Aug. 1, 1950 J. J. CUNNINGHAM ET AL 2,517,387

PORTABLE SOUND AND PICTURE REPRODUCING APPARATUS

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FIG. 1

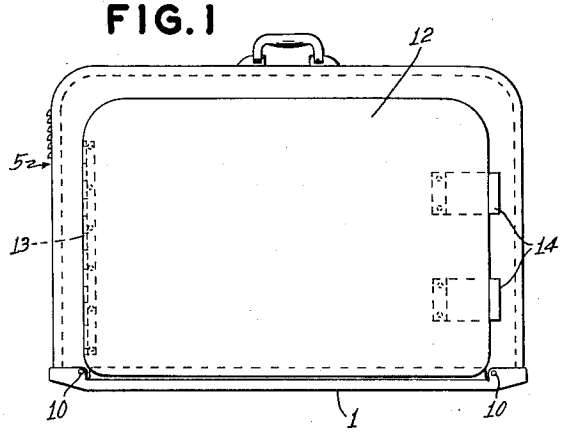


FIG. 2

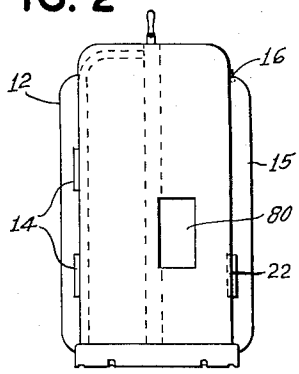


FIG. 4

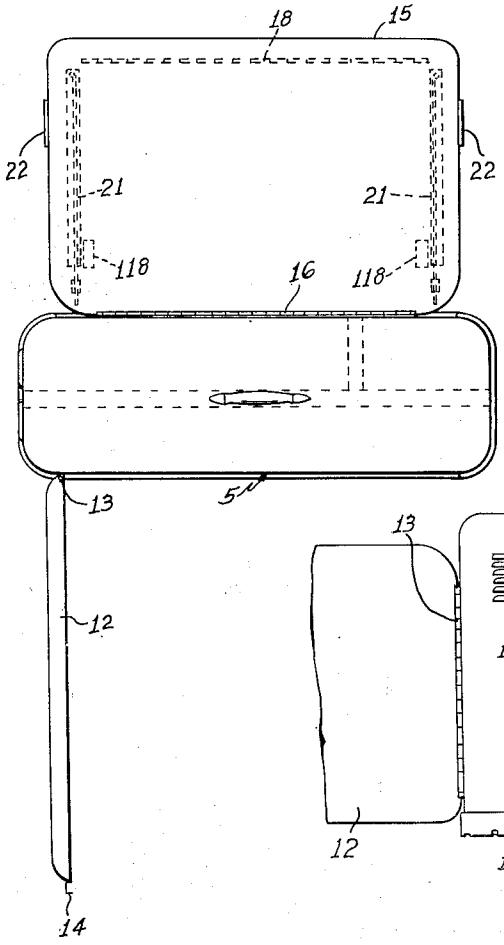


FIG. 3

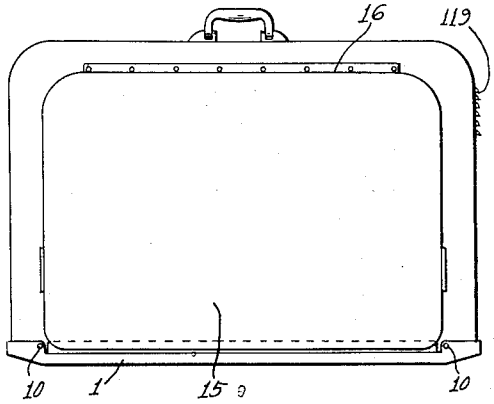
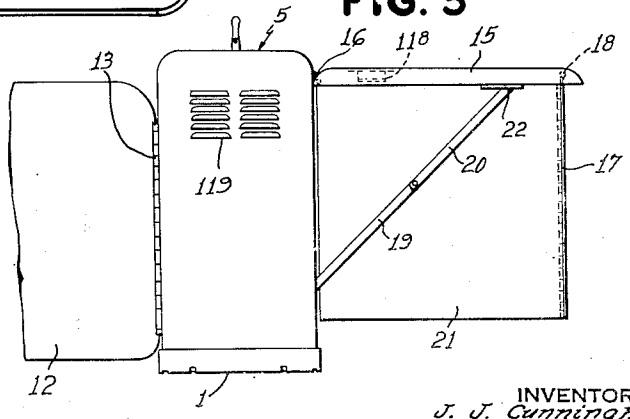


FIG. 5



INVENTORS
J. J. Cunningham
R. P. Nevin
L. H. Larime
BY
Pennie, Edmonds, Morton and Barrows
ATTORNEYS

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PORTABLE SOUND AND PICTURE REPRODUCING APPARATUS

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FIG. 6

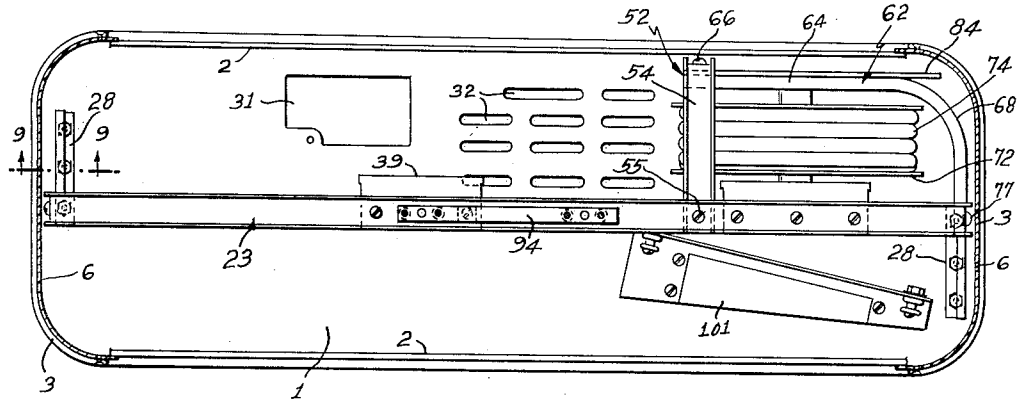
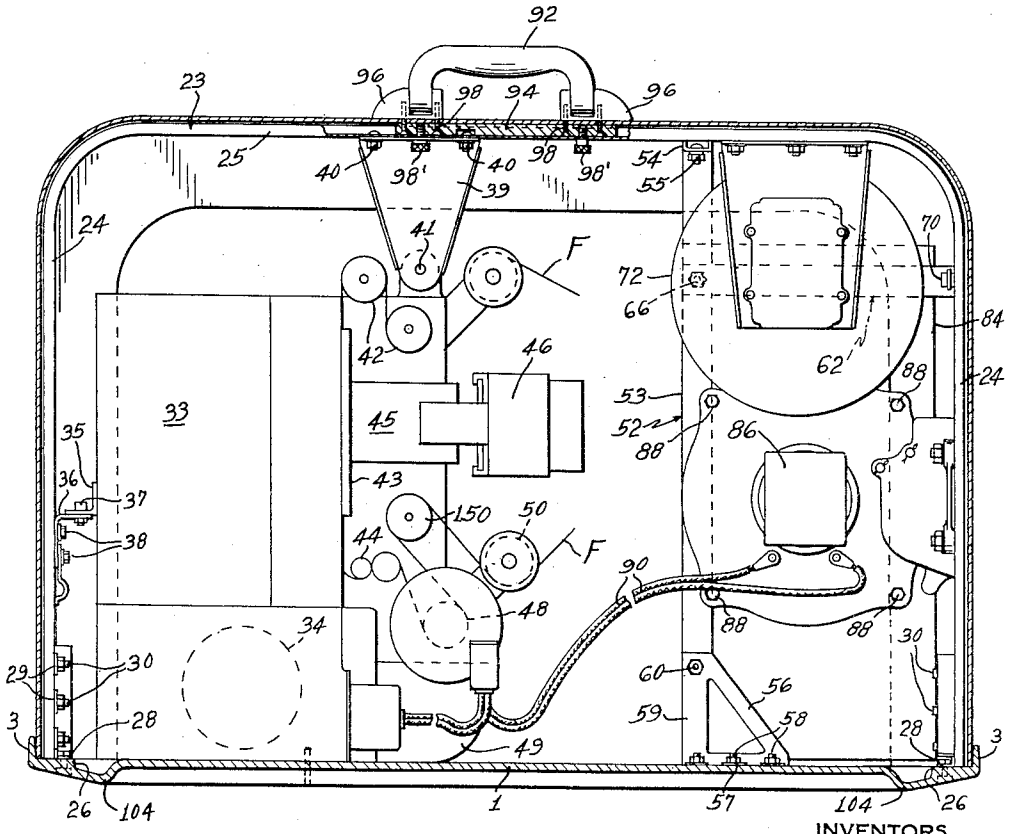


FIG. 7



INVENTORS
J. J. Cunningham
R. P. Nevin
L. H. Larime
BY
Dennis, Edmonds, Morton and Darrow
ATTORNEYS

Aug. 1, 1950 J. J. CUNNINGHAM ET AL 2,517,387

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FIG. 9

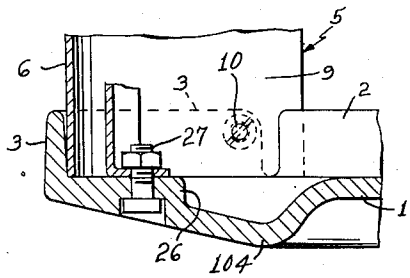


FIG. 8

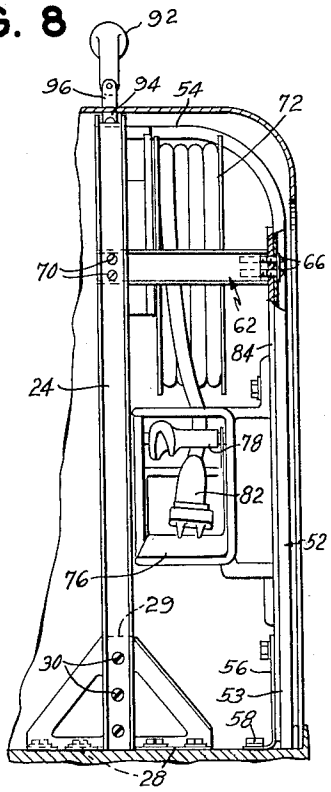


FIG. 10

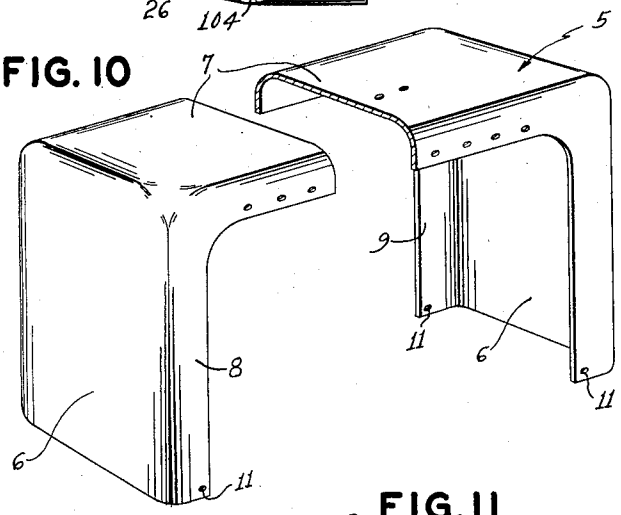


FIG. 11

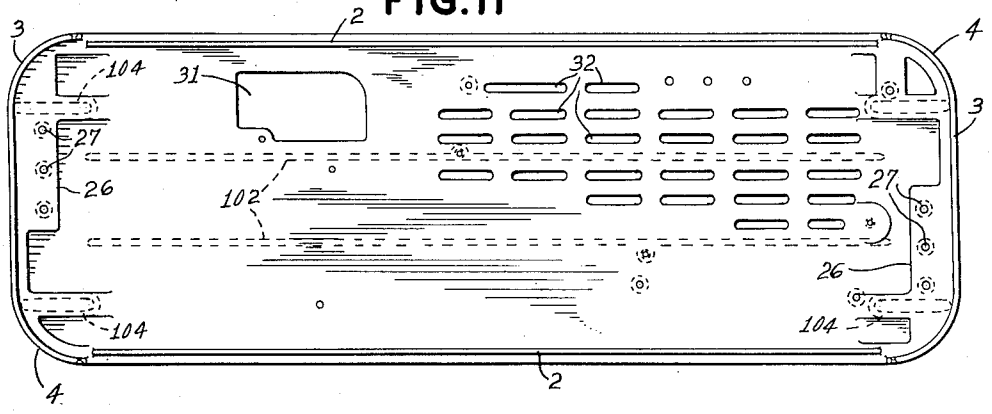
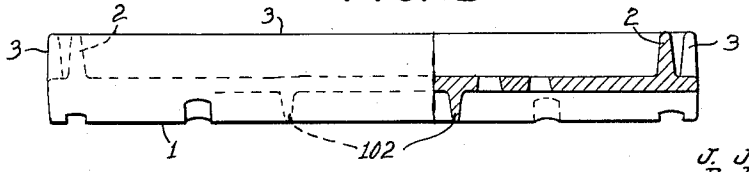


FIG. 12



INVENTORS
J. J. Cunningham
R. P. Nevin
L. H. Larime
BY
Pennie, Edmonds, Morton and Barrows
ATTORNEYS

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2,517,387

UNITED STATES PATENT OFFICE

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PORTABLE SOUND AND PICTURE REPRODUCING APPARATUS

James J. Cunningham, Manhasset, N. Y., and Louis H. Larime, Royal Oak, and Robert P. Nevin, Pontiac, Mich., assignors to The American Tobacco Company, New York, N. Y., a corporation of New Jersey

Application November 17, 1948, Serial No. 60,458

3 Claims. (Cl. 88—16.2)

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This invention relates to portable sound and picture reproducing apparatus, and more particularly to improvements in devices of the type disclosed and claimed in the Boor and Bradford Patent No. 2,256,337, granted September 16, 1941 in which the elements of the reproducer are mounted in a case and in which the apparatus may be used by merely plugging the lead wire into a standard electrical outlet.

The present invention relates primarily to the case construction and the assembly of the reproducer elements within the case to permit ready access to them for repairs and adjustments.

The weight of the reproducer elements of a device of this character is such that they must have ample support. At the same time, if the complete device is to be of such weight that it can be carried from place to place by a single handle, similarly to a suit case, the weight of the case must be kept at a minimum.

To accomplish this, and at the same time provide a construction in which access may be readily had to the reproducer elements, we provide a case having a bottom or base which is of sufficient strength to support all of the reproducer elements. The sides, end walls and top of the case may be formed of a lighter material. This upper portion of the case is also formed as a unit and secured to the base by fastening elements which may be readily removed to permit separation of the top of the case from the base. The reproducer elements are thus exposed for any necessary repairs and adjustments.

To permit the apparatus to be carried from place to place by means of a handle secured to the top, we further provide a bracing element which is secured to the base and which extends upwardly on the inside of each end wall and along the under side of the top. A handle is secured to this bracing element through the top of the case and the weight of the mechanism resting on the base is thus transmitted from the base to the handle.

In the accompanying drawings we have shown one embodiment of the invention. In this showing:

Fig. 1 is a side elevation of one side of the case;

Fig. 2 is an end elevation;

Fig. 3 is a side elevation of the other side of the case;

Fig. 4 is a top plan view of the case with the doors open;

Fig. 5 is an end elevation of the opposite end with the doors open;

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Fig. 6 is a horizontal, sectional view with the reproducer elements removed from the case;

Fig. 7 is a vertical, longitudinal, sectional view showing the reproducer elements in place;

Fig. 8 is a vertical, transverse, section view adjacent one end of the case;

Fig. 9 is a detailed, sectional view on line 9—9 of Fig. 6;

Fig. 10 is a perspective view of the upper portion or top of the case;

Fig. 11 is a plan view of the bottom of the case; and

Fig. 12 is an end elevation of the bottom of the case, part being shown in section.

Referring to the drawings, the case is constructed of a base member 1 which is made of any suitable material, preferably a light metal and is made of sufficient strength to support the weight of the reproducer elements. It is provided with side flanges 2 extending upwardly therefrom slightly inwardly of the edge and with end flanges 3 arranged substantially at the edge of the base. As shown, the base is substantially rectangular with rounded corners 4 but it, of course, may be of any suitable shape. The upper section 5 of the case is made relatively light, as compared to the base, and may be molded of a suitable plastic. As shown, it comprises end walls 6, a top 7, and front and back portions 8 and 9 which are provided with openings for the doors. The top of the case fits on the base with the end walls and the front and back portions 8 and 9 on the inside of the flanges 3. As none of the weight is supported by the top of the case, it is secured to the base by suitable fastening elements, such as screws 10, which pass through openings in the flanges 3 and are received in openings 11 in the front and back sections.

The case is provided with a rear door 12 which is hinged at one side as at 13 and provided with spring catches and hand grips 14 on its free edge. The door is opened to the position shown in Fig. 4 of the drawings to permit access to the reproducer elements when the device is in operation. The front of the case is closed by a door 15, which is hinged to the case at its upper edge as indicated at 16 and when opened is in a substantially horizontal position, as shown in Figs. 4 and 5. The screen 17 is hinged to the door 15 adjacent its free edge as indicated at 18 and assumes a vertical position spaced from the front of the case, when in operative position, as shown in Fig. 5. When closed it is retained in position against the inner side of the door by spring clips 118. The door 15 is supported in raised position by braces on

each side consisting of two arms 19 and 20 hinged to each other and having their opposite ends hinged to the door and to the side of the case, respectively. A pair of light shields 21 are secured to each side of the screen by spring hinges and when the screen is opened, these members assume the position shown in Fig. 5 of the drawings. When the door is to be closed, they are first folded inwardly against the inner surface of the screen and the screen then folded inwardly. The sides of the door are provided with spring clips 22 which also serve as hand grips to open it. The end of the case shown in Fig. 5 is provided with a ventilation 119 adjacent the top.

For the purpose of supporting some of the parts of the reproducer elements and to transmit the weight to the base when the apparatus is carried from place to place, we provide a frame member 23. As shown (see Fig. 6), this frame member is formed of angle iron and consists of two vertical sections 24 which are secured to the base and arranged on the inside of the end walls and a connecting upper horizontal section 25 arranged on the inside of the top. At each end of the base we provide a thickened portion 26 having openings 27 for the reception of fastening elements. An L-shaped angle iron is provided with a base portion 28 having openings therein for the reception of the fastening elements 27 to secure it to the base and is further provided with a vertical portion 29 which extends upwardly in the channel of the vertical portion 24 and is secured thereto by fastening elements 30.

As shown, the base is provided with ventilating openings 31 and 32. The sound and picture reproducer elements are suitably supported from the base. Adjacent one end of the casing we provide a reproducer 33 operated by a motor 34 in its base. These elements and the other elements of the reproducer may be of standard construction. The reproducer may be secured in place by an angle iron or bracket 35 secured to the back of it and connected to an angle iron or bracket 36 by bolts 37. The angle iron or bracket 36 is in turn connected to the frame member by bolts 38. A second supporting member or bracket 39 is secured to the top portion 25 of the frame member by bolts 40 and is connected to the reproducer at 41. The reproducer is provided with the usual film guide sprockets 42 arranged above the film gate 43 and with the usual film guide sprockets 44 arranged below the film gate whereby the film may be fed past the film gate to project pictures through a lens mounted in the lens tube 45 in the usual manner. Adjacent the outer end of the lens tube, we provide a mirror 46 arranged at a suitable angle to project the light beam forwardly at right angles to the plane of the screen 17 when the screen is arranged in the position shown in Fig. 5 of the drawings.

The film F is delivered from a film roll (not shown) arranged adjacent the other end of the machine. From the lower guide rolls the film passes over a guide roll 48 which is arranged over a sound reproducing unit 49. From the guide roll 48 the film passes over sprocket 150 and guide roll 50 and is returned to the film roll. An amplifying unit (not shown) is also arranged on the base adjacent the other end of the case. These reproducer elements are of substantially the same construction as disclosed in the Boor and Bradford Patent 2,256,337 and a further description thereof is deemed unnecessary.

To support the loud speaker and other parts of the apparatus, we provide an auxiliary transverse frame member 52 (see Figs. 7 and 8) which is also formed of angle iron and consists of a vertical section 53 arranged adjacent one side of the case and a horizontal section 54 extending across the case beneath the top and under the main frame member. As shown, the transverse frame member is bolted to the main frame member at 55. It is secured to the base at the lower end of leg 53 by a substantially triangular member 56. As shown, the member 56 is provided with a flange 57 which is bolted to the base as indicated at 58 and with a vertical leg 59, which is bolted to the vertical member 53, as at 60. A horizontally arranged supporting member 62 is mounted in the end of the case opposite the end in which the reproducer units are arranged (see Figs. 6 and 8). It is disposed adjacent the top of the case (see Fig. 7) and consists of a portion 64 extending along the inside of the front of the case and bolted to the transverse frame member 52 at 66. It is curved to extend along the inside of the end wall of the case as at 68 and is bolted to the main frame member at 70. This member supports the cord reel 72 on which is mounted the cord 74 for connection to a socket. As shown, the cord extends into an outlet box 76 over a guide shaft 78 and is unwound through an opening 80 in the end of the case. It is provided with the usual plug 82 on its end.

The supporting member 62 also carries the speaker panel 84 on which loud speaker 86 is mounted. This panel extends downwardly between the transverse supporting member 52 and the end of the case and the loud speaker is bolted to it at 88. The speaker is connected to the sound reproducing unit by leads 90.

The case is provided with a handle 92 arranged on the top of the case, similar to a suit case handle, by means of which the device may be carried from place to place. As shown (see Fig. 7) the handle is attached, through the top of the case, to the frame member 23 so that the weight is transmitted from the base to the handle and none of the weight is carried by the lightly constructed walls of the case. An anchor plate 94 is arranged on the inside of the top of the case and brackets or ears 96, in which handle 92 is pivotally mounted, are secured to this anchor plate, through the top of the case by fastening elements 98. The entire structure is secured to the frame member 23 by thumb nuts 98', which pass through openings in the frame member and are received in threaded openings on the under side of the anchor member 94.

As the film reel and amplifying unit are arranged toward the rear of the case, they do not show in the section on which Fig. 7 is taken. The film magazine is supported from the bottom of the case on a suitable bracket 101 and the film reel is supported on the frame members in the rear of the cord reel. The bottom of the case may be provided with reinforcing ribs 102 (see Fig. 12) and may be provided with a bead 104 (see Figs. 7 and 9) adjacent its edge. This bead and the ribs 102 serve to prevent transmission of jars and shocks to the reproducer elements when the apparatus is set down.

The advantages of the present construction will be apparent from the foregoing description. By providing the frame member 23 and transmitting the weight from the base to the handle through this frame member the front, back, end walls and top of the case can be made relatively

light. Using a light construction for the upper portion of the case permits it to be molded or otherwise formed in a single piece of suitable plastic material. This permits the top of the case to be secured to the base by the fastening elements 10. When access to the reproducer elements is desired for repair, replacement, adjustment or otherwise, the top of the case can be removed by removing the four screws 10 at the four corners and removing the thumb nuts 98 to separate the handle from the frame member. The top can then be lifted off exposing the reproducer elements for whatever operation is necessary.

We claim:

1. A portable sound and picture projecting apparatus comprising a case, the case comprising a base portion, sound and picture projecting means supported by the base portion, a unitary body formed of lighter material than the base portion and secured to the base portion, the body comprising front, back, end walls and a top, a metallic frame member having its ends connected to the base at substantially the center of each end of the base, said frame member extending upwardly on the inner side of each end wall of the body and across the top from end to end on the inner side of the top of the body following the contour of the case, a supporting member for the upper end of the picture projecting means secured to the frame member and the picture projecting means, a handle on the top of the case, and supporting means for the handle extending through the top of the case and secured to the frame member.

2. A portable sound and picture projecting apparatus comprising a case, the case comprising a base portion, sound and picture projecting means supported by the base portion, a unitary body formed of lighter material than the base portion and secured to the base portion, the body comprising front, back, end walls and a top, a metallic frame member having its ends connected to the base at substantially the center of each end of the base, said frame member extending upwardly on the inner side of each end wall of the body and across the top from end to end on the inner side of the top of the body following the contour of the case, a supporting member for the upper end

of the picture projecting means secured to the frame member and the picture projecting means, an auxiliary frame member comprising a member secured to the base on one side extending upwardly along the inner wall of the side, under the top of the case and secured to the frame member, a second member extending from said first member to the end portion of the frame member, and means for supporting a loud speaker on said auxiliary frame member.

3. A portable sound and picture projecting apparatus comprising a case, the case comprising a base portion, a flange extending around the base portion adjacent its outer edges, a unitary body formed of lighter material than the base portion, the body being removably secured to said flanges, the body comprising front, back, end walls and a top, a metallic frame member having its ends connected to the base at substantially the center of each end of the base, said frame member extending upwardly on the inner side of each end wall of the body and across the top from end to end on the inner side of the top of the body following the contour of the case, a supporting member for the upper end of the picture projecting means secured to the frame member and the picture projecting means, a handle on the top of the case, and supporting means for the handle extending through the top of the case and secured to the frame member.

JAMES J. CUNNINGHAM.
LOUIS H. LARIME.
ROBERT P. NEVIN.

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