March 23, 1948. J. I. STEIN 2,438,256

TELEVISION CABINET

Filed April 27, 1945

Fig. 1.

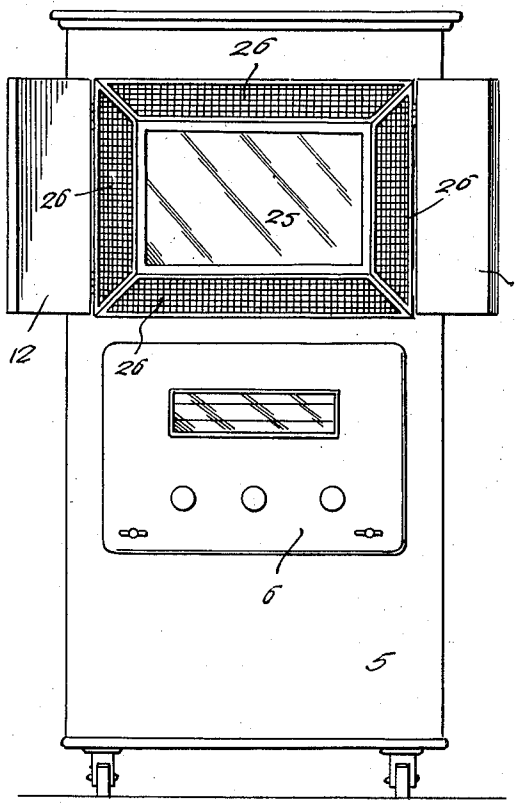


Fig. 2.

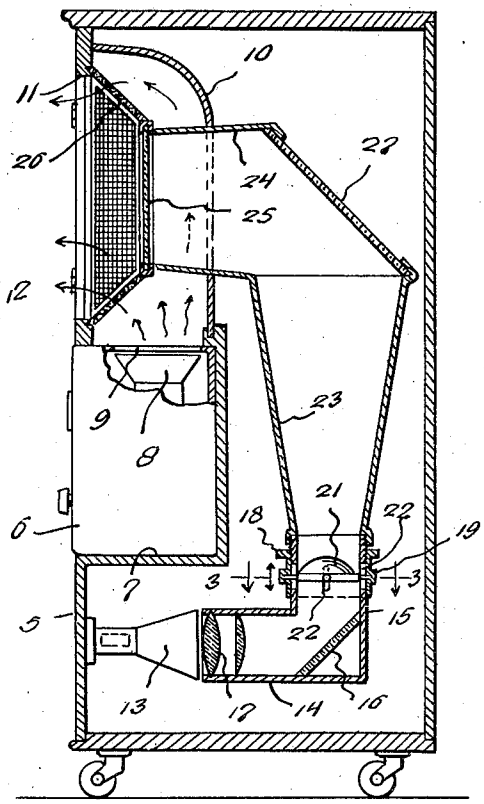
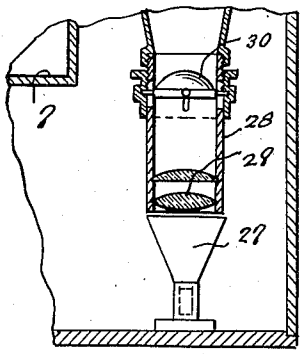


Fig. 4.



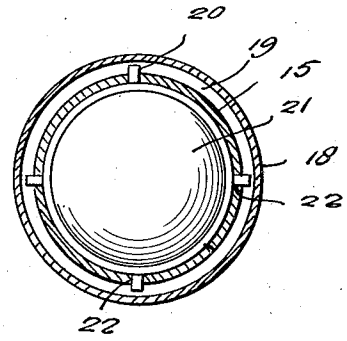


Fig. 3.

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TELEVISION CABINET

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2 Claims. (Cl. 178—5.8)

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The present invention relates to new and useful improvements in television cabinets, and more particularly to a cabinet construction of convenient size and shape adapted to conveniently include elements adapted to the presentation of a television image and the reproduction of the concomitant sound and to present a television picture screen in convenient view of an observer.

An important object of the invention is to provide a means for reproducing the television image on a screen in front of the cabinet together with means for projecting the sound waves accompanying the image at all sides of the screen so that the sound waves from a loud speaker mounted in the cabinet will be uniformly dispersed at all sides of the screen in which the screen is of maximum area for the cabinet size and the image projector is positioned the greatest distance from the screen permitted by the cabinet dimensions to provide the maximum image magnification between the projector and the screen.

A further object of the invention is to provide means for projecting images from the picture receiver at the lower portion of the cabinet upwardly and forwardly in the cabinet for projection on the screen mounted in the front of the cabinet.

A still further object of the invention is to provide magnifying lenses for the images together with adjustable means for said lens.

Another object is to provide an apparatus of this character of simple and practical construction, which is neat and attractive in appearance, relatively inexpensive to manufacture and otherwise well adapted for the purposes for which the same is intended.

Other objects and advantages reside in the details of construction and operation as more fully hereinafter described and claimed, reference being had to the accompanying drawing forming part hereof, wherein like numerals refer to like parts throughout, and in which:

Figure 1 is a front elevational view.

Figure 2 is a vertical sectional view.

Figure 3 is a fragmentary sectional view of the adjustable lens taken substantially on a line 3—3 of Figure 2, and

Figure 4 is a fragmentary vertical sectional view of a modified arrangement of the picture receiving end of the device.

Referring now to the drawing in detail, wherein for the purpose of illustration I have disclosed a preferred embodiment of the invention, the

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numeral 5 designates an elongated, generally rectangular cabinet having a front wall provided with an upper and a lower opening therein, a rear wall, side walls, a top and a bottom. A combined receiving and magnifying unit 6 is mounted in the lower front wall opening and includes a loud speaker 8 arranged to project the sound waves upwardly through an opening 9 in the top of the unit 6.

The opening 9 communicates with a chamber 10 in the upper front portion of the cabinet behind the upper opening 11 in the front wall of the cabinet, the opening 11 being adapted to be closed by hinged doors 12.

The lower front wall opening 7 is disposed above the bottom of the cabinet and a television image projector 13, of conventional construction, and including a cathode ray tube, is mounted in the lower portion of the cabinet below the opening 7. From the projector 13 a tube 14 projects horizontally rearwardly and terminates in a vertical extension 15 at its rear end.

A ground glass plate 16 is mounted at a 45° angle at the junction of the tube 14 with the vertical extension 15 and double plano-convex lenses 17 are mounted in the front end of the tube 14 behind the picture receiver 13 for converging images onto the ground glass plate 16.

The upper end of the extension 15 is externally threaded and adjustably receives an internally threaded collar 18, the collar having an internal annular groove 19 formed therein receiving pins or trunnions 20 projecting radially at the edges of a bull's-eye lens 21, the pins or trunnions being mounted for vertical adjustment in slots 22 in the side walls of the extension 15.

A flared tube 23 is threadedly attached at its lower end to the upper end of the extension 15 above the adjusting collar 18, the tube 23 extending vertically in the cabinet and communicates at its upper end with a forwardly extending horizontal tubular extension 24 of substantially rectangular shape in cross-section and having a television screen 25 mounted in its front end. The extension 24 projects through the rear wall of the chamber 10 and terminates substantially at the center thereof.

In order to place the television image projector at the greatest possible distance from the picture screen the screen is mounted in one end of the cabinet, the projector in the opposite end and the combined receiving and amplifying unit is mounted in the intermediate space between them. This necessitates carrying the light rays from the projector around the receiver from the

projector to the screen as the projector images are magnified in the distance between the projector and the screen.

A reticulated or apertured screen 26 preferably of foraminous material is connected at its inner edge to the top, bottom and sides of the screen 25 and is flared forwardly and connected at its outer edges to the opening 11 in the front of the cabinet.

An oblong mirror or reflector 27 is mounted at a 45° angle at the upper rear edge of the tube 23 and at the inner end of the forwardly projecting extension 24.

Accordingly, images from the picture-receiving unit 13 will be projected rearwardly in the tube 14 upon the ground glass plate 16 and then projected upwardly through the lens 21 onto the mirror 27 and then projected forwardly onto the screen 25. The lenses 17 and 21 magnify the images onto the screen and the lens 21 may be adjusted by means of the collar 18. There is thus provided an image reflecting and magnifying means extending from the projector to the screen and around the receiving and amplifying unit.

In Figure 4 of the drawing, the picture receiving unit 27 is shown supported in a vertical position immediately below the tube 28 having the fixed lenses 29 and adjustable lens 30 therein. Otherwise the construction is similar to that heretofore described.

Having thus described the invention, what is claimed is:

1. In combination, a generally rectangular cabinet, a receiving and amplifying unit in said cabinet between the end portions thereof disposed at the front of said cabinet, said cabinet having an opening in its front wall above said unit, a sound chamber in the cabinet behind the said opening and having communication with said unit, a picture screen mounted in said sound chamber with its edges spaced inwardly from the edges of said opening, a reticulated screen around said screen and inclined to the plane thereof to support said screen from said cabinet while passing sound waves therethrough, a television image projector in the bottom portion of said cabinet and a tubular passage connected at one end to the screen and connected at its other end to the picture receiver for projecting images from the picture receiver onto the screen.

2. A television cabinet including a sound receiver and a picture receiver mounted in the cabinet below the sound receiver, said cabinet having an opening in its front, a sound chamber in the cabinet, and rearwardly of the opening, a picture screen mounted in the sound chamber with its edges in spaced relation from the walls of the chamber and inwardly of the opening, a reticulated screen around the edge of the picture screen and inclined to the plane thereof and extending to the opening to support said screen from said cabinet, a tubular member extending from the picture receiver to the picture screen and including upper and lower horizontal portions and an intermediate vertical portion, said upper horizontal portion being connected to the picture screen and said lower horizontal portion being connected to the picture receiver, reflectors disposed angularly at the junction of the horizontal portions with the vertical portions, said vertical portion of the tubular member flaring outwardly and upwardly.

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