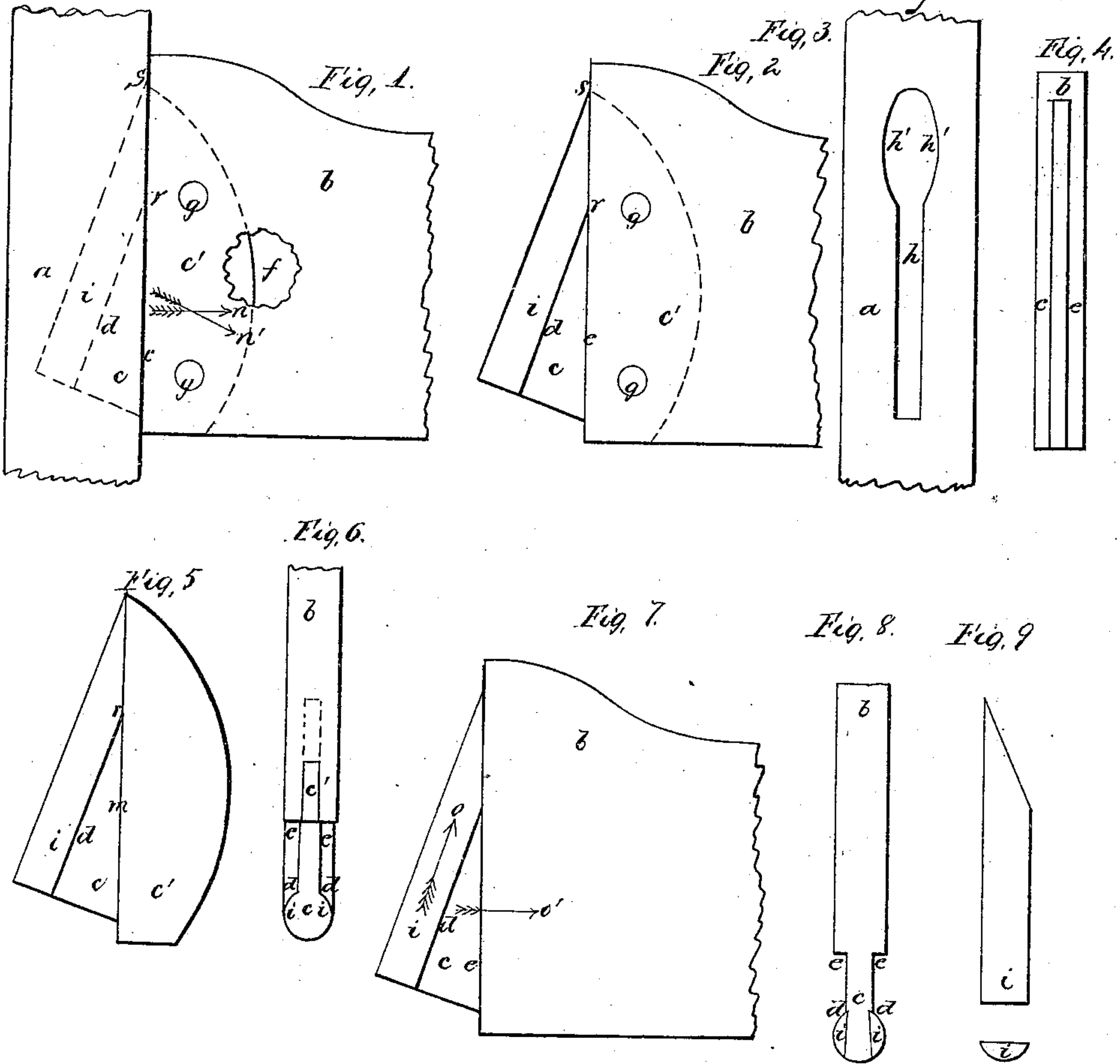


W. H. Elliot,

Bedstead Fastening,

No. 76,611.

Patented Apr. 14, 1868.



Witnesses,

M. L. Elliot
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United States Patent Office.

WILLIAM H. ELLIOT, OF NEW YORK, N. Y.

Letters Patent No. 76,611, dated April 14, 1868.

IMPROVED MORTISE AND TENON FOR BEDSTEADS.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, WILLIAM H. ELLIOT, of the city, county, and State of New York, have invented a new and improved Mortise and Tenon for Bedsteads; and I do 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 marked thereon.

Similar letters of reference indicate the same devices in all the figures.

To enable others skilled in the arts to comprehend, make, and use my invention, I will proceed to describe its nature, construction, and operation.

The nature of my invention consists in forming the projections or shoulders which support the side rail in my patent bedstead-fastening in separate pieces of the same material, and in fastening the parts so formed together in such a manner as to facilitate greatly the making of the same, and so as to prevent the warping or checking of the side rail without the use of cleats; in cutting the tenon out of seasoned hard wood, and fastening it to a light, soft-wood side rail, by means of a large glue joint cut into the end of the side rail, so as to obtain the advantage of a strong, hard-wood tenon with the lightness and cheapness of a soft-wood side rail.

Figure 1 is an elevation of a portion of a post and side rail, showing my improved mortise and tenon in dotted lines.

Figure 2 is an elevation of the end of a side rail, with a double tenon attached.

Figure 3 is an elevation of a portion of a bed-post, showing a mortise cut in the face of the same.

Figure 4 is an elevation of the end of a side rail prepared to receive the tenon.

Figure 5 is an elevation of a double tenon.

Figure 6 is a bottom view of a side rail and tenon.

Figures 7, 8, and 9 show a modification of my invention, figs. 7 and 9 being elevations and fig. 8 a horizontal section.

a, bed-post; *b*, side rail; *c* and *c'*, double tenon; *d*, shoulders, formed by projections, *i*, on the ends of the tenon; *e*, shoulders, formed by the end of the side rail; *f*, portion of the side rail broken away to show the edge of the double tenon; *g*, pins, to be used with glue or other cement for holding the tenon in the side rail; *h*, mortise in the solid material of the post; *h'*, depression in the sides of the mortise to receive the projections *i* on the end of the tenon; *m*, division-line between the two halves of the double tenon, one-half being inserted into the end of the side rail and fastened permanently; the other half enters the post and serves as a fastening; *n*, arrow, showing the direction of the grain of the wood of the side rail; *n'*, arrow, showing the direction of the grain in the double tenon; *o*, arrow, showing the direction of the grain in projection *i*; *o'*, arrow, showing the direction of the grain in the side rail; *r*, acute angle, formed by the shoulders *d* and *e*; *s*, obtuse angle, formed by the end of the tenon and the end of the side rail.

One great object of my invention is to overcome the difficulties of constructing by machinery my bedstead-fastening as secured to me by my patent of the 20th of November, 1866. It is necessary, to render the fastening proof against insects, that the tenon shall fill the mortise, and that the end of the side rail shall rest flat against the face of the post, and cover the mortise so perfectly that insects cannot get into it, as herein shown; and to cut such a tenon on the end of a side rail by machinery is more than can be done practically by any wood-cutting devices known at the present day.

To avoid hand-labor, it is therefore necessary to cut the shoulders *d* on one piece of wood, and the shoulders *e* on another piece of the same material, and fasten them together afterward by the strongest known method, viz, by gluing or cementing, as the cutting of these shoulders together on the same piece, and forming the angles *r* and *s*, is the principal difficulty in the way of making this fastening by machinery.

To effect this object, I have put two methods into practical use, which have been subjected to very severe tests without injury. These two methods are shown in the drawings, the preferable one being that shown in the first six figures.

Other very desirable objects are attained by this method of constructing my mortise and tenon. All tendency of the ends of the side rail to check or warp is effectually prevented by forming a portion or the whole of the tenon of a separate piece, and gluing it to the side rail in such a way that the grain of the wood in one piece shall cross the grain in the other, as shown by arrows *n* and *n'*, and also by arrows *o* and *o'*. This saves the expense of a cleat across each end of the side rail, which is indispensably necessary when iron tenons are let into or fastened upon the end of a side rail. As the surface of the iron cannot be practically glued or cemented to the surface of the wood, iron tenons are therefore insufficient to prevent warping or checking.

This invention combines all the advantages of a seasoned hard-wood tenon with a lighter and cheaper wood for side rails, and, when fastened together by the method herein specified, it has all the other advantages of a tenon and side rail cut in one solid piece.

In my improved fastening, as shown in the first six figures, the tenon is cut from seasoned hard wood, as shown in fig. 5, hard maple being preferable. This tenon is double, the two parts being divided by the line *m*. The part *c* should be about half an inch in thickness, and through the projections *i* nearly an inch in thickness. The part *c'* should be about three-eighths of an inch in thickness. This tenon is cut in the form represented by fig. 5 entirely by machinery. The side rail is prepared to receive the thinner portion of the tenon by sawing into the end of it by a circular saw of suitable thickness. The tenon is then well glued into the end of the side rail, and afterward may be fastened with pins, which should also be glued. The mortise is of such a shape and size as to be filled by the tenon, with a slight allowance for the shrinkage of the parts. The lower side of the tenon does not rest on the lower end of the mortise, but the side rail is supported entirely on the shoulders *d* and *e*, the shoulders *d* drawing the end of the side rail against the post as it is pressed down, thus making the fastening a self-tightening one.

In the modification of my invention shown in the last three figures, the thin portion of the tenon *c* is cut upon the end of the side rail, the projections *i* being cut in the form represented in fig. 9, and glued on to the end of the tenon, as shown in fig. 8.

Having described my improved mortise and tenon for bedsteads, what I desire to have secured to me by Letters Patent of the United States, is—

1. Cutting the shoulder *d* on one piece of wood, and the shoulder *e* on another piece of the same material, and fastening the two together, substantially as described, when said shoulders so operate upon each other and upon the post as to make the fastening self-tightening, as herein set forth.

2. The double tenon *c* and *c'*, when so constructed and applied that it shall become self-tightening when in use, and at the same time serve the purpose of a cleat to prevent warping or checking, substantially as herein shown and described.

3. The combination of pin *g*, double tenon *c* and *c'*, side rail *b*, mortise *h*, with its depressions *h'* cut in the material of the post, all being constructed and operating substantially as described.

WM. H. ELLIOT.

Witnesses:

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