

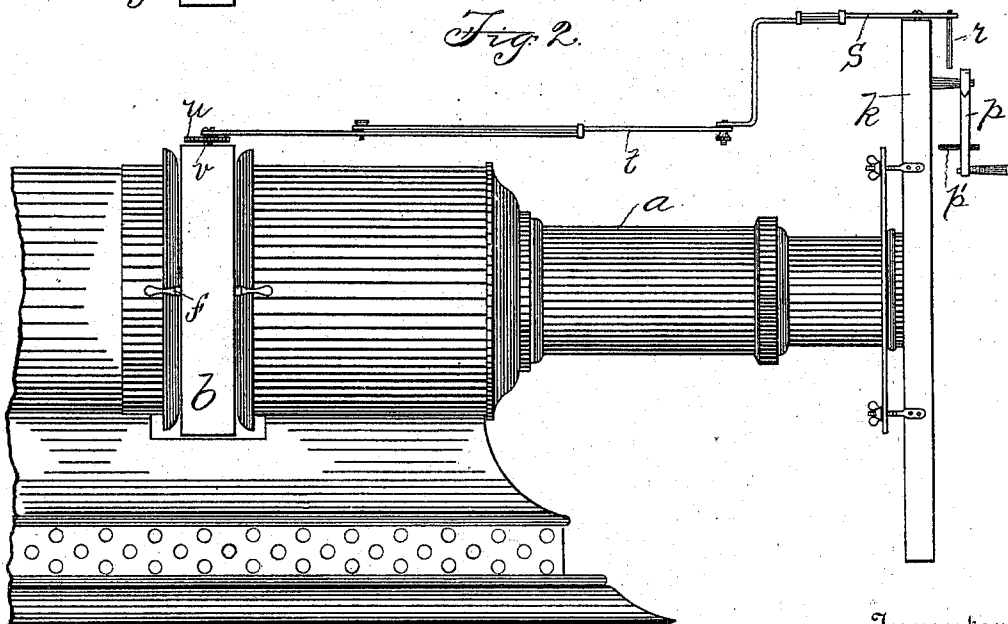
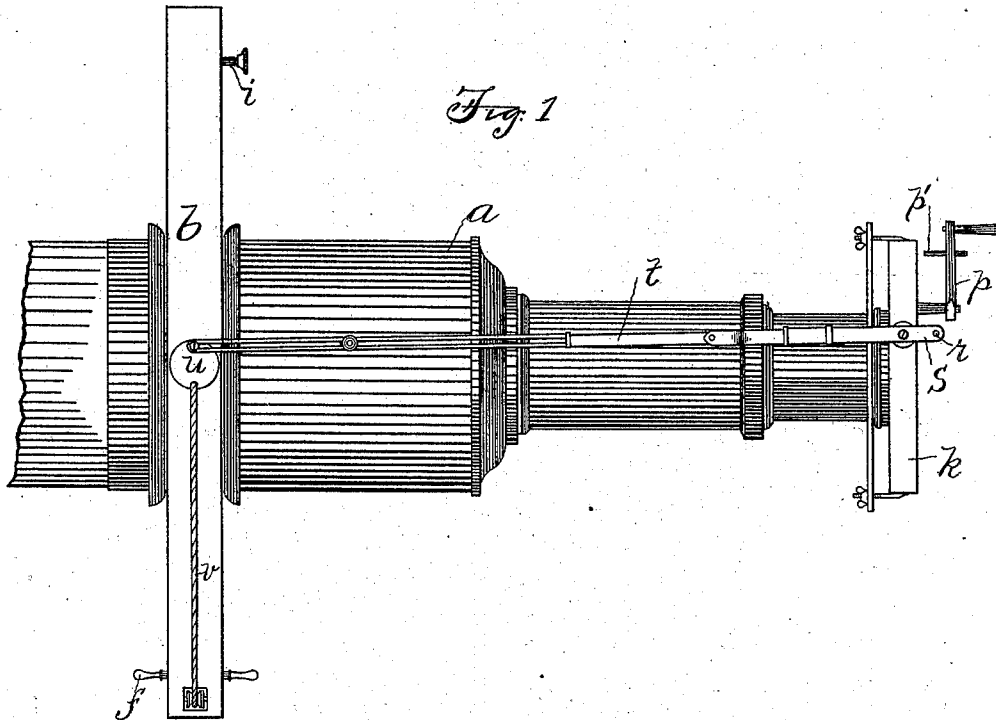
(No Model.)

2 Sheets—Sheet 1.

T. S. BARBOUR.
MAGIC LANTERN.

No. 574,054.

Patented Dec. 29, 1896.



Witnesses

Andrew Ferguson
John P. Healy.

Inventor

Thomas S. Barbour
By W. E. Simonds
Attorney

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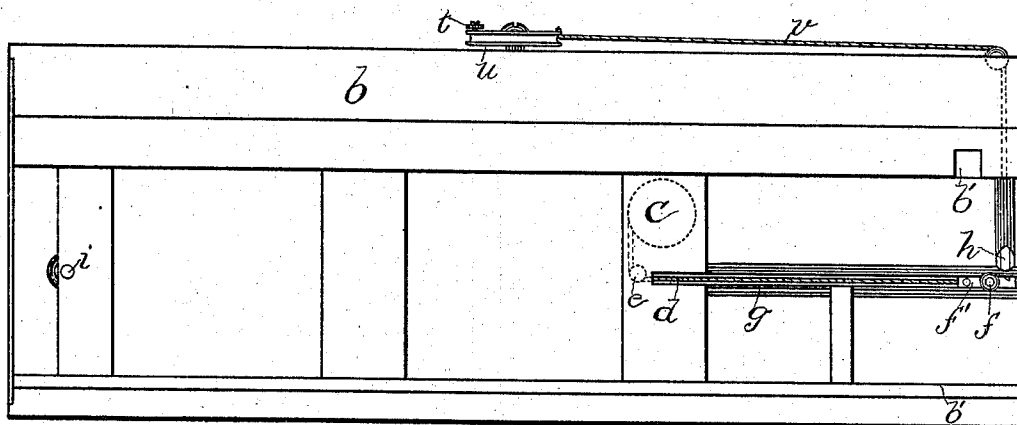


Fig. 3

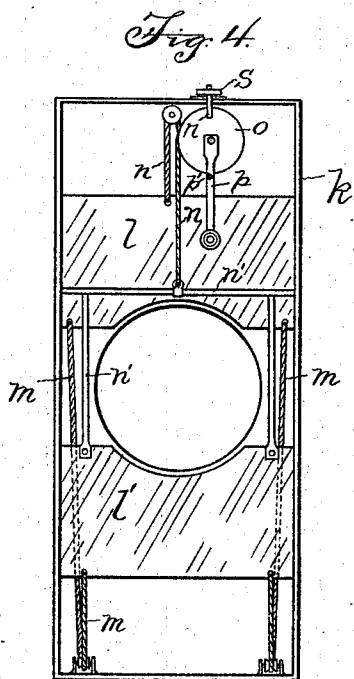


Fig. 4

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Attorney

UNITED STATES PATENT OFFICE.

THOMAS S. BARBOUR, OF ELIZABETHTOWN, NEW YORK.

MAGIC LANTERN.

SPECIFICATION forming part of Letters Patent No. 574,054, dated December 29, 1896.

Application filed April 13, 1896. Serial No. 587,301. (No model.)

To all whom it may concern:

Be it known that I, THOMAS S. BARBOUR, a citizen of the United States of America, residing at Elizabethtown, in the county of Essex and State of New York, have invented a certain new and useful Improvement in Magic Lanterns, of which the following is a description, reference being had to the accompanying drawings, wherein—

Figure 1 is a top view of the lens-tube of a magic lantern with my improvement applied thereto. Fig. 2 is a side view of the same. Fig. 3 is a rear face view of the carrier-case. Fig. 4 is a front face view of the dissolver-case with the front plate removed so as to expose the interior mechanism.

The object of the improvement is the production of a device or mechanism for changing the slides which are on view in a magic lantern with great rapidity, and at the same time producing what is practically a peculiar and pleasing dissolving effect, all being made possible and practical with the employment of a single lantern.

In the accompanying drawings the letter *a* denotes the lens-tube of that sort of a device generally called a "magic lantern."

The letter *b* denotes a carrier-case designed and adapted to be inserted crosswise in the lens-tube at the point or place where the slide-carrier is usually interposed. It has ways *b'* and space therein for three slides, end to end, although ordinarily there are not more than two slides in the carrier at once.

The letter *c* denotes an involute spring boxed in a drum to which is attached a cord *d*, which runs downward around the little pulley *e* and is attached to the finger-base *f'*, which slides or reciprocates in the tube *g*.

This finger-base *f'* carries the finger *f*, projecting from and through a slot or mortise made longitudinally in the tube *g*. When the finger-base is moved to the position which it occupies in Fig. 4, a spring-catch *h* automatically holds it there, and when this spring-catch is withdrawn by the operator the finger-base and the finger instantly shoot back toward the central part of the carrier-case.

The slides are put on view, one after another, in the ways *b'*, there being one in the center and in the line of vision. The

finger *f* is moved to the position shown in Fig. 3, and another slide next to be used is then dropped into the ways between the slide which is in the line of vision and the finger *f*. Now when the operator is ready to change a slide he pulls back the spring-catch *h*, when the finger *f* immediately shoots back toward the center of the carrier-case, carrying with it correspondingly the two slides already referred to. This carries the slide which was just in the line of vision beyond the lens-tube, so that it can be readily removed. Now the operator again resets the finger *f* and drops in another slide ready to be fed, when, at the proper time, the operation is repeated as before.

The letter *i* denotes a stop against which one of the slides strikes when the two are moved together as already described, and this stop is so placed that the slide now put into the line of vision is made to exactly register, that is, to occupy exactly the position desired to throw the picture properly upon the screen.

The letter *k* denotes the dissolver-case, suitably and properly attached upon the end of the lens-tube. It carries within it in suitable ways two corresponding gates which have reciprocating motion in a vertical direction—this for the purpose of shutting off the light from the screen and instantly letting it on again simultaneously with the changing of the slides, as already described. The letter *l* denotes one of these sliding gates and the letter *l'* denotes the other. They are interposed in what may be called an "endless-cord" connection. The letters *m* denote two of these cords, duplicates in arrangement and operation. The letter *n* denotes a third of these cords, its connection with the gate *l'* being made through the medium of the frame *n'*, so as to avoid obstructing the field of vision. The cord *n* is wound around the pulley *o*, so that by rotating this pulley the gates *l* are made to open or close.

The letter *p* denotes a cranked arm by which the pulley *o* may be rotated. It carries a pin *p'*, which at the proper time strikes the finger *r*. This finger *r* is an appurtenance of and pendent from the bar *s*, which is pivotally attached to the top of the dissolver-case.

The bar *s* is extensible or longitudinally adjustable in length, and it is pivotally attached to the connection-rod *t*, which is also longitudinally extensible. The rod *t* is pivotally
 5 attached to the pulley *u*, and from that pulley the cord *v* runs to the spring-catch *h*.

The arrangement just described constitutes a connection between the mechanism of the dissolver-case and the mechanism of the carrier-case, so that by rotating the cranked arm
 10 *p* both mechanisms are operated simultaneously.

The meeting edges of the two gates *l l'* are curvilinear, with the result of evenly diffusing the lights and shadows in the opening and
 15 closing movement. By means of the lengthwise adjustability of the connection from the dissolver-case to the carrier-case the lens-tube is left free to be adjusted longitudinally
 20 in order to attain any desired focus of the lenses. The sliding gates *l l'* are not opaque.

They are translucent, and preferably the material used is celluloid or painted glass.

I claim as my improvement—

1. In combination, the lens-tube *a* of a
 25 magic lantern, the carrier-case *b* containing slide-space for three slides end to end, the involute spring *c*, cord *d*, finger *f* and catch
h, all substantially as described and for the purposes set forth. 30

2. In combination, the lens-tube *a*, carrier-case *b*, spring *c*, cord *d*, catch *h*, finger *f*, dissolver-case *k*, sliding double gates *l l'* having
 35 endless-cord connection, and means intermediate of the carrier case and the dissolver-case adapted to operate both simultaneously, all substantially as described and for the purposes set forth.

THOMAS S. BARBOUR.

Witnesses:

W. E. SIMONDS,
 ANDREW FERGUSON.