G. D. CLARDY.

CAMERA.

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1,318,966.

Patented Oct. 14, 1919.

2 SHEETS—SHEET 1.

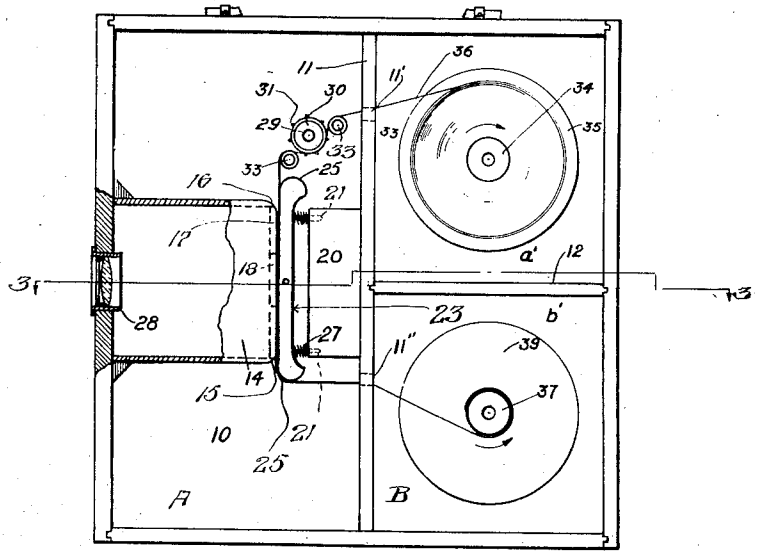


Fig. 1.

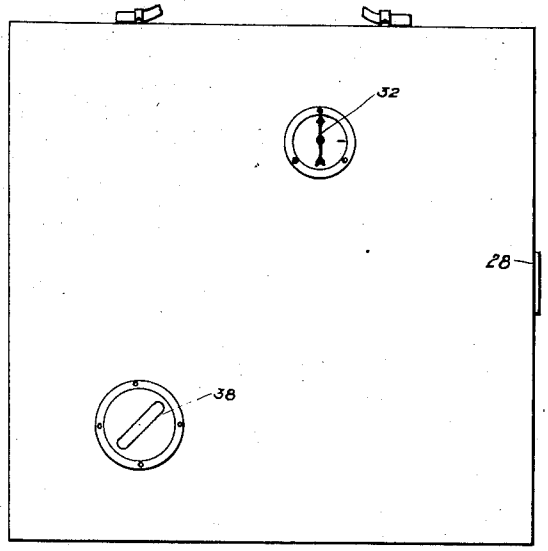


Fig. 2.

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CAMERA.

1,318,966. Specification of Letters Patent. Patented Oct. 14, 1919.

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To all whom it may concern:

Be it known that I, GEORGE D. CLARDY, a citizen of the United States, and a resident of New York, in the county of New York and State of New York, have invented new and useful Improvements in Cameras, of which the following is a specification.

My invention relates to cameras.

An important object of the invention is to provide in a device of the above mentioned character a means whereby a moving picture film of any desired length may be employed to receive thereupon a plurality of exposures.

A further object of the invention is to provide in a device of the above mentioned character a means whereby the exposed areas of the film may be uniformly spaced one from the other when made upon the film.

A further object of the invention is to provide in a device of the above mentioned character a means whereby the film may be effectively guided in its course of travel within the device as a whole.

A further object is to provide a device of the above mentioned character which is simple in construction, inexpensive to manufacture, strong, durable, and reliable in operation.

Other objects and advantages of the invention will be apparent during the course of the following description.

In the accompanying drawings forming a part of this specification and in which like numerals are employed to designate like parts throughout the same,

Figure 1 is a side view showing the interior of the device embodying the invention,

Fig. 2 is a side elevation of the same.

Fig. 3 is a horizontal sectional view of Fig. 1 taken on the line 3—3,

Fig. 4 is a perspective view of a light box, and

Fig. 5 is a perspective view of a pressure gate.

In the drawings, wherein for the purpose of illustration is shown a preferred form of my invention, the numeral 10 indicates a casing divided into sections A and B by means of a vertically disposed wall or partition 11 provided with apertures 11′ and 11″. The section B, as shown, is divided into compartments *a* and B′ by means of a horizontally disposed partition 12. The casing 10 is provided with a removable closure indicated by the numeral 13.

Within the section A there is provided a light box 14 the horizontal edges or corners at the rear of the same being rounded as shown at 15 and 16. The rear end 17 of the box is provided with an opening 18 and a pair of vertical grooves 19 arranged parallel with respect to each other as clearly shown in Fig. 4. To the partition 11 at the rear of the light box 14 there is secured a block 20 provided therein with a plurality of openings 21 each of which is adapted to receive a tongue 22 carried by a pressure gate indicated as a whole by the numeral 23 which comprises an elongated plate 24 the transverse edges of which are rounded as shown at 25. In proximity to the longitudinal edges of the plate 24 there is secured a pair of beads 26 which are arranged parallel with respect to each other and adapted to enter the elongated grooves 19 carried by the light box 14 hereinbefore described. Around each of the tongues 22 is coiled a compressible spring 27, one end of which engages the face of the pressure gate while the other end engages the face of the block 20 as clearly shown in Fig. 1. These springs are adapted to maintain the pressure gate 23 normally in engagement with the rear end of the box 14. The casing 10 is provided at one end thereof with the conventional form of lens indicated as a whole by the numeral 28 and is adapted to direct light rays into the light box 14 in a manner and for a purpose as will hereinafter be described. This lens structure 28 is provided with any suitable shutter mechanism of the conventional form as is ordinarily employed in the construction of photographic cameras.

Within the section A there is journaled a shaft 29 having secured thereto a sprocket 30 carrying eight sprocket teeth 31. The shaft 29 is positively connected with a pointer 32 carried exteriorly to the casing 10, the function of which will be hereinafter described when considering the operation of the device as a whole. In proximity to the sprocket 31 there is journaled within the section A a pair of rotatable rollers 33.

Within the compartment *a* there is pro-

vided a shaft 34 upon which a stock-reel 35 is adapted to be loosely mounted. This reel is designed to carry a length of unexposed motion picture film 36, preferably fifty feet in length.

Within the compartment *b* there is journaled a rotatable shaft 37 having positive connection with a thumb key 38 carried exteriorly to the casing 10 as shown in Fig. 2. The shaft 37 is adapted to receive thereupon a receiving-reel 39 which is adapted to rotate with the shaft 37 as will hereinafter be described.

In use, the operation of the device is as follows: The stock-carrying film reel 35, assuming that the closure 13 is removed as shown in Fig. 1, is placed upon the shaft 34 within the compartment *a*. The unexposed film 36 is passed through the aperture 11′, over the first roller 33, under the sprocket 30, over the second roller 33, between the rear end 17 of the light box and the pressure gate 23, through the aperture 11″, and into the compartment *b* whereupon the end of the film is secured by any suitable means to the film receiving reel 39 as shown. The closure 13 is then placed upon the casing 10 in the position shown in Fig. 3. The exposure is then made upon that portion of the film 36 which covers the opening 18 in the usual manner through the lens 28. The thumb key 38 is then turned in a clockwise direction, as shown in Fig. 2, thereby rotating the film-receiving reel 39 in the direction indicated by the arrow of Fig. 1, whereupon that portion of the film 36 which has previously been exposed is moved onwardly in the direction of line of travel of the film 36 as indicated by the arrow of Fig. 1 and a new or unexposed portion of the film is brought opposite the opening 18 of the light box 14. It might be well for me to state here that the ordinary motion picture film is provided near its longitudinal edges with apertures, four apertures being provided at each longitudinal edge to every three-fourths of an inch of the film or eight to every one and one-half inches of film. I have therefore provided the sprocket 30 with eight teeth which are, it is understood, adapted to enter successively the apertures carried by the motion picture film. By turning the thumb key 38 until the pointer 32 has made one complete revolution I am enabled to determine exactly when an inch and one-half of the film has been wound upon the film-receiving reel 39 regardless of the changing diameter of the exposed roll of film carried by the film-receiving reel 39. I form the opening 18 preferably an inch wide, this being the width of the ordinary motion picture film exclusive of the apertured longitudinal edges. In order to allow an unexposed margin between each exposed portion of the film I form the opening 18 one and five-sixteenths inches in length which will, as may be readily understood, leave three-sixteenths of an inch of every one and one-half inches of film passed over the opening 18 in an unexposed condition, thereby providing the heretofore mentioned margin of three-sixteenths of an inch. In order to make these intermittent exposures throughout the entire length of the film 36 the above described portions are necessary. When the entire film has been exposed the film-receiving reel 39 may be removed from the compartment B′ and developed in the usual manner. Should it be desired, however, to expose and then develop only a portion of the film 36, that portion which has been exposed may be severed from the remainder of the film, removed from the compartment B′ and developed in the usual manner, it being understood that the end of the remaining portion left within the device may be attached to a film-receiving reel 39 and operated upon as hereinbefore described when considering the operation of the device as a whole.

It is to be understood that various changes in the shape, size, and arrangement of parts may be resorted to without departing from the spirit of my invention or the scope of the subjoined claims.

Having thus described my invention, what I claim as new and desire to secure and protect by Letters Patent of the United States, is:

1. A device of the character described comprising a casing adapted to receive therein a film, a light box having an opening therein and adapted to receive light rays, said box being provided with a pair of parallel grooves, a pressure gate adapted to normally retain the film in engagement with the light box, said pressure gate comprising a block having openings therein, a plate provided with a plurality of tongues adapted to enter said openings, a coil spring disposed between said block and plate, said spring being adapted to normally retain said plate in engagement with the film; means for moving the film between said light box and the pressure gate; and means for registering the length of travel of the film therebetween.

2. A device of the character described comprising a casing adapted to receive therein a film, a light box having an opening therein and adapted to receive light rays, said box being provided with a pair of parallel grooves, a pressure gate adapted to normally retain the film in engagement with the light box, said pressure gate comprising a block having openings therein, a plate provided with a plurality of tongues adapted to enter said openings, a coil spring disposed between said block and plate, said spring being adapted to normally retain said plate in

engagement with the film; a plurality of ribs carried by said plate, said ribs being adapted to enter the grooves carried by said light box; and means for registering the length of travel of the film.

3. A device of the character described comprising a casing adapted to receive therein a film, a light box having an opening therein and adapted to receive light rays, said box being provided with a pair of parallel grooves, a pressure gate adapted to normally retain the film in engagement with the light box, said pressure gate comprising a block having openings therein, a plate provided with a plurality of tongues adapted to enter said openings, a coil spring disposed between said block and plate, said spring being adapted to normally retain said plate in engagement with the film; means for moving the film between the light box and pressure gate, and registering means for determining the length of that portion of the film which has been moved, said registering means comprising a sprocket having teeth adapted to engage apertures carried by the film and a rotatable pointer adapted to be rotated by said sprocket.

4. A device of the character described comprising a casing adapted to receive therein a film, a light box having an opening therein and adapted to receive light rays, said box being provided with a pair of parallel grooves, a pressure gate adapted to normally retain the film in engagement with the light box, said pressure gate comprising a block having openings therein, a plate provided with a plurality of tongues adapted to enter said openings, a coil spring disposed between said block and plate, said spring being adapted to normally retain said plate in engagement with the film; means for moving the film between the light box and pressure gate, and registering means for determining the length of that portion of the film which has been moved, said registering means comprising a sprocket having teeth adapted to engage apertures carried by the film and a rotatable pointer adapted to be rotated by said sprocket; and means for retaining the motion picture film in engagement with said sprocket.

5. A device of the character described comprising a casing adapted to receive therein a film, a light box having an opening therein and adapted to receive light rays, said box being provided with a pair of parallel grooves, a pressure gate adapted to normally retain the film in engagement with the light box, said pressure gate comprising a block having openings therein, a plate provided with a plurality of tongues adapted to enter said openings, a coil spring disposed between said block and plate, said spring being adapted to normally retain said plate in engagement with the film; and means for moving the film between the light box and pressure gate, and registering means for determinating the length of that portion of the film which has been moved, said registering means comprising a sprocket having teeth adapted to engage apertures carried by the film and a rotatable pointer adapted to be rotated by said sprocket; a plurality of rollers arranged in proximity to said sprocket, said rollers being adapted to retain the motion picture film in engagement with said sprocket.

GEORGE D. CLARDY.