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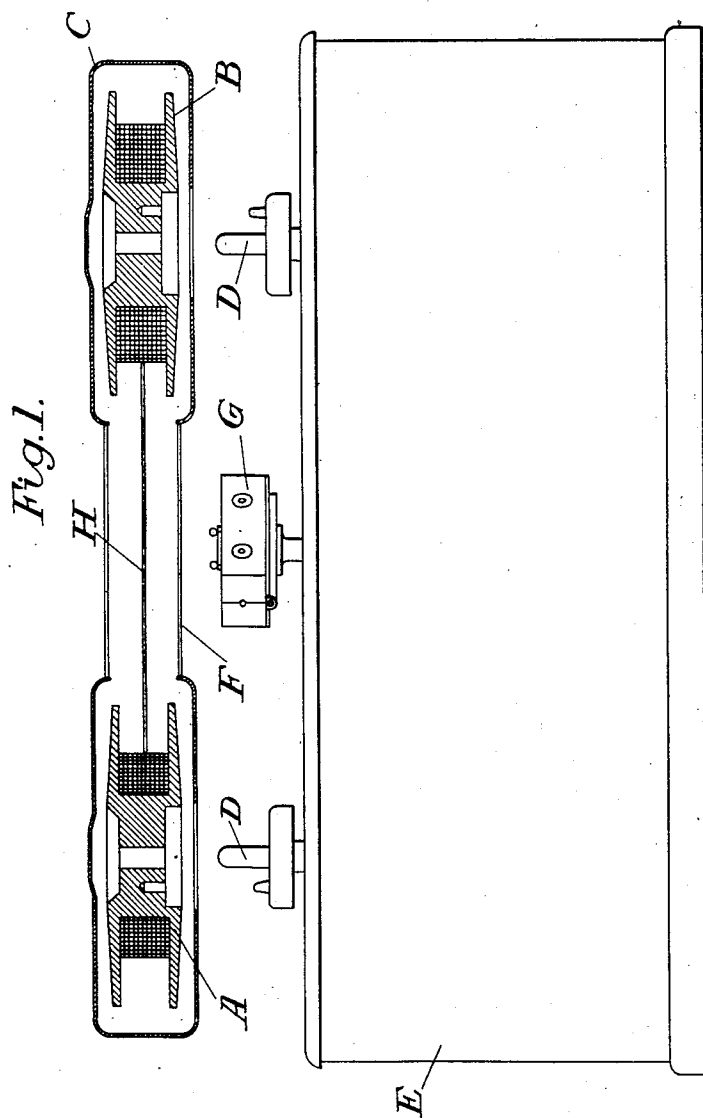
W. HORNAUER

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ELECTROMAGNETIC TALKING MACHINE

Filed June 20, 1925

2 Sheets-Sheet 1



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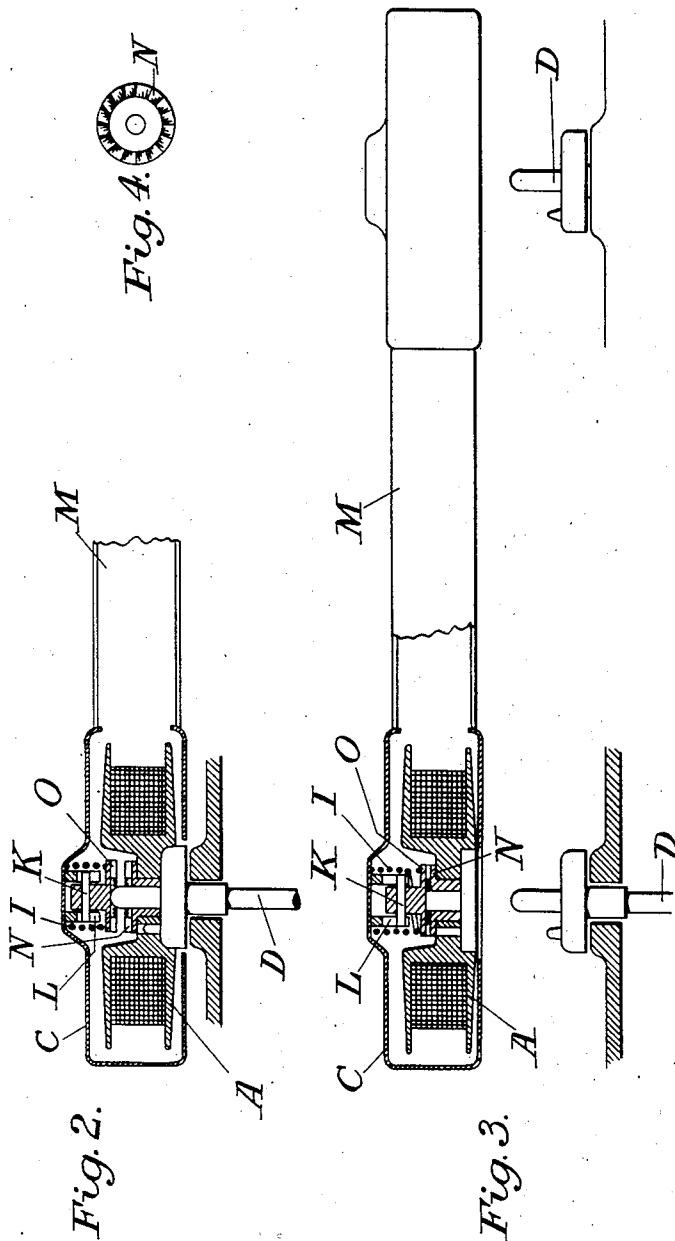
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UNITED STATES PATENT OFFICE.

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ELECTROMAGNETIC TALKING MACHINE.

Application filed June 20, 1925, Serial No. 38,559, and in Germany June 28, 1924.

This invention relates to an electro-magnetic talking-machine in which the sound is recorded and reproduced by means of a steel wire or band which is passed from one spool to another through a magnet box.

It is usual in machines of this kind to enclose the spools in a casing which is applied to and detached from the driving mechanism together with the spools, and it is also usual to have the magnet box connected to the same casing.

The main object of the present invention is to provide means which allow the magnet box to be connected permanently to the machine, and the invention consists in this respect in forming the spool casing with an aperture through which the magnet box can enter and leave the casing when the latter is applied to and withdrawn from the machine.

Another object of the invention is to provide means for preventing displacement of the spools in the casing when the latter is withdrawn from the machine, and in this respect the invention consists in the provision of clutches arranged in the casing so as to engage the spools when the latter are disengaged from the driving spindles.

Fig. 1 of the accompanying drawings represents a side view of the machine, the spools and the enclosing casing being shown in section and in detached position.

Fig. 2 is a sectional view of one of the spools showing the clutch in the position it occupies when the spool is attached to the driving mechanism, and

Fig. 3, a view of the detached spool casing showing one spool and its clutch in section.

Fig. 4 is a plan of one of the clutch elements.

The record band or wire H is held by two spools A and B which are applied to the heads of spindles D for winding the band from one spool to the other, the driving mechanism for the spindles being enclosed in a cabinet E. The spools are enclosed in a casing composed of two drums C and an intermediate connecting arm M, the casing being preferably composed of two shells which are pushed one into the other over the spools.

The magnets are enclosed in a box G

which, according to the invention, is permanently mounted on the cabinet E, the arm M being provided with slots F through which the box G is admitted when the casing and spools are applied to the spindles D. When the spool casing is applied to the machine, the box G is opened to admit the band or wire H. This compulsory opening of the box has the advantage that dust and metal particles which happen to be present in the box will be observed and removed.

In order to secure the spools against rotary and other displacement in the casing when they are detached from the spindles D, the following arrangement is provided:

Two clutch elements N and O are formed with crown teeth whereby they can be engaged to another. The element N is fitted in the boss of the spool and the element O is connected to the casing above it. A socket L secured to the casing serves as a guide for the element O and allows it to move in axial direction, a cross-pin K, which engages slots in the socket, preventing rotary displacement. A coil spring I, arranged about the socket L, bears against the clutch element O and tends to hold it in engagement with the element N, as shown in Fig. 3, the spool being at the same time forced against the bottom of the casing so that displacement of the spool and a derangement of the wire in the casing will be prevented. When the spool casing is applied to the machine, the spindle D, which is brought up through the clutch element N, engages the element O and disengages the clutch so that the spool can be rotated. This position of the elements is illustrated in Fig. 2.

I claim:

1. In an electro-magnetic talking-machine of the character described, a spool casing, record spools enclosed in said casing, driving spindles adapted to receive and to be coupled to said spools, and spring-pressed clutches engaging the spools in the casing so as to prevent normally a displacement of the same, the driving spindles being adapted to disengage said clutches automatically on entering the spools.

2. In an electro-magnetic talking machine of the character described, a spool casing, record spools enclosed in said casing, driving spindles adapted to receive and to be

coupled to said spools, a clutch member secured to each spool, a clutch member mounted within the casing over each spool so as to be capable of axial but not rotary adjustment relative to the casing, and a spring tending to hold said adjustable clutch member in engagement with the mating member on the spool and press the latter against the casing, the spindles being adapted to engage and displace the adjustable clutch members so as to release the spools when the latter are applied to the machine together with the casing. 10

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