

No. 706,245.

Patented Aug. 5, 1902.

W. LOUDEN.  
ROLL HOLDING CAMERA.

(Application filed Apr. 16, 1902.)

(No Model.)

Fig. 1.

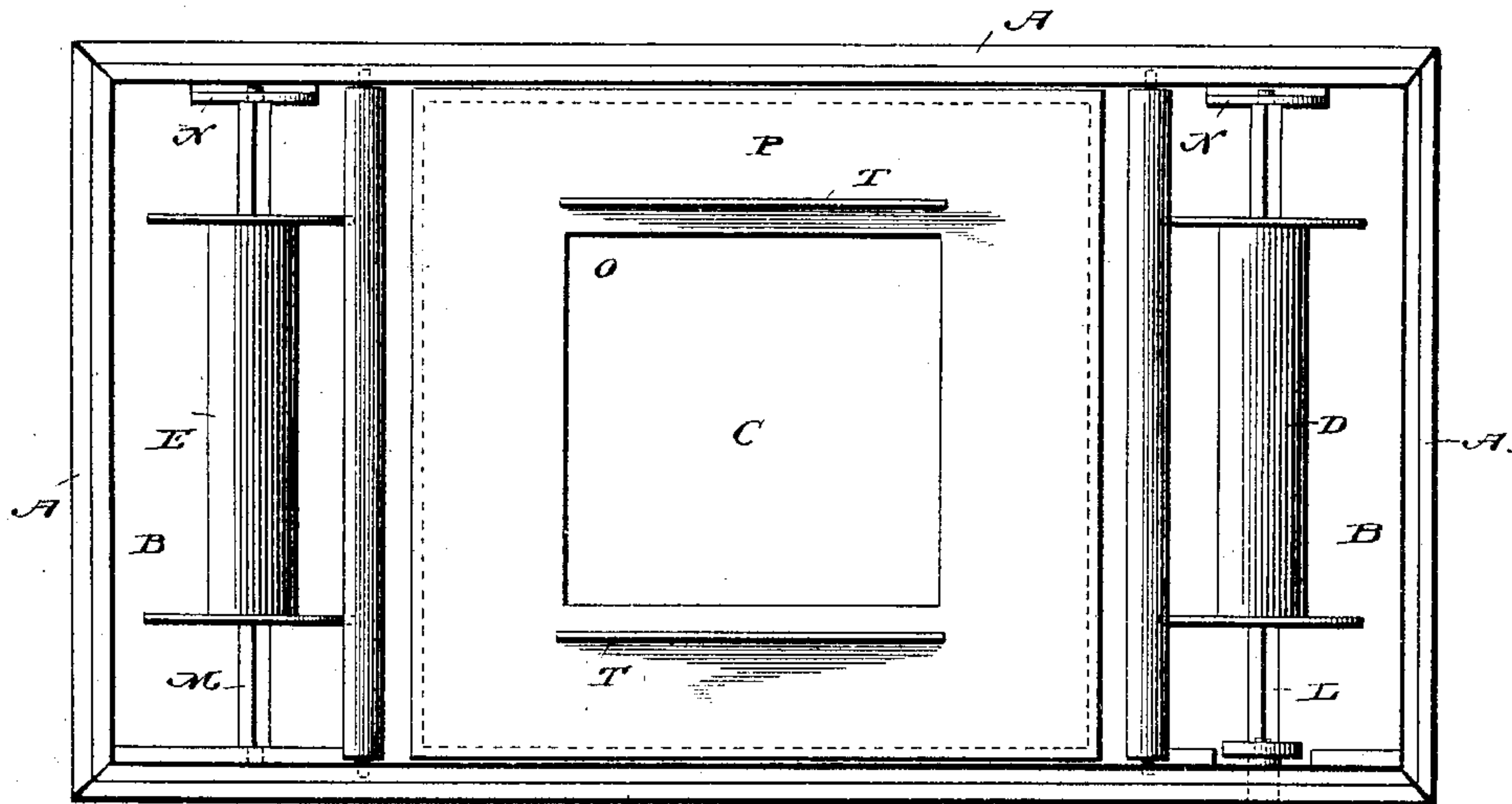


Fig. 2.

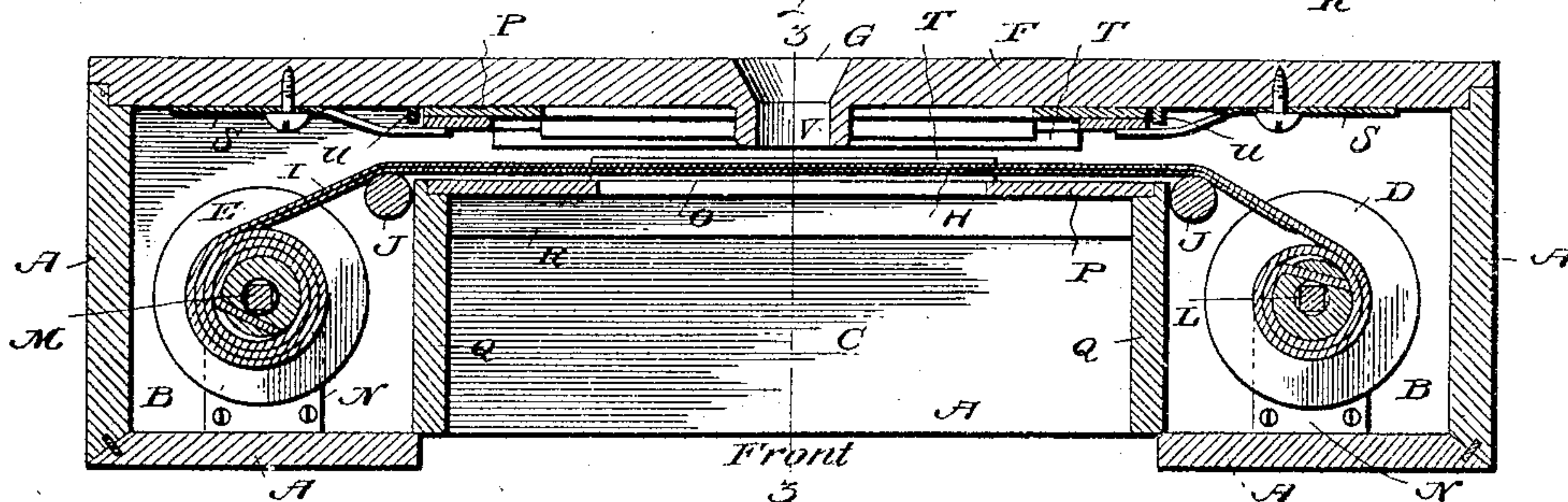


Fig. 3.

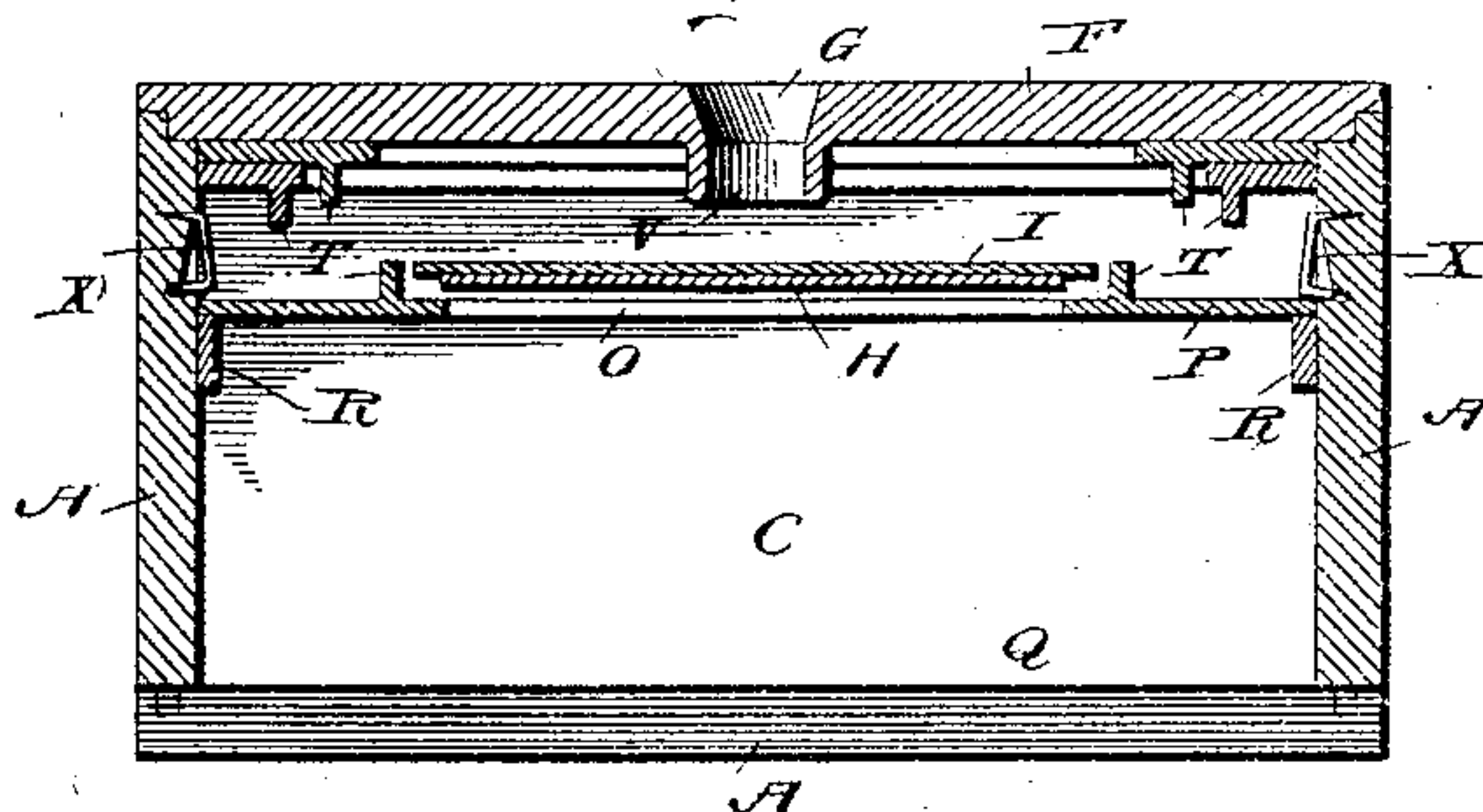


Fig. 4.

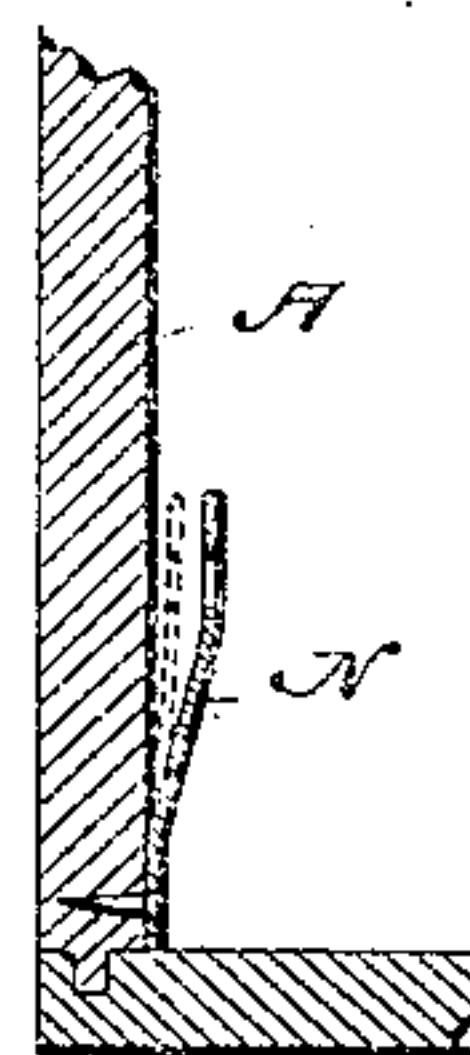


Fig. 5.

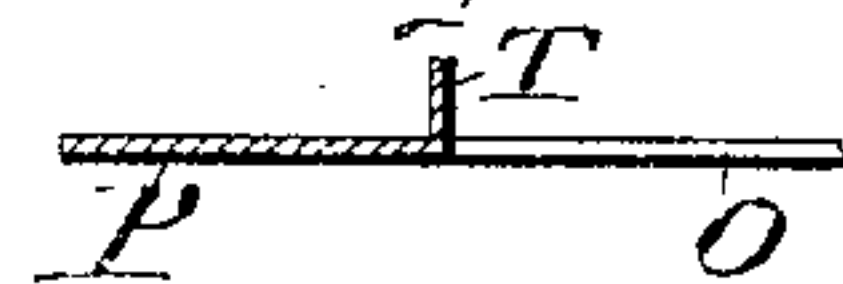


Fig. 6.



Witnesses.

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# UNITED STATES PATENT OFFICE.

WILLIAM LOUDEN, OF FAIRFIELD, IOWA.

## ROLL-HOLDING CAMERA.

SPECIFICATION forming part of Letters Patent No. 706,245, dated August 5, 1902.

Application filed April 16, 1902. Serial No. 103,210. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM LOUDEN, a citizen of the United States, residing at Fairfield, in the county of Jefferson and State of Iowa, have invented certain new and useful Improvements in Roll-Holding Cameras, of which the following is a specification.

My invention relates to that class of roll-holding cameras in which different sizes of films are used and exposures of different sizes are made; and it consists of novel means for accomplishing this result in a manner more simple, convenient, and effective than has hitherto been done, which is fully set out in this specification, and more particularly pointed out in the claims.

In the accompanying drawings, forming a part of this specification, Figure 1 is a rear view of the roll-holding part of a camera embodying my invention, the back being removed and the film and its opaque backing being left out to give a clearer view of the parts. Fig. 2 is a longitudinal section of the same, the back being replaced and the film adjusted to its working position. Fig. 3 is a transverse section on the line 3 3 of Fig. 2. Figs. 4, 5, and 6 are sectional detail views.

In the drawings, A represents the body of the holder, B the usual end compartments containing the film-spools D and E, and C the center compartment containing the field of exposure.

F is the back of the holder, which is made removable and is fitted with the usual sight-hole G.

H is the sensitive film, and I is its opaque backing.

J represents the rollers, over which the film passes in being wound from one spool to the other in passing over the field of exposure, and K is the usual thumb-nut, by means of which the receiving-spool is turned in receiving the film. The thumb-nut is provided with a pawl and ratchet to prevent it from turning backward; but as these devices are common to the art and are fully understood they are not shown in the drawings.

The spindles L and M are made of metal rods or bars, either triangular, square, or oval or such other shape in cross-section as to have sharp longitudinal corners or edges which when passed into the cylindrical bore of the

spools L and M will catch and hold and cause the spools and spindles to turn together. The spindle M has a pinion on each end, which are adapted to turn in suitable bearings in the body of the holder. The spindle K has a similar pinion on one of its ends, and its other end is fitted to connect with the thumb-nut K in the usual manner.

In order to facilitate the insertion and removal of the spindles L and M, I use brackets N, made of spring-plates, secured to the body of the holder by screws, as shown, or by other suitable fastenings. These brackets are fitted with holes to receive one end of the spindles and to hold them in position while being turned to transfer the film from the delivering-spool to the receiving-spool. When inserting or removing a spool, the bracket N is sprung back, as shown by dotted lines in Fig. 4, so that the end of the spindle can be slipped in or out, and when in position the spring of the bracket will securely hold the spindle in position.

The spindles L and M are made of square, triangular, or oval metal, as shown in cross-section in Figs. 2 and 6, or of some other form having angular corners or ribs longitudinally thereon, so as to impinge against or slightly indent the walls of the bore of the spool and hold it in whatever position it may be placed upon the spindle. Fig. 6 shows two views in cross-section of two different-shaped spindles inserted in the bore of a spool, the ring surrounding said sections representing said bore. Therefore spools of any length may be mounted on the spindles and adjusted to any desired part thereon, and they will stay in this position until removed by the operator. Should they become loose by wear or by using spools of different-sized bores, by a little wedging with a sliver of wood or by using other well-known expedients they can be held securely on any desired part of the spindles. By this means spools containing films of different widths can be used up to the full capacity of the holder without any adjustment of the spool-holding devices except to push the spool onto the spindle to the desired location. It is not intended that the bore of the spools shall be the same shape in cross-section as that of the spindles, for in that case the sharp corners on the spindles could not impinge



against or become indented in the wall of the bore, so as to make the spools stick on whatever part of the spindles they may be placed, as contemplated by my invention. As these  
 5 spools are found in market they have cylindrical bores, and this is the preferable form to use with my spindle.

In order to reduce the field of exposure to a size smaller than the full size of the holder,  
 10 I use a plate P, having an opening O in its interior the size of the exposure to be made. I fit the upper ends of the partitions Q with rabbets and place rabbet-strips R on the sides of the body A and make the plates P to fit  
 15 light-tight into these rabbets. The film H, with its opaque backing I, is passed behind this plate, and thus the field of exposure will be reduced to the size of the opening O in the plate P. To hold the plate P securely in position when in use, I affix small spring-catches  
 20 X to the inner sides of the body A, as shown in Fig. 3. When exposures of different sizes less than the full size of the holder are to be made, plates having openings of the desired  
 25 size are inserted. It is evident that a number of different sizes of exposures can be made by having plates with the required size of opening, also that the exposure may be made of any desired shape, as well as size, by making the shape of the opening to suit, and that  
 30 when the operator does not happen to have a plate with the desired size or shape of opening he can generally make one of cardboard, tin, or other suitable material.

Roll-holding cameras have heretofore been made to use films of certain sizes, which sizes are usually kept by dealers in camera supplies wound upon spools ready for insertion in the camera. As thus made only certain  
 40 sizes of pictures can be taken with the camera, and if the proper size of film cannot be obtained the camera cannot be used at all. With my invention all that is necessary is to have a camera large enough for the largest size of  
 45 picture to be taken and then use a film and plate P having an opening to suit it for making the smaller sizes. In case a film of one size cannot be procured a film of another size within the capacity of the camera can be used  
 50 by either having or making a plate with the proper size of opening. Of course it will be understood that when the largest size of film within the capacity of the camera is used the plate P will not be required.

Further, to assist in holding the film and its backing in proper position should the spools by any means become loosened or get shifted on the spindles I form flanges T on the back side of the plate P, between which the film  
 60 and its backing will pass, as shown in Fig. 3. These flanges not only form guides for the film, but also help to shut out any light that might get in through the sight-hole G. They are preferably set back a little from the edges of the  
 65 opening O, so that the opening may be made a shade smaller, or at least no larger than the widths of the film and its backing; but, if de-

sired, they may be made by bending at right angles a portion of the plate adjoining the opening O, as shown in Fig. 5.

To carry the plates P conveniently in the holder when not in use, I place spring-clamps S on the inside of the back F and arrange these clamps to catch and hold one or more of the plates in place, as shown in Fig.  
 75 2. It is preferable to swivel these clamps, so that they may be turned to insert or remove the plates. Small pins or projections U may also be affixed to the back F, so as to prevent the plates from slipping out of position, and  
 80 the openings O being of different sizes the flanges T will nest into each other.

I have shown an extension V surrounding the sight-hole G, which I esteem advantageous, as it may be brought quite close to the  
 85 opaque backing I, and thus effectually shut out whatever light might come in through this hole, and this extension will not be in the way in storing the plates P in the back of the holder, and at the same time the marks  
 90 on the outside of the opaque backing I may be seen to greater advantage.

What I claim is—

1. In a roll-holding camera, a removable plate having an opening in the central part  
 95 of its body, and being adapted to be adjusted in front of the sensitive film for an exposure of reduced size, or to be removed therefrom to permit a full-sized exposure.

2. In a roll-holding camera a series of plates,  
 100 each having a different-sized opening in the central part of its body, each plate being adapted to be adjusted, one at a time, in front of a sensitive film of a size to correspond with the opening in its body, and to be removed there-  
 105 from to permit the use of a different-sized film.

3. In a roll-holding camera having two end compartments for the roll-holding spools, and a central compartment for the field of expo-  
 110 sure, a removable plate having an opening in its body, and being adapted to be adjusted in front of the film and upon the partitions between the compartments so as to effectually shut out the light at the ends of the plate,  
 115 and limit the size of exposure.

4. In a roll-holding camera, a removable plate having an opening in its body adapted to be adjusted in front of the film to regulate the area of the exposure, and flanges on its  
 120 back to guide the passage of the film over said opening.

5. In a roll-holding camera having two end compartments for the roll-holding spools, and a central compartment for the field of expo-  
 125 sure, a removable plate having an opening in its body, and being adapted to be adjusted in front of the film and into rabbets in the edges of the partitions and also in the sides of the body of the camera to shut out the  
 130 light at the edges of the plate and limit the size of exposure.

6. In a roll-holding camera, a removable plate having an opening in its body, adapted



to be adjusted in front of the film to regulate the area of the exposure and means in the body of the holder to the rear of the film for storing the plate when not in use.

5 7. In a roll-holding camera, a series of removable plates, each having an opening of a different size in its body adapted to be adjusted in front of the film to regulate the area of the exposure, and means in the body  
10 of the holder to the rear of the film for storing said plates one being adapted to fit upon another.

15 8. In a roll-holding camera a removable plate having an opening in its body adapted to be adjusted in front of the film to regulate the area of the exposure, and spring-clamps secured to the back of the holder to clamp the plate in position to the rear of the film when not in use.

20 9. In a roll-holding camera having plates, each having an opening in its body for regulating the area of exposure, a back with a sight-hole having an extension on its inner

side, and means for storing said plates on said back so as to surround said extension. 25

10. In a roll-holding camera, metallic spindles adapted to pass into the bore of the roll-holding spools, said spindles having angular corners longitudinally disposed thereon, and said corners being adapted to impinge against  
30 the wall of said bore and hold the spools fixed upon the spindles.

11. In a roll-holding camera, roll-holding spools having cylindrical bores, and metallic  
35 spindles adapted to pass into said bores, said spindles having angular ribs longitudinally disposed thereon and said ribs being adapted to become indented in the wall of the bore and hold the spool fixed thereon.

In testimony whereof I affix my signature 40  
in presence of two witnesses.

WILLIAM LOUDEN.

Witnesses:

V. W. MIDDLETON,  
S. HUTCHINS.