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W. L. WOOLF ET AL

2,248,293

SOUND RECORD FILM

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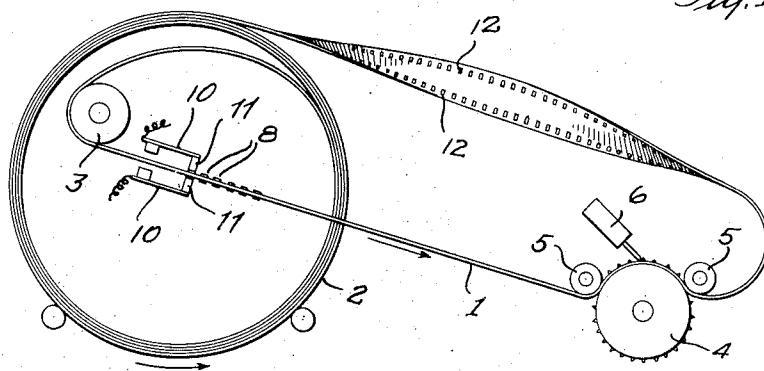


Fig. 1.

Fig. 2.

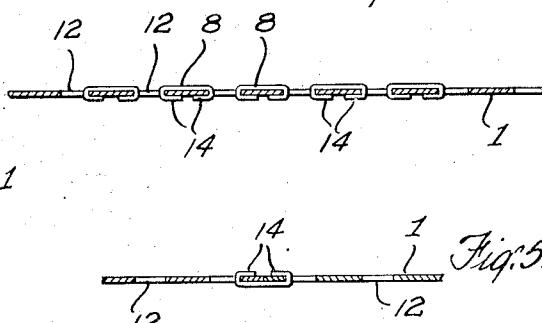
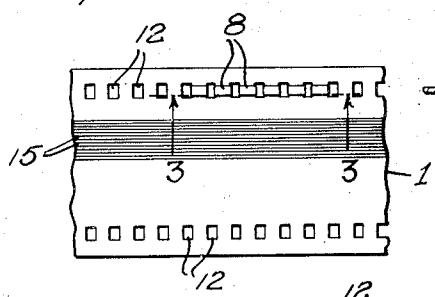


Fig. 3.

Fig. 4.

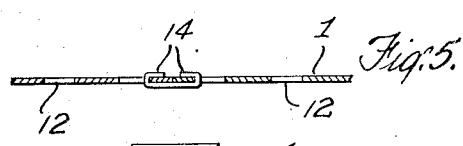
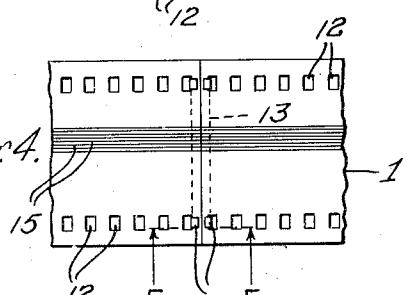


Fig. 5.

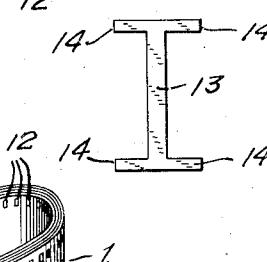


Fig. 6.

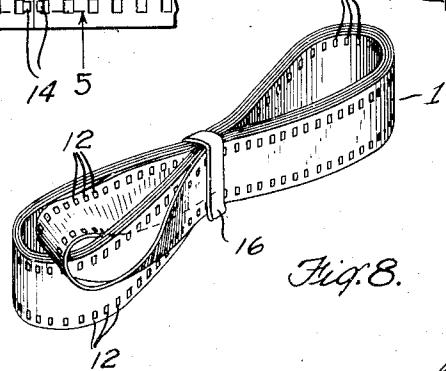


Fig. 7.

Fig. 8.

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SOUND RECORD FILM

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Application January 3, 1940, Serial No. 312,248

3 Claims. (Cl. 200—52)

This invention relates to sound recording media and particularly to a sound recording medium in the form of a continuous strip of film, although a number of features of the invention are not limited to a strip of film which is continuous. More specifically the invention relates to a film, a portion of which is in the form of a roll and a portion of which is in the form of a loop, the loop providing for threading over an instrument either for the purpose of recording sound or reproducing sound which has been previously recorded.

An object of the invention is to provide a record film of the character above indicated with improved means for closing an electric contact.

Another object of the invention is to provide a long playing economical record medium in convenient form for immediate use without the necessity of splicing, rolling, looping or providing it with circuit closing means.

A still further object of the invention is to provide a continuous record film in such form that it may be packed in a small space convenient for transportation.

Various features and advantages will become apparent from the following description and claims when taken in connection with the accompanying drawing, in which:

Figure 1 is a view showing the film and its feeding sprocket together with the sound sensitive instrumentality which may be a recording stylus or a reproducing stylus;

Figure 2 is a portion of the film shown in Figure 1 and included within the loop shown in Figure 1;

Figure 3 is a section between the lines 3—3 of Figure 2;

Figure 4 is a view similar to Figure 2 but showing a modified form of the electrically conductive means for controlling the switch diagrammatically shown in Figure 1;

Figure 5 is a section between the lines 4—4 of Figure 4;

Figure 6 is a detail showing the metal contact means before it has been bent into position shown in Figure 5;

Figure 7 is a further modified form of electric contact device; and

Figure 8 is a perspective view showing the manner in which the film is prepared for packing and shipment.

Referring to Figure 1 of the drawing, a strip of film 1 is shown as being taken from the inside of a roll 2 and guided over a roller 3 located within the film roll and then passed over a

sprocket 4 and thence to the outside of the roll 2. Guiding rollers 5 adjacent the sprocket may also be provided. An instrument 6, which may be either a recording instrument or one capable of reproducing sound, is mounted adjacent the film where the film is fed over the sprocket. Preferably the film is continuous, that is to say, the ends of the film are joined together and in order that both sides of the film may be used, the film may be given a 180° turn or twist before the two ends are joined together. This 180° twist is shown in Figure 1 as occupying the loop portion of the film. This loop portion may be considered as extending from the roller 3 to approximately a point where the upper portion of the film engages the roll portion 2.

The film itself is composed of a material which is non-electrically conductive and may be similar to a moving picture film. Electrically conductive means are provided at a portion of the film as shown at 8, Figure 1. These electrically conductive means may take several forms as will be later described. The electrically conductive means 8 shown in Figure 1 may effect closing of an electric contact shown diagrammatically in Figure 1 and may consist of two arms 10 arranged on either side of the film, which arms are suitably connected in an electric circuit which is closed when the electrically conductive means 8 bridges the contact between the contact pieces 11, carried by the arms 10.

There may be a single contact piece 8 or a plurality, and they may all be arranged near one edge of the film.

35 As shown in Figure 2, the electrically conductive means are near one edge of the film within its marginal edges. In order that the sprocket wheel may feed the film, the latter is provided with the usual perforations 12 and in the form shown in Figures 2 and 3, the electrically conductive means may consist of a ribbon of metal, the ends of which are passed through two adjacent perforations and bent back on the opposite side of the film as clearly shown in Figure 3.

45 In Figures 4 and 5 a somewhat different type of contact making means is provided. This consists of a piece of metal 13 in the form shown in Figure 6. This contact device 13 extends from edge to edge of the film and its laterally projecting portions 14 are passed through the perforations on either edge of the film and bent back on the opposite side as shown in Figure 5. Preferably also the contact device 13 is secured to the film at that location in the film where the ends meet.

In Figure 7, the contact device or devices may take the form of a rivet **8**, passed through the film from one surface to the other and preferably located between two adjacent perforations.

Whether the contact device is in the form shown in Figures 2 and 3 or in the form shown in Figures 4, 5, 6 or 7, it is obvious that the contact device presents contact surfaces on both surfaces of the film and that the contact surfaces are connected by an electrically conductive path. It is also to be noted that where a plurality of devices **8** are used the circuit controlled thereby may be kept closed by reason of the fact that the contact pieces **11** on the arms **10** make contact with two adjacent metal pieces **8** at the same time.

In order that the film with its roll portion and loop portion may be available for immediate use without the necessity of joining the film ends, forming it into a roll, looping it or providing it with circuit closing means, the film is made up as an article of commerce in the form shown in Figure 7. Such a film may be without any record tracks therein or it may be provided with sound record tracks. For instance, a film of 35 mm. in width may have as many as 100 sound tracks recorded thereon. Several of these tracks are indicated at **15** in Figures 2 and 4. As shown in Figure 8, the roll portion of the film and the loop portion with its 180° twist, is brought together in a somewhat hour glass form and its

medial portion is secured by a temporary fastening which may be in the form of a clasp **16** or it may be a band passed about the film with its ends adhesively secured together.

5. What we claim is:

1. A sound record film of non-electrically conductive material, said film having the conventional perforations located within its marginal edges, and electrically conductive means consisting of a metallic ribbon threaded through some of said perforations from one film surface and bent over on the other film surface wholly within the marginal edges of the film to conform substantially to the film surfaces.

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2. A sound record film of non-electrically conductive material said film having the conventional perforations located within its marginal edges and electrically conductive means at the marginal edges of some of said perforations and extending on both surfaces of said film and conforming substantially to the film surfaces.

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3. A sound record film of non-electrical conductive material, said film having the conventional perforations located within its marginal edges and electrically conductive means extending on both surfaces of the film adjacent to the marginal edges of some of said perforations and conforming substantially to the film surfaces.

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