

Sept. 18, 1934.

F. H. HIBBARD
SOUND PICTURE SYSTEM
Filed Oct. 29, 1931

1,974,070

2 Sheets-Sheet 1

FIG. 1

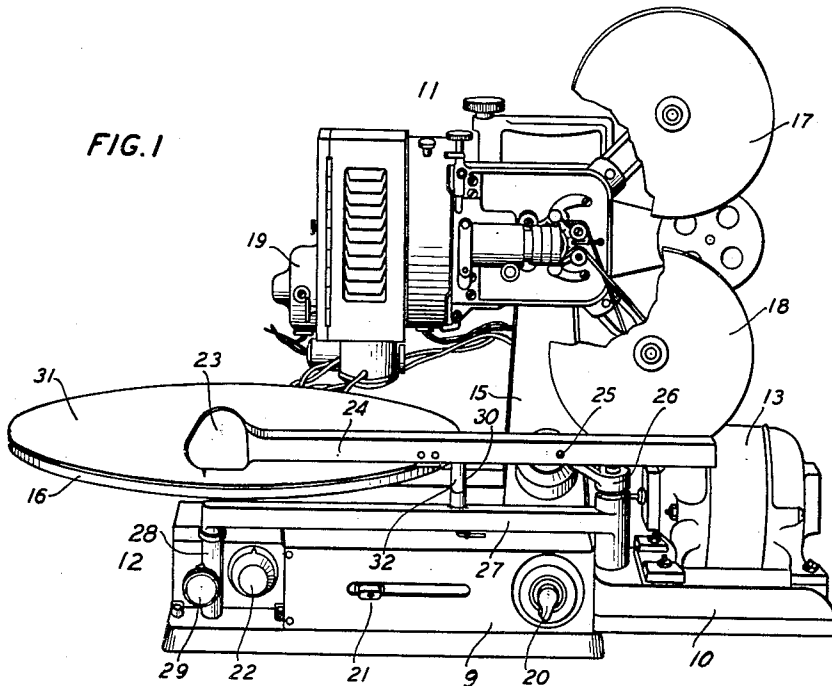
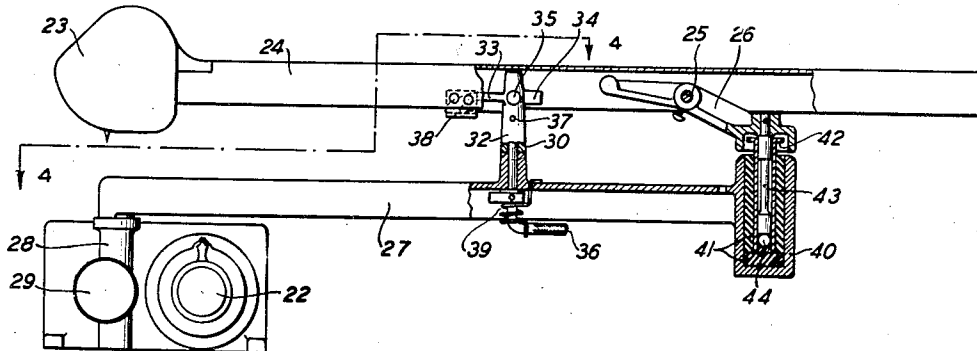


FIG. 2



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FIG. 3

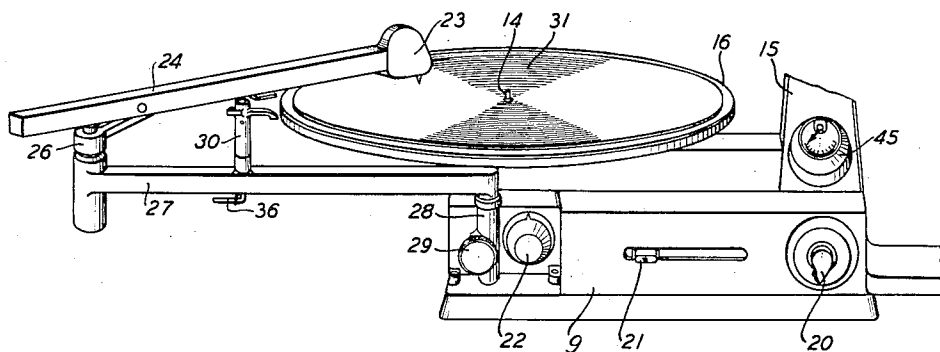
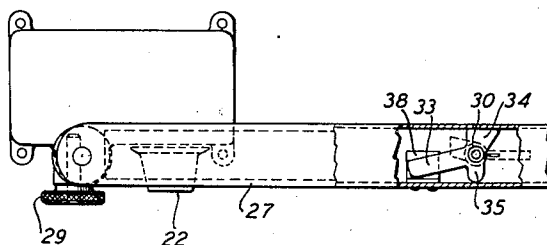


FIG. 4



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SOUND PICTURE SYSTEM

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2 Claims. (Cl. 274—1)

This invention relates to sound picture reproducing sets and more particularly to those which use disc type sound records and which are adapted to be easily portable as a unit.

5 The object of the invention is a set of this type which may be packed in a small case for carrying it from place to place and which may be quickly and easily made ready for use.

In accordance with the general features of the invention the record turntable and picture projector are driven by a single motor through suitable gearing and controlling mechanism including a meter, control switch and rheostat is conveniently mounted in the common base. The reels and turntable are readily detachable to reduce the size of case required for transporting the set.

An important feature of the invention is a reproducer supporting arm adapted to fold compactly when not in use and to swing around for playing purposes to locate the reproducer, remote from the projector head in a convenient operating position. Further features of the arm are a vibration absorbing bearing, a device for locking the arm in any desired position and means for preventing the reproducer from being operated in the wrong position on the record.

In the drawings Fig. 1 is an assembly view of the reproducer set removed from its carrying case;

30 Fig. 2 is an elevation of the double pivoted reproducer arm;

Fig. 3 shows the reproducer arm in playing position; and

35 Fig. 4 is a plan view of a portion of the arm showing the locking arrangement.

Referring now to the drawings, the set consists essentially of a picture film projector 11 and a disc type phonograph 12 mounted on a common base 9 and mechanically coupled together to be driven in synchronism by a motor 13 mounted on the end portion 10 of the base 9. The coupling members include a horizontal shaft engaging the turntable spindle 14 and a vertical shaft within the projector supporting standard 15, connected by suitable gearing to the horizontal shaft and to the drive shaft of the projector. These connections have not been shown in detail since they are of the usual type and form no part of the present invention. When transporting the unit from place to place in its carrying case the turntable 16 and the film reels 17, 18 are removed and placed in suitable pockets to reduce the necessary size of the case.

The driving motor 13 and the fan motor 19 which dissipates the heat generated by the pro-

jector lamp, receive power from a socket in the base 9 in the rear of standard 15 conveniently located for connection to the local power supply. A switch 20 controls the motor 13 and a separate control (not shown) is provided adjacent motor 19 so that the latter may be operated whenever the projector lamp is energized even though the machine is not being used. A meter 45 indicates the current to the lamp, rheostat 21 regulates the lamp current to the desired value and rheostat 22 controls the output of the phonograph pick-up 23. The base 9 is preferably a cast iron shell so that the rheostat and much of the necessary wiring can be concealed within it.

The pick-up is mounted on a supporting arm 24 pivoted at 25 on the member 26 which is journaled in the arm 27. This latter arm is pivotally supported in a bearing 28 eccentric to the axis of the turntable so that for transporting purposes the arms are folded into the position shown and locked by thumb screw 29 and the locking device 30.

In machines of this type, if the pick-up reproduces the record 31 in the position shown in Fig. 1 it is found to be operating within the stray field of the motor 19 and objectionable noise, which cannot be effectively eliminated by shielding, is thereby introduced into the reproduction. According to this invention, therefore, the double pivoted construction just described has been provided and the pick-up cooperates with the record in the manner illustrated in Fig. 3. To place the pick-up in operation the arm 27 is swung around and locked by set screw 29 in the position shown. The locking device 30 is then released so that the arm 24 may be rotated and the pick-up 23 placed in proper position in the starting groove.

This locking arrangement consists of a member 32 having radially projecting lugs 33, 34 and 35 and an operating lever 36 keyed to it by a pin 37. When the arms 24 and 27 are in their folded position as shown in Fig. 2 the arm 24 rests on the member 32 and lug 33 engages the upper surface of bracket 38 so that the arm is held against movement in a vertical direction and lugs 34 and 35 engage either side of the arm to hold it against lateral movement. When the arm 24 is released by turning lever 36 the spring 39 restores lug 33 to the position shown in Fig. 3 so that if the operator attempts to place the pick-up on the record near the bearing 28 in which position the direction of rotation of the record would be incorrect for proper performance, the arm 24 will be engaged by the lug 33 to maintain the stylus out of contact with the record grooves.

The vibration absorbing bearing referred to above is contained in the cylindrical portion 40 of the arm 27. The cylinder is lined with resilient material 41 which may be soft sponge rubber, or its equivalent, and a tubular member 42 containing the shaft 43 fits tightly against the lining. The shaft is supported by a steel ball 44 and is keyed to the member 26 to provide a pivot for the arm 24. Due to the resiliency of the rubber, vibrations originating in the motor or the gearing will not be transmitted to the pick-up 23.

While the invention has been described with reference to the particular structures illustrated, various modifications will occur to those skilled in the art and the invention should be limited only by the following claims.

What is claimed is:

1. In a sound reproducing unit for portable sound picture projection sets, the combination with a supporting base, a reproducer, a turntable and a driving motor therefor mounted on opposite ends of the base, of a swinging arm normally extending above the base toward the

motor, a reproducer supporting arm pivotally mounted on the outer end of the swinging arm, a pivot for the swinging arm eccentric to the axis of the turntable whereby said arm may be swung away from the base to place the reproducer in a suitable playing position and means on the swinging arm for locking the reproducer arm when not in use. 80

2. In a sound reproducing unit for portable sound picture projection sets, a base, a turntable and driving means therefor mounted on the base, a record on the turntable and reproducer supporting means comprising a swinging arm pivoted at one end on the base eccentrically with respect to the axis of the turntable, a reproducer arm pivotally mounted in the free end of the swinging arm, a reproducer on the reproducer arm and locking means on the swinging arm, effective in one position to lock the reproducer arm and in another position to prevent the reproducer from engaging the starting groove on the wrong side of the record. 95

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