Dec. 22, 1942. M. MARZETTI 2,305,808

DEVICE FOR NEEDLE CHANGE IN TALKING MACHINES

Filed Sept. 5, 1939

Fig. 1

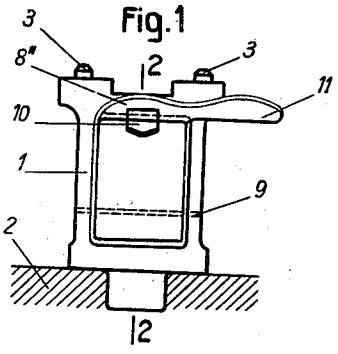


Fig. 2

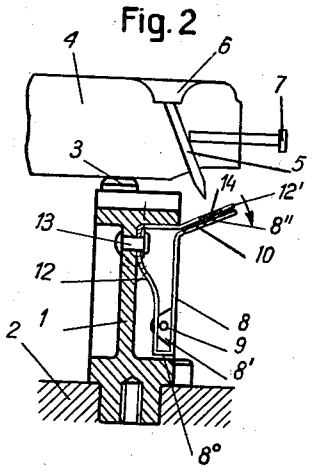


Fig. 3

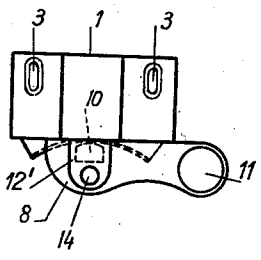


Fig. 4

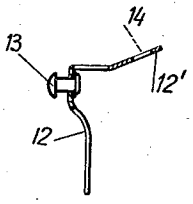
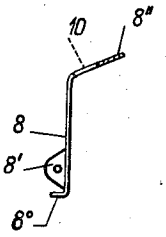


Fig. 5



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DEVICE FOR NEEDLE CHANGE IN TALKING MACHINES

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Application September 5, 1939, Serial No. 293,495
In Italy September 16, 1938

2 Claims. (Cl. 274—1)

Devices are known for changing the scanning needle in pick-ups of tone arms of talking machines, including a support on which the pick-up may be supported in a defined position for the needle change and an arm movable in said support which assists in guiding the waste needle in a receptacle and subsequently operates as an adjusting retainer for the fresh needle to be engaged in the pick-up to enable the operator to correctly position the fresh needle in the pick-up; the needles which are subsequently inserted in the pick-up from its top and are then fast therein by a set screw as usual, are caused to project through a uniform extent from the needle engaging means of the pick-up.

This invention has for its object a device of the above class which removes any possibility of injuring the needle point during the manipulations and actually cooperates to guide the waste needle in the respective receptacle.

An embodiment of the present invention is illustrated by way of example on the annexed drawing and

Fig. 1 is a front view of the device,

Fig. 2 is a transverse section thereof on line 2—2 of Fig. 1;

Fig. 3 is a plan view,

Fig. 4 illustrates separately a part of the device and

Fig. 5 illustrates separately another part of the device.

In the illustrated embodiment, a support frame 1 is fast on the base board 2 of a talking machine case not shown; said frame 1 is provided at its top with abutments 3 on which the tone arm of the talking machine is caused to rest at the time the needle change is to be carried out, as shown in Fig. 2 where the end of the tone arm is shown in dotted lines at 4, 5 showing the needle located therein through its orifice 6 while 7 denotes the set screw intended to secure the needle 5 in the tone arm 4.

A needle retainer arm 8 is mounted to oscillate by means of its perforated lugs 8' on a transverse pivot pin 9 intermediate the legs of the support frame 1. Said retainer arm 8 has at its top a needle retainer finger 8'' having an orifice 10 for the escape of the waste needle and on one side thereof it carries a manipulating wing 11 whilst an upturned tooth 8° extends from its lower end.

A blade spring 12 is located in the support frame 1 adjacent the retainer arm 8, 11 and the intermediate portion of said blade spring 12 is fast on the support frame 1 by means of a rivet 13 the lower end of said spring 12 being free for cooperation with the tooth 8° of the retainer arm 8, 11 to hold said arm 8, 11 in its erected position as illustrated. The top of the spring 12 provides a lug 12' which extends above the finger 8'' of the arm 8, 11 the said retainer arm 8 being held with its finger 8'' in contact with the bottom face of the lug 12' by the action developed by the blade spring 12 on the bottom tooth 8° of the retainer arm 8, 11. The lug 12' has an orifice 14 through it which is shut by the finger 8'' the orifice 10 of this finger not being in register with said orifice 14 of the blade spring lug 12' when said finger contacts with said lug as illustrated.

As shown on the drawing the finger 8'' extends wholly on one side with respect to a vertical plane lying through the axis of the pivot pin 9. Accordingly at the time the retainer arm 8, 11 is shifted off from its position of rest by manipulating the wing 11 thereof, all the portions of the retainer arm 8, 11 move down with respect to the free end of a needle as 5 (Fig. 2) engaged in a tone arm 4 resting on the support frame abutments 3. Consequently an undue manipulation of the retainer arm 8, 11 in such circumstances cannot affect the point of the needle.

For the change of a needle in the tone arm with which the above described device cooperates, the needle-carrying end of said tone arm 4 is arranged to rest on the abutments 3 of the support frame 1 as shown in Fig. 2 and then the point of the needle 5 extends through the orifice 14 of the lug 12' of the spring 12 and abuts on the finger 8'' of the retainer arm 8, 11 the configuration of the parts and location of the orifice 14 being suitably selected for such a purpose having in mind the configuration of the cooperating tone arm.

Then the operator releases the set screw 7 engaging the needle 5 in the tone arm 4 and manipulates the wing 11 of the retainer arm 8, 11 to depress it as shown by the arrow in Fig. 2, the retainer arm 8, 11 being thus caused to move downwardly around its pivot pin 9 and the orifice 10 of the finger 8'' being carried in register with orifice 14 of the lug 12' of the blade spring 12. The waste needle is thus able to fall down from the tone arm 4 and it is guided in its fall being caused to move through the aligned orifices 10, 14 of the parts 12', 8''.

Subsequently the operator releases the retainer arm 8, 11 which is restored by the spring 12 into its illustrated position. Then the operator inserts a fresh needle through the orifice 6 of the tone arm 4 said needle falling down by gravity

until it engages the finger 8'' of the retainer arm 8, 11 which thus adjusts its position and the extent said needle 5 extends down from the tone arm 4. The set screw 7 is finally tightened to clamp the fresh needle in position in the tone arm 4.

In the above device the possible wrong manipulations of the retainer arm at the time a needle secure in the tone arm engages the finger 8'' cannot affect the needle point because any possible manipulation of the retainer arm 8, 11 may only cause its finger 8'' to move away from the needle point.

What I claim as my invention and desire to secure by United States Letters Patent is:

1. A device for rapid change of the scanning needle in a talking machine including a tone arm having a needle receiving seat, comprising a support providing a rest for said tone arm, a stationary member on said support, a part on said stationary member extending in front to the point of a scanning needle located in said seat of a tone arm resting on said support and having a guide aperture in register with said needle point, a pivotal member pivoted on said support, a retaining part on said pivotal member located under said guide aperture of said stationary member extending part for cooperation with said needle to provide an abutment therefor said retaining part having a guide orifice offset from its needle point abutting region and adapted to come in alignment with said guide aperture in the direction of the axis of said needle on said pivotal member and retaining part being oscillated downwards from said stationary member and apertured extending part thereof, means for yieldably holding said pivotal member with said retaining part thereof in a needle point abutting position adjacent to said stationary member apertured extending part to obstruct said aperture thereof and manipulating means on said pivotal member for oscillating it downwards to remove said retaining part thereof from said needle abutting position and bring it with said guide orifice thereof in alignment with said guide aperture of said stationary member extending part.

2. A device for rapid change of the scanning needle in a talking machine including a tone arm having a needle receiving seat, comprising a support providing a rest for said tone arm, a stationary member on said support, a part on said stationary member extending in front to the point of a scanning needle located in said seat of a tone arm resting on said support and having a guide aperture in register with said needle point, a pivotal member pivoted on said support, a retaining part on said pivotal member located under said guide aperture of said stationary member extending part for cooperation with said needle to provide an abutment therefor said retaining part having a guide orifice offset from its needle point abutting region and adapted to come in alignment with said guide aperture in the direction of the axis of said needle on said pivotal member and retaining part being oscillated downwards from said stationary member and apertured extending part thereof, means for yieldably holding said pivotal member with said retaining part thereof in a needle point abutting position adjacent to said stationary member apertured extending part to obstruct said aperture thereof and manipulating means on said pivotal member for oscillating it downwards to remove said retaining part thereof from said needle abutting position and bring it with said guide orifice thereof in alignment with said guide aperture of said stationary member extending part, said pivotal member having its pivotal axis located below said tone arm rest on said support and all the portions of said pivotal member and retaining part which travel in front to the point of said needle during the motion of said pivotal member and retaining part from and to said needle abutting position being within an arc of a circle having its center on said pivotal member pivotal axis and passing through the point of said needle.

MANLIO MARZETTI.