

No. 678,351.

Patented July 9, 1901.

G. ROYLE & W. R. WYNNE.
OPTICAL TOY.

(Application filed Oct. 19, 1900.)

(No Model.)

2 Sheets—Sheet 1.

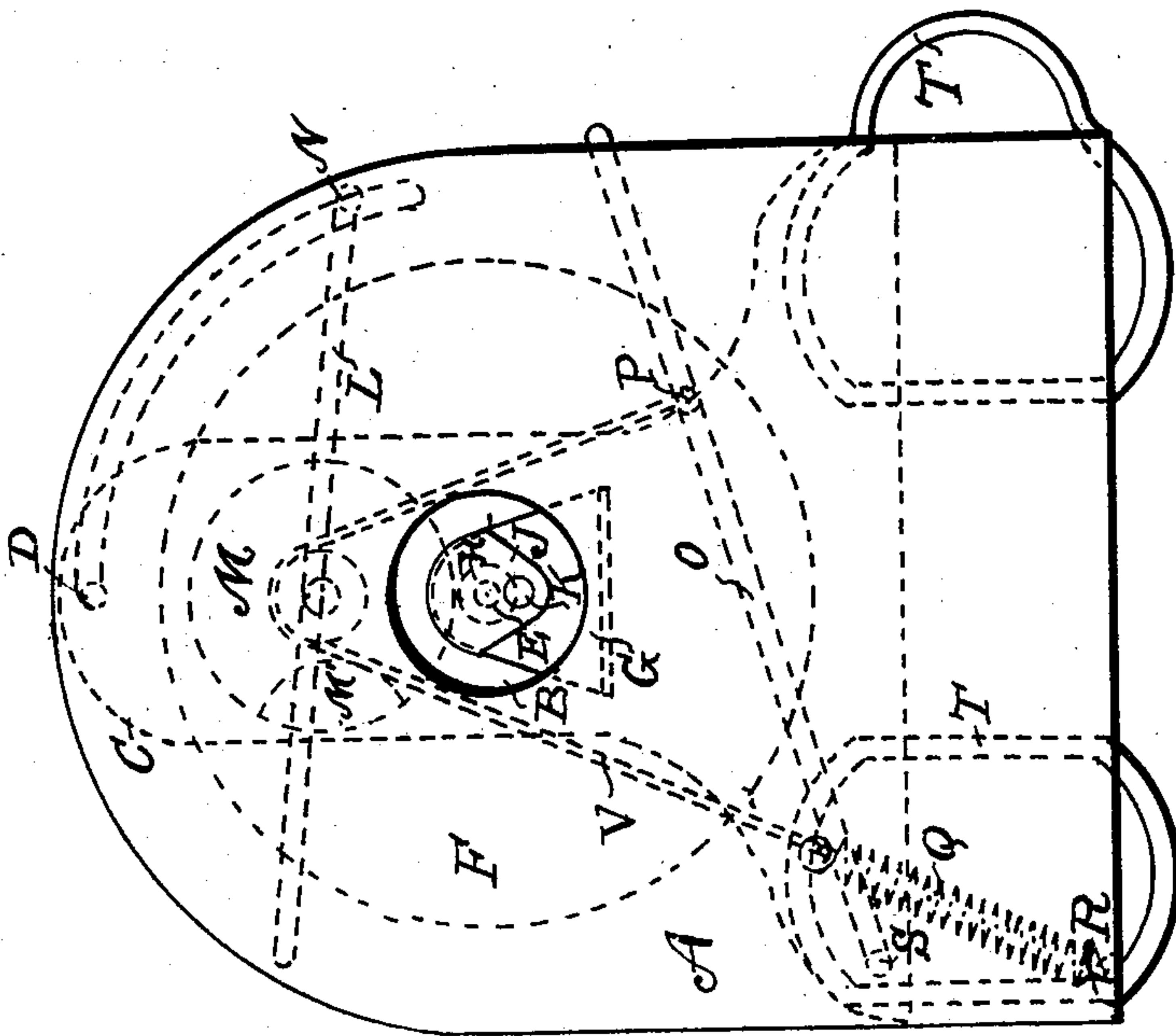


FIG. 1.

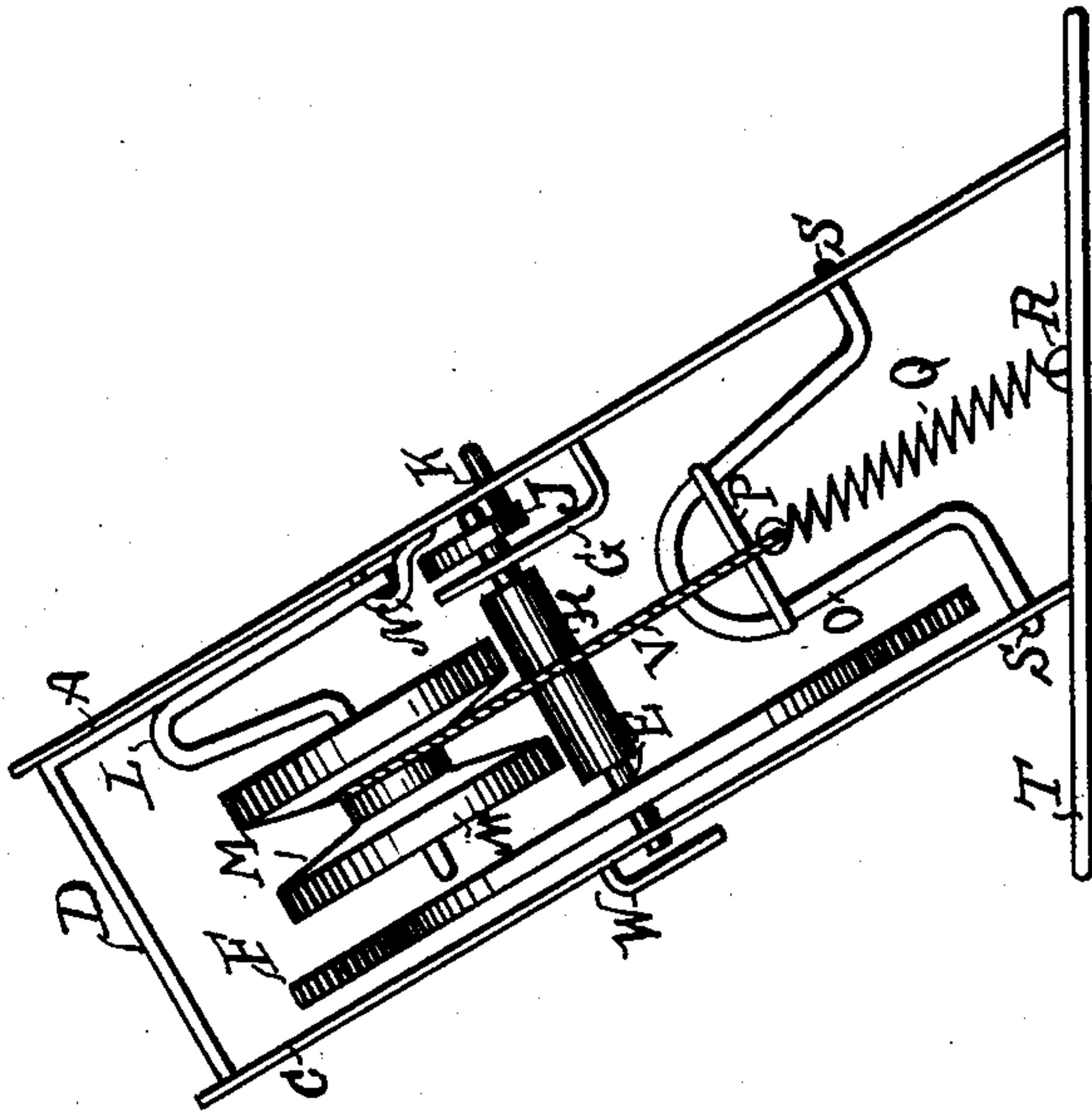


FIG. 2.

WITNESSES
Walter Abbe
A. C. Connor

INVENTORS
George Royle
William Richard Wynne
BY
Horsman and Horsman
ATTORNEYS

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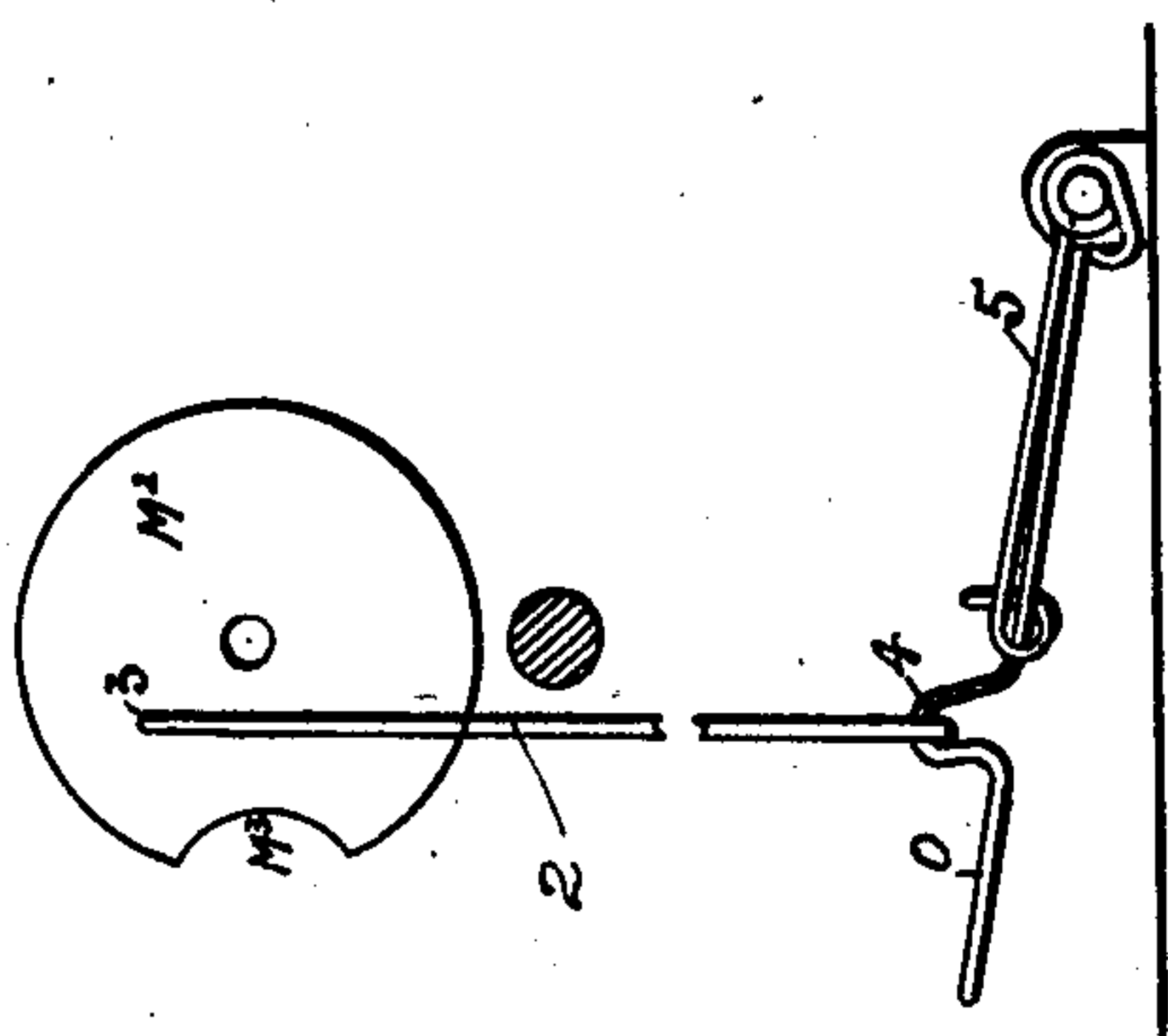


Fig. 5.

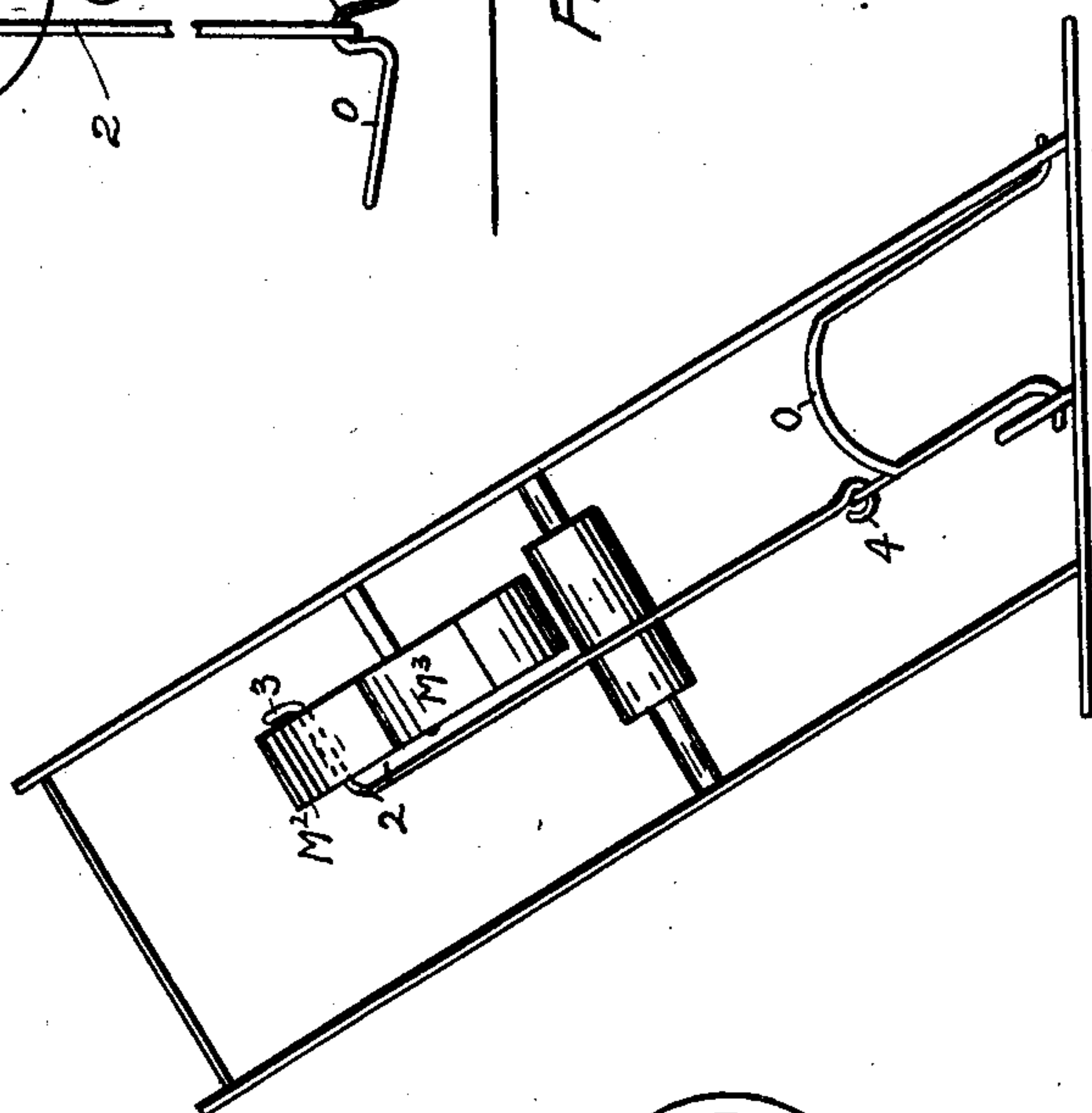


Fig. 4.

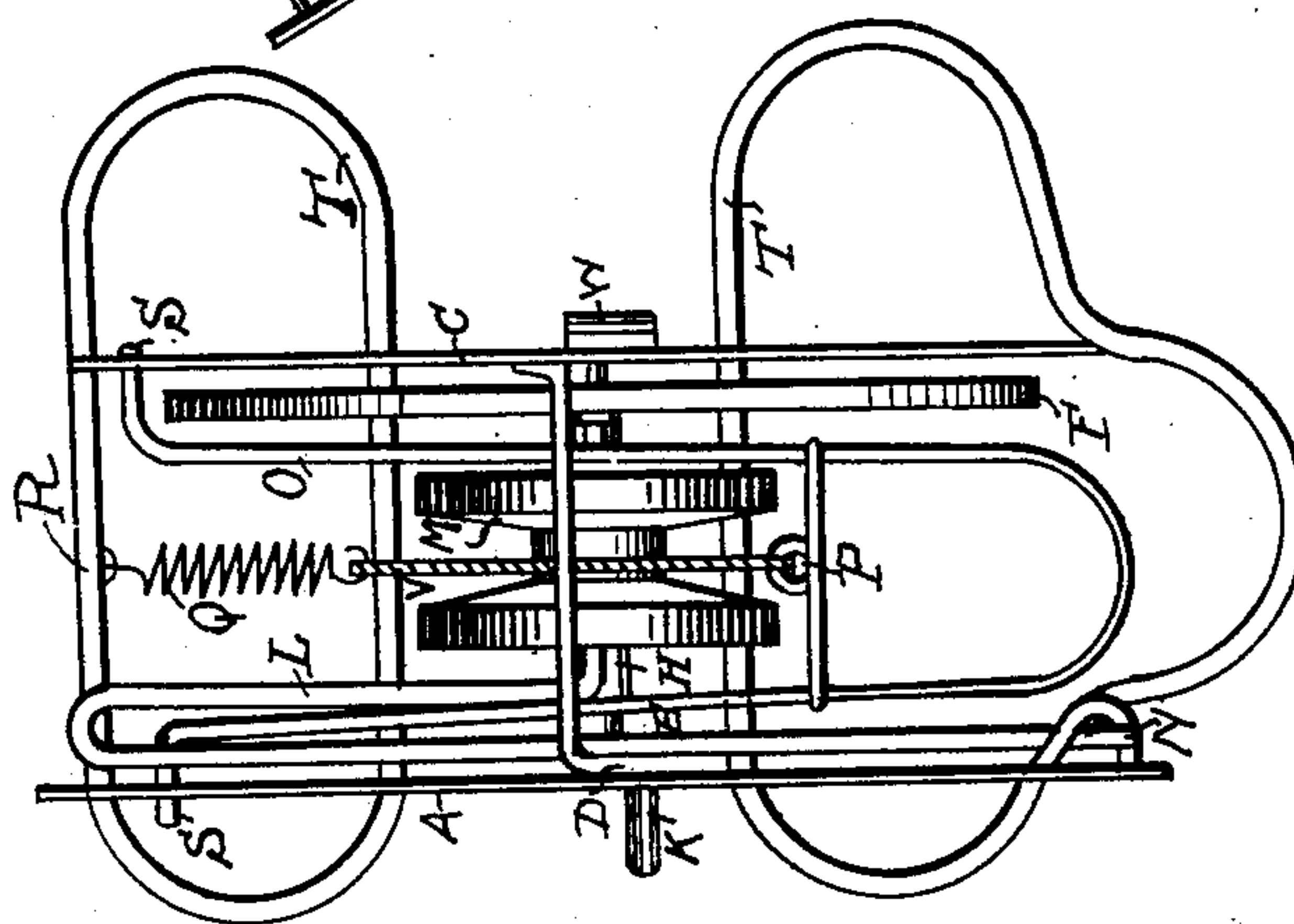


Fig. 3.

WITNESSES

Halter Abbe
S. C. Connor

INVENTORS

George Royle
William Richard Wynne

BY *Howson and Howson*

ATTORNEYS

UNITED STATES PATENT OFFICE.

GEORGE ROYLE, OF WEST KENSINGTON, AND WILLIAM RICHARD WYNNE, OF KENSINGTON, ENGLAND; SAID ROYLE ASSIGNOR OF ONE-HALF OF HIS RIGHT TO ELIAS BERNARD KOOPMAN, OF LONDON, ENGLAND.

OPTICAL TOY.

SPECIFICATION forming part of Letters Patent No. 678,351, dated July 9, 1901.

Application filed October 19, 1900. Serial No. 33,613. (No model.)

To all whom it may concern:

Be it known that we, GEORGE ROYLE, a resident of West Kensington, and WILLIAM RICHARD WYNNE, a resident of Kensington, in the county of London, England, subjects of the Queen of Great Britain and Ireland, have invented an Optical Toy, of which the following is a specification.

This invention relates to improvements in optical toys by the use of which peculiar optical effects are obtained.

Figure 1 is a front elevation. Fig. 2 is a side elevation. Fig. 3 is a plan, and Figs. 4 and 5 are front and side elevations of an alternative pulley.

T T form a base upon which at an angle is fixed a frame consisting of front plate A, with circular opening B, and back plate C. These plates are connected at top by cross-piece D, which is also carried partly around the rear of front plate A and terminates with a hook, as at N, for the purpose hereinafter described.

E is a spindle with rubber sleeve H, working in bearing G and in back plate C, with check-piece W, said spindle carrying fly-wheel F in rear and in front a balanced plate J, to which is attached at a suitable distance from the center a pin K. Plate J can be perforated at various distances from the center, so that pin K can be removed from one position to another; but the relation of this plate J to the front plate of the frame is such that the crank-pin K protrudes through the opening B, so that disks placed on this pin will be in part sustained in their proper plane by the inclined face of the frame.

L is a lever with one end passed through hooked end of D and securely fixed on bearing on front plate A, extending the width of said plate, curving around and coming back to center, the other end then being bent at right angles to form a spindle for pulley M, which is so placed that its circumference is clear of the sleeve H on spindle E. This pulley has a portion cut out, as shown at M'. Over this pulley is carried a cord V, fastened at one point to the pulley. One end of this cord is attached to spring Q, which is fastened

to base at R and the other end to lever O at P. This lever is shaped as shown and works in bearings in front and back plates at S S. An alternative method of imparting motion is shown by Figs. 4 and 5.

M² is a pulley, shaped as shown, with portion cut out at M³. Instead of a cord attached to a spring being carried over it, as before described, one end of a lever 2 is fastened to it at 3 and the other end of said lever to lever O at 4, lever O being kept in normal position by a spring 5.

The toy is thus worked: On pressing down the lever O the pulley M is brought into contact with sleeve H on spindle E and by the action of the cord V and spring Q is sharply rotated, thus imparting a rapid spinning movement to fly-wheel F and through the spindle E to pin K. Should the lever O be held down the spinning is not checked, as the cut-out portion M' of the pulley is then directly over H, leaving it free to work. The resilience of the lever L is sufficient on release of the lever O to cause the pulley to return to its normal position. On placing disks of various designs and colors or other objects on pin K and rotating the mechanism very curious optical effects are obtained.

We claim as our invention—

1. In an optical toy, the combination of a frame inclined at an angle to its base and a spindle having a fly-wheel and cranked end on which a disk may be mounted, the crank-pin protruding through the front of the frame, with a friction-pulley to bear on the spindle and means for turning the pulley.

2. In an optical toy, the combination of a frame and a spindle having a fly-wheel and cranked end on which a disk may be fitted, with a pulley to frictionally bear on the spindle to impart motion to the latter, said pulley having a cut-out portion, as and for the purpose described.

3. In an optical toy, the combination of a frame inclined at an angle to the base, and a spindle carrying a fly-wheel and a cranked end, the crank-pin protruding through the front of the frame, with a pulley, a hinged spindle on which it is mounted and means for

bringing the pulley to bear upon the spindle at the same time that it is turned, substantially as described.

- 5 4. In an optical toy, the combination of a frame and a spindle, having a fly-wheel and a cranked end with a hinged attachment carrying a pulley, an operating-lever O and a lever 2 connecting the operating-lever with the pulley, substantially as described.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

GEORGE ROYLE.

WILLIAM RICHARD WYNNE.

Witnesses:

FRANCIS W. FRIGOUT,
H. D. JAMESON.