

July 18, 1933.

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1,919,117

SOUND RECORD BLANK

Filed Oct. 7, 1931

Fig. 1.

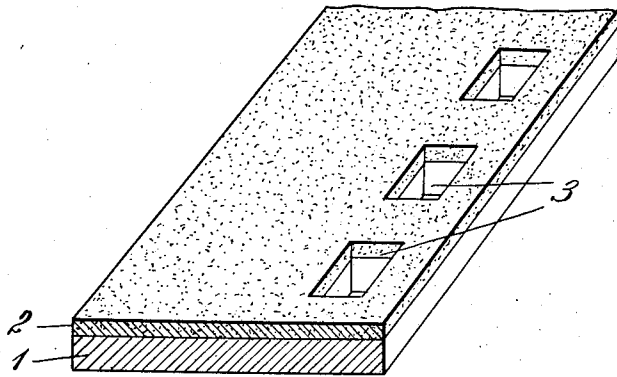
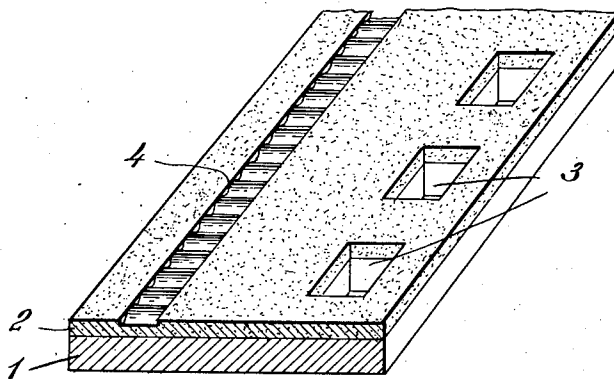


Fig. 2.



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SOUND RECORD BLANK

Application filed October 7, 1931. Serial No. 567,440.

This invention relates to the art of recording sound. More particularly it relates to record blanks on which sound may be recorded.

5 The principal object of the invention is to provide a sound blank adapted for use in one of the improved methods of recording sound disclosed in my co-pending application, Serial No. 566,152, filed September 30, 1931. By the use of any of the methods disclosed in that application a sound track such as that now used in "sound-on-film" talking moving pictures and intended for reproduction in an optical system can be produced by 15 an initial recording of the sound on a film strip in a purely mechanical fashion as distinguished from an optical or photographic recording of the sound. The methods disclosed in the above mentioned application are of two general kinds, one for producing a sound track of the so-called "variable-area" type and the other for producing a sound track of the so-called "variable-density" type. The record blank to be herein described is intended for use in the method which produces the variable-density type of sound track. For that method the blank should have a transparent base portion and a translucent surface portion into which the recording stylus may cut a sound track of the hill-and-dale type. The transparency of such a sound track will vary in accordance with the recorded sound, it being the greatest where the most translucent material has been removed from the track by the recording stylus and being the least where the smallest amount of translucent material has been removed. The sound track thus formed is, therefore, capable of reproducing sound 40 when used in an optical reproducing system because it is capable of controlling and varying the amount of light passing through it and falling upon the photoelectric or other light sensitive cell forming a part of all optical sound reproducing systems. If desired, a sound record containing a sound track made as above described may be used as a negative and photographic counterparts may be made from it.

50 One form of blank suitable for use in the

above described method is illustrated in the accompanying drawing. The illustrated blank is in the form of a portion of a flexible film strip because sound-on-film talking moving pictures is now believed by me to be one of the principal fields of use of my invention but the blank may take the form of a disc, cylinder or the like depending upon how the sound record made from the blank is to be used.

In the drawing—

Fig. 1 is an enlarged perspective view, partly in section, of a portion of a film strip so made as to constitute a record blank capable of use in the above described method of mechanically recording sound; and

Fig. 2 represents the record blank of Fig. 1 after a sound track has been formed thereon in accordance with my method of mechanically recording the sound.

Referring first to Fig. 1 the film strip illustrated therein has a base portion 1 which is transparent and a surface portion 2 which is translucent. The base portion 1 may be made of some material such as celluloid and the surface portion 2 may be a coating of some material such as gelatin which has been rendered translucent in any suitable way, as by solid particles held in suspension in it, by coloring or dyeing or in any other suitable way. Preferably the translucent quality is imparted to the gelatin by some method which will give it a grayish color. If desired, the coating 2 may be a photographic emulsion which has been partly exposed and then developed so as to render it translucent. The translucent coating 2 should be of such a depth that it may receive a sound track of the hill-and-dale type such that for the maximum movement of the recording stylus the groove in the translucent coating will be cut just about to the celluloid base 1 or not quite to it. I have found that the translucent coating should be at least $\frac{1}{2}$ mil in thickness and that good results have been obtained with a thickness of $1\frac{1}{2}$ to 2 mils.

The openings shown at 3 are the usual sprocket wheel openings for guiding the film strip through the sound recording machine. When sound is recorded on a blank of the

kind shown in Fig. 1 by the mechanical recording method described above, a sound track of the kind shown at 4 in Fig. 2 will be formed. Of course the configuration of the sound track will depend upon the nature of the recorded sound, the particular sound track illustrated having a configuration such as might be caused by a single frequency note of say 60 cycles.

As stated above, the record blank need not be in the form of a film strip but may take other forms, such as a disc or cylinder. It is, therefore, not essential that the base be celluloid as it might be made of some other transparent material such as glass or cellophane. Moreover the transparent portion 1 and the translucent portion 2 might be made of the same transparent material with the surface portion of the material rendered translucent to the proper depth in any suitable way.

I claim:

1. A sound record blank adapted to receive a sound track capable of optical reproduction comprising a transparent base having a coating of translucent material consisting of a photographic emulsion which has been partly exposed and developed.

2. A sound record blank adapted to receive a sound track capable of optical reproduction, said blank comprising a flexible strip of celluloid having a coating of translucent material, said coating being of softer composition than the celluloid and having a degree of softness such that it may be cut by a recording stylus, said coating having a thickness sufficient to receive a sound track of the hill-and-dale type.

3. A sound record blank adapted to receive a sound track capable of optical reproduction comprising a transparent base having a coating of translucent material at least $\frac{1}{2}$ mil in thickness, said translucent material being of a softer composition than the material of the base.

4. A sound record blank adapted to receive a sound track capable of optical reproduction comprising a transparent base having a coating of translucent material substantially $1\frac{1}{2}$ to 2 mils in thickness, said translucent material being of a softer composition than the material of the base.

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