

KINETOSCOPE.

APPLICATION FILED JUNE 18, 1909.

995,551.

Patented June 20, 1911.

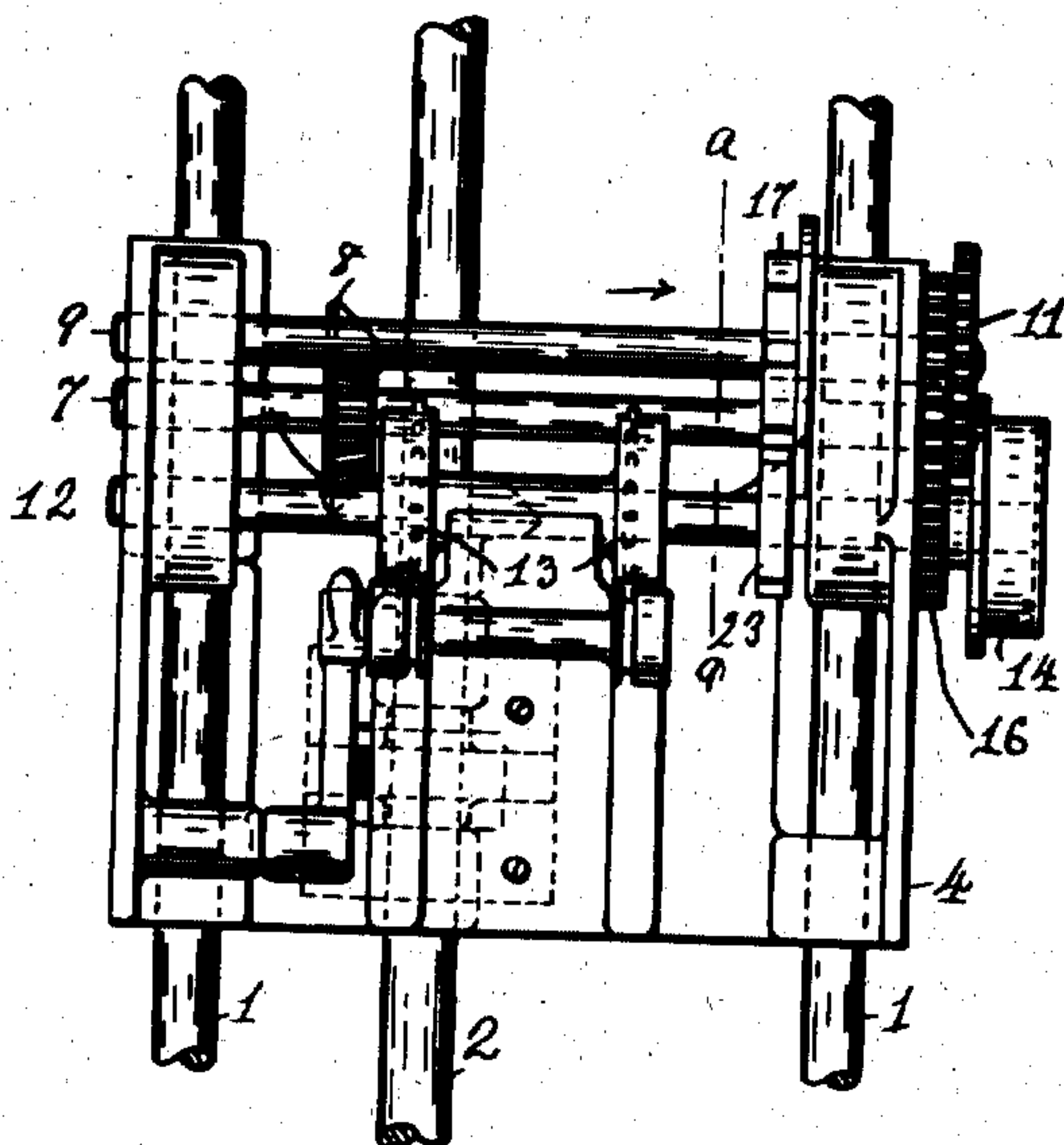


Fig: 1.

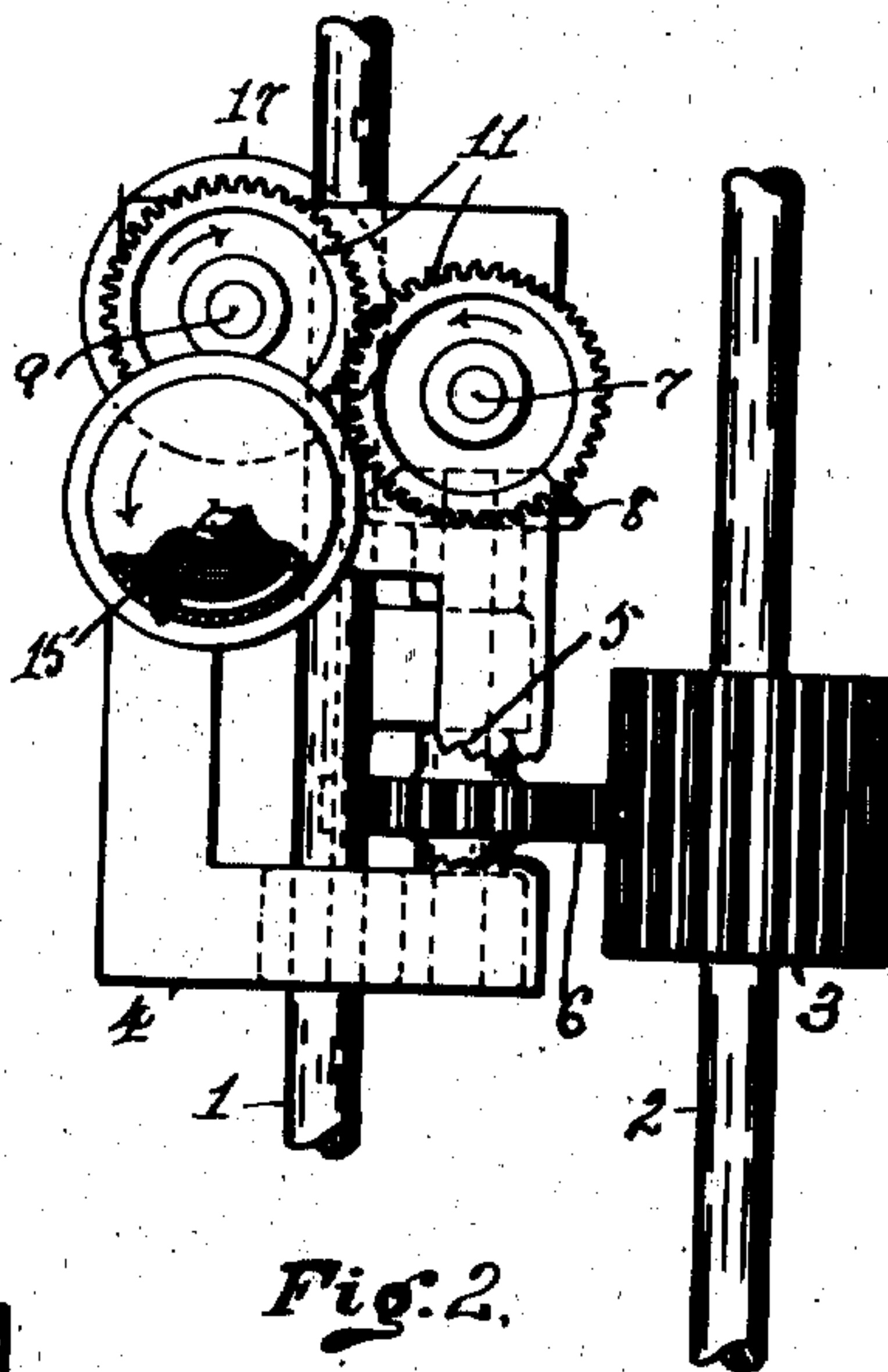


Fig. 2.

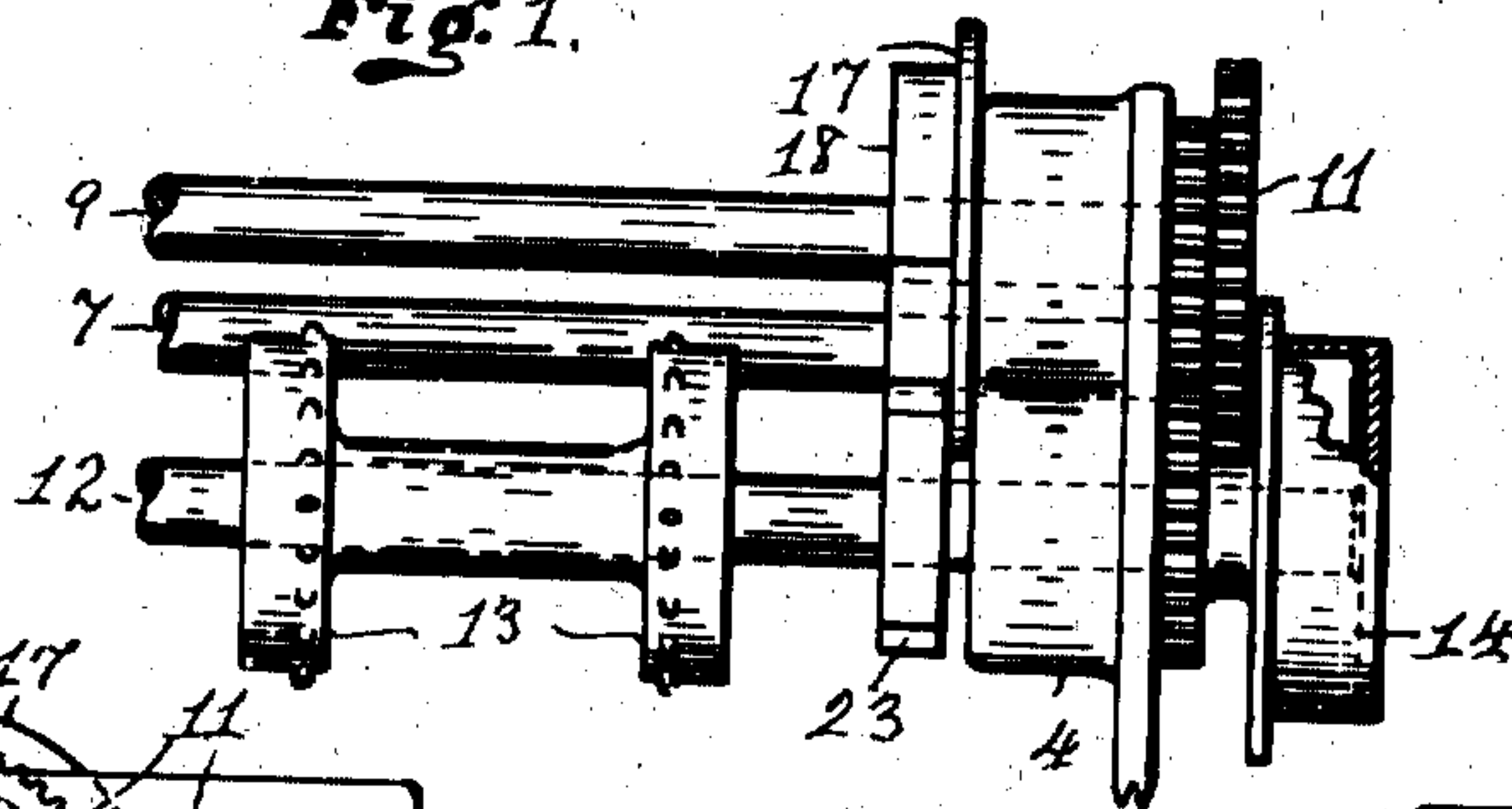


Fig: 3.

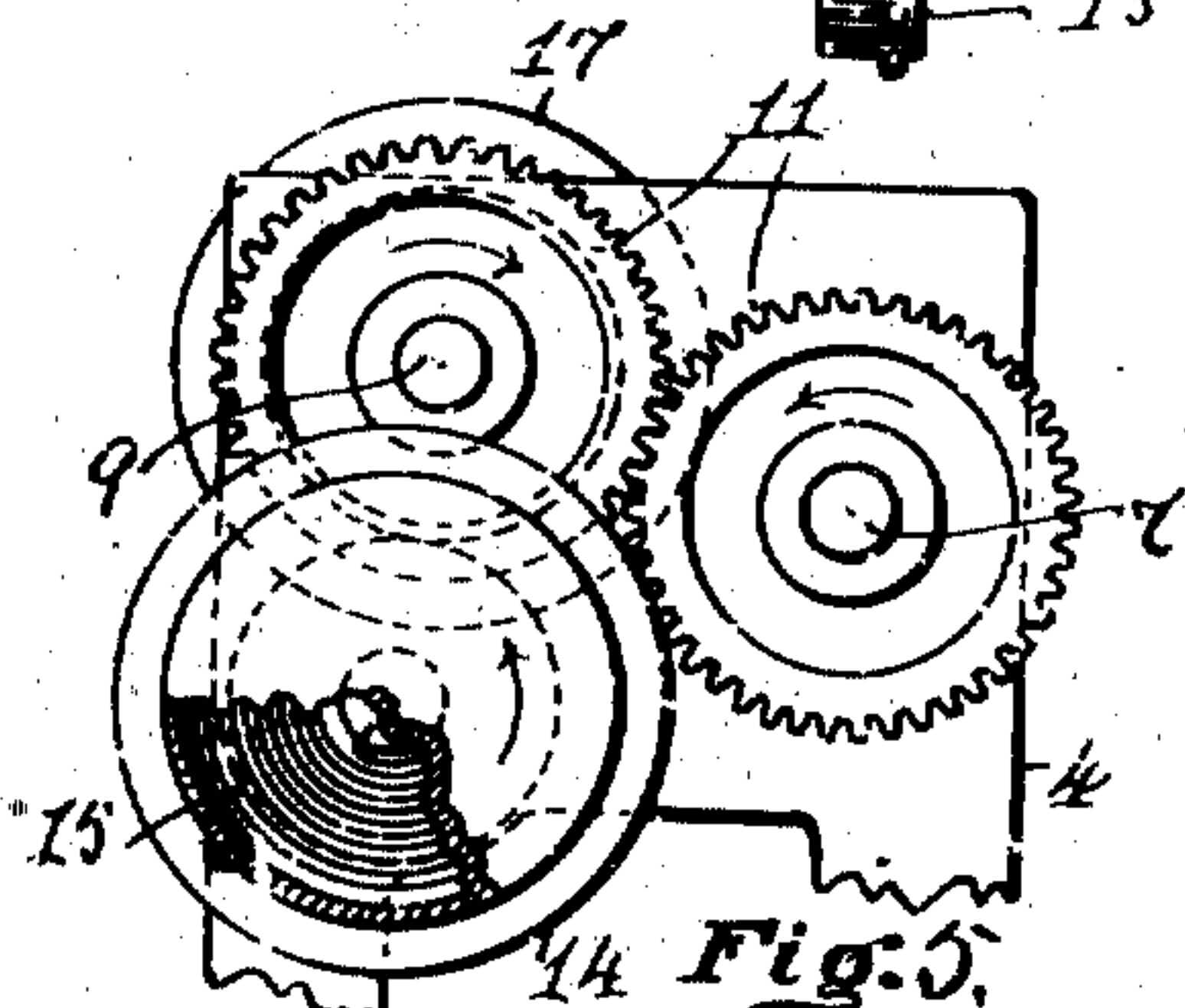


Fig: 5,

Witnesses

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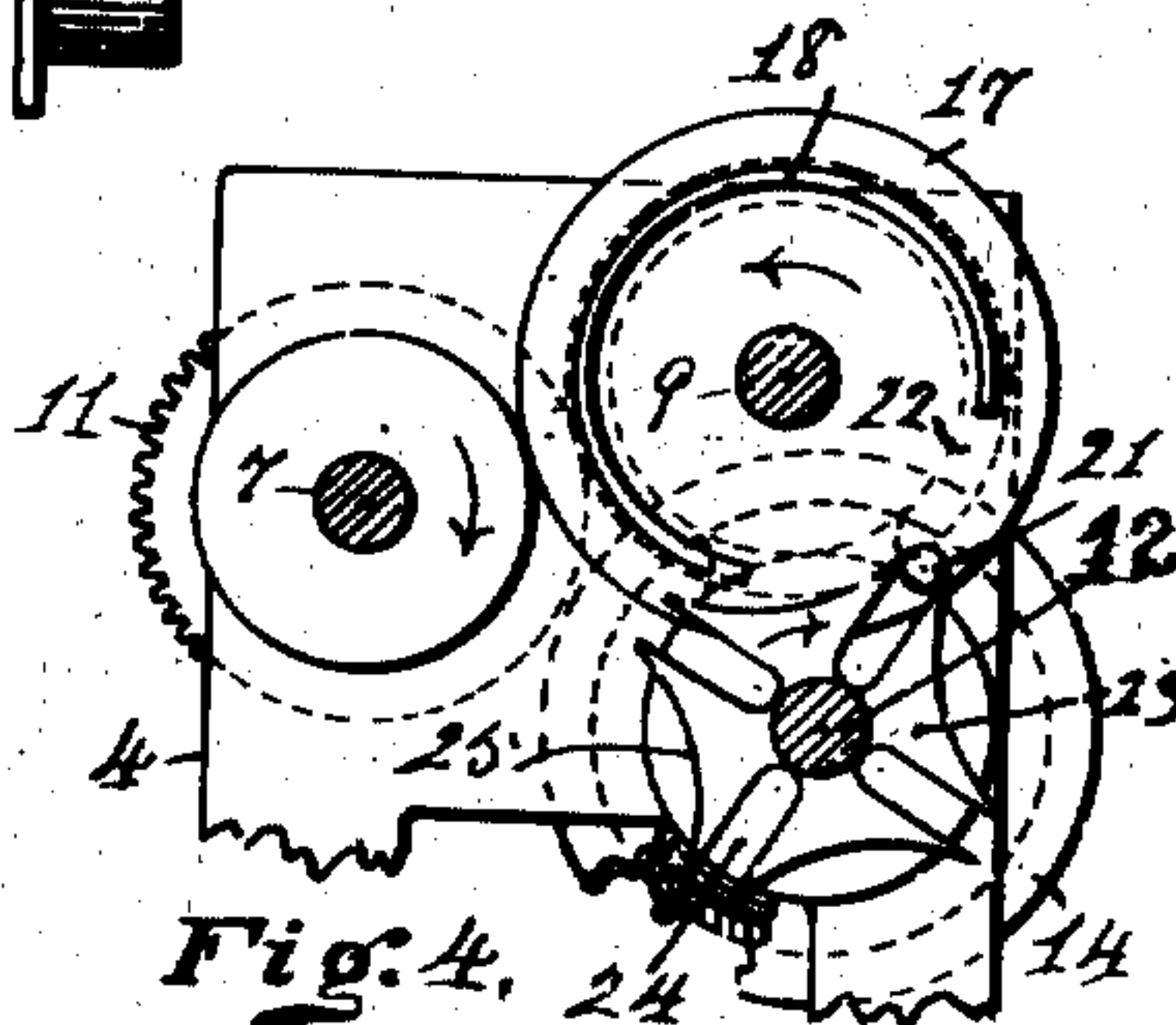


Fig: 4.

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UNITED STATES PATENT OFFICE.

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KINETOSCOPE.

995,551.

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Application filed June 18, 1909. Serial No. 502,933.

To all whom it may concern:

Be it known that I, THADDEUS A. NOLAN, a citizen of the United States, residing at Cincinnati, Ohio, have invented a new and useful Improvement in Kinetoscopes, of which the following is a specification.

My invention relates to kinetoscopes of the class adapted to use for moving pictures, and the objects of my improvements are to provide means for increasing the accuracy of the intermittent movement of the film; to provide spring actuated mechanism for moving the film; to provide means for maintaining the film absolutely motionless between its successive intermittent movements; and to provide simple and durable construction and assemblage of the various co-acting members for securing facility of operation and the required precision of action. These objects are attained in the following described manner as illustrated in the accompanying drawings, in which:—

Figure 1 is a front elevation with parts broken away of a kinetoscope embodying my improvements; Fig. 2, an end elevation; Fig. 3 an enlarged front elevation of portions of Fig. 1; Fig. 4 a longitudinal vertical section on the line *a—a* of Fig. 1, and Fig. 5 an enlarged end elevation of portions of Fig. 2.

In the drawings, 1 represents parallel guide rods mounted in a stationary frame (not shown) 2 a driven shaft journaled in fixed bearings (not shown) and provided with an elongated spur gear 3. A movable frame 4 vertically adjustable on the guide rods 1 carries a vertical shaft 5 which is provided with a pinion 6 in continuous engagement with gear 3.

A transverse shaft 7 journaled in frame 4 is driven from shaft 5 by means of miter gear connections 8 therewith, and a shaft 9 journaled parallel with shaft 7 is driven by means of spur gear connections 11 therewith. A shaft 12 provided with sprocket wheels 13 for engagement with the usual film (not shown) is journaled in the frame 4 parallel to shaft 9. A drum 14 mounted to turn on shaft 12 and yieldingly connected thereto by means of a spiral spring 15 is rotated in the ratio of four to one with shaft 9 by means of spur gear connections 16 therewith. A disk 17 secured on shaft 9 is formed with a segmental guard rim 18 on one of its faces and with a stud 21 projecting from said disk at an intermediate

point in the gap 22 formed between the ends of the rim 18.

A multiple stop 23 secured on shaft 12 is formed with preferably four open radial slots 24 adapted to movably engage with the stud 21 on disk 17. Said stop is also formed with intervening concave seats 25 in its periphery between adjacent slots 24 for movably engaging with the convex face of the guard rim 18.

In operation, the multiple stop is yieldingly maintained by means of the spiral spring with one of its seats in contact with the guard rim during a three-fourths or other predetermined partial rotation of the disk and until the stud enters one of the radial slots. The movable engagement of the stud in the radial slot prevents the action of the spiral spring from turning the stop too fast for the proper engagement of its succeeding seat into movable engagement with the forward portion of the guard rim. In this manner the stop together with shaft 12 and the sprocket wheels thereon are rotated intermittently by means of the spring in unison with the continuous rotation of the drum. The action of the spiral spring prevents any rotative oscillation of the stop and maintains it in constant contact alternately with the stud and the guard rim regardless of any wear or imperfect adjustment of the co-acting members. The accuracy of the intermittent movement of the film by the sprocket wheels for projecting pictures on the canvas with steadiness is very materially increased by the use of the spiral spring.

Having fully described my improvements, what I claim as my invention and desire to secure by Letters Patent of the United States is:—

1. A kinetoscope comprising a driving and a driven shaft, a multiple stop carried by the driven shaft, means carried by the driving shaft for releasing and engaging with different portions of the stop alternately in synchronism with the driving shaft and yielding connections for rotating the stop.

2. A kinetoscope comprising a continuously rotative disk provided with a stud and with a segmental guard rim, a rotative multiple stop provided with open radial slots and intervening seats, said slots and seats being arranged to make movable engagement alternately with the respective

corresponding stud and rim, and yielding connections with the disk for rotating the stop.

3. A kinetoscope comprising a stop
5 formed with radial slots and intervening seats, a continuously rotative disk formed with a stud and with a segmental guard rim for engaging alternately with the corresponding slots and seats, and connections
10 with the disk for rotatively moving and maintaining the stop in one direction under a yielding pressure.

4. A kinetoscope comprising a continu-

ously rotative driving shaft, an intermittently rotative driven shaft, a Geneva 15 stop mechanism connecting with said shafts for controlling the intermittent movement of the driven shaft, and means actuated by the driving shaft for continuously exerting a variable pressure in a rotative direction on 20 the driven shaft.

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Witnesses:

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