May 31, 1938. W. L. DAVIS 2,118,880

FRAME FOR STRETCHING DOILIES OR THE LIKE

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FIG. 1.

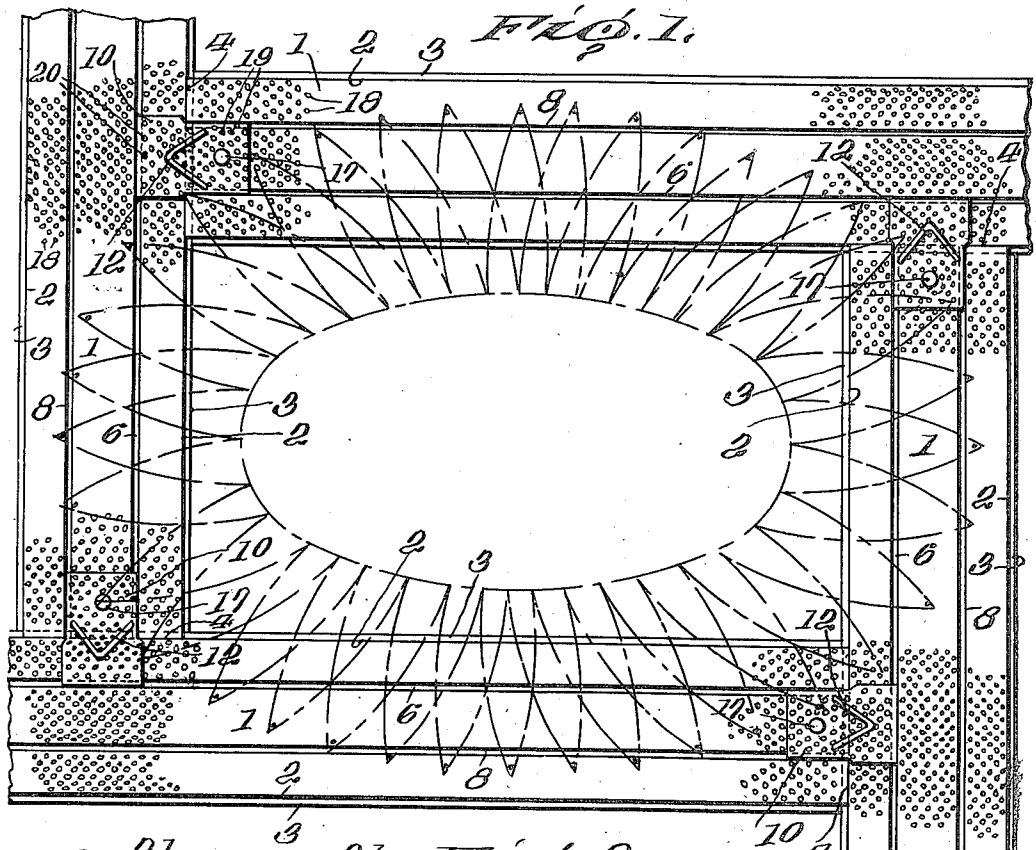


FIG. 2.

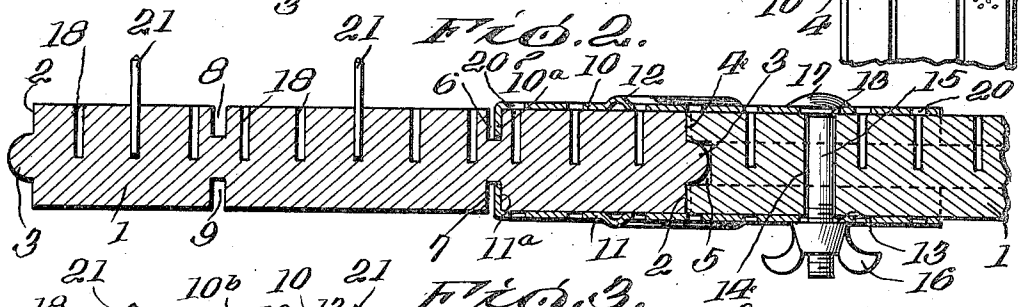
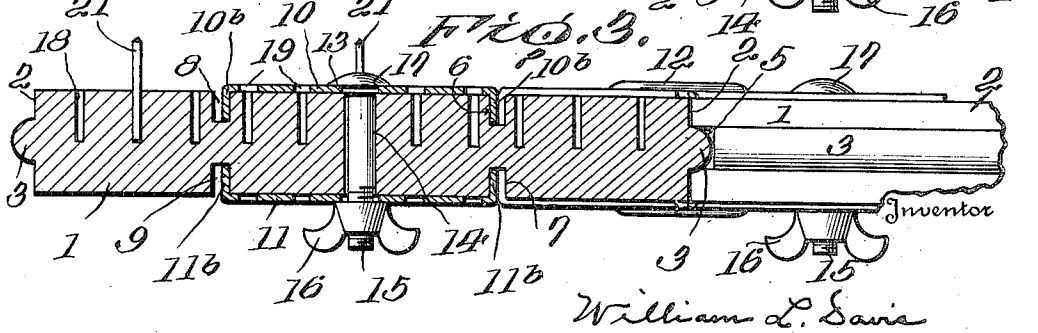


FIG. 3.



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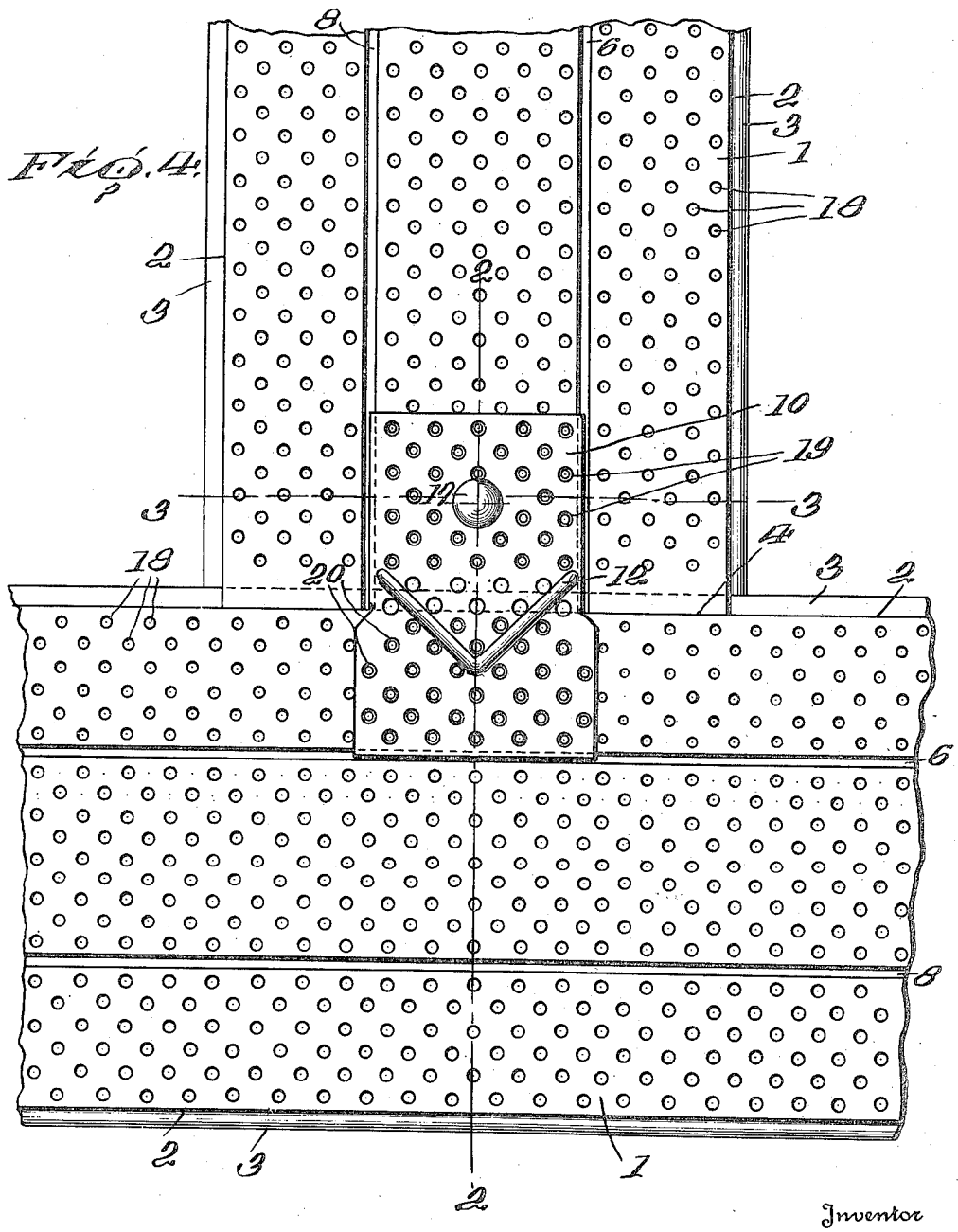
Attorneys

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FIG. 4.



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FRAME FOR STRETCHING DOILIES OR THE LIKE

William Leigh Davis, Richmond, Va.

Application December 27, 1935, Serial No. 56,393

2 Claims. (Cl. 45—24)

The invention relates to new and useful improvements in frames for stretching doilies or the like. In my application, Serial No. 4261, filed January 31, 1935, Patent No. 2,053,465, dated Sept. 8, 1936, I have shown and described a stretching frame wherein frame units of similar construction are adjustably interconnected and capable of being shifted to different set positions; each frame unit being provided with means for separately and individually supporting fabric attaching devices, which attaching devices may be selectively positioned for connection to the marginal edge portion of curved or irregular shaped articles.

The present invention is an improvement upon the stretcher frame of my prior application and has for an object to provide a clamping means for joining the frame units in abutted relation to each other, which clamping means contacts with the flat faces of the frame units and is so constructed that the fabric attaching devices may be connected to the frame units within the limits of the clamping members so that an article may be attached to the stretcher frame at closely spaced intervals along its marginal edge.

A further object of the invention is to provide a stretcher frame, wherein the frame units may be relatively wide and made of wood without danger of said frame units warping, so that each frame unit may present a flat face for supporting the fabric attaching devices.

A still further object of the invention is to provide a stretcher frame, wherein each frame unit is relatively wide and made of wood and is provided with pairs of longitudinal grooves, one over the other, serving to prevent the boards from warping and also to cooperate with the clamping members in holding the frame units in abutted relation.

These and other objects will in part be obvious and will be hereinafter more fully disclosed.

In the drawings:

Fig. 1 is a plan view of a stretcher frame showing diagrammatically an article with a curved edge attached thereto for drying and stretching the same.

Fig. 2 is a sectional view on the line 2—2 of Fig. 4.

Fig. 3 is a section view on the line 3—3 of Fig. 4.

Fig. 4 is an enlarged plan view of a portion of the frame units showing the end of one unit abutted against the side edge of the other unit and secured thereto by the improved clamping means.

The stretching frame as illustrated, consists of four frame units, each unit is indicated at 1 in the drawings. These frame units are all similarly shaped and each unit has the edges thereof straight and parallel. Extending along each side edge of each unit is a tongue 3. Each frame unit 1 also has one end thereof straight as indicated at 4. Extending across the end is a groove 5, which is adapted to receive the tongue 3 when the end of one frame unit is abutted against the side edge of another frame unit. The frame units are preferably of the same thickness, and in the preferred form of the invention they are made of wood.

Each frame unit is provided with a pair of grooves extending longitudinally of the frame unit. The grooves adjacent one edge of a unit are indicated at 6 and 7, while the grooves adjacent the other edge are indicated at 8 and 9. The grooves in each pair are arranged one above the other and are of a sufficient depth and a sufficient distance away from the side edges of the frame unit so as to prevent the board from warping. Any expansion of the boards along either surface will cause the material to move in at the sides of these grooves and thus the strains which usually produce warping are avoided.

Each frame unit is abutted against the side edge of another frame unit and thus the four frame units as shown produce a rectangular or square figure. The end edge 4 of the frame unit is at right angles to the side edge 2. It will be obvious that three frame units may be used instead of 4, but it is essential that they shall have the same abutted relation. With three units, the angle of the end edge to the side edge will be an acute angle. It is also obvious that more than four frame units may be used, in which case, the angle between the end edge and the side edge will be an obtuse angle. It is essential, however, that the frame units shall be abutted, and when interconnected, the flat faces, to which the fabric is to be attached, shall all lie in the same plane. When the end of one frame unit is abutted against the side of another unit, then the tongue will engage the groove and this will hold the faces in alignment and will permit the abutting unit to be shifted to different set positions.

As a means for securing the frame units in their assembled position, two opposed clamping members are provided, one of which is indicated at 10 and the other at 11. These clamping units are similar and so dimensioned as to overlie portions of each of the adjacent frame units. The member 10 has the outer end thereof turned

downward into a right angle flange 10*a*, and the member 11 has the outer end turned upward into a right angle flange 11*a*. The member 10 has the side edges thereof turned down into right angle flanges 10*b* and the clamping member 11 has the side edges turned up into right angle flanges 11*b*. The clamping member 10 is so dimensioned that the flanges 10*b*, 10*b* will engage the grooves 6 and 8 respectively in the abutting frame unit, while the flange 10*a* engages the groove 6 in the frame unit against which it abuts.

Each clamping member is provided with a rib 12 which is V-shaped and disposed so as to strengthen the clamping member in the region where it crosses the abutted edges. Each clamping member is provided with a hole therethrough indicated at 13 and these holes, when the clamping members are in place, are in register with an opening 14 extending through the abutting frame unit. A clamping bolt 15, having a wing nut 16, extends through the opening in the frame unit; said bolt has a head 17 overlying and bearing against one clamping member and the wing nut bears against the opposed clamping member. The bolt just below the head is irregular in shape and the opening is similarly shaped so as to prevent the bolt from turning.

The clamping members are die-shaped so that the outer end portions carrying the flanges 10*a* and 11*a*, respectively, will bear on the frame unit when the wing nut is turned so as to clamp the shank portions of the clamping members to the abutting frame unit. In other words, the clamping members, when the nut is tightened, will hold the frame units in a set position and when the nut is loosened, the clamping members will be freed from clamping engagement with the frame members sufficiently to permit a shifting of the abutting member along the side edge of the member with which it contacts. This provides a means whereby the frame units may be very easily shifted relative to each other and the frame thus set up for the stretching of an article so that said article will be attached along its edge and the central portion of the article will be to a great extent exposed at both sides of the frame to facilitate drying.

It will be noted from the above that the pairs of grooves serve the double function not only of preventing the board from warping, but to aid in the holding of the frame units in assembled position and to permit the adjustment of the frame units relative to each other.

Each frame unit is relatively wide and, as illustrated, is provided with a multiplicity of holes which are spaced from each other longitudinally and laterally of the frame unit. As shown, these holes are in rows and are staggered in the adjacent rows. They may, however, be differently positioned relative to each other, but it is essential that they be spaced both longitudinally and laterally of the frame units. The holes are indicated at 18. The clamping member 10, as clearly shown in Fig. 4, is likewise provided with holes 19, which are similarly spaced to the holes 18, so that when the clamping member is secured to the frame unit through the aid of the clamping bolt, the holes in the clamping member will be in register with the holes in the frame unit and likewise the portion of the clamping member 10, which projects over the side edge of the adjacent frame unit, is provided with holes 20 which may be placed in register with the holes in the frame unit. This is accomplished in the adjustment of the frame units relative to each other.

The fabric attaching means, as illustrated, is in the form of pins 21. Each pin has a pointed outer end and is adapted to be inserted in any one of the holes in the frame unit. The holes do not extend all the way through the frame unit so that the pins, when inserted therein, will be firmly held in place. The clamping member 10 is preferably made of sheet steel and is therefore relatively thin. The pins can be inserted through the holes in the clamping member and thus seated in the holes of the frame unit therebeneath.

Pins may be selectively placed in the holes in the frame units. As shown in Fig. 1, pins have been placed in the frame units for the stretching of a doily, which is elliptical in outline. This requires the seating of the pins in each frame unit in a curved line. Owing to the fact that the holes are spaced laterally of the frame unit, as well as longitudinally, holes may be selected for the pins so that the article will be attached along its marginal edge, although said edge is curved or irregular in outline.

While the preferred form of attaching means is a pin placed in a hole in the frame unit, as this is of simple construction and cheap to make, it will be understood that the attaching means may be otherwise constructed. It is essential, however, that the fabric attaching means shall be capable of being secured to the frame unit at spaced intervals, both longitudinally and laterally of the frame unit.

While it is preferred to make the frame units of wood because it is cheap and light, it will be understood, however, from certain aspects of the invention, the frame unit may be made of other material, but it is essential that the frame unit shall be connected in abutted relation and that each frame unit shall be relatively wide and flat so as to facilitate the placing of the fabric attaching devices at intervals, spaced both longitudinally and laterally of the frame.

It is also obvious that other clamping means may be provided for joining the frame units, but it is essential that the frame units shall not in any way interfere with the fabric attaching devices, so that the article to be stretched may be connected to the stretcher frame at closely spaced intervals along its marginal edge.

I claim:

1. A frame for stretching doilies and the like, comprising a plurality of frame units of similar shape, each frame unit being longitudinally extended and relatively wide and having a flat face, means for adjustably interconnecting said frame units in abutted relation with the flat faces of said frame units in the same plane, said means including clamping members overlying the meeting edges and contacting with adjacent frame units, pins for engaging the fabric to be stretched, each frame unit having holes in the flat portion thereof in which the pins may be removably seated, the clamping member having holes therethrough adapted to register with holes in the frame units, said holes in the frame units being spaced from each other longitudinally and laterally of each frame unit whereby the pins may be selectively positioned for engagement at closely spaced intervals with the marginal edge of an article of curved or irregular outline.

2. A frame for stretching doilies and the like, comprising a plurality of frame units of similar shape arranged in abutted relation to each other, each frame unit having pairs of grooves arranged one above the other and extending parallel with the side edges of the frame units, said clamping

members having flanges extending into said grooves and means for securing the clamping members to said frame units for securing said frame units in adjusted positions relative to each other, each clamping member having a strengthening rib extending across the meeting edges of the frame units, pins for engaging the fabric to be stretched, each frame unit having holes in the flat portion thereof in which the pins may be removably seated, said clamping members having holes therethrough adapted to register with holes in the frame units, said holes in the frame units being spaced from each other longitudinally and laterally of each frame unit, whereby pins may be selectively positioned for engagement at substantially equally spaced intervals with the marginal edge of an article of curved or irregular outline.

WILLIAM LEIGH DAVIS.