

March 15, 1927.

W. REICHMANN

1,621,334

DRIVING GEAR FOR FILMS IN PROJECTION APPARATUS

Filed July 31, 1926

2 Sheets-Sheet 1

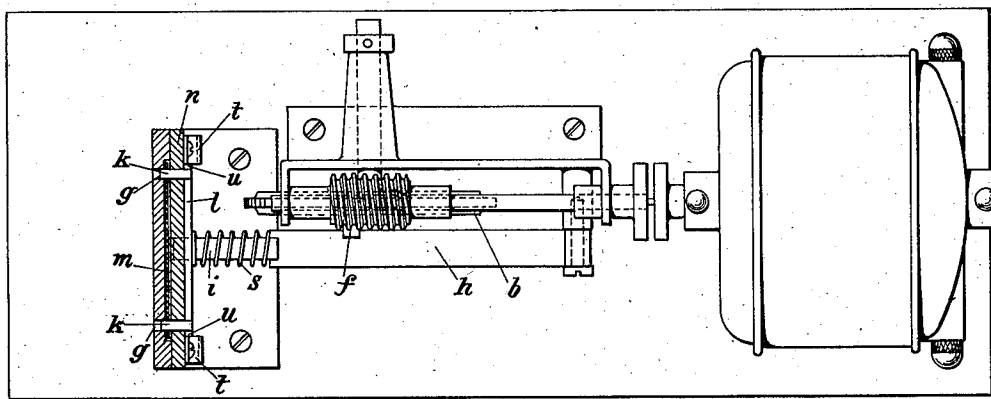
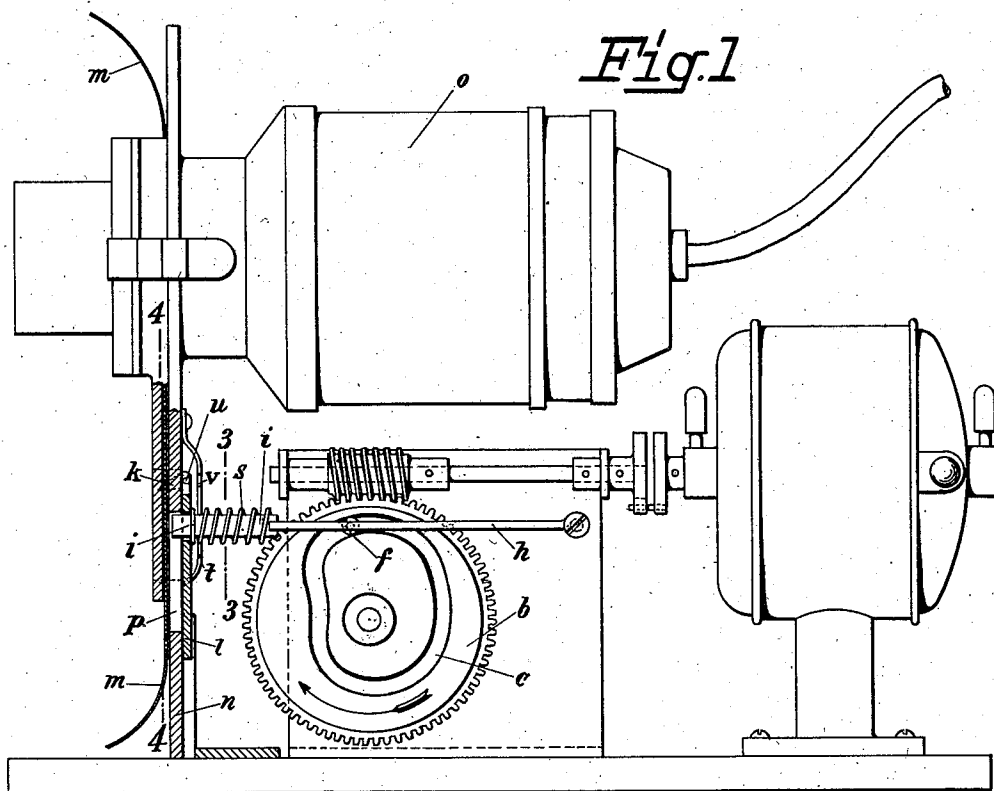


Fig. 2

Witnesses:

L. H. Stephens
E. C. Kelly

Inventor:

Willy Reichmann

March 15, 1927.

W. REICHMANN

1,621,334

DRIVING GEAR FOR FILMS IN PROJECTION APPARATUS

Filed July 31, 1926

2 Sheets-Sheet 2

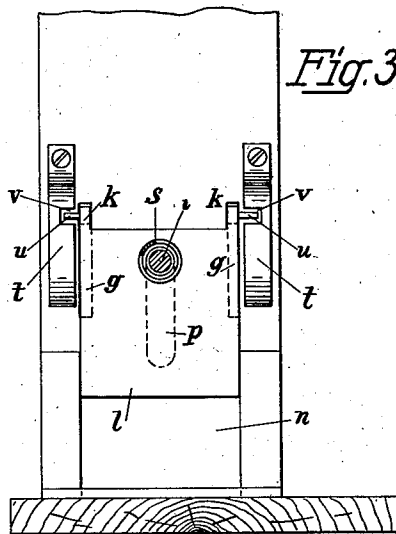


Fig. 3

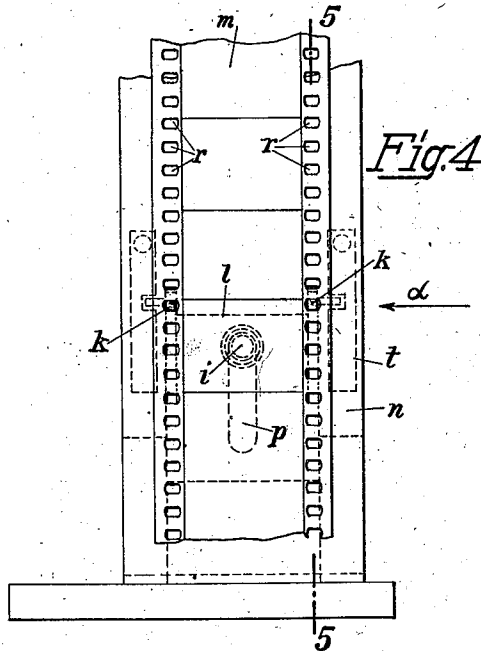


Fig. 4

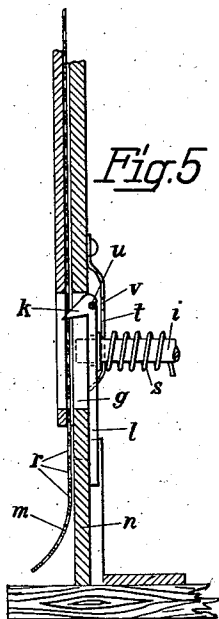


Fig. 5

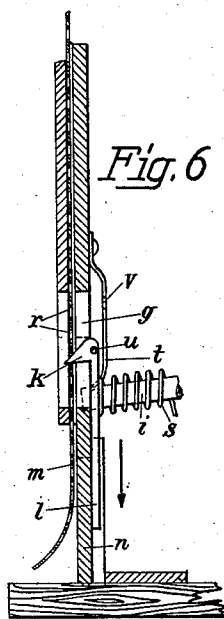


Fig. 6

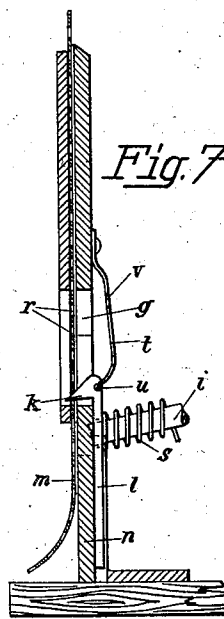


Fig. 7

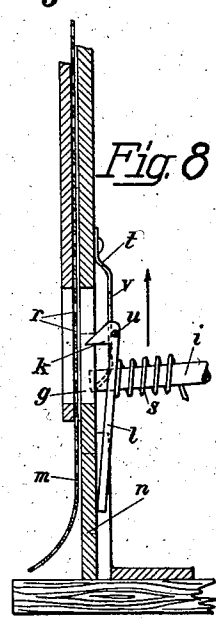


Fig. 8

Witnesses:
L. H. Stephens
S. Paddy

Inventor:
Willy Reichmann

Patented Mar. 15, 1927.

1,621,334

UNITED STATES PATENT OFFICE.

WILLY REICHMANN, OF HAMBURG, GERMANY, ASSIGNOR, BY MESNE ASSIGNMENTS,
TO NATIONAL SCREEN SERVICE, INC., A CORPORATION OF NEW YORK.

DRIVING GEAR FOR FILMS IN PROJECTION APPARATUS.

Application filed July 31, 1926, Serial No. 126,222, and in Germany March 24, 1925.

This invention relates to an improved driving-gear to produce an intermittent movement of the film in a projection apparatus, and in which the usual perforations in the film are engaged by teeth arranged on a slide and moved by a lever that is operated by a cam-disc. The novelty of the invention consists in having said slide urged towards the film by means of a spring encircling said lever and normally causing engagement between film and teeth. Pins are provided on the teeth, and these pins and said teeth are positively actuated by springy tongues to release the teeth from the film during the return movement of the slide. In the highest position of the slide, said pins pass through gaps in the springy tongues so that the teeth engage again in the film perforations.

The accompanying description and drawing illustrate a preferred embodiment of the invention: Figs. 1 and 2 are respectively a side elevation and a plan view, partly in section, of the improved driving-gear applied to a projection apparatus; Figs. 3 and 4 are sections, respectively on the lines 3—3 and 4—4 of Fig. 1; Fig. 5 is a section on the line 5—5 of Fig. 4, as seen in the direction of arrow *a*; while Figs. 6, 7 and 8 are sections similar to that shown in Fig. 5, with the slide in its different positions.

The improved driving-gear comprises essentially a disc *b* with a cam-groove *c* which is engaged by a guide roller *f* of a lever *h* fulcrumed at one end thereof. The free end *i* of the lever *h* loosely engages a vertically reciprocable slide *l* which is provided with teeth *k* to effect an intermittent movement of the film *m* of the projection apparatus. The teeth *k* form part of the slide, being merely extensions of said slide. Said slide *l* is guided behind an abutment-plate *n*, which is provided for said film. To permit a free movement of said slide, the free end *i* of the lever *h* passes through a guide slot *p* of the abutment-plate *n* while the teeth *k* pass through and move in corresponding slots *g* in said abutment-plate. The teeth *k* are adapted to engage in the conventional perforations *r* in the film *m*. To prevent the teeth *k* from sliding on the film *m* during the upward movement of the slide, the slide *l* is provided with pins *u* which in the lowermost position of the slide *l*, that is when its movement is reversed, are rearwardly

engaged by springy tongues *t* connected to the abutment-plate *n*. The slide is thus tilted, whereby the teeth *k* are retracted from the film *m* so far that they do not come in contact therewith during their upward movement. Said springy tongues *t* are provided with gaps *v* through which the pins *u* are urged in the highest position of the slide *l* by the action of a spring *s* encircling the free end *i* of the lever *h*. This causes the teeth to again engage the perforations of the film. These tongues *t* constitute control means for moving the feed means away from the film on the up or return stroke of the lever *h*.

The operation of the device is as follows:—

In the lowermost position of the slide *l* shown in Fig. 7, the springy tongues *t* liberate the pins *u*, so that the slide *l* at the beginning of its upward movement assumes the tilted position shown in Fig. 8. The teeth *k* have then left the perforations in the film *m* as they are positively guided with their pins *u* along the outsides of the springy tongues *t*. As soon as the slide *l* has reached its highest position (Fig. 5), the pins *u* of the teeth *k* are urged through the gaps *v* of the springy tongues *t* by the action of the spring *s* and the teeth are caused to again enter the perforations *r* of the film *m*.

What I claim, is:—

1. The combination, in driving-gear for perforated films in projection apparatus, of a vertically reciprocable slide, teeth located on said slide and adapted to normally enter the film perforations, a spring acting upon said slide and normally urging said teeth to enter said perforations, pins located on said slide, and spring tongues having gaps therein and adapted to act upon said pins to cause said teeth to withdraw from the film perforations during the return movement of the slide, said gaps permitting a reentry of said teeth into the film perforations after said pins enter the gaps of said springy tongues in the highest position of the slide.

2. Intermittent driving mechanism for perforated films in projection apparatus comprising a lever having a stationary fulcrum, means adapted to oscillate said lever, a feeding member mounted upon the free end of the said lever and movable with respect to said lever towards and away from

the said film, a spring adapted to normally urge the said feeding means into engagement with the film, and control means adapted to move said feeding means away from said film upon the return movement of the said lever.

the said spring is mounted upon the said lever and the said control means are stationary.

In testimony whereof I have hereunto set my hand.

WILLY REICHMANN.

3. A device according to claim 2 in which