Jan. 7, 1947. D. H. L. JENSEN ET AL 2,413,922

TELEVISION APPARATUS

Filed Oct. 28, 1943

FIG. 1.

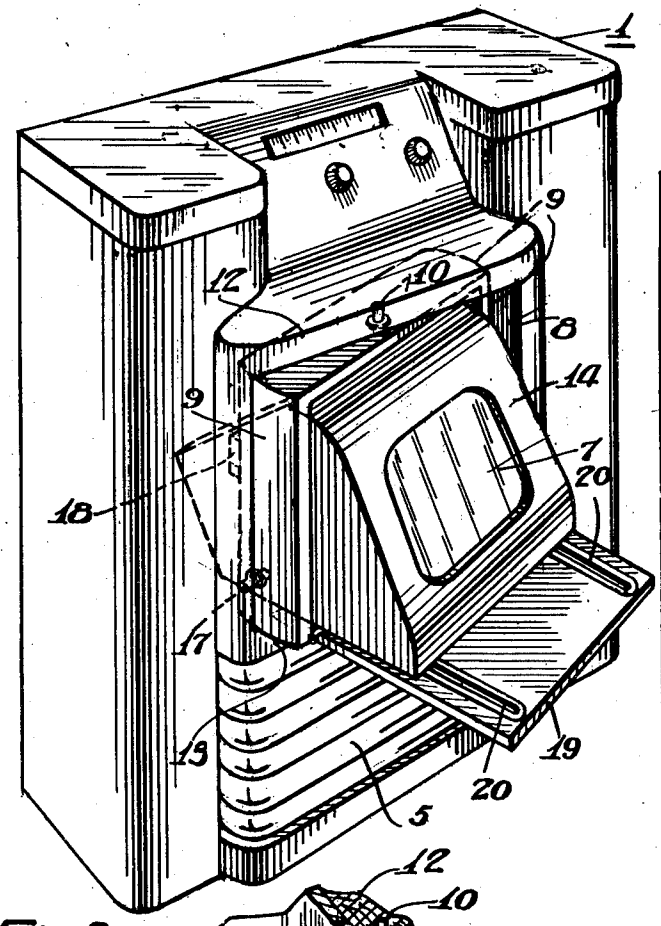


FIG. 2.

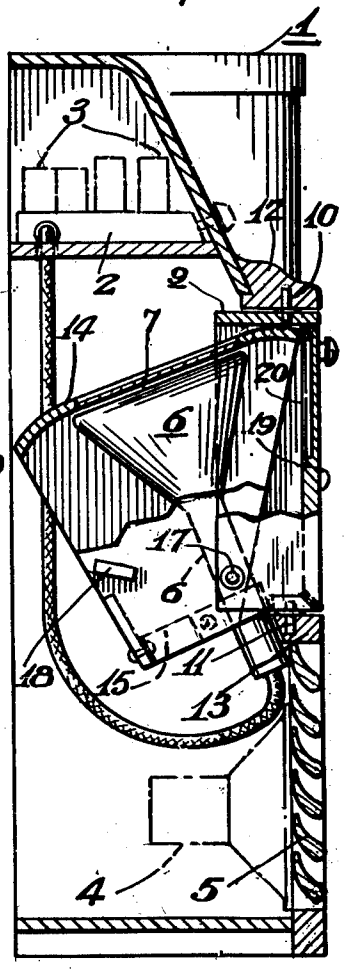
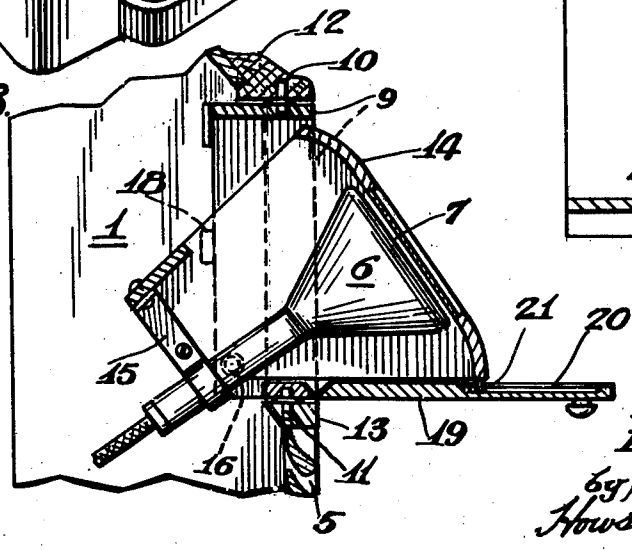


FIG. 3.



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UNITED STATES PATENT OFFICE

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TELEVISION APPARATUS

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12 Claims. (Cl. 178—7.5)

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This invention relates to novel television receiving apparatus, and more particularly to a novel cabinet type apparatus of this class wherein the picture reproducing device is normally disposed within and concealed by the cabinet, and is movable at will to an accessible or viewing position. The present invention is in the nature of an improvement upon that disclosed and claimed in a copending application of Emil I. Harman, Serial No. 420,118, filed November 22, 1941, now Patent No. 2,350,889, issued June 6, 1944.

In the said Harman application, there is disclosed a television receiver comprising a cabinet, a picture tube of greater length than the depth of said cabinet, and means for mounting said tube in the cabinet so that it is movable between an inoperative position in which it is wholly within the confines of the cabinet and an operative position in which it extends through a wall opening of the cabinet for direct viewing of the tube's image screen. Such an arrangement permits the use of a cabinet having a relatively shallow depth and at the same time provides for direct viewing of the image screen. It also has other advantages, as set forth in the said Harman application.

By the present invention, there is provided a television receiver of the type disclosed in the said Harman application, in which novel provision is made for positionally adjusting the picture tube when it is in its operative position above mentoned, so as to enable direct viewing of the tube's image screen from different points of observation. More particularly, the picture tube is pivotally mounted upon a frame-like support for movement between inoperative and operative positions, and the said support is pivotally mounted within the cabinet so as to enable positional adjustment of the picture tube when the latter is in its operative position.

The principal object of the present invention, therefore, is to provide an improved television apparatus of the type disclosed in the said Harman application, embodying novel means whereby the picture tube may be positioned at the will of the user for viewing of its image screen from different points of observation.

A more specific object of the invention is to provide a novel television receiver in which a picture tube of greater length than the depth of the cabinet is pivotally mounted on a support for movement between an inoperative position wholly within the confines of the cabinet and an operative position extending through a wall

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opening of the cabinet, and in which the said support is pivotally mounted to permit positional adjustment of the picture tube when the latter is in its operative position, so as to enable viewing of the tube's image screen from different points of observation.

The invention may be clearly understood by reference to the accompanying drawing, in which

Fig. 1 is a perspective view of the novel television apparatus, showing the picture tube in its operative position and adjusted to permit viewing of its image screen from a desired point of observation;

Fig. 2 is a vertical sectional view taken centrally through the apparatus and showing the picture tube in its inoperative position wholly within the confines of the cabinet; and

Fig. 3 is a fragmentary vertical sectional view showing the picture tube in its operative position.

Referring more particularly to the drawing, there is shown a cabinet 1 which is adapted to house the usual television receiver components, as shown in Fig. 2. By way of example, the receiver chassis 2 carrying tubes and other elements designated 3 may be mounted in the upper part of the cabinet, and the loud speaker 4 may be disposed in the lower part of the cabinet behind a stationary grille 5. The cabinet is preferably of shallow depth less than the length of the cathode ray picture tube 6 which has an image screen at its enlarged end 7.

The cabinet has an opening 8 in its front wall through which the tube 6 is adapted to extend when in operative position, as shown in Figs. 1 and 3. Within the opening 8, and in accordance with the present invention, there is arranged a frame-like member 9 which is mounted on a pair of vertically aligned pivots 10 and 11 carried by stationary portions 12 and 13, respectively, of the cabinet. Thus the frame-like member 9 is arranged for rotational movement about a vertical axis.

The picture tube 6 is mounted within a housing 14, for example by means of a bracket 15. The unit comprising the picture tube and its housing is mounted on horizontally aligned pivots 16 and 17 carried by the frame-like member 9. Thus, the picture tube unit is arranged for movement about a horizontal axis from its inoperative position, as shown in Fig. 2, to its operative position, as shown in Fig. 3. In the latter position, the picture tube unit extends through its supporting frame 9 exteriorly of the cabinet. Stop means 18 in the form of projections or abutments on the picture tube housing 14 serve to limit the

forward movement of the picture tube unit by abutment with the supporting frame 9, as shown in Figs. 1 and 3.

A panel 19 is hingedly attached to the bottom of frame 9 and is movable between closed and open positions as shown. In its closed position, this panel serves to close the front opening 8. A lost-motion connection is provided between the picture tube unit and the said panel so that the latter serves additionally as a means for moving the tube unit between its inoperative and operative positions. By way of example, the lost-motion connection may take the form of a pin and slot connection as illustrated. Thus the panel 19 may be provided with slot-like tracks 20, and the picture tube unit may be provided with pin-like elements 21 which are movably retained by the tracks 20. As the panel is moved between its closed and open positions, the elements 21 move in their respective tracks.

Normally, the parts are disposed in the position shown in Fig. 2 and the picture tube unit is wholly concealed within the cabinet. When it is desired to use the apparatus, the user simply opens panel 19 which moves the picture tube to its operative position shown in Fig. 3. Thereafter, the user may move the picture tube laterally or horizontally merely by moving the entire assembly carried by the frame 9. This may be done most conveniently, simply by moving the panel 19 to the right or left. In this manner, the user may position the picture tube for viewing from a desired point or location.

It will be seen that the present invention provides an apparatus of the type shown in the aforementioned Harman application with all of the advantages thereof, and which in addition enables lateral adjustment of the picture tube for viewing the same from different points or locations. Thus, the invention enables viewing of the image screen within a wide angle without necessitating any change in the position of the cabinet.

It will be understood, of course, that the invention is not limited to the specific apparatus shown but is capable of various modifications within the scope of the appended claims.

We claim:

1. In a television apparatus, a cabinet, a picture tube having an image screen, a vertically-disposed frame for supporting said tube in a position for direct viewing of said screen, and means pivotally mounting said frame on said cabinet for rotation about a substantially vertical axis so as to enable positioning of said tube for viewing of said screen from different points of observation.

2. In a television apparatus, a cabinet, support means in said cabinet mounted for rotation about a substantially vertical axis, and a picture tube of greater length than the depth of said cabinet mounted on said support means for rotation about a substantially horizontal axis, means whereby said picture tube is movable by reason of its said mounting between an inoperative position wholly within the confines of the cabinet and an operative position extending through a wall opening of the cabinet, and means whereby said tube when in its operative position is positionable by rotation of said support means for viewing from different points of observation.

3. In a television apparatus, a cabinet, a supporting frame mounted in said cabinet for rotation about a substantially vertical axis, and a picture tube of greater length than the depth of said cabinet mounted on said frame for rotation about a substantially horizontal axis, means whereby said picture tube is movable by reason of its said mounting between an inoperative position wholly within the confines of the cabinet and an operative position extending through a wall opening of the cabinet, and means whereby said tube when in its operative position is positionable by rotation of said frame for viewing from different points of observation.

4. In a television apparatus, a cabinet having an opening in a wall thereof, support means mounted in said cabinet in cooperative relation with said opening for rotation about a substantially vertical axis, a panel hingedly attached to said support means and normally closing said opening, a picture tube unit of greater length than the depth of said cabinet mounted on said support means for movement between an inoperative position wholly within the confines of the cabinet and an operative position extending through said opening, means interconnecting said picture tube unit with said panel for moving the picture tube unit between the said positions in response to movement of said panel, and means whereby said picture tube unit when in its operative position is positionable by rotation of said support means for viewing from different points of observation.

5. In a television apparatus, a cabinet having an opening in a wall thereof, a supporting frame mounted in said cabinet in cooperative relation with said opening for rotation about a substantially vertical axis, a panel hingedly attached to said frame and normally closing said opening, a picture tube unit of greater length than the depth of said cabinet mounted on said frame for movement between an inoperative position wholly within the confines of the cabinet and an operative position extending through said opening, means interconnecting said picture tube unit with said panel for moving the picture tube unit between the said positions in response to movement of said panel, and means whereby said picture tube unit when in its operative position is positionable by rotation of said frame for viewing from different points of observation.

6. In a television apparatus, a cabinet having an opening in a wall thereof, a supporting frame mounted in said cabinet in cooperative relation with said opening for rotation about a substantially vertical axis, a panel hingedly attached to said frame and normally closing said opening, a picture tube unit of greater length than the depth of said cabinet mounted on said frame for movement between an inoperative position wholly within the confines of the cabinet and an operative position extending through said opening, lost-motion connecting means between said picture tube unit and said panel for moving the picture tube unit between the said positions in response to movement of said panel, and means whereby said picture tube unit when in its operative position is positionable by rotation of said frame for viewing from different points of observation.

7. In a television apparatus, a cabinet having an opening in a wall thereof, a supporting frame mounted in said cabinet in cooperative relation with said opening for rotation about a substantially vertical axis, a panel hingedly attached to said frame and normally closing said opening, a picture tube unit of greater length than the depth of said cabinet mounted on said frame for movement between an inoperative position wholly within the confines of the cabinet and an operative position extending through said opening, stop

means on said picture tube unit engageable with said frame to fix the operative position of the picture tube unit, lost-motion connecting means between said picture tube unit and said panel for moving the picture tube unit between the said positions in response to movement of said panel, and means whereby said picture tube unit when in its operative position is positionable by rotation of said frame for viewing from different points of observation.

8. In a television apparatus, a cabinet having an opening in a wall thereof, movable support means in said cabinet arranged cooperatively with said opening, a pair of vertically aligned pivots supporting said means for rotation about a vertical axis, a panel hingedly attached to said support means and normally closing said opening, a pair of horizontally aligned pivots on said support means, a picture tube unit of greater length than the depth of said cabinet mounted on said last-named pivots for movement between an inoperative position wholly within the confines of the cabinet and an operative position extending through said opening, means interconnecting said picture tube unit and said panel for moving the picture tube unit between the said positions in response to movement of said panel, and means whereby said picture tube unit when in its operative position is positionable by rotation of said support means for viewing from different points of observation.

9. In a television apparatus, a cabinet having an opening in a wall thereof, a movable supporting frame in said cabinet arranged cooperatively with said opening, a pair of vertically aligned pivots supporting said frame for rotation about a vertical axis, a panel hingedly attached to said frame and normally closing said opening, a pair of horizontally aligned pivots on said frame, a picture tube unit of greater length than the depth of said cabinet mounted on said last-named pivots for movement between an inoperative position

wholly within the confines of the cabinet and an operative position extending through said opening, means interconnecting said picture tube unit and said panel for moving the picture tube unit between the said positions in response to movement of said panel, and means whereby said picture tube unit when in its operative position is positionable by rotation of said frame for viewing from different points of observation.

10. In a television apparatus, a cabinet, a picture tube of greater length than the depth of said cabinet, means pivotally supporting said tube for movement from a position wholly within the confines of the cabinet to a position in which the tube is projected outwardly from the cabinet, and additional means pivotally supporting said tube for movement when it is in the latter position so as to enable viewing of the picture from different points of observation.

11. In a television apparatus, a cabinet, a picture tube of greater length than the depth of said cabinet, means supporting said tube for movement between an inoperative position within the confines of the cabinet and an operative position in which the tube is partly withdrawn from the front of the cabinet for direct viewing, and additional means supporting said tube for further movement when it is in said operative position to enable viewing of the picture from different points of observation.

12. In a television apparatus, a cabinet, a picture tube normally positioned within said cabinet, and support means for said tube constructed and arranged both to enable movement of the tube to a viewing position in which the tube is at least partially projected outwardly from the cabinet and to enable additional movement of the tube, when in said projected position, for viewing of the picture from different points of observation.

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