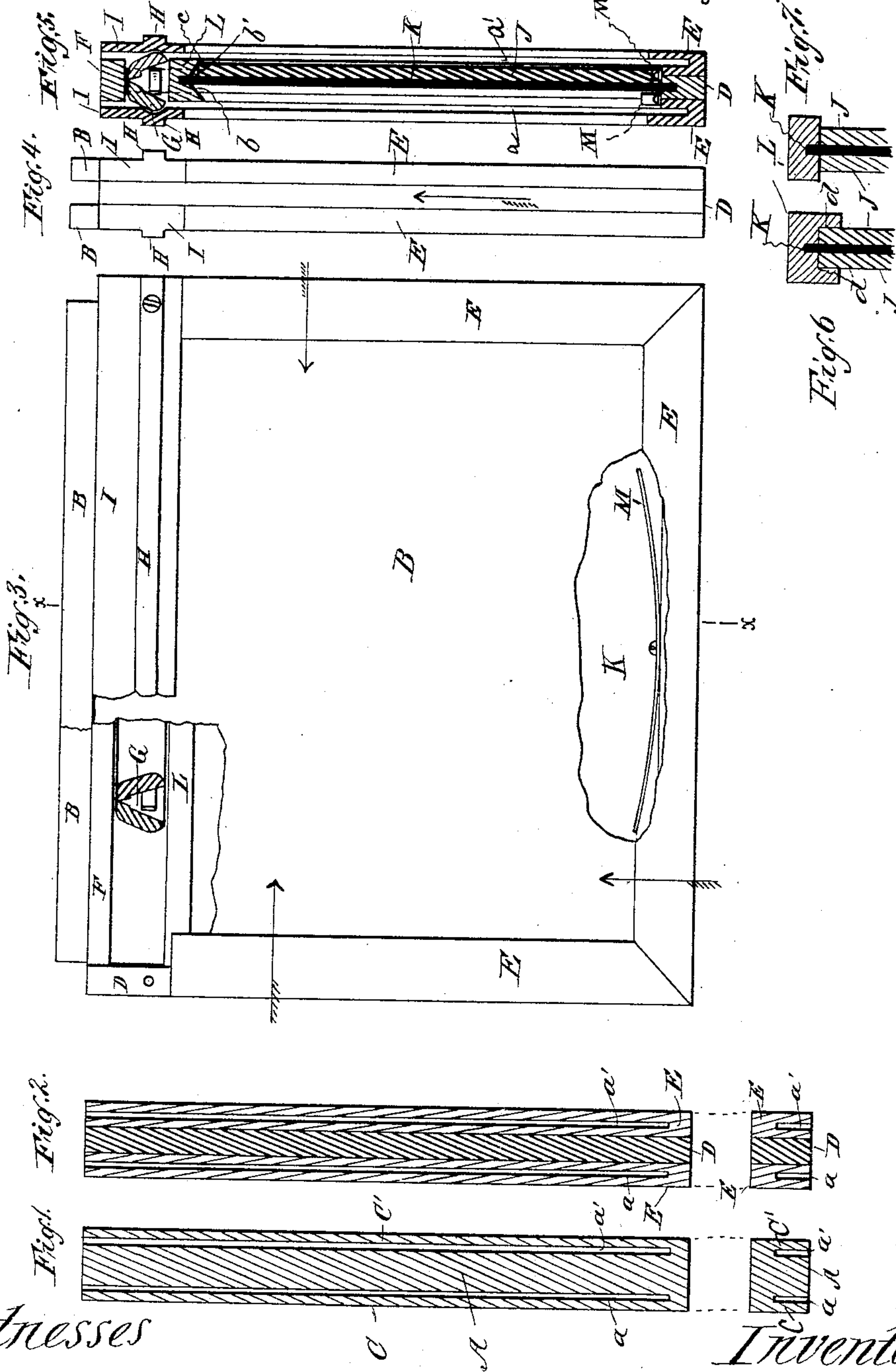


(Model.)

A. G. TISDELL.
PHOTOGRAPHIC PLATE HOLDER.

No. 386,907.

Patented July 31, 1888.



Witnesses

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UNITED STATES PATENT OFFICE.

ABNER G. TISDELL, OF BROOKLYN, NEW YORK.

PHOTOGRAPHIC-PLATE HOLDER.

SPECIFICATION forming part of Letters Patent No. 386,907, dated July 31, 1888.

Application filed August 20, 1887. Serial No. 247,422. (Model.)

To all whom it may concern:

Be it known that I, ABNER G. TISDELL, a citizen of the United States, and a resident of Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Photographic-Plate Holders, of which the following is a specification.

My invention relates to plate-holders for photographic cameras; and it consists in a novel construction of parts of the frame of the plate-holder which conduces to its strength.

My invention also relates to the devices used for holding the plate in the holder.

In the accompanying drawings, forming part of this specification, Figure 1 is a transverse section through one side of the frame of a plate-holder as now constructed. Fig. 2 is the same view through one side of the frame of a plate-holder constructed according to my invention. Figs. 3 and 4 are respectively front and end views of the plate-holder upon which my invention is made, Fig. 3 being broken away at several places to show details. Fig. 5 is a transverse section on the line *xx*, Fig. 3, showing my improved construction of frame and device for holding the plate in the holder. Figs. 6 and 7 are detailed views, hereinafter to be described.

I will now describe the first part of my invention.

Photographic-plate holders are usually composed of a top piece and three sections fastened together, one on either side and one at the bottom. Through the top section and in grooves in the side and bottom sections the exposing-shutters move.

In Fig. 1 of the drawings there is shown in section one of the side sections, A, of a double plate-holder, having the grooves *a a'* for the exposing-shutters B B cut in it. The grain of the wood used in making these sections runs lengthwise of each of the pieces composing the frame, and when the grooves *a a'* are cut the portions C C' are very fragile and are constantly liable to breakage in removing and replacing the plates in the holder, for it will be evident that when the exposing-shutters are out of the grooves the pieces C C' can easily be broken if thin, for they break directly in line with the grain of the wood, and the plate-holder will thus be rendered useless. If in

this construction the pieces C C' are left thick enough to be strong, the plate-holder becomes thick and bulky. To remedy this defect, and to make a light, cheap, and strong wooden plate-holder, is the primary object of my invention, and I accomplish it in the following way:

I may first take, for the purpose of making either of the side sections or bottom section of the frame—for my invention is not applicable to the top section, F, of the frame—three pieces of wood, as D, and unite them at the corners in the proper way to make a frame. Each piece of wood D is to have the grain run lengthwise of the piece, as shown by the arrow in Fig. 4. I, however, for these central frame-sections use strips of wood, which are thinner than the finished frame, as shown at D in Figs. 2, 4, and 5. I next preferably glue on both sides of the three pieces D other pieces, E E E, of wood. (Best shown at Figs. 2 and 4.) These pieces of wood E E E have the grain running for the several sections, as shown by the arrows in Fig. 3. The slots *a a'* for the exposing-shutters B B may now be cut wholly, as shown in Fig. 2, in the exterior piece, or the slot may be cut partly in the exterior pieces, E E E, and partly in the central piece, D, the grooves being in each case cut into the end of the grain of the wood. The previously-described fragile portions C C' will now be found to be strong and durable by reason of the direction of the grain of the wood in relation to the grooves *a a'*, and the said portions C C' may be made very much thinner than the like parts in Fig. 1 and still be sufficiently strong, which would not be the case were the grooves *a a'* cut in a piece of wood having the grain running as A in Fig. 1.

The object of having the grain run in the exterior pieces, E E E, as described, is to give strength for the portions C C', and the object of having the grain run, as described, for the central piece, D, is to give strength to the sections and to form a support for the exterior pieces, which, by reason of the way the grain runs, would be very fragile if not supported. By this manner of constructing the side and bottom sections a thin, strong, and light frame can be made wholly from wood and at a cost but little above that of the old method, as shown in Fig. 1. I prefer to cut the grooves

$a a'$ entirely in the exterior pieces, E E E, for by so doing I obtain the maximum area of wood obtainable to hold the pieces of each section together by gluing.

5 It is not necessary to describe the upper section, F, of the frame, though I have illustrated it in the drawings.

I am well aware that it is old to unite sheets of veneering with their grains crossing each other for the purpose of strength and the prevention of warping, composite material of this character being used for perforated chair-bottoms, mats for picture-frames, and for like purposes; and hence I desire to be understood as
15 not considering myself to be the inventor, broadly considered, of a frame or other article made up of thin sheets of wood united with their grains crossing each other.

I will now describe the other portion of my
20 invention.

In Fig. 5, G is the light trap common to this kind of a plate-holder, and H H are projections which assist in holding the plate-holder within the camera, and are raised on the side
25 pieces, I I, made separate from the frame.

In Fig. 5, J is the plate in position in the holder.

K is the back of the holder, forming in this case the dividing-partition of a double plate-holder, such as here illustrated.
30

L is a head-block at the top of the plate-holder and against which the plate is pushed by the spring M at the bottom of the holder. (Best seen in Fig. 3.) Of course, although I
35 have not shown it, the holder is provided with corner-pieces or their equivalents at the bottom, as is common in all holders.

The head-block L, against which the plate is forced by the spring, is in my invention beveled inwardly, as at $b b'$, and the spring M presses the upper and outer edge, c , of the plate J against this beveled surface. Thus the spring-pressure where the plate meets the bevel of the head-block is transformed into a
45 force tending to hold the plate against the back or partition K of the holder, and in this way the plate is securely held in position and is not liable to be jarred forward or from under the beveled or undercut head-block L. The
50 head-block may extend part way or the whole way across the top of the holder.

At Figs. 6 and 7 is shown two of the methods in use for holding the plate at the top in plate-holders, in which the plate is inserted through
55 the opening made by withdrawing the exposing-shutter, which is the class of holder to which my present invention especially relates.

In Fig. 6 the head-block L is undercut so as
60 to lock the plate J positively within the holder, the spring below keeping the plate up in the groove d thus formed.

In Fig. 7 the bottom of the head-block L is straight, and the plate J is kept from falling
65 forward against the slide or out, when the slide

is removed, merely by the friction of the plate against the bottom of the block.

The method shown in Fig. 6 secures the plate perfectly; but its use is annoying, and it is difficult to remove the plate from the holder. 70
The method shown in Fig. 7 alone does not hold the plate with sufficient security at the top, and it is apt to be jarred forward, so that it will come in contact with the slide; and in plate-holders having head-blocks like those in
75 Fig. 7 other devices are used to insure the retention of the plate. By my method, however, of beveling the head-block so that the upward force of the spring causes the plate to be pushed inward and away from the slide, no
80 danger of displacing the plate exists, and the plates can be put in and taken out of the holders through the slide-openings very easily.

It will be seen from an examination of Fig. 5 that the beveled portions of the head-blocks
85 extend outward directly from the septum or back K, so that the plate will be held securely regardless of its thickness.

To remove the plate the slide is first taken out, and the holder being held in a position
90 slightly inclined from the perpendicular toward the plate to be removed, its lower edge is struck upon the palm of the hand, when the plate will drop out through the slide-opening.

I have illustrated my invention in the drawings as for a double-plate holder. It is equally applicable for use in single-plate holders. If
95 it is used in a single-plate holder, the sections will be made thinner and the set of grooves $a a'$ in the pieces E E E will be omitted on one side and the partition K will form the back of
100 holder.

When my invention is used in the manufacture of single-plate holders, I still have to use the three pieces, as before described, for
105 each section, though only the exterior piece on one side of each section is grooved, for if this were not done the sections would warp.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, 110
is—

1. As a new article of manufacture, a photographic-plate holder having frame-sections each composed of three pieces of wood suitably attached, the grain of the central pieces
115 running lengthwise of the sections and the grain of the exterior pieces running at right angles to the grain of the central pieces, the said frame being provided with a shutter groove or grooves formed in the said exterior
120 pieces transverse to the grain thereof, substantially as described.

2. In a photographic-plate holder provided with an exposing-shutter and grooves for the said shutter, the combination of the pieces D
125 D D and the pieces E E E, and the grooves for the exposing-shutter, formed in the pieces E, transverse to the grain thereof, the grain of the several pieces composing the sections running substantially as described. 130

3. In a photographic-plate holder, the combination of the frame having grooves for the exposing-plate, a back, K, a spring which forces the plate upward, and a head-block lying
5 close to the said back K and having its edge adjacent thereto beveled to the same, as at *b*, whereby the force of the spring is caused to press the plate close against the back, substantially as described.

Signed at New York, in the county of New York and State of New York, this 17th day of August, A. D. 1887.

ABNER G. TISDELL.

Witnesses:

B. T. VETTERLEIN,
G. W. BORCHERS.