

(No Model.)

W. H. LEWIS.
PHOTO DEVELOPING BOX.

No. 353,493.

Patented Nov. 30, 1886.

Fig. 1

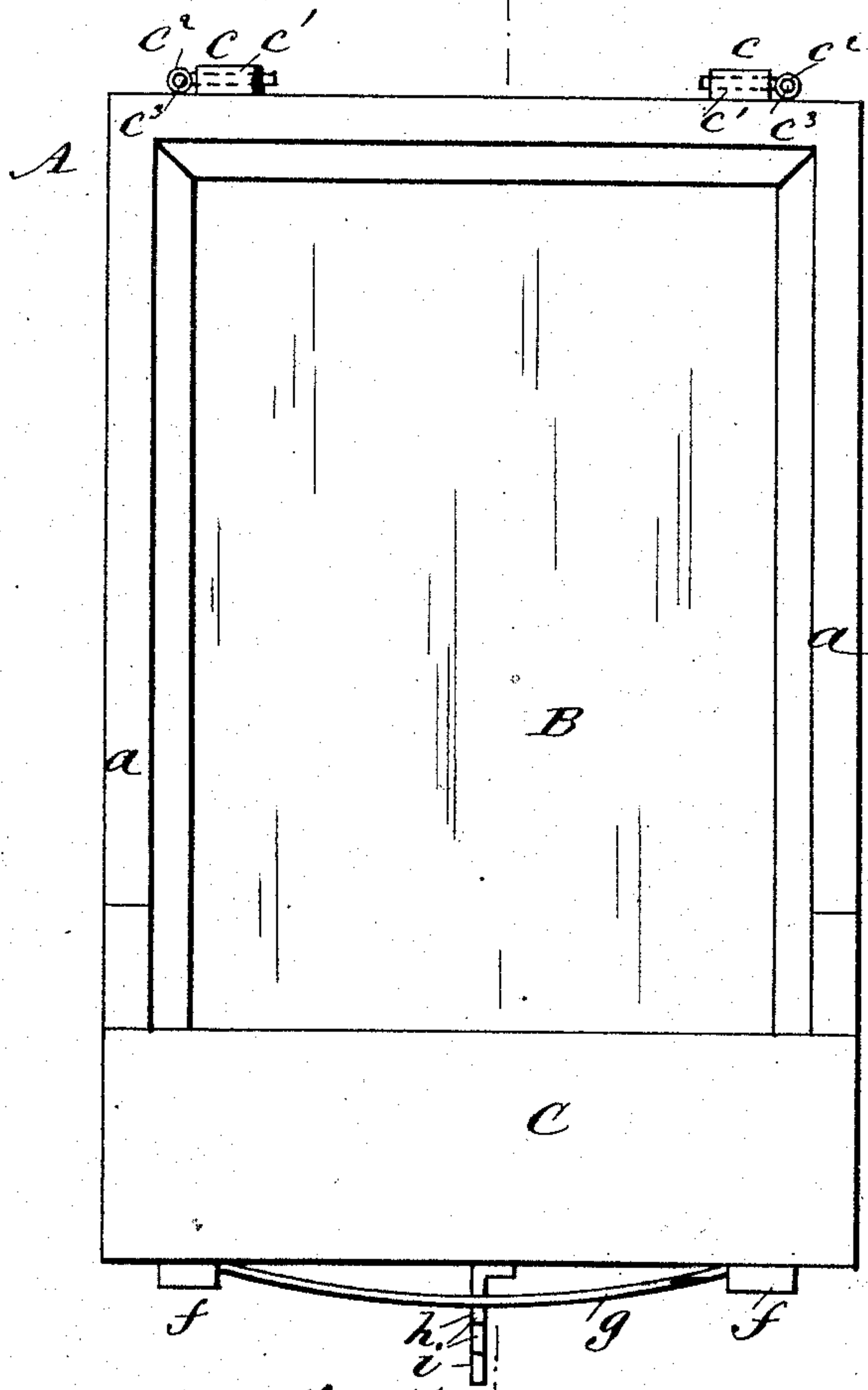


Fig. 2

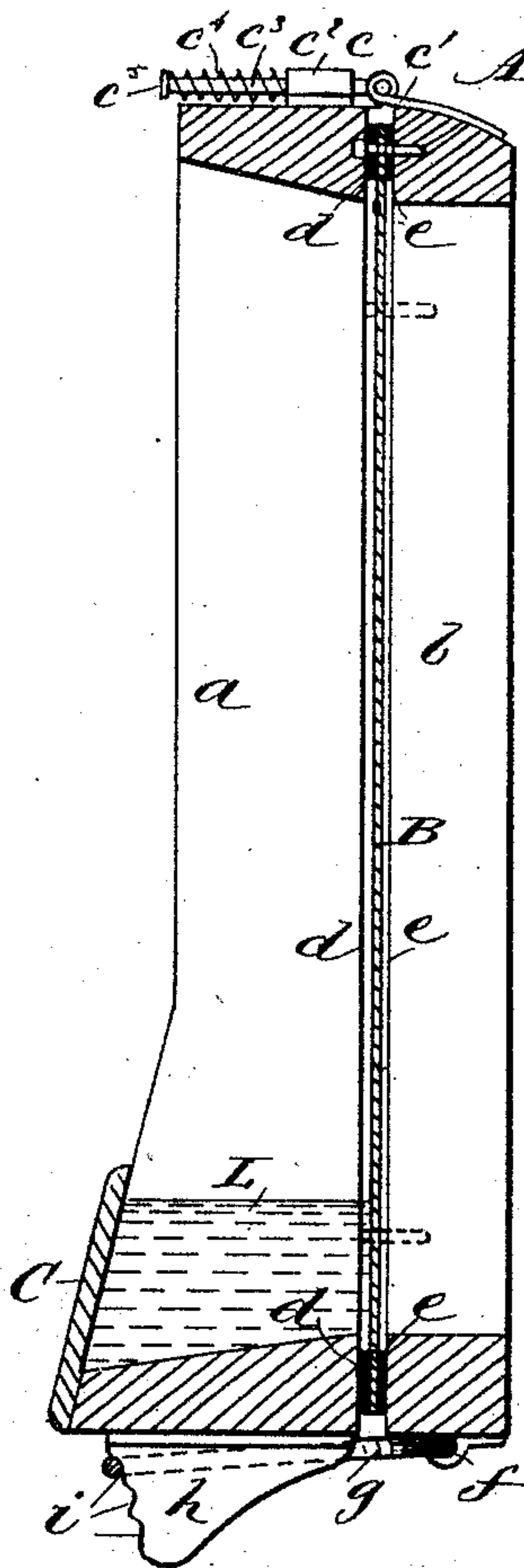
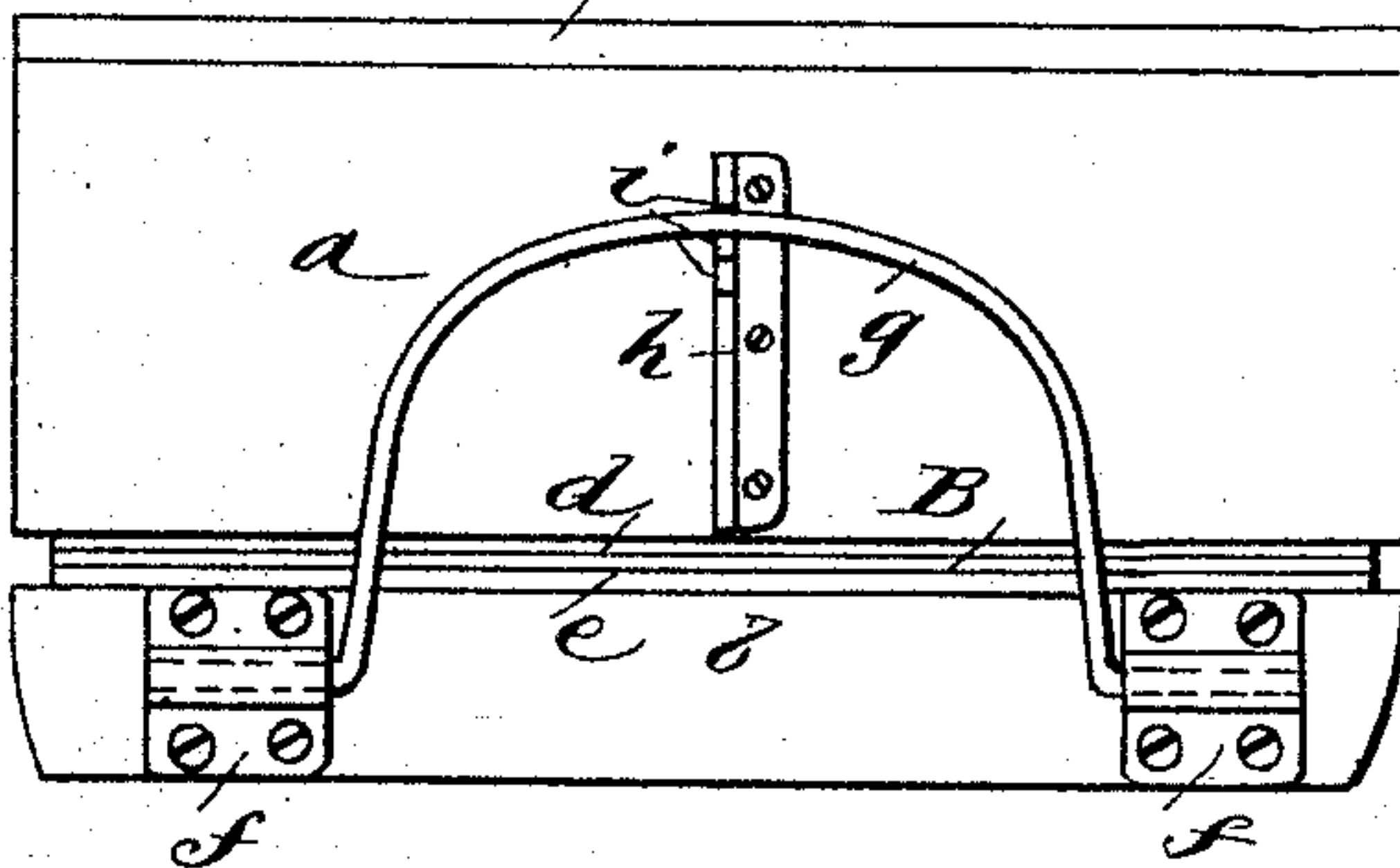


Fig. 3



Fig. 4



WITNESSES:

C. Neveu

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INVENTOR:

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BY Munn & Co

ATTORNEYS.

UNITED STATES PATENT OFFICE.

WILLIAM H. LEWIS, OF NEW YORK, N. Y., ASSIGNOR TO E. & H. T. ANTHONY
& CO., OF SAME PLACE.

PHOTO-DEVELOPING BOX.

SPECIFICATION forming part of Letters Patent No. 353,493, dated November 30, 1886.

Application filed May 26, 1885. Serial No. 166,738. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM H. LEWIS, of the city, county, and State of New York, have invented a new and Improved Photo-Developing Box, of which the following is a full, clear, and exact description.

My invention relates to improvements in sectional and bottomless photo-developing boxes wherein the photographic plate or film placed in the box constitutes the bottom of the box for retaining the developing-liquid; and the invention consists in hinging the sections of the box together by spring or yielding hinges to avoid danger of breaking the plate or film, and to adapt the box to hold photographic films, with or without plates, and plates of different thicknesses.

The invention further consists of a locking-plate and spring-bail attached to the sections, the plate being inclined and notched at its upper edge to receive the bail in notches stepped one above the other, so as to close and lock the sections tightly upon photographic films, or upon photographic plates of various thicknesses.

The invention finally consists of the box provided at one end with said notched and inclined locking-plate and bail and at the other end with the yielding hinges, all as hereinafter fully described and claimed.

Reference is to be had to the accompanying drawings, forming part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a front elevation of my new and improved photo-developing box, showing a photographic plate held therein. Fig. 2 is a sectional elevation of the same on the line *x x* of Fig. 1; and Figs. 3 and 4 show in front elevation the opposite ends of the box with its sections closed upon a film or plate.

The photo-developing box A is composed of the two sections *a* and *b*, hinged together by the hinges *c*. The sections *a b* are provided, respectively, at their adjacent edges with yielding strips *d e*, of rubber or other suitable material, which strips close together when the box is closed, and constitute the grasping-surfaces of the sections *a b*, for holding in the box the photographic plate or film B to be de-

veloped. The plate or film B, placed in the box between the sections *a b*, and the sections closed tightly upon it, will be held all around its edges and upon both sides by the strips *d e*, and with a cushioned or yielding pressure, which avoids injury to and danger of breaking the plate or film, and the pressure causes a liquid-tight joint to be formed between the strip *d* and the plate or film B, so that the plate or film forms the bottom of the box to receive and retain the developing-liquid L.

To avoid excessive pressure upon the plate or film B at the end next to the hinges *c*, and to adapt the box to hold photographic films, and also photographic plates of different thickness, I construct the hinges *c* to spring or yield, so that the sections *a b*, when closed, will spread, according to the thickness of the plate or film placed between them. In this instance the hinges *c* are each formed of eye-plate *c'*, attached to section *b*, eye-plate *c''*, attached to section *a*, and bent hinge-rod *c'''* and coiled spring *c''''*, placed thereon, to act between the head *c''''* of the rod *c'''* and the upper edge of the eye-plate *c''*. The rods *c'''* are bent at right angles, and the eye-plates *c' c''* are placed at right angles to each other to hold the rod *c'''*, as shown in Fig. 3, so that the action of the springs will close the sections *a b*, and yield to accommodate any object of considerable thickness placed between them, the plates *c''* sliding upon rods *c'''*, according to the thickness of the object.

To the end of the section *b*, opposite the hinges *c*, I attach by the plates *f f* the locking-bail *g*, and to the center of the section *a*, I attach, by screws or otherwise, the locking-plate *h*, the upper edge of which is inclined and notched, as shown at *i*, to receive and hold the bail *g*, for locking the sections *a b* together, and to still further avoid rigid grasping of the photographic plate or film by the sections of the box, I make the bail *g* semicircular in form and of suitable spring-wire, so that it will have a spring action in being forced upon the upper edge of the plate *h*, thus constituting a flexible lock for the sections.

The notches *i* are stepped one above the other, as shown in Fig. 2, so that the bail *g* may be pressed into one or the other of them,

according to the thickness of the plate or film placed between the sections *a b*, causing them in all cases to be closed snugly upon the plate or film, no matter what thickness they possess.

5 A partial cover, *C*, is secured upon one end of the section *a*, which partial cover, together with the end and side walls of the section *a*, form a receptacle for retaining the developing-liquid *L* when the box is held in vertical position, as in Fig. 2, for inspecting the film or plate *B* being developed. This avoids the necessity of pouring the liquid from the box and returning it every time the progress of development is to be observed; and by constructing the box without a bottom and adapting the box to hold the photographic film or plate directly, so it forms the bottom of the box, the light to the back of the plate or film is entirely unobstructed, so that the development of the plate or film may be observed by holding the box in vertical position with the same precision as though the plate or film were removed from the box and the liquid and held up in the hands.

25 I do not claim, broadly, a photographic developing-box composed of open frames or sections hinged together and provided with packing or cushioning strips at their closing or adjacent edges, as such construction is shown in the application of R. E. Atkinson, Serial No. 157,676, on which my invention is an improvement, the same consisting, mainly, in yielding springs and in providing both sections of the box at their closing or adjacent

edges with strips of yielding material to protect and avoid breaking the photographic film, as specifically claimed below, nor do I lay any claim, broadly, to the locking-plate and bail applied to the sections of the developing-box. 35

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is— 40

1. The sections or frames *a b* of the developing-box *A*, hinged together by springs or yielding hinges *c*, substantially as and for the purposes set forth. 45

2. The box *A*, composed of two open frames or sections, *a b*, in combination with the spring or yielding hinges *c* at one end, and the spring-bail *g* and inclined and notched plate *h* at the other end, arranged to operate substantially as described. 50

3. The sections *a b*, provided with the yielding strips *d e*, in combination with the yielding hinges *c*, applied to the ends of the sections *a b*, substantially as described. 55

4. The section *b*, provided with the horizontally-arranged eye-plates *c'*, and the section *a*, provided with the vertically-arranged eye-plates *c''*, in combination with the bent hinge-rods *c'''*, and coiled springs *c''''*, placed upon the rods to press upon the plates *c''*, substantially as and for the purposes described. 60

WILLIAM H. LEWIS.

Witnesses:

EDGAR TATE,
ALBERT EDWARD BRINKERHOFF.