

(No Model.)

J. H. HARE.
PHOTOGRAPHIC CAMERA.

No. 471,512.

Patented Mar. 22, 1892.

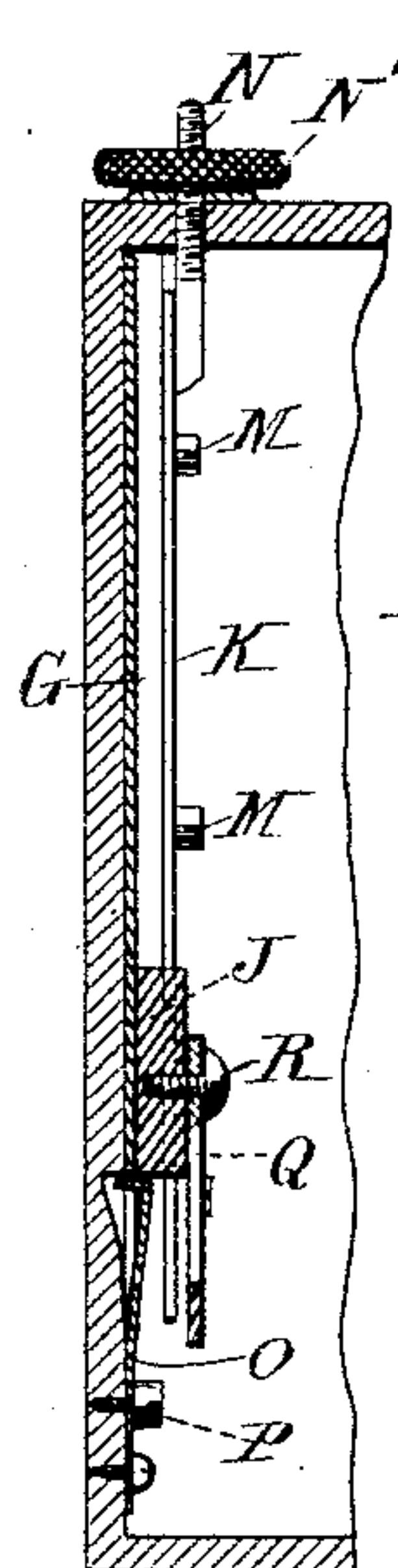


Fig. 2.

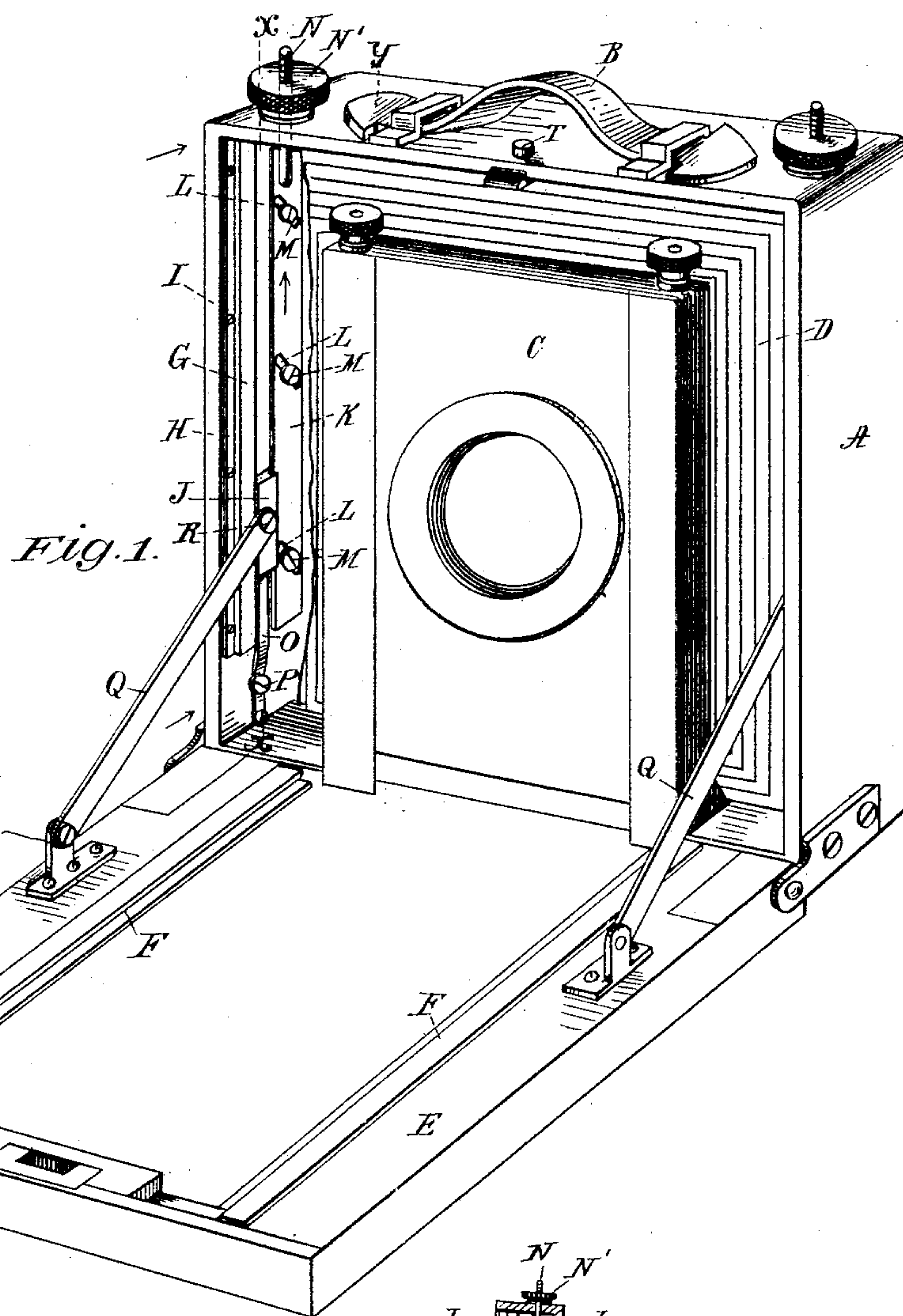


Fig. 1.

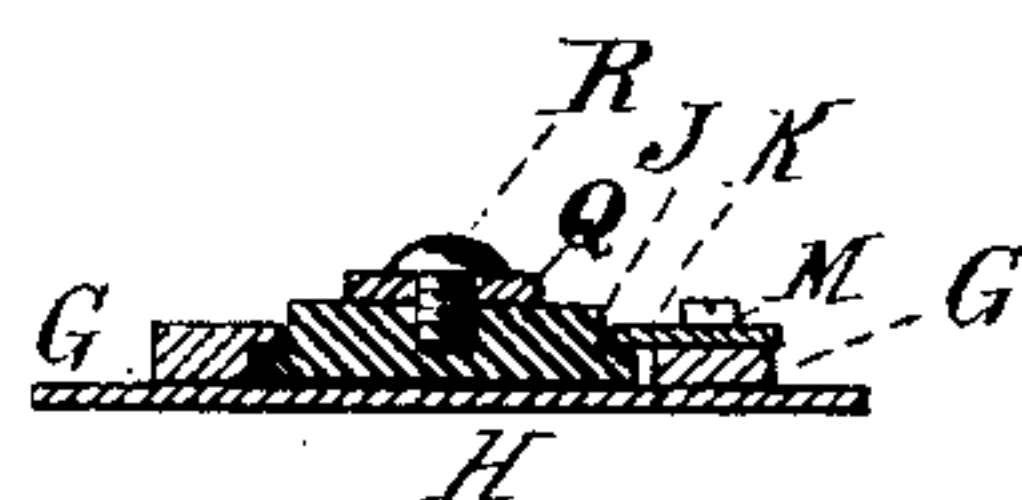
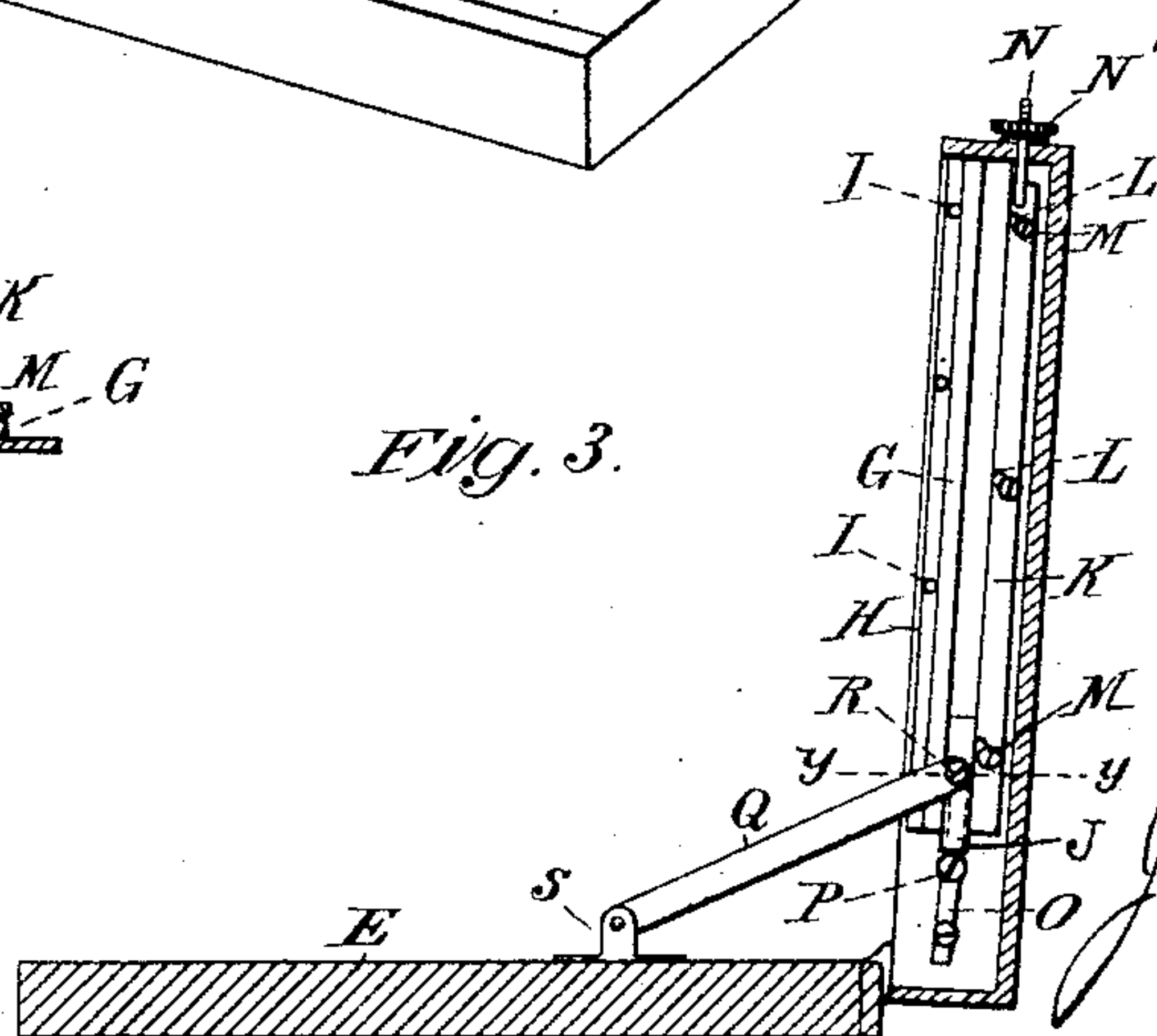


Fig. 4.

Fig. 3.



WITNESSES:
Edward C. Howland.
J. E. Hoffman

INVENTOR
James H. Hare
BY Phillips Abbott
his ATTORNEY

UNITED STATES PATENT OFFICE

JAMES H. HARE, OF BROOKLYN, ASSIGNOR TO THE E. & H. T. ANTHONY & COMPANY, OF NEW YORK, N. Y.

PHOTOGRAPHIC CAMERA.

SPECIFICATION forming part of Letters Patent No. 471,512, dated March 22, 1892.

Application filed October 20, 1891. Serial No. 409,278. (No model.)

To all whom it may concern:

Be it known that I, JAMES H. HARE, a citizen of the Kingdom of Great Britain, and a resident of Brooklyn, (Green Point,) in the county of Kings and State of New York, have invented certain new and useful Improvements in Photographic Cameras, of which the following is a specification.

My invention relates to certain new and useful improvements in the form of photographic cameras known as the "folding" or "swing-back" cameras. In this form considerable difficulty has heretofore been experienced in the method of constructing the braces or supports for the swinging part, the difficulty being to secure a smooth and even movement of the sliding part of the braces, whereby jamming and annoying hinderances to the opening and closing of the apparatus are avoided.

By my invention I overcome the stated defects in the old forms and secure a smooth easy movement of the parts and a better clamping or holding effect than has heretofore been secured, and, also, I inclose all of the apparatus within the case of the camera, leaving only a couple of small milled thumb-nuts upon the exterior of the camera.

In the drawings, Figure 1 is a perspective view showing the swing-back opened, but the lens, plate, and bellows not projected. Fig. 2 is a sectional view on the line X X of Fig. 1. Fig. 3 is a sectional view on the line Y Y Y of Fig. 1. Fig. 4 is a detail of the slideway and block on line Y Y, Fig. 3.

A is the camera box or case, provided with handle B.

C is the lens-holding frame.

D is the bellows.

E is the swing-back frame provided with guiding-slides F F, which engage with suitable devices on the lower edge of the lens-frame C, as well understood.

G G (see Fig. 4) are two parallel bars or strips, which are preferably, although not necessarily, attached to a base H, which base is secured by screws, as at I, to the sides of the camera, and between these strips G slides a block J. It will be understood, of course, that these slideways and blocks are preferably,

although not essentially, on both sides of the camera.

K is a flat plate of metal having slots L cut diagonally in it, in which are placed screws or pins M, which screw into the strip G, which lies beneath it. At the upper end of the slotted piece K there is fastened a threaded spindle N, which projects through the top of the camera-box, and upon the outside there are milled thumb-nuts N'.

O represents spring-stops, one of which, on each side of the camera, is arranged in the path of the block J, and it is made so as to intercept the block and stop its downward movement. If desired, however, these springs may be pressed inwardly out of the way of the blocks, and then the blocks may be moved farther down, passing over the springs O, that the swing-back and the camera-box may assume an angle greater than a right angle, as shown in Fig. 3. This is sometimes desirable, and in order that the blocks O may not slide entirely through the slideway and become disconnected I provide a stop to determine their ultimate downward movement. (Seen in the present instance as screws P, the heads whereof project considerably beyond the springs O, which they also aid in holding in place.)

Q Q are the braces which hold the swing-back and camera in proper relative position. At one end they are pivoted to the blocks J by a pin or screw R, and at the other end they are pivoted by hinge-like joints S to the swing-back.

The operation of the device is as follows: A catch T (see Fig. 1) being depressed, the swing-back E is free to move, and being pulled away from the body of the camera-box it assumes more and more a right-angle position relative to it, during which operation the blocks J J slide smoothly and evenly down the slideways until the desired position is reached, which will ordinarily be determined by the lower ends of the blocks coming in contact with the spring-stops O. To fasten the parts in their then position, the thumb-nuts N' are now turned so as to pull the slotted plates K upwardly, and the action of the slots L in them against the pins M is such as to move the slotted plates inwardly toward the op-

posite side of the slideway. This brings their inner edges in contact with the sides of the blocks J, so that they (the blocks) are firmly clamped and held against movement in either
 5 direction. When desired to close the camera, the thumb-nuts are moved in opposite direction, and slight pressure upon the thumb-nuts will then reverse the movement of the slotted plates, releasing the blocks, and the swing-
 10 back E, being then swung upwardly against the camera-box, the blocks J will slide smoothly and without jamming or hitching up through the slideways and the parts again assume their closed position, and when de-
 15 sired to additionally incline the swing-back relative to the camera, the springs O being depressed the blocks J may be caused to descend until they strike against the stops P, as already stated.

20 Having described my invention, I claim—

1. In a camera, the combination of a swinging frame, braces pivoted to the side frame at one end, blocks pivoted at the other end of the braces, slideways through which the blocks
 25 move, and means, substantially as described, operated from the exterior of the camera for clamping the blocks in the slideways when the camera is closed, substantially as set forth.

2. The combination of a swinging frame,
 30 braces pivoted to the frame at one end, blocks at the other ends of the braces, slideways through which the blocks move, fastened upon the inside of the camera, and means, substantially as described, operated from the exterior
 35 of the camera for clamping the blocks in the

slideways when the camera is closed, substantially as set forth.

3. In a camera, the combination of a swinging frame, braces pivoted to the said frame at one end, blocks pivoted to the other end
 40 of the braces, slideways through which the blocks move, a movable slotted plate provided with an extension projecting through the side of the camera-box, and means upon the said
 45 extension whereby the slotted plates may be moved to clamp the blocks, substantially as set forth.

4. In a camera, the combination of a swinging frame, braces pivoted to the said frame at one end, blocks pivoted at the other end
 50 of the braces, slideways through which the blocks move, and movable stops to determine the downward movement of the ends of the braces, substantially as set forth.

5. In a camera, the combination of a swing-
 55 ing frame, braces pivoted to the said frame at one end, blocks pivoted at the other end of the braces, slideways through which the blocks move, and movable stops to determine the downward movement of the ends of the
 60 braces, and stops below the movable stops to determine the ultimate movement of the ends of the braces, substantially as set forth.

Signed at New York, in the county of New York and State of New York, this 15th day of
 65 October, A. D. 1891.

JAMES H. HARE.

Witnesses:

PHILLIPS ABBOTT,
 L. SOH. RITTERBAM.