

Dec. 9, 1941.

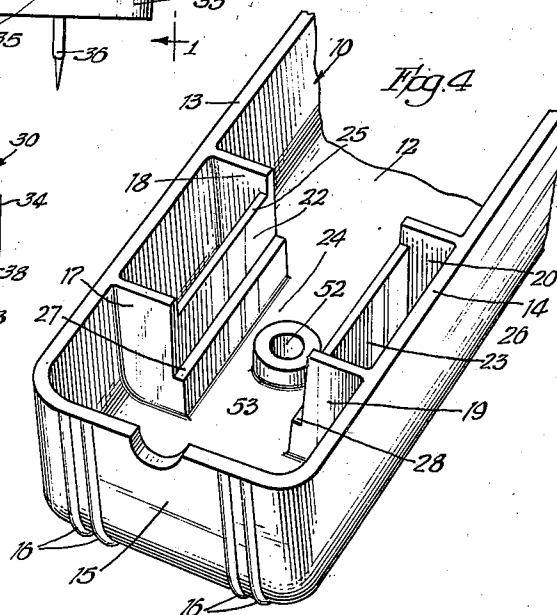
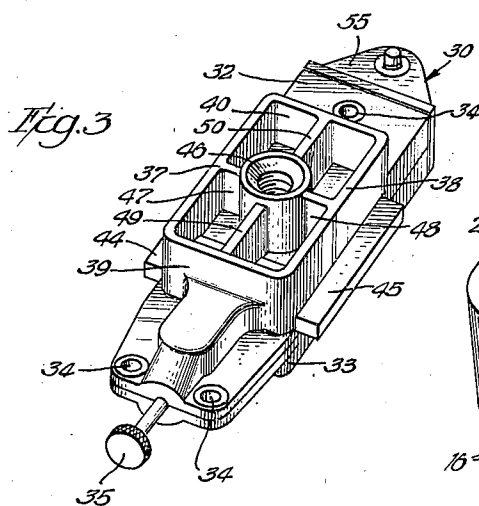
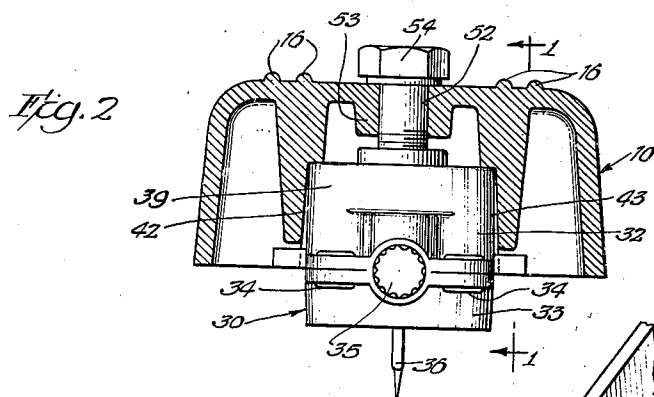
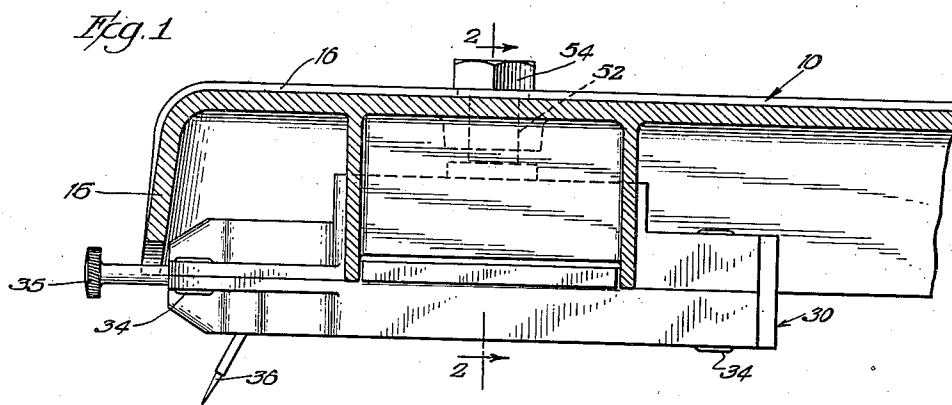
W. H. HUTTER

2,265,840

PICKUP ARM ASSEMBLY

Filed May 13, 1940

2 Sheets-Sheet 1



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2 Sheets-Sheet 2

Fig. 5

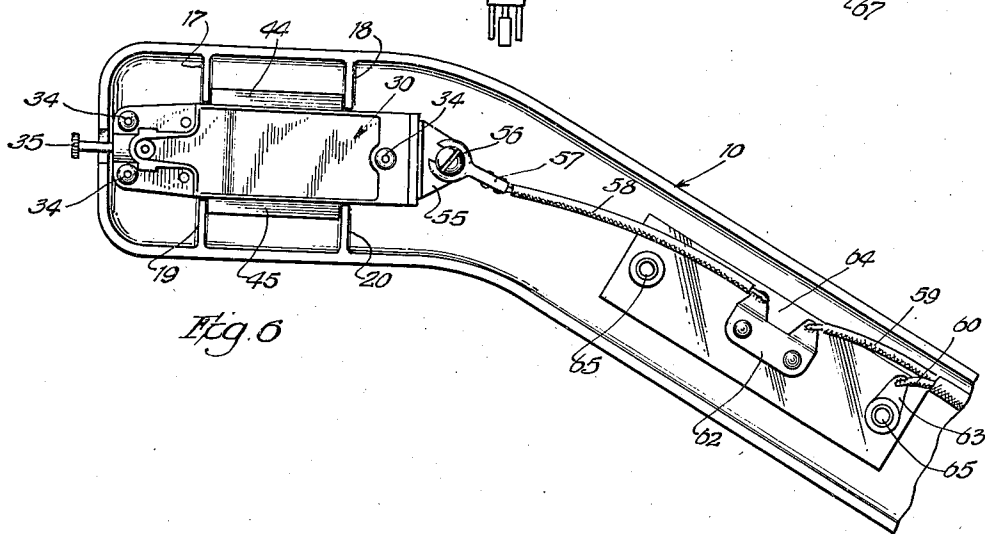
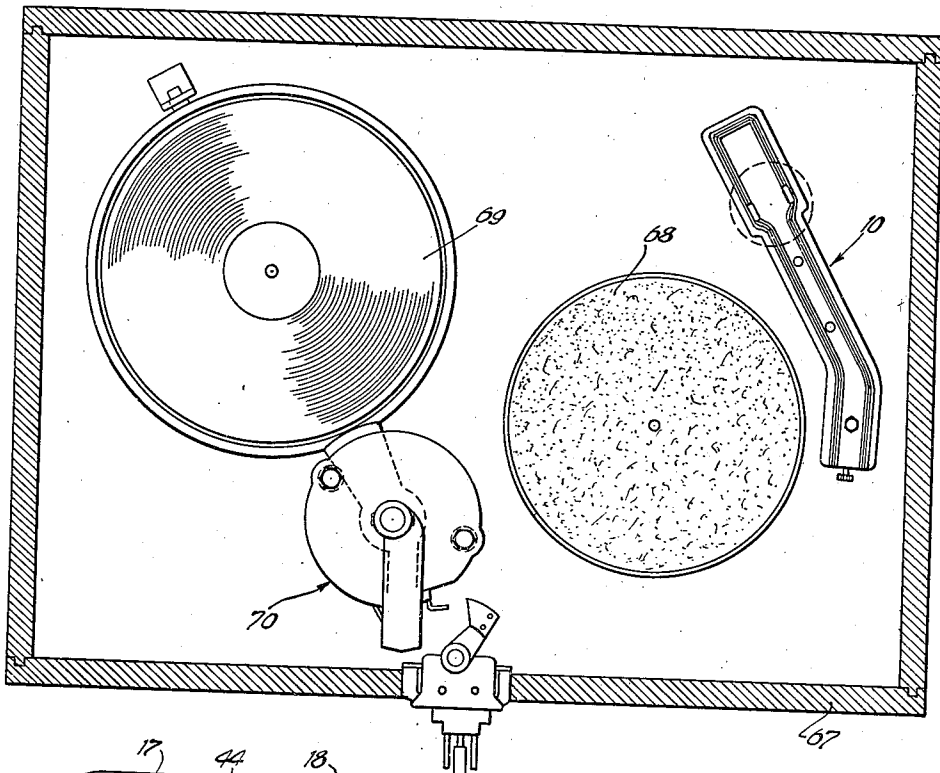


Fig. 6

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UNITED STATES PATENT OFFICE

2,265,840

PICKUP ARM ASSEMBLY

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Application May 13, 1940, Serial No. 334,760

2 Claims. (Cl. 179—160.41)

This invention relates to pick-up arms of the type adapted to be utilized with sound reproducing apparatus or phonographs.

An object of this invention is to provide a pick-up arm and pick-up cartridge having cooperating engaging surfaces adapted definitely and accurately to locate the pick-up cartridge with respect to the arm and also having a single fastening means which is easily accessible for securing the cartridge in place with respect to the arm.

Another object of this invention is to provide a die cast pick-up arm and a pick-up cartridge having a die cast housing portion, said die cast parts having integrally cast projecting portions providing cooperating surfaces for accurately locating the cartridge with respect to the arm and holding the cartridge to an extent that only a single fastening means is necessary to secure the cartridge in position.

Other objects and advantages of the invention relate to features of construction and arrangement of parts which will be apparent from a consideration of the following specification and accompanying drawings, wherein:

Fig. 1 is a fragmentary side sectional view of a pick-up arm assembly embodying a preferred form of this invention and having a section taken substantially on a line 1—1 of Fig. 2 and in the direction of the arrows;

Fig. 2 is a sectional view with the section taken substantially on line 2—2 of Fig. 1;

Fig. 3 is a perspective view of a preferred form of pick-up cartridge which comprises a part of the pick-up arm assembly shown in Figs. 1 and 2;

Fig. 4 is a fragmentary perspective bottom view of the pick-up arm shown in Figs. 1 and 2;

Fig. 5 is a top plan view of a phonograph including a preferred form of this pick-up arm assembly and illustrating one adaption thereof; and

Fig. 6 is a fragmentary bottom plan view of the pick-up arm assembly shown in Figs. 1 and 2.

Having particular reference to the drawings, a pick-up arm 10 is preferably die cast of light metal and has a channel section including a top 12, side walls 13 and 14, and closed ends such as 15. Linearly extending ribs such as 16 may be provided on the outer surface of the pick-up arm for decorative purposes and for providing additional strength if desired.

Pairs of opposed ribs or fins 17 and 18, and 19 and 20, respectively, are preferably integral with and disposed between the sides 13 and 14 of the pick-up arm, near one end of the arm. The ribs

or fins 17 and 18 extend into the channel of the arm from the side 13, and the ribs or fins 19 and 20 are preferably oppositely disposed with respect to the fins or ribs 17 and 18, and extend into the channel of the arm from the side 14. Opposed fins or ribs 22 and 23 are also preferably integral with the pick-up arm and extend transversely with respect to and between the ribs 17 and 18, and 19 and 20, respectively. A longitudinal channel is formed at 24, between the fins or ribs 22 and 23. Surfaces 25 and 26 of the fins or ribs 22 and 23, respectively, are preferably equi-distant from the surface of the top 12 of the arm. The ribs 22 and 23 also preferably have integral shoulders or surfaces 27 and 28, respectively, which are equi-distant from the surface of the top 12 of the arm. The fins or ribs 17, 18, 19, and 20, preferably project beyond the surfaces 25 and 26 of the fins 22 and 23, to provide end stop lugs.

A pick-up cartridge 30 preferably comprises a pair of housing portions 32 and 33 which are preferably die cast and secured together by rivets or fastening means 34. These pick-up housing portions 32 and 33 enclose a conventional type of crystal or other suitable pick-up unit and have a thumb screw 35 threaded into one end thereof for securing a needle, such as 36, in place. The housing portion 32 has projecting side ribs or fins 37 and 38 which are preferably integral therewith and connected by integral end ribs or fins 39 and 40. The side ribs 37 and 38 provide outer surfaces 42 and 43 which are adapted to fit between the opposed surfaces of the ribs or fins 22 and 23 on the pick-up arm. The housing portion 32 also preferably has, integrally formed on opposite sides thereof, projecting lugs 44 and 45 which are adapted to engage the surfaces 25 and 26 of the fins or ribs 22 and 23 of the pick-up arm, and fit between the projecting portions of the fins or ribs 17 and 18, and 19 and 20. An internally threaded collar 46 is preferably integral with the portion 32 of the pick-up housing and is preferably disposed between the fins or ribs 37, 38, 39 and 40. Also, integral reinforcing ribs 47, 48, 49, and 50 preferably extend from the ribs or fins 37, 38, 39, and 40, respectively, to the collar 46.

An opening 52 is provided in the top 12 of the pick-up arm in such a position that it is in alignment with the threaded opening in the collar 46 when the pick-up cartridge is in position between the fins or ribs 17, 18, 19, 20, 22, and 23. A reinforcing collar 53 is preferably integral with the pick-up arm on the inner surface of the

top 12 and adjacent the opening 52. A bolt or thumb screw 54 extends through the opening 52 and is threaded into the collar 46 to secure the pick-up cartridge in place on the pick-up arm 10.

A terminal lug 55 is secured to one end of the pick-up cartridge and has a screw 56 threaded therein for making an electrical connection to the cartridge by a lug such as 57 and lead wire such as 58. Also in the preferred embodiment of my invention, the lead wires, such as 58, 59, and 60, are anchored with respect to the pick-up arm 10 by being secured to suitable lugs such as 62 and 63 on a terminal strip 64, which terminal strip is secured to the inner surface of the pick-up arm by rivets or fastening means, such as 65.

As illustrated in Fig. 5, the pick-up arm 10 is rotatably mounted in a phonograph cabinet 67, adjacent a turntable 68, for the playing of records, such as 69, which records may be placed upon and removed from the turntable by a record carrying mechanism, such as 70.

In the use and operation of this pick-up arm assembly the pick-up cartridge 30 is definitely located with respect to the pick-up arm 10 by the engagement of the cooperating surfaces of the fins on the pick-up arm and the sides and extending lugs on the pick-up cartridge. The cartridge is secured in position by the removable bolt or screw 54. The advantages of this pick-up arm assembly structure are numerous. The pick-up cartridge is easily removed and replaced without removal of the pick-up arm from the phonograph cabinet or its normal support therein. The pick-up cartridge is released by the removal of the bolt or screw 54, after which the lead wire 58 is disconnected by loosening the screw 56. The operations are opposite for the replacement of the pick-up cartridge. Having particular dimensions for the housing of the pick-up cartridge and the extending lugs 44 and 45 thereon, and corresponding dimensions for the fins on the pick-up arm,

the pick-up cartridge may only be replaced by one of the same type which is adapted to operate properly with the phonograph and arm. With the structure provided, it is also impossible to mount the pick-up cartridge in the wrong position or in the wrong place with respect to the pick-up arm. The pick-up arm is definitely and securely held in position in the proper location.

While I have described a preferred embodiment of my invention, many modifications may be made therein without departing from the spirit of the invention, and I do not wish to be limited to the precise details of construction set forth, but desire to avail myself of all changes within the scope of the appended claims.

I claim:

1. A pick-up arm assembly comprising, in combination, a die cast pick-up arm having integrally cast fins on one side thereof having two sets of opposed surfaces and one set of surfaces spaced a predetermined distance from said one side of the arm, a pick-up cartridge having integrally cast portions providing three separate sets of surfaces adapted to be engaged between said opposed surfaces and by said one set of surfaces definitely to locate the cartridge with respect to the arm, and a screw extending through the arm and threaded into the cartridge for securing the cartridge in place on the arm.

2. A pick-up arm assembly comprising, in combination, a pick-up arm having pairs of spaced and opposed fins extending in transverse directions to form a channel having projecting end lugs, one of said pairs of fins having surfaces equi-distant from the arm, a pick-up cartridge having a projecting portion on one side adapted to fit into said channels and having projections on opposite sides adapted to rest against said surfaces and fit between said projecting end lugs, and means for securing the cartridge in place.

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