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ARRANGEMENT FOR RECORDING, REPRODUCING, AND PRINTING FILM

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Fig. 1

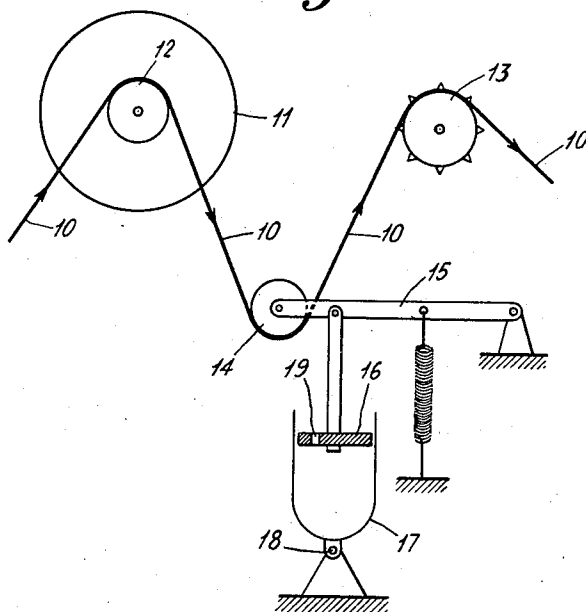


Fig. 2

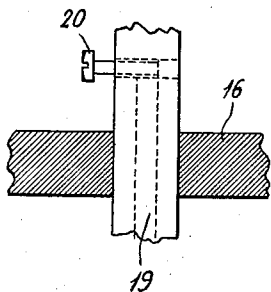
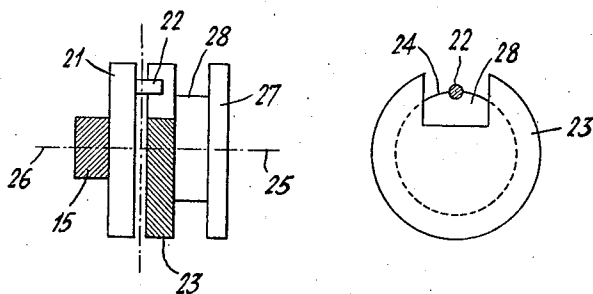


Fig. 3



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ARRANGEMENT FOR RECORDING, REPRODUCING, AND PRINTING FILMS

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4 Claims. (Cl. 271-2.3)

It is known from the photographic art of recording, reproducing or printing sound record films or the like, to cause the film strip at the pick-up or recording or exposure point to run over a smooth roller coupled rigidly with a fly-wheel, the film strip being pulled by a sprocket wheel over the smooth roller to transmit all or substantially all of the driving torque of the fly-wheel. Between the said sprocket wheel and the smooth roller is disposed an elastic film tensioning roller which has its movement damped by suitable means. Between the supporting lever of the film tensioning roller and the said damping or smoothing means it has been customary to interpose a special spring with a view to permitting the film tensioning roller to move slightly without damping under certain conditions such as the feeding of shrunk films.

The present invention is concerned with constructing the damping means itself in such a way that the film tensioning roller will be capable of undergoing slight movements without damping.

The invention will be better understood from the following description when considered in connection with the accompanying drawing, and its scope will be pointed out in the appended claims.

Referring to the drawing:

Fig. 1 illustrates a form of the invention wherein a vented dashpot is provided to permit slight undamped movement of the film tensioning roller,

Fig. 2 illustrates certain details of a suitable form of dashpot, and

Fig. 3 illustrates a modified form of damper adapted to be mounted at the pivotal axis of the film tensioning roller.

Referring to Fig. 1, 10 denotes the film strip, 11 is the fly-wheel which is coupled to the smooth roller 12, while 13 and 14 designate the sprocket wheel and the yielding film-tensioning roll. United with the lever 15 of the film tensioning roll is the piston of a dashpot 17. The cylinder of 17 itself is pivoted at 18.

The damping cylinder 17 may consist of an air dashpot which permits slight movements of the piston 16 with incidental compression of the volume of air confined inside the cylinder 17, in other words, without any appreciable air current being permitted to flow through the vent 19 of the said cylinder. The provision of this particular kind of damping device makes the disposition of a distinct yielding intermediate link between tensioning roll lever 15 and the piston 16 unnecessary.

The air damping or dashpot device is preferably so designed, as shown in Fig. 2, that the aperture

or vent 19 is arranged in the stem of the piston 16, and that by the aid of a set screw it is capable of being adjusted gradually.

Another exemplified embodiment of the invention is illustrated in Fig. 3. Rigidly associated with the lever 15 at its pivoting point is a part 21, the latter having an extension which engages with another part 23 with a certain amount of play or backlash. For this purpose part 23 is furnished with a recess 24. The part 23 in turn is rotatable about the axis 25, whereas 26 designates the axis of the pivot of the roller tensioning lever 15 shown in Fig. 1. Rotation or pivoting of part 23 about axis 25 is possible only with a certain amount of friction. For this purpose a damping device 28 is interposed between the part 23 and a part 27 fixed in space, the said damping device being preferably of the type of a liquid or fluid dashpot.

Having thus described our invention, we claim:

1. A photophonographic apparatus including means for supporting a moving record strip, means including a movable idler roller for tensioning said strip, damping means connected to said roller, and means in cooperative relation with said damping means permitting undamped movement of said damping means only within predetermined limits of movement.

2. A photophonographic apparatus including means for supporting a moving record strip, means including a movable idler roller for tensioning said strip, and means mounted at the pivotal support of said roller for permitting undamped movement of said roller only within predetermined limits.

3. A photophonographic apparatus including means for supporting and moving a record strip, means including a lever pivoted at one end and provided with an idler roller at the other end for tensioning said strip, and means rotatable about the pivotal axis of said lever to permit undamped movement of said roller only within predetermined limits.

4. Photophonographic apparatus, including a sprocket for driving a film at predetermined speed, a drum over which the film is drawn, a fly-wheel connected to said drum for insuring that the film moves at a uniform average speed, an idler between said sprocket and said drum for absorbing differences in movement between said sprocket and said drum, damping means and a lost-motion connection between said damping means and said idler, whereby said idler is permitted a predetermined amount of undamped motion.

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