

Feb. 6, 1945.

J. K. ROSE

2,368,882

TELEVISION RECEIVER

Filed May 15, 1942

4 Sheets-Sheet 1

Fig. 1.

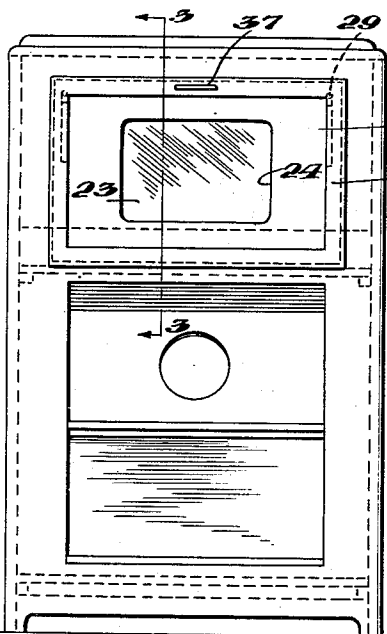


Fig. 2.

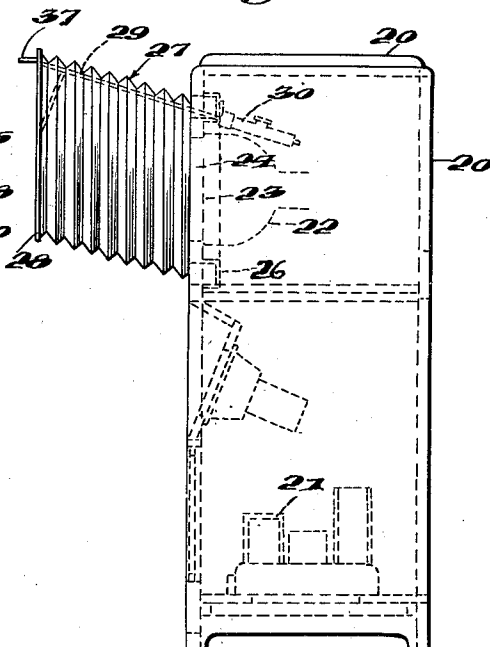


Fig. 3.

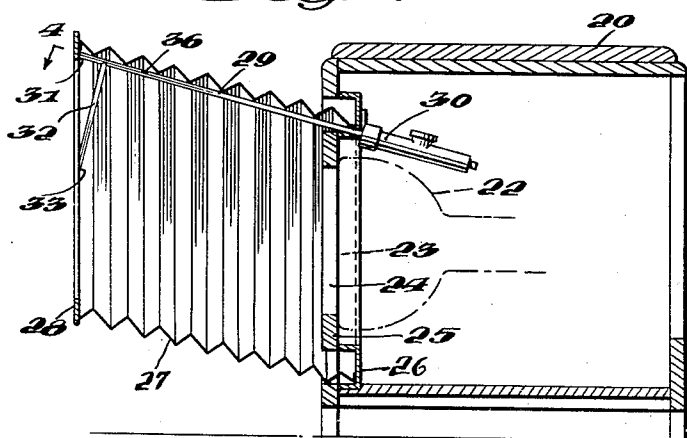


Fig. 5.

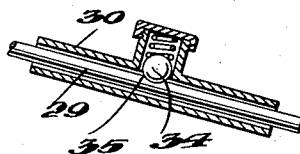
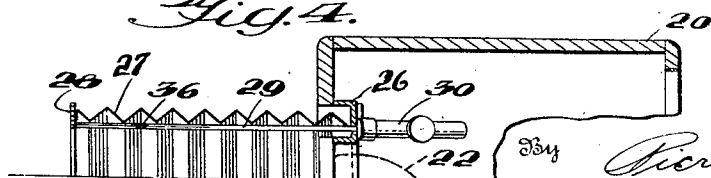


Fig. 4.



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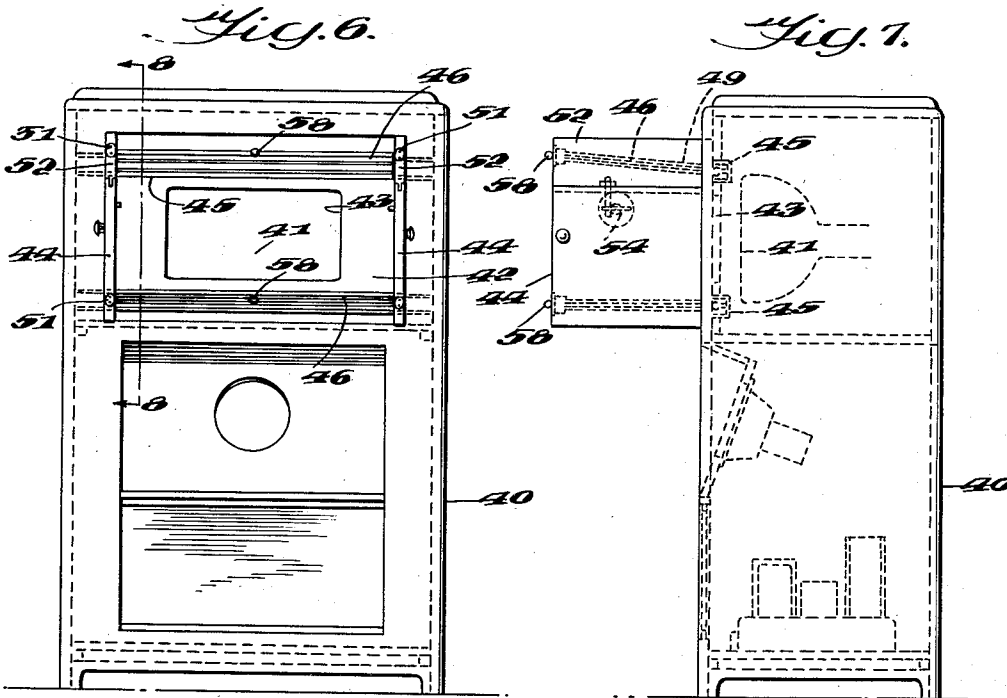
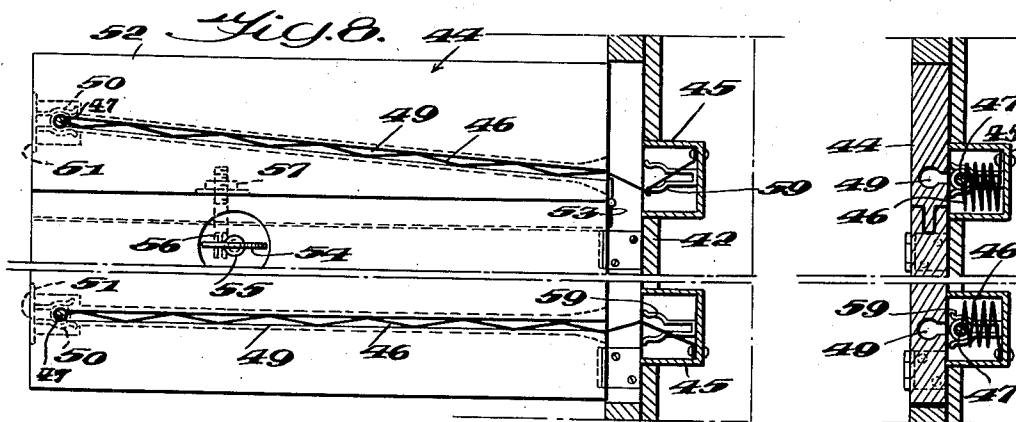
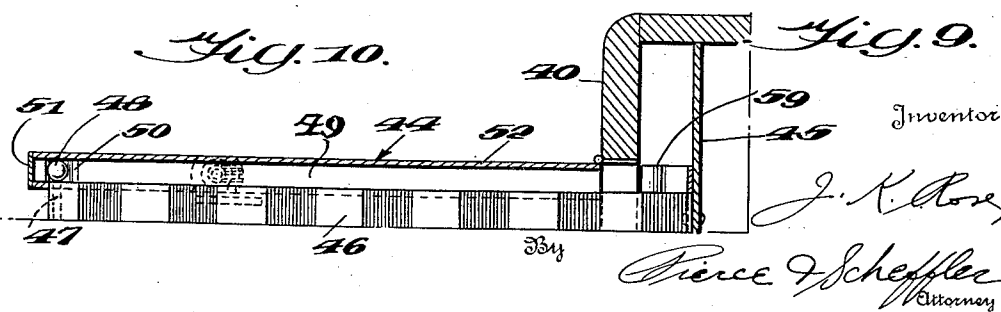
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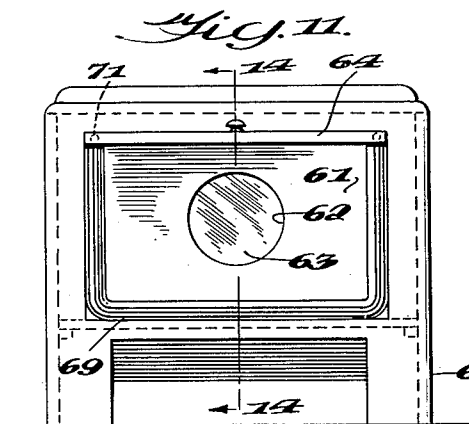
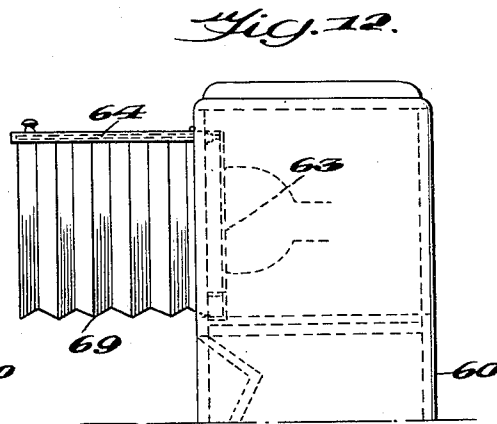
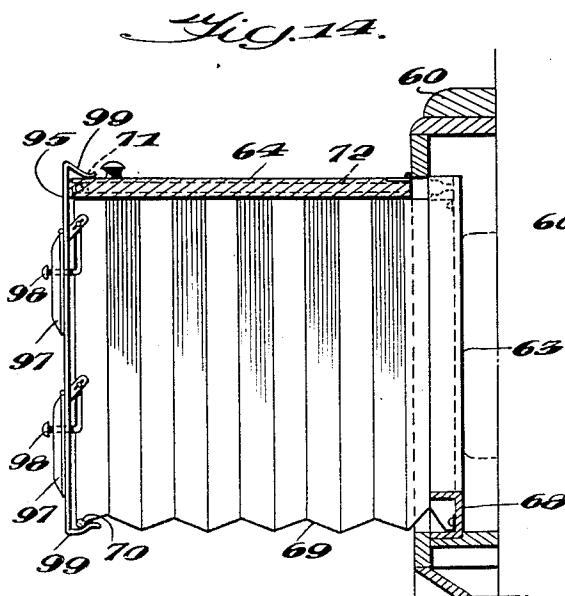
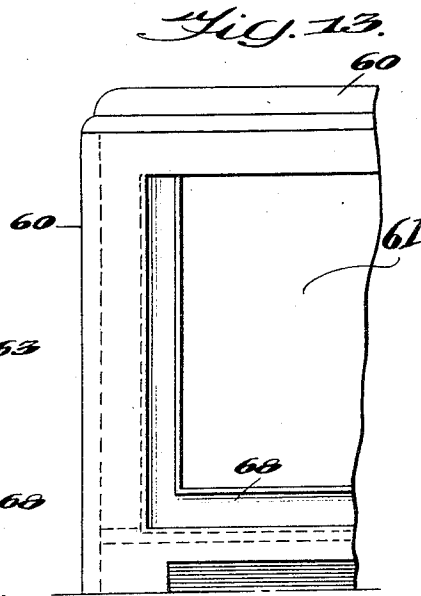
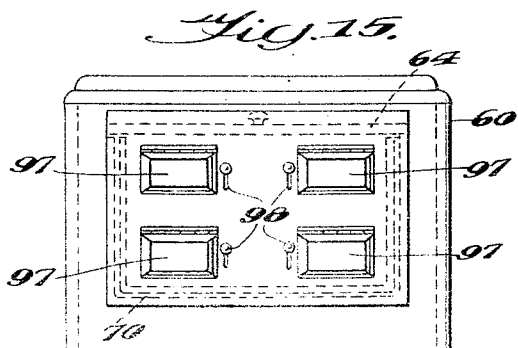
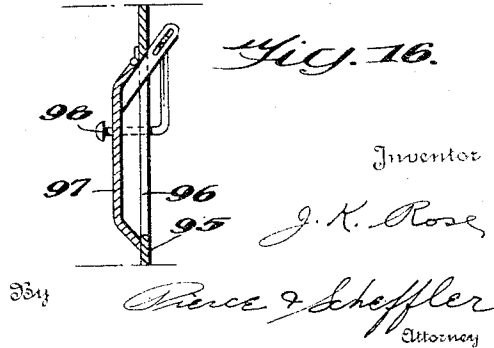
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2,368,882

TELEVISION RECEIVER

Filed May 15, 1942

4 Sheets-Sheet 3



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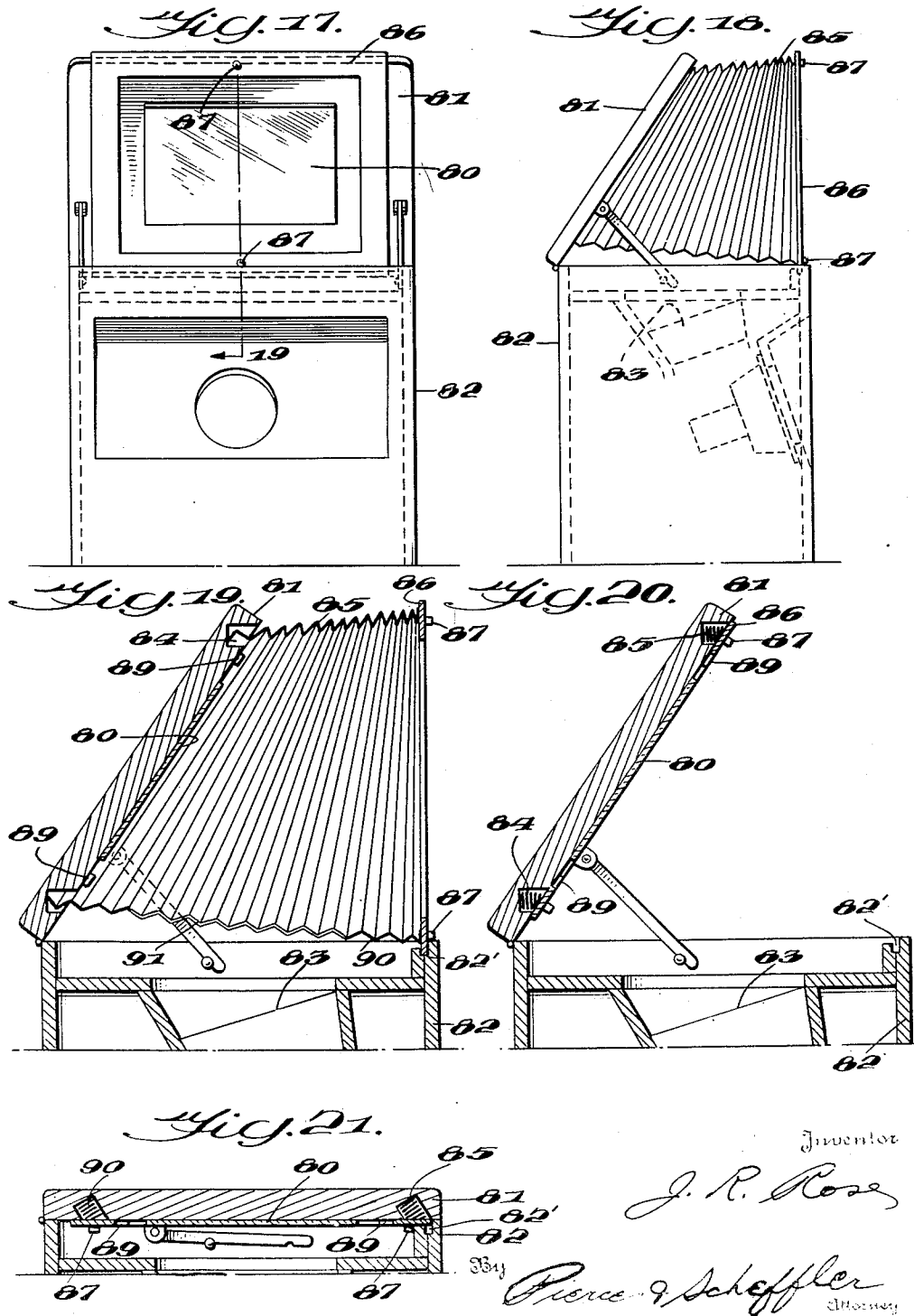
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UNITED STATES PATENT OFFICE

2,368,882

TELEVISION RECEIVER

Joseph K. Rose, Chicago, Ill.

Application May 15, 1942, Serial No. 443,104

11 Claims. (Cl. 178—7.5)

The present invention relates to television receivers of the type including an image producing member such as a cathode ray tube and an image exhibiting member which may or may not be a part of the tube itself, and more particularly to means in association with the exhibiting member for shielding the same from external light.

Objects of the invention are to provide television receivers that include a panel or frame surrounding the image exhibiting member, and an extensible light shield that may be collapsed into a recess of the panel bordering the image exhibiting member or may be extended to exclude external light from the image exhibiting member and thus afford a satisfactory view of the television image without darkening the room in which the receiver is located.

An object of the invention is to provide a television receiver including a cabinet having an image exhibiting member mounted therein, with a normally concealed extensible and light shield associated with the image exhibiting member which may be readily extended to provide a projecting shield effective to exclude external light from the screen when desired and which will not detract from the appearance of the cabinet when in the collapsed position.

Another object of the invention is to provide an extensible and collapsible light shield for the image exhibiting means of a television receiver which includes a door or the like serving as a closure for the exhibiting means when closed and as a support and part of the light shield when opened.

Another object of the invention is to provide a collapsible light shield for the picture exhibiting means of a television receiver which may be readily adjusted to the proper line of sight for the most satisfactory viewing of the picture from the position occupied by the observer or observers.

Other objects and advantages of the invention will become apparent from the following detailed description of several preferred embodiments of the invention illustrated by the accompanying drawings in which:

Fig. 1 is a front elevation of a television receiver embodying the invention, showing the light shield in closed position,

Fig. 2 is a side elevation thereof with the light shield extended,

Fig. 3 is a vertical sectional view on the line 3—3 of Fig. 1 with the light shield in extended position,

Fig. 4 is a fragmentary sectional view approximately on the line 4—4,

Fig. 5 is a sectional detail of a slide support,

Fig. 6 is a front elevation of a television receiver embodying a modified form of the invention, with the light shield in extended position,

Fig. 7 is a side elevation thereof,

Fig. 8 is an enlarged detail view approximately on the line 8—8 of Fig. 6,

Fig. 9 is an enlarged vertical sectional detail, with the doors closed,

Fig. 10 is an enlarged horizontal sectional detail,

Fig. 11 is a front elevation of another modification,

Fig. 12 is a side elevation thereof,

Fig. 13 is a partial front elevation with the light shield removed,

Fig. 14 is a sectional view of the same approximately on the line 14—14 of Fig. 11, with an auxiliary front wall attachment fitted thereon, shown in side elevation,

Fig. 15 is a front elevation showing the auxiliary front wall attachment,

Fig. 16 is a sectional detail of the operating means for the cover plates of the auxiliary front wall attachment,

Fig. 17 is a front elevation of another modification of the invention,

Fig. 18 is a side elevation thereof,

Fig. 19 is a sectional view on the line 19 of Fig. 17,

Fig. 20 is a similar view with the shield collapsed, and

Fig. 21 is a vertical section with the light shield and lid in closed position.

Referring now more particularly to the embodiment of the invention shown in Figs. 1 to 5, 20 is a cabinet of wood or other suitable material having an amplifier 21 and image producing member such as a cathode ray tube 22 mounted therein. The tube 22 is preferably of the type provided with a fluorescent screen surface 23 on which the image is produced by electron bombardment. The screen 23 may be viewed directly as the image exhibiting member and for this purpose is framed by an opening 24 in the panel 25 that forms a part of the front wall of the cabinet. The panel 25 is provided with a recess or channel 26 outlining the image exhibiting screen 23 for housing a collapsible light shield or hood 27, preferably in the form of a bellows, secured at its outer end to a rigid frame 28 by which the shield is extended and collapsed, and which is dimensioned to seat in the channel 28 over the shield and preferably flush with the face of the cabinet and panel 25 when the shield is collapsed. The inner

end of the shield 27 is suitably attached to the bottom of the channel so as to cause the pleated walls thereof to expand and form a light shield or shadow box around the screen 23 when the frame 28 is pulled out to extended position.

The frame 28 is supported by rods 29 slidable in tubular guides 30 mounted within the cabinet rearwardly of the upper corners of the channel 26. The guides 30 are preferably tilted at a slight angle so that in the extended position, the frame at the outer end of the bellows is slightly elevated with respect to the screen, thereby making the passage through the light shield coincident with the line of sight of a person sitting or standing in front of the receiver. This is particularly desirable when the receiver is a table model in which the screen is below eye level of the viewer.

The frame and light shield supporting rods 29 are preferably rigidly secured to the back of the frame 28, as indicated at 31 and are provided with an angularly depending brace 32 adjacent the forward end thereof which is attached at its lower end to the inner face of the frame 28 as at 33 thereby making the frame 28 and rods 29 a rigid unit. The brace 32 also serves to maintain the frame in a plane parallel to the face of the cabinet around the channel 26 so that the frame will seat flush with the same in the collapsed position. The tubular guides 30 for the rods 29 have spring pressed latching balls 34 which engage notches 35 and 36 adjacent opposite ends of the rods 29, to secure the frame and light shield in either the fully extended or fully closed position. These latches are readily released by the balls riding out of the notches when the frame 28 is intentionally pulled out or pushed in. A handle 37 is preferably provided on the frame 28 to facilitate operation of the shield.

In the form of the invention shown in Figs. 6 to 10, a cabinet 40 having a television receiver including a cathode ray tube having a fluorescent screen surface 41, is provided with a recessed panel 42 in the front thereof. The panel 42 is provided with an opening 43 framing the screen 41 and with side hinged doors 44 adapted to close over the panel 42 to conceal the same and the screen 41 when the receiver is not in use.

The cabinet 40 is provided with horizontal recesses or channels 45 extending between the doors 44 in the face of the panel 42 above and below the screen opening 43 for housing extensible wall members 46. The wall members 46 may be in the form of pleated collapsible strips of suitable material and at their outer ends are fastened to bars or rods 47 having ball ends 48 at the extremities thereof. The doors 44 are provided with guide slots 49 in their inner faces adjacent the top and bottom thereof to receive the ball ends 48 and the edges of the extensible wall members 46 when the doors are opened and the walls are extended outwardly. The slots 49 are inwardly enlarged to receive the balls 48 endwise from the back edge of the doors but the opening of the slots onto the inner face of the doors is narrower so that the balls are retained against lateral displacement from the slots while the edges of the extensible wall members extend into the slots and are guided and supported thereby, as shown in Figs. 8 and 9.

A spring clip or catch 50 carried by a mounting plate 51 is secured at the free or outer edge of the doors in line with the ball guiding portion of each of the slots 49 to grip the balls 48 and hold the same to retain the wall members 46 in extended position.

In order to adjust the upper wall member 46 so as not to interfere with the normal line of sight to the screen, the upper slots 49 are disposed at an angle slanting upwardly from the back to the front edge of the doors. The angle of use of the upper wall member can be increased by elevating the front or outer edge of the top portion of the doors. In order to permit this adjustment, the doors are made in two parts with an upper section 52, in which the upper slot 49 is formed, pivoted at the back edge to the lower section as indicated at 53 in Fig. 8. A thumbscrew 54 and worm 55 turning a jackscrew 56 carried by the lower door section serves to elevate and lower the outer end of the upper door sections, the jackscrew being threaded through a nut 57 carried by the upper section. In order to prevent light entering between the door sections when the upper part is elevated, the meeting edges may be rabbetted to provide overlapping edges.

In operation of this form of the invention, the doors are first opened to stand at right angles to the face of the cabinet and the rods 47 are drawn outwardly, as by grasping the handle 58 provided centrally of each, whereupon the ball ends will enter the flared ends of the enlarged inner part of the slots 49 at the back edge of the doors. When the partition is fully extended the ball ends 48 will snap into the spring catches 50 to retain the same in this position. If the outer edge of the upper wall member is found to be too low, the thumbscrews 54 are turned to elevate the same on each side. Spring catches 59 are also preferably provided in the ends of the channels 45 to grip the ball ends 48 to retain the partitions in the collapsed position.

In the embodiment of the invention shown in Figs. 11 to 14 a cabinet 60, with a front panel 61 having an opening 62 framing the screen 63 of a cathode ray tube mounted therein, is provided with a drop type door 64 for concealing the panel and screen when the instrument is not in use. When a light shield is desired, the door is raised to the horizontal position and is retained there by suitable supports.

A U-shaped channel or recess 68 is provided in the front panel 61 and in the same is mounted a U-shaped extensible light shield 69 having a metal rod frame 70 secured at the outer edge thereof. This frame 70 is provided with ball ends 71 on the upper ends of the side members thereof and the under or inner face of the door 64 is formed with slots 72 similar to the slots 49 in the doors 44 so that the ball ends 71 and upper edges of the shield 69 slide and are retained therein when the shield is pulled out to the extended position after the door 64 is opened.

In the embodiment of the invention shown in Figs. 17 to 21 the image exhibiting member of the apparatus is a mirror or reflecting surface 80 mounted on the inner face of a hinged top lid 81 of the cabinet 82. When the lid is raised to approximately a 45° angle the fluorescent screen end 83 of a cathode ray tube in the cabinet is reflected in the mirror.

A rectangular recess or channel 84 is provided in the lid panel around the mirror 80 and within this channel is seated an extensible light shield 85 in the form of a bellows member 85. A frame 86 is secured to the front end of the extensible shield and the rear end is fastened in the bottom of the channel 84. The channel 84 is formed so that with the lid 81 raised to the proper viewing angle, the upper and lower walls of the

transverse sections of the channel will be approximately horizontal so that the shield may be extended straight forwardly. The frame 86 is dimensioned to close the channel over the shield 85 when the latter is collapsed and is provided with handles 87 by which it may be drawn forwardly to extend the shield to the position shown in Figs. 17-19 when the lid is raised. In the extended position, the bottom rail of the frame seats in a slot or recess 82' at the front edge of the cabinet 82 so that the bellows is held extended and the frame is maintained upright without other support.

The bottom wall 90 of the shield is formed with an opening 91 for passage of light from the cathode ray tube when the shield is extended to permit unobstructed reflection of the screen 83 in the image exhibiting mirror.

It may be desirable under some conditions, as when the light conditions are such that an open front shield does not produce sufficient shadow effect around the image exhibiting member for satisfactory viewing, to provide a shield having an apertured front closure for individual viewing of the screen through the respective openings. The invention provides means for providing any of the light shields previously described with an apertured front wall or panel for this purpose. As shown in Figs. 14 to 16, a front wall panel 95 is provided having a plurality of individual viewing apertures 96, normally closed by suitable pivoted doors or flaps 97 which may be opened when desired by levers 98 linked thereto. The wall panel 95 is provided along the upper and lower edges thereof with rearwardly extending spring clips or flanges 99 adapted to engage the top and bottom members of the several disclosed light shields. It will thus be seen that any of the shields illustrated may be quickly provided with a front wall merely by slipping the apertured auxiliary panel 95 onto the end of the extended shield in each case. When not in use the auxiliary panel 95 can be kept in the base of the cabinet.

Claims specific to the embodiments of the invention illustrated in Figs. 6 to 10 and in Figs. 17 to 21 are presented in my copending applications Serial No. 540,087, filed June 13, 1944, and Serial No. 545,922, filed July 21, 1944, respectively.

While preferred embodiments of the invention have been shown and described by way of illustration, it will be understood that various other modifications and changes in the details of construction may be resorted to without departing from the spirit of the invention within the scope of the appended claims.

I claim:

1. In a television receiver, a cabinet, an image producing system including an image exhibiting member mounted in said cabinet, a forwardly facing panel framing said image exhibiting member and having a recess bordering said image exhibiting member, a collapsible member normally housed within said recess and adapted to be forwardly extended therefrom to comprise a light shield adjacent the image exhibiting member, and means carried by said cabinet for supporting said collapsible member in its forwardly extended position.

2. In a television receiver, a cabinet, an image producing system including an image exhibiting member mounted in said cabinet, a forward facing panel framing said image exhibiting member and having a recess bordering said image exhibiting member, an extensible wall member nor-

mally collapsed within said recess and adapted to be forwardly extended therefrom to comprise a light shield for the image exhibiting member, and extensible supporting means carried by said cabinet for supporting said extensible wall member in its forwardly extended position.

3. In a television receiver, a cabinet, an image producing system including an image exhibiting member mounted in said cabinet, a forward facing panel framing said image exhibiting member and having a recess bordering said image exhibiting member, an extensible wall member housed in said recess and adapted to be forwardly extended therefrom to form a light shield for the image exhibiting member, a hinged door carried by said cabinet adapted to overlie said panel in closed position and to extend outwardly above and at right angles thereto in open position, and interengaging means on said door and extensible wall member for supporting said extensible wall member in its forwardly extended position.

4. In a television receiver, a cabinet, an image producing system including an image exhibiting member mounted in said cabinet, a forward facing panel framing said image exhibiting member and having a recess bordering said image exhibiting member, an extensible wall member housed in said recess and adapted to be forwardly extended therefrom to form a light shield for the image exhibiting member, a hinged door carried by said cabinet adapted in closed position to overlie said panel and in open position to extend outwardly above and at right angles thereto, said door having guide means for said extensible wall member when said door is in open position, and means carried by said extensible wall member adapted to engage said guide means when said extensible wall is extended with said door in open position.

5. In a television receiver, the invention as recited in claim 4, wherein said wall member has bottom and side sections cooperating with said door to form a light shield of substantially rectangular form.

6. In a television receiver, a cabinet, an image producing system including an image exhibiting member mounted in said cabinet, a forward facing panel framing said image exhibiting member and having a recess bordering said image exhibiting member, an extensible wall member housed in said recess and adapted to be forwardly extended therefrom to form a light shield for the image exhibiting member, a frame carried by said extensible wall member and adapted in the collapsed position thereof to seat over said recess and to conceal the same and said extensible wall member, and extensible supporting means for said extensible wall and frame carried by said cabinet comprising supporting guide members mounted in said cabinet, a pair of rods slidable in said guides and secured at one end to said frame.

7. In a television receiver as defined in claim 6, means associated with said guides and rods slidable therein for releasably latching said rods in extended and retracted position, respectively.

8. In a television receiver, a cabinet, an image producing system including an image exhibiting member mounted in said cabinet, a forwardly facing panel framing said image exhibiting member and having a recess bordering said image exhibiting member, an extensible member housed in said recess and adapted to be forwardly extended therefrom to comprise a light shield ad-

adjacent the image exhibiting member, means carried by said cabinet for supporting said extensible member in its forwardly extended position, an apertured panel adapted to form a front closure for said light shield for individual viewing of said image exhibiting member through the apertures therein, and means for detachably securing said apertured panel on the front of the light shield.

9. In a television receiver, a cabinet, an image producing system including an image exhibiting member mounted in said cabinet, a forwardly facing panel framing said image exhibiting member and having a recess bordering said image exhibiting member, an extensible wall member housed in said recess and adapted to be forwardly extended therefrom to comprise a light shield adjacent the image exhibiting member, means carried by said cabinet for supporting said extensible member in its forwardly extended position, an apertured panel adapted to form a front closure for said light shield for individual viewing of the image exhibiting member through the apertures thereof, movable closure means for each of the apertures, individual operating members for moving said closure members from over the apertures and means for detachably securing said apertured panel on the outer end of said light shield.

10. In a television receiver including a cabinet supporting an image-exhibiting member and a light shield for the same, an apertured panel adapted to form a front closure for said light shield for individual viewing of the image exhibiting member through the apertures thereof, movable closure means for each of the apertures, individual operating members for moving said closure members from over the apertures and means for detachably securing said apertured panel on the outer end of said light shield comprising upper and lower gripping members carried by said panel adapted to engage the outer portion of opposed sides of the light shield.

11. In a television receiver including a cabinet supporting an image-exhibiting member and a light shield for the same, an apertured panel adapted to form a front closure for said light shield for individual viewing of the image exhibiting member through the apertures thereof, movable closure means for each of the apertures, individual operating members for moving said closure members from over the apertures and means for detachably securing said apertured panel on the outer end of said light shield.

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