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PATENT SPECIFICATION



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COMPLETE SPECIFICATION.

Improvements in or relating to Kinematographic Apparatus.

thus avoided.

We, ÉTABLISSEMENTS CONTINSOUZA (SOCIÉTÉ ANONYME), of 9 and 13^{bis}, rue des Envierges, Paris, in the Republic of France, do hereby declare the nature of 5 this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

The present invention has for its object 10 an arrangement for registering images in 'kinematographic projecting apparatus, which permits of preserving synchronism between the movements of feeding the film and of obturation.

By fixed registration is meant the process which consists in preserving the optical axis in an invariable position and in keeping or bringing the centre of the images of the film in coincidence with it.

In certain known apparatus, the registration is effected by causing the Maltese cross to rotate about the axis of the carrier of the driving-finger; in others the axis of the carrier of the driving-finger is caused to rotate about the Maltese cross, so as to determine a rotation of the driving-drum of the film, some form of differential being provided in connection with the obturator in each form of apparatus so that the obturator may be correctly adjusted after the registration.

The present arrangement which forms the subject matter of this invention, permits, during the registration, of keep35 ing the driving-finger in an invariable position with relation to the openings in the Maltese cross. The correction being made on the finger itself, does not, owing to this fact, require any adjustment of 40 the position of the obturator, and the

To enable the description of the arrangement and also its working to be easily followed, the invention will now be 45 described by reference to the accompanying drawing in which:—

Figures 1 and 2 show, by way of

supplementary correcting mechanism is

Figures 1 and 2 show, by way of example, one construction of this arrangement, and Figures 3 to 6 are 50 working diagrams.

Figure 1 is a section through the axis of the mechanism, and Figure 2 is an end view and a view in section on line X—Y of Figure 1.

The pinion 11 receives movement from the mechanism of the apparatus and transmits it to the registering arrangement. The shaft 12 on which this pinion is keyed carries a skew gear 13 which it 60 drives round in its rotation and which is adapted to slide upon it. The gear 13 gears with a pinion 14 keyed on the shaft 15 of the carrier of the driving-finger. This pinion is a satellite of the pinion 13 during the operation of registration. For this purpose the shafts 12 and 15 are carried by a cylindrical box 16, the shaft 12 being placed in the axis of the box 16.

The pinion 13 is controlled in its rota- 70 tion by the shaft 12 and in its translation on this shaft by a guide 17 loose on 12, which itself receives its movement from a spindle 18 passing through a combination of two pairs of slots arranged as follows: 75

The two symmetrical helical slots 19 are made through the box 16, the pitch of these slots is dependent upon that of the cut of the skew pinion 13.

The other pair comprises two horizontal 80

[Price 1/-]

grooves 20 made in the frame 21 and supporting the box 16. The Maltese cross 22, in which is keyed the film driving-drum 23, is placed on a shaft coaxial with 5 the shaft 12.

The registration of the images of the film driven by the drum 23 is obtained by the rotation of the box 16 by means of the lever 24, the angle described corresponding to the result desired.

The skew pinion 14 is driven round by this action and works round the pinion 13 as a satellite. The pinion 13, under the combined action of the slots 19 and 20 slides on its axis and cancels the relative rotation which it would produce on its satellite if it were to remain keyed on the shaft in its anterior position. It is evident that an exact determination of the pitch of the slots relatively to the cut of the pinions, permits of the pinion 13 being moved by such an amount that its rotation relative to its satellite may be suppressed.

25 The effect of the arrangement described is indicated in the diagrams of Figures 3

In the diagrammatic Figures 3 and 4, the various parts are supposed to occupy 30 positions before a registration and at the commencement of the feeding period.

In Figures 5 and 6, the position of the various parts of the arrangement has been modified by a registration, the 35 apparatus being supposed to be stopped. The driving-finger has not moved in the opening of the Maltese cross. The period of feeding has not therefore been released

relatively to its position anterior to the registration. On the other hand, the 40 pinion 11 has not rotated, and, consequently, the rest of the mechanism of the apparatus has not been affected by the registration and the obturator has not moved.

Having now particularly described and ascertained the nature of our said invention and in what manner the same is to be performed, we declare that what we claim is:—

1. A device for registering the images in kinematographic apparatus having a sprocket feed, characterised essentially by the fact that the position of the driving-finger remains the same with relation to 55 the openings in the Maltese cross when the feed sprocket is caused to rotate in order to register the images of the film, a result which removes the necessity for the usual auxiliary system for correcting 60° the adjustment of the obturator and avoids the momentary scintillation caused ordinarily by this operation.

2. A device for registering the images in kinematographic apparatus, substan-65 tially as described with reference to the accompanying drawings.

Dated this 27th day of January, 1920.

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143.839. Complete Specification of ETABLISSEMENTS CONTINSOUZA SOC. ANON.

