

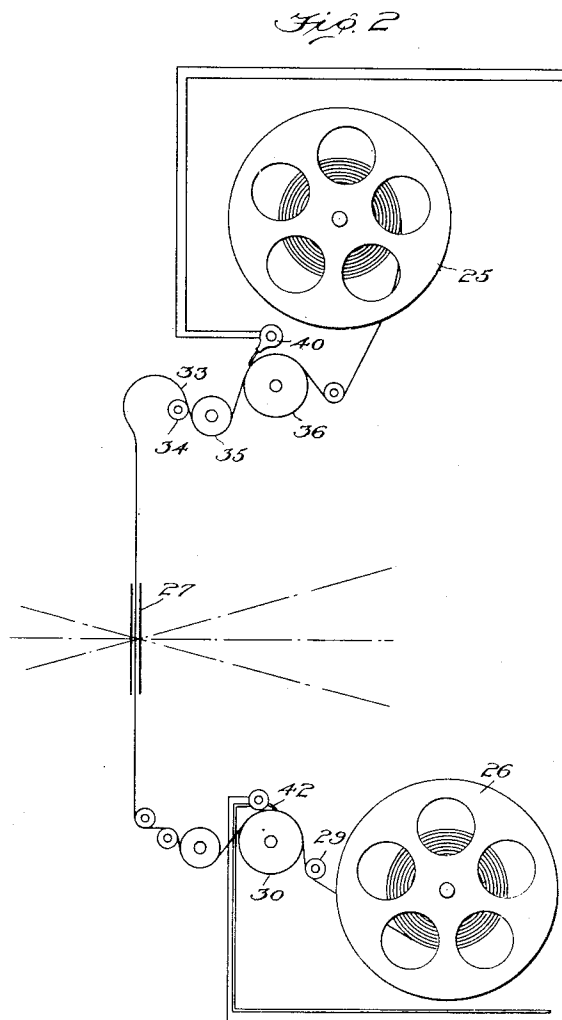
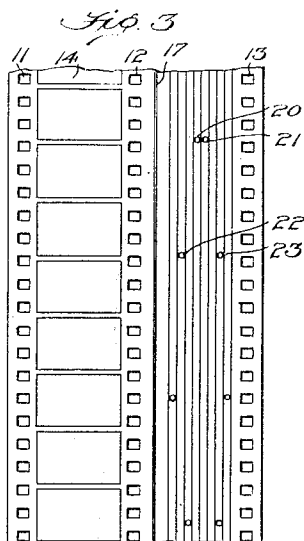
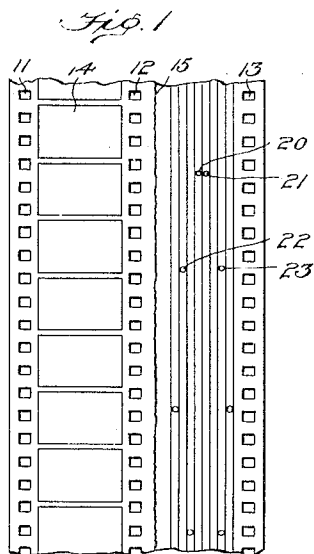
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TALKING MOTION PICTURE FILM

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TALKING MOTION-PICTURE FILM.

Application filed March 6, 1924. Serial No. 697,294.

This invention relates to a film for a talking motion-picture device and has for its object the provision of a film which can be used to display a so-called moving picture and simultaneously reproduce the sound corresponding to the scene directing the voice from one side or the other of the screen in accordance with the location at the moment of the character speaking or instrument sounding. The general method and apparatus for carrying out the method utilizing this film is described and claimed in my co-pending application Serial Number 697,295, filed March 6, 1924, and the method and machine are therefore not claimed in the present application.

In the drawings,—

Figure 1 is a general plan view of the film.

Fig. 2 is a diagrammatic view of the film in position of use.

Fig. 3 is a modification showing the use of a magnetized wire.

The film consists of a sheet of the usual transparent material perforated at each edge with the usual rounded rectangular perforations 11 and 13 which are preferably although not necessarily repeated in the center as indicated at 12 and between the perforations 11 and 12 which are the standard distance apart are the pictures 14 of standard size and for the usual machines. Except for the width of the film the parts described are of well known construction not differing in any way in standard commercial practice.

To the far side of the series of perforations 12, however, I add a new feature, namely, the sound groove 15 which, as illustrated, is of the side-to-side type rather than the hill and dale type used in the Edison and Pathé instruments, the latter type requiring a thicker film than it is desired to use, this invention however contemplating the use of either of the types mentioned or of the magnetized wire type common in dictagraphs and normally referred to as the Pulson type. In case the magnetized wire should be used it will be secured to the transparent film or partially embedded therein. Fig. 3 shows a modification using the wire which in this case is of course perfectly straight and is denoted by the numeral 17. The film shown in Fig. 3 is not preferred as it is impossible at the present time to

make the wire so small that it will not bulge the film when wound on the reel.

To the right, as seen in Fig. 1, of the film and between the series of perforations 12 and 13 there are a series of widely separated perforations such as 20, 21, 22 and 23, arranged in a number of parallel columns which may if desired be grooved to more conveniently guide the contact-making needles which press from above on the film which is a non-conductor of electricity and when a hole or slot such as 23 passes beneath the needle, the needle passes through the hole and engages a metal drum beneath the film making an electric contact between two of the needles, the holes just mentioned being variably arranged in pairs such as 20 and 21 and 22 and 23, although other arrangements might possibly be used.

The purpose of the holes 20 to 23 is to select one of a plurality of amplifying horns behind the screen and arranged so that some one horn will be near the speaker supposed to be talking at that instant. For example we will suppose that the scene illustrated in the portion of the film shown in Fig. 1 to be such that a character at the right and in the near foreground is speaking. The contact made through the holes 20 and 21 will disconnect some amplifying horn just used and the holes 22 and 23 will couple a horn to the right of the screen, i. e., very close to the position of the speaker on the screen and then the reproduction given by the sound groove 15 will appear to the audience to come from the character speaking and not from some other part of the screen. Referring now particularly to Fig. 2, 25 and 26 are the two reels, the former is unwinding and the lower reel 26 is winding the film before the lens 27 in the usual well known manner. The film passes to the winding reel 26 over the idle rolls 29 and the sprocket drum 30 in practically the ordinary manner and likewise is provided in accordance with common practice with the bight 33 caused by the rolls 34 and 35. The drum 36 is of any desired composition not necessarily metal and is a sprocket drum driving the film at a constant rate of speed. A single contact 40 of usual commercial type engages the sound groove 15 and conveys the vibration received to a receiving and amplifying set not shown.

The drum 30 is of metal and the contacts 42 preferably eight in number make connec-

tion through the holes 20, 21, etc., with each other by virtue of the drum 30 being of metal and these contacts are individually connected so as to bring into and out of
 5 action the several horns which with eight contacts may be as many as 16 in number.

It will be particularly noted that the pictures, the sound groove and the amplifying holes are not transversely alined, but on the
 10 contrary the amplifying holes to determine the location of horn behind the screen are in advance of the pictures a desired and predetermined distance preferably about eighteen inches and the sound groove is about the
 15 same distance behind the series of pictures. The great objection to devices of this kind in the past has been that the pictures and voice get out of alinement but in the present device this difficulty is reduced to a
 20 minimum and even if the film breaks as it frequently does there is no particular harm done as by mending the film in the usual way while there is a gap it is only of a fraction of a second and the operator with the
 25 point of a knife can readily connect the two parts of sound groove. It is essential, however, that in repairing the film the front section be placed over the back section when joining them or else the section must be beveled which would be quite difficult to do.
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What I claim is:

1. A flexible support having a plurality of perforations arranged in parallel series to permit an electrical contact to be made,
 35 a plurality of series of sprocket engaging perforations for feeding and guiding the support, sound reproducing means on said support, and a series of alined pictures on said support extending along one side of
 40 said sound reproducing means.

2. A flexible support having a plurality of perforations arranged in parallel series to permit an electrical contact to be made, sprocket engaging perforations in said support for feeding and guiding the same, a
 45 series of alined pictures on the support, and sound reproducing means on said support, the pictures at any point of the support and the corresponding contact permitting perforations being displaced a predetermined distance from each other longitudinally of said support.

3. A flexible support having a plurality of perforations arranged in parallel series to permit an electrical contact to be made, sprocket engaging perforations in the support for feeding and guiding the same, a series of alined pictures on the support, and a sound reproducing means carried by said support, the pictures at any one point on the support and the sound reproducing means corresponding to the pictures at that point being displaced a predetermined distance from each other longitudinally of the support.

4. A flexible support having a plurality of perforations arranged in parallel series to permit an electrical contact to be made, a plurality of sprocket engaging perforations in said support for feeding and guiding the latter, a series of alined pictures on said support, and a sound reproducing means carried by said support, the pictures at any one point on the support and the contact permitting perforations corresponding to the pictures at that point and the sound reproducing means corresponding to the pictures at that point being displaced a predetermined distance from one another longitudinally of said support.

5. A flexible support having a plurality of perforations arranged in parallel series to permit an electrical contact to be made, a plurality of sprocket engaging perforations in said support for feeding and guiding the latter, a series of alined pictures on said support, and a sound reproducing means carried by said support, the pictures at any one point of the support being displaced a predetermined distance in advance of that portion of the sound reproducing means corresponding to the pictures at that point and said pictures at that point being displaced a predetermined distance in the rear of the contact permitting perforations corresponding to said pictures.

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