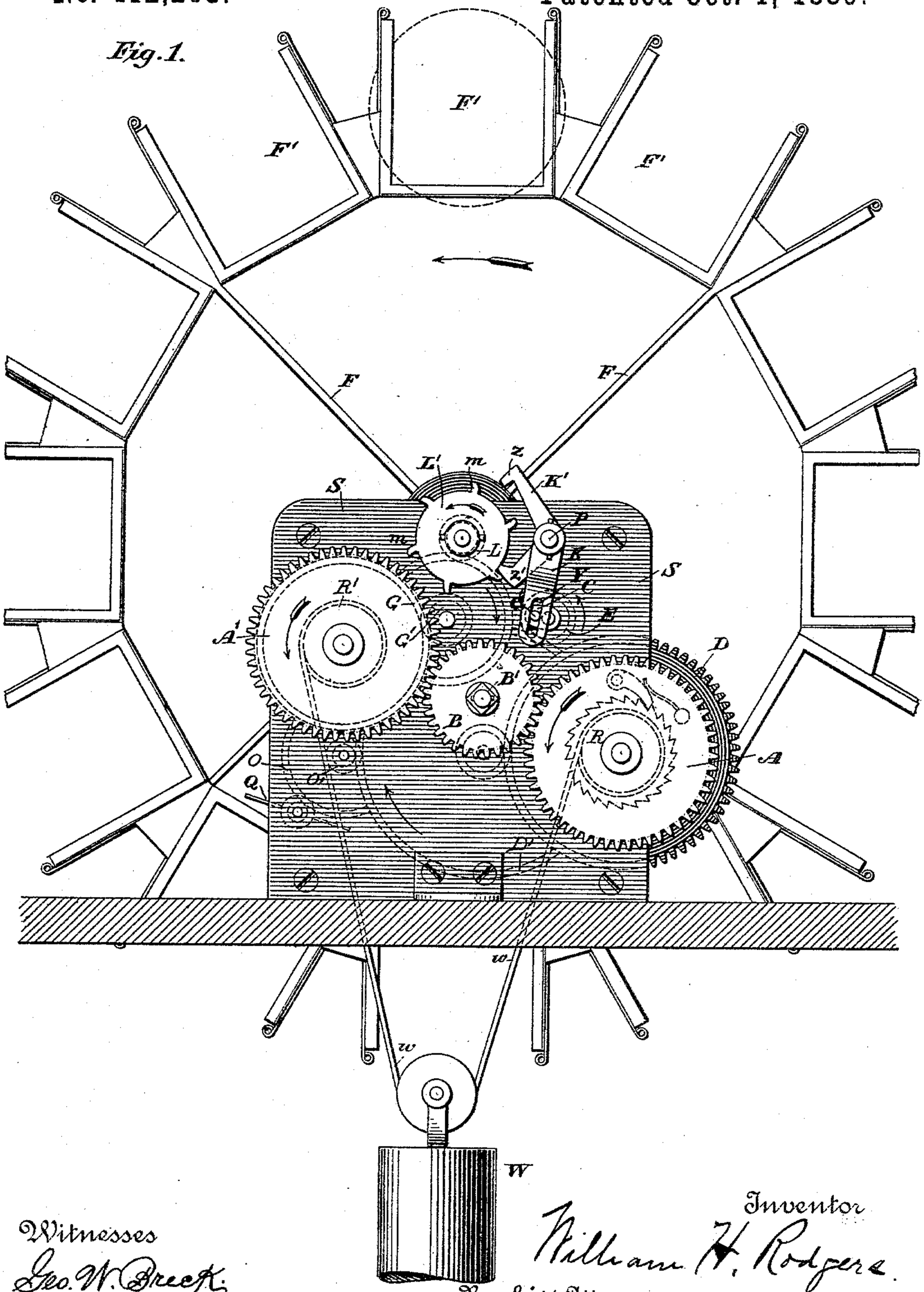
(No Model.) 2 Sheets—Sheet 1.

W. H. RODGERS.

AUTOMATIC EXHIBITOR.

No. 412,203. Patented Oct. 1, 1889.

Fig. 1.



Witnesses
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Carrie E. Ashley

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(No Model.) 2 Sheets—Sheet 2.

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AUTOMATIC EXHIBITOR.

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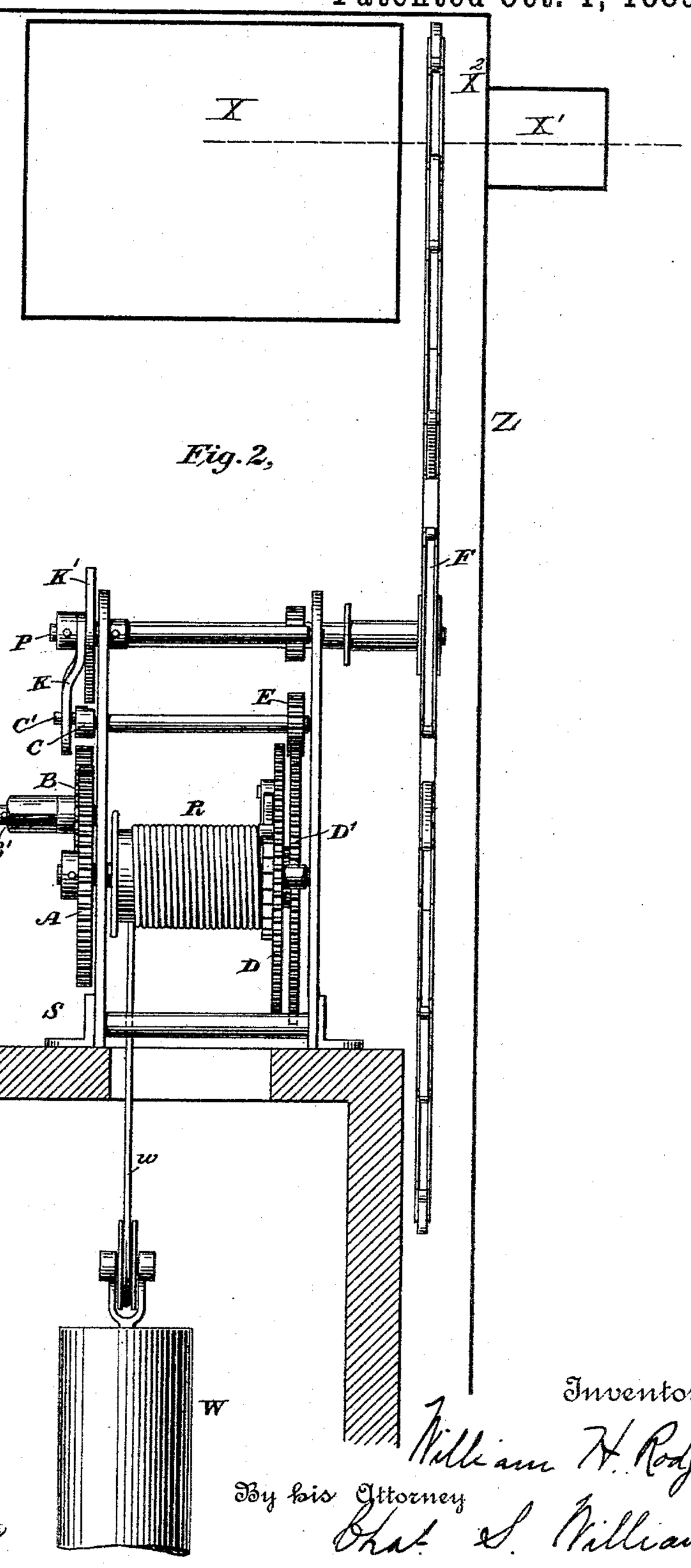
Fig. 2.



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UNITED STATES PATENT OFFICE.

WILLIAM H. RODGERS, OF BROOKLYN, NEW YORK.

AUTOMATIC EXHIBITOR.

SPECIFICATION forming part of Letters Patent No. 412,203, dated October 1, 1889.

Application filed November 26, 1888. Serial No. 291,895. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM H. RODGERS, a citizen of the United States, residing at Brooklyn, in the county of Kings and State of New York, have invented a new and useful Automatic Exhibitor, of which the following is a specification.

My invention relates to an automatic exhibitor in which a frame carrying the objects to be displayed is caused to revolve, and at certain points to remain stationary for a time, this time being when the object is displayed in full view of the beholder.

The objects of my invention are to provide, first, an automatic exhibitor with revolving exhibiting-frame, having an intermittent or arrested motion, whereby the revolving frame remains stationary at times; second, an automatic exhibitor having an intermittent or arrested motion which in its action shall be free from imparting to the revolving exhibiting-frame when it is brought to a standstill any jar or vibration, and, third, an automatic exhibitor in which the objects to be displayed may be viewed directly as they appear upon the exhibiting-frame, or by use of a suitable lens behind the exhibiting-frame they may be viewed upon a suitable surface.

While there are many uses to which my invention may be put, yet the most important is that in which the pictures are moved in front of a lens of a magic lantern or stereopticon.

I attain these objects by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a front elevation of the exhibitor without an inclosing box or case, showing the winding mechanism, the motors in outline, the arresting device, and the revolving exhibiting-frame. Fig. 2 is an elevation of the right-hand side of the exhibitor, showing one of the winding-drums, a portion of one of the motors and of the arresting device, and the revolving exhibiting-frame.

Like letters refer to like parts throughout.

My automatic exhibitor consists of two gear-wheel motors attached at front and rear to metal plates, one motor for driving the revolving frame and catch-wheel and the other for driving the arresting-catch.

A A′ are winding-wheels on the outer or front plate S, each rigidly fixed on and turning with a shaft pivoted in the rear plate and passing through the outer or front plate S, both wheels A A′ engaging with a pinion B, pivoted on the outer plate S, having a winding-shaft B′.

Between the metal plates, and on the same shafts as the wheels A A′, are winding-drums R R′, over each of which is wound a cord *w w*, attached to a weight W.

Rigidly fixed to and revolving on the same shafts as the wheels A A′ are driving-wheels D G, each having attached to it a retaining-pawl and ratchet to prevent the unwinding of the drums R R′. (Shown in outline on D only.) The wheel D engages with a pinion D^2, secured to the driving-wheel D′, which in turn engages with the pinion E.

On the outer or front plate S, and revolving with and fixed upon the same shaft as the wheel E, is a cam or crank C, having a pin C′ working in a slot Y of an arm K, also on the outer or front plate S. Fixed upon and turning with the shaft P is a catch or pallet K′, also on the outer plate S, which engages with the teeth *m m* of a catch or escapement wheel L′. The catch or pallet K′ and the arm K are rigidly connected at the shaft P. This catch or pallet K′ is so formed that the inside of the projecting point *z*, which engages with the teeth *m*, and the outside of the projecting point *z′*, which also engages with the teeth *m*, form portions of an arc having a radius from the inside of *z* to the center of the shaft P, or from the outside of the point *z′* to the center of the shaft P. The teeth *m* are caught inside of the projecting point of K′ at *z*, and outside of it at *z′*. The wheel G engages with the wheel G′, which in turn engages with the wheel L.

Rigidly fixed upon the same shaft as the wheel L, but on the outer or front side of the plate S, is a catch or escapement wheel L′, having teeth *m m*. The working-edges of these teeth, where they come in contact with the point *z′* of the catch K′, are always perpendicular to the tangent to the circle of which the portions *z* and *z′* of the catch K′ form an arc, as above stated, and where they come in contact at the point *z* they are always

in the line of the diameter of the same arc, the object being to prevent any jar or vibration of the catch or escapement wheel L′ when one tooth is disengaged and another is caught. In other words, there will be no back motion to the catch or escapement wheel L′. Any vibration or jar of the wheel L′ would give a wabbling or dancing motion to the exhibiting-frame which revolves upon the same shaft, and have a tendency not to bring the slides in the direct line of vision. In number these teeth *m m* are always one-half the number of slides or objects shown upon the exhibiting-frame.

Attached to the rear side of the plates, and revolving on the same shaft as the wheels L L′, is a skeleton frame F, having on its circumference slides F′, in which the objects to be displayed are fixed.

Instead of a weight and cord, the motors may be driven by spring, electric, or any power that will impart to them a regular motion.

The picture-holding disk F F′ revolves in a vertical plane and on a horizontal or substantially horizontal axis *f*, and is made to revolve intermittently through the space X^2, between the lens X′ and the lantern X, Fig. 2, and so as to bring the various pictures in succession before the lens. By this means the images of the pictures are projected on a suitable screen or otherwise, and caused to remain for a given time and then be followed, in succession, one by the other.

Z is an inclosing-box, through which the lens or sight-aperture projects or extends. The box or case may be made in any desirable manner.

In this application I do not claim the broad invention of an intermittently-rotating picture-holding frame, but claim the specific constructions hereinafter pointed out in the claims.

The operation of my automatic exhibitor is as follows: The machine is inclosed in a suitable box or case, with an opening to display the objects one at a time as they move into view through the action of the revolving exhibiting-frame. The wheels A A′, and thus the drums R R′, are wound by a key applied to the shaft B′. The wheel D drives the wheel D′, which in turn drives the wheel E, and with it the cam or crank C. The pin C′, revolving with the cam C and working in the slot Y, causes the arm K to vibrate right and left, and with it the catch or pallet K′, thus lifting the point *z* or *z′*, as the case may be. The wheel G engages with the wheel G′, which engages with the wheel L, which causes the catch-wheel L′ to revolve. The catch or pallet K′ *z* or K′ *z′* having been released from a tooth *m*, the catch-wheel L′ revolves the distance between two of the teeth *m m*. The revolving of the cam C and the working of the pin C′ in the slot Y of the arm K throws the catch or pallet K′ *z* or K′ *z′* in place against a tooth *m*, and the motion of the wheel L′ is stopped. When the wheel L′ is stopped, the frame F attached to the same shaft is stopped also, and the slides for exhibiting objects are so adjusted that at that moment they will be in position to afford a stationary view. The continued revolving of the pin and cams C′ C again releases the pallet or catch K′ from the wheel L′, allows the frame F to revolve, and another object is presented to view.

By suitable arrangement in a case or box with an opening for view the pictures or advertisements may be looked at directly. By means of a lens the pictures and advertisements may be shown upon a screen or other surface. The portion of disk shown in the drawings, Fig. 1, above the catch-wheel L′ is merely a portion of the attachment of the frame F, and is not essential to the mechanism. The wheels O O′ and fly-fan Q are merely to regulate the train of wheels A D D′ E.

Having fully described my invention, what I claim, and desire to protect by Letters Patent, is—

1. The combination of a substantially flat vertically-arranged and intermittently-rotating picture-holding disk having a horizontal or substantially horizontal axis, an inclosing-case having a sight orifice or lens before which the picture-holder revolves, and power mechanism to intermittently rotate said disk.

2. The combination of a vertically and intermittently rotating picture-holding disk having a horizontal or substantially horizontal axis, and formed with the pictures arranged substantially in the same plane and radiating from the axis, a magic lantern having a lens before which the picture-holder revolves, and power mechanism to intermittently rotate said disk.

3. The combination of a vertically and intermittently rotating picture-holding disk having a horizontal or substantially horizontal axis, and formed with the pictures arranged substantially in the same plane and radiating from the axis, a magic lantern having a lens before which the picture-holder revolves, power mechanism to intermittently rotate said disk, and an inclosing-case for the disk, power mechanism, and lantern.

4. In an automatic exhibitor, a magic lantern, in combination with an intermittently-revolving exhibiting frame or disk, a catch-wheel carried with said frame, a pallet or catch to catch or release the catch-wheel, and power mechanism to operate both the frame or disk and the pallet.

5. In an automatic exhibitor, a magic lantern, in combination with an intermittently-revolving exhibiting frame or disk, a catch-wheel carried with said frame, a pallet or catch to catch or release the catch-wheel, and independent power devices for operating the frame or disk and the pallet.

6. In an automatic exhibitor, a magic lantern, in combination with an intermittently-

revolving exhibiting frame or disk, a catch-wheel carried with said frame, a pallet or catch to catch or release the catch-wheel, independent power devices for operating the frame or disk and the pallet, consisting of gearing and drums and in which a single cord and weight is arranged to operate both motors.

7. In an automatic exhibitor, a magic lantern, in combination with an intermittently-revolving exhibiting frame or disk having a horizontal axis and formed with pictures arranged in substantially the same plane and radiating from said axis, a power mechanism to rotate said disk, and a stop motion to intermittently arrest the rotation of said disk.

8. In an automatic exhibitor, a flat disk or frame having a central axle and provided with pictures arranged in a circle about said axle and radiating at right angles or thereabout from the axle and in substantially the same plane, power mechanism to rotate said disk, and intermittently-actuated stop mechanism to intermittently arrest the rotation of the disk.

9. In an automatic exhibitor, a magic lantern, a flat disk or frame having a central axle and provided with pictures arranged in a circle about said axle and radiating at right angles or thereabout from the axle and in substantially the same plane, power mechanism to rotate said disk in front of the lens of the lantern, and intermittently-actuated stop mechanism to intermittently arrest the rotation of the disk.

10. The combination of a rotating disk F, having openings for pictures around its circumference, power mechanism to rotate said disk, an escapement mechanism to intermittently arrest the rotation of said disk, and having an operating-arm, a crank-pin or its equivalent to operate said arm, and power mechanism to rotate said crank-pin.

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Witnesses:
H. RODGERS,
M. R. RODRIGUES.