Nov. 13, 1945. G. PATTERSON, JR 2,388,761

TELEVISION APPARATUS

Filed March 30, 1944 2 Sheets-Sheet 1

FIG. 1.

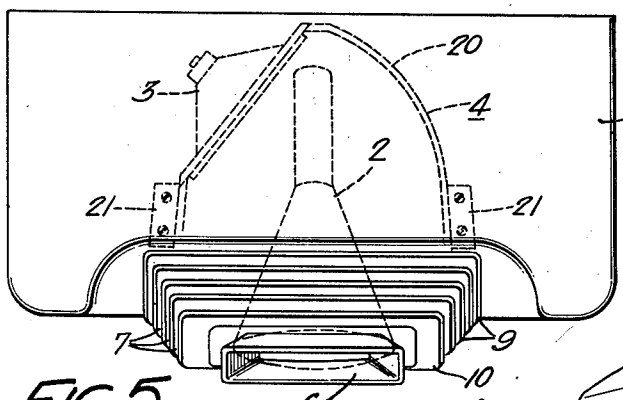


FIG. 3.

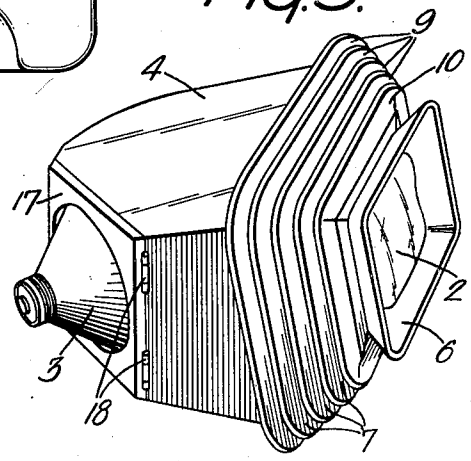


FIG. 5.

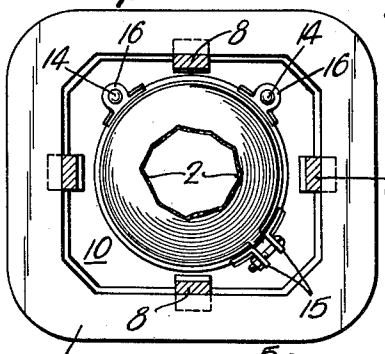
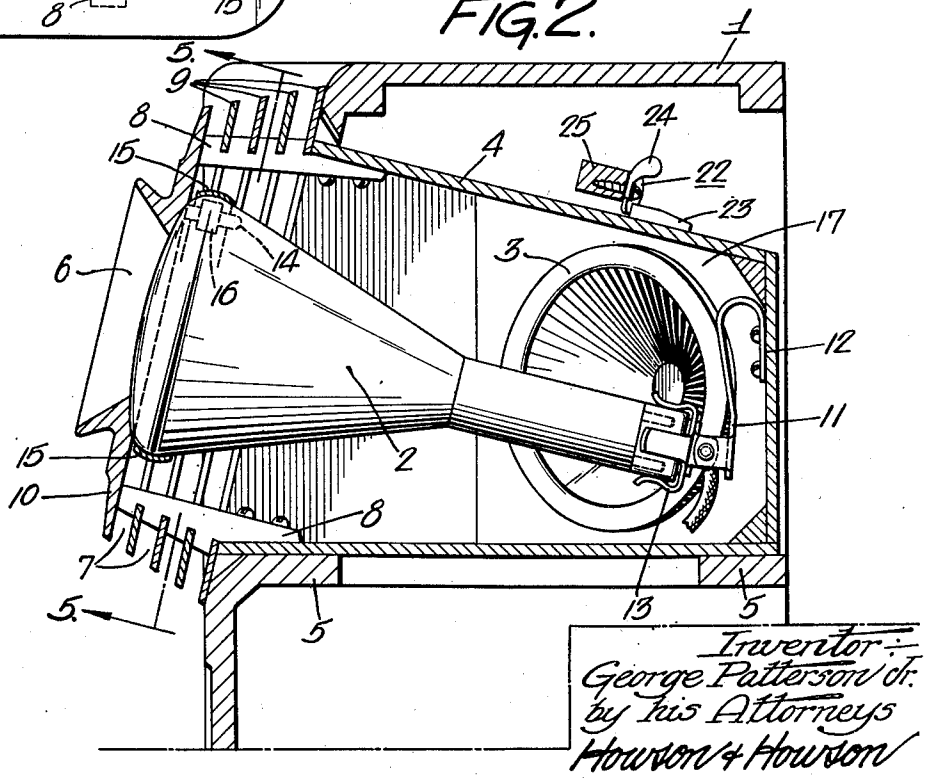


FIG. 4.



FIG. 2.



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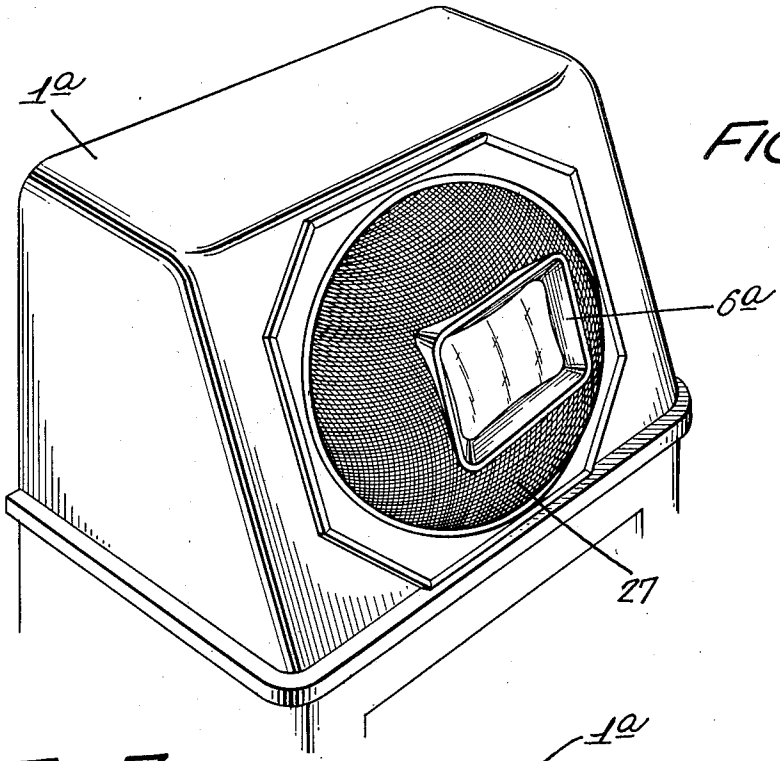
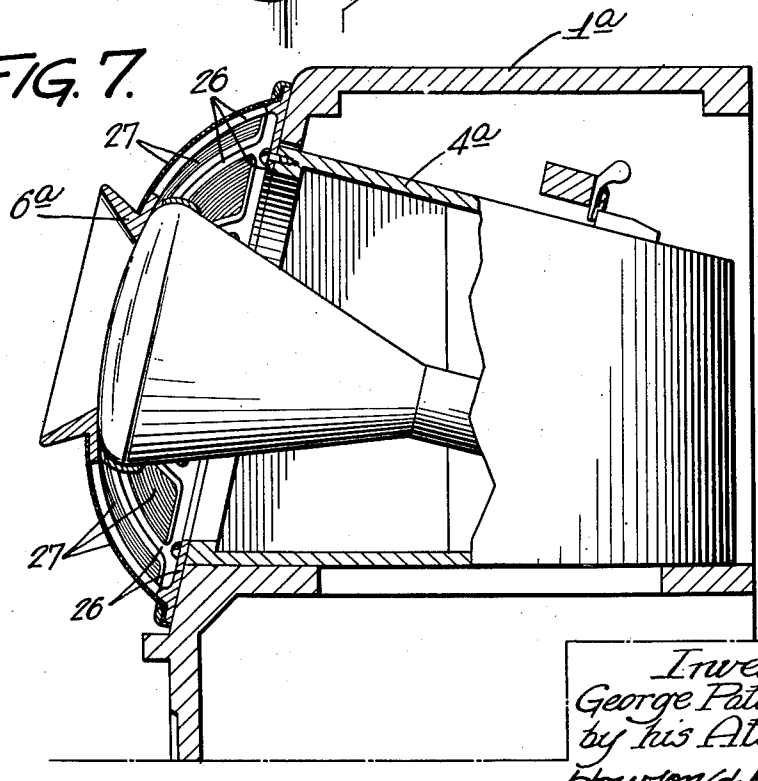


FIG. 6.

FIG. 7.



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UNITED STATES PATENT OFFICE

2,388,761

TELEVISION APPARATUS

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Application March 30, 1944, Serial No. 528,745

6 Claims. (Cl. 178—5.8)

This invention relates to sound and picture receiving apparatus, and more particularly to combined television and radio receiving apparatus.

The principal object of the invention is to improve the performance of such apparatus from the standpoint of the listening observer and to increase or enhance the enjoyment or entertainment derived by such observer.

In sound and picture receivers such as combined television and radio receivers, it has been the practice heretofore to separate the sound source, i. e., the loud speaker or sound reproducer, from the picture screen. Such practice has been the result of the thought, generally prevailing among those working in the art, that sound is secondary to sight in such an apparatus, and therefore it has been the general practice to locate the loud speaker or sound reproducer in any available location on the apparatus with little or no regard to close association of the sound source with the picture. Consequently, it has not been uncommon to have the sound source located somewhat remote from the picture or at least not very close thereto.

In such an apparatus it is highly desirable that the sound source be located as close to the picture as possible in order to give the impression that the sound is emanating from the images produced on the picture screen. With this in mind, it is one object of the present invention to provide a novel structure or arrangement in such an apparatus which is adapted to give the aforementioned impression.

Another object of the invention is to provide a novel sound and picture reproducing unit which effectively combines the sound and picture reproductions to produce the desired effect.

A further object of the invention is to provide a novel structure having desirable advantages in respect to compactness, manufacture and assembly of component parts of the apparatus.

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

Fig. 1 is a plane view of a combined television and radio receiver embodying the present invention;

Fig. 2 is a fragmentary sectional view of the upper portion of the receiver, taken along a centrally-located vertical plane;

Fig. 3 is a perspective view of the sound and picture reproducer unit provided by the present invention;

Fig. 4 is a fragmentary perspective view showing a detail of the said unit;

Fig. 5 is a sectional view taken along line 5—5 of Fig. 2;

Fig. 6 is a fragmentary perspective view of a modified form of the invention; and

Fig. 7 is a sectional view of the same, taken along a centrally-located vertical plane.

Referring first to Figs. 1 and 2, there is shown a cabinet 1, which is adapted to house the various parts of a combined television and radio receiver. This cabinet may take any suitable form, it being shown as a console type cabinet for the purposes of illustration. In accordance with the present invention, the television picture tube 2 and the radio loud speaker 3 are arranged in cooperative association, as described in detail hereinafter. Preferably, these elements are located in the upper portion of the cabinet 1, as shown most clearly in Fig. 2, and the other component parts of the apparatus are located in the lower portion of the cabinet. Since the present invention is not concerned with such other components, which are of conventional form and arrangement, it is unnecessary to illustrate or describe the same.

According to the preferred embodiment of the invention, the picture tube 2 and the loud speaker 3, which per se may be of conventional form, are mounted within a casing or housing 4 and constitute therewith a self-contained unit, as shown in Fig. 3. This unit is removably mountable within a cabinet 1, which has a horizontal shelf portion 5 (see Fig. 2) for supporting the said unit. At the front of the casing 4 there is provided a window constituted by the frame 6, and there is also provided a sound emission louver structure, designated generally by reference character 7, which extends about the window. More specifically, a plurality of supports 8 are secured to the body of casing 4 and extend outwardly from the front thereof, and these supports serve to hold the frame 6 and they also carry spaced baffles 9 of progressively varying size. A flange 10 on frame 6 also serves as a baffle plate, being the foremost baffle in the series, as shown clearly in Fig. 2. The construction is preferably such that the said baffles are inclined at an angle to the vertical when the casing 4 is disposed within the cabinet 1, as may be clearly seen in Fig. 2. It will be seen that the louver structure thus provided is adapted to emit sounds from the loud speaker 3 about the window area.

The picture tube 2 is disposed within the casing 4 with its screen end abutting against the rear of frame 6, so that its image screen is arranged at the window and is framed by the frame 6. The picture tube may be supported within the casing

4 in any suitable manner, but it is preferably supported so as to be readily removable from the casing as illustrated. As shown in Fig. 2, a resilient bracket 11 is secured at 12 to the rear vertical wall of casing 4 and carries a pivoted holder 13 provided with resilient fingers, which are adapted to grasp and hold the rear end of the picture tube and socket assembly. Secured to the upper part of frame 6 and projecting from the rear thereof are a pair of pins (Fig. 5), which serve to support the front or screen end of the picture tube. A removable ring clamp 15 is secured to the enlarged end of the picture tube and is provided with apertured lugs or ears 16, which are adapted to fit over the pins 14.

The loud speaker or sound reproducer 3 is mounted on a wall 17 of casing 4, and the said wall is hinged as at 18 (see Fig. 3) so as to serve as a door through which the picture tube may be inserted in the casing 4 or removed therefrom. Suitable latching means, as shown at 19 in Fig. 4, may be provided to maintain the hinged panel 17 in closed position.

The picture tube is inserted in place within the casing 4 by opening the doorlike panel 17 and then pressing the resilient member 11 rearwardly while inserting the picture tube so as to bring the apertured lugs 16 into engagement with pins 14. The rear supporting member 11 is then permitted to return to its normal position into engagement with the rear end of the picture tube. The tube may be removed at any time merely by reversing this process.

It will be noted that the panel 17 which supports the loud speaker 3 is located so as to dispose the loud speaker to one side of the picture tube near the rear portion thereof. The purpose of this arrangement is to minimize as far as possible the depth of the cabinet 1 and to make the apparatus more compact. Since the necessary depth of cabinet 1 is determined largely by the longitudinal dimension of the picture tube 2, it will be seen that the arrangement provided by the present invention does not materially increase the cabinet depth.

It will be noted further that the loud speaker is arranged so as to propagate sounds in the general direction of the sound emission openings. Moreover, the casing 4 is so constructed as to constitute an acoustic horn. To this end the walls of the cabinet are flared toward the front thereof and the wall 20 (see Fig. 1) opposite the loud speaker is curved. Consequently, the horn action of casing 4 amplifies the sounds from the loud speaker. It will be noted further that the sounds are emitted forwardly and outwardly about the image screen by reason of the baffles 9—10 and their progressive variation in size.

The cabinet 1 should, of course, be constructed so as to accommodate the sound and picture reproducing unit above described. As illustrated, the upper central portion of the cabinet front may be open to receive the said unit and the cabinet may be designed accordingly. When the said unit is placed within the cabinet proper, it becomes a part of the cabinet structure and blends ornamentally therewith. That is to say, the exposed portion of the unit, comprising the window 6 and the associated louver portion, becomes, to outward appearances, an integral part of the cabinet structure.

In order to properly locate the above described unit within the cabinet, a pair of guides 21 (see Fig. 1) may be provided within the cabinet, and a suitable latching mechanism, as shown at 22 in Fig. 2, may be utilized. Such mechanism may comprise an abutment 23 on the upper surface of casing 4 and a latch member 24 pivotally carried by a supporting member 25 mounted on the cabinet. The latch member 24 is readily accessible from the open rear of the cabinet.

In Figs. 6 and 7 there is illustrated a modified form of the invention in which the sound-deflecting baffles are eliminated, and the reproduced sounds are emitted directly. In this instance the frame 6a is supported by a grille 26 secured to the casing 4a and covered by a screen or cloth 27. The reproduced sounds are substantially unimpeded in passing through the cloth covered grille about the frame 6. Apart from the differences noted, the structure may be similar to the first-described embodiment.

From the foregoing description and the accompanying illustration, it will be seen that the invention provides a novel structure having the advantages hereinbefore mentioned, the principal feature being the effective combination of the sound and picture reproductions to give the impression that both are emanating from a single source. While certain preferred embodiments of the invention have been illustrated and described, it will be apparent that the invention is not limited thereto but is capable of various other embodiments or modifications.

I claim:

1. In a sound and picture receiver, a cabinet for housing the component parts of said receiver, an enclosure disposed horizontally within said cabinet, said enclosure having a window at the front thereof and sound emission openings about said window, a picture tube having an image screen mounted within said enclosure with said screen arranged at said window for observation, and a sound reproducer mounted on said enclosure and arranged to propagate sounds therethrough in the general direction of said openings, whereby to give the impression that the sounds are emanating from the images produced on said screen, said enclosure being shaped to constitute an acoustic amplifier.

2. In a combined radio and television receiver, the combination with a cabinet of a self-contained unit removably mounted within said cabinet, said unit comprising a casing extending horizontally from the front of said cabinet to the rear thereof, said casing having a window at the front thereof within view of an observer in front of said cabinet and also having openings adjacent said window, a television picture tube disposed in a generally horizontal position within said casing and having an image screen at said window for observation, and a sound reproducer attached to a wall of said casing and positioned so as to direct the reproduced sounds through said casing in the general direction of said openings.

3. An apparatus as defined in claim 2, wherein the sound reproducer is mounted on a side wall of said casing at one side of said picture tube, and said casing is shaped to constitute an acoustic amplifier.

4. An apparatus as defined in claim 2, wherein said picture tube is removably mounted within said casing, and said sound reproducer is mounted on a hinged panel of said casing, so as to enable removal of said picture tube by opening said panel.

5. In a combined radio and television receiver, the combination with an open-back cabinet of a casing disposed within said cabinet and extend-

ing from the front to the rear thereof, said casing having a window at the front thereof within view of an observer in front of said cabinet and also having openings adjacent said window, a television picture tube removably mounted within said casing and disposed in a generally horizontal position therein, said picture tube having an image screen at said window for observation, said casing having a hinged panel arranged to enable ready removal of said picture tube from the rear of said cabinet, and a sound reproducer mounted on said casing so as to direct the reproduced sounds therethrough toward said openings.

6. An apparatus as defined in claim 5, wherein said round reproducer is mounted on said hinged panel.

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