

J. C. DRAKE.

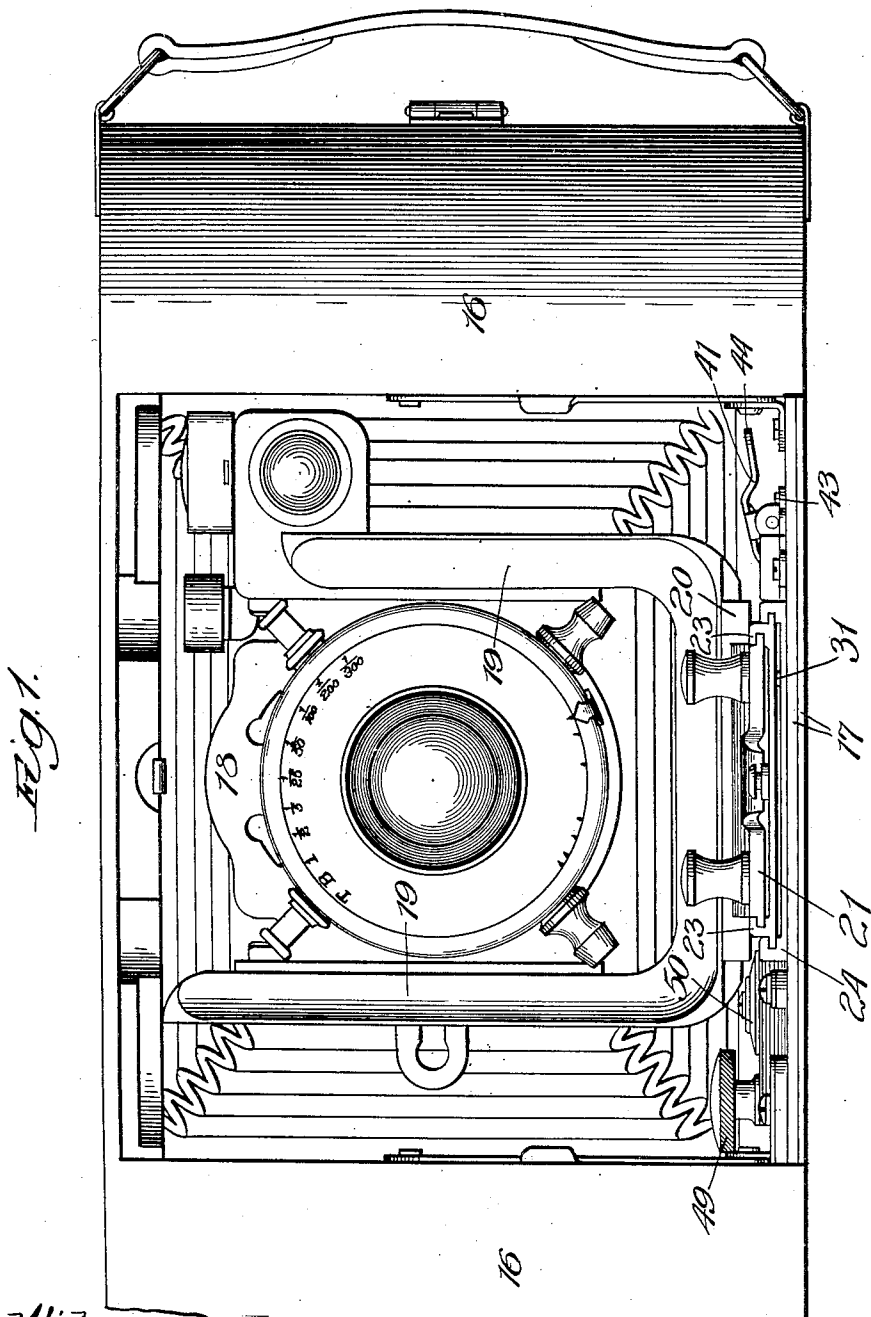
CAMERA.

APPLICATION FILED SEPT. 30, 1913.

1,127,870.

Patented Feb. 9, 1915.

4 SHEETS-SHEET 1.



Witnesses:
Chas. H. Buell

Inventor:
James C. Drake,
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J. C. DRAKE.

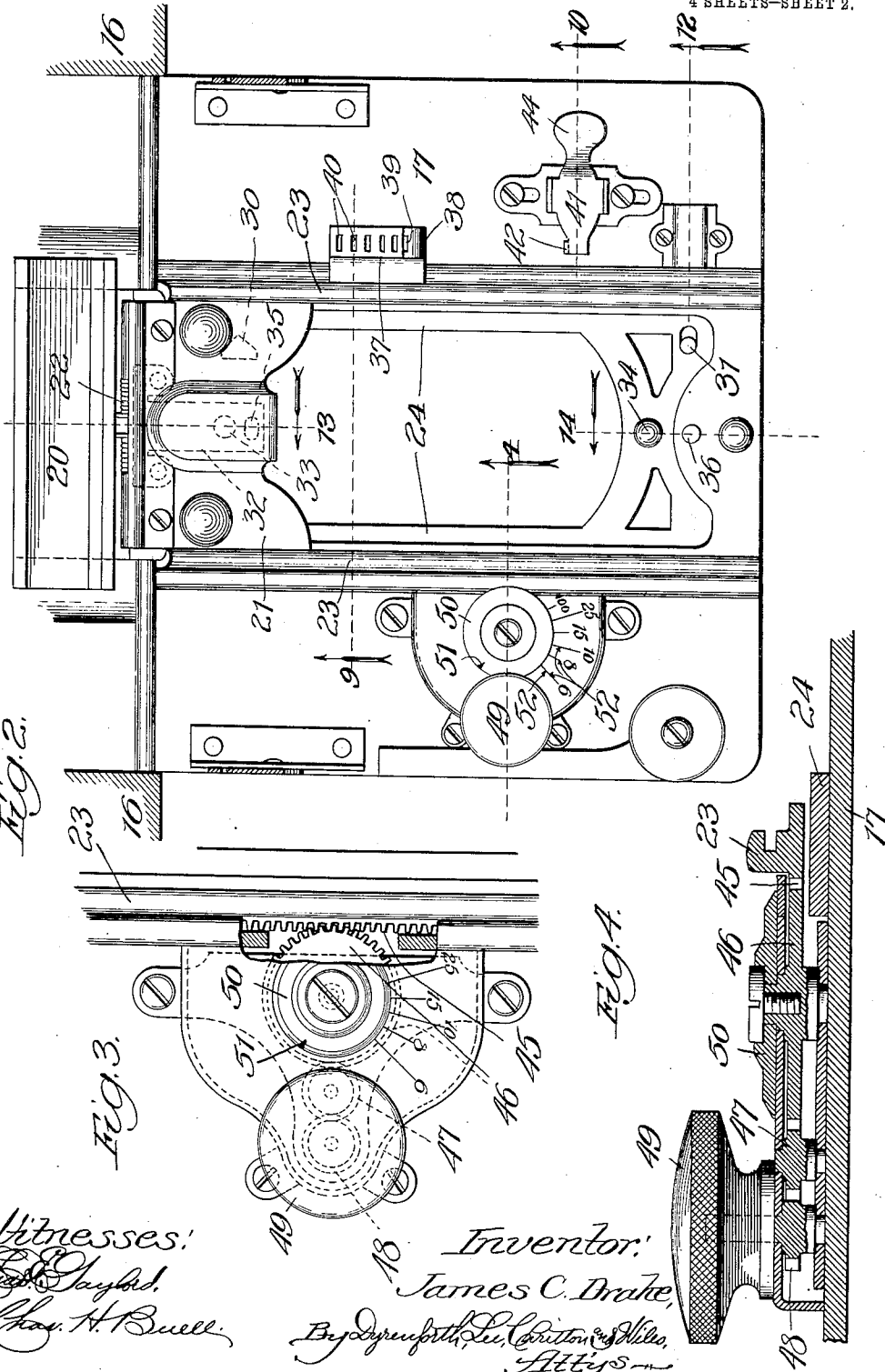
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4 SHEETS—SHEET 2.



Witnesses:
E. C. Gaylord,
Chas. H. Buell.

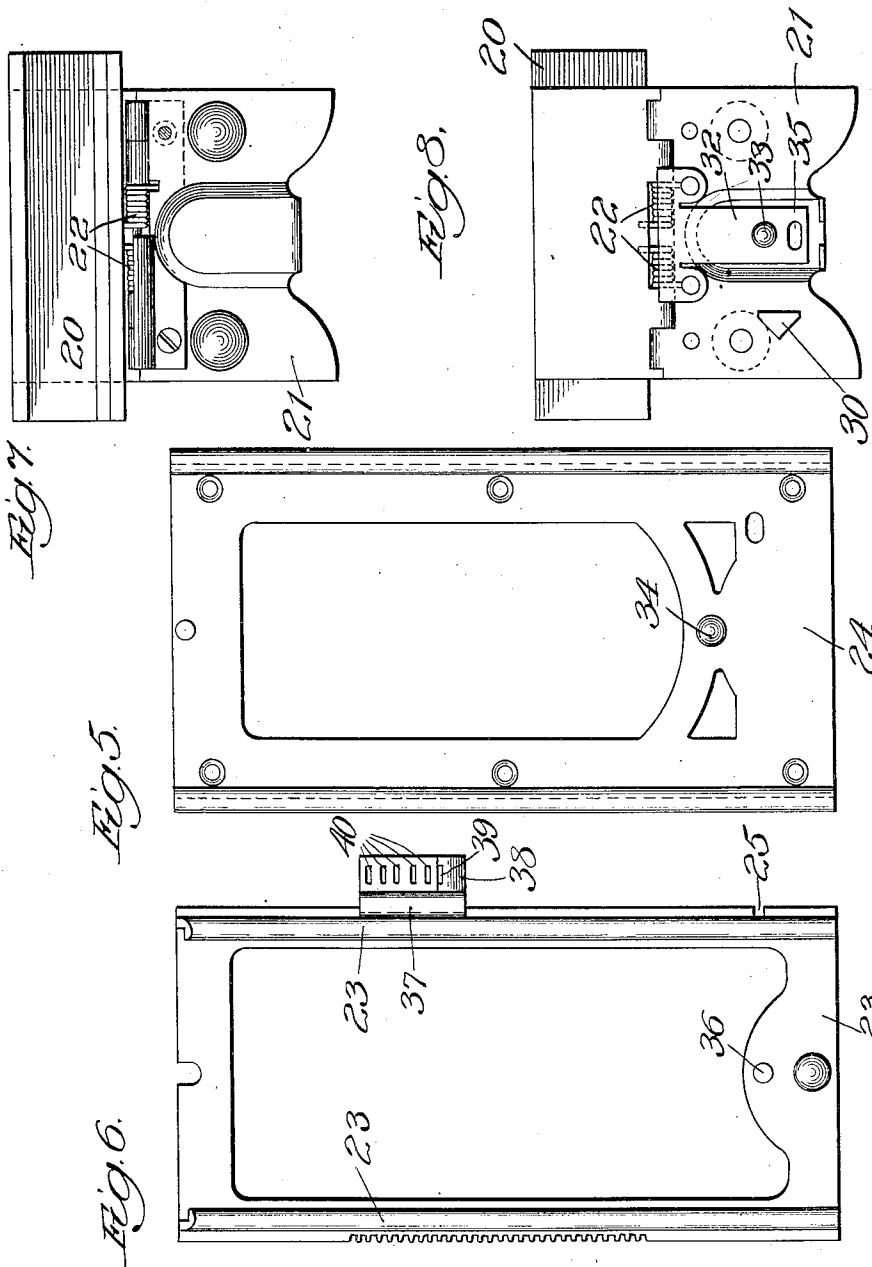
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4 SHEETS—SHEET 3.



Witnesses:
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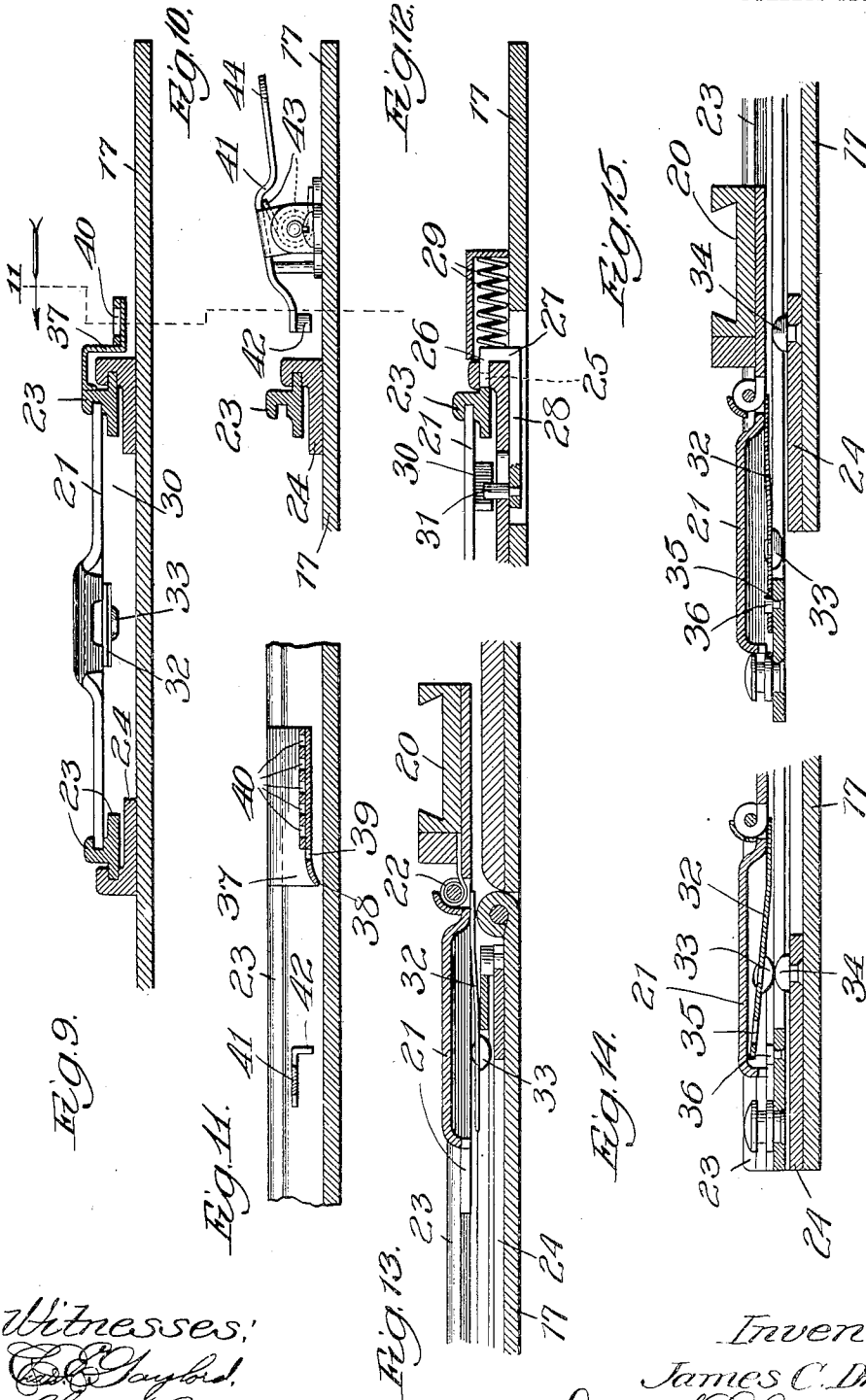
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4 SHEETS—SHEET 4.



Witnesses:
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UNITED STATES PATENT OFFICE.

JAMES C. DRAKE, OF ROCHESTER, MINNESOTA, ASSIGNOR TO CONLEY CAMERA COMPANY, OF ROCHESTER, MINNESOTA, A CORPORATION OF MINNESOTA.

CAMERA.

1,127,870.

Specification of Letters Patent.

Patented Feb. 9, 1915.

Application filed September 30, 1913. Serial No. 792,639.

To all whom it may concern:

Be it known that I, JAMES C. DRAKE, a citizen of the United States, residing at Rochester, in the county of Olmsted and State of Minnesota, have invented a new and useful Improvement in Cameras, of which the following is a specification.

My invention relates to certain new and useful improvements in cameras and is fully described and explained in the specification and shown in the accompanying drawings, in which—

Figure 1 is a front elevation of my improved camera in open position; Fig. 2 is a plan of the hinged front and parts mounted thereon with the bellows-front pushed back; Fig. 3 is a detail view of the racking mechanism; Fig. 4 is a section on the line 4 of Fig. 2; Fig. 5 is a plan of the stationary guide-plate; Fig. 6 is a plan of the extension track which runs therein; Fig. 7 is a top plan of the shoe and its adjacent parts; Fig. 8 is a bottom plan of the parts shown in Fig. 7; Fig. 9 is a section on the line 9 of Fig. 2; Fig. 10 is a section on the line 10 of Fig. 2; Fig. 11 is a section on the line 11 of Fig. 9; Fig. 12 is a section on the line 12 of Fig. 2; Fig. 13 is a central longitudinal section on the line 13 of Fig. 2; Fig. 14 is a section on the line 14 of Fig. 2, showing the shoe drawn forward and about to engage the extension track, the parts of the shoe being of course shown on the same section as in Fig. 13, and Fig. 15 is a section on the same line, but showing the shoe and extension track moved forward with the shoe engaging the track.

Referring to the drawings, 16 is a camera box of usual form and provided with a downwardly-opening bed 17 hinged along the lower longitudinal edge of the box and adapted, when swung up, to close the opening in the front thereof.

18 is a bellows-front carrying the lens and shutter and mounted for vertical adjustment in a U-shaped member 19. This furnishes a rising and falling front when the camera is placed in its normal position. The U-shaped member 19 is mounted and capable of lateral adjustment in a guide 20, longitudinally movable for focusing purposes through the mechanism hereinafter to be described, said guide serving as a means for supporting the front of the bellows and,

by means of the adjustment shown for supplying the rising and falling front when the camera is used with its length vertical. The guide 20 is hinged to a shoe 21, a spring 22 tending to hold the shoe extended in the plane of the guide. When the camera is closed up, the guide rests within the box proper while the shoe remains on the bed, as shown in Fig. 2, and this spring therefore operates as means for swinging down the bed from its position closing the front of the camera to that which it occupies in use.

The shoe 21 is movable in a track 23 shown in Fig. 6, the track in turn resting on a guide-plate 24 fixed on the bed. The guide-plate is shown in Fig. 5 and the relative positions of the shoe, track and guide-plate are shown in Fig. 9. When the shoe is pushed back, the track is locked in a stationary position by mechanism best shown in Fig. 12. The track has on one edge a notch 25 (Fig. 6) which is adapted to be engaged by an inwardly-turned end 26 on an upward projection 27 of a track-latch 28. The track-latch is normally held in by a spring 29 and it is adapted to be automatically disengaged by the forward movement of the shoe. The shoe carries on its lower surface a cam 30 (Figs. 8 and 12) which, when the shoe moves forward, strikes a pin 31 on the track-latch to force the same outward, thus releasing the track. At the moment when the track is thus unlocked, so as to be capable of longitudinal movement, the shoe locks to the track. The mechanism for accomplishing this result and its mode of operation is best shown in Figs. 13, 14 and 15. The shoe has on its lower surface a spring 32 having a downward rounded projection or button 33 adapted to engage, as the shoe moves longitudinally, a stationary button 34 on the guide-plate. Just as the track is being unlocked from the guide-plate, the button 33 on the shoe-spring runs over the button 34 so as to elevate the end of the spring 32. At this moment, the track is disconnected both from the bed-plate and the shoe. Backward movement of the shoe will permit the track-latch to operate, while forward movement permits the button 33 to run past the button 34, so that an opening 35 in the forward end of the spring 32 slips over the

head of a pin 36 locking the shoe and track together. This locking is not vitally essential in the forward movement of the shoe and track, but it is of great importance nevertheless, because through it, when the shoe is moved back it carries the track with it until the track is again locked to the bed-plate. Thus the track, during the further backward movement of the shoe, necessarily occupies its rearmost position so as properly to guide the shoe throughout its movement into a proper position for closing up the camera.

When the lens has been drawn forward to the proper position for the making of an exposure at infinity, the track is automatically locked against further movement by the mechanism best shown in Figs. 9, 10 and 11. The track carries a laterally projecting stop-plate 37, having a downwardly-turned beveled end 38 and a series of perforations 39, 40. The first perforation 39, it will be seen from Fig. 11, is at a lower level from the remainder and the purpose of this arrangement will presently appear. Pivotaly mounted to one side of the track guide is a stop 41 having at its inner end a downwardly-turned finger 42 adapted to engage with any of the perforations 39, 40, and to rise against the action of a spring 43 over the beveled end 38 of the stop-plate. Thus, in an obvious manner, when the track moves forward to the proper position, its further forward movement is arrested and the stop is so placed that it acts for the first time when the lens is substantially at the focal length from the sensitive plate. When it is desired to take pictures at other distances the stop is disengaged by depressing its free end 44 whereupon the track is adjusted to the proper position for the desired distances and the stop again allowed to come into action. The perforations 40 in this stop-plate are so positioned that when the stop engages each of them the focus corresponds to the several distances marked upon the focusing scale hereinafter to be described.

Easy focusing is attained by the rack and pinion arrangement best shown in Figs. 2, 3 and 4. One side of the track is formed with rack-teeth 45 engaged by a pinion 46. This pinion is engaged by an intermediate pinion 47, in turn engaged by an operating pinion 48, upon the arbor of which is mounted a thumb-piece or handle 49. The pinion 46 carries on the upper end of its arbor a disk 50 marked with an index 51 adapted, as the pinion 46 rotates, to register successively with the various marks on a focusing scale 52 arranged circumferentially about said disk 50.

From the foregoing description of the construction it is believed that the operation will be entirely apparent. The advantages of the construction lie partially in the simple

and efficient arrangement and partially in the new method of manipulation. In a camera of the type herein shown where the hinge of the bed-plate is along the longer edge of the camera box, the bed-plate is necessarily quite short and the extension track is a practical necessity. The arrangement in method of manipulating a camera with the extension track has been reduced to very simple form in the structure herein shown. This method of opening a camera is most desirable because it gives a flat base upon which the camera can be set.

I am aware that considerable variation is possible in the details of the present construction without departing from the spirit thereof, and I do not intend therefore to limit myself thereto, except as pointed out in the following claims, in which my intention is to claim all the novelty inherent in the construction as broadly as is permitted by the state of the art.

I claim as new and desire to secure by Letters Patent—

1. In a camera, a bed-plate, an extension track, a shoe adapted for attachment to the lens mount and running in the track, means normally to lock the track to the bed-plate and to release the same and automatically lock it to the shoe as the latter moves forward.

2. In a camera, a bed-plate, an extension track, a shoe adapted for attachment to the lens mount and running in the track, means normally to lock the track to the bed-plate, means carried by the shoe to release said track, locking means as the shoe advances, and means automatically to lock the shoe to the track when freed from the bed-plate.

3. In a camera, a bed-plate, an extension track, a shoe adapted for attachment to the lens mount and running in the track, a spring-pressed track-latch in the bed-plate to engage the track, means carried by the shoe to release said track-latch as the shoe advances, and means automatically to lock the shoe to the track when freed from the bed-plate.

4. In a camera, a bed-plate, an extension track, a shoe adapted for attachment to the lens mount and running in the track, a spring-pressed track-latch in the bed-plate to engage the track, a cam on the shoe to engage the track-latch to release the same as the shoe advances, and means automatically to lock the shoe to the track when freed from the bed-plate.

5. In a camera, a bed-plate, an extension track, a shoe adapted for attachment to the lens mount and running in the track, means normally to lock the track to the bed-plate, means carried by the shoe to release the track-locking means as the shoe advances, a spring on the shoe perforated to engage a pin on the track, and parts on the spring

and bed-plate to flex the spring and to permit it to engage when the track is freed from the bed-plate.

5 6. In a camera, a bed-plate, an extension track, a shoe adapted for attachment to the lens mount and running in the track, a spring-pressed track-latch on the bed-plate to engage the track, a cam on the shoe to engage the track-latch to release the same
10 as the shoe advances, a spring on the shoe perforated to engage a pin on the track, and parts on the spring and bed-plate to flex the spring and to permit it to engage when the track is freed from the bed-plate.

15 7. In a camera, a bed-plate, an extension track, a shoe adapted for attachment to the lens mount and running in the track, means normally to lock the track to the bed-plate and to release the same and automatically
20 lock it to the shoe as the latter moves forward, and means to lock the track to the bed-plate a second time when the lens is drawn forward to the proper distance for making an exposure.

25 8. In a camera, a bed-plate, an extension track, a shoe adapted for attachment to the lens mount and running in the track, means normally to lock the track to the bed-plate and to release the same and lock it to the
30 shoe as the latter moves forward, and a releasable catch on the bed-plate to engage the track to lock the same in a series of positions in which the lens occupies its proper positions for a series of exposures at
35 varying distances.

9. In a camera, a bed-plate, an extension track, a shoe adapted for attachment to the lens mount and running in the track and adapted to engage the same in a fixed re-

40 lation thereto, rack-teeth on the edge of the track, a pinion parallel to the bed-plate and mounted on an axis perpendicular thereto and engaging the rack-teeth, and a focusing scale cooperating with the pinion.

45 10. In a camera, a bed-plate, an extension track, a shoe adapted for attachment to the lens mount and running in the track and adapted to engage the same in a fixed relation thereto, rack-teeth on the edge of the track, a pinion parallel to the bed-plate
50 and mounted on an axis perpendicular thereto and engaging the rack-teeth, a focusing scale cooperating with the pinion, a driving pinion and an intermediate pinion between the driving pinion and the
55 track-engaging pinion.

11. In a camera, a bed-plate, an extension track, a shoe adapted for attachment to the lens mount and running in the track, and adapted to be locked to the same in a fixed
60 position with reference thereto, rack-teeth on the edge of the track, a pinion parallel to the bed-plate and rotatable on an axis perpendicular thereto and engaging the rack-teeth on the track, a focusing scale
65 cooperating with the pinion, and a releasable catch on the bed-plate to engage the track and lock the same in a series of positions in which the lens occupies its proper positions for a series of exposures corre-
70 sponding to the positions indicated by the focusing scale.

In testimony whereof I have hereunto set my hand this 28 day of July, 1913.

JAMES C. DRAKE.

In presence of two subscribing witnesses:

M. E. SWEANY,
F. M. NEEDHAM.