April 17, 1956 F. E. SAUNDERS 2,741,868

ADJUSTABLE STAND

Filed May 28, 1954

Fig. 1

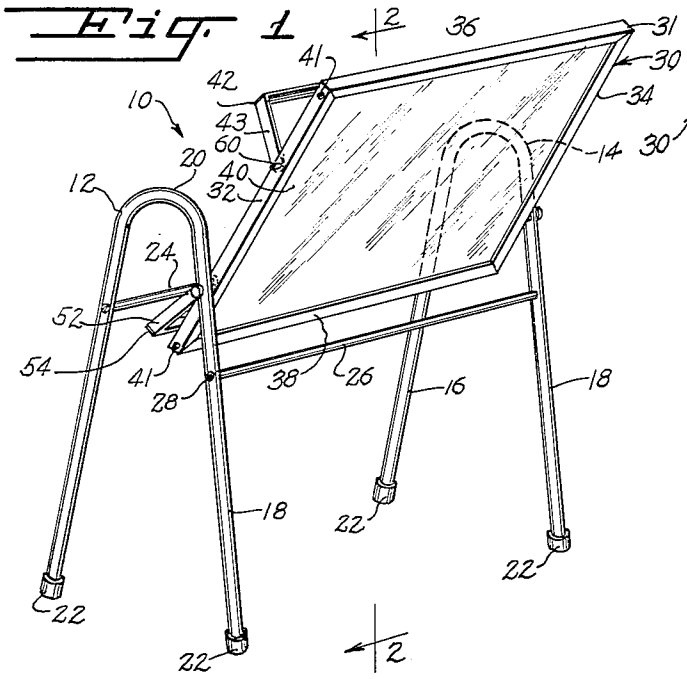


Fig. 2

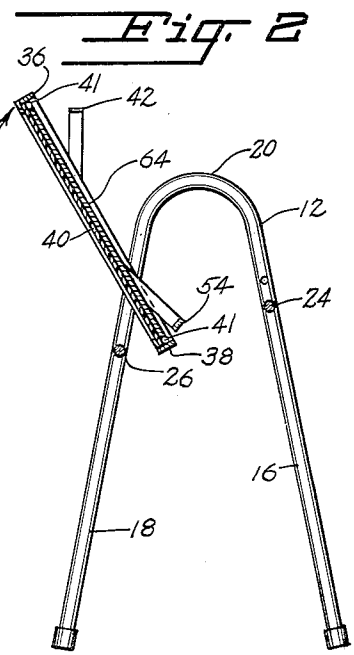


Fig. 5

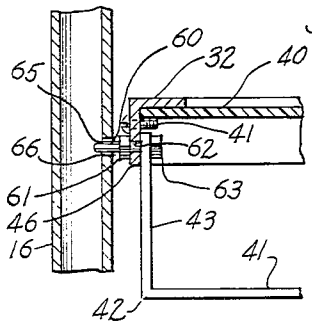


Fig. 4

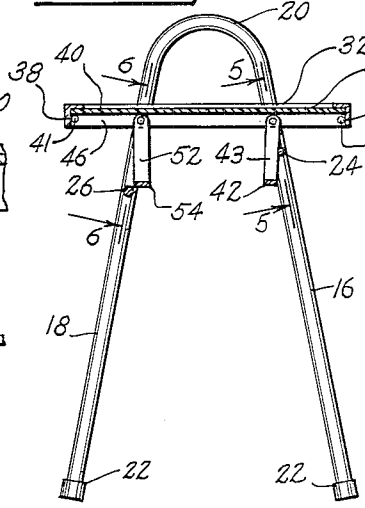


Fig. 3

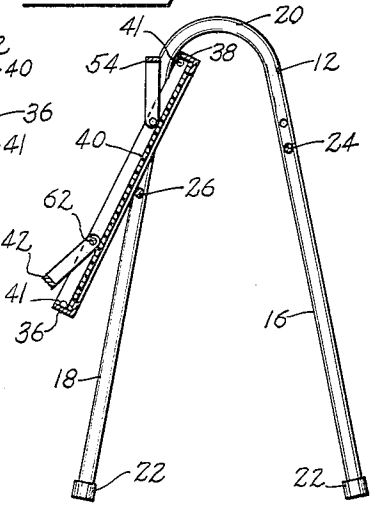
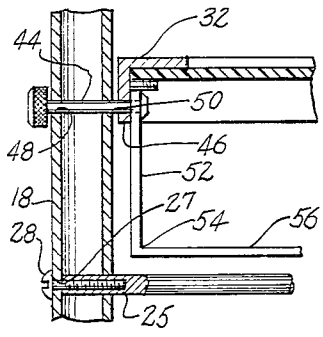


Fig. 6



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ADJUSTABLE STAND

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Application May 28, 1954, Serial No. 433,141

3 Claims. (Cl. 45—82)

This invention relates to an improved adjustable stand.

It is an object of this invention to provide an adjustable stand which may be employed as a stand for the support thereon of reading material, such as newspapers and books, while the person using the device is in a reclining or sitting position, and due to its adjustability, may also find use as a table upon which articles may be supported.

It is a further object of this invention to provide an adjustable stand which is of simple construction, rugged and durable in use, made of lightweight materials which result in attractive appearance, and which may be produced at a relatively low cost.

Other objects and advantages will become apparent from a consideration of the following detailed description forming the specification, and taken in conjunction with the accompanying drawing, in which:

Figure 1 is a perspective view of an adjustable stand embodying this invention with the article support in one adjusted position;

Figure 2 is a vertical cross sectional view taken on line 2—2 of Figure 1;

Figure 3 is a cross sectional view similar to Figure 2, but showing the article support in a different position of adjustment;

Figure 4 is a cross sectional view similar to Figure 2 and 3, but showing the article support in still another position of adjustment;

Figure 5 is a sectional view taken on line 5—5 of Figure 4; and

Figure 6 is a sectional view taken on line 6—6 of Figure 4.

With continued reference to the drawing, the illustrated adjustable stand, generally indicated at 10, comprises a pair of spaced parallel standards 12 and 14 which are of generally U-shape. Each of the standards 12 and 14 have a pair of legs 16 and 18 in diverging relation from the arcuate bight connecting portion 20, and lie in a common plane. The ends of the legs 16 and 18 remote from the bight 20 are provided with resilient caps 22 which are adapted to rest upon the floor or other supporting surface, such as a bed or a couch, depending upon the use to which the stand is to be put.

The standards 12 and 14 are fashioned from hollow tubular lightweight metal, such as aluminum, and are maintained in their spaced parallel relation by a pair of tubular cross rods or bars 24 and 26, each of these rods preferably being made of tubular lightweight metal, such as aluminum, and secured at their opposite ends to the respective legs 18 and 16 of the standards 12 and 14, so as to extend therebetween and maintain the standards rigidly in their spaced relation. As shown in Figure 6, the end of each of the cross rods 24 and 26 is secured in an opening 25 through one wall of the respective standard legs between which they extend, and the rods extend up to the opposite wall of the respective standard legs. The ends of each of the cross rods are secured to the respective legs by bolts, such as bolt 28, which extends through the respective legs of the standards through a

suitably aligned aperture 27 therein with the threaded shank portion of the bolt being received in an internally threaded bore in the end of the associated cross rod.

An article support, generally indicated at 30, comprises a generally rectangular frame having spaced parallel end bars 32 and 34 which are maintained in their spaced parallel relation by a pair of side bars 36 and 38 extending between the end bars and secured at their opposite ends to the adjacent ends of the end bars. The end and side bars are preferably made of a lightweight material, such as aluminum or other light-weight metal. A clear, preferably transparent plastic panel 40 is supported in the frame defined by the side and end bars by screws 41, and the panel 40 extends thereacross.

A U-shaped bracket 42 has its opposite legs 43 pivotally secured to the end bars 32 and 34 intermediate the ends thereof, but more closely adjacent to the side bar 36, with the bight portion 41 of the bracket extending transversely across the frame between the end bars 32 and 34, with the opposite spaced, parallel legs 43 in contact with the inner faces of the respective end bars 32 and 34.

As clearly shown in Figures 6, the frame 31 is carried by the standards 12 and 14, so as to extend therebetween for movement in an arcuate path about a horizontal axis defined by axially aligned thumb bolts 44 passing through suitably aligned apertures in the legs 18 of the respective standards 12 and 14 adjacent the bight 20 thereof, and through a suitable opening in the depending flange 46 of the L-shaped end bars 32 and 34 of the frame. The thumb bolts 44 are snugly received in the aligned openings 48 and 50 through the respective standard legs 18, so as to have considerable frictional contact, thus permitting the article support 30 to be maintained in any position of adjustment desired.

The opposite spaced parallel legs 52 of another U-shaped bracket 54 are also mounted on bolts 44 inside the respective end bars 32 and 34 adjacent the leg 18 of the respective standards 12 and 14 with its bight portion 56 extending transversely across the frame 31 in spaced parallel relation to the bight portion of the bracket 42. Each of the brackets 42 and 54 is made of flat, relatively narrow strap metal material, which may be aluminum or other suitable material. Also, each of the brackets 42 and 54 is mounted for movement in arcuate paths perpendicular to the panel 40 across which they extend, and will fit snugly along the inside of the angle bar frame 31 with their bight portions extending inside and parallel to the depending legs or flanges of the side bars 36 and 38, respectively.

It will be noted that the frame 31 has its opposite end bars 32 and 34 pivotally mounted on the respective legs 18 adjacent the side bar 38. With respect to the use of the adjustable stand 10, in the position of adjustment of the article support 30, as shown in Figures 1 and 2, the stand is adjusted for use as a bed reader wherein the capped ends of the standard legs will be supported upon the bed with the reading material extending across the face of the panel 40, so as to be disposed above and in angular relation to the person reclining upon the bed, so that the person may read printed matter supported on the panel 40 of the article support 30.

By gripping the knurled heads 45 of the thumb bolts 44, the article support 30 may be rotated to the position shown in Figure 3, wherein the end bars 32 and 34 rest against the cross rod 26, so that the article support 30 is maintained in an angular relation to the standards 12 and 14 with the side bar 36 being moved from its position above the bight portions of the standards to a position intermediate the legs 16 of the standards. In this position of adjustment, the stand 10 is adapted for use as a bed reader for a person sitting up in the bed, and will

provide a writing surface defined by the panel **40**, in the event that the person sitting up in bed desires a writing surface.

In Figure 4, the article support **30** is shown in a position of adjustment intermediate the positions shown in Figures 2 and 3 wherein the panel **40** provides a horizontal supporting surface, generally parallel to the floor or other supporting surface on which the stand **10** is placed, to define a table upon which articles may be supported. In order to maintain the article support **30** in the horizontal position shown in Figure 4, there is provided bolts **60** which extend transversely through the flanges **46** of the end bars **32** and **34** adjacent the free ends thereof, and the depending flanges **46** of the side bars **32** and **34** being provided with apertures **62** therethrough adapted to receive the threaded shank portions of the bolts **60** projecting beyond the flanges **46**, on which are mounted nuts **61**, as shown in Figure 5. The nuts **61** are disposed at the outer faces of the flanges **46**, while the heads **63** of the bolts are disposed at the inner faces of the legs **43** of the bracket **42** which are pivotally carried on the bolts **60**. The ends **65** of the bolts **60** remote from the heads **63** thereof enter the openings **66** in the legs **16** in one wall thereof. Slight inward pressure at the bottom of the leg **16** is sufficient to permit the ends **65** of the bolts **60** to enter the openings **66** in the respective legs **16**. Due to the inherent resilience of the legs, the ends of the bolts will be maintained in the openings **66**, so as to rigidly maintain the frame **31** in the horizontal position shown in Figure 4.

In the position of adjustment shown in Figure 4, wherein the stand **10** is adapted for use as a table, it will be noted that the brackets **42** and **54** depend therefrom with the legs of the brackets disposed substantially perpendicularly to the horizontal plane of the article support **30**, so that the depending brackets **42** and **54** now define a support for magazines or books which may be disposed thereupon and be supported upon the bight portions thereof beneath the article supporting surface defined by the panel **40** of the article support **30**.

In order to release the article support **30** from its horizontally disposed position, shown in Figure 4, it is merely necessary to exert a slight pressure on the legs **16** of the respective standards **12** and **14** toward each other to permit the bolt shank ends to drop out of the openings **66**, whereupon the article support **30** is then free to be rotated by rotation of the thumb bolts **44** into any of the other desired positions of adjustment.

From the foregoing, it will be apparent that there has been provided an adjustable stand which comprises a pair of spaced standards **12** and **14**, each standard being of tubular metal stock and formed into generally U shape with the legs thereof in diverging relation, a frame **31** which extends between complemental legs **18** of the standards and is pivotally mounted thereon for movement in a vertical arcuate path to assume selected adjusted positions in its path of movement, the frame **31** mounting a panel **40** of clear plastic material therein to define a support surface movable therewith, and means defined by the thumb bolts **44** carried by the complemental legs **18** and operatively connected to the frame **31** to move the frame in its arcuate path. Also, there are means defined by the bolts **60** which are operatively connected to the other complemental legs **16** of the standards **12** and **14** for releasable engagement with the openings **66** provided in the complemental legs **16**, to maintain the frame and its supporting surface **40** in one position in its path of movement, this position being shown in Figure 4 as being parallel generally to the surface upon which the stand is placed, or being disposed in a substantially horizontal position.

Further the cross rod **26** which is secured to and extends between the complemental legs **18**, not only rigidly maintains the standards **12** and **14** in their spaced relation, along with the companion cross rod **24**, but also defines a stop for limiting the movement of the frame **31** in its path of movement in one direction, as shown in Figure 3.

Broadly considered, the adjustable stand **10** comprises a pair of spaced standards **12** and **14** having an article support **30** which includes a flat supporting surface **40**, the article support being carried by and extending between the standards for movement in an arcuate path about a horizontal axis to assume selected adjusted positions in its path of movement, and means defined by the thumb bolts **44** carried by the standards for effecting movement of the article support **30** in its path of movement.

It will be noted that the cross rod **26** is disposed at a level closer to the surface upon which the stand **10** is supported than the level at which the cross rod **24** is disposed. Also, with reference to Figure 2, it will be seen that when the adjustable stand is employed as a bed reader for a person lying down in the bed, that the reading material or periodical **64** will be disposed on the side of the transparent panel **40** remote from the face thereof adjacent the head of the reader.

The invention may be embodied in other specific forms without departing from the spirit or essential characteristics thereof. The present embodiment is, therefore, to be considered in all respects as illustrative and not restrictive, the scope of the invention being indicated by the appended claims rather than the foregoing description, and all changes which come within the meaning and range of equivalency of the claims are, therefore, intended to be embraced therein.

What is claimed is:

1. In an adjustable stand, a pair of similar standards of inverted U-shape each comprising a bight portion and first and second legs, a support frame positioned between the standards, said frame having end flanges adjacent to the standards, said first legs being provided with bores, and said end flanges having openings located near one side of said frame, thumb bolts extending frictionally through said bores and through said openings, said thumb bolts having outer ends having thumb pieces thereon for rotating the thumb bolts to rotate the frame relative to the standards, and cross rods extending between and fixed to the first and second legs upon which the frame rests in opposite extreme tilted positions of the frame.

2. In an adjustable stand, a pair of similar standards of inverted U-shape each comprising a bight portion and first and second legs, a support frame positioned between the standards, said frame having end flanges adjacent to the standards, said first legs being provided with bores, and said end flanges having openings located near one side of said frame, thumb bolts extending frictionally through said bores and through said openings, said thumb bolts having outer ends having thumb pieces thereon for rotating the thumb bolts to rotate the frame relative to the standards, and cross rods extending between and fixed to the first and second legs upon which the frame rests in opposite extreme tilted positions of the frame, a pair of U-shaped brackets having bight portions and legs having free ends, the free ends of the legs being pivoted to the end flanges of the frame at points near to and spaced from opposite sides of the frame, said frame being rotatable on said thumb bolts to a horizontal position with the brackets moved into depending positions, the first and second legs having openings below the bight portions of the standards, and bolts on the end flanges engageable in the last mentioned openings for holding the frame in a horizontal position and against movement therefrom relative to the standards.

3. In an adjustable stand, a pair of similar standards of inverted U-shape each comprising a bight portion and first and second legs, a support frame positioned between the standards, said frame having end flanges adjacent to the standards, said first legs being provided with bores, and said end flanges having openings located near one

side of said frame, thumb bolts extending frictionally through said bores and through said openings, said thumb bolts having outer ends having thumb pieces thereon for rotating the thumb bolts to rotate the frame relative to the standards, and cross rods extending between and fixed to the first and second legs upon which the frame rests in opposite extreme tilted positions of the frame, a pair of U-shaped brackets having bight portions and legs having free ends, the free ends of the legs being pivoted to the end flanges of the frame at points near to and spaced from opposite sides of the frame, said frame being rotatable on said thumb bolts to a horizontal position with the brackets moved into depending positions, the first and second legs having openings below the bight portions of the standards, and bolts on the end flanges engageable in the last mentioned openings for holding the frame in a horizontal position against movement therefrom relative ot the standards, said standard being sufficiently flexible to provide for manual flexing of the standards away from each other to produce disengagement of the bolts from the last mentioned openings.

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