

(No Model.)

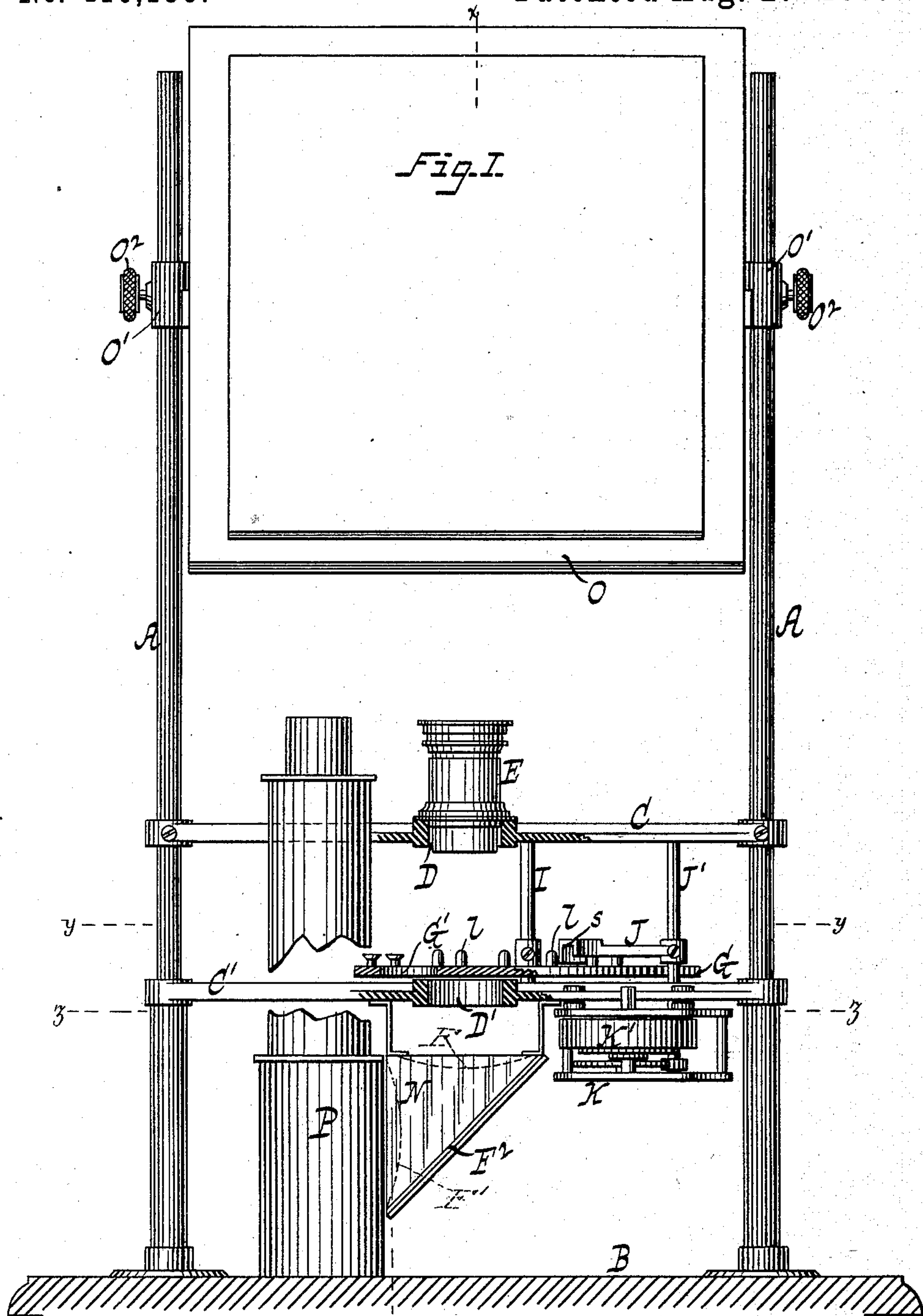
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C. C. BRUCKNER & H. W. THORNTON.

MAGIC LANTERN FOR ADVERTISING OR OTHER PURPOSES.

No. 410,135.

Patented Aug. 27 1889.



WITNESSES:

Jas S. Ewbank.
Chas. Wahlers.

INVENTOR

Charles C. Bruckner.
Henry W. Thornton.
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(No Model.)

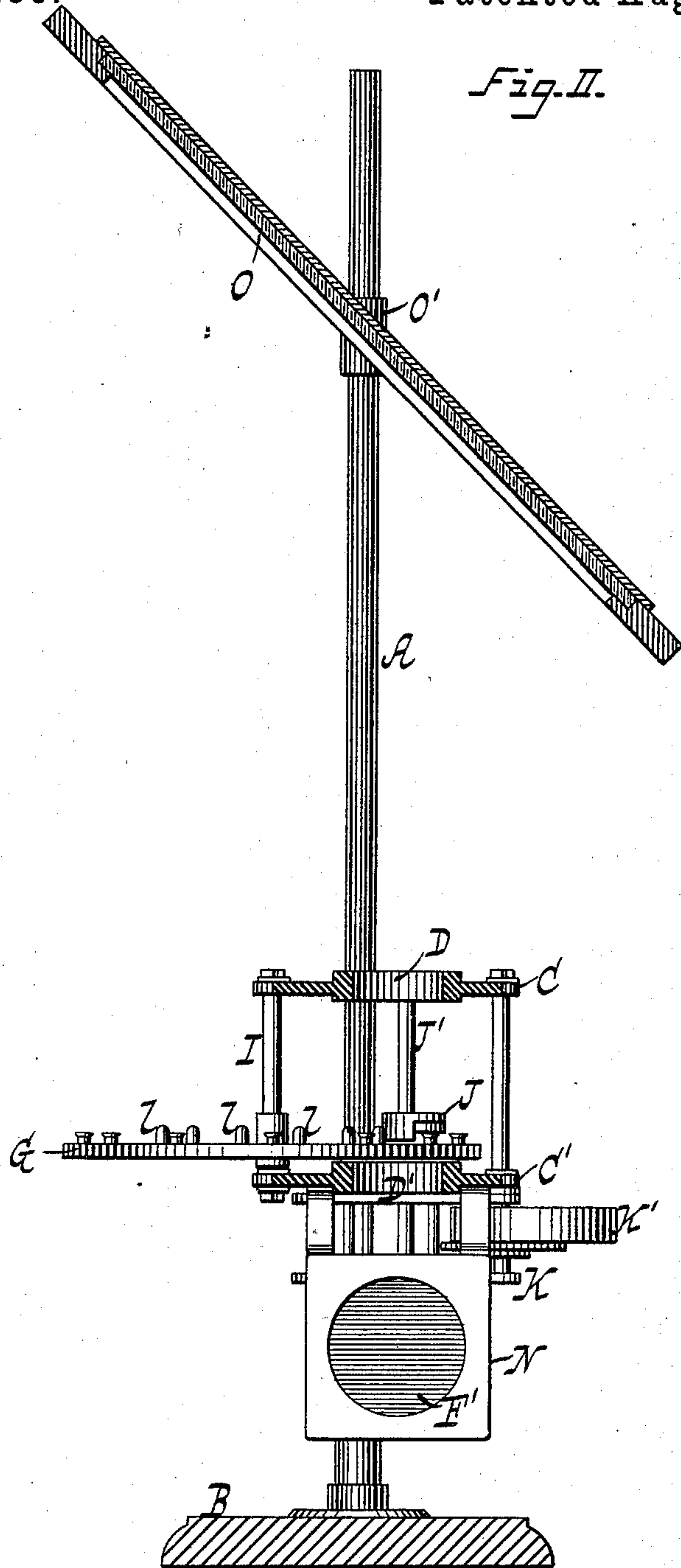
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3 Sheets—Sheet 3.

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Fig. III.

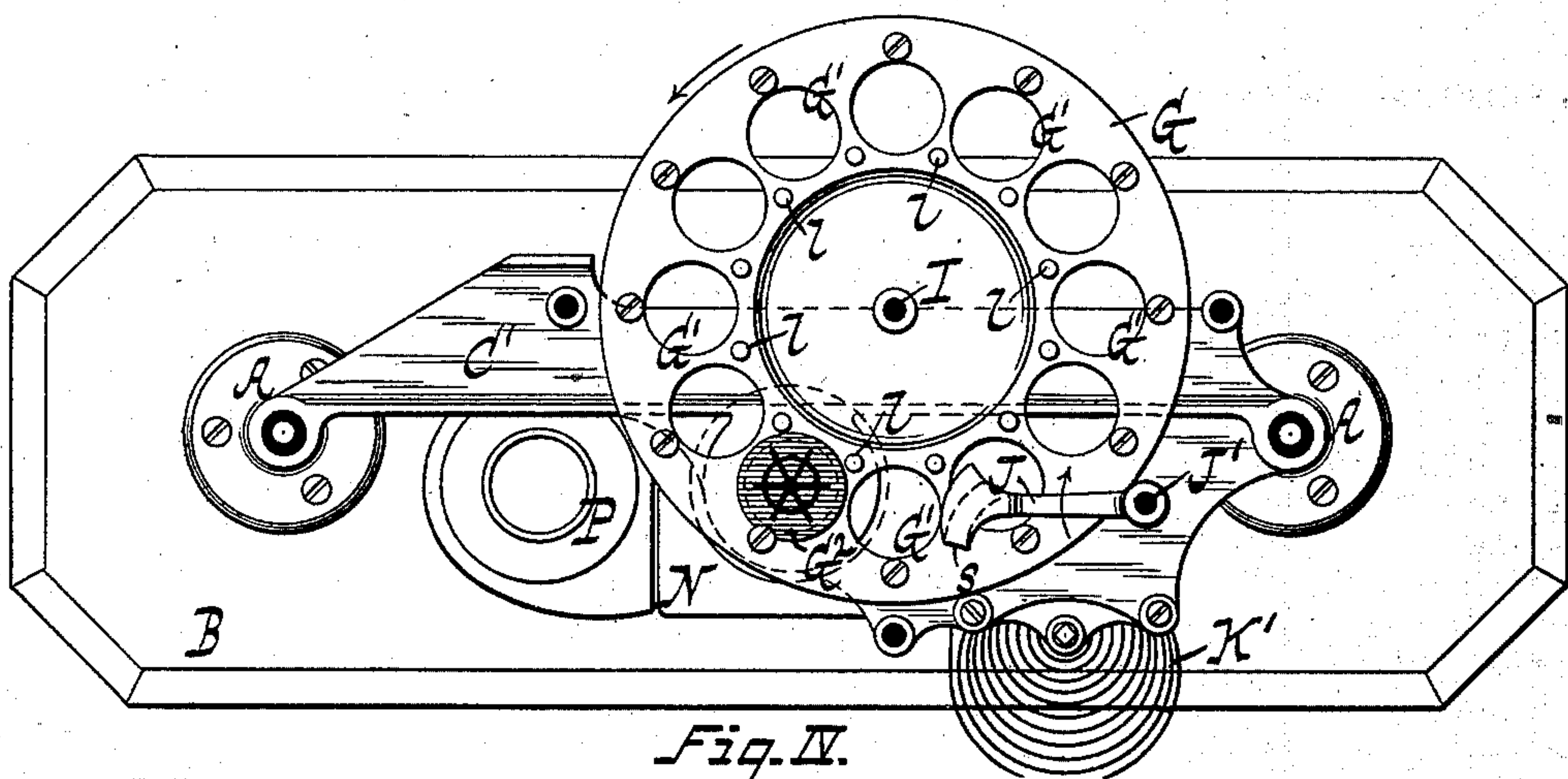


Fig. IV.

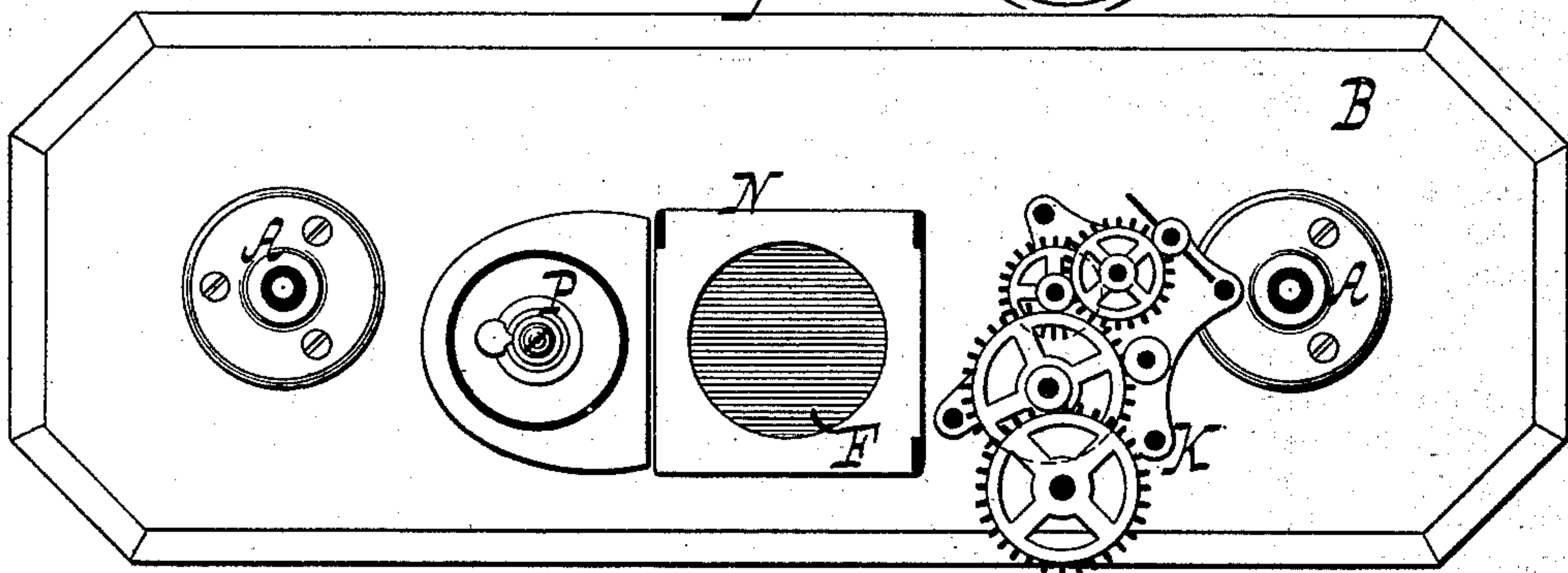
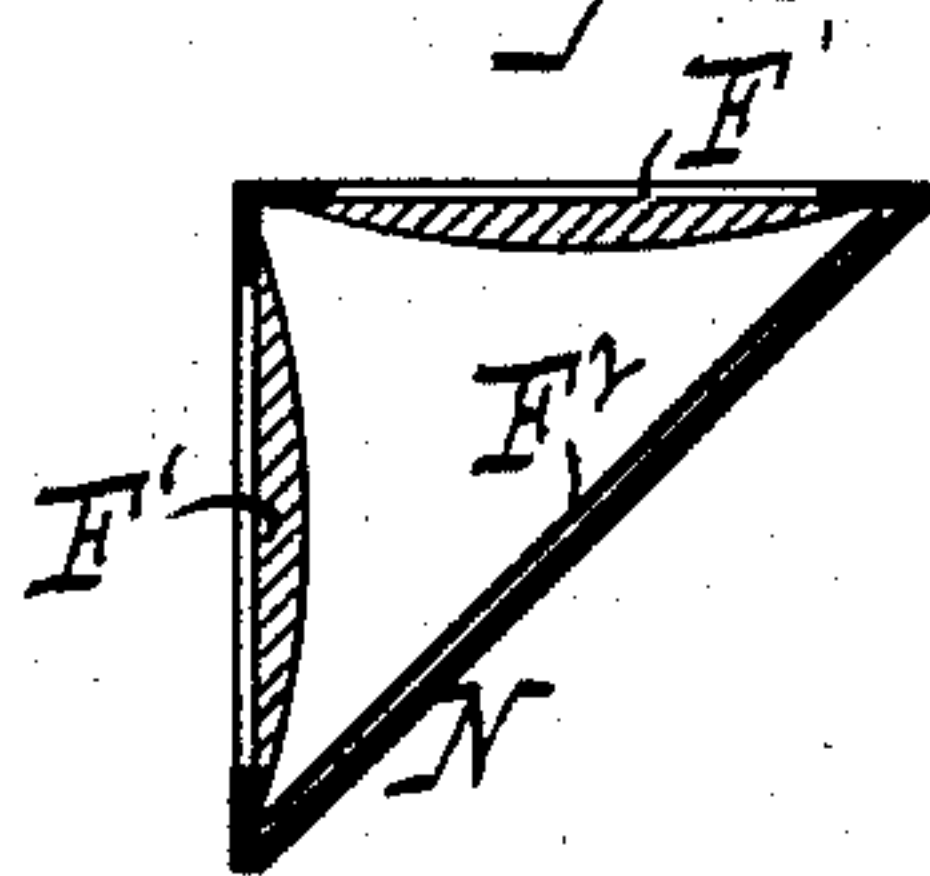


Fig. V.



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UNITED STATES PATENT OFFICE.

CHARLES C. BRUCKNER AND HENRY W. THORNTON, OF NEW YORK, N. Y.

MAGIC LANTERN FOR ADVERTISING OR OTHER PURPOSES.

SPECIFICATION forming part of Letters Patent No. 410,135, dated August 27, 1889.

Application filed November 17, 1888. Serial No. 291,085. (No model.)

To all whom it may concern:

Be it known that we, CHARLES C. BRUCKNER and HENRY W. THORNTON, citizens of the United States, and residents of New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Optical Apparatus, of which the following is a specification.

Our invention is a new apparatus for automatically exhibiting upon a screen or the like a series of illuminated pictorial or other objects in succession for advertising or other purposes; and it consists of a certain novel combination of lenses and reflectors with an intermittingly-revolving plate-carrier for receiving a series of glass plates with the desired objects thereon, and a motor for operating the plate-carrier, as hereinafter more fully described, and illustrated in the accompanying drawings, in which—

Figure 1 represents a rear elevation, partly in section. Fig. 2 represents a vertical section thereof on the line $x x$, Fig. 1. Fig. 3 represents a horizontal section thereof on the line $y y$, Fig. 1. Fig. 4 represents a like section thereof on line $z z$, Fig. 1. Fig. 5 represents a cross-section of a lens-holder detached.

Similar letters of reference indicate corresponding parts.

The letter A indicates two vertical rods rising from a base or platform B, and supporting two cross-heads C C', one above the other. Each of said cross-heads C C' has a hole or orifice D or D', usually round, formed thereon for the concentrated passage of light, the axis of said orifices being coincident, and in the orifice D of the upper cross-head is fitted a magnifying-lens E, while below the orifice D' (the lower head) is located a condensing-lens F.

Between the two cross-heads C C' is the plate-carrier G, consisting of a horizontal disk, in which is formed a circular row or series of light-orifices G', each corresponding to said light-orifices D D' of the cross-heads, and which is mounted on a vertical shaft or spindle I, having its bearings in said frame in such a position relatively to the light-orifices of the cross-heads that the circular lens intersecting the axis of the carrier-orifices also intersects the axis of the head-orifices,

and hence by revolving the plate-carrier each of its orifices may be brought directly opposite to the head-orifices. Each of said light-orifices G' of the plate-carrier is in practice fitted with a glass plate, as at G², Fig. 3, on which plate the selected object to be exhibited is properly inscribed, and which is held fast, as by edge-gages, on the proper face of the carrier. Immediately above the plate-carrier G is located a tappet-arm J, which is mounted on a vertical shaft J', having its bearings on the frames C C' in such a position relatively to a circular row or series of stop pins or teeth l on the face of the plate-carrier that by continuously revolving said arm in a horizontal plane it engages with said carrier stop-pins one after another, and by displacing the same imparts to the plate-carrier G intermittingly a degree of motion equal to the distance between the carrier light-orifices G, thereby adjusting the latter in succession to the light-orifices D D' of the cross-heads. In the lower surface of the tappet-arm, and at or near its free end, is formed a transverse groove s , which is preferably curved, and the inner edge of which is continuous with one edge of said arm where it engages the stop-pins l of the plate-carrier, as shown by dotted lines in Fig. 3, so that when the arm engages either stop-pin the latter is received in said groove, and, traveling through it, is released at a fixed point with a corresponding adjustment of the plate-carrier. Said shaft J' of the tappet-arm is geared with a motor K, to receive a continuously-revolving motion therefrom for automatically operating the plate-carrier G, said motor being in this example driven by a spring K', and the motor-frame properly secured to the lower cross-head C'. The axis of the condensing-lens F, as well as the magnifying-lens E, is coincident with the axis of said light-orifices D D' G' of the cross-heads and plate-carrier, and said condensing-lens is fitted in a box or holder N, in which is also fitted a second or auxiliary condensing-lens F', together with a light-reflector F², (see Fig. 4,) the two condensing-lenses being at right angles to each other, and said reflector being at an angle, usually of forty-five degrees, to both lenses. At a point above the magnifying-lens E is located an object-reflector O, which is at an

angle corresponding to the angle of the light-reflector F^2 , but usually in a plane opposite thereto, as shown. Said object-reflector O is supported on the vertical rods A , as by means of socket-pieces O' , having set-screws O^2 , for permitting said reflector to be adjusted to different heights, and, if desirable, provision may be made for setting the reflector to different angles.

10 Opposite to the auxiliary condensing-lens F' is located an illuminator P , of any usual or suitable construction, for directing an artificial light upon the reflector F^2 through said auxiliary lens, whence such light is thrown
15 upward through the main condensing-lens F upon the glass plate of the plate-carrier G , that may be in alignment, and thence through the magnifying-lens E upon the object-reflector O , and thence upon a screen or the
20 like.

When the apparatus is applied to use, a glass plate with the object to be exhibited—say a photograph or a print thereon—is placed opposite to each of the light-orifices G' on the
25 plate-carrier, and said carrier is put in operation by means of the motor, whereupon the objects represented on the glass plates are successively directed upon the object-reflector P at regular intervals of time, under a very
30 strong light, due to the action of the condensing-lens F , and in a magnified form, due to the action of the magnifying-lens E , from which reflector the object may be readily thrown upon the desired surface, as of a screen
35 placed opposite thereto, with a highly artistic effect.

In some cases the lenses E F and plate-holder G may be elongated for throwing the object in a direction horizontally instead of vertically, as in the present example of our invention.

If deemed desirable, the apparatus may be arranged to throw objects on the sidewalk, or a series of them may be placed in a wagon
45 and the canvas of the wagon used as a screen, thereby affording a very superior portable advertising medium.

It may be remarked that the vertical rods A may have suitable hangers attached thereto
50 for exhibiting articles of merchandise.

What we claim as new, and desire to secure by Letters Patent, is—

1. An optical apparatus in which are combined a magnifying-lens and a condensing-lens axially coincident with each other, an
55 intermittently-revolving plate-carrier having a circular row of light-orifices adapted to axially coincide with said lenses, and a motor for operating said carrier, substantially as
60 and for the purpose described.

2. An optical apparatus in which are combined a magnifying-lens, two condensing-

lenses at right angles to each other, one condensing-lens being axially coincident with the magnifying-lens, a light-reflector at an angle
65 to both condensing-lenses, an intermittently-revolving plate-carrier having a circular row of light-orifices, and a motor for operating said carrier, substantially as and for the purpose described.
70

3. An optical apparatus in which are combined a magnifying-lens and condensing-lens axially coincident to each other, an object-reflector opposite to said magnifying-lens, an
75 intermittently-revolving plate-carrier having a circular row of holes between said lenses, and a motor for operating said carrier, substantially as and for the purpose described.

4. An optical apparatus in which are combined a magnifying-lens, two condensing-lenses at right angles with each other, one
80 condensing-lens being axially coincident to said magnifying-lenses, an illuminator opposite to the other condensing-lens, a light-reflector at an angle to both condensing-lenses,
85 an object-reflector opposite to said magnifying-lens, an intermittently-revolving plate-carrier having a circular row of light-orifices, and a motor for operating said carrier, substantially as and for the purpose described.
90

5. An optical apparatus in which are combined an intermittently-revolving plate-carrier having a circular row of light-orifices and a corresponding row of stop-pins, a revolving
95 tappet-arm adapted to engage with said pins of the carrier, a shaft carrying said arm, and a motor geared with said shaft, substantially as and for the purpose described.

6. An optical apparatus in which are combined an intermittently-revolving plate-carrier having a circular row of light-orifices and a corresponding row of stop-pins, a tappet-arm having a transverse groove, the inner
100 edge of which forms a continuation of one edge of said arm for engaging said pins of the carrier, a shaft carrying said arm, and a motor geared with said shaft, substantially as and for the purpose described.
105

7. An optical apparatus in which are combined two cross-heads having light-orifices
110 axially coincident with each other, a magnifying-lens fitted in said orifice of the upper cross-head, a condensing-lens arranged below said orifice of the lower cross-head, an intermittently-revolving plate-carrier having a circular row of light-orifices, and a motor for imparting motion to said carrier, substantially
115 as and for the purpose described.

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Witnesses:

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