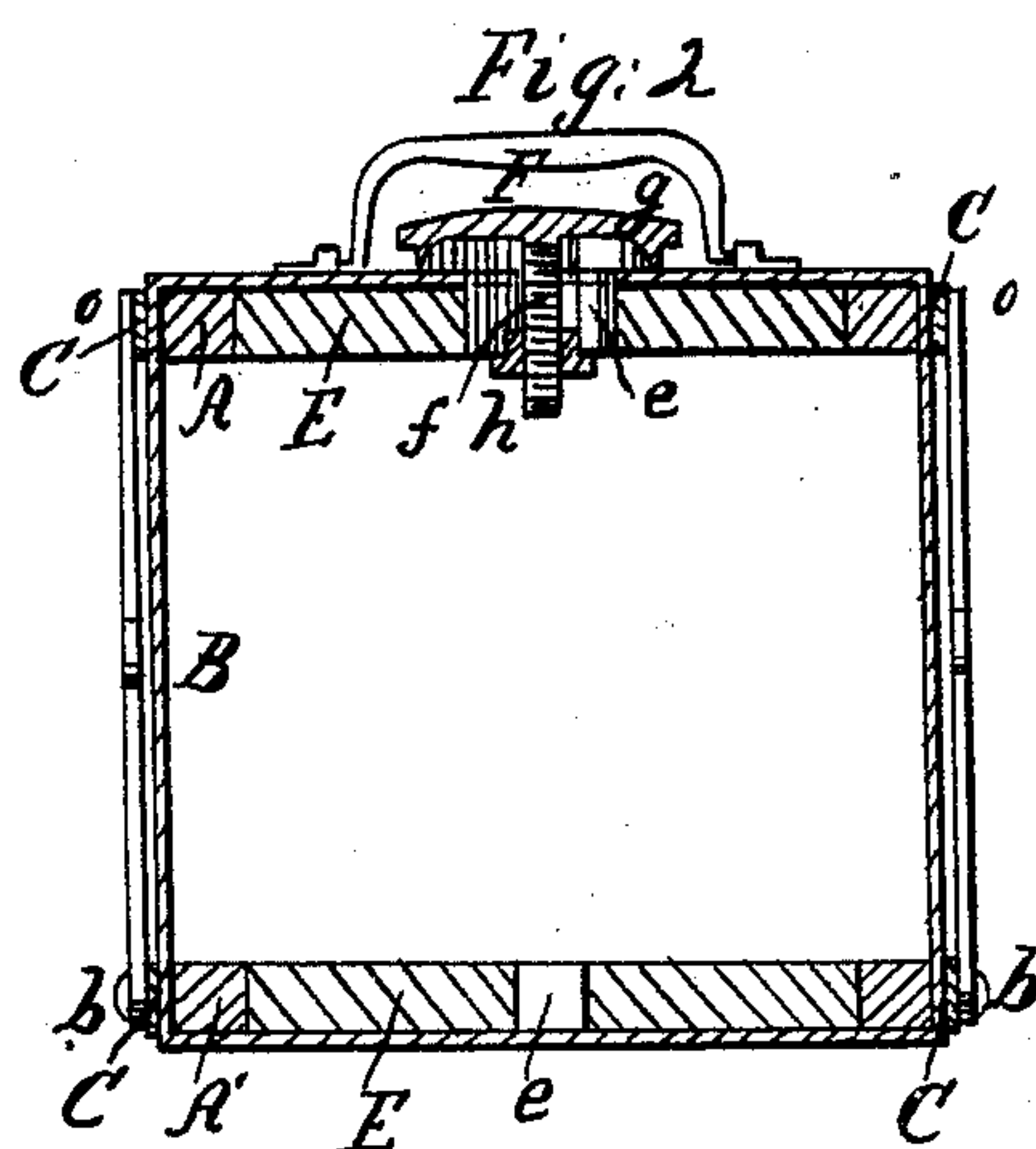
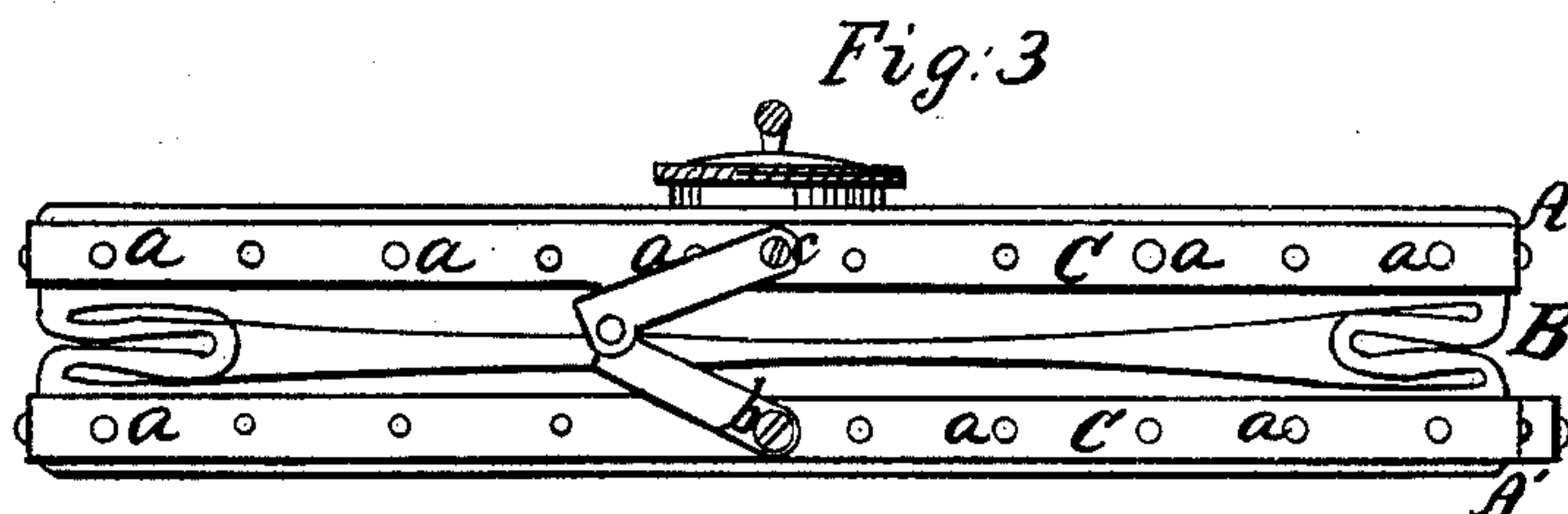
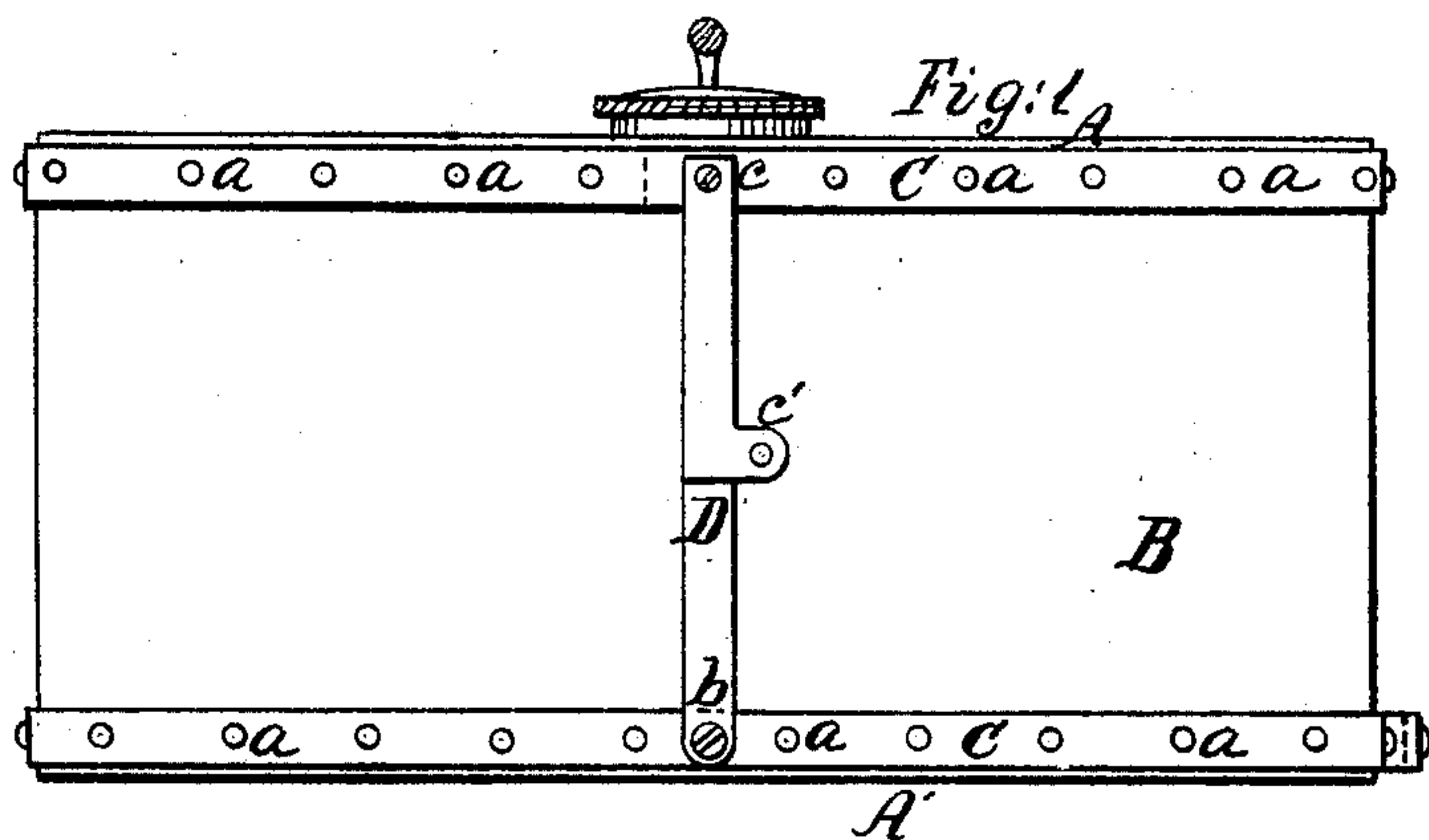


O. E. Woods. Life Buoy.

N^o 25,781.

Patented Oct. 11, 1859.



Witnesses
Wm. P. Hubberd
Lewis Goddard

Inventor
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UNITED STATES PATENT OFFICE.

OLIVER EVANS WOODS, OF PHILADELPHIA, PENNSYLVANIA.

IMPROVED LIFE-PRESERVING BUOY.

Specification forming part of Letters Patent No. 25,781, dated October 11, 1859.

To all whom it may concern:

Be it known that I, OLIVER EVANS WOODS, of Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented a new and Improved Life-Buoy; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming a part of this specification, in which—

Figure 1 represents a side elevation of my life-buoy expanded and ready for use. Fig. 2 is a transverse vertical section of the same. Fig. 3 is a side elevation of the same when compressed.

Similar letters of reference in the three views indicate corresponding parts.

To enable others skilled in the art to fully understand and make and use my invention, I will proceed to describe its construction and operation.

A A' are two frames, made of wood and in a rectangular form strong enough in proportion to the size of the buoy and according to the weight and pressure which they are expected to sustain. These frames are covered and united by some flexible air and water tight material B, such as india-rubber cloth, which is secured to the sides of the frames by means of sheet-metal strips C, which are firmly fastened to the frames by a large number of tacks or screws *a*, so that the whole forms a perfectly air and water tight box. The two frames are kept apart by means of stays D, which are secured to the frames A A' by means of pivots *b c*, and which are hinged together in the center by means of a pivot *c'*, so that the frames can be compressed and the stays assume a position, as clearly represented in Fig. 3, or that they can be turned up at right angles with the sides of the frame, as represented in Figs. 1 and 2. Both the frames are strengthened by cross-braces E, which are secured between the frames and flush with their upper edges, and one or more of these braces are perforated with holes *e*, which extend through the india-rubber covering B and which are covered up by valves F. One of these valves is represented in section in Fig. 2, and it consists of a screw *f* with a large round head *g*, which is turned in on its under side, and secured to

the under side of the brace E is a metal bar *h*, which forms the nut for the screw *f*. When this screw is screwed down tight, the opening *e* is perfectly closed.

Secured to the brace E is a handle G, whereby the buoy can be raised and carried from place to place, and which when the box is not used can be turned down on the surface of the same.

The operation is as follows: When my life-buoy is to be used and inflated through the agency of gravity, then let the upper frame be sustained, and upon opening the valve E the subjacent frame immediately descends and the air rushing into and through the valve-opening inflates the buoy. The valve F is now closed and the air within prevented escaping. When the buoy is to be inflated through the mechanical agency of the stays, then open the valve F as before, and simultaneously with making the stays rigid the two frames will be separated and the air rushing through the valve-opening will fill the buoy. The valve should now be closed; but even when not closed, if the stays are used the device will still in most cases remain a very efficient buoy. When the stays are used, they receive and sustain the pressure, to which in their absence the sides of the buoy would be subjected. By compressing the sides and closing the valve F the soundness of the material may be tested. If sound, then the pressure of the atmosphere will cause the device to remain compressed even when sustained by the upper frame only but when thus sustained, if the device is out of order air will enter through the crevices and the two frames separating will point out that some imperfection exists; but, I repeat, a serious puncture may be made in the material and the device still remain an efficient buoy, provided the stays are used.

Buoys constructed on the foregoing principle can be used with great advantage to save life in individual cases by being attached to and forming part of portmanteaus, hat-boxes, &c. They can likewise be made on a scale sufficiently large to form pontons for bridges, and even to sustain ships. It will be noticed that a buoy constructed according to my principle requires no blowing up in order to inflate it. My buoy is inflated through the

agency of either one of two forces—to wit: gravity or the mechanical agency of stays. In the former case the device may be said to be self-acting, the inflation of the buoy being the almost instant consequence of opening the valve F. The inflation through the mechanical agency of the stays is almost equally expeditious, and in either case the operation can be conducted by the most inexperienced person.

By reason of the manner in which my buoy is constructed it can be made to sustain a much greater pressure than other devices for the same purpose.

The top and bottom of my improvement being composed of rigid plates, its form is always preserved and the elastic parts are protected from injury. An ordinary life-preserver could not, like my improvement, be lashed to trunks, chairs, tables, spars, rafts, and the like, because the cords would soon chafe or cut through or burst the same; nor could a life-preserving trunk be used for such

purposes as the strain of the cords and ropes would separate the cover or hinged top and destroy the air-supporting vessel.

My improvement may be readily attached to any of the aforesaid articles, either by means of cords passed through the handles or bound around the buoy.

For use in case of shipwreck my improvement forms a powerful and reliable float, less subject to injury than the ordinary cloth or pliable life-preservers.

What I claim as new, and desire to secure by Letters Patent as a new article of manufacture, is—

A buoy arranged with two frames A A', stays D, and cross-braces E, and with a valve or valves F, and otherwise constructed and operated as herein described.

OLIVER EVANS WOODS.

Witnesses:

WM. P. HIBBIRD,
LOUIS GODBOU.