(No Model.)

J. H. RUDOLPH.

SLATE FRAME.

No. 524,353. Patented Aug. 14, 1894.

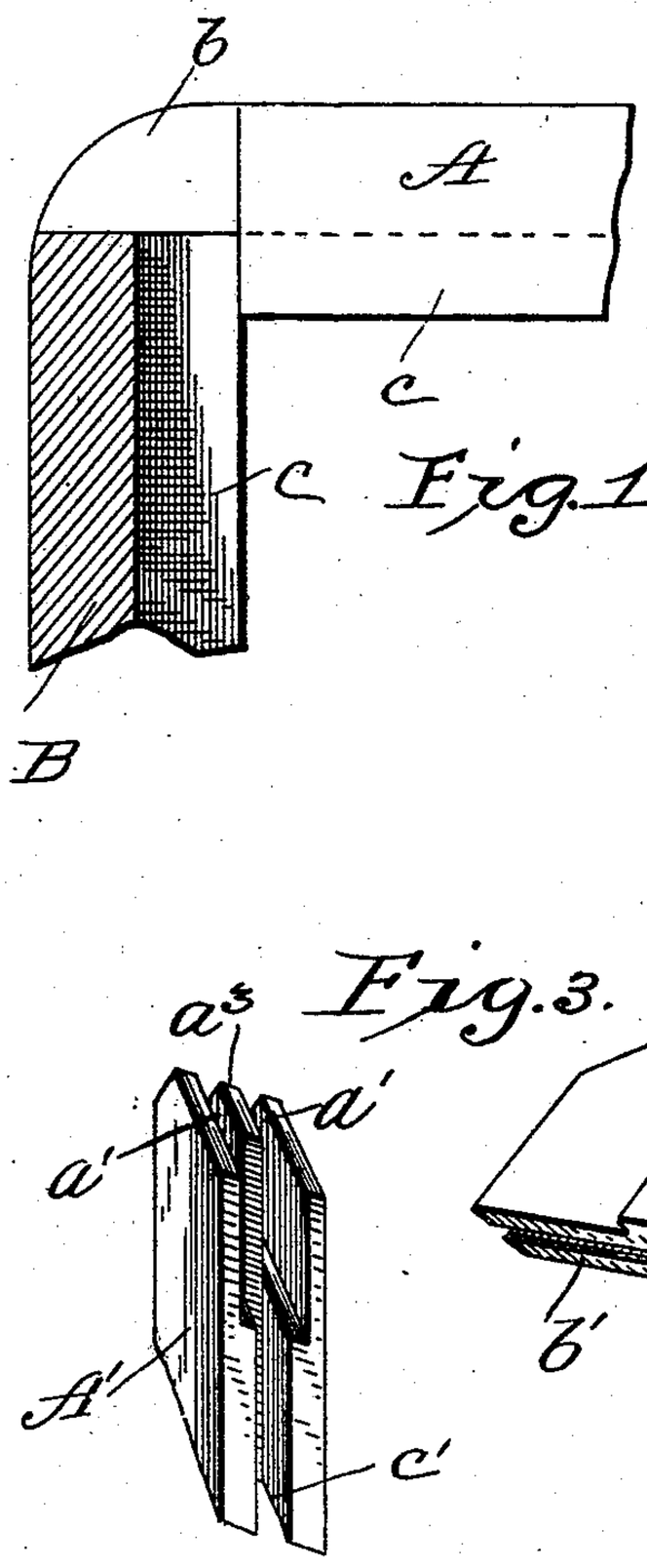


Fig. 1.

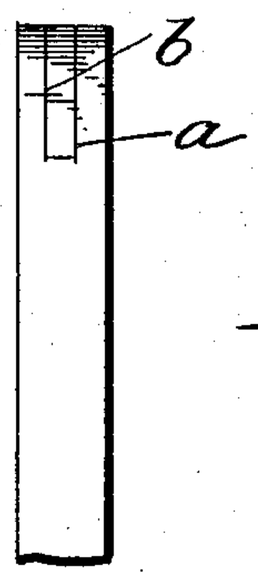


Fig. 2.

Fig. 3.

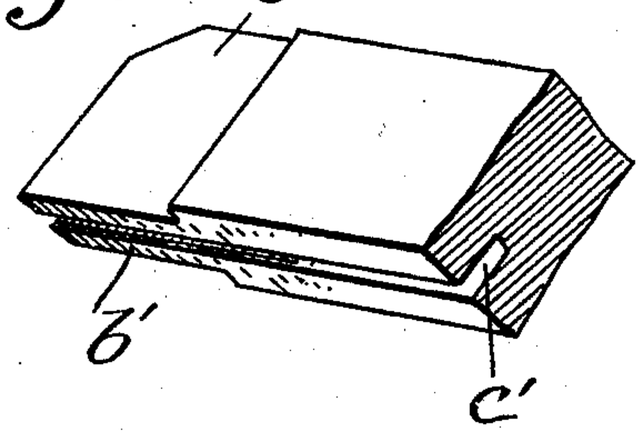


Fig. 4.

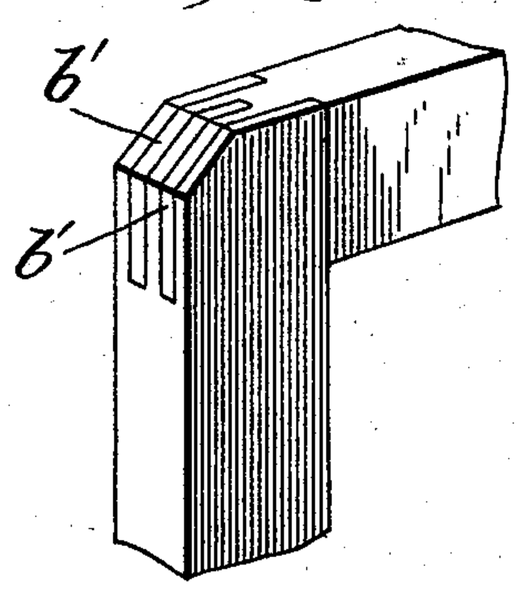
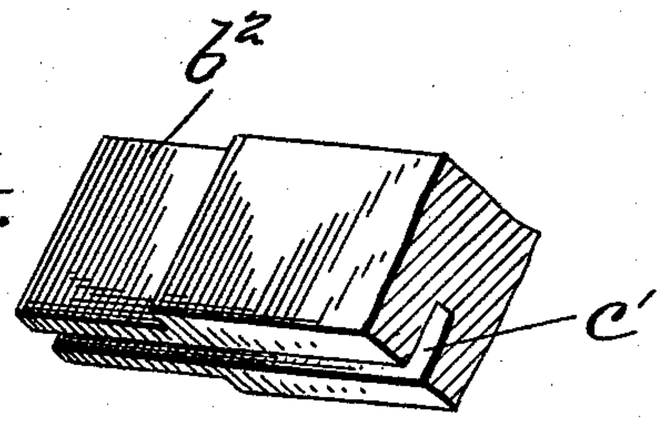


Fig. 5.



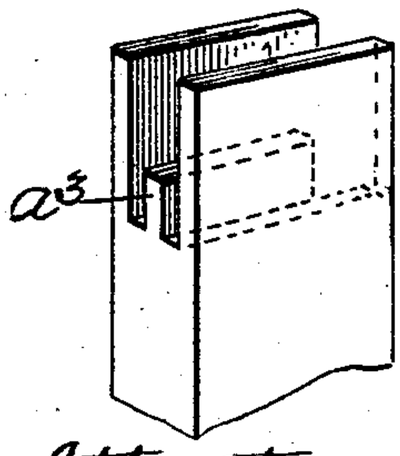
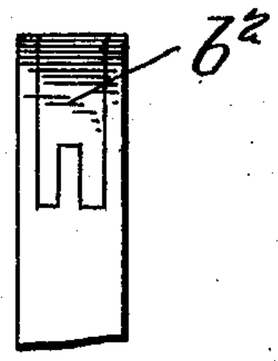


Fig. 6.



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UNITED STATES PATENT OFFICE.

JUSTUS H. RUDOLPH, OF SLATINGTON, PENNSYLVANIA.

SLATE-FRAME.

SPECIFICATION forming part of Letters Patent No. 524,353, dated August 14, 1894.

Application filed December 20, 1893. Serial No. 494,235. (No model.)

To all whom it may concern:

Be it known that I, JUSTUS H. RUDOLPH, a citizen of the United States of America, residing at Slatington, in the county of Lehigh and State of Pennsylvania, have invented certain new and useful Improvements in Slate-Frames, of which the following is a specification.

Slate frames as heretofore constructed are made with but a single tenon and mortise forming the connection between the strips at the corners, and hence of necessity have to be made about an inch wide so as to make the tenon sufficiently large and strong to hold the frame together at the corners of the slate.

As is well known, the strips composing the slate frame, which are generally about three-eighths by four-sevenths of an inch in cross section, are formed with a groove in one edge to receive the slate, which of necessity reduces the size of the tenon a very material amount because there can be no tenon in the space which must be occupied by the groove for the slate edge. On account of this, therefore, it is necessary to make the frame of larger strips in order to secure the requisite strength, when often times much smaller strips would be desirable.

Another objection to the slate frames as usually constructed arises from the fact that the joints between the tenons of adjoining strips are directly in line with and form practically continuations of the side walls of the groove holding the slate. When water is used upon the slate in cleansing it the moisture obtains ready access to the glue at the joints for the reason above mentioned and by acting upon the glue seriously impairs the strength of the joint.

It is the object of my invention to overcome these objections; by providing a frame in which the strips are so joined together that a much larger surface proportionately is secured for the connection, thus permitting the use of much smaller strips without weakening the connection, and the connection or joint is located out of alignment with the walls of the slate holding groove.

I have illustrated in the accompanying drawings a slate frame of the ordinary and well known construction, and also two forms of slate embodying my invention; the old and improved forms being shown in order to better illustrate my improvements.

In the drawings Figure 1, represents a portion of a slate frame of ordinary form partly in section and partly in plan. Fig. 2, represents an edge view of the same. Fig. 3, is a detail perspective view of the corner portions of a slate frame having a joint constructed in accordance with my invention, the strips being separated in order to better illustrate the particular construction of each. Fig. 4, is a perspective edge view of the same showing the parts connected. Fig. 5, is a view similar to Fig. 3, showing a modified construction, and Fig. 6, is an edge view of the joint of the modification.

Referring by letter to the drawings A B Fig. 1, represent two of the strips of which a frame is composed, and *c c* represent the grooves in the inner edges of the strips adapted to receive the slate, this groove being represented by shading and dotted lines.

b represents the tenon on one of the strips which engages with a corresponding groove *a* in the other strip. Now as there can be no tenon at the point occupied by the groove *c* it will be readily seen that the width of the tenon is reduced to a little more than one half the width of the strip, and it is thus impossible to make the frame of very narrow strips as the groove would occupy so much of the strip that there would not be sufficient surface to the tenon to make a firm joint.

In my preferred form it will be seen that I provide two tenons *b'*, *b'*, and that these tenons are located one upon each side of the groove *c'* for the slate and are therefore not reduced in size nor affected in any way by the said groove *c'*. The tenons *b'* enter mortises *a' a'* made in the adjoining strip A' and it will thus be seen that a very large surface is provided for the connection of the strips, and as the double tenons *b'* are located out of the line of the slate groove, the frame may be made very narrow indeed and yet be of sufficient strength.

Instead of forming a double tenon upon one of the pieces I may provide only a single tenon

b^2 as illustrated in Figs. 5 and 6 this tenon being materially thicker than the slate holding groove c'. This has the effect of throwing the joint between the tenon and walls of the mortise out of alignment with the said groove and also secures the full width of the frame pieces for the joint, without any encroachment thereon by the said groove.

It will be noticed that in both the form of Figs. 3 and 4 and that of Figs. 5 and 6 there is a reduced tenon a^3 in the mortised portion, this reduced tenon being in line with the slate groove and on the sides of this reduced tenon the tenons b' or the parts of the tenon b^2 fit.

Having thus described my invention, what I claim is—

1. A slate frame having a tenon and mortise connection between adjoining strips with the joints between said parts located out of alignment with the groove holding the slate, substantially as described.

2. A slate frame having a double tenon and mortise connection between adjoining strips with the joints between said tenons and mortises located out of alignment with the slate holding groove, substantially as described.

3. In a slate frame, a joint for connecting the strips of which the frame is composed consisting of two tenons formed upon one strip and corresponding mortises in the adjoining strip adapted to receive said tenons, said tenons and mortises being formed out of alignment with the slate holding groove, substantially as described.

4. A slate frame having a double tenon and mortise connection comprising the reduced tenon portion a^3 with mortises on each side of the same and the tenon portions of the other strip adapted to fit on each side of said reduced tenon, substantially as described.

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

JUSTUS H. RUDOLPH.

Witnesses:

DAVID MCKENNA,

W. L. GEIST.