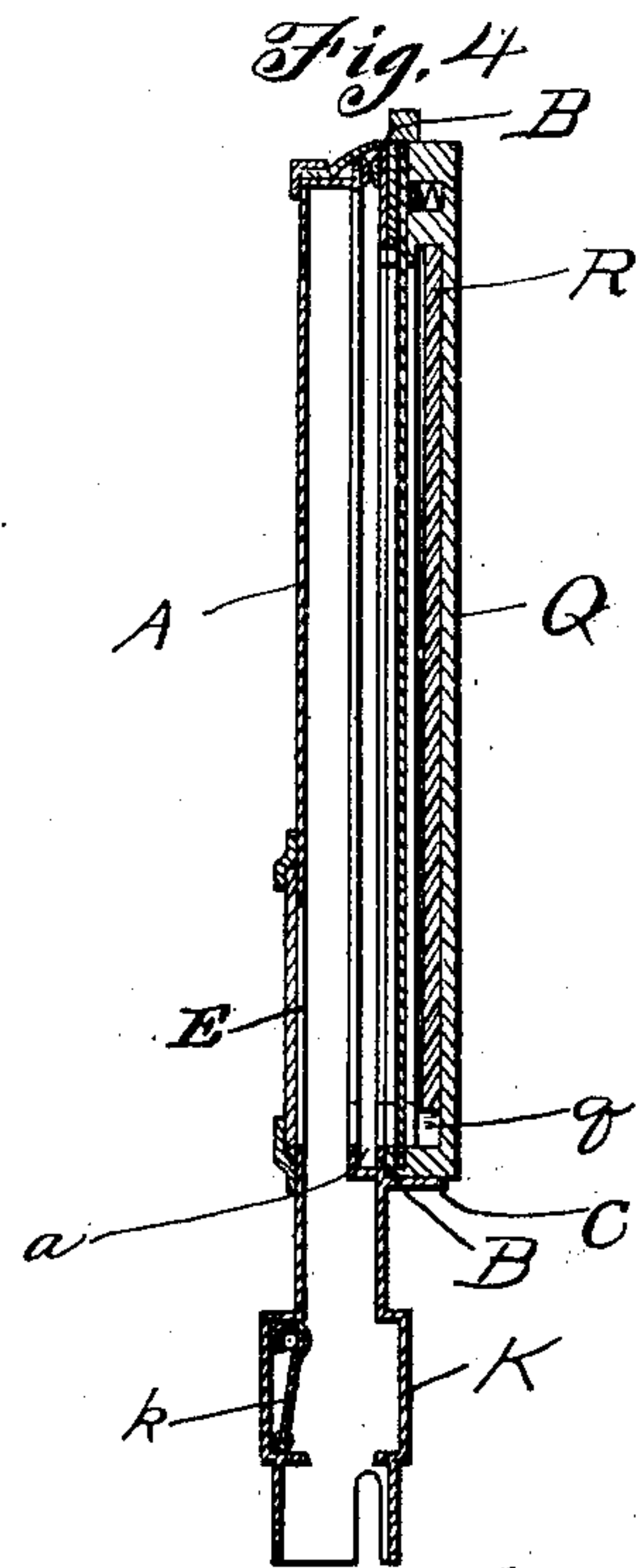
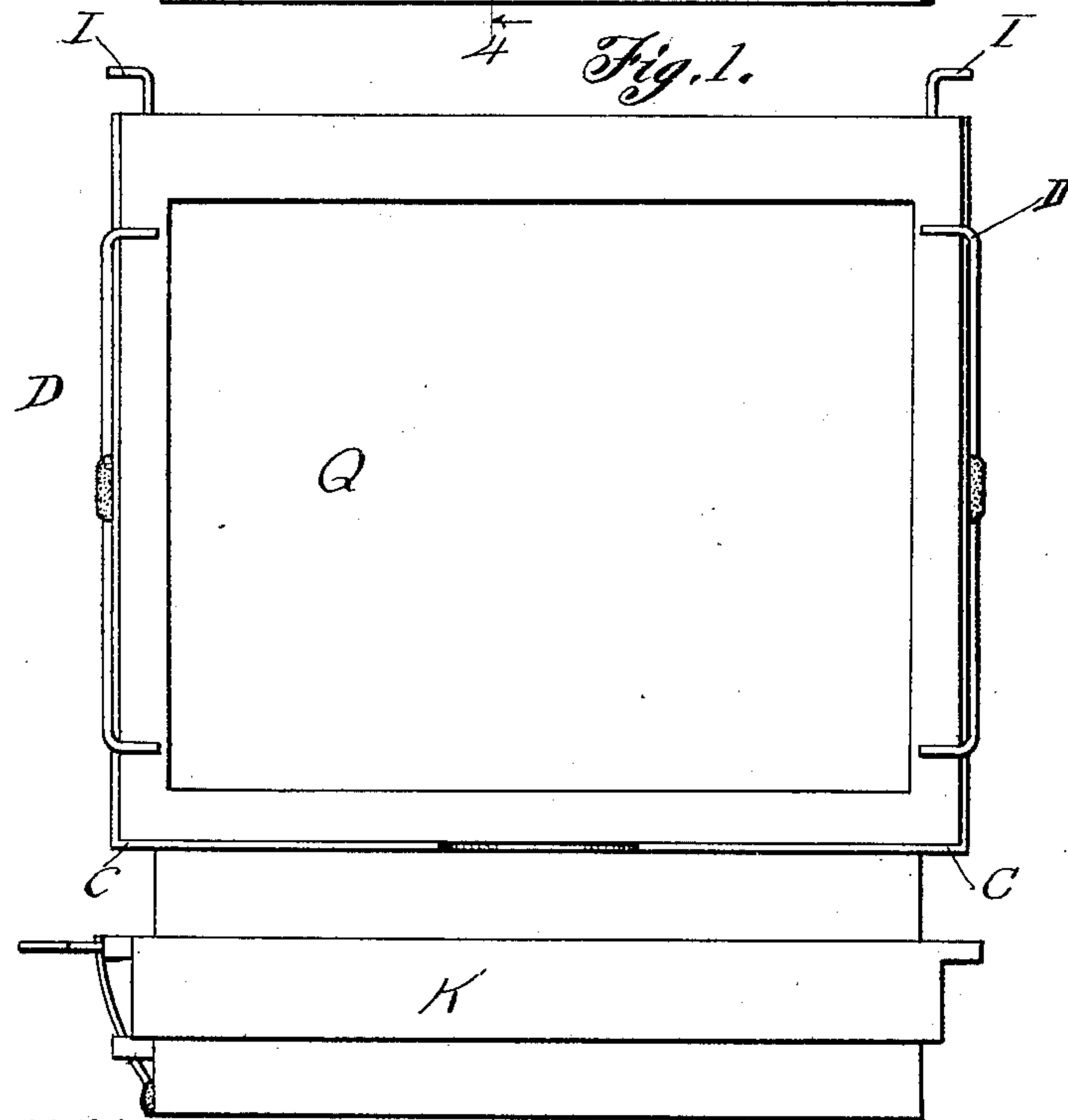
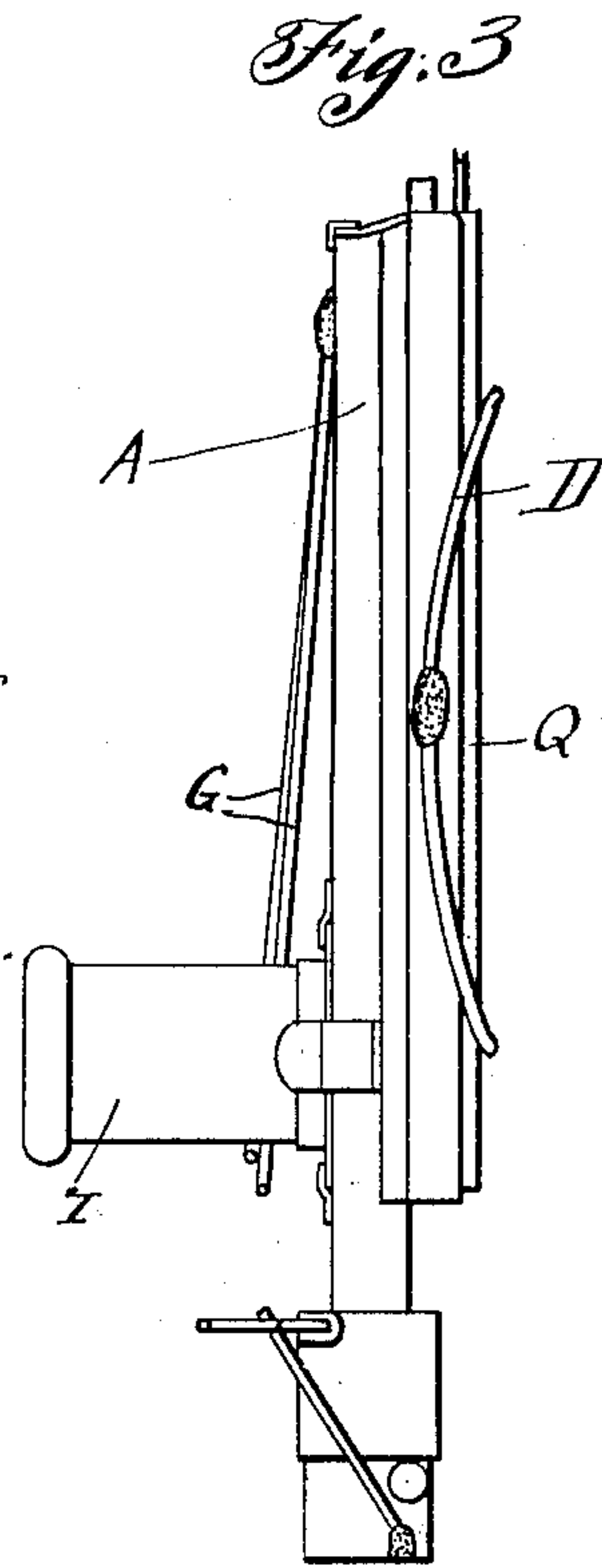
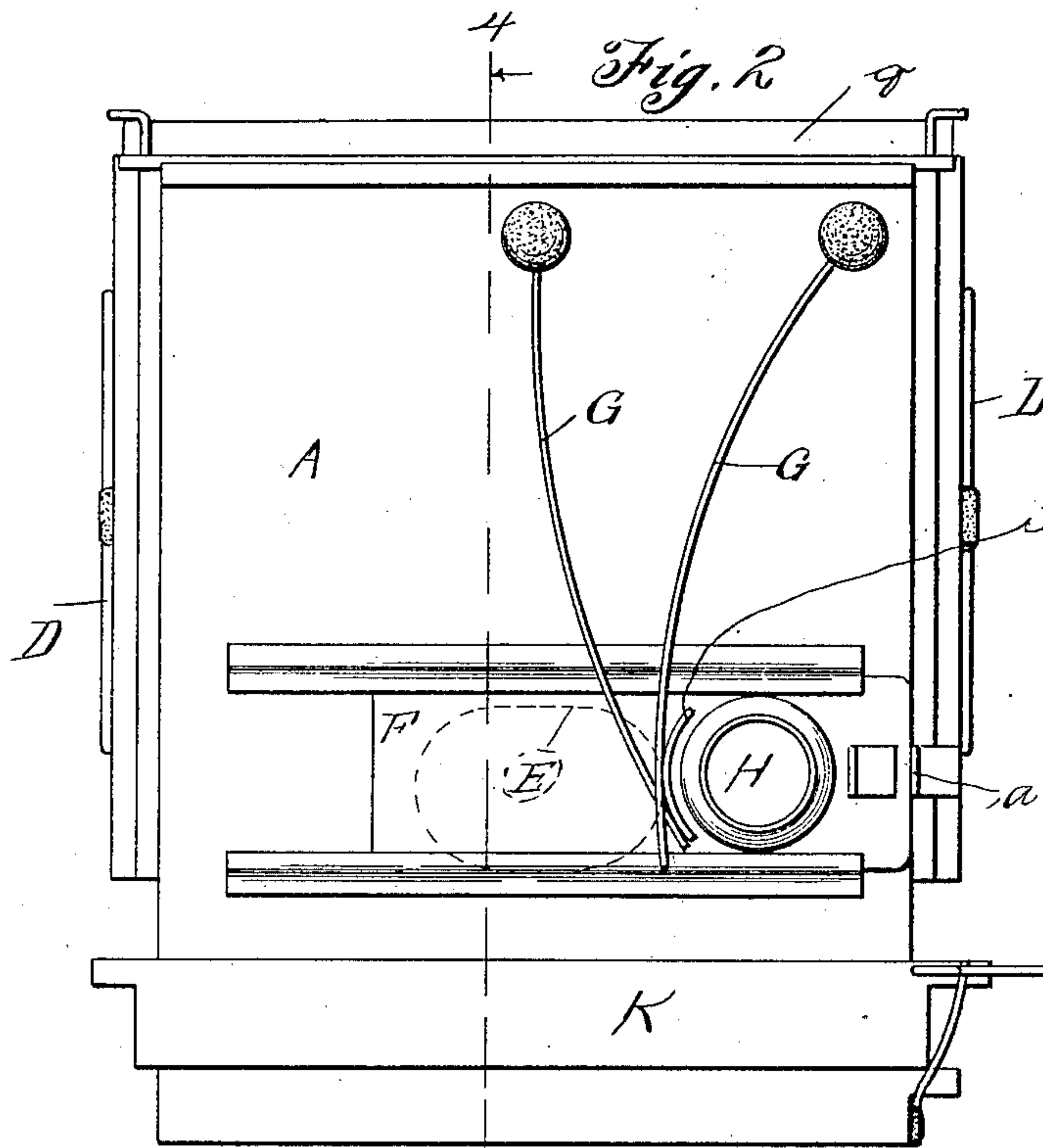


F. L. CONDIT.
PHOTOGRAPHIC DEVELOPING APPARATUS.

APPLICATION FILED NOV. 29, 1901.

NO MODEL.

4 SHEETS—SHEET 1.



Witnesses:
J. E. Perry
Robert H. Weir

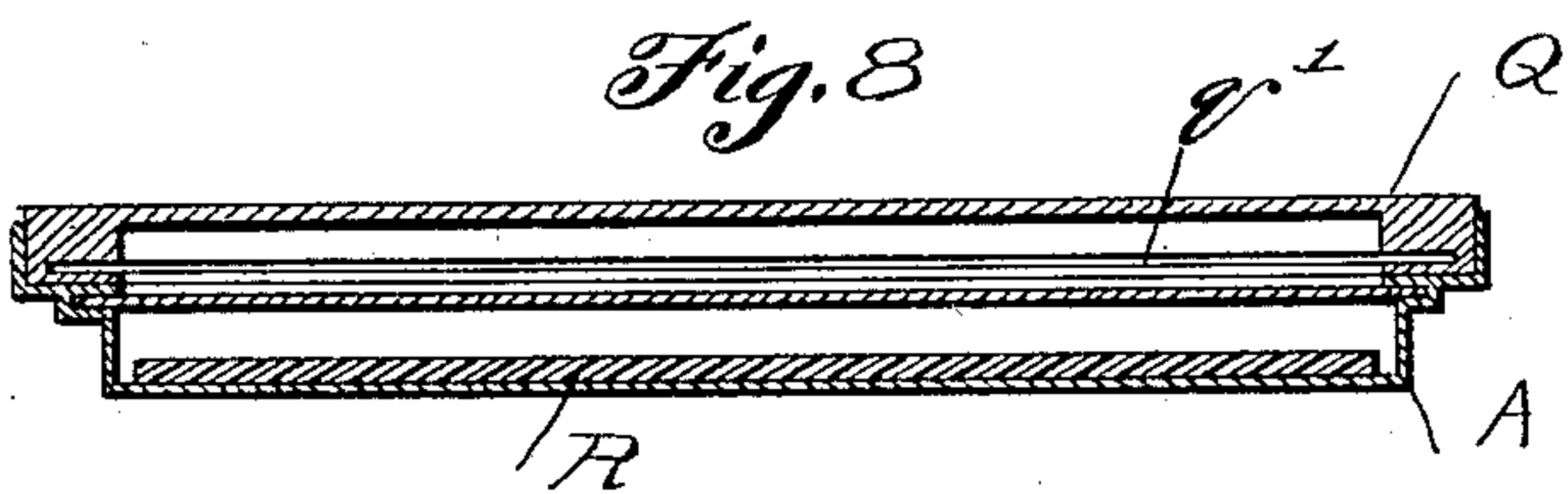
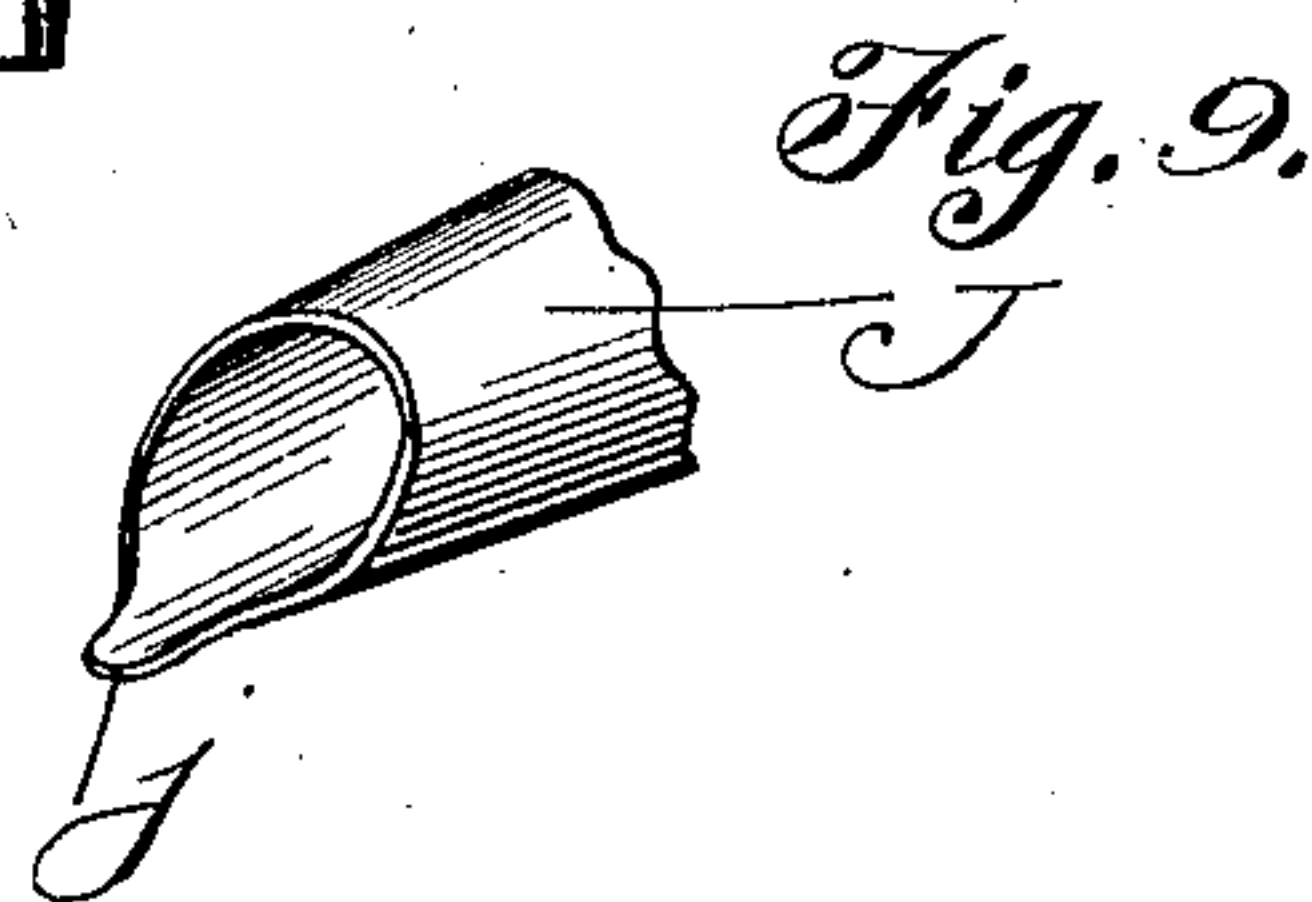
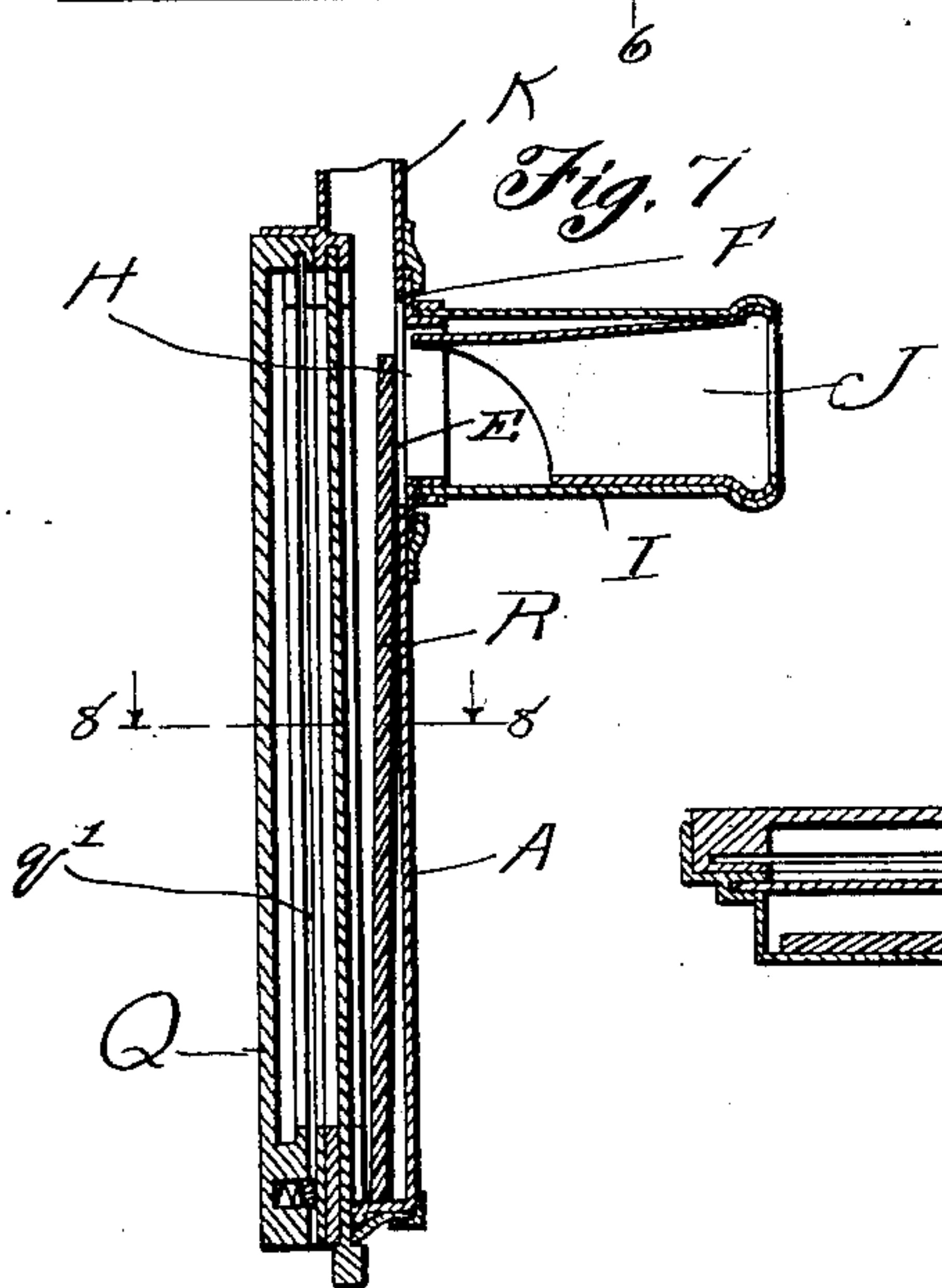
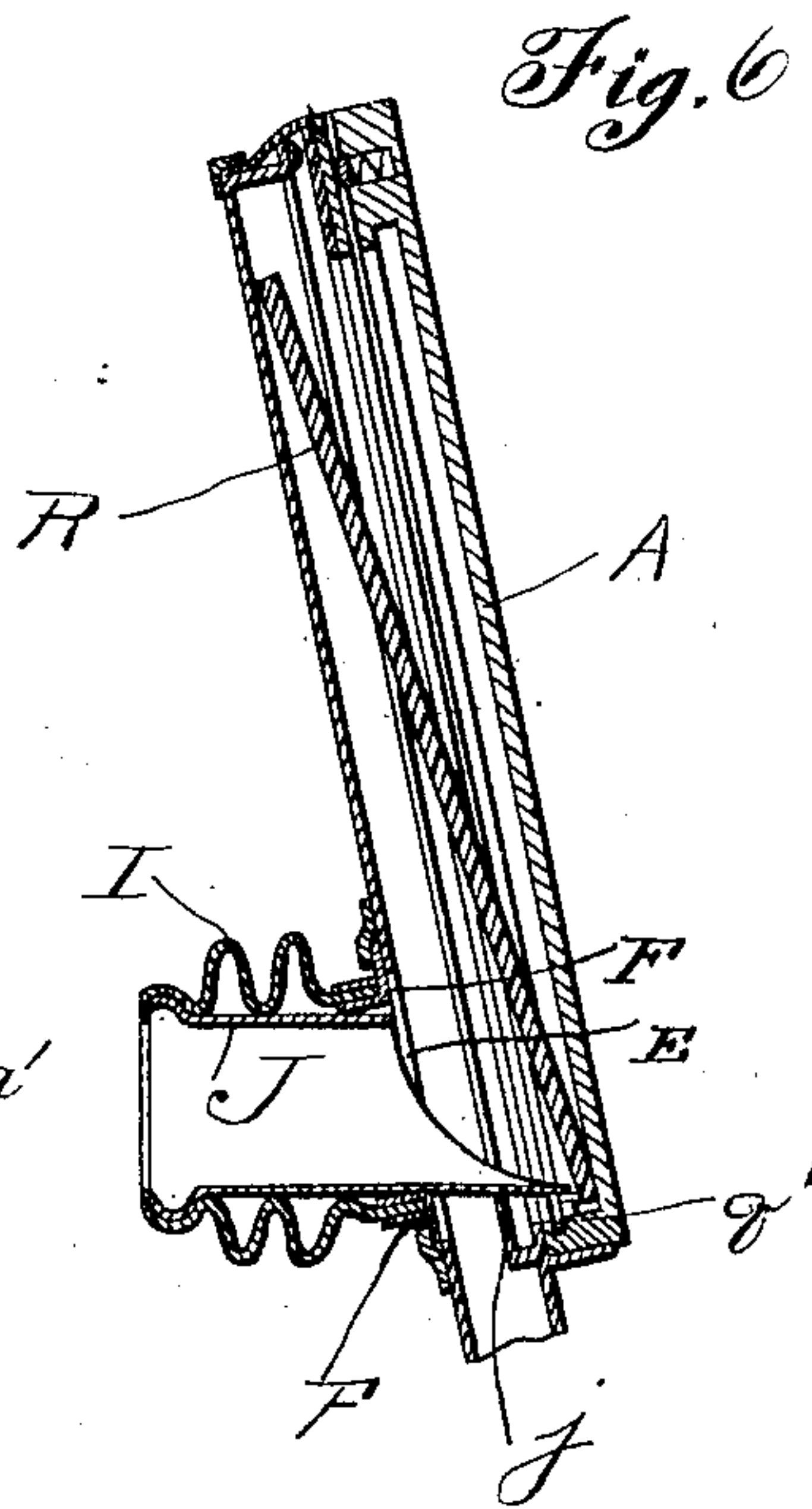
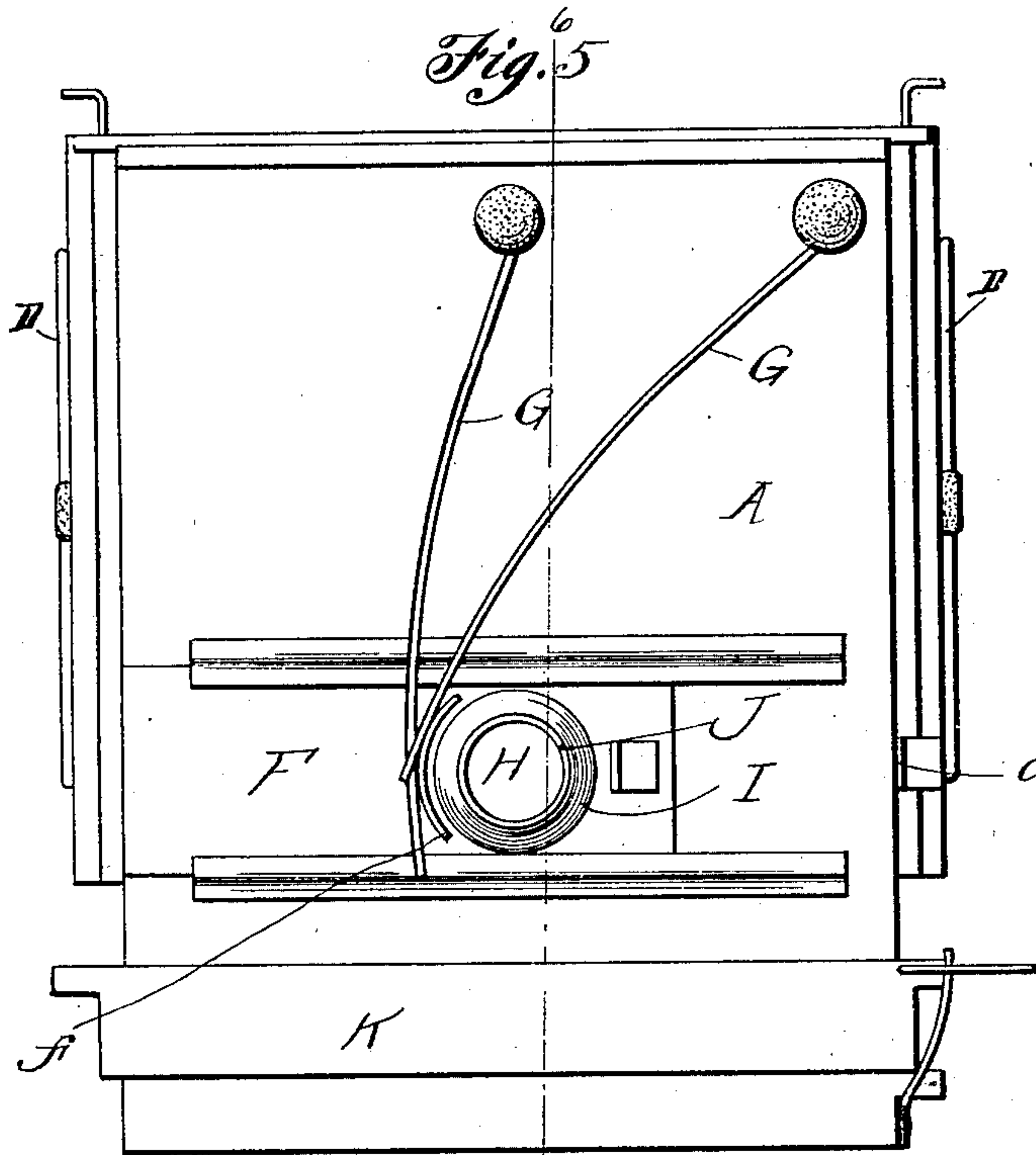
Inventor:
Frank L. Condit
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F. L. CONDIT.
PHOTOGRAPHIC DEVELOPING APPARATUS.

APPLICATION FILED NOV. 29, 1901.

NO MODEL.

4 SHEETS—SHEET 2.



Witnesses:
Ora D. Terry
Robert H. Weir.

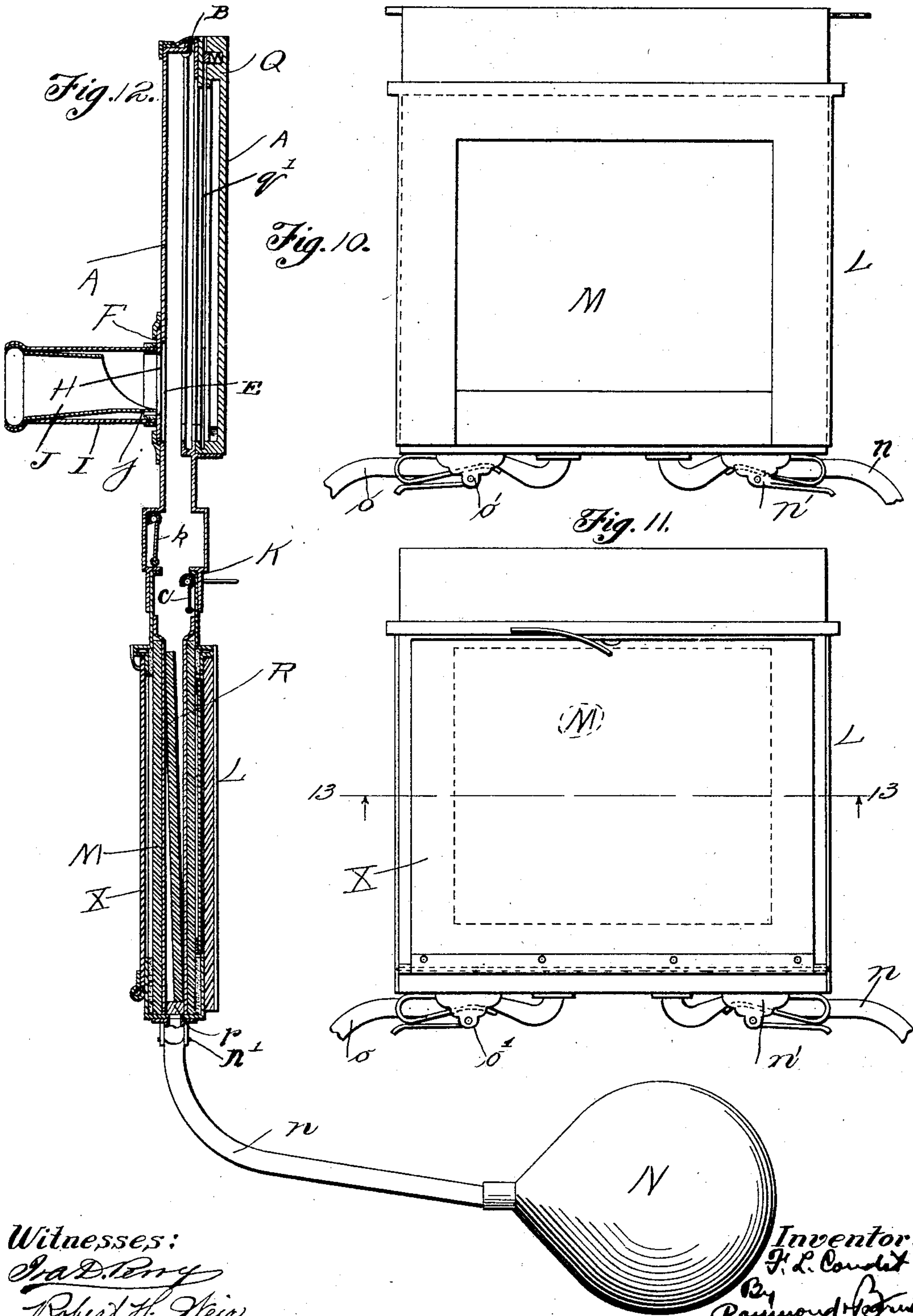
Inventor:
Frank L. Condit
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F. L. CONDIT.
PHOTOGRAPHIC DEVELOPING APPARATUS.

APPLICATION FILED NOV. 29, 1901.

NO MODEL.

4 SHEETS—SHEET 3.



Witnesses:
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F. L. CONDIT.
PHOTOGRAPHIC DEVELOPING APPARATUS.

APPLICATION FILED NOV. 29, 1901.

NO MODEL.

4 SHEETS—SHEET 4.

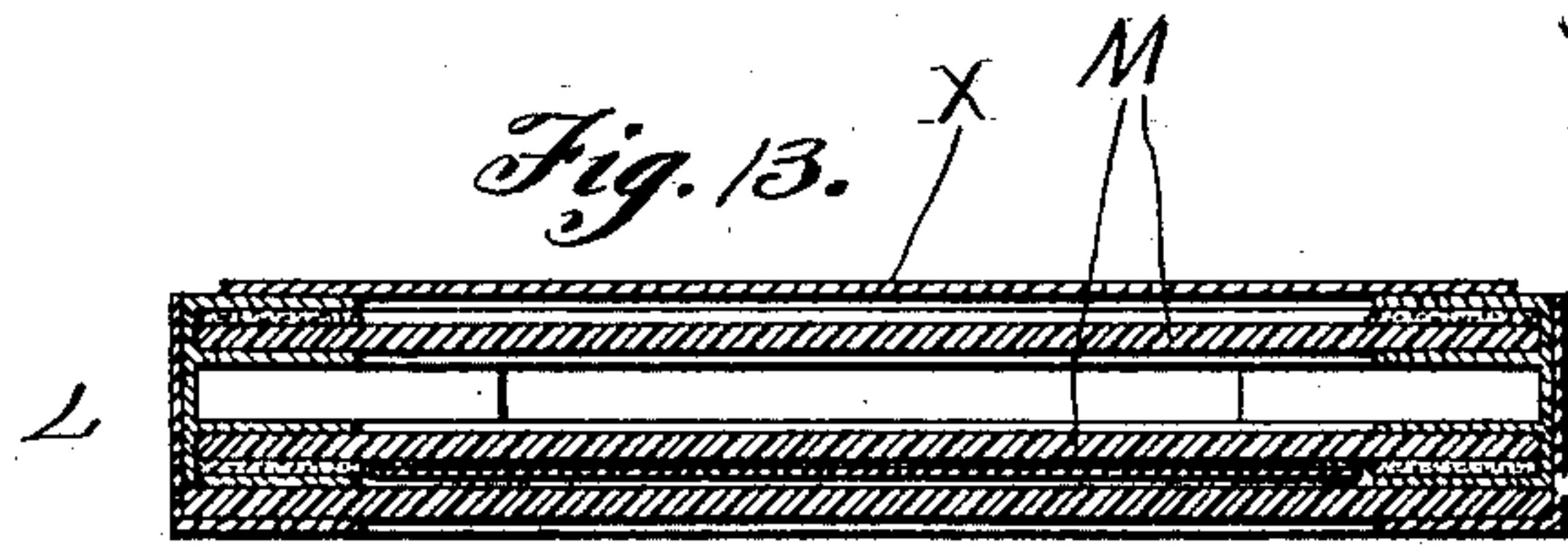
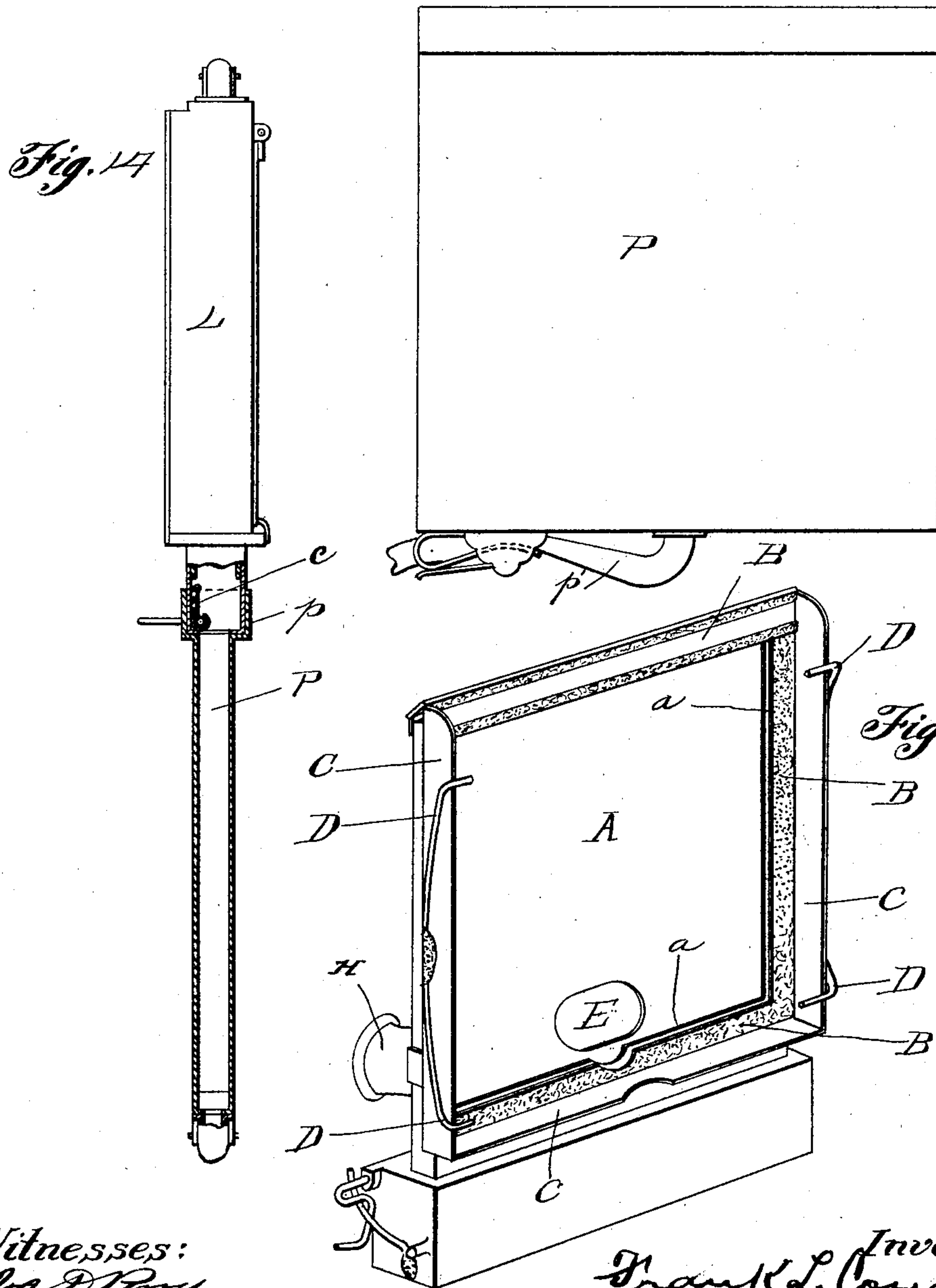


Fig. 15



Witnesses:
Chas. D. Perry
Robert H. Weir

Inventor:
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By *Raymond & Barnett*
Attorneys

UNITED STATES PATENT OFFICE.

FRANK L. CONDIT, OF CHICAGO, ILLINOIS, ASSIGNOR OF ONE-HALF TO
PARK N. CONDIT, OF CHICAGO, ILLINOIS.

PHOTOGRAPHIC DEVELOPING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 722,813, dated March 17, 1903.

Application filed November 29, 1901. Serial No. 84,035. (No model.)

To all whom it may concern:

Be it known that I, FRANK L. CONDIT, 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 Photographic Developing Apparatus, of which the following is a specification.

The object of my invention is to provide an apparatus by means of which an exposed photographic plate may be removed from a plate-holder, developed, and fixed in any room by daylight or artificial light without exposing the plate to actinic light. This and such other objects as may hereinafter appear are attained by the devices illustrated in the accompanying drawings, in which—

Figure 1 is a front elevation of what may be termed the "transfer-chamber." Fig. 2 is a rear elevation of the same. Fig. 3 is an end elevation thereof. Fig. 4 is a transverse vertical section on the line 4 4 of Fig. 1. Fig. 5 is also a rear elevation showing the slide in open position. Fig. 6 is a transverse vertical section on the line 6 6 of Fig. 5, showing a plate in course of transfer from the plate-holder to the transfer-chamber. Fig. 7 is a like vertical section of the transfer-chamber in reversed position. Fig. 8 is a transverse vertical longitudinal sectional view on the line 8 8 of Fig. 7. Fig. 9 is a perspective view of the metallic finger-sleeve. Fig. 10 is a front elevation of the developing-chamber. Fig. 11 is a rear elevation thereof. Fig. 12 is a transverse vertical section through the transfer and developing chambers, showing the manner in which a plate is transferred from the transfer-chamber to the developing-chamber. Fig. 13 is a horizontal section of the developing-chamber on the line 12 12 of Fig. 10. Fig. 14 is an end elevation of the developing-chamber and a transverse section of the fixing-chamber coupled to allow the transfer of a plate from the developing to the fixing chamber. Fig. 15 is a front elevation of the fixing-chamber. Fig. 16 is a perspective view of the transfer-chamber.

Like letters of reference indicate the same parts in the several figures of the drawings.

Referring by letter to the accompanying drawings, A is a transfer-chamber consisting

of a rectangular box of slightly-greater depth than the thickness of a photographic plate and having in its front side an opening slightly larger than the dimensions of the largest photographic plate which is to be used in connection with the apparatus. Surrounding this opening is a ledge B, which is provided with felt or other means for forming a light-tight joint, and surrounding this ledge are flanges or stops C for receiving a photographic plate holder. These stops are so arranged that when the plate-holder is fitted therein and the slide removed therefrom the opening in the plate-holder will be opposite to or register with the opening in the front of the transfer-chamber. The transfer-chamber is also provided with spring-clips D for engaging the outer face of the plate-holder and holding the same tightly against the ledge B, so as to form a light-tight joint therewith. I may also provide the transfer-chamber with a slot through the top thereof communicating with grooves *a*, surrounding the opening in the face thereof for the admission of a slide, such as is commonly used in photographic plate holders. This slot and these grooves are so arranged and constructed that with a slide inserted therein the front of the transfer-chamber will be closed and there will be a light-tight engagement between said slot and grooves and the slide inserted therein.

The back of the chamber A is provided with an opening E, which is normally closed by a slide F. This slide is normally held in closed position by means of springs G, which loosely engage a shoulder *f* on the slide and hold the slide against a stop *a'*. The slide F is provided with a finger-hole H, which is surrounded by one end of a flexible sleeve I, within which is fitted a metallic sleeve J, which terminates at its inner end in a finger *j*. The sleeve J is of such a size that the operator's fingers will fit snugly therein, so that no light will be admitted between the finger of the operator and the sleeve J. So likewise the sleeve I has a light-tight joint with the slide F.

When the slide F is moved against the springs G to its open position, the opening therein will come opposite to the opening E in the back of the transfer-chamber A, so as

to admit of the finger *j* through the opening E and adjacent to the bottom of the transfer-chamber. The bottom of the transfer-chamber leads to a passage-way or sleeve K, which
 5 is provided with a shutter *k*, arranged to be operated by a lever *k'* on the outside of the transfer-chamber to open or close the passage through the sleeve K. The lower end of the sleeve K is of a size and contour to fit
 10 snugly over the upper end of the developing-chamber, so as to provide a light-tight joint therewith and may be secured in engagement with the developing-chamber in any suitable manner.

15 L is the developing-chamber, consisting, primarily, of a thin rectangular box of a size to freely receive the largest-sized plate which it is sought to develop therein and sufficiently narrow between its front and back faces to
 20 maintain such photographic plate in substantially a vertical position. The opposite faces of the developing-chamber are provided with openings M, which are closed by ruby glass or other transparent medium, which
 25 will exclude the actinic rays of light, and so located that a photographic plate contained within said developing-chamber will be supported between such openings. The upper
 30 edge of the developing-chamber is of a contour to engage the sleeve or passage K on the transfer-chamber and to form a light-tight joint therewith and is provided with a shutter *c* similar to the shutter *k* of the transfer-chamber.

35 N is a bulb which communicates by means of the tube *n* with the interior of the developing-chamber and is provided with any suitable shut-off device, such as the clip *n'*. A second tube *o*, similarly provided with a
 40 shut-off device, connects another bulb with the interior of the developing-chamber. Preferably the bulb N is of a size to contain a charge of developer sufficient to fill said developing-chamber with a photographic plate
 45 contained therein and at least sufficient in quantity to develop such plate. The tube *o*, on the other hand, leads to a bulb which contains clear water for rinsing the plate after development.

50 P is a fixing-chamber, which in its preferred form consists of a chamber similar in general outline to the developing-chamber, provided with a sleeve *p* for snugly engaging the upper portion of the developing-chamber
 55 and provided with a bulb arranged to supply a fixing solution to the fixing-chamber through the tube *p'*. The fixing-chamber may, if desired, be supplied with a shutter similar to the shutters *k* and *c* for excluding
 60 light therefrom; but such a shutter is not an essential.

My device is used as follows: A photographic-plate holder Q, containing an exposed plate R, is fitted to the open face of the transfer-chamber A and within the stops C. In
 65 this position the plate-holder is held securely against the shoulder or ledge B by means of

the spring-clips D and forms a light-tight joint therewith. The slide *q* is then withdrawn from the plate-holder, thereby exposing the plate within the transfer-chamber A. The plate will now be held in position within the plate-holder by means of the usual spring
 70 *q'* at the bottom of the plate-holder. The operator now inserts a finger within the sleeve J at the back of the transfer-chamber and reciprocates the slide F until the sleeve J is brought opposite to the opening E in the back of the chamber A. This opening will be opposite to the spring *q'* in the plate-holder.
 75 The operator now inserts the sleeve J through the opening E, as shown in Fig. 6, until the finger *j* engages the plate-retaining spring *q'* in the plate-holder. By means of the finger *j* he now presses down on the spring *q'*, thereby releasing the plate R and allowing it to fall forward within the transfer-chamber A,
 80 as shown in Fig. 6. The plate R having been disengaged from the plate-holder, the finger *j* is withdrawn from the interior of the transfer-chamber A, and by tipping the chamber in any suitable manner the plate R will entirely fall out of the plate-holder and will rest within the transfer-chamber and against the back wall thereof. The further manipulations of the transfer-chamber may be continued with the opening in the front thereof still closed by the plate-holder, or, as previously described, the front of the transfer-chamber may be provided with a slot and
 85 grooves for receiving a slide similar to a plate-holder slide. This slide may now be inserted through the slot and into the grooves provided therefor, thereby securely closing the front of the transfer-chamber against the admission of light, and the plate-holder may now be removed. When the sleeve J and the finger *j* are withdrawn from the opening E, the slide F is moved by the springs G to its closed position and the opening E is tightly closed by the slide. I next fit the sleeve K of the transfer-chamber over the upper end of the developing-chamber, as shown in Fig. 11, and by turning back the shutters *k* and *c* leave a clear passage-way from the interior of the transfer-chamber to the interior of the developing-chamber, whereupon the plate R drops from the transfer-chamber into the developing-chamber. Preferably the bottom of the developing-chamber is provided with rubber cushions *r*, upon which the plate R drops without injury thereto. The shutter *c* is now closed, so as to make a light-tight closure of the passage between the transfer and developing chambers, and the transfer-chamber is disengaged and removed from the developing-chamber. The operator now forces developing fluid from the bulb N to the interior of the developing-chamber, and the tube *n* being then closed by the clip *n'* the developing fluid is retained in the developing-chamber as long as may be desired. Thereupon the development of the plate may be watched through the glazed openings in the sides of the developing-
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chamber, such openings allowing non-actinic light to pass through the developing-chamber and through the plate supported therein between said openings and in course of development. When in the judgment of the operator the plate has been sufficiently developed, the clip n' is released, whereupon the developing fluid is withdrawn from the developing-chamber and into the bulb N, where it is retained by again closing the tube n by means of the clip n' . The plate is now rinsed by forcing water into the developing-chamber through the tube o , which water is then withdrawn into the bulb in connection with said tube, and the tube o in its turn is again closed by means of its clip o' . The developing-chamber is now fitted to the fixing-chamber, as shown in Fig. 13, the shutter c is opened, and the plate is dropped into the fixing-chamber, which may contain a fixing-bath at the time, but which is preferably furnished with a fixing solution through the tube p' after the plate has dropped into the fixing-chamber. The bottom of the fixing-chamber is also provided with rubber cushions r . The developing-chamber is then disengaged from the fixing-chamber and the fixing of the plate may be completed in the fixing-chamber or the plate may now be transferred to any suitable fixing bath in the usual manner.

While I have described my developing-chamber in its simplest form, I prefer to provide it with additional protection against fogging the plate by exposure to too strong light. For this purpose I provide one face of the developing-chamber with a clip or other means for receiving an additional plate of ruby glass or similar transparent medium for excluding actinic rays of light, while for still further safety, as in the case of very sensitive plates, another thin plate of ruby or like glass or a screen of ruby paper may be loosely fitted within the frame of the developing-chamber surrounding one of its glazed openings and between the glass closing said opening and the additional sheet of ruby glass. I consider that it is only necessary to provide these extra screens upon that side of the developing-chamber which is held toward the strong light which is to be transmitted through the developing-chamber to the eye of the operator. However, for safety while effecting the transfer of the plate and for other steps it is desirable to provide the side of the transfer-chamber which is to be held toward the operator with a movable or hinged opaque screen X, which will effectively close that side of the developing-chamber against the admission of light until the operator wishes to examine the plate, whereupon this opaque screen may be removed or swung out of the way and the plate examined by means of transmitted light.

It will be understood that while I have described my preferred construction I do not limit myself thereto, and while I have de-

scribed the openings to the walls of the developing-chamber as closed by ruby glass or the like it is evident that either or both of said openings may be closed by any suitable transparent medium, the insertion of slides of ruby glass or of any other suitable screen across the face thereof being relied on to exclude the actinic rays of light, and various other variations in detail may be readily made without departing from the spirit of my invention.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In a photographic developing apparatus, a developing-chamber comprising a box having two oppositely-disposed transparent walls, said chamber being provided with an opening in one edge thereof for the edgewise entrance of a photographic plate, and being also provided adjacent to said edge with a sleeve arranged to make light-tight connection with one edge of a transfer-chamber, and means arranged within said sleeve to close the opening therethrough, substantially as described.

2. In a portable photographic developing apparatus, a developing-chamber comprising a box having oppositely-disposed openings through two of the walls thereof, non-actinic transparent means for closing said openings, means for supporting a photographic plate between said openings and in a plane substantially parallel therewith, said box being provided with an opening, at one edge thereof, arranged to receive a photographic plate edgewise, and being provided adjacent to said opening with means for making a light-tight connection with one edge of a transfer-chamber, and means for closing said edge opening in the developing-chamber, substantially as described.

3. The combination with a portable developing-chamber, comprising non-actinic transparent walls and provided with a passage at one edge thereof for the edgewise entrance of a photographic plate, of means separable from said developing-chamber for receiving a plate from a plate-holder without exposure, coengaging means on said developing-chamber, adjacent to said passage, and on said plate-receiving means, for forming a light-tight passage through which a plate may pass from said plate-receiving means to said developing-chamber, and means for closing said passage into said developing-chamber to exclude light therefrom when the plate-receiving means has been disengaged from said developing-chamber.

4. A photographic developing apparatus, comprising a box having transparent non-actinic walls and provided with means for separably engaging another box so as to form a light-tight connection therewith, and provided with an opening in an edge thereof for the passage of a photographic plate from one to the other of said boxes without exposing

said plate, and means for closing said opening so as to exclude the entrance of light therethrough, substantially as described.

5 In a photographic developing apparatus, the combination with a transfer-chamber provided with an opening through one edge thereof, of a sleeve, arranged adjacent to said opening, a developing-chamber, provided with an opening through one edge thereof, a sleeve
10 arranged adjacent to said opening and arranged to make light-tight connection with said first-named sleeve, so as to provide a passage connecting the edge opening in the transfer-chamber with the edge opening in the developing-chamber, and means for closing the
15 passage through each of said sleeves, substantially as described.

6. In a portable photographic developing apparatus, the combination with a developing-chamber, of a separable transfer-chamber, means upon said transfer-chamber for engaging the developing-chamber so as to provide free communication between said chambers for the passage of a photographic plate,
20 and means upon said transfer-chamber for receiving a photographic plate from a plate-holder, all without exposure of such plate, substantially as described.

7. In a photographic developing apparatus, the combination with a developing-chamber having two oppositely-disposed transparent walls, of means separable from said walls for intercepting the passage of actinic light there-
30 through, substantially as described.

8. In a photographic developing apparatus, the combination with a transfer-chamber for receiving a photographic plate from a plate-holder, said transfer-chamber being provided with an opening for the passage of a photo-
35 graphic plate therefrom to a developing-chamber, a developing-chamber provided with an opening for receiving a photographic plate from the transfer-chamber, means upon each of said chambers for separably engaging the
40 other of said chambers so as to form a light-tight joint therebetween, and means upon each of said chambers for closing said openings therefrom so as to exclude the entrance of light therethrough, substantially as de-
45 scribed.

9. In a portable photographic developing apparatus, the combination with a transfer-chamber adapted to receive a photographic plate from a plate-holder, of a developing-
50 chamber provided with means for engaging the transfer-chamber so as to have free communication therewith for the passage of a photographic plate, and a fixing-chamber provided with means for engaging the develop-
55 ing-chamber so as to provide free communication therewith for the passage of a photographic plate, all arranged to be operated in daylight without exposing the photographic plate, substantially as described.

65 10. A photographic developing apparatus comprising a box provided with means for separably engaging a developing-chamber so

as to form a light-tight joint therewith, and provided with an opening in an edge thereof for the passage of a photographic plate from
70 a developing-chamber to said box without exposing said plate, and means for closing said opening so as to exclude the entrance of light therethrough, substantially as described.

11. In a photographic developing apparatus, the combination with a transfer-chamber, of means outside thereof and attached thereto for releasing a photographic plate from a plate-holder so as to admit said plate to said transfer-chamber without exposure,
80 substantially as described.

12. In a photographic developing apparatus, the combination with a transfer-chamber, of means outside thereof and slidably attached thereto for releasing a photographic
85 plate from the plate-holder, substantially as described.

13. In a photographic developing apparatus, the combination with a transfer-chamber, of means outside thereof and attached
90 thereto, for releasing a plate from a plate-holder, said means comprising a flexible sleeve, a tube mounted within said sleeve, adapted to receive means for engaging the spring holding said plate in the plate-holder,
95 substantially as described.

14. In a photographic developing apparatus, the combination with a transfer-chamber, of means outside thereof and attached thereto for releasing a plate from a plate-
100 holder, said means comprising a flexible sleeve and a tube mounted within said sleeve, provided at its inner end with a finger adapted to engage the spring holding a plate in a plate-holder, substantially as described.
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15. In a photographic developing apparatus, the combination with a transfer-chamber, of means outside thereof and attached thereto for releasing a plate from a plate-
110 holder, said means comprising a sleeve and a tube mounted within said sleeve and adapted to be closed at its inner end, said end being provided with a finger adapted to engage the spring holding a plate in a plate-holder, sub-
115 stantially as described.

16. In a photographic developing apparatus, the combination with a transfer-chamber, of a flexible sleeve outside thereof and attached thereto, and means contained in said sleeve for disengaging a plate from a plate-
120 holder, substantially as described.

17. In a portable photographic developing apparatus, a transfer-chamber provided with an opening at one side thereof adapted to receive the face of a photographic-plate holder,
125 means for holding said plate-holder in engagement with the open side of said transfer-chamber, means for providing a light-tight joint between such plate-holder and the transfer-chamber, means for excluding actinic
130 light from said transfer-chamber when in engagement with a plate-holder, means mounted upon said transfer-chamber for disengaging a plate from a plate-holder when in en-

5 gagement with said transfer-chamber, so as to permit such plate to enter said transfer-chamber without exposing the same to actinic light, and means for permitting the passage of the plate, without exposure, from the transfer-chamber to a developing-chamber, substantially as described.

10 18. A photographic developing apparatus comprising a box provided with an opening upon one face thereof for the admission of a photographic plate, a ledge surrounding said opening, and adapted to engage the face of a photographic-plate holder, means upon said ledge for forming a light-tight joint with a photographic-plate holder, means upon said box for holding a photographic-plate holder in close engagement with said ledge, said box having an opening in the back thereof opposite to said first opening and arranged adjacent to the middle of one edge of said box, means for closing said last-named opening and for also admitting the insertion of a suitable disengaging means therethrough without admitting light into said box, said box having a slot in one edge for the passage of a photographic plate from said box, and means for closing said slot so as to exclude the entrance of light therethrough, substantially as described.

30 19. A photographic developing apparatus comprising a box provided with an opening

upon one face thereof for the admission of a photographic plate, a ledge surrounding said opening, and adapted to engage the face of a photographic-plate holder, means upon said ledge for forming a light-tight joint with a photographic-plate holder, means upon said box for holding a photographic-plate holder in close engagement with said ledge, an opening in the back of said box opposite to said first opening and arranged adjacent to the middle of one edge of said box, a slide arranged to close said last-named opening, means for yieldingly holding said slide in closed position, said slide being provided with an opening arranged to be brought opposite to said last-named opening in the box, by moving said slide, and a flexible sleeve mounted upon said slide, surrounding the opening therethrough and arranged to make a light-tight joint with any suitable disengaging means inserted in said sleeve, through the opening in said slide and through the opening in the back of said box, so as to assist in releasing a photographic plate from a plate-holder held in engagement with the open face of said box, substantially as described.

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Witnesses:

PARK N. CONDIT,
O. R. BARNETT.