

E. A. IVATTS.
 MIXED METHOD OF PERFORATION FOR KINEMATOGRAPHIC FILMS.
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Fig. 1.

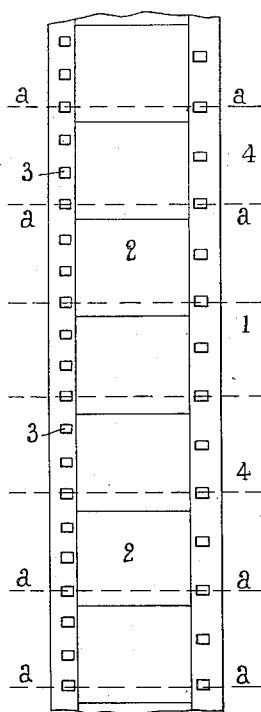
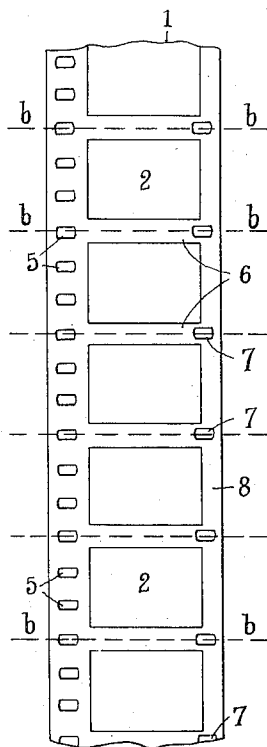


Fig. 2.



Witnesses

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MIXED METHOD OF PERFORATION FOR KINEMATOGRAPHIC FILMS.

1,065,133.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, ERNEST ALBERT IVATTS, a citizen of Great Britain, residing at Paris, in the Department of the Seine and Republic of France, have invented certain new and useful Improvements in Mixed Methods of Perforation for Kinematographic Films, of which the following is a specification.

This invention refers to the perforation of kinematographic films, its subject matter being a mixed method of perforation for the said films.

Ordinarily a kinematographic film has in its border four sets of holes per picture for engagement by the teeth of the wheels or drum which moves said film, but said teeth are so spaced that they engage with only one of said holes per picture, the distance between the holes thus engaged being the height of a picture. It thus results according as the operator engages the one or other of the four sets or pairs of holes of the picture with the teeth, that this picture will be higher or lower with respect to the window or opening of the apparatus and it will consequently be necessary by means of some registering arrangement to reestablish the correct position between the window and the picture. This inconvenience can be avoided by employing films having only one pair or set of holes for each picture, as has actually been the case at the commencement of the kinematographic industry.

There then arose another disadvantage because the films thus perforated in order easily to engage with the feeding drums necessitated an almost absolute precision between the length separating each hole and that separating each tooth of the drum. This is practically speaking impossible to obtain owing to the contractions of the films under the action of the weather, moisture and the like.

The mixed method of perforation for kinematographic films forming the subject matter of this invention overcomes these drawbacks and consists in employing for each of the borders of the films different kinds of perforations, that is to say that one of the borders will be perforated with 1, 2, 3, 4 or a greater number of holes for each picture, whereas the other border will be perforated with a different number of

holes for each picture. Whatever may be the number of holes per picture according to the sort of perforations employed the holes on each border will be equidistant from each other and will be arranged, so that for each picture one of the holes of one sort of perforations will always be situated exactly opposite or twinned with one of the holes of the other sort of perforations of the opposite border. These two oppositely situated or twinned holes will serve for driving the film, this being effected for example by two oppositely situated or twinned teeth each corresponding to one sort of perforations. With this mixed method of perforation of the films the operator when placing the film in the slide will naturally engage the twinned holes of one picture in the corresponding teeth so that the picture will be automatically registered in its proper position before the window or opening of the projecting apparatus. On the other hand the movement of the film by the feeding drums will be considerably facilitated owing to numerous perforations situated on the borders of the band, the teeth of these drums being arranged so as to exactly coincide with the holes.

I shall now describe my invention with reference to the accompanying drawing showing examples of this mixed method of perforations, in which:

In Figure 1 the portion of film of any manufacture is formed by a support 1 of celluloid, cellulose, acetate of cellulose and the like coated with an emulsion on which the pictures 2 are printed by any process whatsoever. One of the borders is provided with holes 3, three holes being provided for each picture 2, whereas the opposite border has only two holes 4 for each picture. The twinned holes of the holes 3 and 4 of the two sorts of perforations being arranged in the manner indicated in the drawing by the dotted lines *a a*.

In the example according to Fig. 2 the holes 5 of one kind of perforation are characterized in that one of the holes is situated in the middle axis *b—b* of the space 6 separating two consecutive pictures 2. 7 are the holes of the other kind of perforation which are arranged so that each hole is in the axis *b—b* and consequently exactly opposite the corresponding holes 5 of the other

kind of perforation. This arrangement permits the perforations 7 encroaching on the spaces 6 and even on the pictures 2 which results in a smaller non-utilized border 8 and consequently effects an economy of material. This result is not apparent in the drawing at first sight, because in Fig. 2 the perforations along the left hand border are much larger than the corresponding perforations in Fig. 1; but it is evident upon a careful comparison of the two figures that with small perforations arranged as in Fig. 2, a decided narrowing of the film support can be effected.

15 Having now particularly ascertained and described the nature of my invention, I declare that what I claim is:

1. A cinematographic film having a series of openings along each side, the openings of one series being spaced differently to the openings of the other series.

2. A cinematographic film bearing a succession of pictures thereon and having a series of openings along each side, the openings of one series being spaced differently to the openings of the other series of openings, the two series being so located

relatively to each other that for every picture one opening of each series occurs on the same transverse line of the film. 30

3. A cinematographic film bearing a succession of spaced pictures thereon and having a series of respectively equidistant perforations along each side, the openings of one series, being spaced differently to the openings of the other series and encroaching on the space between the pictures, and are each on the same transverse line of the film as one of the openings of the said other series. 40

4. A cinematographic film bearing a succession of pictures thereon and having a series of openings along each side, the openings of one series being spaced differently to the openings of the other series and at least one opening of each series being provided for each picture on the film. 45

In testimony whereof I affix my signature, in presence of two witnesses.

ERNEST ALBERT IVATTS.

Witnesses:

CAIUS DANZER,
LUCIEN CRESPIN.