W. H. ANDERSON.

MASKING DEVICE FOR CINEMATOGRAPH APPARATUS.

APPLICATION FILED NOV. 24, 1913.

1,127,155.

Patented Feb. 2, 1915.

2 SHEETS—SHEET 1.

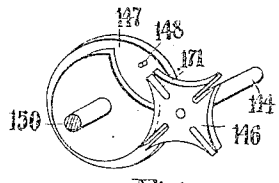


Fig. 6.

Fig. 1.

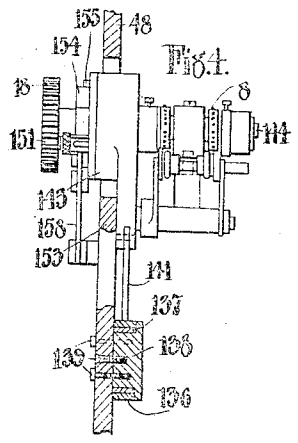


Fig. 4.

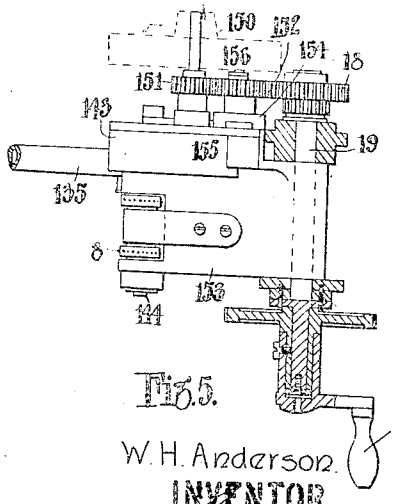


Fig. 5.

19

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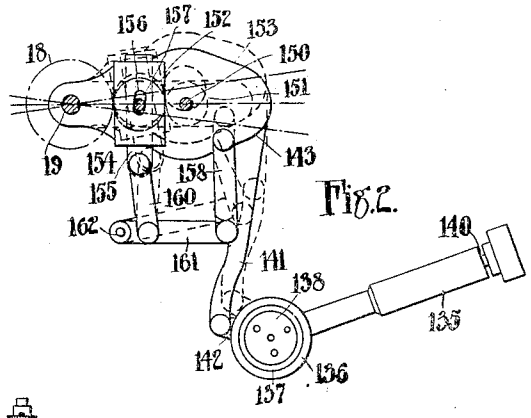


Fig. 2.

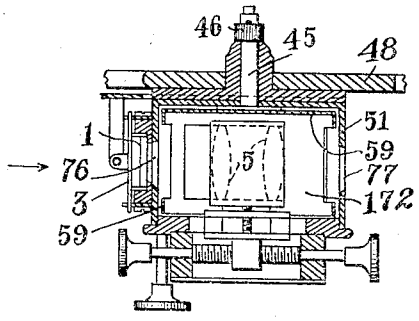


Fig. 7.

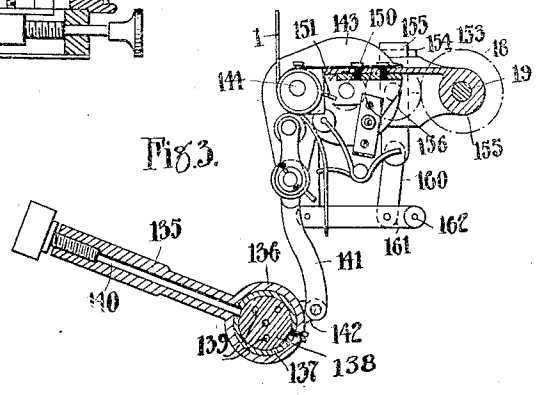


Fig. 3.

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MASKING DEVICE FOR CINEMATOGRAPH APPARATUS.

1,127,155. Specification of Letters Patent. Patented Feb. 2, 1915.

Original application filed December 4, 1912, Serial No. 734,805. Divided and this application filed November 24, 1913. Serial No. 802,718.

To all whom it may concern:

Be it known that I, WALTER HILLIER ANDERSON, a citizen of the Dominion of New Zealand, and residing at 318 Willis street, Wellington, in the Provincial District of Wellington, in the Dominion of New Zealand, have invented certain new and useful Improvements in Masking Devices for Cinematograph Apparatus, of which the following is a specification.

This invention relates to cinematograph apparatus and has for its object to provide an improved masking device in connection therewith, and more particularly adapted to such apparatus as is described in the specification of my prior Patent No. 1,106,069.

The improvements are illustrated in the accompanying drawings which will now be referred to for the purposes of a detailed description.

Figure 1 is a side view of a cinematograph apparatus. Fig. 2 is a side elevation of the masking mechanism. Fig. 3 is a reverse side elevation partly in section. Fig. 4 is a front elevation. Fig. 5 is a plan. Fig. 6 is a perspective elevation of Maltese cross mechanism. Fig. 7 is a sectional view of a shutter mechanism.

Referring to the drawings the masking apparatus consists of a lever 135, having a boss 136 provided with a friction ring 137 fitting upon a pivot 138 held from turning by screws 139, passing through support 48. A screw 140 passing down the lever 135 is adapted to bear upon the pivot 138 and lock the lever in any desired position. A rod 141 connects the short end 142 of the lever to a bracket 153 carrying an oil bath 143 wherein is contained the usual Maltese cross 146, (see Fig. 5) upon a spindle 144. The sprocket wheel 8 on spindle 144 pulls the film 1 intermittently through the gate 3 as the Maltese cross is operated by the usual pin 148 projecting from a disk 147 mounted upon the spindle 150, to which is fixed a pinion 151 gearing with an idle wheel 152, which gears with the driving spur wheel 18. The wheel 18 is mounted on the spindle 19 which is rotated by means of the operating handle 19'. The bracket or frame 153 is pivoted upon the spindle 19. A transverse casing 154 upon the bracket 153 is provided with a slide 155 to which the spindle 156 of the wheel 152 is fixed. A slot 157 made in the casing 154 allows the spindle 156 to move with the slide 155. The bracket 153 is connected by a link 158, and the slide 155 is connected by a link 160 to an arm 161 pivoted upon a pin 162. The shutter 59, Fig. 7, is mounted on a shaft 45, having a pinion 46, which meshes with a spur wheel 47 engaging a wheel 49 which is driven by the pinion 50 on the shaft 19. The shaft 45 has its bearing in a casing 51 surrounding the shutter and having apertures 76 and 77 for the admission and emission of the light to and from the lens 5, from the lantern house 4. The shutter mechanism is fully described and illustrated in the prior patent above referred to.

When it is necessary to mask the pictures correctly upon the screen the lever 135 is operated to raise or lower the sprocket wheel 8 as required to bring the pictures of the film exactly into correspondence with the apertures 76 and 77. The slide 155 is also operated by the movement of the lever 135, but owing to the distance between the pin 162 and 166 being less than the distance between the spindle 19 and 156, the slide 155 is retarded in its movement. The retardation must be such that the rotation of the idle wheel 152 around the wheel 18 will not rotate the pinion 151, hence the portion of the film passing over the sprocket wheel 8 is raised or lowered relatively to the gate according as the said sprocket wheel is raised or lowered by the movement of the lever 135.

In order that the pictures may be properly displayed upon the screen, it is essential that the synchronism between the movements of the shutter and the passage of the pictures of the film through the film gate should be maintained, that is to say, the pin 148 must engage one of the slots 171 in the Maltese cross 146 and operate the cross and sprocket wheel 8 simultaneously with the cutting off of the light by the diametrically opposite blanks 172 in the shutter. If, therefore, the pinion 151, which is fixed upon the spindle 150 of the disk 147 is rotated when the masking is effected by operating the lever 135, then the pin 148 would operate the Maltese cross 146 either before or after the blanks of the shutter had completely closed the apertures through which the light passes. If the blanks of the shutter were extended farther along the shutter in

order to mask the pictures after the movement of the film had taken place, then a corresponding reduction of time of exposure of the screen to the light of the lantern would necessarily ensue with a reduction of the brilliancy of the picture. The masking apparatus herein described overcomes this drawback as the retarding of the slide 155 allows the upward and downward movement of the pinion 151 to be effected but without rotating it, consequently, the operating of the Maltese cross 146 by the pin 148 always synchronizes with the time at which the blanks 172 mask the pictures.

Having now described my invention what I claim as new and desire to secure by Letters Patent is:—

1. In cinematograph apparatus, masking mechanism comprising a sprocket wheel and spindle, a film fed through the apparatus by the sprocket wheel, a pinion fixed to the spindle, an idle wheel gearing with the pinion, a driving wheel gearing with the idle wheel, a pivoted bracket upon which the pinion and driving wheel are mounted, a slotted transverse casing upon the bracket, a slide within the casing upon which the idle wheel is mounted, a pivoted arm, links connecting the pivoted arm to the bracket and slide respectively, and means for operating the bracket upon its pivot.

2. In cinematograph apparatus, masking mechanism comprising a sprocket wheel and spindle, a film fed through the apparatus by the sprocket wheel, a pinion fixed to the spindle, an idle wheel gearing with the pinion, a driving wheel gearing with the idle wheel, a pivoted bracket upon which the pinion and driving wheel are mounted, a slotted transverse casing upon the bracket, a slide within the casing upon which the idle wheel is mounted, a pivoted arm, links connecting the pivoted arm to the bracket and slide respectively, an operating lever having a boss, a split ring secured within the boss by a screw, and fitting a pivot and upon which the lever is fulcrumed, a screw fitting the stem of the lever and adapted to lock the lever, and a link connecting the short end of the lever to the bracket.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

WALTER HILLIER ANDERSON.

Witnesses:
BERTRAM H. MATTHEWS,
WILLIAM H. BIRD.