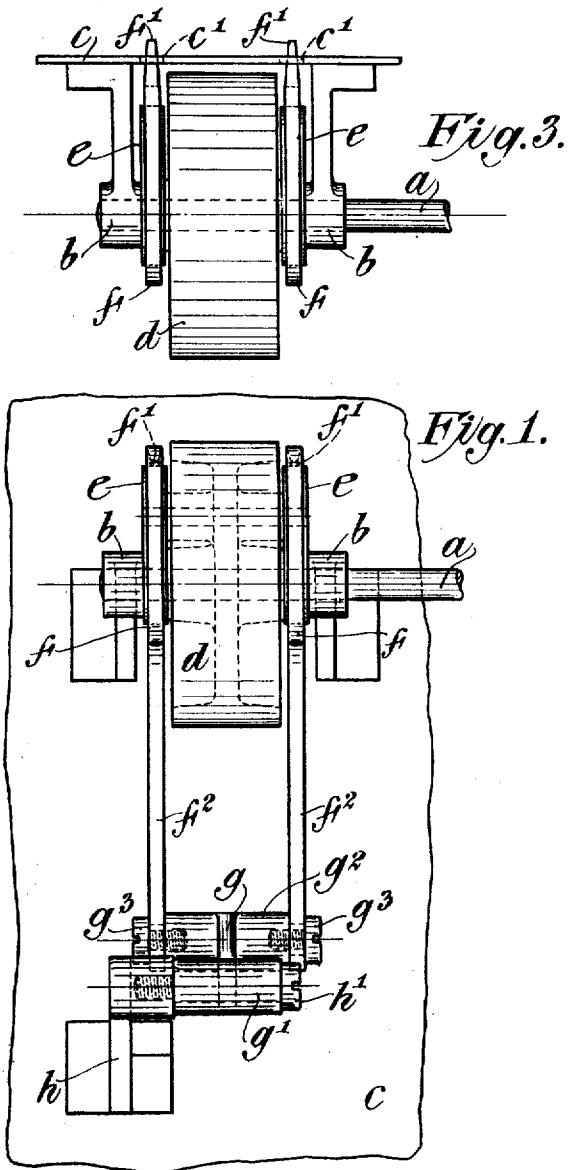
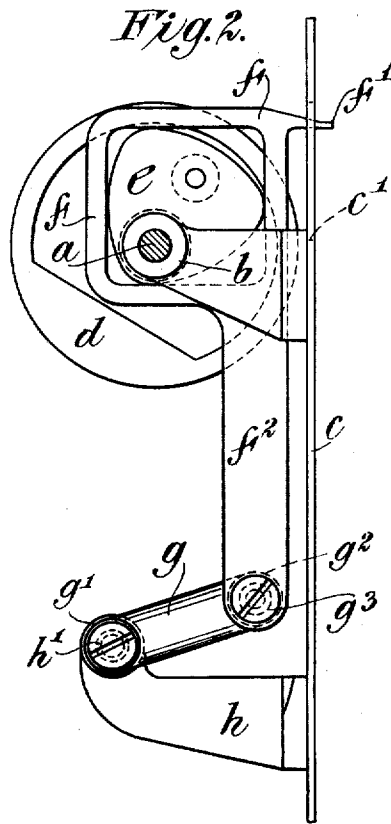


1,268,874.

Patented June 11, 1918.



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ERIK WM. NELSON, OF NEW ROCHELLE, NEW YORK.

CAM-MOVEMENT.

1,268,874.

Specification of Letters Patent.

Patented June 11, 1918.

Application filed September 1, 1917. Serial No. 189,378.

To all whom it may concern:

Be it known that I, ERIK W. NELSON, a citizen of the United States, and residing in the city of New Rochelle, in the State of New York, have invented new and useful Improvements in Cam-Movements, of which the following is a specification, reference being had to the accompanying drawing, forming a part hereof.

10 In Letters Patent of the United States No. 1,152,800, dated September 7, 1915, there is shown and described a cam-movement which comprises a cam having three faces formed on a circular arc, a rectangular cam frame, and a rectilinear guide to which the cam frame is pivotally connected. In the practical operation of that cam-movement, particularly when driven at high speed for the purpose of feeding a motion picture film, for which use it is designed, it is found that through lack of balance there is considerable vibration and that there is apt to be binding of the rectilinear guide which tends to slow down the movement. It is the object of this invention to improve the cam-movements of the general type of that shown in said Letters Patent with the view to overcoming the difficulties referred to, as well as for the purpose of simplifying the construction. To this end the triangular cam or cams is or are formed upon a counter-balanced wheel or drum, the cam frame is arranged to engage the film directly, without the intervention of a separate finger, and the extension of the cam frame is guided by a freely swinging link in place of the rectilinear guide of the patent.

The invention will be more fully explained hereinafter with reference to the accompanying drawing in which it is illustrated and in which—

Figure 1 is a view in front elevation of the improved cam-movement.

Fig. 2 is a view of the same in side elevation, with the cam-shaft in section.

Fig. 3 is a top view thereof.

Although the cam-movement is particularly intended for the feeding of a motion picture film and, as shown in the drawing, is complete in itself as a film-feeding device, it is unnecessary to illustrate or describe in detail any of the parts of a motion picture camera or projector, other than as indicated in the drawing. A shaft *a*, which receives rapid rotary motion from any suitable source, is mounted in bearings *b* which

are secured to the plate or frame *c*, the latter being slotted, as indicated at *c'*, to permit the travel of the lugs or points which directly engage, at one side or at both sides, the perforated film. On the shaft, between the two bearings *b*, is secured a suitable counterweighted balance wheel *d*, and to each end thereof is secured a triangular cam *e*, with each face formed on a circular arc, one of such faces being concentric with the shaft *a*. Cooperating with each cam is a rectangular cam frame *f*, which is suitably fitted to contact interiorly with the cam *e* in its rotation, as shown in Fig. 2. Each cam frame is provided with a projection or point *f'* which projects through the slot *c'* of the plate *c* so as to engage the corresponding side of the perforated film. The cam frame *f* is also formed with an extension *f''* which is pivotally supported upon and guided by a link *g* substantially at right angles to the direction of the film, the link being itself pivotally mounted on a bracket *h* which is secured to the frame or plate *c*. As shown, the link *g* has a long bearing on the pivot-screw *h'* and at its other end has a long cross-bar *g''* to each end of which is pivotally secured, as by a screw *g'''*, the corresponding extension *f''* of the cam frame. A single link *g* thus serves as a common guide and support for the two cam frames when two cam frames are used. It will be understood, however, that in some cases a single cam frame may be used.

The mode of operation of the improved device will be readily understood without further explanation and it will be seen that the cam frame or both cam frames are so supported and guided by the swinging link or links as to have free movement at all times without danger of binding. The construction, moreover, is exceedingly simple and direct in its action and well adapted to operate at high speed without vibration.

I claim as my invention:

1. A cam-movement comprising a triangular cam with each face formed on a circular arc, a rectangular cam frame cooperating with the cam and provided with an extension, and a link pivoted on a fixed point and pivotally connected to said extension and constituting the sole support and guide for the cam frame.

2. A cam-movement comprising a triangular cam with each face formed on a circular arc, a rectangular cam frame cooperating

with the cam and provided with an extension and with an actuating tooth, and a pivoted link pivotally connected to said extension and supporting and guiding the cam
5 frame.

3. A cam-movement comprising a counterbalanced driving disk, a triangular cam secured to each face of the driving disk and having each of its own faces formed on a

circular arc, rectangular cam frames cooperating with the cams and provided each with an extension, and a single pivoted link pivotally connected to both of said extensions and supporting and driving both of said cam
10 frames.
15

This specification signed this 29th day of August, A. D. 1917.

ERIK WM. NELSON.