July 2, 1935. F. PUTNOKY 2,006,605

PICK-UP ARM GUIDE FOR SOUND BOXES OF TALKING MACHINES

Filed May 13, 1933

FIG. 1

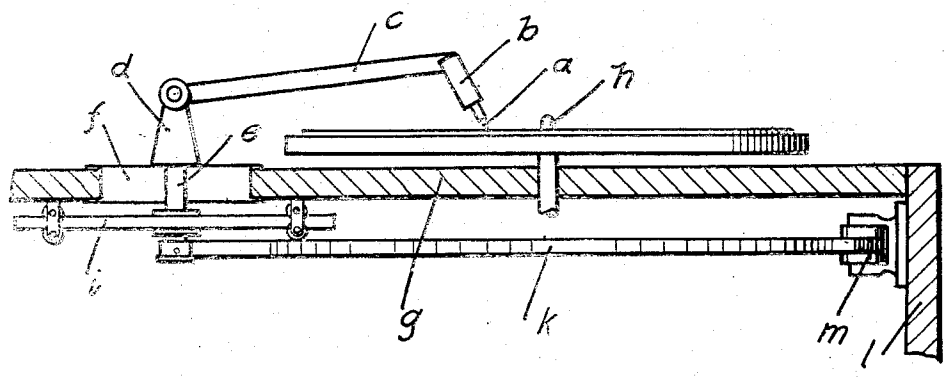


FIG. 2

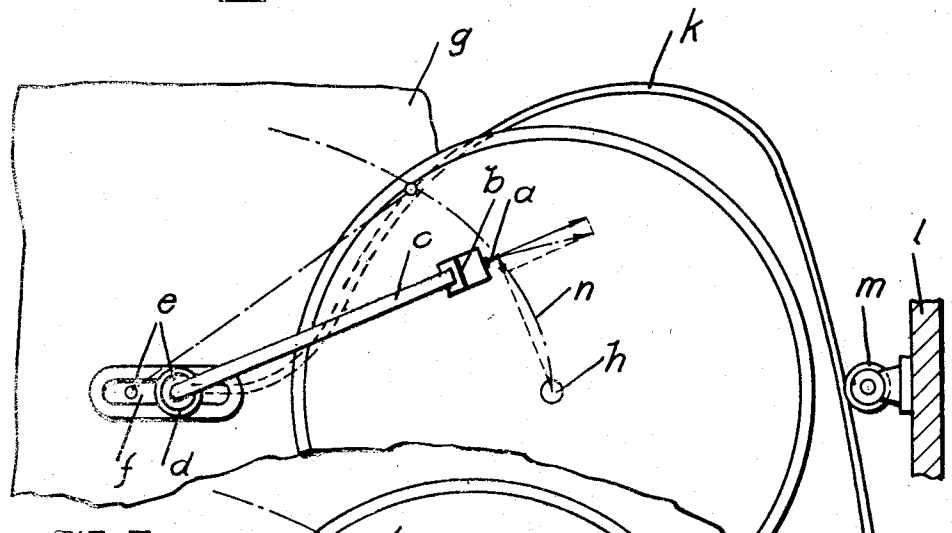
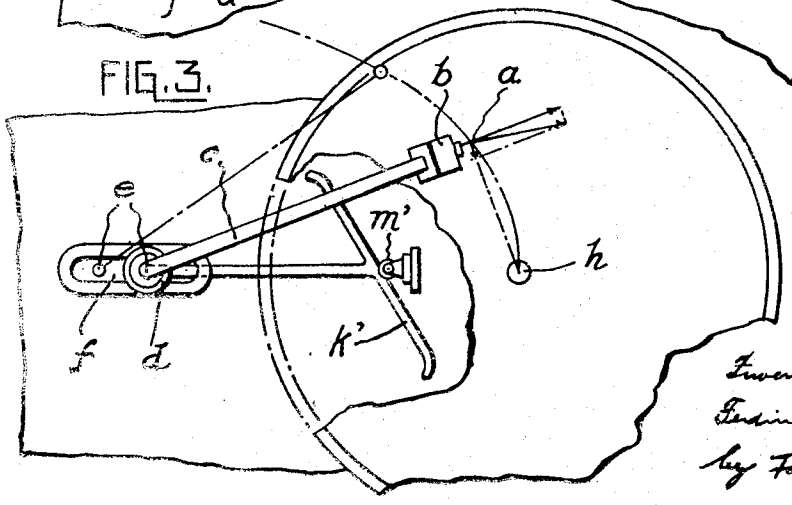


FIG. 3.



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PICK-UP ARM GUIDE FOR SOUND-BOXES OF TALKING MACHINES

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1 Claim. (Cl. 274—1)

In the known pick-up arm guides for sound boxes or pick ups different kinds of constructions are provided for ensuring that the plane of the stylus oscillations is always in the direction of the actual radius of the record. The lateral pressure exerted by the record groove on the stylus is utilized in all instances as adjusting force. This is open to the objection that the force lies substantially in the direction of the radius so that the force acts upon the stylus in the direction in which it is capable of carrying out oscillations of maximum amplitude. The result is, that the secondary noises caused by the feed are entirely transmitted to the diaphragm. It is therefore necessary for the feeding force to be perpendicular to the plane of oscillation of the stylus, in which plane the stylus can carry out no movements so that the secondary noises otherwise produced by the feeding force cannot possibly be transmitted to the pick-up, so that the portion of the secondary noises caused by the feed are eliminated.

Further, the known pick-up arm constructions are open to the objection that in many instances they work with too many joints. In order to overcome friction increased thereby, the feeding force engaging in the direction of the plane of oscillation of the stylus must be greater and lead to an increase of the secondary noises.

This invention relates to a pick-up arm guide in which the oscillation plane of the stylus is not situated exactly in the direction of the actual radius but always adjusted perpendicular to the resultant of the lateral feed speed and of the actual tangential circumferential speed variable with the radius. On this account and owing to the suitable relation of the groove pitch the lateral feed is avoided entirely, so that the sound box or pick-up is only stressed by a pull vertical to the plane of oscillation of the stylus, with the result that the disturbing noises are avoided which are otherwise caused by the lateral feed or by the components of the resultant relative movement between the stylus and the record falling into the plane of oscillation of the stylus. For this purpose the fulcrum of the pick-up arm is variable radially to the middle of the record and provided with a guide cam sliding past a stationary roller.

An embodiment of the invention is illustrated by way of example in the accompanying drawing in which:—

Fig. 1 shows the pick-up arm guide in side elevation.

Fig. 2 is a top plan view of Fig. 1.

Fig. 3 is a similar view to Fig. 2 of a modified form of construction.

A stylus *a* of a pick-up *b* lies in the same plane as a pick-up arm *c* hingedly connected to the support *d* in any suitable manner. The pivot pin *e* of this support *d* is mounted in a slot *f* of top plate *g* of the instrument radially disposed with respect to turntable axle *h*. The pin *e* is shiftable in slot *f* radially to the axle *k*. A guide cam *k* or *k'* is fixed on the pin *e* below a guide *i* and this cam *k* or *k'* bears against the roller *m* or *m'* fixed on the wall *l* of the instrument or on the top plate *g*. The guide cam *k* or *k'* connected to the pick-up arm *c* participates in the turning movement of the arm *c*, the distance between the pin *e* and the axle *h* being varied by striking against the roller *m* or *m'*, in that the pin *e* slides in the slot *f*. The stylus *a* is moved toward the axle *h* by the guide cam *k* along the track *n* indicated in a dot dash line. According to the shaft of the guide cam the plane of oscillation of the stylus can either always be in the direction of the actual radius or in every recording point it can be standing vertical to the resultant relative speed, which is produced by the radial feed speed and by the tangential record speed, so that a feeding force cannot occur in the direction of the oscillating plane of the stylus.

The invention also presents the advantage of the known devices in that it is not subject to wear and therefore ensures accurate guiding of the stylus for an indefinite period.

I claim:—

A pick-up arm guide for talking machines, comprising in combination with the pick-up arm carrying a stylus at one end, a support hingedly connected to the other end of said pick-up arm, a pivot pin on said support, a top plate of the talking machine having a slot through which said pivot pin extends, a guide on said pin under said plate, a stationary roller, and a guide cam fixed on said pin below said guide and bearing against said roller, said cam adapted to swing with said pick-up arm and shift said pin in said slot to maintain the stylus tangent to the record groove.

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