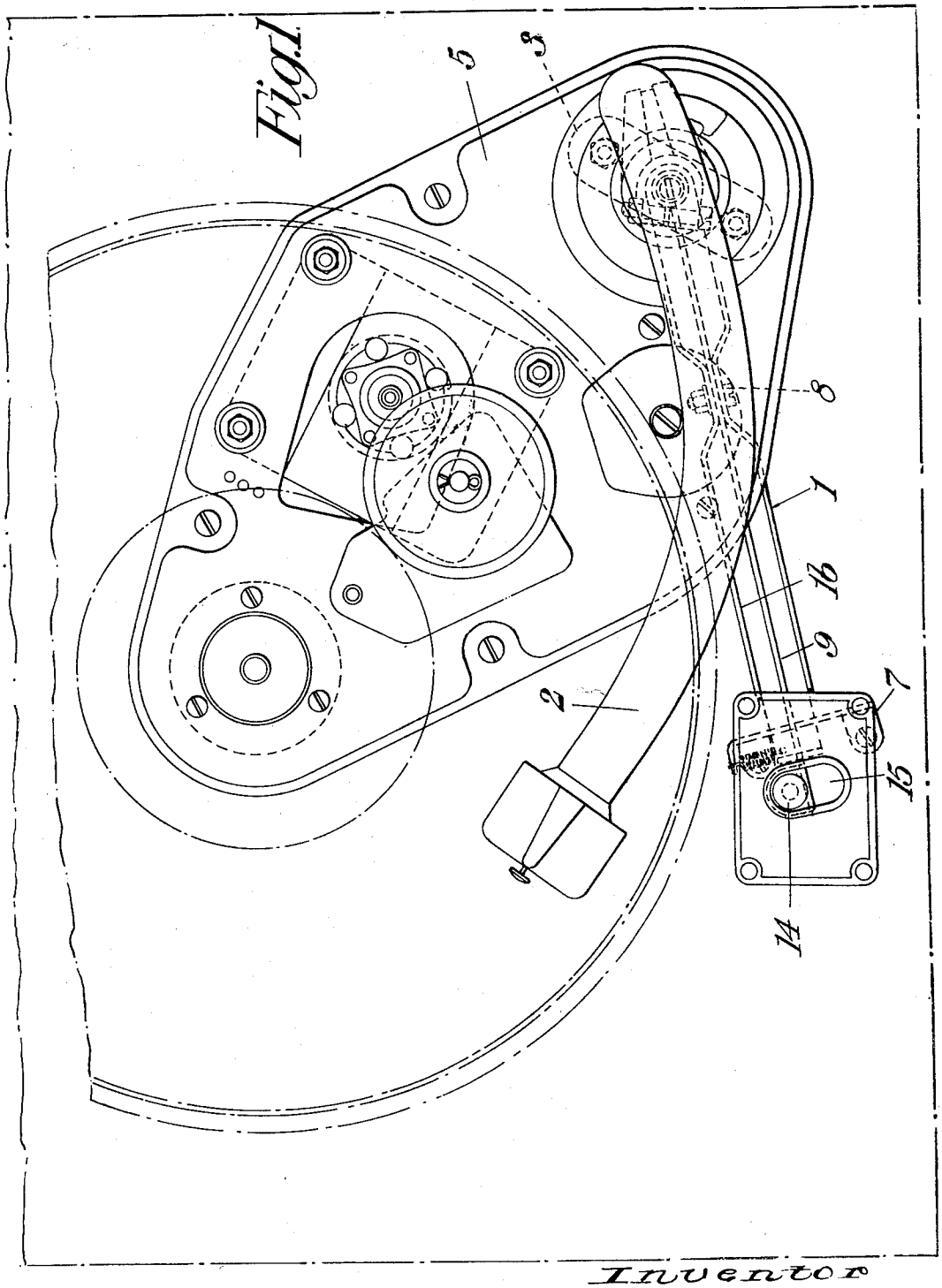
Nov. 15, 1955 L. STONE 2,723,859

MANUALLY OPERABLE REPEATING MECHANISM FOR A PHONOGRAPH

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Fig. 1



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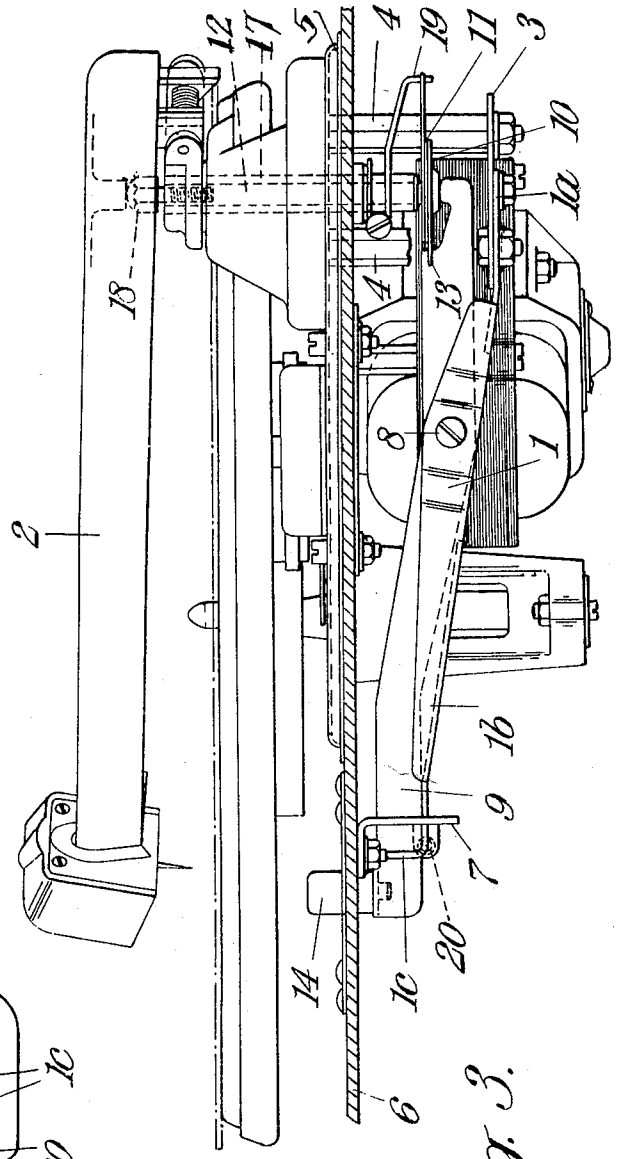


Fig. 3.

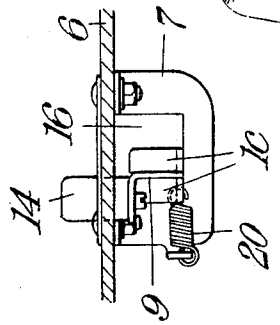


Fig. 4.

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Filed June 11, 1951 3 Sheets-Sheet 3

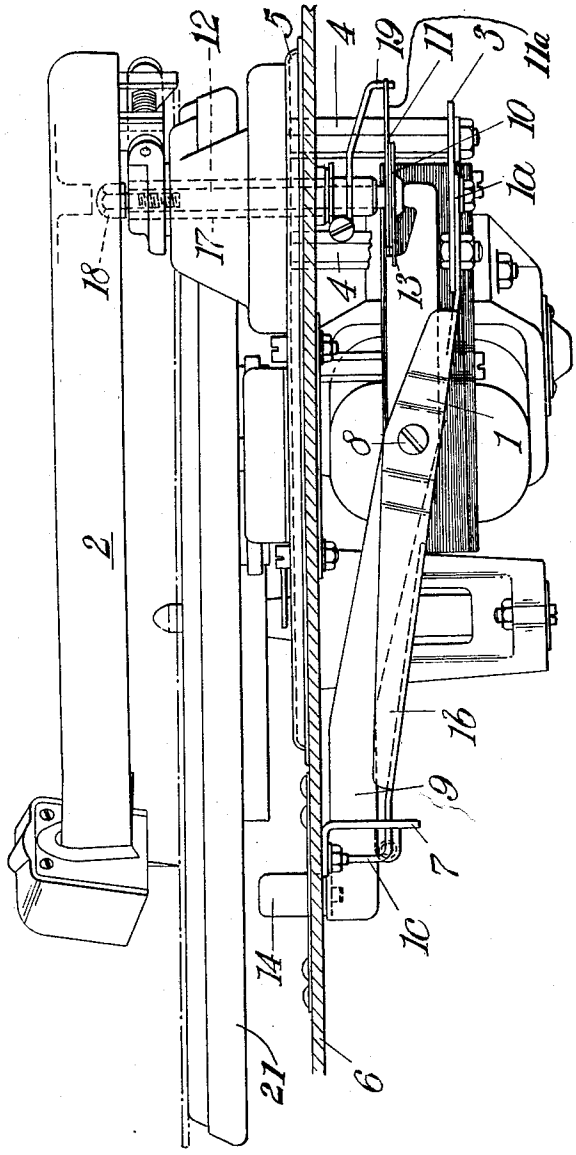


Fig. 2.

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2,723,859

MANUALLY OPERABLE REPEATING MECHANISM FOR A PHONOGRAPH

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Application June 11, 1951, Serial No. 230,874

Claims priority, application Great Britain June 14, 1950

2 Claims. (Cl. 274—14)

This invention relates to phonographs primarily for use with records of an educational character, such as the study of foreign languages, the object of the invention being the provision of means whereby short passages of a record may be readily repeated at will.

According to the invention manually operable means are provided for raising the tone arm or pick-up from the record and moving it in a rearward direction a predetermined amount and then lowering it onto the record.

The means for raising and lowering the tone arm or pick-up may comprise lever means operable by a button projecting through a slot in the motor board, the length of the slot determining the rearward displacement of the tone-arm or pick-up.

In the accompanying drawings:

Figure 1 is a plan view.

Figure 2 is an elevation with the pick-up in the playing position.

Figure 3 is an elevation with the pick-up raised by the mechanism according to the invention.

Figure 4 is an end elevation.

In carrying the invention into effect according to one convenient mode by way of example, a lever supporting member or arm 1 is pivotally mounted at one end 1*a* on an axis coincident with the axis of oscillation of the pick-up 2 upon a plate 3 suspended by posts 4 from a mounting plate 5 supported upon the motor board 6. At its other end the arm 1 seats upon a bracket 7 bolted to the motor board, the arm being free to move horizontally in an aperture or slot in the bracket. The arm 1 is formed intermediate its ends of channel shape, the webs 1*b* extending upwardly and being bent inwardly to support a horizontal pin 8 upon which an actuating lever 9 is pivotally mounted, the bent portions forming a guide for the lever.

The actuating lever 9 at its forward end rockably supports a friction disc 10 which is located to engage a similar friction disc 11 secured to the lower end of the pick-up arm lifting spindle 12. Rotation of the friction disc 10 relatively to the actuating lever 9 is prevented by a forked extension 13 of the disc engaging the actuating lever.

At the rear end of the actuating lever 9 an actuating knob 14 is mounted which extends upwardly through a slot 15 in the motor board 6. This end of the lever 9 is guided between bent up portions 1*c* of the arm 1.

By means of these guides and those adjacent the pivot 8, the actuating lever 9 and arm 1 will pivot together around the pivot 8.

On pressing the knob 14 the actuating lever 9 is pivoted on pivot 8 to raise the friction disc 11 thereon and thus raise the pick-up arm lifting spindle 12 and thus raising the pick-up needle clear of the record. While still depressed movement of the knob 14 along the slot 15 will pivot the lever and the supporting arm about the axis of oscillation of the pick-up arm whereby the pick-up needle is moved rearwardly or away from the centre of the record an amount determined by the aperture or slot 16 in the bracket 7. The knob 14 may then be released

to lower the pick-up needle onto the record to repeat the desired passage or phrase.

The pick-up arm lifting spindle 12 is mounted in a hollow pick-up arm spindle 17 and the amount of lift imparted when depressing the knob 14 may be adjusted by an adjusting screw 18 located at the top of the pick-up arm lifting spindle 12.

Independent rotation of the pick-up arm lifting spindle 12 relative to the pick-up arm spindle 17 is prevented by a forked extension 11*a* of the friction disc 11 secured to the lifting spindle 12 engaging a member 19 secured to the arm spindle 17.

On releasing the presure on the knob 14 the lever 9 and arm 1 are returned to normal position by suitable spring means 20 connected to the bracket and the supporting arm.

The turntable 21 may be driven in the normal manner by electric or spring motor.

I claim:

1. In a phonograph, a motor board, a pick-up arm, a mounting on the motor board in which the pick-up arm is mounted for oscillation about a vertical axis, a plate below the motor board carried by the mounting, a bracket supported below the motor board in spaced relation to the plate, a tubular spindle for the pick-up arm extending vertically through the motor board, a pick-up arm lifting spindle extending through the tubular spindle, and manually operable repeating mechanism for the phonograph, such mechanism comprising an arm pivotally mounted at one end on said plate for movement on an axis aligned with the axis of oscillation of the pick-up arm, the other end of the arm projecting through an aperture formed in said bracket, an actuating lever pivotally mounted intermediate its ends to said arm for movement about a horizontal axis, a friction drive plate on one end of the lever, a complementary friction drive plate above the first named drive plate carried by the pick-up arm lifting spindle, the respective friction drive plates being axially aligned with the axis of oscillation of the pick-up arm, the other end of the lever projecting through the aperture in the bracket, the aperture serving as means to limit the extent of movement of the arm and the lever about the vertical axis to conform to the portion of the record to be repeated, an operating knob on the projecting end of the lever extending through a slot in the motor board so that upon the application of pressure to the knob, the lever will move about its pivot to bring its friction drive plate into driving engagement with the friction drive plate on the pick-up arm lifting spindle to move the pick-up arm upwardly, spring means biassing the arm to its normal position, and length adjusting means for the pick-up arm lifting spindle to adjust the amount of upward movement imparted to the pick-up arm.

2. A phonograph as defined in claim 1 wherein the arm includes a base, a web at each end of the base arranged at right angles to the base, with the webs being formed to provide guides for the lever adjacent the pivot of the lever to the arm, and the base adjacent the bracket being bent upwardly and provided with a slot to form a guide for the projecting end of the lever.

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