

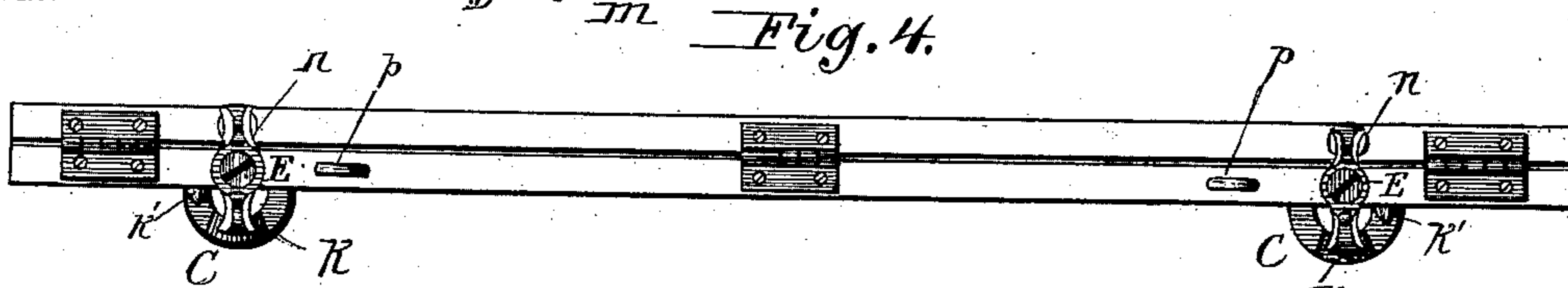
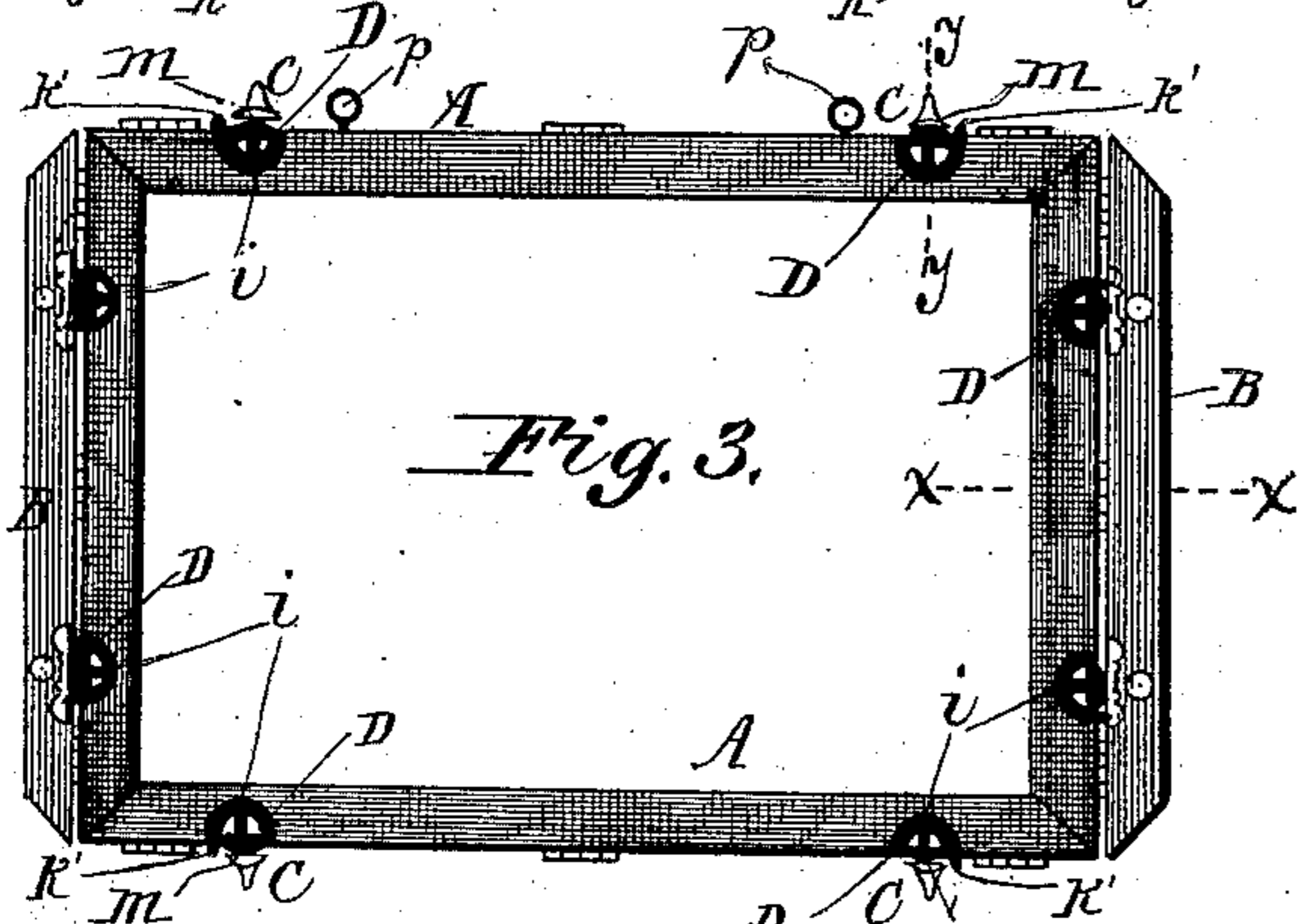
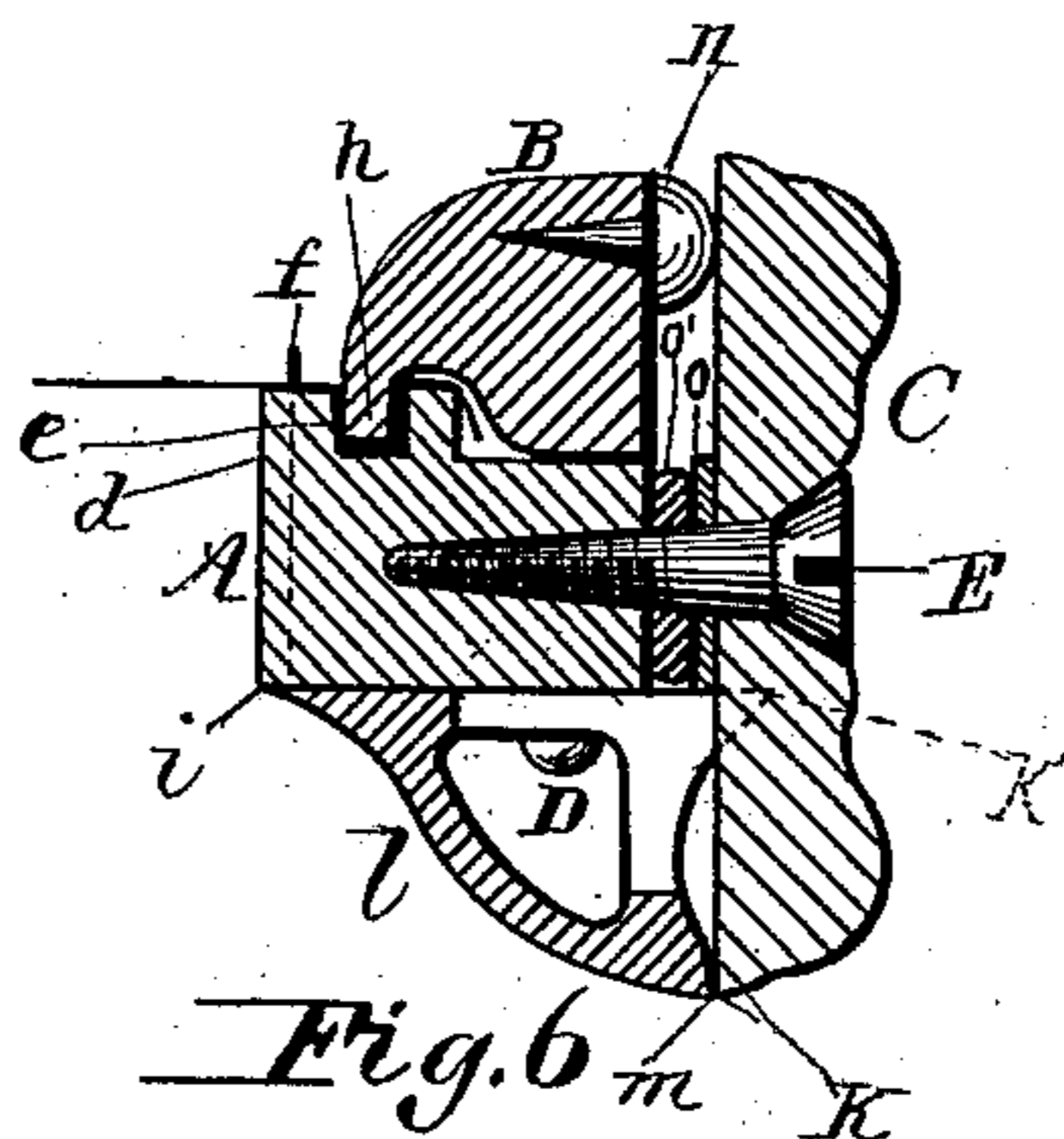
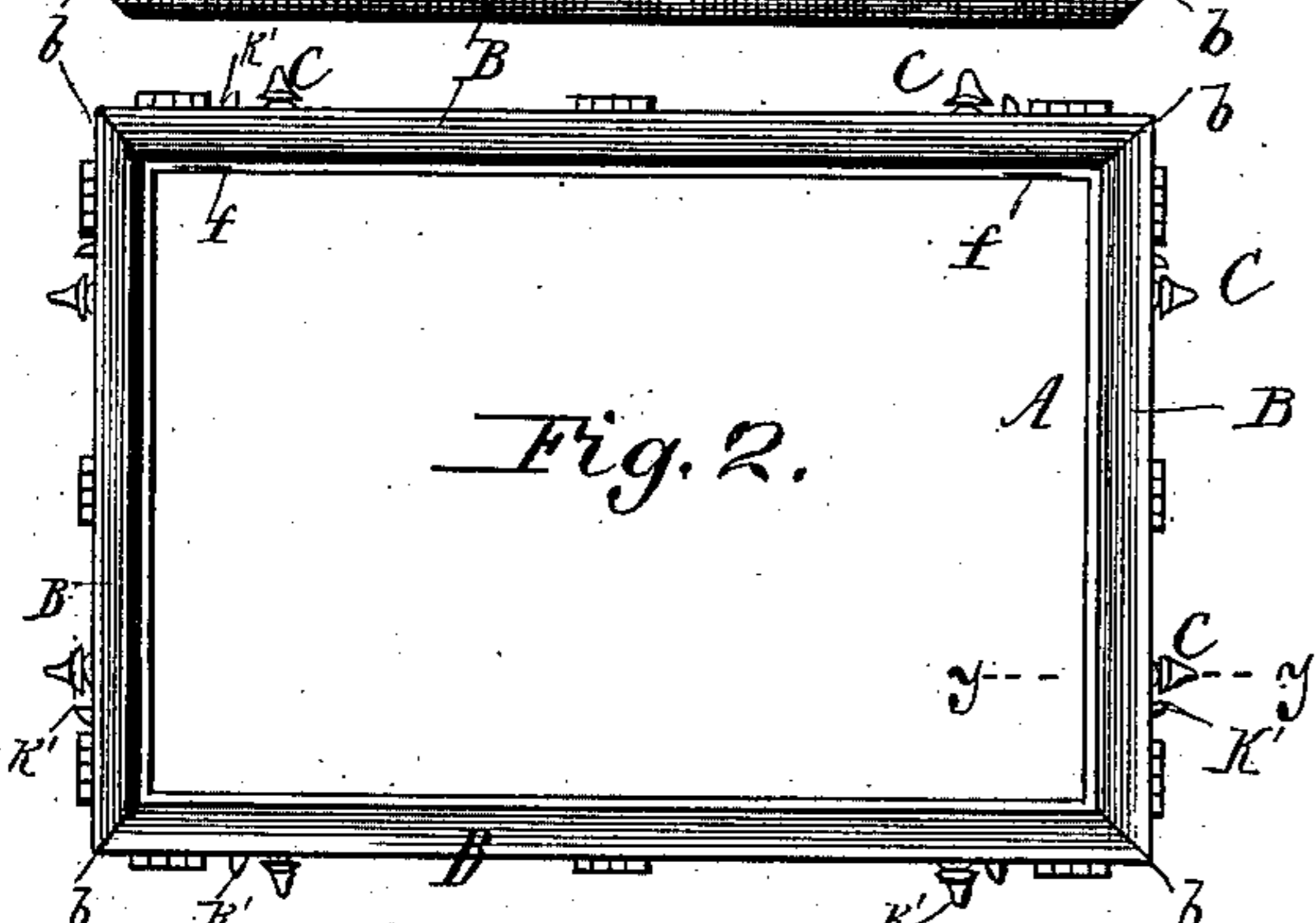
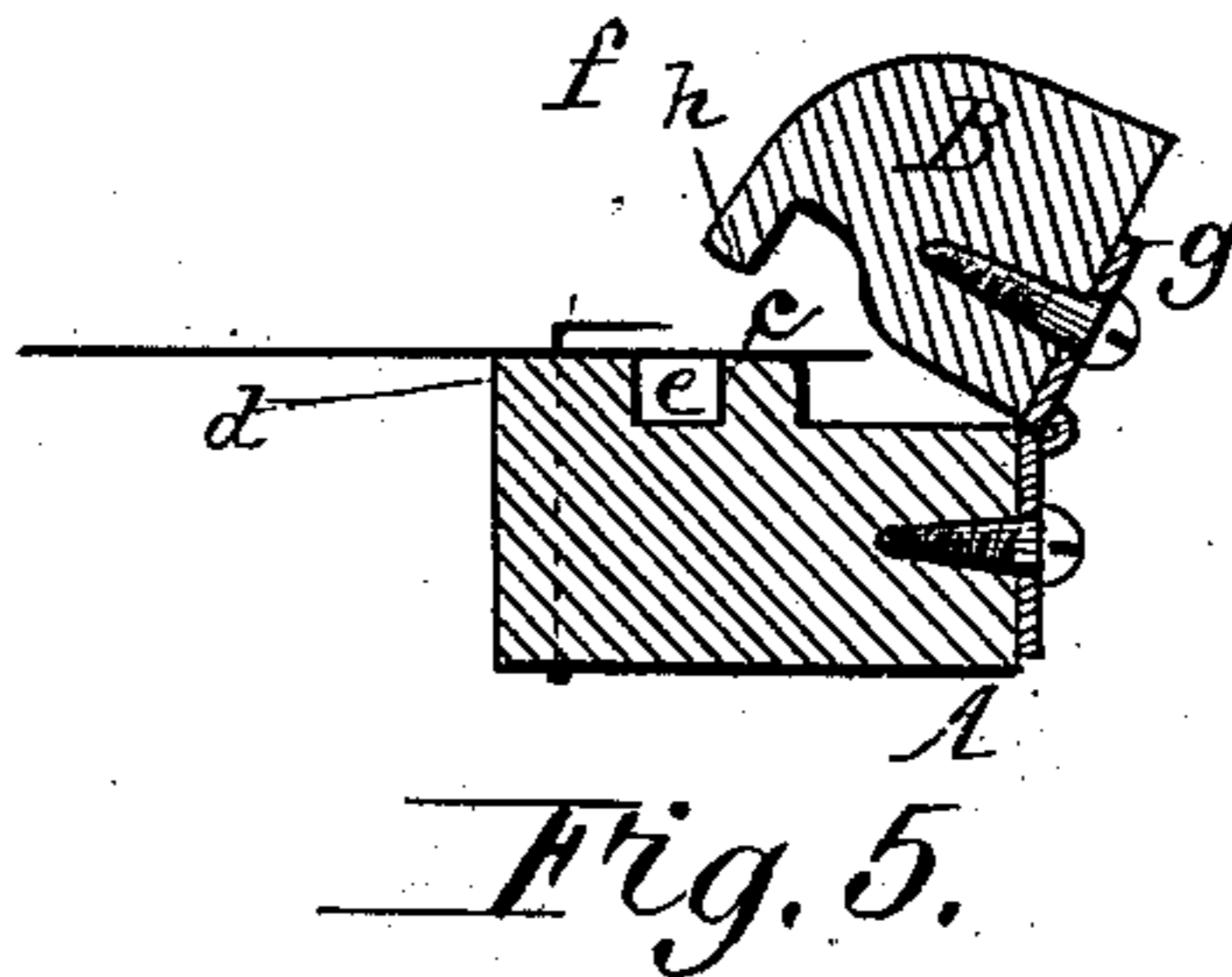
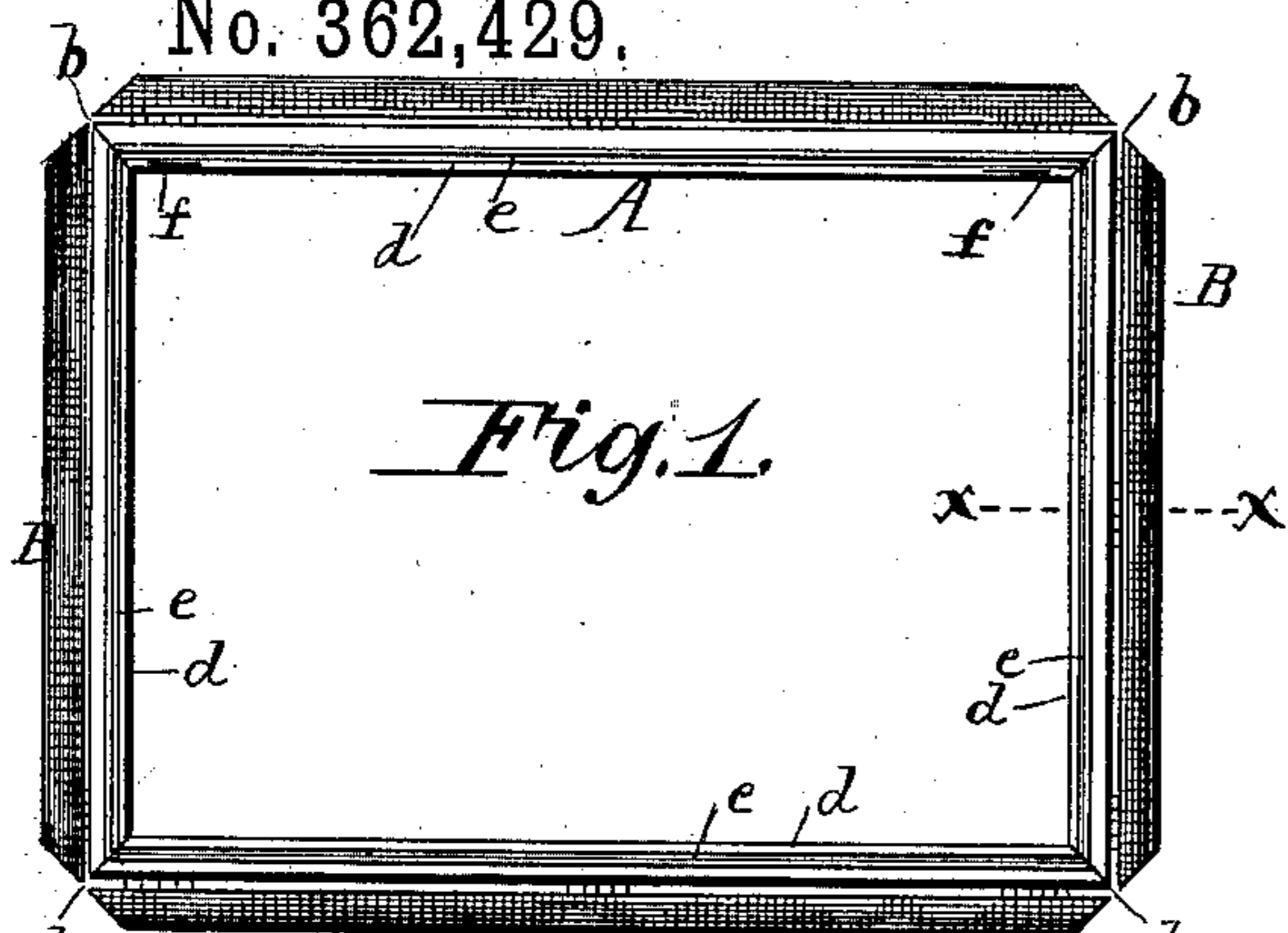
(No Model.)

E. S. CROWELL.

STRETCHING AND DRYING FRAME FOR SENSITIZED PAPER.

No. 362,429.

Patented May 3, 1887.



Witnesses:

B. C. Fenwick
A. S. Lindsey

Everard S. Crowell
Inventor:
by Emerson Hodges
Atty.

UNITED STATES PATENT OFFICE.

EVERARD S. CROWELL, OF ROCHESTER, MINNESOTA.

STRETCHING AND DRYING FRAME FOR SENSITIZED PAPER.

SPECIFICATION forming part of Letters Patent No. 362,429, dated May 3, 1887.

Application filed October 13, 1886. Serial No. 216,174. (No model.)

To all whom it may concern:

Be it known that I, EVERARD S. CROWELL, a citizen of the United States, residing at Rochester, in the county of Olmsted and State of Minnesota, have invented certain new and useful Improvements in Stretching and Drying Frames for Sensitized Paper; and I do hereby 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.

My invention relates to an improvement in stretching-frames, and more particularly in frames employed by photographers in stretching and drying sensitized paper.

In the process of sensitizing paper much annoyance has been experienced by photographers owing to the fact that the albumenized paper employed by them, after being subjected to a solution of nitrate of silver or other sensitizing solution preparatory to its receiving impressions, would shrink unequally upon drying, and so remain until it had received the imprint, when, being again thoroughly soaked in various solutions, it would again expand irregularly and remain enlarged when mounted, (this being invariably done while the paper is yet wet,) thus drawing the likeness out of proportion, either longer or broader than would be natural, owing to the well-known fact that the sensitized paper used, having shrunk irregularly, will expand more in one direction than in the other. Heretofore inventions for avoiding this difficulty have been devised in which a pair of frames hinged together at one side were provided the one with a groove around its upper face and the other with a corresponding tongue adapted to receive the paper between them when shut, a board of the thickness and size of the frame being placed within one frame to hold the paper in position, while the second frame was shut over the same in the process of stretching the paper; but much-deserved objection has arisen against this form of construction, since it is an inconvenient frame to manipulate, ineffectual in its work, and liable to get out of order.

The object of my present invention is to provide a frame in which sensitized paper may be tightly and equally stretched in all directions alike, and firmly held in place while

drying, kept smooth, and not curled and twisted out of shape.

A further object is to provide a frame in which the paper may be held during the process of printing.

A further object is to provide a frame with means for securely locking it when in closed adjustment.

A further object is to provide a light frame which may be conveniently packed and shipped.

With these ends in view my invention consists in certain features of construction and combination of parts, as will be hereinafter described, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a top plan view of the stretching-frame with the clamping members in open adjustment. Fig. 2 is a view of the same with the clamping members closed. Fig. 3 is a bottom plan view showing a pair of the clamping members closed and one pair open. Fig. 4 is a side elevation of the stretching-frame, showing the fastening device in top plan view. Fig. 5 is a vertical section through line *x x* on Fig. 1. Fig. 6 is a vertical section through line *y y*, Fig. 2.

A represents a rectangular frame of any convenient size and material. The frame is constructed of four strips of wood, preferably a little broader than thick, and fastened together at the ends, forming the right angles or corners *b*. The inner portion, *d*, of the upper face, *c*, of the frame is made thicker than the outer portion, and a longitudinal groove or depression, *e*, is sunk therein, extending within a short distance of the corners. Just beyond the end of the groove *e*, in two of the adjacent corners, pins or hooks *f* are secured. Of these further mention will be hereinafter made.

The clamping members B are firmly hinged one to each side of the frame A. The clamps or clamping members B are thickest at the hinged portion *g*, and thence taper to a narrow tongue or projection, *h*, of a size and length adapted to fit the groove *e* when in closed adjustment.

On each side of the frame, about midway from the corners, the devices C are attached for fastening the parts in locked adjustment.

A secure fastening is effected in the follow-

ing manner: A bracket, D, is fastened on the bottom face of each side of the frames, having a rounded or inverted-horseshoe-shaped back, *i*, a substantially similar shaped top, *k*, integral with and perpendicular thereto, and a brace, *l*, extending between the bights of the back *i* and top *k*; but the form of the parts described is not essential, (this form, however, being best adapted to the purpose sought.)
 10 The top *k* is provided on its upper face at one of its ends with a lug, *k'*, adapted to restrict the locking-button from turning in one direction beyond a parallel with the back face of the frame. At point *m*, preferably above the
 15 brace *l*, a double incline or rise is formed integral with the top *k*, and adapted to act as a wedge for the locking-button while holding the frame closed. A pin-head or lug, *n*, is secured in the back of the clamping member,
 20 which also acts as a wedge for the button when the same is turned to lock the parts in closed adjustment.

The button E is of ordinary construction, and one is pivotally secured to each side of the frame in a direct line between the lug *n* and the rise *m*. Beneath the button, which may be attached by an ordinary screw, is placed a metallic washer, *o*, with a rubber washer, *o'*, beneath it, for the purpose of holding the button firmer in place and allowing the adjustment of the tension.

A pair of eyes or screw-eyes, *p*, are fastened in the side of the frame, by means of which it can be suspended upon the wall.

35 The operation of the parts is as follows: The frame, being open, is suspended face outward upon a couple of nails conveniently placed in a block secured to the wall by means of the eyes *p*. The albumenized paper
 40 then, being caught by two of its corners, is drawn from the sensitizing nitrate of silver or other solution and suspended upon the pins *f*. After closing the upper and lower clamps, B, the buttons E on the upper and
 45 lower side of the frame, then being taken one in either hand of the operator, are turned simultaneously, thus closing and locking the parts. The two remaining sides of the frame are then closed in like manner. When so
 50 stretched, the paper is left in the frame until dry, after which process it is proof against irregular swelling, stretching, or shrinking.

It is obvious that by changing the corners of the frame slightly the image might conveniently be printed from the negative upon the
 55 paper and washed and toned for mounting before being removed from the frame, the said frame forming a shallow tray, the paper

itself being the bottom thereof. If desired, the frame may be similarly constructed on either side—in other words, duplex in construction—so that two sheets of paper may be stretched and dried at once.

A great advantage of this frame is attained by its hanging in a vertical position, not only from the fact that it requires but little space and is in convenient position for operation, and is not nearly so liable to catch dust as when lying horizontally, but also from the fact that the sensitizing solutions are evenly dried on its surface, the surplus flowing off; also, any scum which may collect in spots on the surface of the paper may be readily removed by applying a little absorbent cotton.

It is evident that slight changes might be resorted to in the form and arrangement of the several parts described without departing from the spirit of my invention; hence I do not wish to limit myself to the particular construction herein set forth; but,

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

1. In a stretching and drying frame, the combination, with the main frame and clamps hinged thereto, of pins whereon the paper is hung while being engaged by the clamping members, and a pair of screw-eyes attached to the frame, upon which it is to be hung, substantially as set forth.

2. In a stretching and drying frame, the combination, with the main frame and clamping members, of a locking device consisting of a bracket rigidly secured to the frame and provided on its upper face with a lug and incline, and a button pivotally secured to the frame and adapted to rest one end on the incline and the other on a lug or pin-head in the clamping member when in its locking adjustment, substantially as set forth.

3. In a locking device, the combination, with a button pivotally secured to the side of the main frame, of a bracket rigidly secured on a plane perpendicular to that of the button and provided on its upper face with a lug for limiting the turn of the button, and a double incline, a lug being placed on the back of the clamping members, upon which the opposite ends of the buttons rest in locking the parts, substantially as set forth.

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

EVERARD S. CROWELL.

Witnesses:

R. H. GOVE,
H. H. MONROE.