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Patented Nov. 7, 1899.

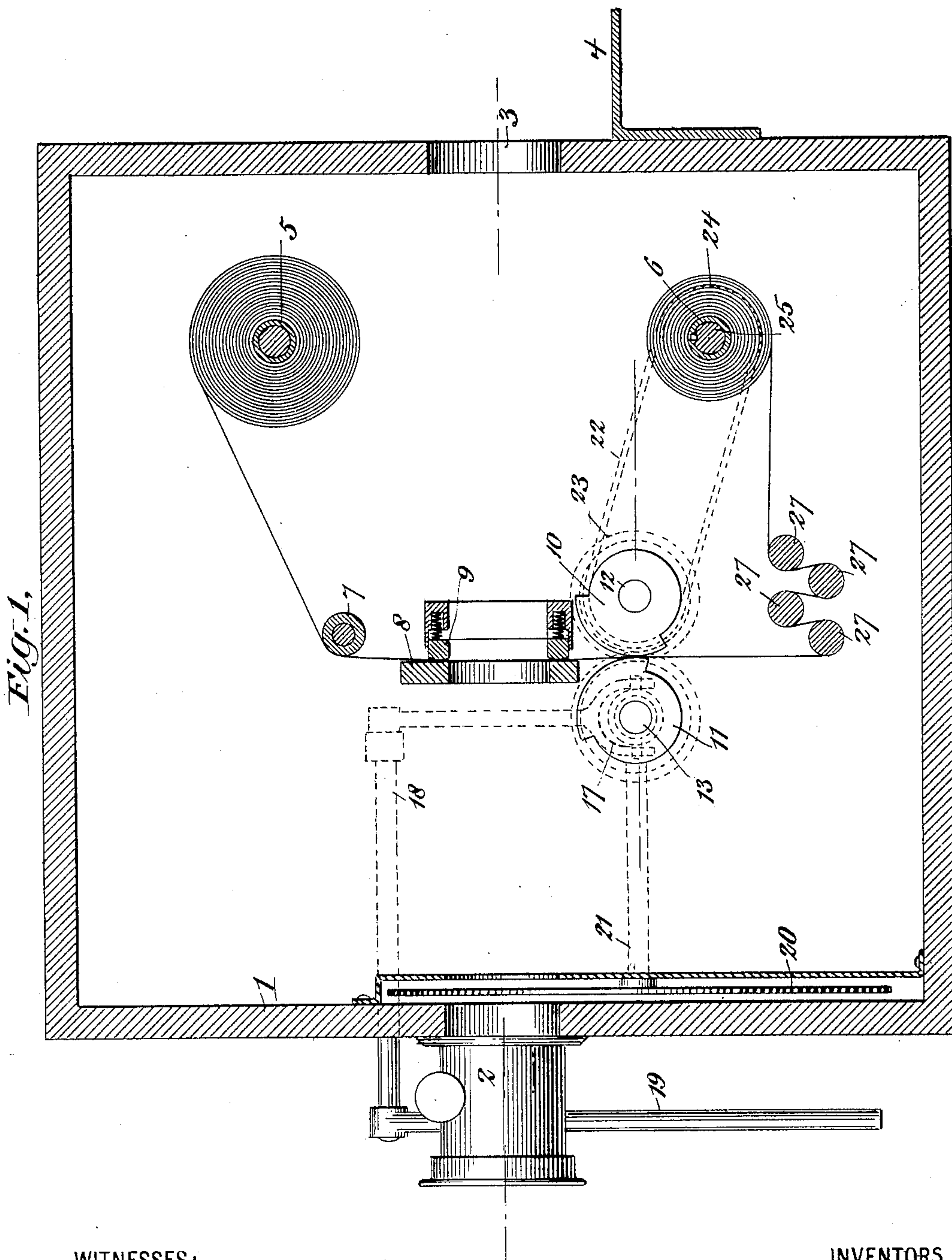
H. CASLER & J. A. PROSS.

FILM FEEDING MECHANISM FOR CONSECUTIVE VIEW APPARATUS.

(Application filed May 9, 1899.)

(No Model.)

2 Sheets—Sheet 1.



WITNESSES:

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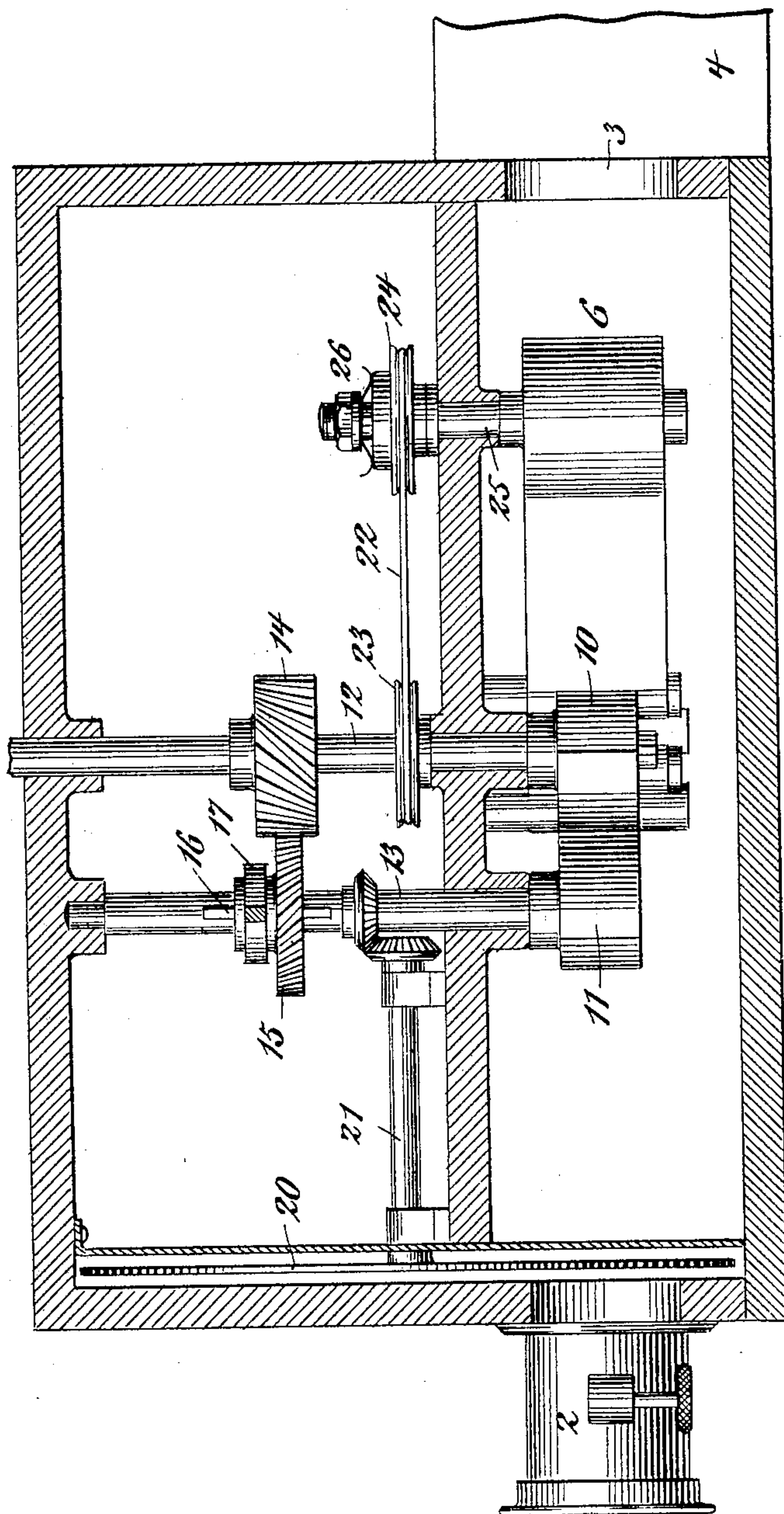
FILM FEEDING MECHANISM FOR CONSECUTIVE VIEW APPARATUS.

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(No Model.)

2 Sheets—Sheet 2.

Fig. 2,



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UNITED STATES PATENT OFFICE.

HERMAN CASLER AND JOHN A. PROSS, OF CANASTOTA, NEW YORK, ASSIGN-
ORS TO THE AMERICAN MUTOSCOPE COMPANY, OF NEW JERSEY.

FILM-FEEDING MECHANISM FOR CONSECUTIVE-VIEW APPARATUS.

SPECIFICATION forming part of Letters Patent No. 636,716, dated November 7, 1899.

Application filed May 9, 1899. Serial No. 716,118. (No model.)

To all whom it may concern:

Be it known that we, HERMAN CASLER and JOHN A. PROSS, citizens of the United States, residing at Canastota, in the county of Madison and State of New York, have invented certain new and useful Improvements in Film-Feeding Mechanism for Consecutive-View Apparatus; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

Our invention relates generally to improvements in consecutive-view apparatus such as employ a flexible picture-strip or film, and relates particularly to improvements in mechanism employed for varying the rate of feeding of such picture-strip or film.

Our invention consists in the novel means employed for varying the rate of feeding of the picture-strip or film.

The objects of our invention are to improve the devices employed for varying the rate of feeding of films or picture-strips in consecutive-view apparatus and to render the same as simple and inexpensive as possible. These objects are attained in the invention herein described, and illustrated in the drawings which accompany and form a part of this specification, in which the same reference-numerals indicate the same or corresponding parts, and in which—

Figure 1 is a vertical longitudinal section of a consecutive-view apparatus constructed in accordance with our invention, the section being taken through the optical axis; and Fig. 2 is a detail horizontal section of the apparatus.

In the drawings, 1 is the outer case of a consecutive-view-projecting apparatus; 2, the objective-lens thereof; 3, a light-opening in the rear of the case, concentric with the optical axis, and 4 a shelf (the greater portion of which has been broken away) upon which a suitable projecting-lantern may be placed.

5 is a supply-reel, revolubly mounted, from which the film may be drawn, and 6 is a winding-up reel, likewise revolubly mounted.

7 is a guide-pulley.

8 is a support located transversely of the

path of the rays of light, but having an opening for the passage of light, and 9 is a spring-pressed frame surrounding the light-opening in the plate 8 and tending to press against said plate. The frame therefore serves to hold the film steady while being exposed and to offer some slight frictional resistance to the passage of the film across the optical field.

10 and 11 are two segmental feeding-rollers for feeding the film forward intermittently. The major portion of the face of each of these rollers is cut away, as shown, leaving a working surface extending through only a portion of the circumference. Roller 10 is mounted upon and keyed to a shaft 12, and roller 11 is mounted upon and keyed to a shaft 13. Shaft 13 is driven from shaft 12 by means of two spiral gears 14 and 15. Gear 14 is fast upon shaft 12, but gear 15 is laterally movable upon shaft 13, transmitting motion to said shaft by means of a key 16. Gear 15 has a grooved hub engaged by a yoke 17, mounted upon a rock-shaft 18, which projects through the front of the case 1 and is provided with an operating-handle 19.

The shaft 12 is the driving-shaft of the apparatus. A shutter 20 is driven from shaft 12 by a shutter-shaft 21 and suitable bevel-gears. A belt 22 runs over a pulley 23 on shaft 12 and over a pulley 24, loosely mounted upon the shaft 25, upon which reel 6 is mounted. This shaft is driven from pulley 24 by means of an adjustable frictional driving device 26, which permits pulley 24 to slip upon shaft 25 when all slack in the film has been taken up.

In order to prevent the strain upon the film produced by the tendency of the reel 6 to revolve from causing motion of the film through the field of the apparatus to occur during the intervals of exposure, when the film should be absolutely stationary, the film is passed about a series of snubbing-posts 27, which suffice to prevent the strain of the winding-up reel from reaching that portion of the film which passes through the optical axis.

The operation of the apparatus is as follows: When shaft 12 is revolved, rollers 10 and 11 are also revolved, roller 11 being driven from shaft 12 through gears 14 and 15. The film is drawn intermittently from the reel 5

across the optical axis and is wound upon the reel 6, which slips whenever the film is drawn taut. If it be desired to vary slightly the feeding of the film, so as to make the successive pictures on the film register accurately with the exposure-opening, the handle 19 may be moved in the one direction or the other, according as it is desired to make the film move more rapidly or more slowly. The effect of such movement of the handle 19 is to move gear 15 laterally with respect to gear 14, thus moving the segmental roller 11 backward or forward, as the case may be, with respect to its companion roller 12—that is to say, by moving the gear 15 upon its shaft the roller 11 is given a certain amount of angular advance (positive and negative) varying with the position of the gear 15. The effect of varying this angular advance is to vary the length of the period in each revolution of the two rollers 10 and 11 during which both are in contact with the film, thus varying the length of film fed forward at each revolution of said rollers.

25 Having thus completely described our invention, what we claim, and desire to secure by Letters Patent, is—

1. In a consecutive-view apparatus, the combination, with shafts provided with segmental feeding-rollers adapted to contact with a picture-strip or film passing between them, of means for giving one of said rollers angular advance with respect to the other

roller, thereby varying the duration of the period of joint contact of said rollers with the strip or film, substantially as described. 35

2. In a consecutive-view apparatus, the combination, with shafts provided with segmental feeding-rollers, adapted to contact with a picture-strip or film passing between them, of intermeshing spiral gears mounted upon said shafts, and means for moving one of said gears laterally upon its shaft, thereby advancing one of said rollers angularly with respect to the other, substantially as described. 45

3. In a consecutive-view apparatus, the combination, with parallel shafts provided with segmental feeding-rollers, adapted to contact with a picture-strip or film passing between them, of intermeshing spiral gears mounted upon and connected to said shafts, and adapted to transmit power from one shaft to the other, and means for moving one of said gears laterally with respect to the other, thereby advancing one of said rollers angularly with respect to the other, substantially as described. 55

In testimony whereof we hereunto affix our signatures in the presence of two witnesses. 60

HERMAN CASLER.
JOHN A. PROSS.

Witnesses:

CLARENCE L. HOBART,
WM. WAGNER.