

C. E. LUCKE.
EXHIBITING DEVICE.

(Application filed Sept. 25, 1900.)

(No Model.)

2 Sheets—Sheet 1.

Fig. 2

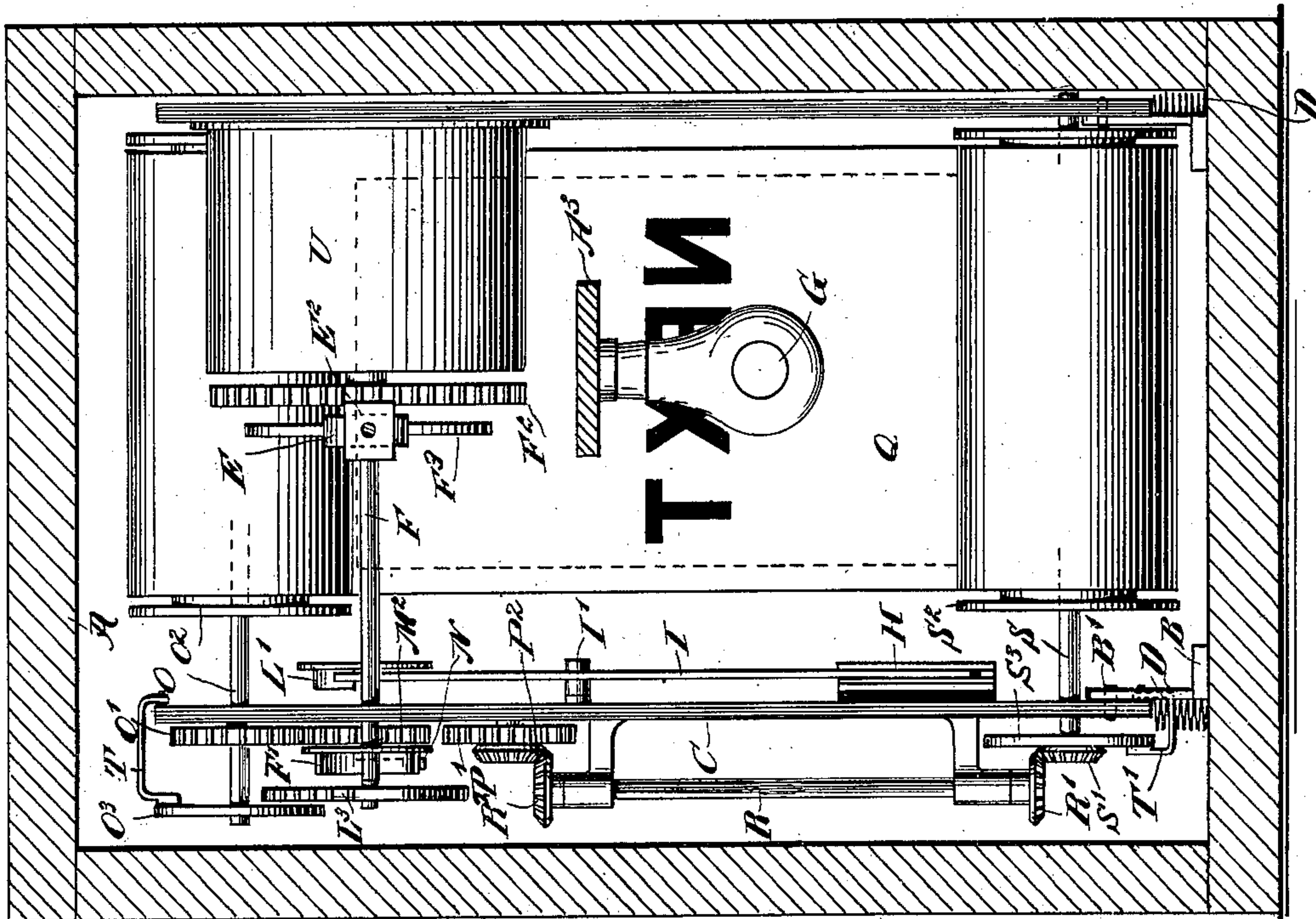
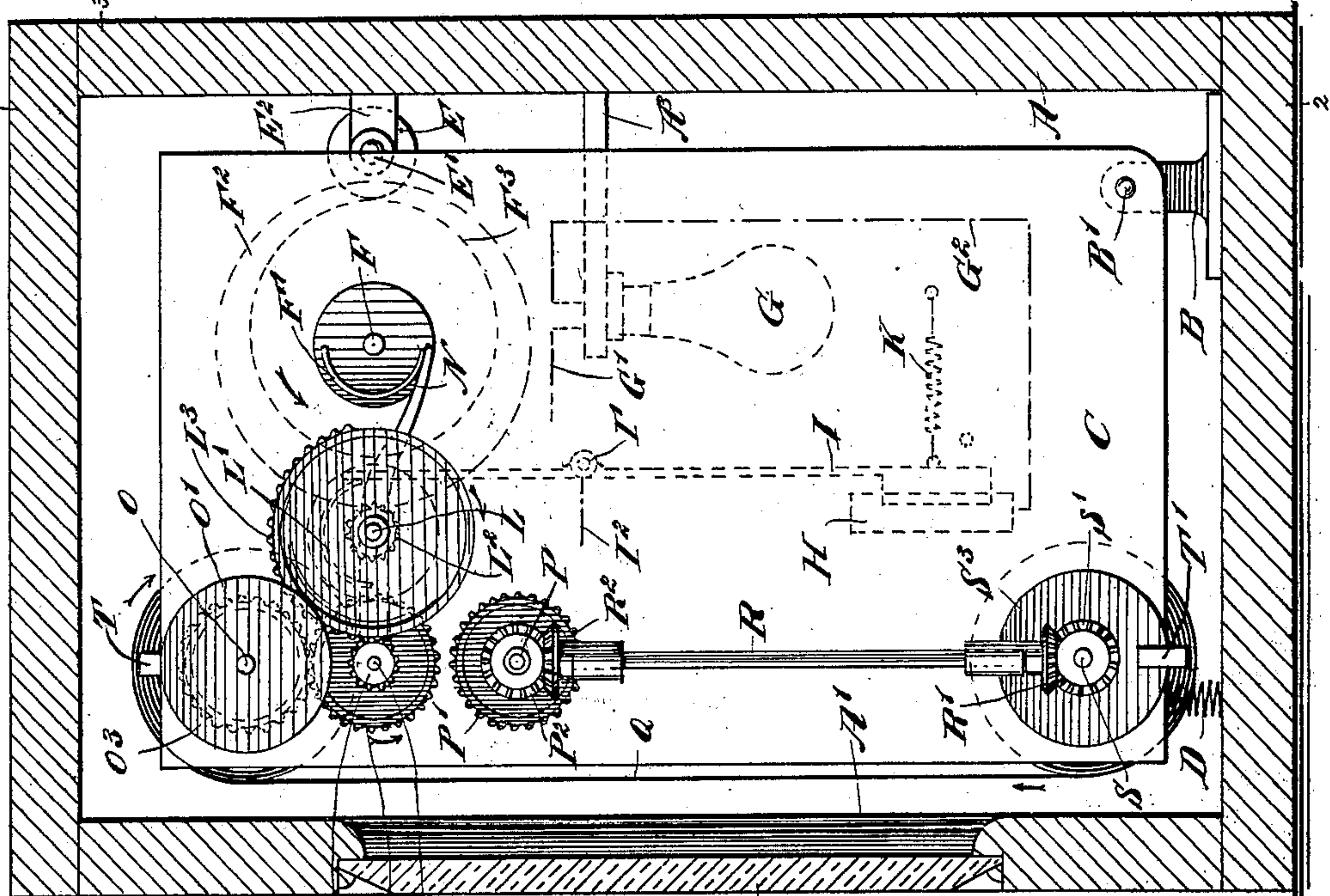


Fig. 1



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EXHIBITING DEVICE.

SPECIFICATION forming part of Letters Patent No. 674,211, dated May 14, 1901.

Application filed September 25, 1900. Serial No. 31,029. (No model.)

To all whom it may concern:

Be it known that I, CHARLES E. LUCKE, a citizen of the United States, and a resident of the city of New York, Kingsbridge, borough of the Bronx, in the county and State of New York, have invented certain new and useful Improvements in Exhibiting Devices, of which the following is a full, clear, and exact description.

My invention relates to devices for successively exhibiting a series of signs, advertisements, or other articles by intermittently moving a band or ribbon carrying such articles.

The objects of my invention are, first, to provide an improvement in the manner of illuminating the sign or other article, and, second, to construct a simple compensating device to bring each picture or advertisement into the proper position notwithstanding the variation in the diameter of the roll of band or ribbon.

To these ends my invention consists in certain features of construction and combinations of parts, as will be fully described hereinafter, and particularly pointed out in the appended claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a side elevation of my improved exhibiting device with the casing in section. Figs. 2 and 3 are respectively a sectional rear elevation and a horizontal cross-section on lines 2 2 and 3 3 of Fig. 1; and Fig. 4 is a view, corresponding to Fig. 1, of another form of my invention.

As illustrated by Figs. 1, 2, and 3, the apparatus comprises a suitable stationary box or casing A, having a sight-opening A', which may contain a transparent pane A². Within this casing is pivoted, as at B', to brackets B the frame C of the exhibiting device. The pivot, as shown, is located at the rear bottom corner of the frame, and in front of the pivot springs D are interposed between the frame and the bottom of the casing A, so that the frame has a tendency to swing upward at its front end, the position of the frame being governed by a stop-wheel E, journaled at E' on a bracket E², fixed to the back wall of the

casing A. This stop-wheel E is engaged by a cam F³, mounted on a shaft F, journaled in the frame, and it will be understood that the position of the frame will vary as the cam F³ turns. The mechanism controlling the cam F³ will be described hereinafter. It will be obvious that instead of interposing compression-springs between the frame C and the bottom of the casing A the same result may be secured by locating tension or suspension springs between the top of the casing and the frame.

Within the casing is located upon a support A³ an electric lamp—for instance, an incandescent lamp G—one terminal of which is connected, as by a wire G', with a source of electricity, while the other terminal of the lamp connects by a wire G² with a contact-plate H, secured to the frame C. This contact-plate is adapted for engagement with a switch-lever I, fulcrumed at I' and drawn by a spring K against a cam L' on a shaft L, journaled in the frame C and driven from the main shaft F by gearing F² L². The lever I is electrically connected, as by a wire I², with the other pole of the source of electricity or with the ground, so that the circuit is completed and the lamp G lighted when the switch-lever I engages the contact-plate H.

On the shaft L is fastened a mutilated gear-wheel L³, meshing with a pinion M' on a shaft M, which is journaled in an arm N, fulcrumed on the shaft L—that is, loosely mounted on said shaft. The shaft M also carries a gear-wheel M², movable between two wheels O' P' to engage one of them at a time. In the position shown in Fig. 1 the gear-wheel M² engages the upper wheel O', and the shaft M is held in the proper position for this purpose by the engagement of the arm N with a rib or cam F' on the shaft F. When the arm N is released by the cam F', the weight of the arm, with the parts carried thereby, (wheels M' M², and shaft M,) assisted, if necessary, by a spring, (not shown,) will cause the wheel M² to drop into engagement with the lower wheel P'. The wheels O' P' are mounted on shafts O P, respectively, journaled in the frame C. The upper shaft O carries the spool O², on which is secured one end of the band or ribbon Q, having a series of pictures, advertisements, &c. The lower shaft P has

a bevel-wheel P^2 , meshing with a similar wheel R^2 on a vertical shaft R , journaled in the frame C . At its lower end said shaft carries a bevel-wheel R' , meshing with a bevel-pinion S' on the shaft S of the lower spool S^2 , this shaft being journaled at the lower portion of the frame C . The spools $O^2 S^2$, or rather their shafts OS , are provided with tension devices which may consist of friction-disks $O^3 S^3$, engaged by springs $T T'$, secured either to the casing A , as shown, or preferably to the frame C . The various parts are driven by power applied to the main shaft F in any suitable manner—for instance, by a spring-motor, the barrel of which is lettered U in the drawings.

The operation is as follows: In the position shown in Fig. 1 the wheel M^2 is in mesh with the wheel O' , so that the upper spool O^2 is driven. The feed movement is almost completed as the toothed portion of the mutilated gear L^3 is about to come out of contact with the pinion M' . Also the cam L' is just beginning to act on the lever I to swing it into contact with the plate H . The parts are so arranged that at about the same time the contact is made the pinion M' will stop, owing to the toothed portion of the gear L^3 leaving said pinion, so that the lighting of the lamp G and the stopping of the band Q will be simultaneous. Then for a while (a half-revolution of the shaft L) the picture exhibited will remain stationary, being illuminated during this time by the lamp G . Then the cam L' will clear the lever I , so as to break the circuit at H , extinguishing the lamp G , and at the same time the toothed portion of the gear L^3 will again come into mesh with the pinion M' to drive the spool O^2 , so that the paper or other band Q will travel upward a distance corresponding to the length of the picture, advertisement, or other article. Thus there will be periods of darkness, with simultaneous motion of the band Q , alternating with periods of illumination which coincide with the stoppage of the band Q . This will continue until the band is fully wound on the upper spool O^2 . At that moment the cam F' releases the arm N and the driving-wheel M^2 drops into engagement with the gear-wheel P' . From now on the operation is the same as before described, except that the spool S^2 is driven so that the band Q travels in the opposite direction—that is, downward.

It will be obvious that with the arrangement hereinbefore described the angular velocity or rotary speed of the spools $O^2 S^2$ is about constant. It follows that as the diameter of the band on the spool increases a greater length of the band will be fed than at the preceding operation and the picture to be exhibited would be raised too high or lowered too much, and therefore fail to properly register with the opening A' of the casing A . To compensate for this, I have provided the cam F^3 , which is of such a shape as to cause the frame C to be lowered when the band Q winds on the upper roller and to be raised when

the band winds on the lower roller. This is the operation approximately—that is, the movement of the frame will be such as to counteract the above-mentioned effect arising from a variation of the amount of material on the rollers or spools and as to always bring each picture into perfect registry with the sight-opening A' . It will be understood that a purely vertical movement of the frame C would accomplish the result above set forth.

It will be understood that the wheel E practically forms a part of the casing A . In fact, the cam F^3 might engage the casing directly, (dispensing with the wheel E ,) the only objection to this being increased friction.

In Fig. 4 I have illustrated another apparatus for carrying out that part of my invention which relates to lighting and extinguishing the electric light in accordance with the periods of stopping and moving the picture-strip. a is the casing, having the sight a' . f is the drive-shaft, with a gear-wheel f^2 to drive the pinion l^2 on the shaft l . The latter carries the mutilated gear l^3 and the switch-operating cam l' , which, as in the construction first described, is located correspondingly to the toothed portion of the gear l^3 . The cam operates the switch-lever i , fulcrumed at i' and adapted to engage the contact-plate h . The electrical connections of the switch i , contact-plate h , and lamp g are the same as in Fig. 1 and are lettered g' , g^2 , and i^2 , respectively. The mutilated gear l^3 drives intermittently a pinion m' on a shaft m , which carries a feed-roller v for actuating the band or strip q , which in this case is endless and passes over guide-rollers W . v' is a tension-roller for holding the strip q against the feed-roller v . In this construction also the switch is so operated as to light the lamp g only when the strip q is stationary.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. In an exhibiting device, the combination of a shaft adapted to rotate continuously, a mutilated gear on said shaft, a feed mechanism driven intermittently by said mutilated gear, an electric light, a switch for controlling the supply of current to said light, and a switch-operating cam mounted on said shaft and arranged to open the circuit at the time the mutilated gear is in the driving position.

2. In an exhibiting device, the combination of a shaft adapted to rotate continuously, a mutilated gear on said shaft, a feed mechanism driven intermittently by said mutilated gear, an electric light, a switch for controlling the supply of current to said light, and a switch-operating cam mounted on said shaft and arranged in a segment or arc corresponding to the toothed arc of the mutilated gear, to open the circuit at the time the mutilated gear is in the driving position.

3. In an exhibiting device, the combination of the drive-shaft carrying a reversing-cam, the intermediate shaft in driving connection

with the first-named shaft and carrying a mutilated gear, an arm fulcrumed on the intermediate shaft and arranged to engage the cam on the drive-shaft, a shaft journaled in said arm and carrying a pinion adapted to be rotated by said mutilated gear, a feed-wheel mounted on the same shaft as the pinion, gear-wheels between which the feed-wheel may move and with either of which it may engage according to the position of said arm, and spool-shafts each in driving connection with one of said gear-wheels.

4. In an exhibiting device, the combination of the drive-shaft carrying a reversing-cam, the intermediate shaft in driving connection with the first-named shaft and carrying a mutilated gear, an arm fulcrumed on the intermediate shaft and arranged to engage the cam on the drive-shaft, a shaft journaled in said arm and carrying a pinion adapted to be rotated by said mutilated gear, a feed-wheel mounted on the same shaft as the pinion, gear-wheels between which the feed-wheel may move and with either of which it may engage according to the position of said arm, spool-shafts each in driving connection with one of said gear-wheels, an electric light, a switch for controlling the supply of current to said light, and an interrupter-cam secured on the said intermediate shaft and arranged to shift the switch so as to open the circuit when the feed-wheel is in operation and to close it when the feed-wheel is stationary.

5. In an exhibiting device, the combination of the casing having a sight portion, with the

frame movable in the casing relatively to the sight portion thereof, spool-shafts and driving mechanism therefor carried by the frame, and means controlled by said driving mechanism, for changing the position of the frame relatively to the casing.

6. In an exhibiting device, the combination of the casing having a sight portion, with the frame movable in the casing relatively to the sight portion thereof, spool-shafts and driving mechanism therefor carried by the frame, and a cam connected with the driving mechanism and arranged to engage a part of the casing to change the position of the frame relatively to the casing.

7. In an exhibiting device, the combination of the casing having a sight portion, with the frame movable in the casing relatively to the said sight portion, a spring interposed between the casing and the frame to press the latter in a predetermined direction, spool-shafts and driving mechanism therefor carried by the frame, means carried by the frame movably and engaging the casing, and a connection from said means to the driving mechanism to vary the position of the frame relatively to the casing.

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

CHARLES E. LUCKE.

Witnesses:

N. P. BEERS,
GEO. L. HENTZ.