

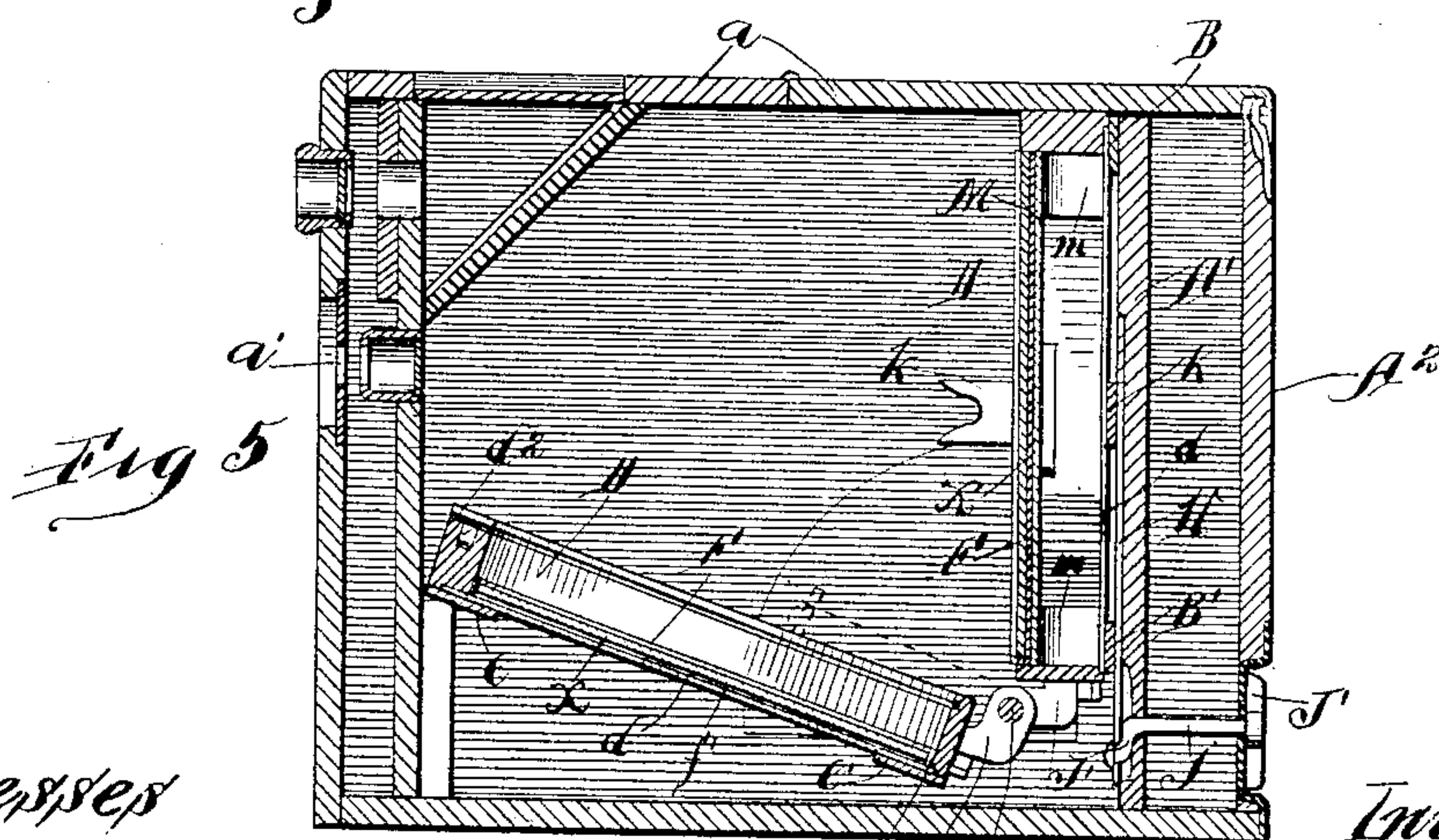
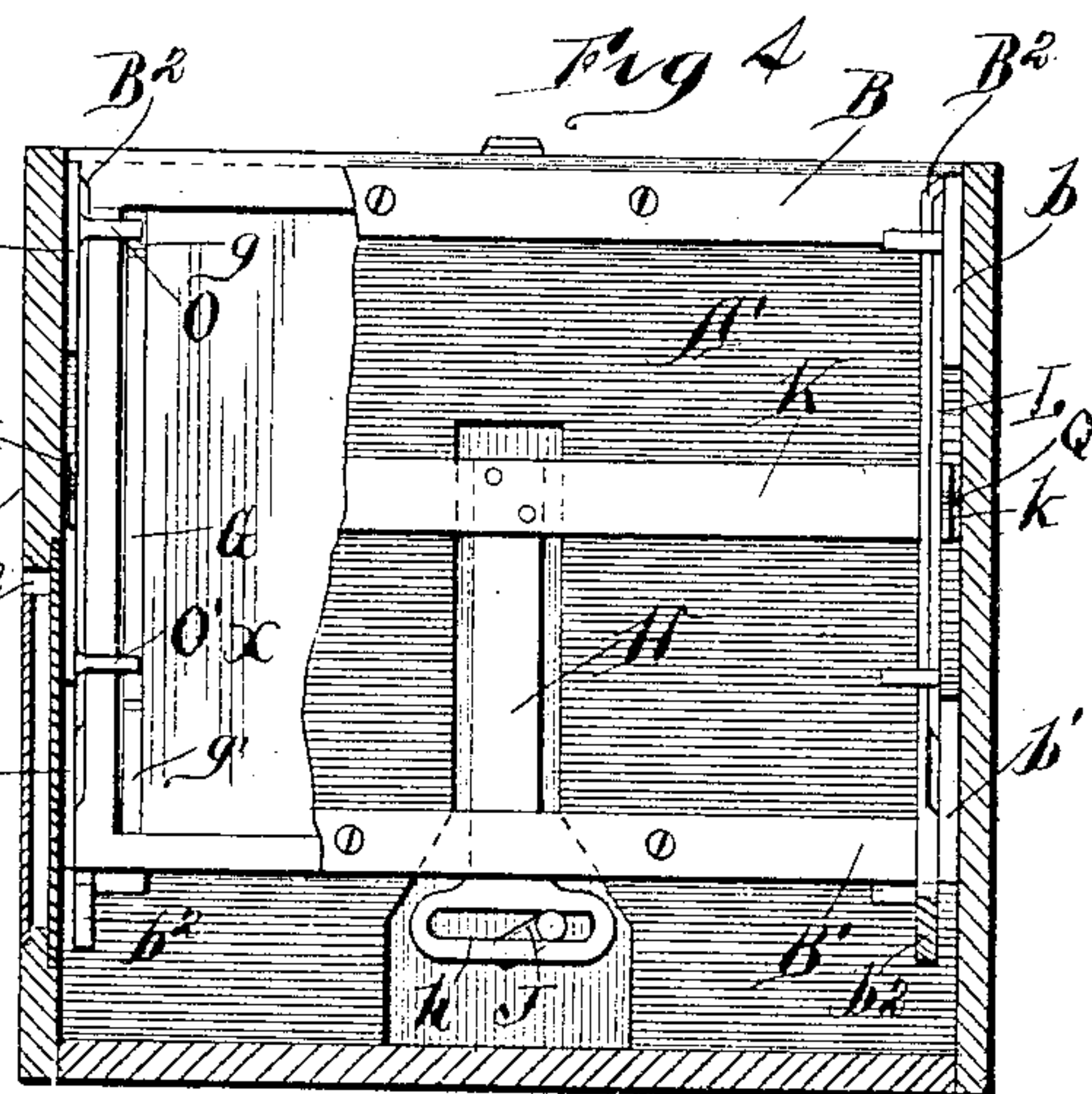
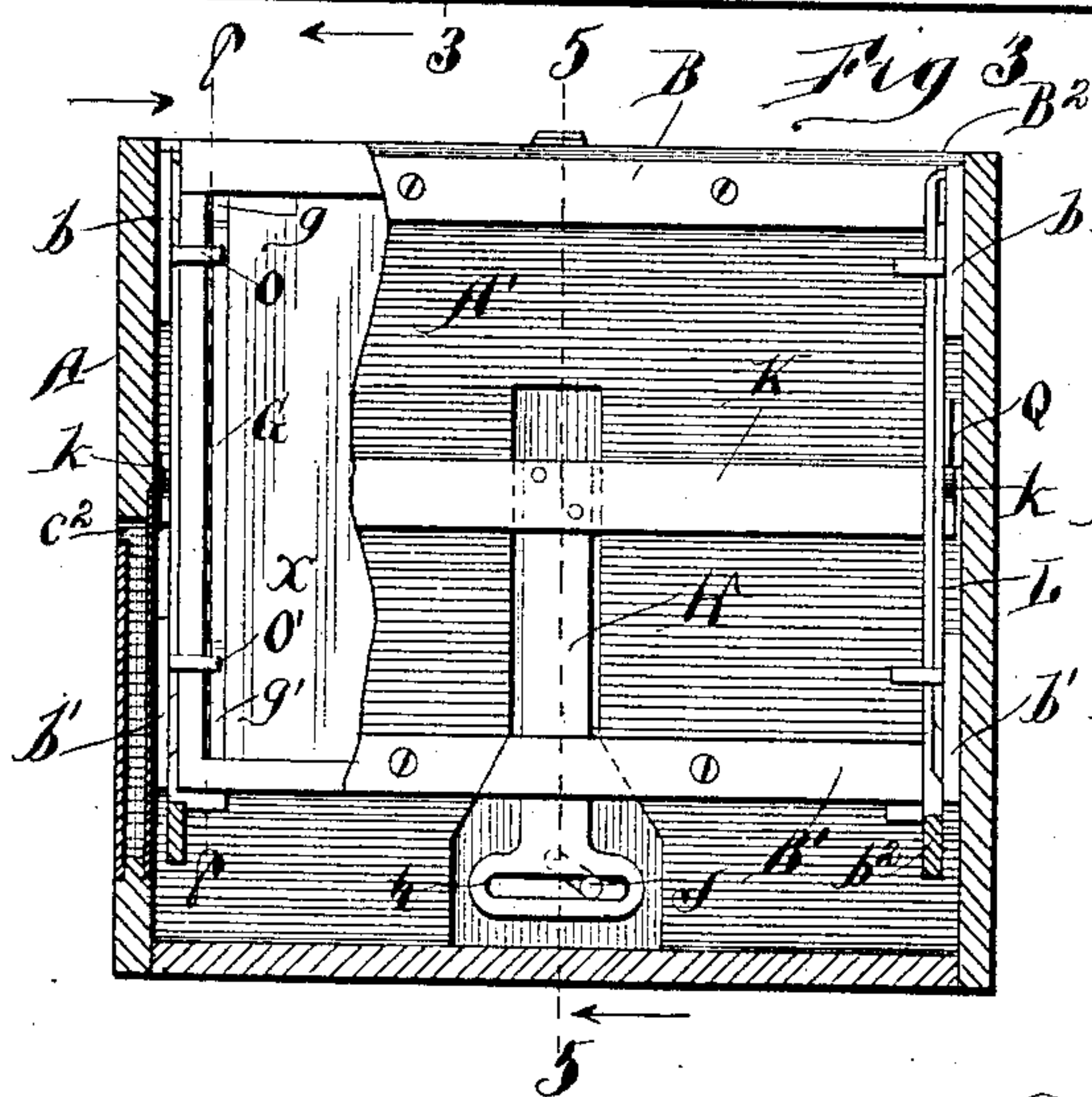
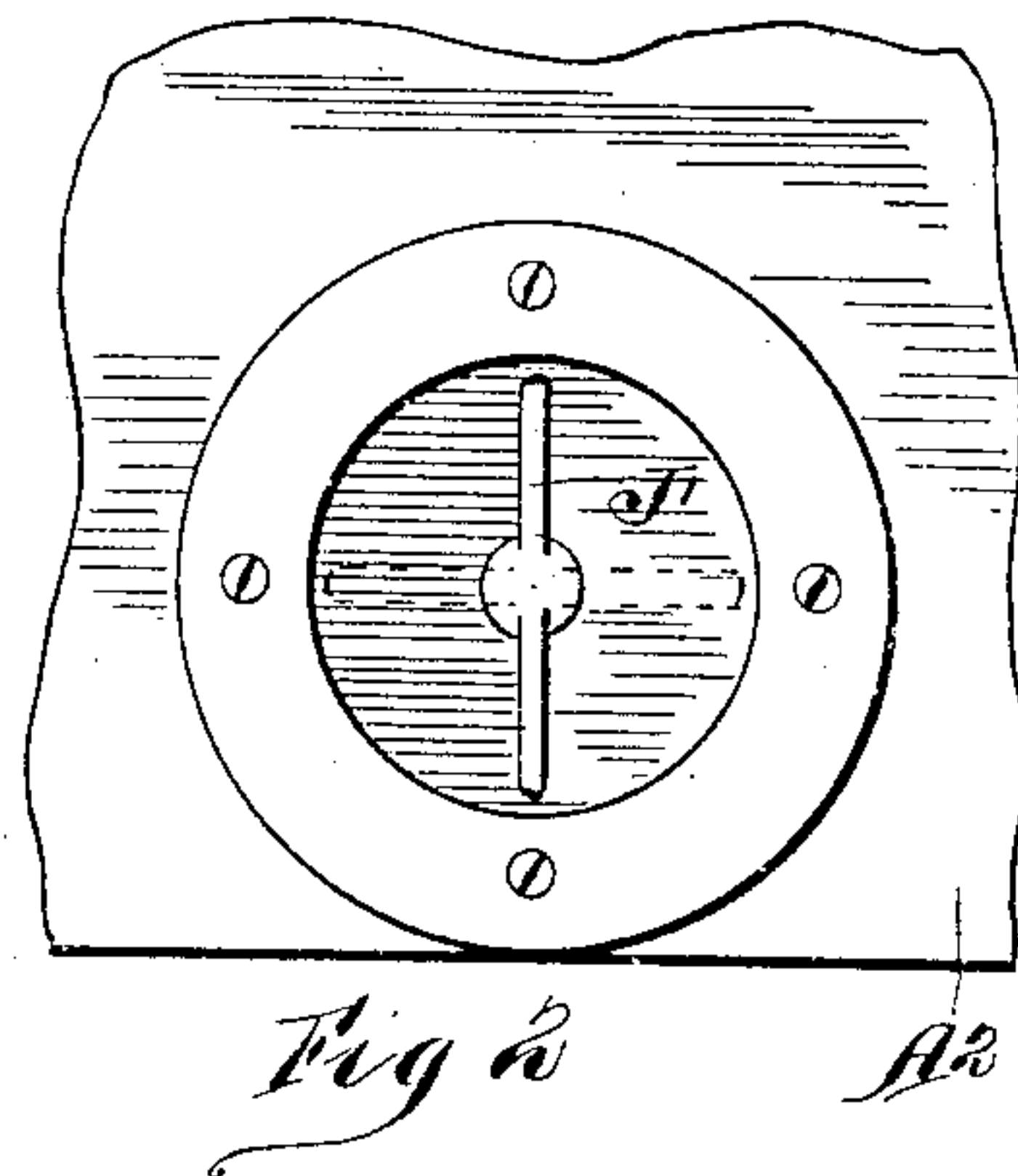
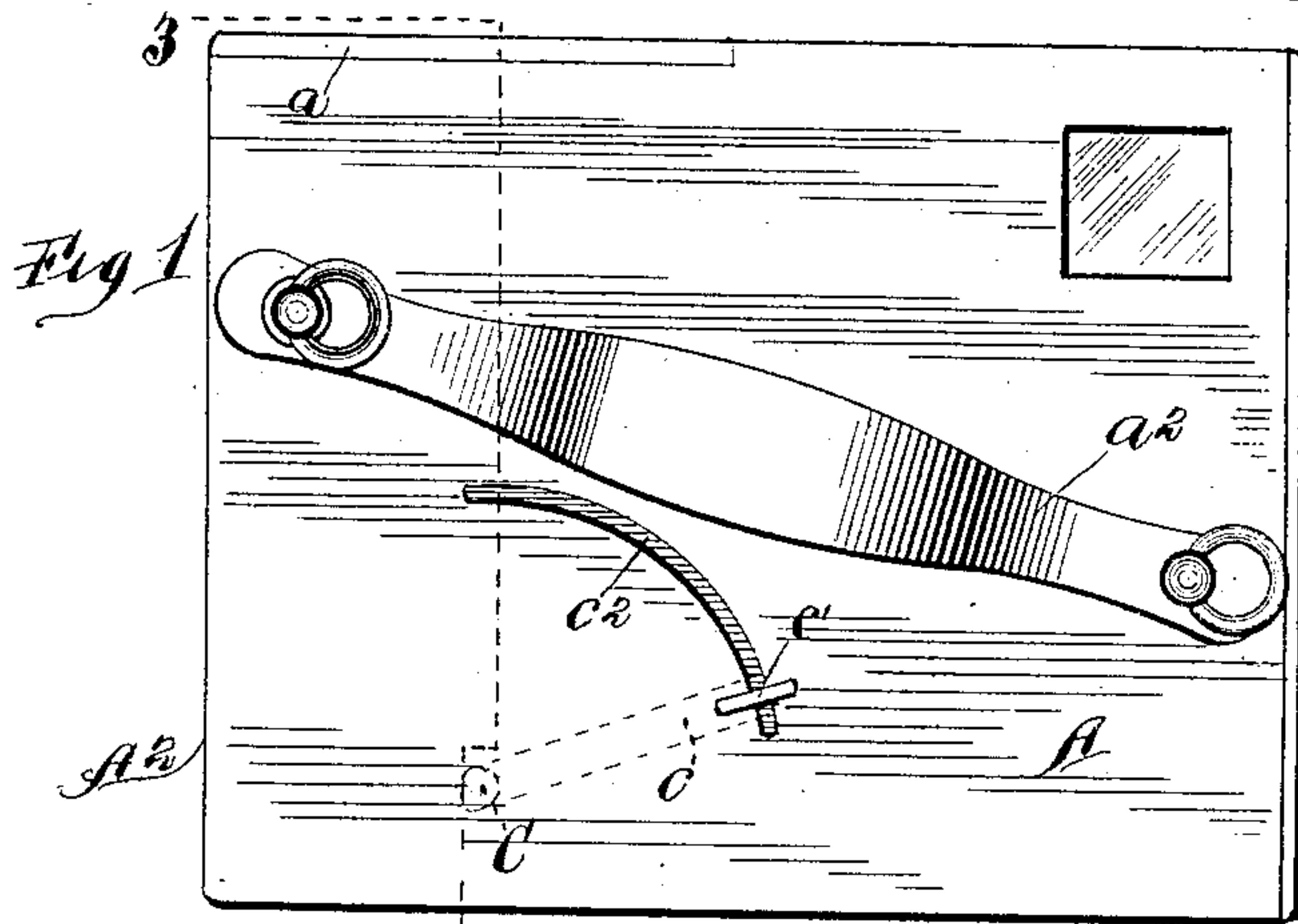
(No Model.)

2 Sheets—Sheet 1.

J. A. MOSHER.
MAGAZINE CAMERA.

No. 599,188.

Patented Feb. 15, 1898.



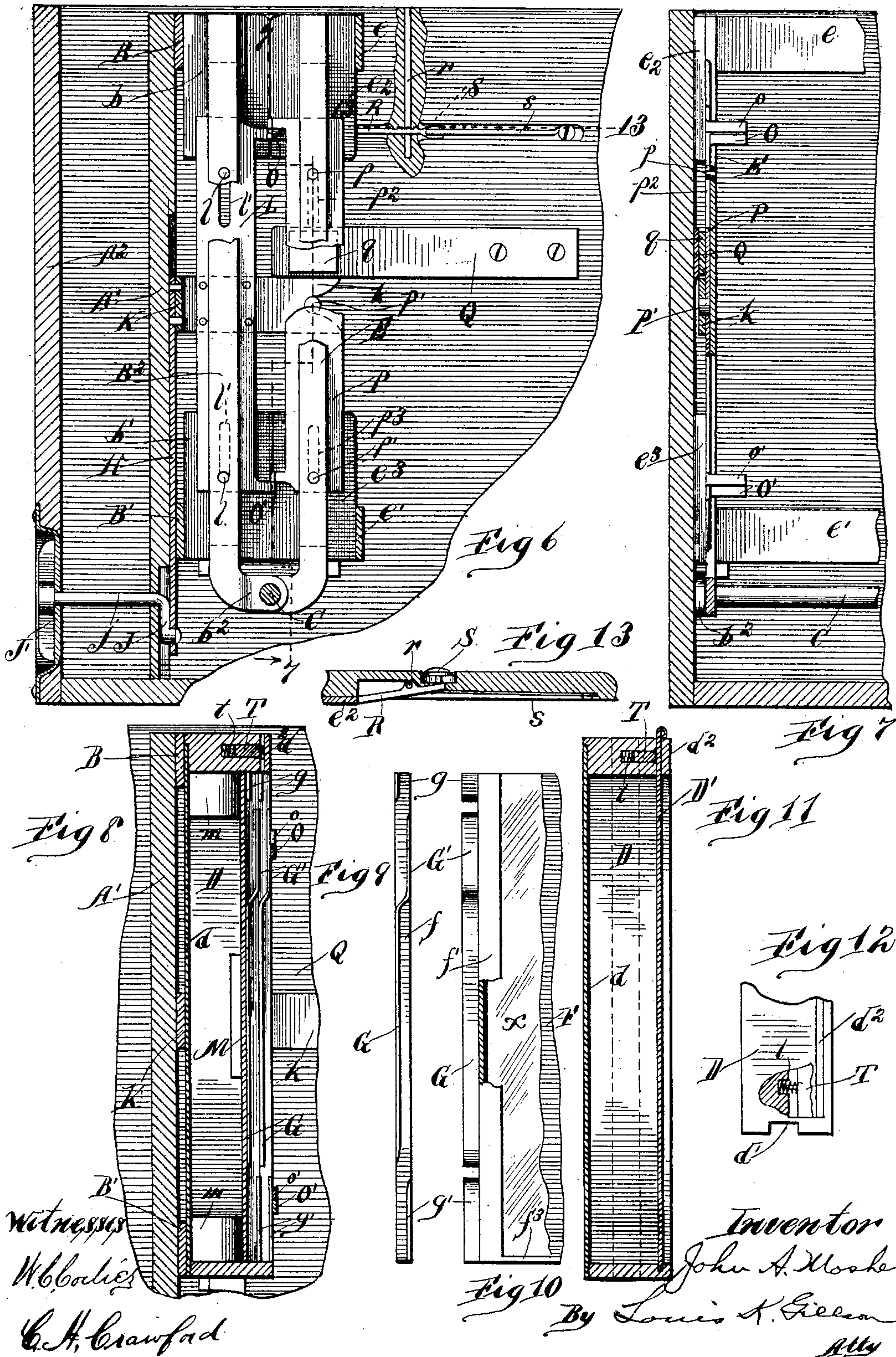
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UNITED STATES PATENT OFFICE.

JOHN A. MOSHER, OF CHICAGO, ILLINOIS, ASSIGNOR TO THE ADAMS & WESTLAKE COMPANY, OF ILLINOIS.

MAGAZINE-CAMERA.

SPECIFICATION forming part of Letters Patent No. 599,188, dated February 15, 1898.

Application filed June 12, 1897. Serial No. 640,497. (No model.)

To all whom it may concern:

Be it known that I, JOHN A. MOSHER, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Cameras; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

The object of this invention is to provide means for introducing into and removing from the camera-case magazines containing sensitized plates in the daylight and to provide for the ready transfer of plates from a holding to a receiving magazine.

The invention consists in the various parts and arrangement of parts, all as hereinafter fully described and as illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation of a hand-camera case. Fig. 2 is a detail elevation of the rear of the case. Fig. 3 is a sectional view on the line 3 3 of Fig. 1. Fig. 4 is a sectional view on the line 3 3 of Fig. 1, with the mechanism shifted from the position shown in Fig. 3. Fig. 5 is a sectional view on the line 5 5 of Fig. 3. Fig. 6 is a detail central vertical longitudinal section, partly broken away. Fig. 7 is a detail section on the line 7 7 of Fig. 6. Fig. 8 is a detail section on the line 8 8 of Fig. 3. Fig. 9 is a side edge of a plate-sheath. Fig. 10 is a detail front elevation of a plate-sheath with the plate. Fig. 11 is a transverse sectional view of one of the magazines. Fig. 12 is a detail plan of the same, and Fig. 13 is a sectional view on the line 13 13 of Fig. 6.

One of the side walls of the camera-case is designated A and is provided with a carrying strap handle a^2 . The lid or door by which access is gained to the interior of the case comprises a section of the top thereof and is marked a . The lens-opening is shown at a' , the rear wall of the case at A^2 , and a transverse partition spaced apart from the rear wall to form therewith a chamber within which

may be stored any of the appurtenances of the camera is designated A' .

A frame for carrying a fixed plate-magazine is secured to the forward side of the partition A' , and consists of an upper and lower transverse bar $B B'$, having their ends turned forwardly and lying against the sides of the case, such forwardly-turned ends being designated, respectively, $b b'$, and a pair of guide-bars B^2 , one upon each side of the case and rigidly fixed to the ends $b b'$ of the bars $B B'$. The lower ends of the guide-bars B^2 are turned forwardly, as indicated at b^2 , and in these ends is journaled a rock-shaft C, one end of which projects through the side A of the case and carries a crank-arm c . The crank-arm c may, if desired, be incased, the casing being provided with a segmental slot c^2 , through which a crank-pin c' projects. A swinging frame comprising a pair of arms E, fixed upon the rock-shaft C and offset forwardly at their lower ends, and transverse plates $e e'$, connecting the arms E and being attached thereto by means of inturned ends $e^2 e^3$, is adapted to oscillate from the position parallel with the guide-bars B^2 forwardly to the position shown in Fig. 5. The arms E are of like configuration and size with the guide-bars B^2 and serve a corresponding purpose, as will hereinafter appear.

Two plate-magazines are used, the one being filled with plates and the other inserted into the camera-case empty, so as to receive the plates one by one after their exposure. These magazines are preferably alike and consist of the side walls D, which may be of wood, and a back d , which is preferably of sheet metal. Their faces or fronts are open and may be closed by means of a slide D' , passing through a slot d^2 in one of the side walls and running in suitable internal grooves or ways in the other side wall. This plate is preferably of sheet metal. Two opposite side walls of the magazine are grooved or channeled, as shown at d' , for the purpose of engaging the guide-bars B^2 or arms E.

The plates X are each incased within a sheet-metal sheath consisting of a plate F, slightly larger than the plate X and having its side edges upturned, as shown at f , and inturned,

as shown at f' , to form ways within which the plate may enter, and having across one (its lower) edge an upturned flange or foot f^3 . Along the side walls f of the sheath are located laterally-projecting flanges, four in number, two of such flanges, as G g , being located at the rearward edge of the wall f , substantially in the plane of the back plate F , one of them, as g , extending downwardly from the top of the sheath, and the other one, as G , having its lower end spaced apart from the bottom of the sheath, and the other two, as G' g' , being at the opposite or front edge of the wall f and extending downwardly from a point at or slightly below the lower ends of the flanges g G —that is to say, the flanges are arranged in two pairs, one pair at each edge of the side wall f , and the members of one pair are out of transverse alinement as to the members of the other pair. As shown, the flanges G G' are united together by an oblique member; but this feature is a mere incident of construction and is not material to the proper performance of the functions of the flanges.

The sheaths are adapted to fit within the magazines, and in charging the magazine from which they are to be delivered after exposure an ejecting-spring consisting of a transverse bar M and curved spring members m at the ends of such bar is first placed within the magazine, and the sheaths are inserted with their open faces outwardly and their open edges upwardly—that is to say, toward the edge of the magazine having the slot d^2 . The plate D' is inserted for the purpose of holding the sheaths and their plates within the magazine and excluding the light while the magazine is not within the camera. It will be understood that the charging of the magazine is accomplished in a dark room.

The magazine having been introduced into the camera by adjusting its grooves d' to the guide-bars B^2 and the plate D' having been withdrawn, the ejecting-spring forces the plates forwardly, and they are stopped by the engagement of the flanges G' g' with fingers O O' , projecting inwardly at each side of the case.

The fingers O O' are carried by sliding plates L , located between the guide-bars B^2 and the sides of the case and connected therewith by means of pins l , fixed in the guide-bars and projecting through longitudinal slots l' in the plates L . Vertical reciprocation of the plates L is accomplished by means of a turn-button J' at the back of the camera, actuating a crank-shaft j , which is journaled in the rear wall A^2 and the partition A' , its crank J being forward of the latter partition and engaging a transverse slot h in a sliding rod H , located in a suitable vertical way or channel in the front face of the partition A' and being rigidly attached to a cross-bar K , the ends of which, k , are turned forwardly along the side walls of the camera-case and are se-

cured to the plates L . It will be seen from reference to Fig. 8 that the elevation of the plates L will carry the fingers O O' above the flanges G' g' , so that the springs m will force the plate-sheaths forwardly until they are stopped by the contact of the flanges g G with the fingers. A second set of fingers o o' in the same plane with the fingers O O' and being located in close proximity thereto are carried by a slide-plate P , located between the backwardly-turned ends e^2 e^3 of the cross-bars e e' and the arms E and connected with the last-named parts by means of pins p p' , fixed in the arms and projecting through longitudinal slots p^2 p^3 in the plates P . Vertical reciprocation is communicated to the plates P by means of the ends k of the cross-bar K , which are forked, so as to engage a pin P' , projecting from each of the plates P .

An empty magazine is introduced into the camera by having its grooves or channels d' engaged with the arms E , its open face being directed backwardly. The action of the turn-button J' , which moves the fingers O O' upwardly, also moves the fingers o o' upwardly. The reverse movement of the turn-button carries both sets of fingers downwardly out of engagement with the flanges g G and back of the flanges G' g' . If now the receiving-magazine be swung forwardly by the rocking of the shaft C , the fingers o o' , moving with it, will retain the forward plate-holder therein, and the fingers O O' being now in engagement with the flanges G' g' of the next sheath in the rearward magazine the transfer of but a single plate at a time is provided for, and the removal of the forward plate leaves the next in order in position for exposure, the falling of the receiving-magazine removing it from the range of the lens.

It is important that the accidental discharge of a plate from the holding-magazine by the inadvertent movement of the turn-button J' while the receiving-magazine is down should be guarded against, and this is accomplished by means of the leaf-spring Q , secured to the inner surface of one of the side walls of the camera-case forward of the magazine-holding mechanism and projecting backwardly, so that its free end lies immediately above one of the ends k of the cross-bar K and normally stands out far enough from the camera-wall to engage this part and prevent its upward movement. A friction-block q is fixed upon the slide-plate P , so as to bear against the spring Q when the receiving-camera is brought to its upright position and thereby forces the spring out of engagement with the parts k .

A pawl or latch R is pivoted by means of a pin r within a suitable recess in the inner face of one of the side walls of the camera-case, so that it may be thrown across the path of the part e^2 , so as to prevent the forward movement of the receiving-magazine. A spring s holds the latch R outwardly, and the

latter is withdrawn by means of a push-button S, projecting outwardly through the wall of the camera.

Light is prevented from entering the magazine through the slot d^2 by means of a slide-plate T, housed in a suitable recess in the slotted wall of the magazine and normally projected across the slot by means of the springs t behind it. The upper face of the plate T is beveled, so that the entrance of the plate D forces it back.

The operation of the herein-described camera is as follows: The holding-magazine is filled with plates, each inserted in one of the sheaths, in a dark room, the ejecting-spring being placed beneath them. The open faces of the sheaths are directed outwardly and light is excluded by inserting the metallic slide D'. A filled or holding magazine having been placed within the camera in engagement with the guide-bars B^2 and an empty or receiving magazine having been placed within the camera by engagement with the arms E and the plate D' having been withdrawn, the instrument is ready for use. An exposure is made by throwing forwardly and downwardly the receiving-magazine, pressure being applied with a finger of one hand to the push-button S and by the thumb and finger of the other hand to the crank. The shutter-actuating button being now moved, light is thrown through the lens upon the front plate in the holding-magazine. The receiving-magazine being now elevated and the turn-button J' being oscillated, the front plate is transferred from the holding to the receiving magazine and the plate next in order is brought to the focal plane. After all of the plates have been exposed the slide D', which may have been carried within the chamber back of the partition A', is inserted within the receiving-magazine, and the latter may be removed from the camera without access to a dark room. The ejecting-spring may now be removed from the magazine which has just been emptied of its contents, and the latter may be transferred to the arms E and another charged magazine inserted in engagement with the guide-bars B^2 .

The operating parts—that is to say, the push-button S, the crank-arm c , and the actuating-button of the shutter—may all be so disposed that they will be convenient of manipulation when the camera is held in the usual way, and the movement of all of these parts is so easy that the manipulation need not jar the camera.

I claim as my invention—

1. The combination with a camera-case having a lens-opening, of a pair of magazine plate-receptacles each having an open side and ways for a sliding cover for such side, a slide for entering such ways, means for fixing one of such receptacles at the focal plane of the camera with its open side toward the lens-opening, an oscillating frame forward of such means and adapted to receive the second receptacle with

its open side directed backwardly and to carry it to and from the fixed receptacle, means for oscillating such frame, and means for transferring plates singly from one receptacle to the other, both of such operative means being controllable from without the case.

2. The combination with a camera-case having a lens-opening, of a pair of magazine plate-receptacles each having an open side and ways for a sliding cover for such side, a slide for entering such ways, means for fixing one of such receptacles at the focal plane of the camera with its open side toward the lens-opening, an oscillating frame forward of such means and adapted to receive the second receptacle with its open side directed backwardly and to carry it to and from the fixed receptacle, means for oscillating such frame, and means for transferring plates singly from one receptacle to the other, both of such operative means being controllable from without the case, and opaque plate-holding sheaths, each adapted to cover one side of a plate, and to leave the other face thereof exposed.

3. In a camera, the combination with a case having a lens-aperture, of an open-faced magazine plate-holder, means for securing the holder at the focal plane of the camera, an open-sided magazine plate-receiver pivotally mounted so as to oscillate forwardly from the plane of the front of the holder, means for oscillating the receiver and means for transferring plates singly from the holder to the receiver, both sets of means being controllable from without the case, and a detent for locking such plate-transferring means and being automatically engaged therewith and disengaged therefrom by the oscillation of the receiving-magazine.

4. The combination with a camera-case having a lens-aperture, a magazine plate-holder having an open front, means for holding such magazine with its front facing the lens, a plate-receiving magazine having an open face, means for holding the receiving-magazine before the holding-magazine and face to face therewith, means for oscillating the receiving-magazine, sheaths for holding single plates and having at their side edges two sets of flanges in different planes and out of transverse alinement, of vertically-reciprocating fingers for engaging such flanges, and means for ejecting the sheaths from the holder when released by the fingers.

5. The combination with a camera-case having a lens-aperture, a magazine plate-holder having an open front, means for holding such magazine with its front facing the lens, a plate-receiving magazine having an open face, means for holding the receiving-magazine before the holding-magazine and face to face therewith, means for oscillating the receiving-magazine, sheaths for holding single plates and having at their side edges two sets of flanges in different planes and out of transverse alinement, of vertically-reciprocating fingers for engaging such flanges, means for

ejecting the sheaths from the holder when released by the fingers, and reciprocating fingers connected with the receiving-magazine for engaging the sheath-flanges.

5 6. In a camera having an open-faced magazine plate-holder, an open-faced magazine plate-receiver, means for bringing the two magazines face to face and means for ejecting the plates from the holder, the combination
10 of sheaths for separate plates, such sheaths having opaque backs and open faces, and having two sets of lateral flanges in different planes and out of transverse alinement, with a vertically-reciprocating frame, fingers carried by such frame and engaging the sheath-
15 flanges, and means controllable from without the camera-case for causing the reciprocation of such frame.

20 7. In a camera having an open-faced magazine plate-holder, an open-faced magazine plate-receiver, means for bringing the two magazines face to face and means for ejecting the plates from the holder, the combination of sheaths for separate plates, such sheaths
25 having opaque backs and open faces, and having two sets of lateral flanges in different planes and out of transverse alinement, with a vertically-reciprocating frame, fingers carried

ried by such frame and engaging the sheath-flanges, means controllable from without the camera-case for causing the reciprocation of such frame, reciprocating bars mounted with the receiving-magazine and having fingers for engaging the sheath-flanges, and connecting
30 between the reciprocating bars and the reciprocating frame when the two magazines are brought together whereby the bars are actuated by the frame.

8. The combination with a camera-case having internal guide-bars across two opposite sides, and a swinging frame having guide-bars capable of being brought to a parallel relation with the guide-bars of the case, of a pair of open-faced plate-magazines having grooves for receiving the members of a set of
40 such guide-bars, whereby such magazines may be brought together face to face in the camera-case, and means for transferring plates singly from one magazine to the other.

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

JOHN A. MOSHER.

Witnesses:

LOUIS K. GILLSON,
O. L. PLUMTREE.