No. 720,040. PATENTED FEB. 10, 1903.

H. W. LOCKE.

CAMERA.

APPLICATION FILED JUNE 28, 1902.

NO MODEL.

Fig. 1.

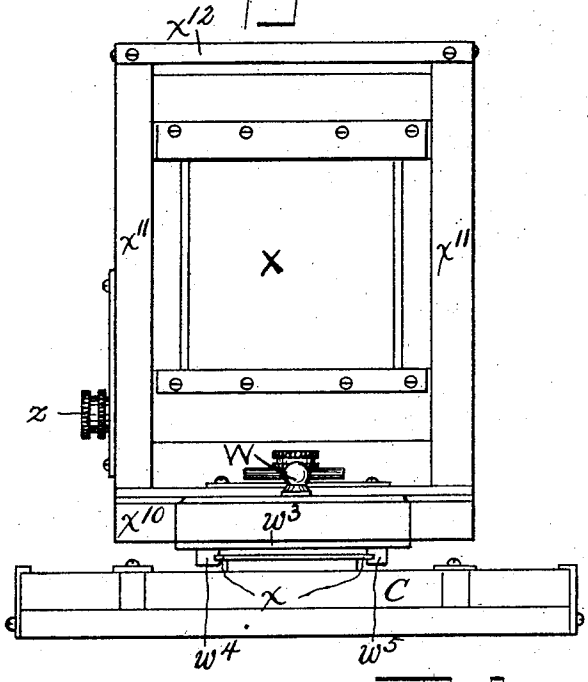


Fig. 2.

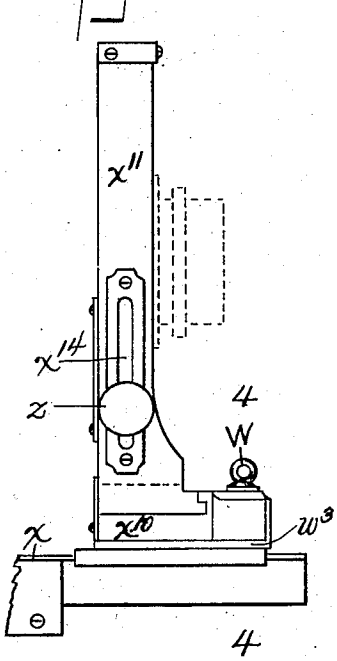


Fig. 3.

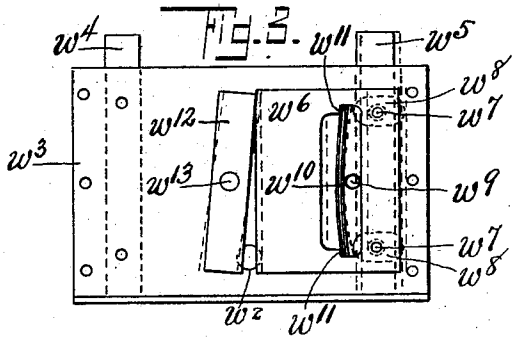
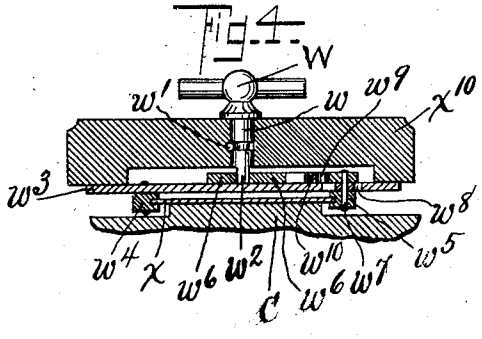


Fig. 4.



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UNITED STATES PATENT OFFICE.

HARVEY W. LOCKE, OF ROCHESTER, NEW YORK, ASSIGNOR TO CENTURY CAMERA COMPANY, OF ROCHESTER, NEW YORK, A CORPORATION OF NEW YORK.

CAMERA.

SPECIFICATION forming part of Letters Patent No. 720,040, dated February 10, 1903.

Application filed June 28, 1902. Serial No. 113,632. (No model.)

To all whom it may concern:

Be it known that I, HARVEY W. LOCKE, a citizen of the United States, and a resident of Rochester, in the county of Monroe and State of New York, have invented certain new and useful Improvements in Cameras, of which the following is a specification.

This invention relates to cameras. Its object is to provide simple and efficient means for clamping the lens-frame in different positions upon its guideways; and it consists in the mechanism hereinafter described and claimed.

In the drawings, Figure 1 is a front elevation of the lens-frame and its mechanism. Fig. 2 is a side elevation of the same. Fig. 3 is a bottom plan view of the clamping devices, and Fig. 4 is a cross-section on the line 4 4 of Fig. 2.

The lens-frame X is of any suitable form, but is herein shown as having a base x^{10}, two vertical standards x^{11}, and a top bar x^{12}. A slot x^{14} is shown in one of the side rails x^{11} of the lens-frame, and a milled head z is shown, which is part of a mechanism for raising and lowering the lens-holder within said lens-frame. The lens-frame is supported upon a section C of the camera-bed and is adjustably secured thereon by the clamping device, which engages with the guideways x. Said frame is connected with a camera-box of suitable construction in the usual way, which is not represented in the drawings.

The clamping device is shown in detail in Figs. 3 and 4. This clamping mechanism is automatic, in that after the lens-frame has been unclamped from the ways the mere release from the hand causes a clamping in the position where the lens-frame has been placed.

Through the base x^{10} of the lens-frame there extends upward a handle W, which has a stem w, held in a stationary bearing in the lens-frame by a pin w', fastened in the frame and extending into a groove around said stem w. The lower end of the stem w^2 is oblong, as shown in Fig. 4, by flattening the two sides of the stem, and constitutes a cam, as hereinafter shown. Upon the under side of the base-piece x^{10} is a plate w^3, having upon it two bars w^4 and w^5, one of which, w^4, is fastened stationarily upon the plate w^3, and the other of which, w^5, is capable of movement to and from the bar w^4 and is normally pressed toward the bar w^4 by means of a suitable spring. Rotation of the handle W moves the bar w^5 away from the bar w^4 against the tension of the spring, and then on releasing the handle W from the hand the spring carries the bar w^5 back to place, so as to be in the clamping position on the ways x. A convenient construction for producing these results is a sliding plate w^6, connected in any suitable manner, as by the pins w^7, with the bar w^5, which pins pass through slots w^8 in the plate w^3. A stationary pin w^9 in the plate w^3 serves as an abutment for the spring above mentioned, which in the present example of this invention is a flat spring w^{10}, having its ends resting on abutments w^{11} in a suitable opening in the plate w^6. It is clear now that if the plate w^6 is moved toward the right, as seen in Fig. 12, the spring w^{10} will be bent by pressure against the pin w^9, and when released the plate will resume its former position by the spring action.

It is convenient that the handle W should be at the front of the broad base x^{10}, as shown in Fig. 2, in order to give easy access of the hand to the handle, and it is also desirable that the bars w^4 and w^5 should have long bearings upon the ways x upon the folding front or lens-frame support, and in order to produce uniform movement, and therefore quick and prompt release of the bar w^5 from the ways, a lever w^{12} is pivoted by the pin w^{13} to the upper side of the plate w^3, and the flattened sides of the end w^2 of the operating-stem are set between one end of said lever and the neighboring flat face on the edge of the plate w^6, while the other end of the lever presses against a distant portion of said plate w^6. If the handle W be turned, the lever w^{12} is tilted and presses against one portion of the plate w^6, while the cam end w^2 of the handle presses against another portion of said plate w^6, so that both the top and the bottom edges of said plate, as seen in Fig. 3, move equally, and the bar w^5 separates from the way x throughout its length. The parts are so adjusted and the slots w^8 are of such length that

the cam end w^2 cannot be turned at right angles to the face of the plate w^6, against which it bears, but can turn through a small angle only, the effect of which is that whenever the handle W is turned to the utmost limit permitted by the mechanism—as, for instance, setting the parts in the positions shown in dotted lines in Fig. 3—and then the handle W is released from the hand the spring-pressure causes the return of all the parts, including the cam end w^2, to the normal position of rest (shown in full lines in Fig. 3) and at the same time clamps the ways x between the plates w^4 and w^5.

It is obvious that other cam forms on the end of the stem w^2 may be employed and other forms of spring w^{10} and that other connections between the cam and the movable bar w^5 may be used. So, too, the bars w^4 and w^5 may have different lengths and shapes from those shown in the drawings. In general the following claims are not intended to be limited to the specific devices herein shown and described, except where the state of the prior art requires such limitation.

What I claim is—

1. In a camera, a lens-frame support having guideways, a lens-frame having two blocks, one of which is movable, a spring for pressing said movable block toward the other for clamping said ways, and a cam for moving said movable block away from the other, substantially as described.

2. In a camera, a lens-frame support having guideways, a lens-frame having two blocks, one of which is movable, a spring for pressing said movable block toward the other for clamping said ways, and a cam having a stationary bearing in the lens-frame for moving said movable block away from the other, substantially as described.

3. In a camera, a lens-frame support having guideways, a lens-frame having two blocks, one of which is movable, a spring for pressing said movable block toward the other for clamping said ways, a plate connected with said movable block and having a flat edge, a rotary cam on the lens-frame having a flattened side for engaging said flat edge for operating said movable block to unclamp the ways, and means for limiting the extent of rotation of the cam, substantially as described.

4. In a camera, a lens-frame support having guideways, a lens-frame having two blocks, one of which is stationary and the other of which is movable for clamping said guideways, a spring for pressing said movable block toward the other, a plate connected with said movable block, a lever pivoted on said lens-frame and having one end normally resting against said plate, and a cam between the other end of said lever and said plate, substantially as described.

5. In a camera, a lens-frame support having guideways, a lens-frame having a stationary block w^4, and a movable block w^5 for clamping said guideways, a supporting-plate w^3 carrying said blocks, a plate w^6 to which said movable block w^5 is connected, a spring w^{10} for pressing said movable block toward the other and having a stationary abutment, a lever w^{12} pivoted to said plate w^3 and a handle having a cam end w^2 having flattened sides, one of which rests against the face of the plate w^6 and the other of which rests against one end of the lever w^{12} while the other end of said lever rests against another portion of the plate w^6, substantially as described.

6. In a camera, a lens-frame support having guideways, a lens-frame having a stationary block w^4 and a movable block w^5 for clamping said guideways, a supporting-plate w^3 carrying said blocks, a plate w^6 to which the block w^5 is connected by pins passing through slots in the plate w^3 for limiting the motion of said block w^5, a spring w^{10} for pressing said movable block toward the other and having a stationary abutment, a lever w^{12} pivoted to said plate w^3 and a handle having a cam end w^2 having flattened sides one of which rests against the face of the plate w^6 and the other of which rests against one end of the lever w^{12} while the other end of said lever rests against another portion of the plate w^6, substantially as described.

7. In a camera, a lens-frame support having guideways, a lens-frame having two blocks, one of which is movable, a spring for pressing said movable block toward the other for clamping said ways, a plate connected with said movable block and having a flat edge and a rotary cam on the lens-frame having a flattened side for engaging said flat edge for operating said movable block to clamp the ways substantially as described.

HARVEY W. LOCKE.

Witnesses:
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F. BISSELL.