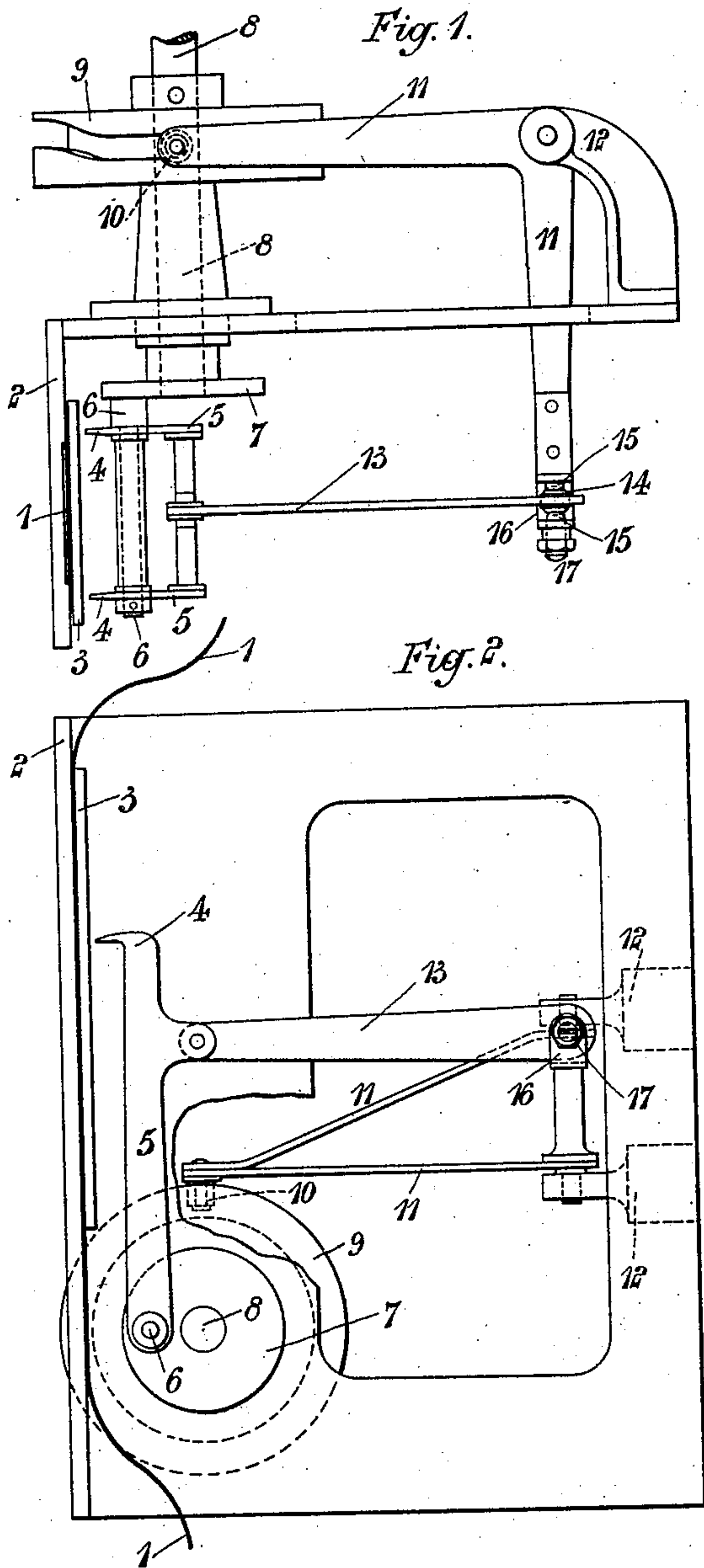


KINEMATOGRAPH FEED MECHANISM.

APPLICATION FILED APR. 19, 1909.

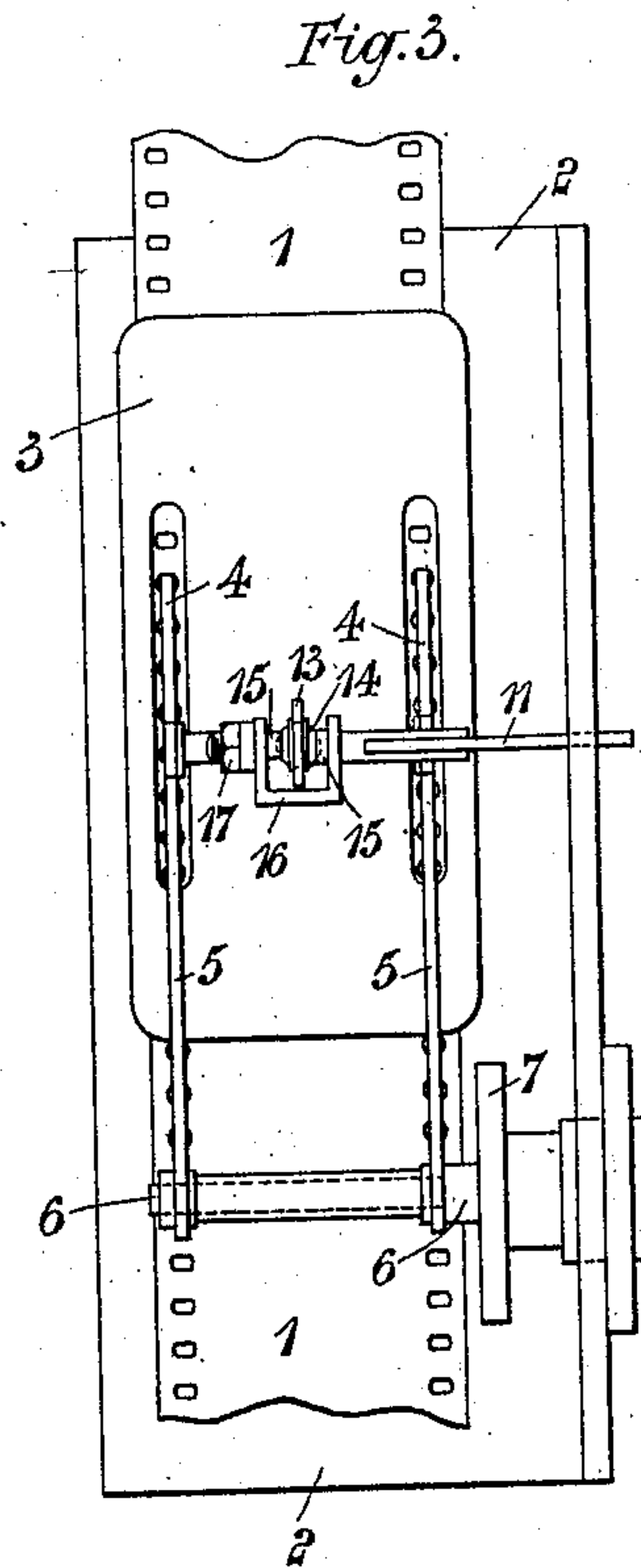
Patented Sept. 14, 1909.

934,242.



WITNESSES

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UNITED STATES PATENT OFFICE.

CHARLES URBAN, OF LONDON, ENGLAND.

KINEMATOGRAPH FEED MECHANISM.

934,242.

Specification of Letters Patent.

Patented Sept. 14, 1909.

Application filed April 19, 1909. Serial No. 490,905.

To all whom it may concern:

Be it known that I, CHARLES URBAN, a subject of the King of Great Britain and Ireland, of 89 Wardour street, in the county of London, England, have invented new and useful Improvements in Kinematograph Feed Mechanism, of which the following is a specification.

My invention relates to mechanism for giving rapid intermittent feed movements, and is more especially intended for feeding films in kinematographic cameras, kinematographic printing-machines, and apparatus for exhibiting kinematographic pictures, the object of my invention being to provide mechanism which enables the feed movements to be effected at very high speed, with great accuracy, and with a minimum of vibration. I will, for the purposes of description, presume that the mechanism, according to my invention, is to be applied to the feeding of a film in kinematographic cameras, from which its application to analogous purposes will also be understood.

According to my invention I employ an arm, or arms, provided with means for engaging the perforations in the film, and I operate the said arm, or arms, by mechanism giving thereto a combination of movements obtained from the same shaft, this combination of movements consisting of reciprocating movements imparted to the said arm, or arms, in directions longitudinally of the film, for effecting the intermittent feeding of the film, and reciprocating movements imparted to the said arm, or arms, in directions at, or about, right angles to the feeding movements, for effecting the engaging and disengaging of the feeding means at the termination of the reciprocating movements of the arm, or arms, longitudinally of the film.

The accompanying drawing represents an arrangement of mechanism in accordance with my invention.

Figure 1 is a plan and Fig. 2 is a side elevation of the mechanism. Fig. 3 is an end elevation of part of the mechanism.

I have only shown so much of the apparatus as is necessary to explain my invention.

The film 1 may be passed between the fixed plate 2 and the movable gate 3 in the usual way, and is intermittently fed by means of the claws 4, carried by arms 5, and capable of engaging in the perforations of the film.

The arms 5 and claws 4 have a combination of movements imparted to them as hereinbefore explained, the movements longitudinally of the film being imparted by means of the crank pin 6, on the disk 7, secured to the shaft 8, the arms 5 being loosely mounted on the pin 6 and being secured by a nut and distance sleeve, as shown.

The movements of the arms 5, to bring the claws 4 into, and out of, engagement with the perforations in the film are controlled by the cam 9 secured to the shaft 8, in the groove in which cam engages a roller 10, on one end of a bell-crank lever 11 centered in the brackets 12, the other arm of the bell-crank lever 11 operating a rod 13 connected to the arms 5 by a swivel joint. To allow of the necessary radial movement in each direction the connection between the bell-crank lever 11 and the rod 13 is made by means of an universal joint; it is shown as being connected by a ball-and-socket joint, the ball 14 being secured to the end of the rod 13 and the socket being formed by the pieces 15 carried by the cranked piece 16 secured to the end of the lever 11, the outer piece 15 being secured by a nut 17 for adjustment. As the cam 9 is secured to the same shaft 8 as the crank 7, the said cam will act as a fly-wheel and assist in steadying the action.

The bell-crank lever 11 only moves through a very small angle and therefore the cam 9 can have a very easy path obviating vibration.

The crank pin 6 and cam 9 are so relatively set on the shaft 8 that the claws 4 are engaged and disengaged at the respective ends of the reciprocating movements of the arms 5 and claws 4.

I claim:—

1. For imparting intermittent feed movements, a shaft provided with a crank, arms carried by the said crank and carrying claws for engaging the body to which intermittent feed movements are to be imparted, a cam on the same shaft, a bell-crank lever operated by the said cam, and a connection between the said lever and the said arms to engage the claws with, and disengage them from, the said body between each of the intermittent feed movements.

2. For imparting intermittent feed movements, a shaft provided with a crank, arms carried by the said crank and carrying claws

for engaging the body to which intermittent feed movements are to be imparted, a cam on the same shaft, a bell-crank lever operated by the said cam through one arm, and
5 a rod connected at one end to the other arm of the lever, and at the other end to the aforesaid arms, the connections of the said rod being made by swiveling joints.

In testimony whereof I have signed my name to this specification in the presence of 10 two subscribing witnesses.

CHARLES URBAN.

Witnesses:

WILLIAM GERALD REYNOLDS,
H. D. JAMESON.