Oct. 21, 1941. O. J. McCLURE 2,259,651

SOUND-PICTURE MACHINE

Filed April 27, 1939 3 Sheets-Sheet 1

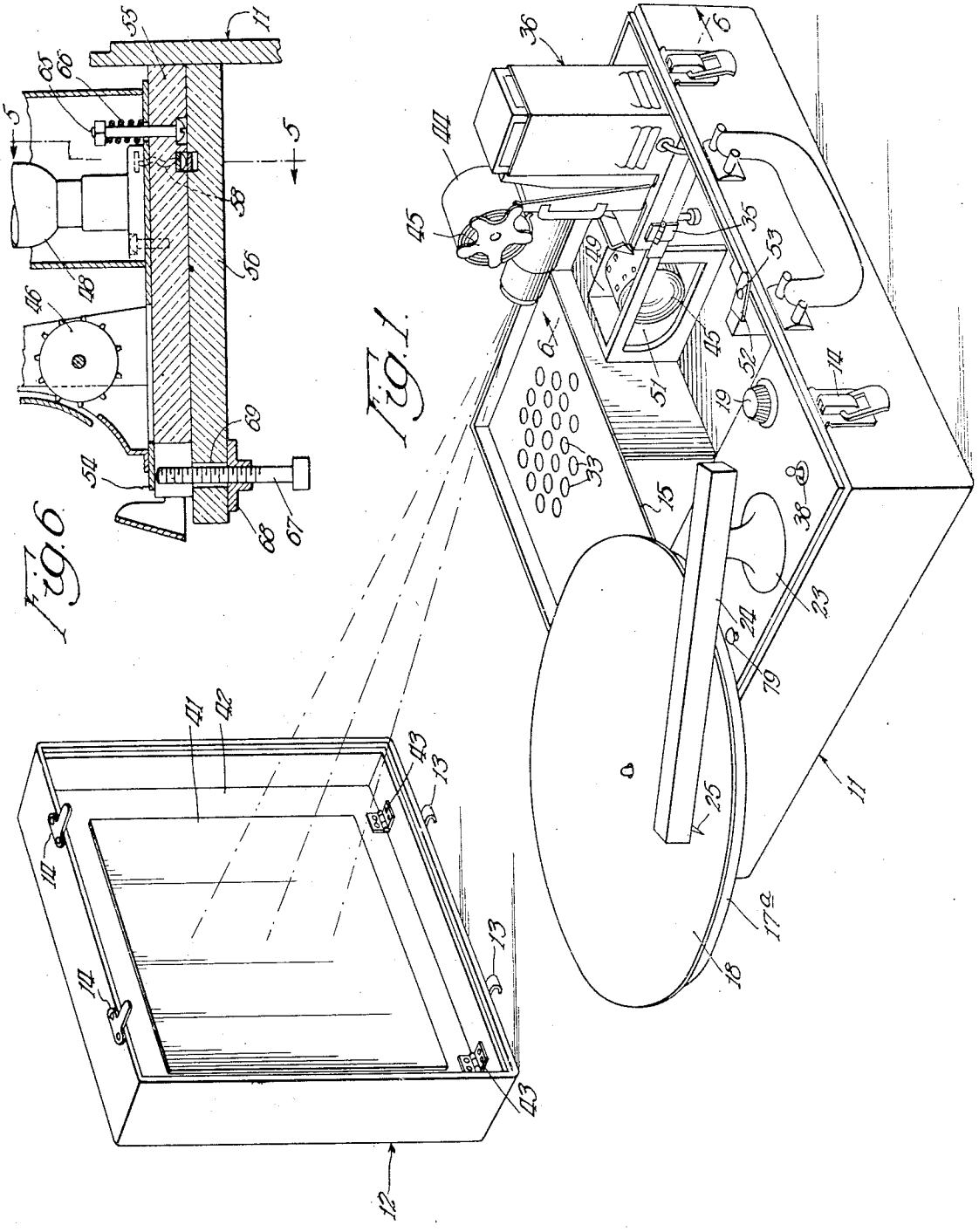


Fig. 1.

Fig. 4.

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Fig. 2.

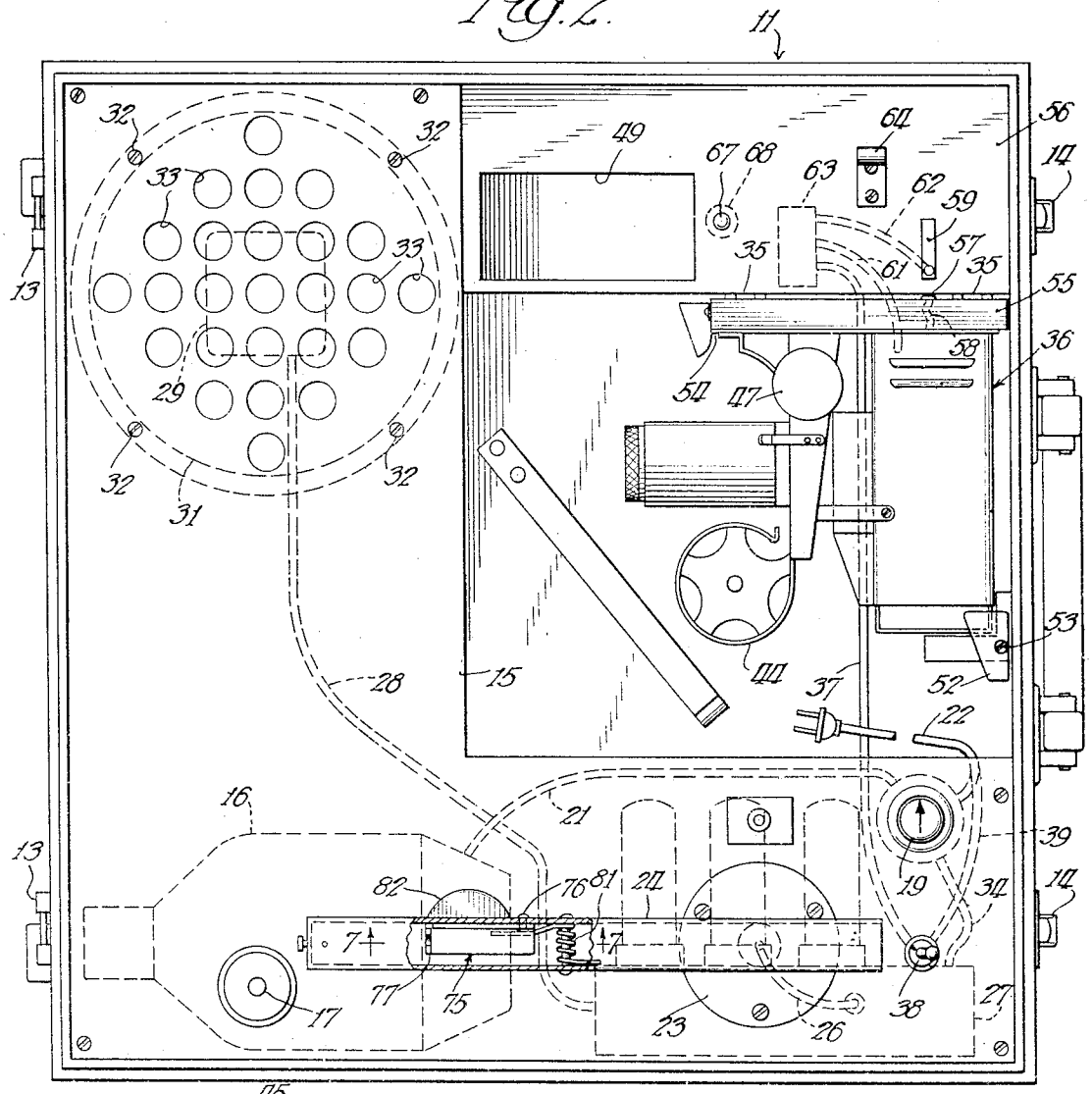


Fig. 3.

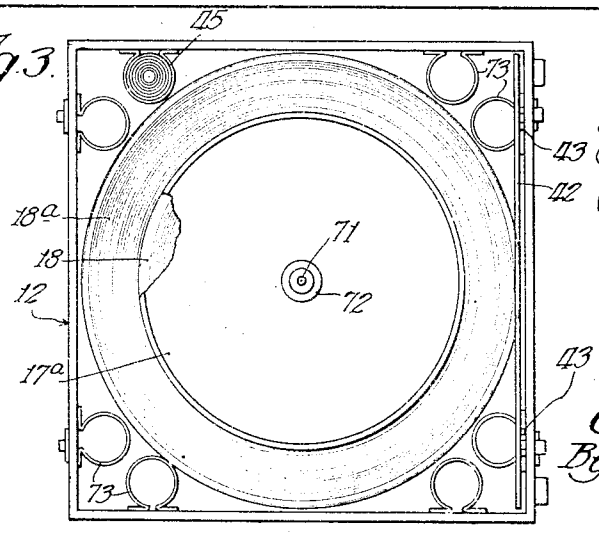
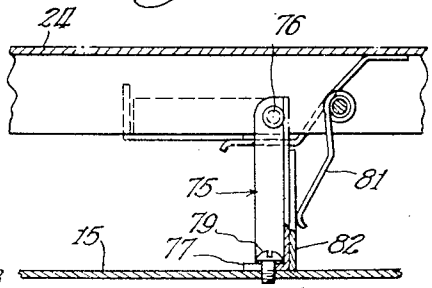


Fig. 7.



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SOUND-PICTURE MACHINE

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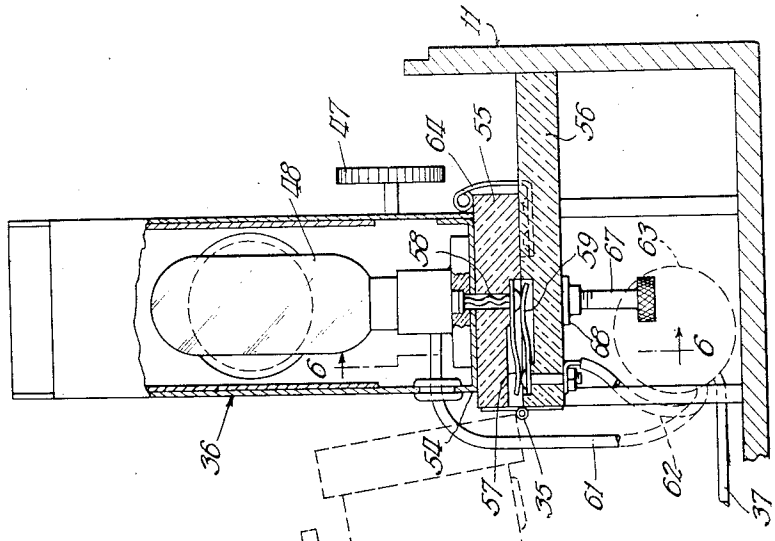


Fig. 5.

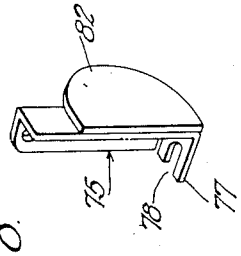


Fig. 8.

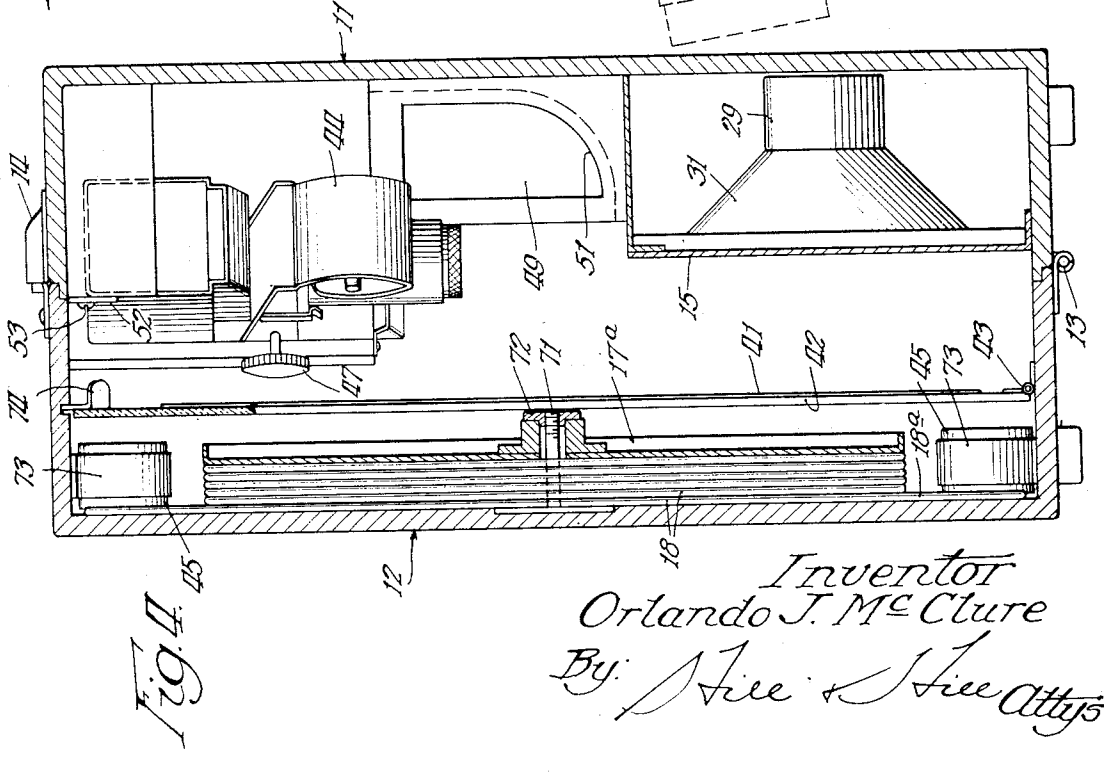


Fig. 4.

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Patented Oct. 21, 1941

2,259,651

UNITED STATES PATENT OFFICE

2,259,651

SOUND-PICTURE MACHINE

Orlando J. McClure, Chicago, Ill.

Application April 27, 1939, Serial No. 270,373

3 Claims. (Cl. 88—28)

This invention relates to a sound-picture machine, and particularly to a portable machine for the projecting of sound or talking pictures for industrial promotional and educational purposes.

One object of the present invention is to provide a device of the character described, which is of neat appearance, compact, light of weight, and wherein all of the structure employed in its operation is securely packed in a divisible case or container for safe transportation and handling, and at the same time conveniently accessible for setting-up the device in operative position within the case.

Another object of the invention is to provide a novel construction and arrangement whereby the filament of the projector lamp is efficiently protected against breakage in setting up the device for operation or dismantling and packing the device for transporting or handling.

Another object of the invention is to provide a novel construction and arrangement for protecting sound-records, employed in the operation of the device, from abnormal heat and heat generated by the projector, thereby preventing warping or other damage to the record discs.

Another object of the invention is to provide novel means whereby the projector must be secured in folded or inoperative position within the case before the cover or closure member therefor can be placed in position with respect thereto.

A further object of the invention is to provide novel and conveniently operated means for securing the tone or pick-up arm in fixed relation to the device.

A still further object of the invention is to improve devices of the character described in sundry details hereinafter referred to and particularly pointed out in the appended claims.

One embodiment of the present invention is shown for illustrative purposes in the accompanying drawings, in which:

Fig. 1 is a perspective view of my improved sound-picture machine and screen therefor set up in operative position;

Fig. 2 is an enlarged plan view of a portion of the case with certain of the elements constituting the present invention shown in folded and secured position preparatory to receiving the cover member;

Fig. 3 is a plan view on a reduced scale of the open side of the cover member illustrating the manner of mounting sound records, turn-table and film rolls therein for purposes of storage and for handling.

Fig. 4 is a sectional elevational view of the sound-picture machine case and cover member therefor in folded or packed condition ready for storing, transporting or other handling;

Fig. 5 is a fragmentary sectional elevational view of a portion of the device taken substantially as indicated by the lines 5—5 of Fig. 6;

Fig. 6 is a fragmentary sectional elevational view taken substantially as indicated by the lines 6—6 of Fig. 5;

Fig. 7 is a fragmentary sectional elevational view of the supporting member and securing means for the tone or pick-up arm used in conjunction with the present device and taken substantially as indicated by the line 7—7 of Fig. 2, but showing the supporting member in arm-supporting position; and

Fig. 8 is a perspective view of the pick-up arm supporting member illustrated in Figs. 2 and 7.

As illustrated in the accompanying drawings, the present invention comprises a container or casing indicated, as a whole, by the numeral 11 having a cover member 12 operatively related and adapted to be removably connected thereto by means of cooperating hinge connections 13 and cooperating locking means 14 (Figs. 1, 2, and 4).

Mounted in the casing 11 is a plate 15 adapted to cover a substantial portion of two sides of the casing and spaced from the bottom portion thereof as clearly illustrated in Figs. 1 and 4, and mounted also in the casing 11, preferably, adjacent one corner thereof and beneath the plate 15 is the motor 16 having a rotating spindle 17 operatively related thereto and adapted to receive a turn-table 17a on which sound-records of various sizes indicated at 18 and 18a (Fig. 4) may be mounted, the motor 16 being connected through a switch 19 and suitable electrical conductors 21 and 22 (Fig. 2), with a suitable source of electrical current supply for actuating the motor and rotating the turn-table 17a and sound-record 18.

Mounted on the plate 15 is a pedestal 23 on which is pivotally mounted a tone or pick-up arm 24 having a needle 25 mounted thereon adapted to cooperate with sound grooves formed in the record 18, as is common practice in reproducing machines, the tone or pick-up arm 24 being shown in present instance as operatively connected by means shown at 26 (Fig. 2) with a sound amplifying device 27 operatively connected by means of a conductor 28 with a loud speaker unit 29 having a speaker cone 31 associated therewith mounted on and secured to the inside

of the plate 15 by means of screws 32, the plate 15 being perforated or provided with a plurality of apertures 33 adjacent the speaker unit 29 and cone 31 for permitting the passage of sound therethrough, while the amplifier 27 is operatively connected to the switch 19 by means of a conductor 34 by which the operation of the amplifier and the speaker unit may be controlled.

By such an arrangement it will be apparent that the sound picked up from the record 18 by the needle 25 and arm 24 may be amplified and transmitted through the amplifier 27 to the loud speaker unit 29.

Mounted also in the casing 11 and hingedly connected thereto, as indicated at 35, is a projector indicated as a whole by the numeral 36, operatively connected to an electrical conductor 37, switch 38 mounted on the plate 15, and conductors 39 and 22 with the source of current supply employed for operating the motor 16 and amplifier 27.

The projector 36 is shown in Fig. 1 in upright or operative position for projecting a picture or the like onto a screen 41 mounted on a partition 42, formed preferably of heat insulating material, hingedly connected by means of hinges 43 to and within the cover member 12 in spaced relation to the closed side thereof, as clearly shown in Fig. 4 of the drawings, the projector 36 being provided with a film holder 44 adapted to receive a roll of film 45, which may be fed through the projector by means of the sprocket wheel 46 operated by a hand wheel 47 and past a light beam generated by a lamp 48 mounted in the projector, the film being fed downwardly into a film receptacle 49 formed in the casing 11, said receptacle having, preferably, an inclined or curved portion 51 adjacent one of its sides to facilitate the re-rolling of the film within the receptacle.

As illustrated in Figs. 2 and 4, and shown by dotted lines in Fig. 5, the projector 36 is adapted to be swung about its hinge connection 35 into a folded or inoperative position with respect to the casing 11, and is adapted to be secured thereto in such folded or inoperative position by means of a button 52 pivotally mounted on a stud 53, the form and position of the button 52 with respect to the edge or wall portion of the casing 11 being such that when the button is out of projector securing position, as illustrated in Fig. 1, the button will interfere with the positioning of the cover member 12 on the casing, but when moved to the position shown in Figs. 2 and 4 for securing the projector in inoperative or folded position with respect to the casing 11, the cover member 12 may be readily positioned thereon for closing the open side of the casing 11 as shown in Fig. 4.

For protecting the filament of the lamp 48 of the projector 36 against possible damage by reason of the current being connected with the lamp when the projector is in folded or inoperative position, the projector 36 and bottom plate 54 thereof are mounted on a base member 55 to which the hinges 35 are connected for pivotally securing the projector to the casing 11 through the medium of a support 56 forming a part of the casing (Figs. 5 and 6), and mounted on the base 55 in a manner to move therewith is a resilient contact finger 57 operatively connected through a conductor 58 with the lamp 48, and mounted on the support 56 is a resilient contact finger 59 adapted to cooperate with the finger 57 when the projector is in upright operative position, and to be separated therefrom when the projector is moved to and retained in inoperative or folded position with respect to the casing, the lamp 48 being provided with a conductor 61, and the spring finger 59 being operatively related through a conductor 62 to a junction box 63 in which suitable connections are made with the conductor 37 for controlling the operation of the projector lamp by manipulation of the switch 38 when the projector is in upright operative position as shown in Figs. 5 and 6. It will be noted by reference to Fig. 5 that the projector 36 may be maintained in upright operative position by means of a spring latch 64 mounted on the support 56 and engageable with the upper side of the base 55 of the projector.

By reference to Fig. 6, it will be noted that the bottom plate 54 of the projector 36 is secured to the base 55 by means of a bolt 65 having a spring 66 operatively related thereto and to the plate 54 for yieldingly or movably securing the plate 54 adjacent one of its ends to the base 55, and for raising and lowering the opposite end of the plate 54 for elevating and lowering the beam of the projector, an adjusting screw 67 threaded into a ring or plate 68 mounted on the support 56 is adapted to extend through an opening 69 formed in the support 56 and into engagement with the underside of the plate 54, and from this arrangement it will be apparent that by manipulating the adjusting screw 67, the adjacent end of the plate 54 may be raised and lowered against action of the spring 66 in a manner to vary the elevation and angle of the beam of the projector in a manner to properly position an image on the screen 41 in the event of unevenness in the surface on which the casing 11 and cover member 12 may be positioned when the device is set up for operation.

For conveniently supporting and carrying the records 18 used in the operation of the device, the closed side of the cover member 12 is provided with an inwardly extending spindle 71 adapted to enter the centering apertures of the records 18 in a manner to support the records thereon, after which the turn-table 17a may be positioned on the spindle 71 and the turn-table and records may be rigidly secured to the cover member 12 by means of a nut 72, as clearly illustrated in Fig. 4, and by reference to Figs. 3 and 4, it will be noted that the respective corner portions of the cover member 12 are provided with loops 73 for holding a plurality of rolls of film 45 or containers therefor.

It is a well known fact that considerable heat is generated by the lamp 48 of the projector, and that such heat is frequently retained for a considerable period of time by the lamp housing and other elements of the projector, and in order to protect the records and films from such heat when placed in the closed casing, as shown in Fig. 4, the partition 42 on which the screen 41 is mounted is positioned in the cover member 12 in spaced relation to the closed side thereof and between the films and records mounted on the cover and the projector, the partition 42 being shown, in the present instance, as secured in position by means of a latch 74 pivotally mounted on the partition 42 and engageable with a portion of the cover member.

For securing the tone or pick-up arm 24 in fixed position with respect to the casing 11 when the device is packed for transporting, the arm 24 is provided with a supporting member indicated, as a whole, by the numeral 75 pivotally mounted adjacent one of its ends at 76 to the arm 24 and

provided at its opposite or lower end with a laterally extending foot portion **77** having a recess **78** formed therein adapted to receive a stud shown, in the present instance, as a screw **79** mounted on the plate **15**, the member **75** being adapted to be retained in operative position with respect to the stud **79** by means of a spring **81** mounted on the arm **24** and acting to yieldingly urge the supporting member **75** toward the stud and to move the supporting member to the dotted line position shown in Fig. 7 when the member is disconnected from the stud. For conveniently manipulating the supporting member **75** to operative and inoperative position, the member is provided with a finger piece **82** adapted to extend laterally at one side of the pick-up arm **24**, as shown in Fig. 2, in a manner to engage the underside of the arm and serve as a stop against upward movement with respect to the arm.

From the foregoing description, it will be apparent that the present invention provides a novel construction and arrangement whereby the elements of a sound-picture machine of the character described may be positioned conveniently in folded compact relationship for safe transportation and handling of the device, and wherein the elements are conveniently accessible for setting up the device in operative position.

It will be observed also that the present invention provides novel means for protecting the filament of the projector against breakage or damage when setting up or dismantling the device, and that suitable provision is made for protecting sound-records and films employed in the operation of the device against the heat generated by the projector, thereby preventing warping or other damage to the record discs and films.

Obviously, the present invention is not limited to the precise construction and arrangement shown and described, as the same may be variously modified. Moreover, all the features need not be used conjointly, as the same may be used to advantage in variously different combinations and sub-combinations.

What I claim as new and desire to secure by Letters Patent is:

1. A device of the class described comprising a case, a sound-record operating motor having a rotating spindle associated therewith mounted in said case, a pick-up arm pivotally mounted in said case and adapted to cooperate with a sound-record operatively connected to and rotatable with said spindle, a speaker unit in said case, a sound amplifier in said case operatively related to said pick-up arm and speaker, a projector in said case and hingedly connected thereto in a manner to be variously positioned entirely within the bounds of the sides of said case, a detachable cover member for said case, a picture screen mounted in said member in spaced relation to the closed side thereof, and means on said cover member for positioning and securing sound records thereto between the closed side thereof and said screen.

2. A device of the class described comprising a case, a sound-record operating motor having a rotating spindle associated therewith mounted in said case, a pick-up arm pivotally mounted in said case and adapted to cooperate with a sound-record operatively connected to said spindle, a vertically facing speaker unit in said case, a sound amplifier in said case operatively related to said pick-up arm and speaker, a film roll receiving projector in said case and movably connected thereto in a manner to be variously positioned within the vertically extending confines of said case, a detachable cover member for said case, a picture screen hingedly mounted in said member in spaced relation to the closed side thereof, means on said cover member for positioning and securing sound records thereto between the closed side thereof and said screen, and a film roll receptacle mounted in said member.

3. A device of the class described comprising a case, a sound-record operating motor having a rotating spindle associated therewith mounted in said case, a pick-up arm pivotally mounted in said case and adapted to cooperate with a sound-record operatively connected to said spindle, a speaker unit in said case, a sound amplifier in said case operatively related to said pick-up arm and speaker, a film receptacle in said case, a film roll receiving projector in said case adjacent said receptacle and hingedly connected to the case in a manner to be swung into and out of operative position with respect to said receptacle and within the vertically disposed confines of the case, a detachable cover member for said case, a picture screen hingedly mounted in said member in spaced relation to the closed side thereof, means on said cover member for positioning and securing sound records and turn-table thereto between the closed side thereof and said screen, a plurality of film roll receptacles removably mounted in said cover member, and a pair of switches in said case connected to a source of electrical current supply and operatively related, respectively, to said motor and amplifier, and to said projector.

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