Nov. 3, 1970 W. D. FRANKLIN, SR., ET AL 3,538,250

PORTABLE TELEVISION RECEIVER CABINET STRUCTURE HAVING ADJUSTABLE LEGS

Filed July 10, 1968

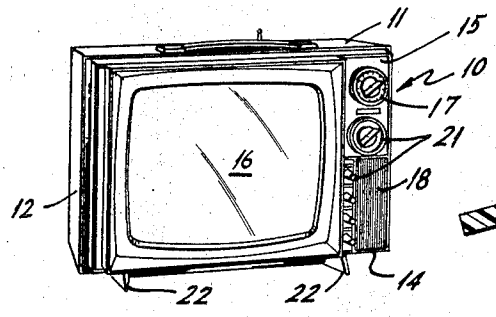


FIG. 1.

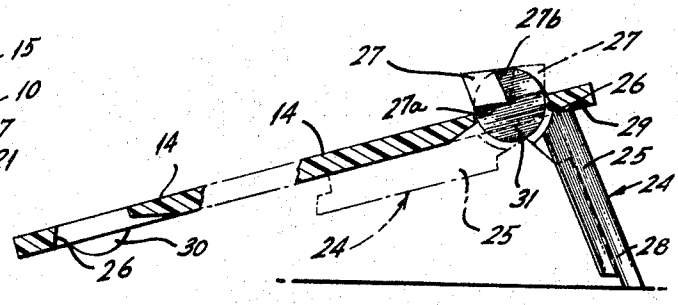


FIG. 5.

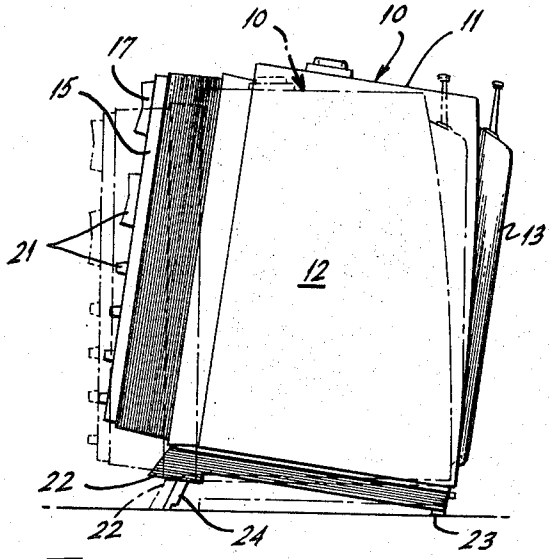


FIG. 2.

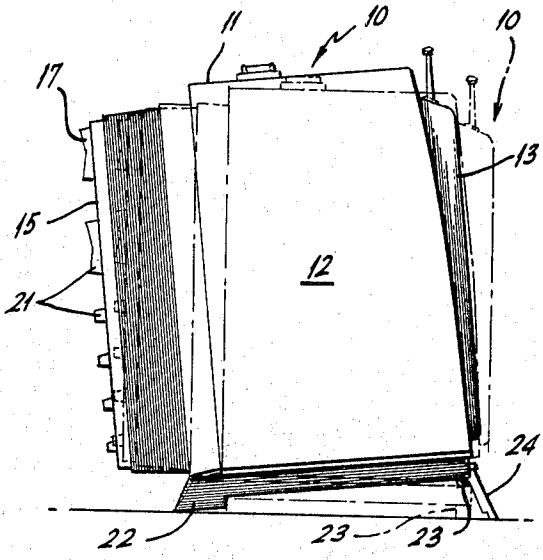


FIG. 3.

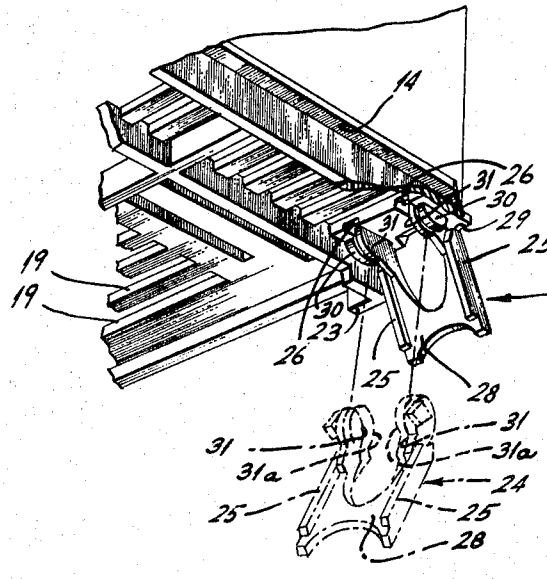


FIG. 4.

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United States Patent Office 3,538,250 Patented Nov. 3, 1970

3,538,250

PORTABLE TELEVISION RECEIVER CABINET STRUCTURE HAVING ADJUSTABLE LEGS

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Filed July 10, 1968, Ser. No. 743,687
Int. Cl. A47b 81/06; H04n 5/64; H05k 5/00
U.S. Cl. 178—7.9 11 Claims

ABSTRACT OF THE DISCLOSURE

A portable cabinet is provided with a pair of pivotally adjustable and removable support members which aid in positioning the cabinet at certain desired angles. When the support members are affixed to the forward base corners of the cabinet and rotated to their extended position, the cabinet is tilted slightly backward when disposed upon a horizontal support, and when similarly affixed to the rearward base corners, the cabinet is tilted forward. Alternatively, the support members may be rotated to a non-extended position to level the cabinet.

BACKGROUND OF THE INVENTION

This invention has to do with portable cabinet structure, and more particularly with improvements in support structure which aids in positioning cabinets, for example those used to house television receivers, at an optimum viewing angle.

Portable television receivers are viewed in a variety of locations, and it is not always possible to have at hand a suitable support such as a table, a chair or the like that is at the proper height for comfortable viewing. For such reason, it has been found desirable to have some means for tilting the cabinet either forward or backward, as the case may be, to optimize the viewing angle. Further it has been found desirable that any such means for tilting be readily storable and adjustable without detracting from the appearance and portability of the receiver.

It is an objective of this invention to provide such means as is outlined above for enhancing the viewing of a television receiver in a variety of locations.

SUMMARY OF THE INVENTION

The invention contemplates provision, in a portable cabinet, for example the cabinet of a television receiver, of a pair of adjustable support members which may be removably and hingedly affixed to the forward base corners of the receiver cabinet and rotated between stored and extended position, whereby the cabinet may be respectively leveled or tilted slightly backward. The same support members are adapted for removable and hinged attachment to the rearward base corners, to provide for tilting of the cabinet forward. In further particular accordance with the invention, it is contemplated that such support members comprise flexible and resilient, generally U-shaped members having leg end portions insertible into suitably provided apertures on the bottom of the receiver cabinet for resilient retention in such apertures, while permitting pivotal movement thereof between stored and extended positions. Advantageously, each of the leg end portions includes especially shaped and positioned stop members that cooperate with cabinet structure adjacent the apertures to hold the support members in either their stored or extended positions.

The manner in which the foregoing as well as other objectives of the invention may best be achieved will be understood from a consideration of the following description taken in light of the accompanying drawing.

BRIEF DESCRIPTION OF THE DRAWING

FIG. 1 is a perspective showing of portable television cabinet structure embodying the invention;

FIG. 2 is a side elevational showing of the structure illustrated in FIG. 1, and with support members thereof positioned to provide for tilting of the cabinet rearwardly from the position thereof shown in broken lines to the position shown in full lines;

FIG. 3 is a view similar to FIG. 2, but with the support members positioned to tilt the cabinet forwardly;

FIG. 4 is a perspective showing, on a larger scale, of the bottom right rear corner of the cabinet as illustrated in FIG. 3, with parts removed and broken away for clarity of illustration, and with a portion shown in broken lines to illustrate operational features of the invention; and

FIG. 5 is a detailed view, partly in section, of the support member located generally as seen in FIGS. 3 and 4 and illustrating its cooperative relationship with the cabinet structure.

DESCRIPTION OF THE PREFERRED EMBODIMENT

With more detailed reference to the preferred embodiment shown in the drawing, and first to FIGS. 1, 2 and 3, a television receiver cabinet **10** of the portable type includes the usual top, side, rear, and bottom wall portions **11**, **12**, **13** and **14**, respectively, and a front wall portion **15** including a relatively large, mask-defining opening for a viewing screen **16** of a cathode ray tube. A decorative grill **18** covers a relatively small opening (not shown) disposed in the front wall for registry with a conventional loudspeaker (also not shown). Additional elements of the receiver include a knob **17** for the usual channel selector, and various other manual control elements such as are normally associated with a television receiver, and designated generally by the number **21**.

With further reference to FIGS. 1, 2 and 3, and also to FIGS. 4 and 5, the invention is directed especially to the construction of the bottom wall portion **14** of cabinet structure **10**, and the support means associated therewith. As is illustrated to advantage in FIGS. 2 and 3, bottom wall portion **14** preferably is provided with fixed support members **22** and **23** located, respectively, at the lower front and rear corners of the cabinet. These fixed support members **22** and **23** provide for level positioning of the cabinet (broken lines, FIGS. 2 and 3), as will be the case under normal viewing conditions. The present invention recognizes that level positioning of the cabinet is not always suitable to a viewer of screen **16** and, for that reason, novelly constructed, pivotally adjustable legs or members **24** are provided for tilting the receiver cabinet either rearwardly (FIG. 2, full line showing) or forwardly (FIG. 3, full line showing), as may be desired.

With further reference to FIGS. 4 and 5, each support member **24** comprises a generally U-shaped element having flexible and resilient leg portions **25** interconnected by a loop portion **28** of relatively thin cross section in its central portion. Leg portions **25** include generally disk-shaped end portions **31** insertible into a suitably provided pair of spaced apertures **26** on the bottom wall portion **14** of the receiver cabinet, for resilient retention in apertures **26**, while permitting pivotal movement thereof between stored and extended positions. A member molded from a synthetic resin such as nylon has been found to exhibit the desired degree of flexibility and resilience while affording the desired structural rigidity. End portions **31** of leg portions **25** include especially shaped and positioned stop members **27** that cooperate with regions of the bottom wall portion **14** adjacent apertures **26** to aid in locat-

ing the support members 24 in the apertures in either their stored position (broken lines, FIG. 5) or their extended position (solid lines, FIGS. 2 to 4). The stop members 27 comprise generally trapezoidal sections having points of convergence of two sides generally coincident with the axis of disk-shaped end portions 31, and also with the axis of rotation of a member 24. Stop members 27 are so shaped to prevent damage thereto from compressive and shear forces developed therein when they are urged against bottom wall 14 of members 24. When the ends 31 of leg portions 25 are flexed toward one another, to the broken line positions designated 31*a* (FIG. 4), the stop members 27 are insertible past the edges of the pair of apertures 26 provided in the bottom of the cabinet. It will be appreciated that flexure is enhanced by the relative thinness of the section presented by loop portion 28. After insertion, the leg portions are released and stop members 27 resiliently are urged over the inner edges of the wall portion 14 defining the apertures 26, thereby to retain support member 24. Further insertion of the leg members is prevented by shoulder surfaces 29 of each leg portion 25 that abuttingly engage the lower surface of bottom wall 14 adjacent apertures 26. As best seen in FIG. 5, these same surfaces 29 include portions that are substantially parallel to one surface 27*a* of each of the trapezodial stop members 27, and are spaced therefrom by approximately the thickness of the bottom wall 14. It will be appreciated that stop members 27 are of substantial axial extent relative to leg end portions 31, whereby an effective and durable load bearing surface is presented by side surface 27*a* for engagement with wall portion 14. Advantageously, for each leg member 24 stop members 27 provide stops both in the retracted position, as provided by surface 27*a* and in the extended position, as provided by surface 27*b*. In the extended position, a member 24 is angularly positioned with respect to the plane of the bottom wall portion 14, by virtue of the cooperable dispositions of the parallel surfaces 27*a* of stops 27 and surfaces 29, so that the weight of the cabinet on a supporting surface will urge and hold the support member in this position. By virtue of the reduced section of loop portion 28, it presents a pair of support pads to a supporting surface, thereby tending to compensate for slight irregularities in a supporting surface.

In FIGS. 3, 4 and 5 support members 24 are shown in apertures 26 provided in the vicinity of the rear corners of cabinet 10. For convenience of illustration, the angularity between the bottom wall 14 and the supporting surface has been slightly exaggerated. Should it be desired to move them to the front corners, as is illustrated in FIG. 2, it is only necessary to flex the leg portions 25 of a support member 24 toward one another, e.g. to position 31*a*, FIG. 4, an amount sufficient for the laterally outwardly projecting stop members 27 to clear the respective outer edges of apertures 26. This is followed by removal of the support members, rotation through 180°, and reinstallation in similar apertures 26 (FIG. 5) provided near the front corners of the cabinet.

When support members 24 are in their retracted positions, as illustrated in broken lines in FIG. 5, it will be appreciated that they are hidden from view and do not interfere with the portability of the cabinet. Moreover, members 24 can be stored in either the front corner apertures 26 or the rear corner apertures 26, as may be desired. It will be apreciated further that unused apertures 26 serve as cooling vents, in addition to the vent slots illustrated and designated by numerals 19.

To facilitate pivotation of a support member 24, and to prevent its over-extension into an aperture while it is being pivoted, semi-cylindrical tabs 30 (FIGS. 4 and 5) are provided on bottom wall 14 adjacent the outer edges of each aperture 26 of a pair. The curved surface of a tab 30 presents a bearing surface to a portion of shoulder 29 in achievement of this function.

From the foregoing it will be appreciated that the present invention provides simple and inexpensive apparatus for enhancing the viewing of a television receiver in a variety of locations.

We claim:

1. In apparatus for supporting a cabinet, such as the cabinet of a portable television receiver, selectively in horizontally or angularly disposed positions, said cabinet including a generally planar, horizontally extending bottom wall portion having at least a pair of adjacent slotted apertures disposed toward an edge of said wall portion spaced rearwardly of the viewing screen of the receiver, the improvement comprising: at least one generally U-shaped member having flexible and resilient leg portions capable of being flexed toward and away from one another for insertion in said apertures and resilient retention therein, said member while so retained being mounted for pivotal movements between stored and extended positions; each said leg portion including stop means cooperably engageable with the cabinet structure adjacent said apertures to position said member in the apertures in either its stored or its extended positions.

2. Apparatus according to claim 1, and further characterized by the inclusion of fixed support leg means for said cabinet, and in that in the recited extended position said U-shaped member presents a cabinet support portion disposed beyond the plane within which the support portions of the leg means are positioned, whereby to provide tilted position of said cabinet, and when in stored position said U-shaped member is disposed to accommodate level support of said cabinet by said fixed leg means.

3. Apparatus according to claim 1, in which said improvement is further characterized in that each said leg portion of said U-shaped member includes a generally disk-shaped portion extending into one of said apertures, said stop means comprising lateral projections including divergent wall sections having a line of intersection substantially coaxial with said disk-shaped portion, said U-shaped member being rotatable about the mentioned axis, whereby one of said divergent wall sections engages said cabinet wall portion to establish either the stored or the extended position of said U-shaped member.

4. Apparatus according to claim 3, and further characterized in that each said divergent wall section is positioned to engage said cabinet wall portions substantially frontally.

5. Apparatus according to claim 4, and further characterized by the inclusion of fixed support means including cabinet-supporting surface portions disposed in a plane for establishing level support of said cabinet, and in that a pair of U-shaped members are provided, one being disposed in the region of each of a pair of the recited support means, said U-shaped members when in their extended position presenting a support disposed beyond the plane of the recited supporting surfaces of said fixed support means, whereby to provide tilted position of said cabinet, and said U-shaped members when in their stored position accommodating level support of said cabinet by supporting surface portions of said fixed support means.

6. Apparatus according to claim 1, and further characterized by the inclusion of an additional pair of adjacent slotted aperatures in said bottom wall portion, spaced from said first recited pair in the direction of spacing between the latter and said viewing screen, said U-shaped member being removable from the first recited pair of apertures, upon flexure of said leg portions toward one another, and insertable in said additional pair of apertures as recited, said U-shaped member in said first recited apertures providing for tilted support of said cabinet in one direction, and in said additional aperatures providing for tilted support of said cabinet in the opposite directon.

7. For use in supporting cabinet structure selectively in at least a raised and a lowered position on a generally horizontal supporting surface structure, and wherein such cabinet structure includes a generally horizontal bottom

wall portion having paired, substantially parallel slotted apertures extending thereinto, cabinet support means for releasable and pivotal association with such apertures, each comprising: a generally U-shaped member having leg portions that are flexible and resilient and capable of being flexed toward and away from one another, and a loop portion that presents a supporting structure-engaging section, end regions of each said leg portion including a pair of stops spaced along the length of each said leg portion, the end-most stops being insertable through such apertures upon flexure of said leg portions toward one another, and thereafter resiliently movable over surface portions of such wall portion upon release of said leg portions, the other stops being positioned to engage lower regions of such wall portion adjacent the apertures, each said pair of stops on a leg portion being cooperably positioned relative to such wall portions to establish and maintain an extended cabinet supporting position of the support means, said support means being pivotable from such extended position to a stored position.

8. Cabinet support means according to claim **7**, and further characterized in that said end regions of said leg portions comprise generally disk-shaped members, the polar axes of which are substantially coincident with the axis of pivotation of said support means, in that said end-most stops comprise wedge-shaped members extending laterally from said disk-shaped members and having lateral surfaces defining vertices extending along a line substantially coincident with the polar axes of said disk-shaped members, and in that the other stops comprise laterally extending surface defining means substantially parallel with one of the lateral surfaces of each of the wedge shaped members, the recited parallel surfaces of said stops being spaced one from the other a distance substantially the thickness of such bottom wall portion and disposed with angularity as respects the axis of extension of said support means.

9. Cabinet support means according to claim **8**, and

characterized further in that it is comprised of a molded synthetic resin.

10. Cabinet support means according to claim **7**, and further characterized in that said loop portion comprises a central region of relatively restricted cross-sectional area, and in that the structure-engaging section comprises the sections of said loop portion to either side of said restricted area.

11. In combination, a portable television receiver cabinet including a generally vertically extending forward wall provided with a viewing screen and a generally horizontal bottom wall portion, said bottom wall portion having first and second aperture means, said first aperture means being in the region of an edge adjacent the forward wall and said second aperture means being disposed toward an edge spaced rearwardly of the recited first aperture, and at least one leg member resiliently and removably retained in one of said aperture means, and pivotal between an extended, cabinet supporting position and a stored position, said leg member being removable from the recited aperture means and insertable in the other aperture means for movements therein between extended and stored positions.

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U.S. Cl. X.R.

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