base, a tubular pedestal extending upwardly from said base to a top plate, a hinge having one element thereof mounted tangentially of said top plate, a support plate, the complemental element of said hinge being fixed to the underside of said support plate, the axis of said hinge being perpendicular to the axis of said tubular pedestal and outwardly offset therefrom, a plate hinged to the opposite side of said support plate from said hinge, said hinge plate having means thereon which co-operate with means on said top plate to fix adjustably the upward tilt of said top plate about said hinge, said tubular pedestal comprising telescopic sections and housing therein a length adjustment device, said device embodying a plurality of concentric circular elements one of which has a conical base, and an annular series of balls adapted frictionally to seat between the circular elements to provide a friction clutch for holding of said support plate at a pre-selected distance from said base.

3. An article of furniture according to claim 2 wherein there is between the circular elements a relatively shiftable coaxial ring and setting means for the ring to cause the balls to be disengaged.

4. An article according to claim 2 including a second footrest vertically adjustably mounted on said pedestal.

5. An article according to claim 2 wherein said hinged plate comprises a notched strap, and said means which co-operates therewith on said top plate comprises a hook means projectable into said notches.

6. An article according to claim 2 wherein said base includes a forward extending portion, and a tilted footrest horizontally adjustably mounted on said forward extending portion.

7. An article according to claim 6 wherein said horizontally adjustable footrest includes means for self-locking said footrest in its different adjusted positions.

8. An article according to claim 7 wherein said self-locking means comprises a lineal succession of engagement locations and means releasable upon raising of the footrest for adjustment of said rest in a horizontal direction.

9. An article of furniture comprising a base, a telescoping tubular pedestal extending upwardly from said base, a horizontal top plate mounted on and extending outwardly from the top of said pedestal, a hinge having one of its elements mounted tangentially of said top plate, a support plate, the complemental element of said hinge being fixed to the underside of said support plate, the axis of said hinge being outwardly offset from the tubular pedestal in a plane parallel to the axis of said pedestal, and a notch strap hinged to the opposite side of said support plate from said hinge, a hooking element attached to the opposite side of said top plate from said hinge for co-operation with the notches of said notch strap to fix the upward tilt of said top plate around the axis of said hinge, said tubular pedestal comprising telescopic sections and housing therein a friction clutch length adjusting device, said base having an extension, and an upwardly tilted footrest horizontally adjustably mounted on said extension.

10. An article according to claim 9 including a second footerest vertically adjustably mounted on said pedestal.

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