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Sept. 13, 1949.

J. K. ROSE
IMAGE DISPLAY APPARATUS AND CABINET HAVING
ADJUSTABLE LIGHT SHIELDS

2,482,031

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2 Sheets-Sheet 1

X 153

X 5007

X 772

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6.

Fig. 1.

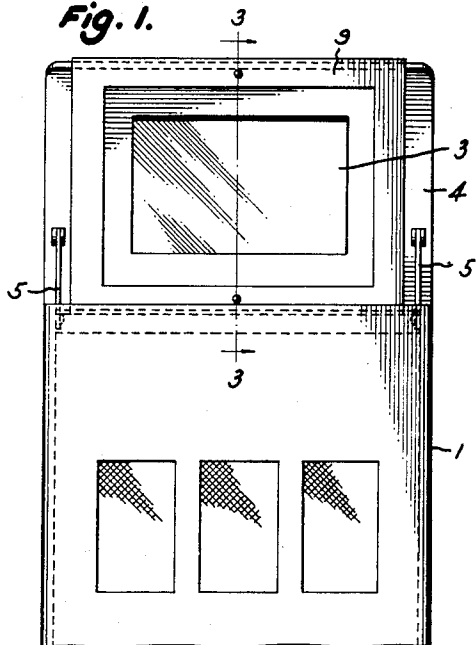


Fig. 2.

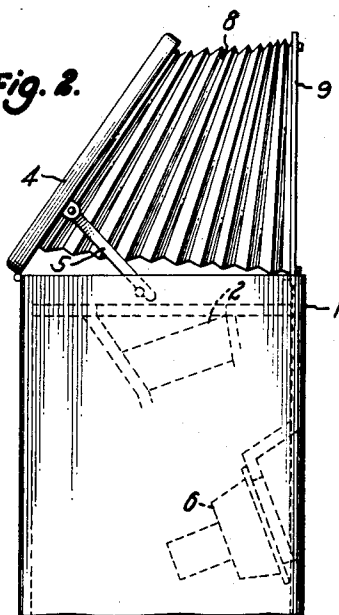


Fig. 3.

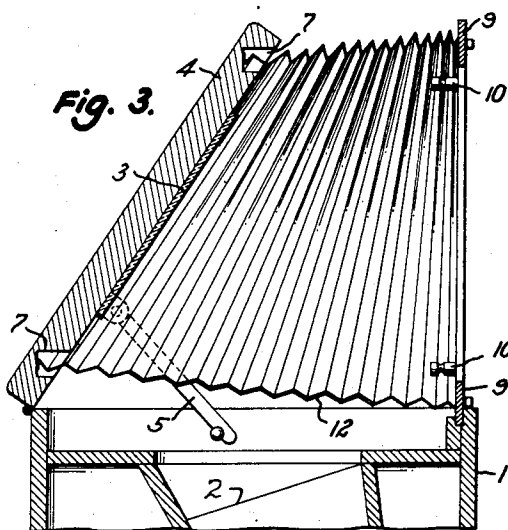


Fig. 4.

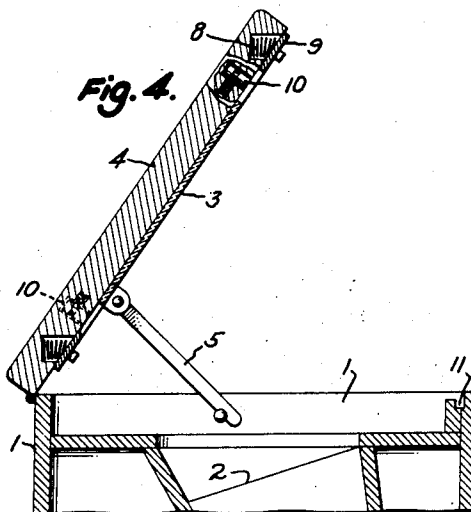
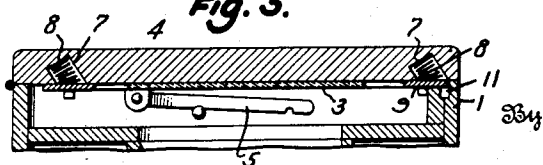


Fig. 5.



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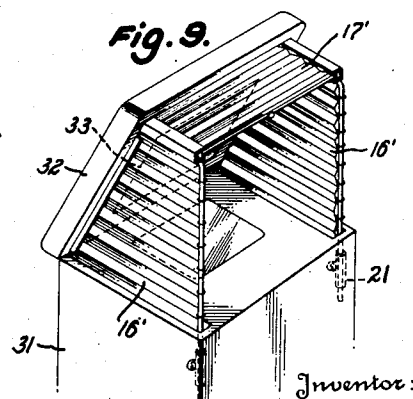
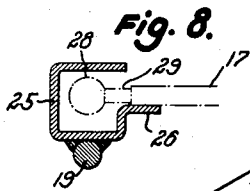
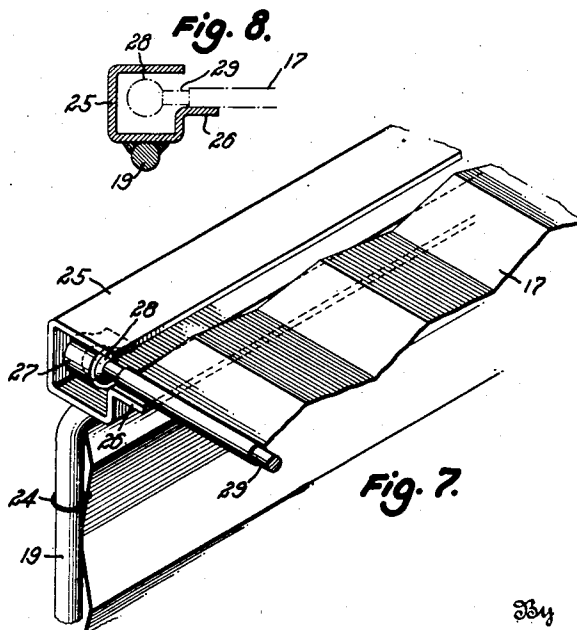
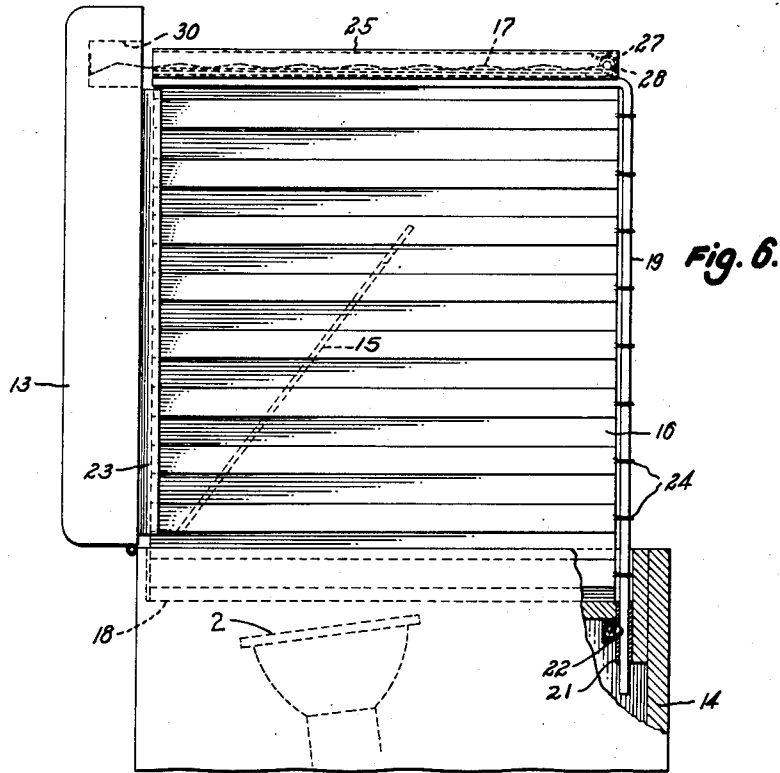
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IMAGE DISPLAY APPARATUS AND CABINET HAVING
ADJUSTABLE LIGHT SHIELDS

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2 Sheets-Sheet 2



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UNITED STATES PATENT OFFICE

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IMAGE DISPLAY APPARATUS AND CABINET HAVING ADJUSTABLE LIGHT SHIELDS

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Application July 21, 1944, Serial No. 545,922

3 Claims. (Cl. 88-24)

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This invention relates to television receivers and like cathode ray tube apparatus of the type including an extensible light shield forming a "shadow box" for shielding the light exhibiting member from extraneous light, and particularly to extensible light shields for cathode ray tubes associated with image exhibiting members of the reflecting mirror type.

The reflecting mirror may be secured to the inner face of a cabinet lid that is lifted into an inclined position, or it may be separately mounted to permit lifting of the lid into substantially vertical position when the television receiver or oscilloscope employing a cathode ray tube is in use. The details of the supporting structure of the reflecting mirror are not an essential feature of the present invention which in its broader aspects, contemplates a light shield that is carried, in whole or in part, by the casing lid when collapsed into inoperative position.

This application is a continuation-in-part of my copending application Ser. No. 433,104, filed May 15, 1942, which has become U. S. Patent No. 2,368,882, dated February 6, 1945.

Objects of the invention are to provide television receivers or oscilloscopes of the reflecting type including a cabinet with a hinged lid, and an extensible light shield with wall elements that, in whole or in part, are carried by the lid when collapsed into inoperative position. An object is to provide a television receiver or oscilloscope of the reflecting type that includes a light shield that may be collapsed upon or into recesses of the cabinet lid when not required to screen off extraneous light from the reflecting surface. A further object is to provide television receivers or oscilloscopes of the reflector type that include a plurality of extensible wall sections forming a light shield, at least one of the extensible wall sections being supported by and normally collapsed into or upon the lid of the cabinet when not required for a clear view of the projected television image.

These and other objects and advantages of the invention will be apparent from the following specification when taken with the accompanying drawings in which:

Fig. 1 is a fragmentary front elevation of a television receiver embodying the invention;

Fig. 2 is a side elevation of the same;

Fig. 3 is a transverse section as seen on the plane of line 3-3 of Fig. 1;

Fig. 4 is a similar section but showing the light shield in inoperative position;

Fig. 5 is a fragmentary section showing the casing lid in closed position;

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Fig. 6 is a side elevation, with parts in section, of the upper portion of another television receiver embodying the invention;

Fig. 7 is a fragmentary perspective view, on a larger scale, showing the supporting structure at a forward corner of the light shield, and the adjacent portions of a side wall and the top wall of the light shield;

Fig. 8 is a transverse section through a guide-way for supporting the top wall; and

Fig. 9 is a fragmentary perspective view, on a smaller scale, of a television receiver having a lid carrying the reflecting mirror, and a multiple part light shield similar to that shown in Figs. 6 to 8.

In the drawings, the reference numeral 1 identifies the cabinet which houses television receiving apparatus including a cathode ray tube having a fluorescent screen 2 and an image exhibiting member or mirror 3 that is arranged above and at about 45° to the screen 2. The mirror is mounted directly upon the inner face of the hinged lid 4 that may be supported in raised position by notched links 5 or turned down to cover the cabinet when the television receiver is not in use, see Fig. 5. The loud speaker 6 and the other elements, not shown, of a radio receiver are preferably housed within the cabinet 1.

A rectangular recess or channel 7 is provided in the lid 4 around the mirror 3, and an extensible light shield 8 in the form of a rectangular bellows is attached to the bottom wall of and normally collapsed within the recess 7. The front edge of the bellows 8 is secured to a rectangular frame 9 that may be latched to the lid 4 by spring clips 10 to retain the bellows in collapsed condition, see Figs. 4 and 5, or supported in forward position to extend the bellows by seating the lower edge of the frame in a slot 11 at the inner face of the front wall of the cabinet, see Fig. 3. The frame 9 is of sufficient width to cover the recess 4 when the light shield is collapsed into inoperative position, and the frame is colored or otherwise ornamented as desired to blend into the general design of the cabinet. The lower wall of the bellows 8 is provided with an opening 12 for the passage of light from the screen 2 to the mirror 3 when the light shield is in extended, operative position.

The bellows or light shield is in normally collapsed position within the recess 7 of the lid 4 when the television receiver is not in use and the cabinet is closed, Fig. 5. The lid is lifted and supported by the links 5 when the receiver is to be used, and the light shield may be left in inoperative position when the extraneous light

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reaching the fluorescent screen 2 and mirror 3 does not interfere with clear reception. When the extraneous light tends to obscure the television image, the frame 9 is released from the clips 10 and drawn forwardly to seat in the groove 11, thus extending the bellows 8 to shield both the screen 2 and the mirror 3 from outside light.

In another type of apparatus including a cathode ray tube, the hinged lid 13 of the cabinet 14 is raised into vertical position when the apparatus is to be used, and the reflecting mirror 15 is supported in inclined position by any known or desired means, see Fig. 6. A light shield for this form of cabinet may be formed by side walls 16 and a top wall 17 that are normally concealed within the cabinet 14 and the hinged lid 13 respectively. The side walls 16 may be rigid sheets of opaque material, flexible sheets on rollers similar to conventional shade rollers or, as shown, may be bellows wall members that are normally collapsed into recesses 18 in the top panel of the cabinet. The upper edges of the extensible side walls 16 are secured to the horizontal arms of bent rods 19 of inverted L-shape that have vertical arms slidably supported in sleeves 21 secured to the cabinet 14. Spring pressed balls 22 cooperate with notches in the vertical arms of the bent rods 19 to retain the same in raised position. The lid 13 has inwardly projecting strips or flanges 23 that lie within the recesses 18 of the cabinet top when the lid 13 is closed, and the rear edges of the side walls 16 aline transversely with these flanges 23 to prevent leakage of exterior light around the inner edges of the side walls 16. Loop 24 of thread or fine wire may be secured to the midpoints of the forward edges of some elements of bellows walls 16 to hold the front edges of the walls 16 in vertical alinement with the rods 19. Guideways 25 with inwardly extending flanges 26 are welded or soldered to the horizontal arms of rods 19 to support the upper wall 17 in extended position. Spring clips 27 are mounted within the outer ends of the guideways to receive and yieldingly retain the extended ball ends 28 of a rod 29 at the front edge of the extensible wall 17 of the light shield. A recess 30 is preferably formed in the lid 13 to receive the top wall 17 when it is collapsed into inoperative position and spring means, not shown but similar to the clips 27, are provided to cooperate with the ball ends 28 to retain the wall 17 in collapsed condition.

A light shield with independently movable wall sections, as illustrated in Figs. 6-8, may be employed with a cabinet 31 having a hinged lid 32 that carries a mirror 33 and is lifted into inclined position for the reception of television images. The construction is similar to that illustrated in Figs. 6-8, but differs therefrom in that the inner edges of the side walls 16' are inclined and the top wall 17' is relatively narrow.

The method of operation of the multiple part light shield will be apparent from the above description of the illustrated embodiments of the invention. Various changes may be made in the

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light shield constructions and it is to be understood that the invention is not restricted to the illustrated embodiments as various changes that may be made in the light shield elements and their supporting structures fall within the spirit of my invention as set forth in the following claims.

I claim:

1. In an image-displaying apparatus, a cabinet structure including a cabinet proper and a hinged lid, an image producing system including a mirror above said cabinet proper and in front of the lid when the latter is raised, and an extensible light shield for said mirror; said light shield including side wall members normally housed in said cabinet proper, means including inverted L-shaped rods for supporting said side wall members in extended position, an extensible top wall member carried by said hinged lid, and guideways for the side edges of the extensible top wall member carried by said rods.

2. In an image-displaying apparatus, the invention as recited in claim 1 wherein each of said wall members is a bellows member.

3. In a television receiver, a cabinet, an image exhibiting member mounted in said cabinet, a hinged panel member mounted on said cabinet adapted to be supported in upstanding position adjacent said image exhibiting member, said panel having a horizontally extending recess in the face thereof, a collapsible wall member mounted in said recess and adapted to be extended therefrom to comprise the top wall of a light shield for said image exhibiting member, collapsible side wall members housed within said cabinet at opposite sides of said image exhibiting member and adapted to be extended vertically to meet the side edges of said first mentioned collapsible member to comprise the side walls of the light shield, means comprising inverted L-shaped extensible rods mounted in said cabinet for supporting said collapsible side wall members in extended position and guideways for the collapsible member forming the top wall for the light shield carried by the said L-shaped rods.

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