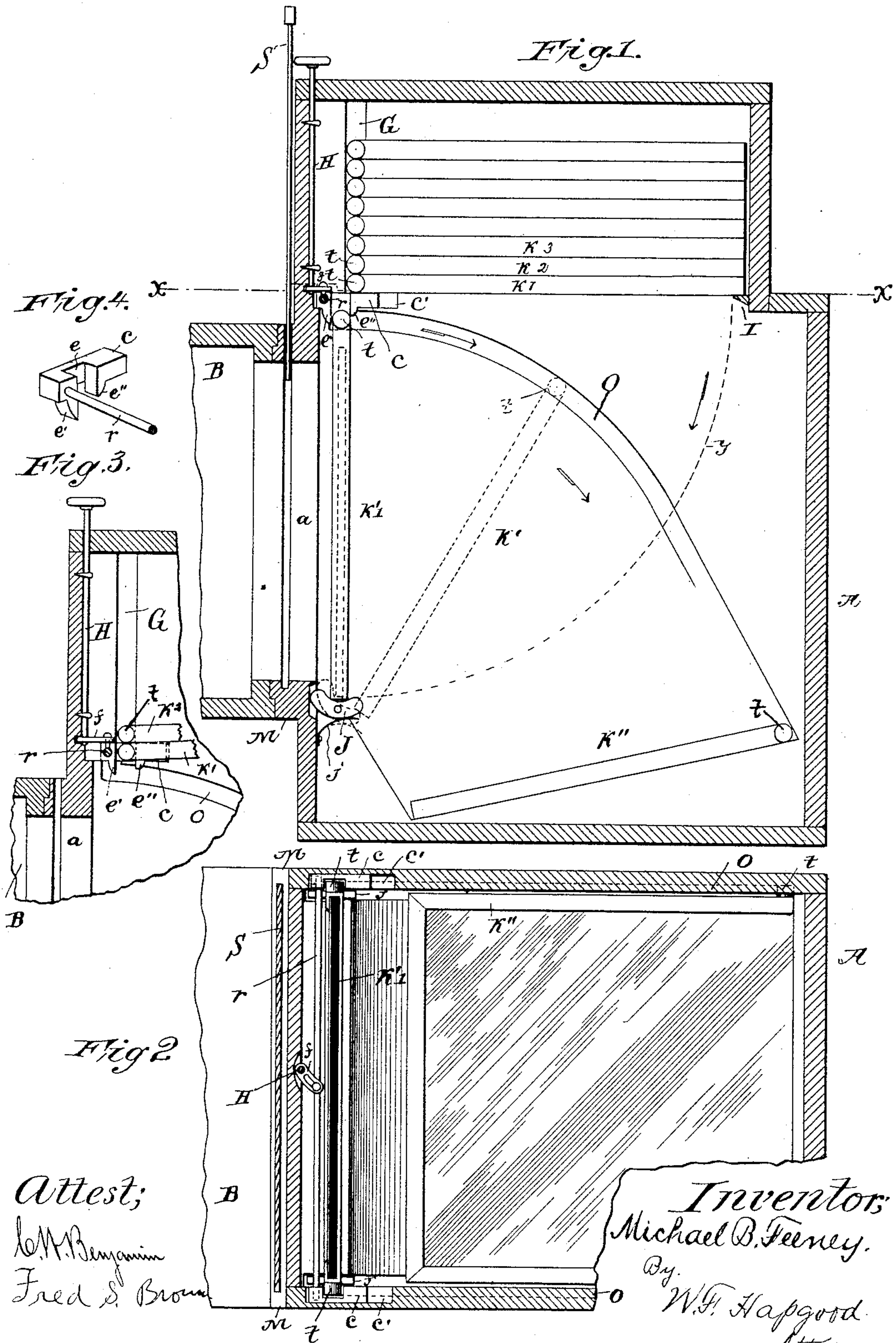


(No Model.)

M. B. FEENEY.  
MAGAZINE FOR CAMERAS.

No. 471,715.

Patented Mar. 29, 1892.



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# UNITED STATES PATENT OFFICE.

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## MAGAZINE FOR CAMERAS.

SPECIFICATION forming part of Letters Patent No. 471,715, dated March 29, 1892.

Application filed July 11, 1891. Serial No. 399,112. (No model.)

*To all whom it may concern:*

Be it known that I, MICHAEL B. FEENEY, a citizen of the United States, residing at New York, in the county and State of New York; have invented certain new and useful Improvements in Magazines for Photographic Cameras, of which the following is a specification.

Many people who already have a camera of the ordinary description desire to have some means for carrying a considerable number of plates and a simple and rapid means of changing them which can be adapted to their instrument, and it is desirable that the mechanism employed shall be so constructed that it can be removed as occasion requires to admit of the use of the ordinary plate-holder. This result I attain, together with a simple and compact mechanism for operating the plates, in the separable magazine-box illustrated in the accompanying drawings, wherein—

Figure 1 is a sectional elevation of the magazine. Fig. 2 is a horizontal section through X X in Fig. 1. Fig. 3 is a view of a portion of Fig. 1, showing the changing-slide in its receiving position, and Fig. 4 is an enlarged view of one of the changing-slides.

In carrying out my invention I provide a suitable box A, in which provision is made for carrying a number of plates, and suitable mechanism is provided for successively exposing said plates, one at a time, as desired. In the front of this magazine-box is an opening *a* of suitable size for the plate used, and surrounding this opening is fixed the frame M, provided with the closing-slide S, working through a suitable light-trap at the top. This frame M is rabbeted to fit the camera-back B in place of the ordinary plate-holder and may be interchangeable with the ordinary plate-holder by making the rabbet correspond with that on the plate-holder. The plates are placed in light metal carriers *K*<sup>1</sup> *K*<sup>2</sup>, &c., which are provided with trunnions *t* at their upper corners. These carriers, with the plates in position, are placed in the upper part of the box A in a horizontal position, face down, with the trunnions *t* in the vertical groove G cut in the opposite sides of the box, as shown in Fig. 1. The trunnions of the lower carriers rest on the inner ends of the changing-

slides *c*, while the other end of this carrier rests on the projecting ledge I on the end of the box. The other carriers are supported by this lower carrier and are held in position horizontally by the trunnions in the groove G. The changing-slides *c*—one on each side of the box—are constructed as shown in Fig. 4 and fit in horizontal grooves *c'* across the lower ends of the vertical grooves G. These changing-slides consist of metal bars with a vertical slot *e*, Fig. 4, cut in their inner sides near front end and corresponding in size with the groove G in the side of the box. This slot is prolonged downward by the lips *e'* and *e''*, the latter rear lip being shorter than *e'*. These changing-slides are connected by the rod *r*, and may be operated by any convenient means which will impart a reciprocating movement to *r*. In Figs. 1 and 4 of the drawings I have shown one device for doing this. A vertical rod H, placed in the forward end of the magazine-box, is mounted in bearings so that it can be revolved easily by the knob on its upper end, which projects outside the box. To the lower end of rod H is attached a crank-arm *f*, the other end of which engages with a pin fixed in the rod *r*. On turning rod H by means of the knob the crank-arm *f* moves the rod *r* forward or backward, according to the direction of the revolution of rod H, and through rod *r* the changing-slides are operated as described. Small cam-shaped supports J, held in position by light springs *j*, are placed at the lower corners of the opening *a* to hold the lower side of the carrier when in position for exposure, and the curved slot O guides the carrier to the storage-compartment in the lower part of the box after exposure.

The operation of my invention is as follows: The full carriers *K* being in position in the upper part of the magazine, the changing-slides are moved back into position shown in Fig. 3, when each trunnion of the lower carrier drops into the slot E and rests on the lower side of the groove *c'*. The slide *c* is now drawn forward, and, carrying with it the lower carrier *K*<sup>1</sup>, draws it off of the supporting-ledge I, and the carrier swings down by gravity, as indicated by the dotted line *y* in Fig. 1, into a vertical position at *k'*, until its lower edge is caught by the supports J. The carrier *K*<sup>2</sup> has



in the meantime dropped into the position vacated by carrier K'. As the carrier K' reaches the vertical position the slot *e* has reached the opening at the end of the groove O, into which the trunnions of the carrier drop, as shown in Fig. 1. The lips *e' e''* now hold the trunnions in proper position, securing the upper side of the carrier, while the support J holds the lower edge of the carrier, and the exposure may be made. To change the plate, the slides *c* are pushed back, as at first, and in so doing the lip *e'* pushes the trunnions of the exposed plate K' backward in the groove O, which by its downward curve carries the trunnions clear of the shorter back lip *e''* of the slide. The carrier, freed from the changing-slide *c*, now falls by gravity to the bottom of the box, guided by the groove O, as indicated by K'. The curve of O is such as to pull the carrier slightly backward, thus drawing the lower edge off of J, which by turning, as shown in the dotted lines, assists in releasing the carrier, which falls to the position K''. While this operation is taking place, the trunnions of the second carrier K<sup>2</sup> drop into the slot *e*, ready to be pulled forward and released, as was the first plate, and after exposure each succeeding carrier is piled in the bottom of the box in the same way as the first until all are used. The top and bottom of the box A may be opened in the usual way for charging and removing plates.

It is evident that the mechanism above described for manipulating the plates can be used in any magazine-camera, and its use is not confined to the separable magazine principally described; but I have shown this mech-

anism as one specially suitable for use with such a separable magazine.

What I claim, and desire to secure by Letters Patent, is—

1. In a photographic camera, the magazine-box A, provided on its two opposite sides with corresponding vertical storage-grooves G and the changing guide-grooves *c'* and O, in combination with the horizontal supporting-ledge I and changing-slides *c*, substantially as set forth.

2. In a photographic camera, the changing-box A, provided with guide-grooves G *c' O*, cut in its two opposite sides for the reception and guidance of trunnions affixed to the plate-carriers, supporting-ledge I, and spring-supports J, in combination with the changing-slides *c*, working in grooves *c'* and provided with lips *e' e''*, substantially as and for the purpose set forth.

3. In a magazine-camera, the changing-slides *c*, provided with lips *e' e''* and working in horizontal slots *c'*, cut in the opposite sides of the magazine changing-box A, said slides being connected by a rod *r* to move them in unison and operated by rod H and crank *f* or other suitable device, in combination with the box A, having storage-grooves G and curved changing-grooves O cut in the sides thereof for operating and changing plates held in carriers provided with trunnions at their upper corners, substantially as described.

MICHAEL B. FEENEY.

Witnesses:

HERBERT J. HINDES,  
FRED S. BROWN.