April 24, 1934. W. KLAPPENECKER 1,955,813

DEVICE FOR DRIVING BANDS

Filed Feb. 1, 1932

Fig. 1

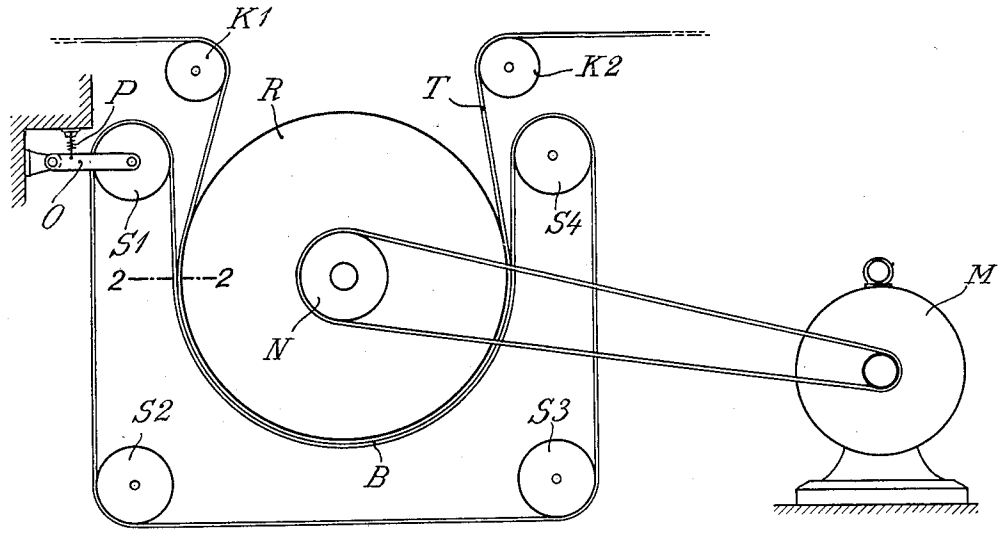


Fig. 2

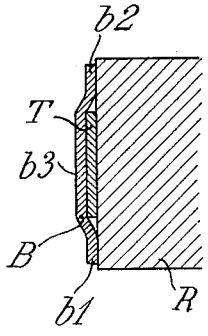
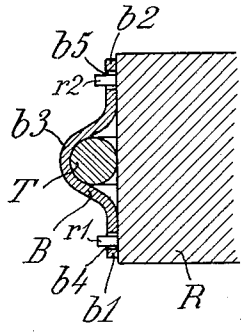


Fig. 3



Inventor:
Wilhelm Klappenecker
by R. C. Hopgood
Attorney

Patented Apr. 24, 1934 1,955,813

UNITED STATES PATENT OFFICE

1,955,813

DEVICE FOR DRIVING BANDS

Wilhelm Klappenecker, Berlin, Germany, assignor to Ferdinand Schuchhardt, Berliner Fernsprech- und Telegraphenwerk, Aktiengesellschaft, Berlin, Germany

Application February 1, 1932, Serial No. 590,223
In Germany February 2, 1931

6 Claims. (Cl. 74—21)

This invention relates to means for driving such bands or wires as require to be moved as uniformly as possible, such, for instance, as in the case of arrangements wherein bands or wires are used as sound carriers. Arrangements of this kind are constituted, for example, by the magnetic talking machines on the bands or wires of which the sounds are impressed by magnetic influence in order to be reproduced by the bands or wires thus prepared coacting with magnets.

It is a well-known method to pass such bands or wires around a pulley driven at a uniform speed and to press them against this pulley by an endless auxiliary band.

According to the invention now to be described, this auxiliary band is driven in its turn and at the same speed as the said pulley. It may be driven, for instance, by the pulley itself, as will be understood from the following description, reference being had to the accompanying drawing which shows two embodiments of the invention by way of example. In this drawing Fig. 1 is a diagrammatic elevation of one of these embodiments. Fig. 2 shows a section on the line 2—2 of Fig. 1. Fig. 2 is drawn to a larger scale than Fig. 1. Fig. 3 is a similar view to Fig. 2 and illustrates the other embodiment.

In Figs. 1 and 2 a band T is shown that may be a sound band and which by means of two idlers K1, K2 is conducted around a pulley R. This pulley is fitted with a belt pulley N attached to a motor M. An endless band B, which is the auxiliary band before mentioned, is conducted over rollers S1, S2, S3, S4 to bear against the band T and the pulley R in the manner indicated in Fig. 2. The two edge portions $b1$, $b2$ of the band B are in frictional contact with the pulley R while the mid-portion $b3$ thereof is in frictional contact with the band T. The roller S1 is supported by a lever O which is acted upon by a spring P so as to tension the band B.

In view of the fact that the band T is made of metal, its co-efficient of friction with respect to the pulley R would be quite small. For this reason, if the auxiliary band B engaged the wire alone, any material strain upon the band T at its input end would cause slippage between the pulley R and band T with accompanying loss of speed of both bands B and T. Also, if there were any material tension exerted at the output end due, for example, to the winding of band T on a driven reel or reel under spring tension, with this winding naturally increasing in diameter tending to increase the speed of band T, then again slippage might occur between the band T and pulley R resulting in increased speed of the bands B and R.

Owing to the friction between the pulley R and portions b_1, B_2 of the auxiliary band B, the band B is forcibly driven by the motor M. In addition to the frictional engagement of the band B with the pulley R, there is frictional engagement between the band T and band B. For this reason, any tension exerted upon the band T tending to increase or decrease its speed, would be resisted not only by the natural friction between pulley R and band T but by the friction between auxiliary band B and pulley R exerted through the friction between bands B and T.

The band B may consist of fabric or any other suitable material. If such material is sufficiently elastic, it may be fitted to the rollers S1 to S4 and pulley R with sufficient tension to allow the tensioning device O, P to be dispensed with.

In the construction shown in Fig. 3 the sound carrier T is a wire. The band portions $b1$, $b2$ are perforated after the manner of films. Only two perforations, $b4$ and $b5$, are shown. The pulley R has studs $r1$, $r2$ to engage such perforations in a manner well-known from films.

The mode of action here is mainly the same as described with reference to Figs. 1 and 2.

It will be obvious that the mere frictional contact between R and $b1$, $b2$, disclosed in Fig. 2, may also be adopted in the case of Fig. 3, and that the toothed arrangement shown in Fig. 3 may also be provided in the case of Fig. 2.

It is to be understood that the invention is not restricted in scope to the embodiments illustrated, but that changes may be made within the scope indicated by the appended claims, without departing from the spirit or sacrificing any of the advantages of this invention. The word "band" in these claims is to denote bands or wires of any cross-sectional shape.

What is claimed is:

1. In a device for driving bands, a pulley engaging the band to be driven, means for driving this pulley, an auxiliary band, means for causing such auxiliary band to engage the band to be driven, and means independent of said first-named band for driving this auxiliary band.

2. In a device for driving bands, a pulley engaging the band to be driven, means for driving this pulley, an auxiliary band, means for causing such auxiliary band to engage the band to be driven, and inter-engaging means between the auxiliary band and said pulley.

3. In a device for driving bands, a pulley en-

gaging the band to be driven, means for driving this pulley, an auxiliary band, means for pressing such auxiliary band by its mid-portion against the band to be driven and by its edge portions against the said pulley.

4. In a device for driving bands, a pulley engaging the band to be driven, means for driving this pulley, an auxiliary band having perforations, studs provided on the said pulley for engaging these perforations, and means for causing this auxiliary band to engage the band to be driven.

5. In a device for driving bands, a pulley engaging the band to be driven, means for driving this pulley, an auxiliary band, guide rollers holding this auxiliary band in frictional contact with the band to be driven, means for tensioning such auxiliary band, and means for driving it.

6. In a device for driving bands, a driving pulley frictionally engaging the band to be driven, an auxiliary band pressing upon said first band to increase the frictional engagement between said first band and the driven pulley, and means associated with said auxiliary band for engaging said pulley whereby relative movement between said first band and said pulley is substantially prevented.

WILHELM KLAPPENECKER.