

April 14, 1931.

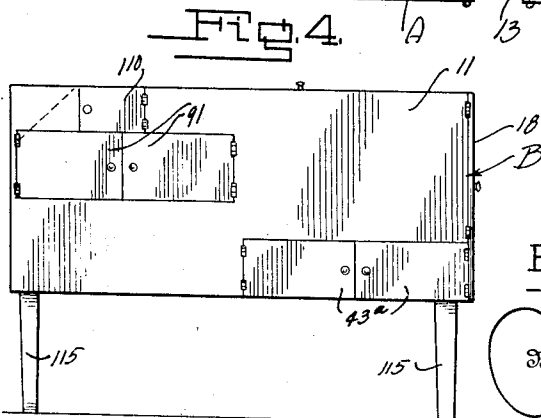
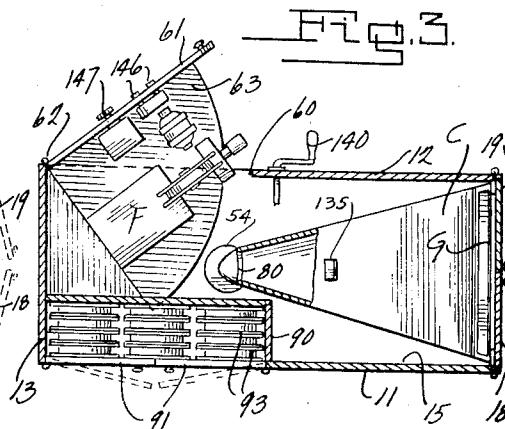
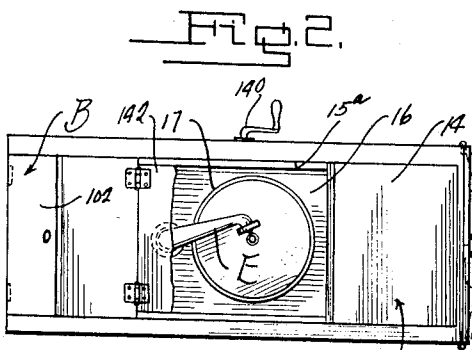
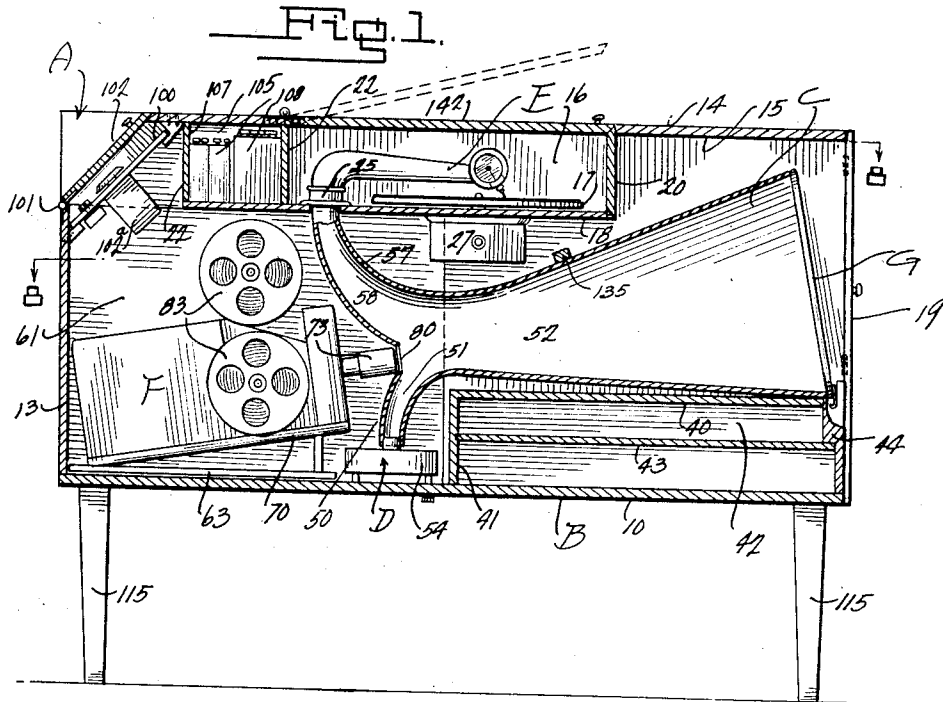
E. RASMUSSEN

1,801,208

COMBINED PHONOGRAPH, RADIO, AND PICTURE PROJECTOR

Filed July 15, 1927

2 Sheets-Sheet 1



Inventor
Eigil Rasmussen

By *Lancaster & Allin*
Attorney

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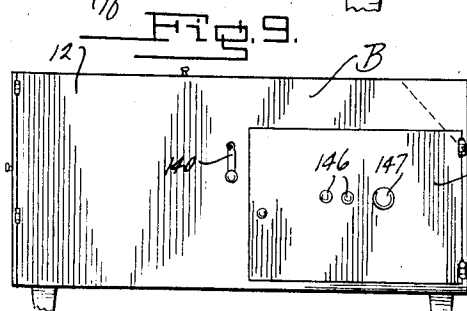
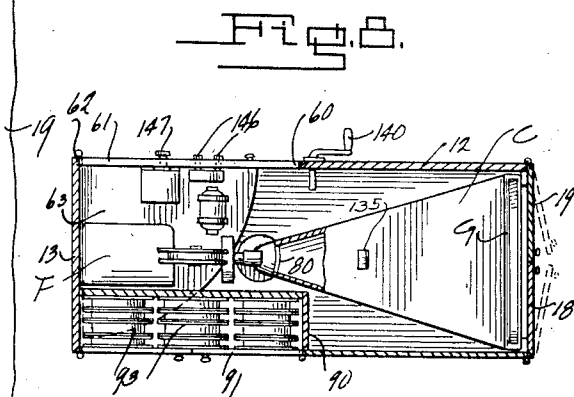
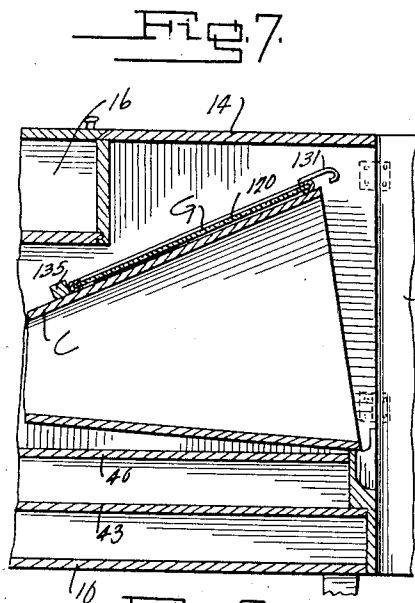
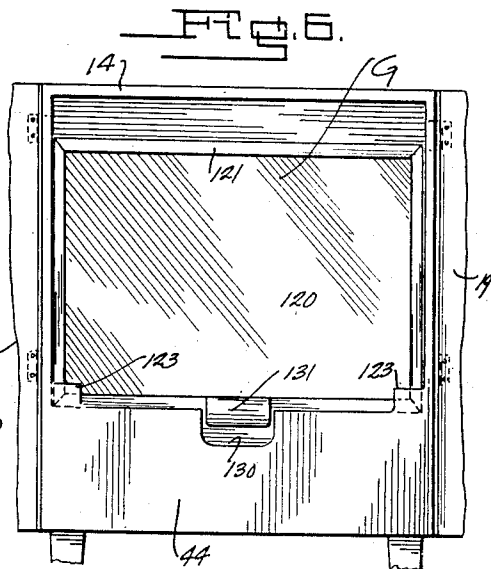
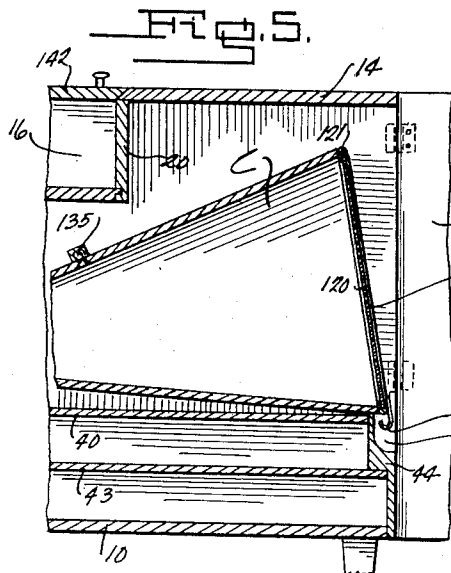
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COMBINED PHONOGRAPH, RADIO, AND PICTURE PROJECTOR

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Eigil Rasmussen
Inventor

353 Lancaster and Alvin
Attorney

UNITED STATES PATENT OFFICE

EIGIL RASMUSSEN, OF VANCOUVER, BRITISH COLUMBIA, CANADA

COMBINED PHONOGRAPH, RADIO, AND PICTURE PROJECTOR

Application filed July 15, 1927. Serial No. 208,083.

This invention relates to a combined radio, phonograph, and picture projecting machine or device.

The primary object of this invention is the provision of a compact device within which a radio, phonograph, and picture projecting machine are adapted to be mounted in a cooperative relation with respect to an amplifying horn and screen supported thereby.

A further object of this invention is the provision of an entertaining device adapted to be used in homes, for advertising, and the like, including a novel association of picture projecting and sound reproducing mechanism.

Other objects and advantages of this invention will be apparent during the course of the following detailed description.

In the accompanying drawings, forming a part of this specification, and wherein similar reference characters designate corresponding parts throughout the several views,

Figure 1 is a longitudinal sectional view taken through the improved device, showing a relative arrangement of details thereof.

Figure 2 is a reduced plan view of the improved device.

Figure 3 is a horizontal sectional view taken through the improved device, showing a left side door open and supporting moving picture projecting apparatus in a cooperative relation to other details of the device.

Figure 4 is a right side elevation of the improved device.

Figure 5 is a fragmentary sectional view of the front end of the improved device, showing more particularly the amplifying horn thereof and projecting screen supported thereby.

Figure 6 is a fragmentary front elevation of details illustrated in Figure 5.

Figure 7 is a sectional view of parts similar to those illustrated in Figure 5, but with the screen in an operatively supported relation on the horn of the device.

Figure 8 is a horizontal sectional view taken substantially on the line 8—8 of Figure 1.

Figure 9 is a left side elevation of the improved device.

In the drawings, wherein for the purpose of illustration is shown a preferred embodiment of the invention, the letter A may generally designate the improved combined radio, phonograph, and picture projector, which may include a casing B having an amplifying horn C mounted therein in a cooperative relation for receiving sound from radio apparatus D and phonograph apparatus E, and for also receiving through the passageway or channel thereof projected rays of light from moving picture apparatus F in a projected relation upon a screen G supported by the said horn C.

Referring to the means B the same preferably includes a bottom 10; right and left side walls 11 and 12; a rear wall 13; and a top wall 14, defining a horizontally elongated compartment 15, normally open at the front thereof, and having preferably hinged doors or closures 18 and 19 respectively vertically hinged on the front edges of the walls 11 and 12 for swinging to a closed or open relation with respect to the compartment 15, as illustrated in the drawings. The top wall 14 is preferably provided with an opening 15^a therein, which opens into a compartment 16 wherein a phonograph turn table 17 is rotatably supported on a horizontal partition 18. The partition 18 at its sides may be secured to the side walls 11 and 12, and at its front and rear ends terminating short of the rear wall and front doors; a front partition wall 20 being provided therefor and a rear partition wall 22, thus defining the shallow compartment 16 in which the phonograph turntable 17 is rotatably mounted for supporting a record in the conventional relation. The tone arm E is pivoted at 25 on the partition 18, and it may also be used for supporting a motor 27 on its bottom surface, in the compartment 15.

The amplifying horn C is preferably of trumpet-shape formation, supported longitudinally in the compartment 15, and flaring from the front end in a diverging relation to the rear end thereof. The front end of the horn C is open, and faces the front opening of the casing B, and over which the screen G may be detachably supported, as illus-

trated in Figure 1. The horn C is supported on an axis acute to the horizontal, that is, the same slopes downwardly to the rear of the compartment 15, and the horn C may be thus supported in any suitable manner by the walls of the casing B. A partition 40 may be disposed in the lower part of the forward end of the compartment 15, below the horn C, spaced from the bottom wall 10, to provide a shallow record receiving compartment between the same and the bottom 10. The partition wall 40 extends from the opening at the front of the compartment 15 to about the middle of the compartment 15, and there a rear wall 41 terminates the record compartment 42, which may have an auxiliary supporting shelf 43 therein, if desired. In order to support the front ends of the partition wall 40 and shelf 43, a front wall or support 44 may be provided, set into the casing compartment 15 so that the doors 18 and 19 may properly close the compartment 15, as illustrated in Figures 1 and 3 of the drawings. The horn C at its front end rests upon this wall or support 44, and the said horn extends rearwardly above the partition 40, and at its rear end is provided with a downturned flaring neck or inlet 50, providing a small channel passageway 51 which communicates with the main channel or passageway 52 of the horn C, and which inlet or neck 50 is adapted to be connected at its lower end to the mouth of a radio loud speaking unit 54, of a radio apparatus D, as is well illustrated in Figure 1 of the drawings. This radio unit 54 is of course mounted in the compartment 15 rearwardly of the wall 41.

The amplifying horn C is also provided with a relatively larger inlet neck 57, arcuating upwardly in a Y-shaped relation with respect to the inlet or arm 50; said inlet or arm 57 having a channel 58 therethrough, and said inlet 57 at its reduced end being suitably connected in the phonograph motor board or wall 18, in communication with the tone arm E, so that the latter may swing over the record in conventional relation and transmit the sound reproduced into the channels 58 and 52, as can readily be understood from Figure 1 of the drawings.

In the rear half of the left wall 21 of the casing B is provided an opening 60, in which a door or closure 61 is hingedly connected at 62 adjacent the left edge of the rear wall 13. The said door 61 is provided along the lower margin thereof with a horizontal table 63, preferably in the shape of a 90° segment, which swings into the compartment 15 immediately over the bottom 10 of the casing B, and which supports thereon the moving picture projecting machine F. The machine F is upwardly tilted at its front end, and may rest on an auxiliary rearwardly and downwardly sloping platform 70 provided on the platform or table 63, as illustrated in

Figure 1, so that the telescope or lens piece 73 of the moving picture machine F will cast the rays of light from the motion picture machine into the port or opening 80 provided in the rear end of the amplifying horn C between the inlet arms 50 and 57; the axis of projection of the rays thus being aligned axially along the horn C, so that the rays of light from the motion picture machine F can be cast directly on the screen G along the channel or passageway 52 of the horn C, as will be apparent from Figure 1 of the drawings.

The motion picture machine F of course supports reels 83, and the machine F may be swung by opening and closing of the door 61, to the outside of the compartment 15, to facilitate changing of the reels, in a relation which is apparent from Figure 3 of the drawings.

When the door 61 is fully closed the motion picture machine F is in position to project its rays thru the port 80, as illustrated in Figure 1.

In order to accommodate a number of reels of film, it is preferred to provide partitions in the compartment 15 along the right hand wall 11 at the rear thereof, to define a compartment 90, having an opening in the side wall 11 thereto over which the closures or doors 91 operate; the compartment 90 being adapted to receive reels 93 therein for the motion picture projecting machine F; the compartment 90 in horizontal depth being limited so as not to interfere with the machine F, as will be apparent from Figure 8 of the drawings.

As to the radio apparatus, the loud speaking unit 54 is a portion thereof, and the dial panel 100 is preferably supported at the upper rear corner of the casing B; the rear portion of the top wall 14 and upper portion of the rear wall 13 being cut away to diagonally accommodate the panel 100. A closure 102 may be hingedly connected at 101 on the upper end of the wall 13, which swings to a closed diagonally inclined position to cover the panel 100, as will be apparent from Figure 1 of the drawings. Of course on the rear of the panel 100 may be provided any suitable mechanism, such as condensers 102^a and the like, suitably connected by wires (not shown) to the loud speaker unit 54. As a part of the radio apparatus there may also be provided a battery compartment 105, the same being in fact an extension of the phonograph turn table compartment 16, but separated therefrom by the wall 22 above mentioned. The bottom 18 which forms the support for the turn table of the phonograph is extended rearwardly and at its rear end is provided with a vertical wall 107 spaced with the wall 22 to provide the compartment 105 extending from side to side of the casing B, which receives the A and B bat-

teries 108 therein, as illustrated in Figure 1. The compartment 105 has an opening on the right hand wall 11, over which a closure 110 is hingedly connected, as illustrated in Figure 4 of the drawings.

It is readily apparent that the inclined panel 100 will permit a person to stand and readily adjust the dials thereon; it being intended to support the casing B upon legs 115 of desired length to place the phonograph turn table and radio dials in conveniently accessible positions to a person standing.

Referring to the screen G, the same may be of frosted glass, silk, or other fabric, it being necessary that the same be translucent. Preferably the same includes a screen body 120, which may be of any suitable material as above mentioned, which is peripherally enclosed in a metal frame 121 of rectangular formation. The front end of the horn C has an opening which conforms to this rectangular formation of the screen G, and the screen G is adapted to fit over the front opening of the horn C, in the relation illustrated in the drawings. In order to most efficiently position the screen G for picture observation, the same is inclined at an acute angle to a vertical plane; the front margins of the horn C terminating in a plane at an angle acute to the vertical, so that the screen G may rest thereagainst in a plane acute to the vertical, upwardly inclining into the compartment 15 from the lower edge thereof which rests upon the front wall or supporting block 44 above described; the said block 44 having corner lips 123 thereon which secure the screen G against slipping from its resting position against the open end of the horn C. It is to be noted that this inclined positioning of the screen G will enable people in the room to more efficiently see pictures reflected on the screen body 120, and indeed one of the important advantages secured by inclining the screen is that the same is overlapped by the front end of the top wall 14 of the casing, which shades the same from any lights in the room, and enables a better observation of the picture on the screen G, free of interference by illuminant within the room in which the machine may be operating. It is to be particularly noted that the screen G only rests at its lower portion on the block 44, and entirely within the compartment 15, so that the doors 18 and 19 can be closed. The block or front wall 44, as is more clearly illustrated in Figure 6 is recessed at 130, into which an operator may slip his or her fingers beneath a substantially J-shaped handle 131 which is secured on the screen G and extends into the recess 130; this handle 131 being gripped by the hand of the operator for the purpose of slightly elevating the screen G until it is free of the retaining lips 123, so that the screen G may be entirely detached

from the casing B, or so that the upper end thereof may be slipped into the compartment 15 above the horn C into a resting relation upon the top wall of the horn C; the screen coming to rest at its normal top edge against a stop block 135 secured on the top wall of the horn C, in order to position the handle 131 of the screen G where it may be easily grasped when it is desired to take the screen G from its inoperative collapsed position in Figure 7, to the operative position in Figures 5 or 6.

A suitable crank 140 may be provided for the motor 27, which is preferably of the spring wound type. A top lid or closure 142 may be provided for the compartment 16, collapsed into the same plane as the top wall of the casing B, as illustrated in Figure 1. In order that the motion picture machine may be conveniently operated, the switch details 146 thereof may be mounted on the closure 61, as may also the rheostat 147, as illustrated in Figures 8 and 9 of the drawings.

From the foregoing description of this invention it is apparent that a novel type of combined radio, phonograph, and motion picture projector has been provided, which are compactly arranged in a cooperative assemblage of details which will permit of relatively small rooms receiving these three entertaining devices in a single unit. This renders a device of this character practical for home use, although the application of such details thereof may be made to devices adapted for other uses, such as advertising.

Various changes in the shape, size, and arrangement of parts may be made to the form of invention herein shown and described, without departing from the spirit of the invention or the scope of the claims.

I claim:

1. In a device of the class described a casing having a compartment therein, an amplifying horn in the compartment having a passageway therethrough and a front opening therefor, a screen supported over said front opening, of translucent material, a phonograph in the compartment of the cabinet for transmitting sound to the horn, a radio for the cabinet including a loud speaking unit in the compartment connected with said horn for transmitting sound therethrough, and a motion picture projecting machine in the cabinet compartment mounted to project rays of light thru the passageway of the horn onto the screen supported thereby.

2. In a device of the class described the combination of a cabinet having a compartment therein, a phonograph mounted in the upper portion of the compartment, a radio including a loud speaking unit mounted in the lower portion of the compartment below the phonograph, a single horn, and upper and lower inlet connections for the horn communicating respectively with the phonograph

and loud speaking unit for transmitting sounds thru the horn, said horn between said inlet connections having a port therein, a translucent screen supported at the front of the horn with which the support aligns, and motion picture projecting apparatus in the compartment of the casing rearwardly of the horn in a position to project rays of light thru the port onto said screen.

3. In a device of the class described a cabinet including side walls, top and bottom walls, and a rear wall, said cabinet having a compartment opening at the front thereof, closures for said opening of said compartment, a horn operatively situated in the compartment towards the front thereof having a longitudinally extending passageway opening at the front in facing relation with the front opening of said compartment, the rear of said horn having a port therethrough aligning with the front opening of the horn, motion picture projection apparatus situated in the rear of the compartment for directing rays of light thru the port to the front opening of said horn, a translucent screen detachably situated over the front opening of said horn, radio apparatus in the compartment of said casing having a diagonally positioned dial supporting panel at the rear upper corner of said cabinet, a loud speaker unit having an inlet connection with said horn, and phonograph apparatus in the top portion of the compartment having an opening thru the top wall of said cabinet and having an inlet connection with said horn at the rear end thereof.

4. In a device of the class described a cabinet, an amplifying horn of tapered formation having at the rear restricted end thereof divergent inlet arms, phonograph means having a tone arm connected with one of said inlet arms, radio receiving apparatus having amplifying means connected with the other inlet arm of the horn, motion picture projection apparatus in the cabinet, the horn between said inlet arms having a port into which rays of light from the motion picture projection apparatus are directed, and the horn at its front end having a translucent screen for receiving thereon the rays of light from the motion picture projection apparatus.

EIGIL RASMUSSEN.

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