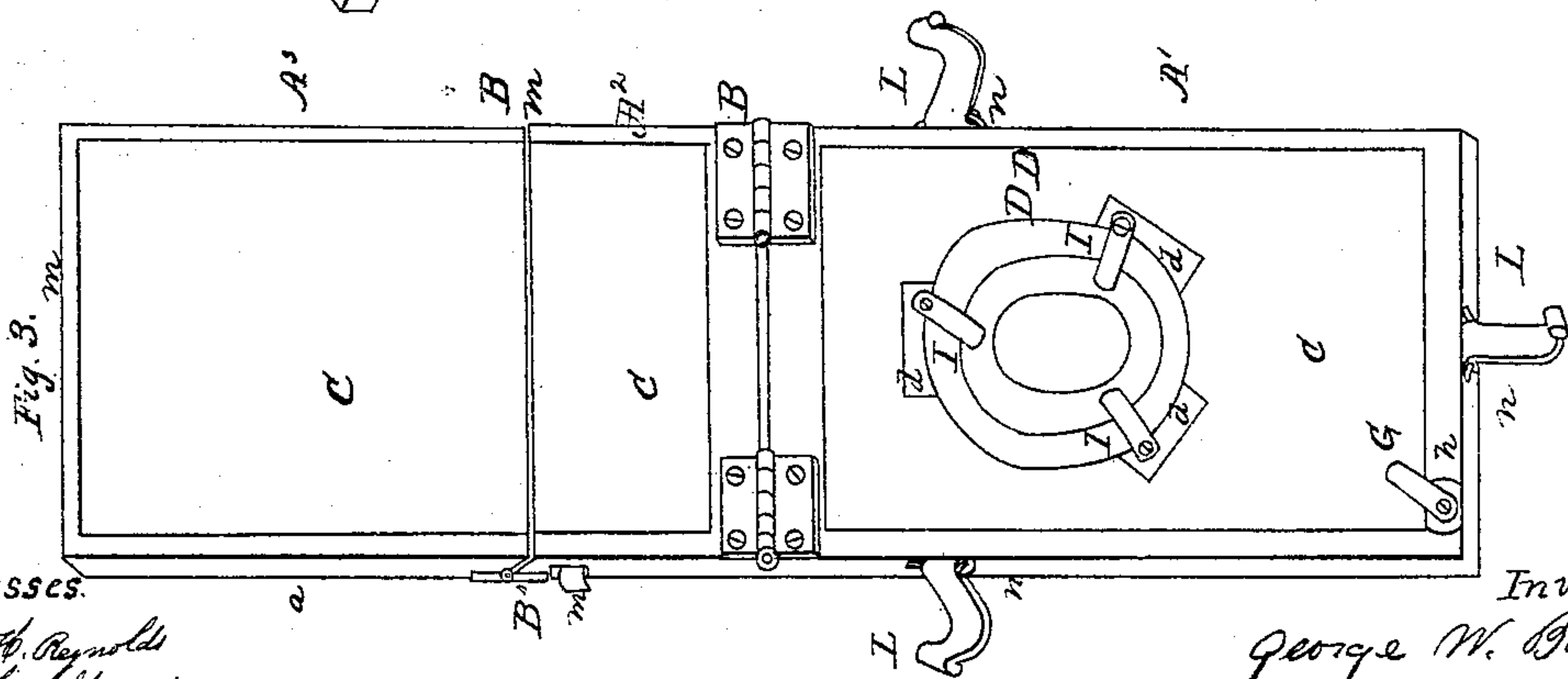
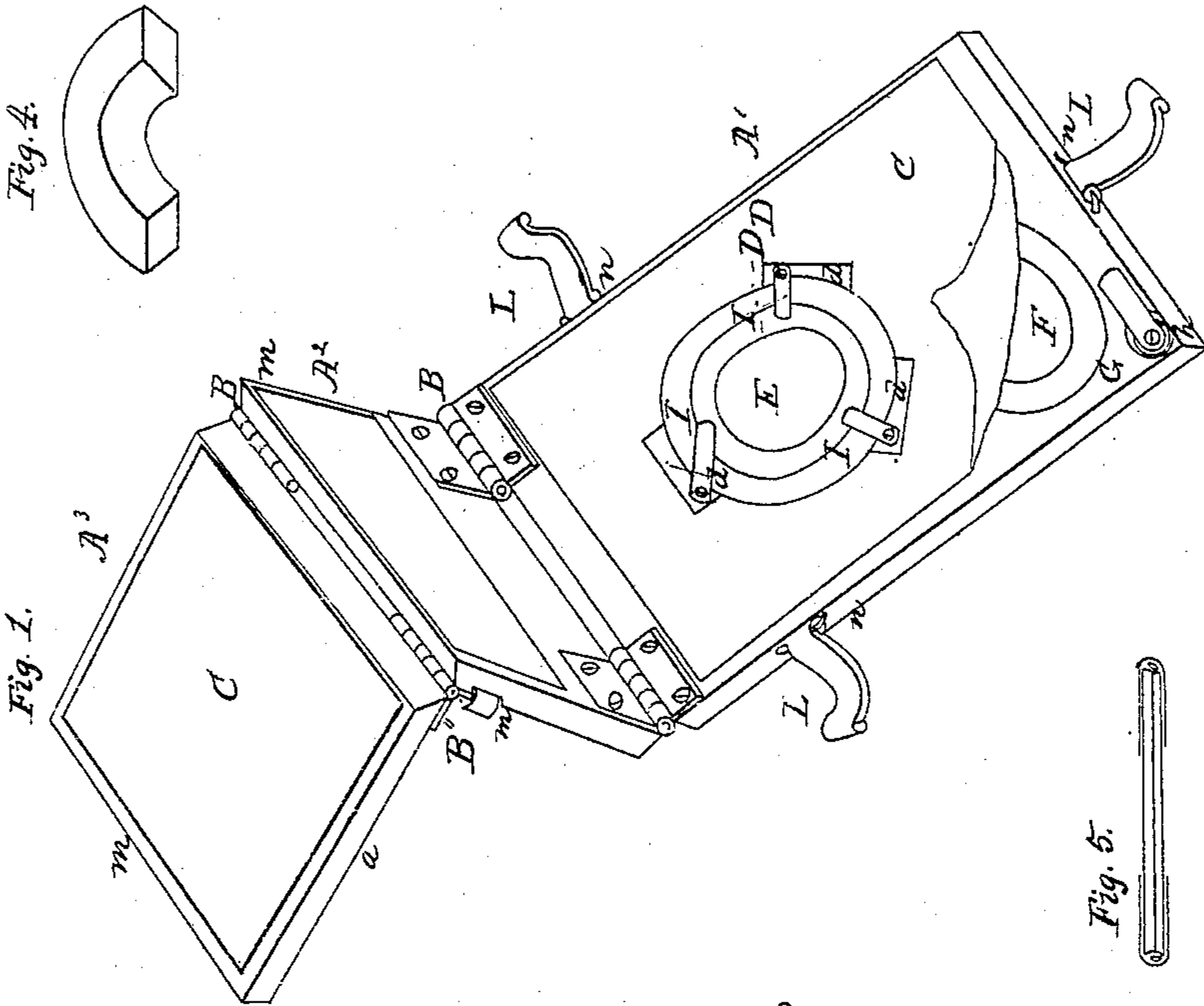
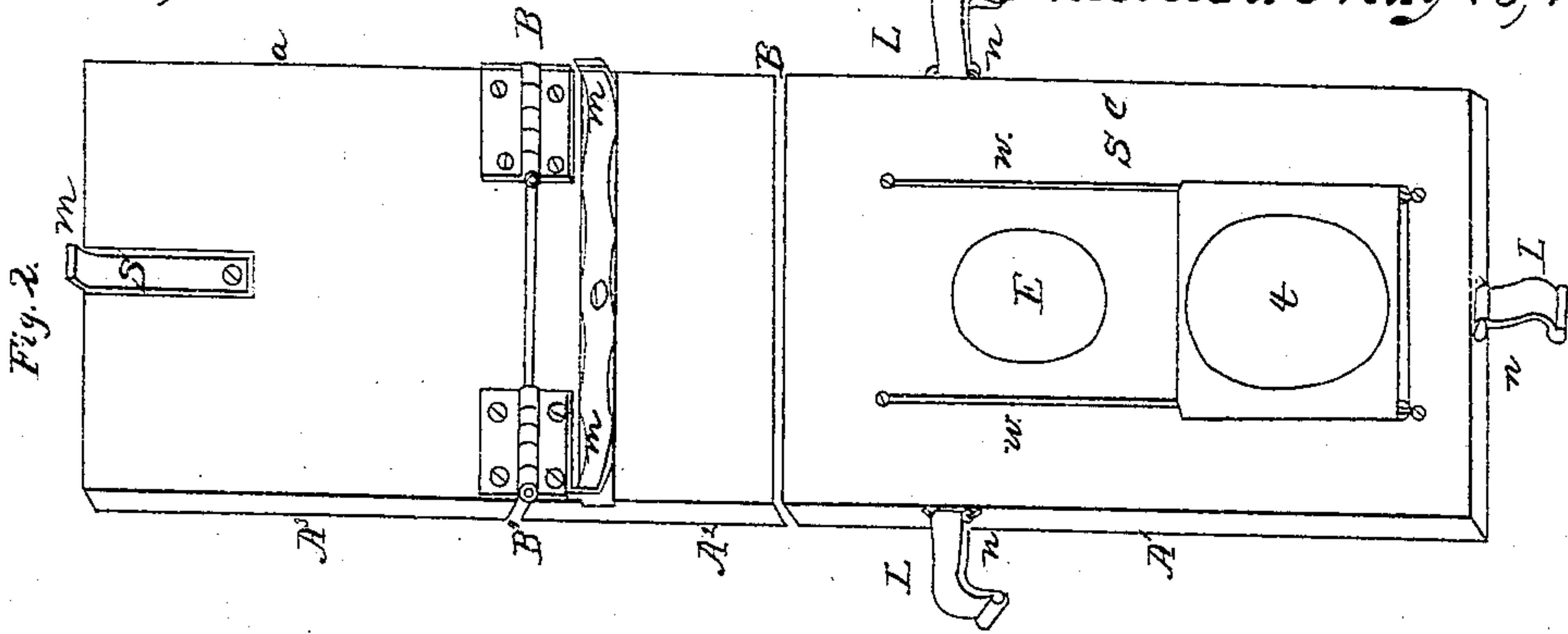


G. W. & W. Bowlby,

Photographic Printing Frame.

N^o 22,637.

Patented May 10, 1864.



Witnesses.

J. H. Reynolds
Chas. French

Inventors,

George W. Bowlby
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UNITED STATES PATENT OFFICE.

GEORGE W. BOWLSBY AND WILLIAM H. BOWLSBY, OF MONROE, MICH.

PHOTOGRAPHIC-PRINTING FRAME.

Specification forming part of Letters Patent No. 42,637, dated May 10, 1864.

To all whom it may concern:

Be it known that we, GEORGE W. BOWLSBY and WILLIAM H. BOWLSBY, of Monroe, in the county of Monroe and State of Michigan, have invented new and useful Improvements in Photograph Printing-Frames; and we hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference thereon.

The nature of our invention consists in making a photograph printing frame more compact, more complete, convenient, and cheaper than those heretofore used, and in so arranging the parts and fastening them together that they need never be separated, and, therefore, saving the consequent delay of looking up the different parts to use under the varying circumstances.

It is a frame of wood, with a cloth lining inside to cushion the negative, a series of rings in the aperture to vary the size of the pictures, a pocket under the cloth lining to hold the same when not in use, a combination of latches, catches, and springs to close the frame onto the negative, and a screen to shut out the light when too strong.

In the accompanying drawings, Figure 1 is a perspective view of the frame, partially opened. Fig. 2 is an outside plane view. Fig. 3 is an inside plane view. Fig. 4 is a cross-section of one of the protractor-rings. Fig. 5 is a cross-section of the glass screen and sliding ways.

Similar letters of reference refer to like parts.

A' A² A³ is the frame, of wood, hinged together as shown at B B, and consists of three pieces, one piece, A', being a complete half of the frame, the other half consisting of the two pieces, A² and A³, divided at about one-third of the distance from the hinging of the two halves with a bevel cut, as shown at B''.

The whole of the inside is covered with a cloth, C C C, to act as a cushion to hold the negative firmly in place, and also to prevent breakage.

The object of the bevel cut at B'' is to prevent the disturbance of the sensitive paper in its seat on the negative when lifting the cover *a* to observe the progress of the printing.

D D are rings, of paper-pulp, hard rubber, gutta-percha, papier-maché, pressed leather, wood, or any other semi-elastic and suitable

material, and made of a form to fit the aperture E, and with a proper bevel, as shown in Fig. 4, to shade off the print and vary its size at pleasure, and when not wanted in the aperture are put away in the pocket F under the cushion C and buttoned down by the little thin metal button shown at G, said button being lifted from the wood sufficiently to pass readily over the cloth by the little metal washer, and pierced by the fastening hinge-screw and carried around on the wire traveler *h*, all shown at G *h*.

The pocket F is a cavity sunk in the wood of the depth and size of the rings.

The thin metal buttons I I I serve to hold in the protractor-rings, and they swing into the recesses cut into the cushions *d d d* when not in use.

The latches *l l l* swing upon wire staples *n n*, and lock over onto the catches *m m m*, said catches being at the end of the springs S S, which are sunk into the wood of the opposite half of the frame and grasp the frame onto the negative and the printing paper. Sloping gains are sunk under the springs to permit their working.

The springs serve the triple purpose of adapting the frame to different thicknesses of negatives, equalizing the pressure on the glass, and make a uniformly firm catch for the latches under all circumstances.

The screen S C is made of two plates of common glass with a thin paper lining between them, and made to adhere firmly together for increased strength by any adhesive substance that is of proper transparency, as gum-arabic solution, starch, oil, &c. The plates are then bound with a thin frame of brass at the edges, wrapping it completely, except the aperture *t*. It is made to traverse on sliding ways or travelers of wire W W, more than twice its own length, is fastened at the ends with a coil about projecting screws, and lifted a little from the plane by said coil. The wires pass through the metal binding between the edges of the glass plates and the curved walls of the binding the whole length of two sides of the screen in the line of traverse. It is so arranged as to be readily placed over the aperture E when the sunlight is strong and prevents the sharp outline of print so undesirable, and when the sun is obscured is readily removed to admit the weakened light. The

doubling of the glass and the cementing it together on the paper or cloth lining greatly increases its strength, so much so as to require a severe blow to break it, therefore insuring it against accident. The friction of the screen upon the plane of the frame and on the travelers W W insures the retention of the frame in its seat wherever desired.

Having thus fully described our improved frame, we will proceed to compare its merits with those in use.

We are not aware that any other photograph-printing frame has been made entirely in one piece, including all the parts that are desirable, as in this frame, namely, holder A', grip A², lid A³, latches L L L, springs S S, catches m m, screen S C, cushions C C C, protractor-rings D D, with thin pocket F. Some of these parts in various forms, different from these, have been more or less united, and some of them absent, but never so but that it was necessary to hunt up something that had strayed from the frame in order to its complete working under all circumstances. This is of very great importance, as when a great number are used the different parts get so mixed up as to greatly delay the various manipulations. The parts are all so attached together as to permit the frequent examination of the print with the least delay and without pinching the grip A² onto the negative and against the bed A' of the frame to keep the sensitive paper and negative in their places while turning the print up to view, and the fastenings are so readily opened and closed as to make the least possible delay in such examination, which is very important, especially when the number of prints is great or the light strong and the printing rapid.

The disposition of the parts in relation to each other is such as to make the whole very compact, there being no surplus material in it of any kind; therefore a greater number can be placed in the limited space usually to be had with the proper light.

The screen is much cheaper than the ground or obscured glass of commerce, and is tenfold

stronger because of the crossing of the lines of fracture, as no two plates of glass can possibly be striated in exactly the same direction, and this, in addition to the increased thickness, and also the accessory strength of the fibrous material between the plates and the adhesive power of the cement, together with the absorption of the strain or jar (in case of sudden and violent contact) by the cushioning or deadening effect of the fibrous material between, and therefore not any more liable to breakage than the rest of the frame, as it would be with a frail plate of single glass or paper only, as generally used. The smooth glass surfaces are also readily cleaned of grease and dirt, which is not the case with the furrowed ground glass or the softened and absorbing surface of the obscured glass, which is of no little account in the under surface, especially of the screen, as it is not readily reached. The ways W W act as a ready means of altering the position of the screen, and at the same time hold it just where wanted.

Having thus described our invention, we do not claim the hinging together of some of the principal parts of a photograph-printing frame; but

What we do claim, and desire to secure by Letters Patent, is—

1. The protractor-rings D D, with their fastenings I I I.
2. The pocket F.
3. The combined latches L L L, catches m m, and springs S S.
4. The screen S C, with the ways W W, made substantially in the manner described.
5. The cushioning of both sides of the negative, instead of one only, as heretofore done, and which is here complete, as shown at C C C.
6. The combination of all the devices for the purposes set forth in the manner hereinabove shown.

GEORGE W. BOWLSBY.
WM. H. BOWLSBY.

Witnesses:

L. H. REYNOLDS,
THOS. SHERCK.