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Meyer et al.

[11] **3,785,072**

[45] **Jan. 15, 1974**

[54] **NEEDLEPOINT BLOCKING DEVICE**

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[52] **U.S. Cl.** **38/102.5**

[51] **Int. Cl.** **D06c 3/08**

[58] **Field of Search** 38/102.4, 102.5, 38/102.6, 102.7, 102.91

[56] **References Cited**

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Attorney—John H. Bishop

[57] **ABSTRACT**

An outer rectangular frame having intermediate members adjustable between opposite outer side members to provide a canvas engaging rectangular stretching frame of any desired size having four flush canvas enagaging frame members on which a needlepoint canvas of any size may be engaged and stretched for blocking the canvas to truly rectangular shape. Canvas engaging pins project from two side and one intermediate frame members; and staple pins are hinged to the other intermediate frame member and engage over the top of and through the canvas at one edge of the canvas. Crank arm screws are journaled in opposite side members and have screw thread engagement with the intermediate members to adjust the latter toward and away from the side members. The intermediate members normally are maintained parallel with the side members between which the intermediate members are movable. The staple mounting intermediate frame member has a series of removable blocks of varying lengths to provide staple zones variable by uniform increments on said staple mounting member.

8 Claims, 12 Drawing Figures

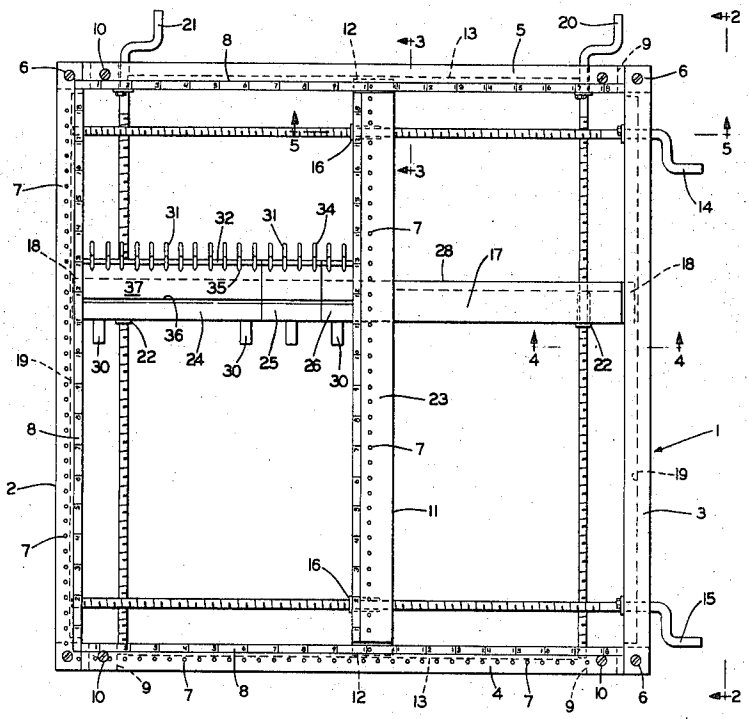
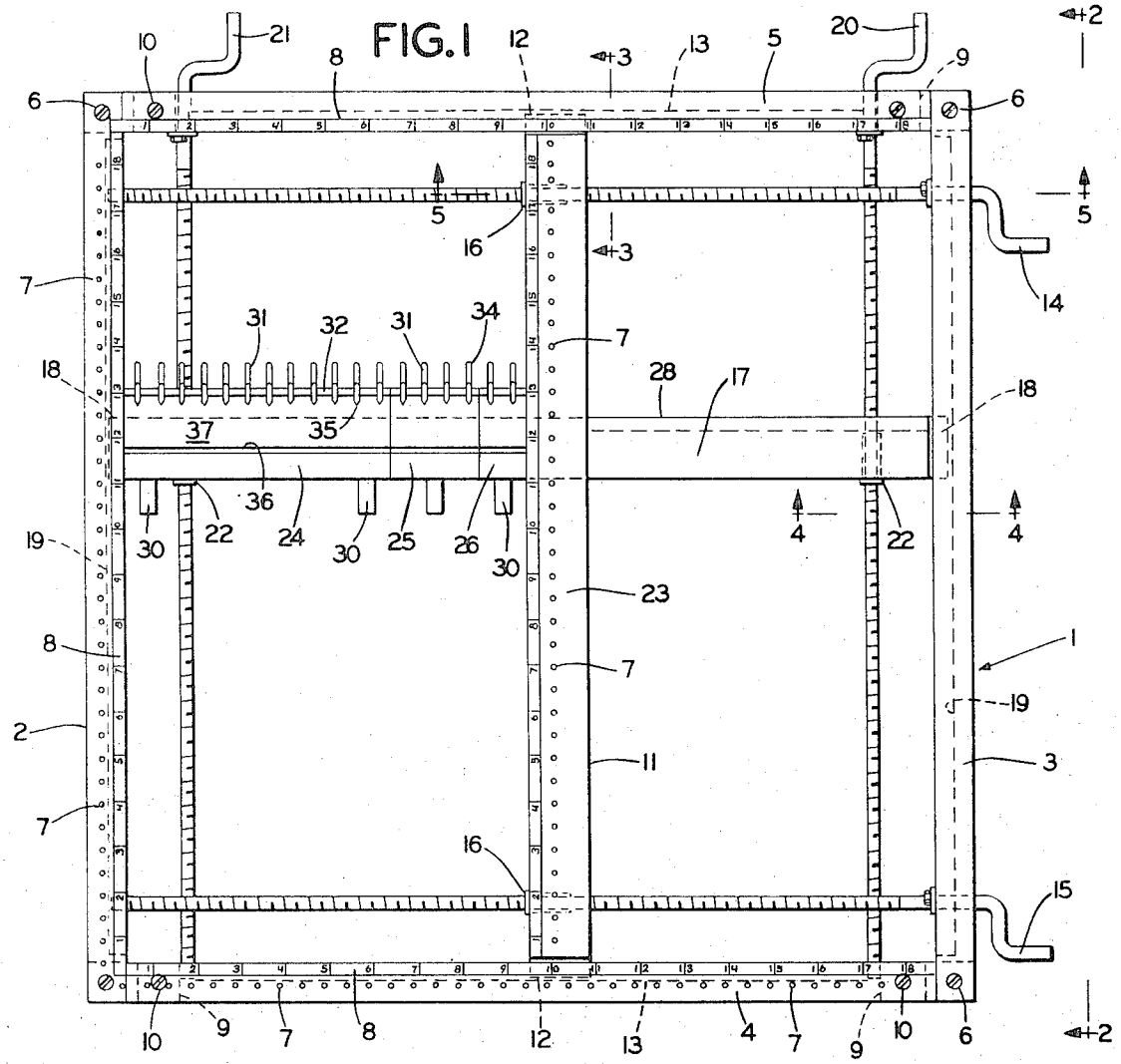


FIG. 1



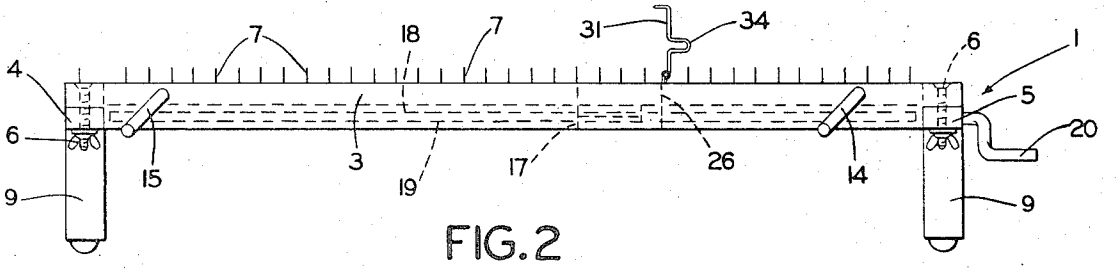


FIG. 2

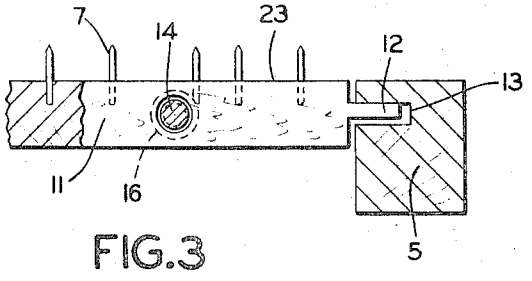


FIG. 3

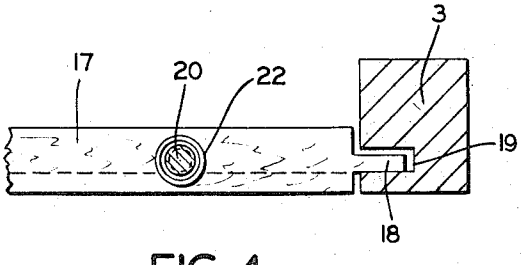


FIG. 4

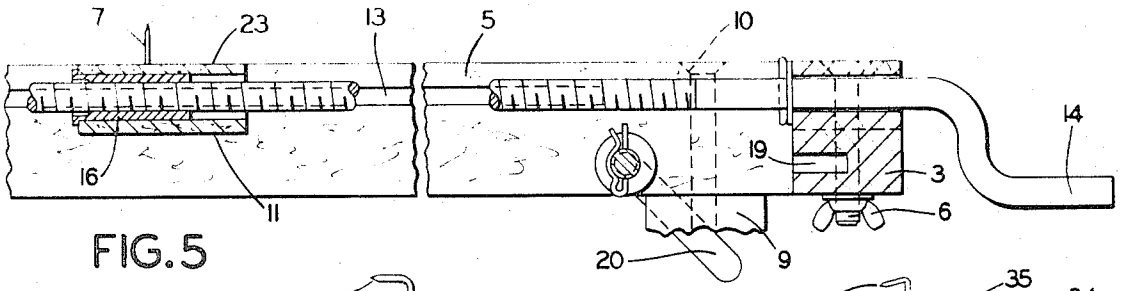


FIG.5

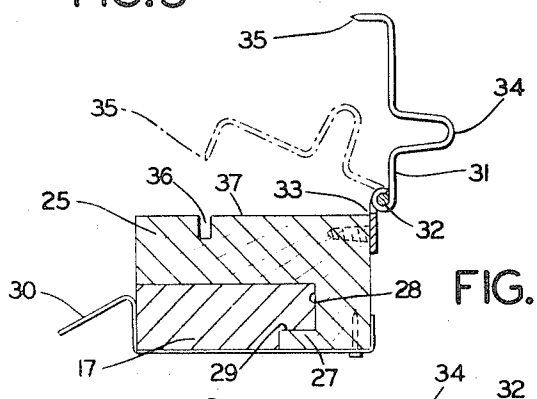


FIG.7

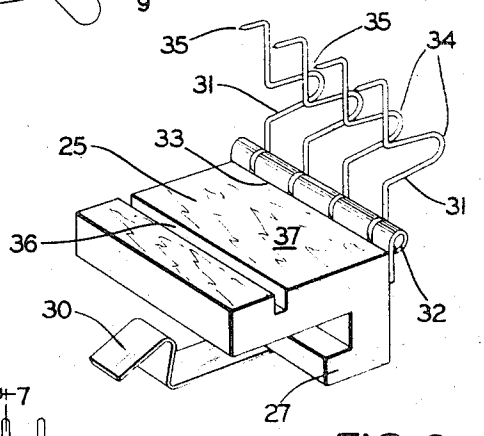


FIG.8

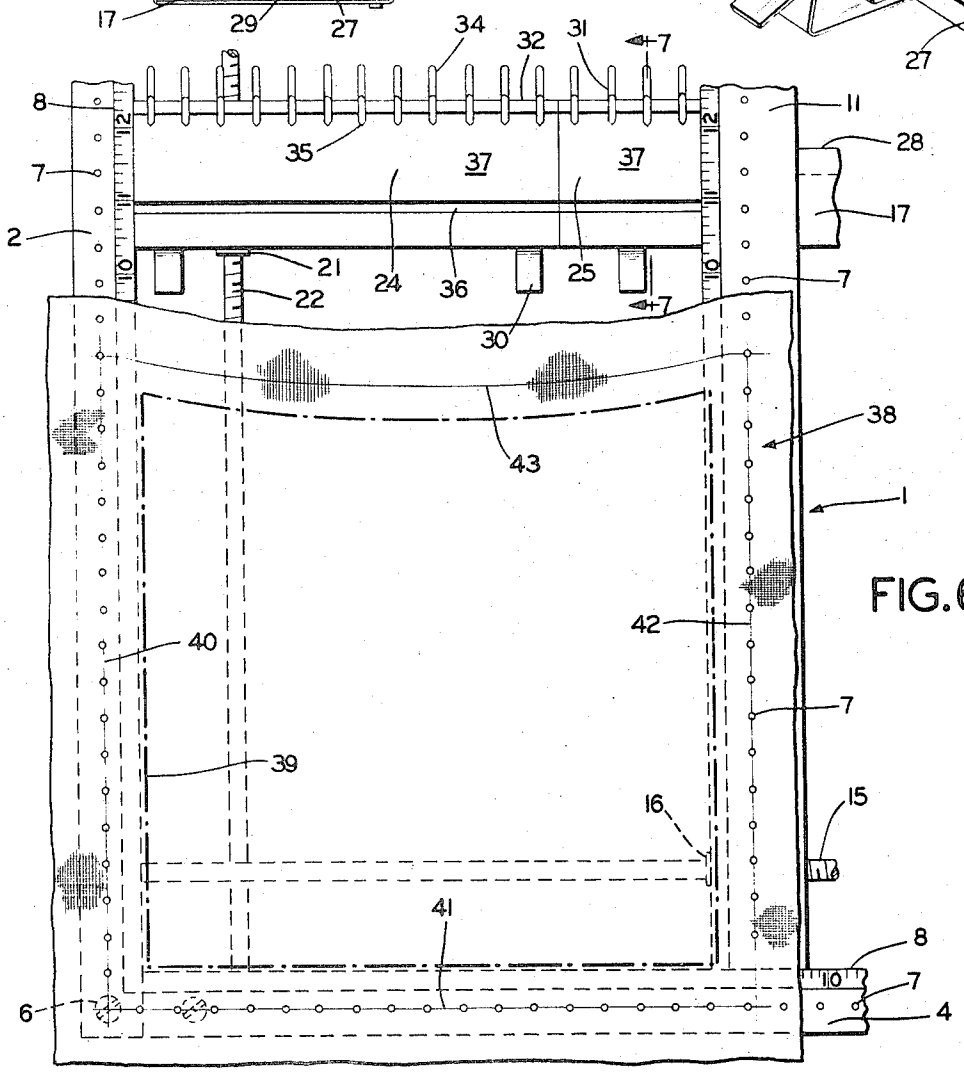


FIG.6

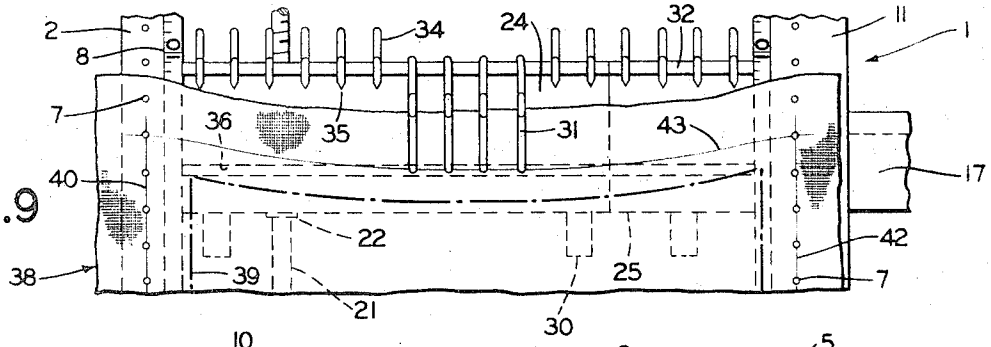


FIG.9

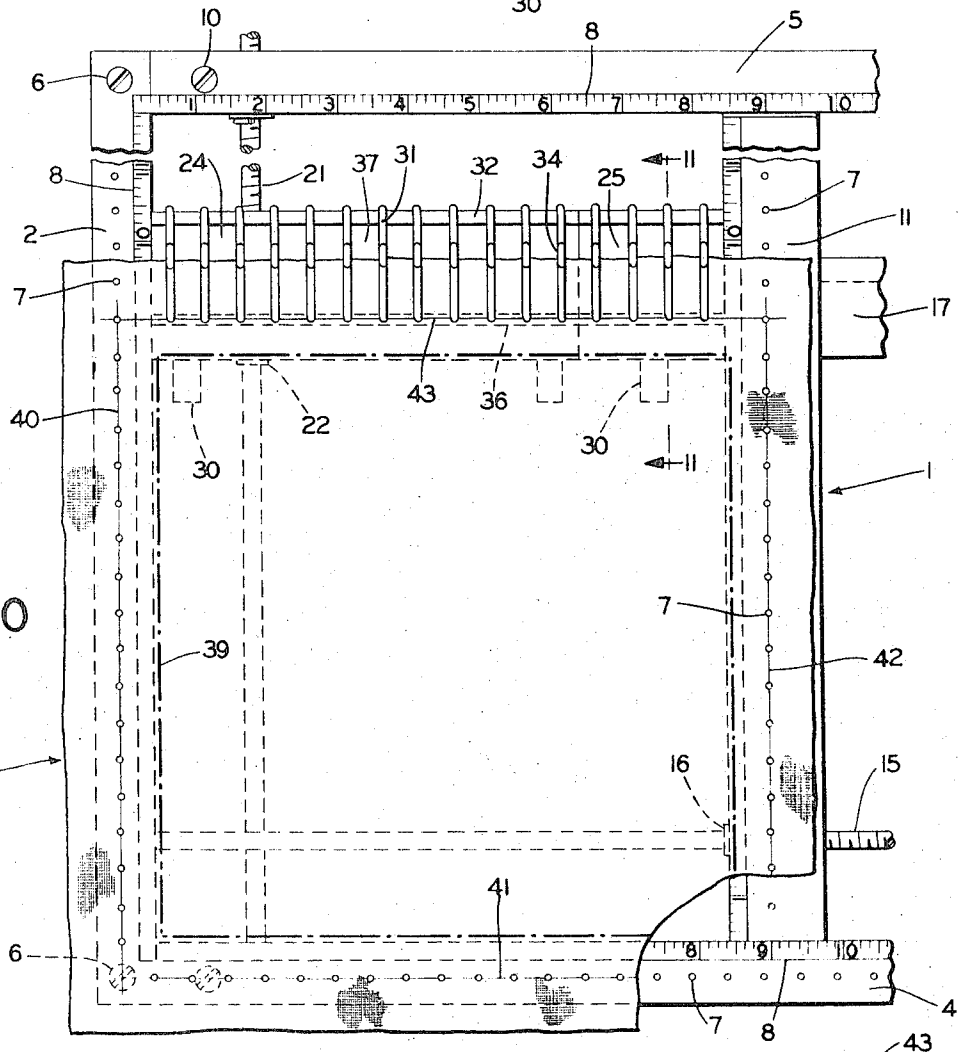


FIG.10

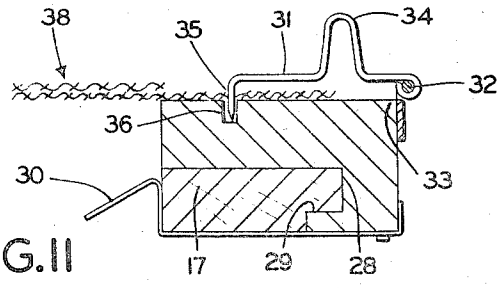


FIG.11

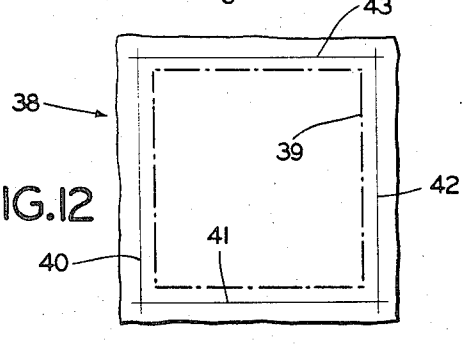


FIG.12

NEEDLEPOINT BLOCKING DEVICE

BACKGROUND OF THE INVENTION

1. Field of the Invention

The invention relates to a rectangular frame construction having adjustable frame members which may be moved to accurately engage, hold and tension a needlepoint canvas in truly rectangular form while it is being blocked, i.e., while it is being moistened and then permitted to dry so that it retains its stretched truly rectangular shape.

2. Description of the Prior Art

Needlepoint canvases ordinarily have a special pattern of canvas thread rows originally extending at right angles to each other forming openings through which the needlepoint yarn is sewn or drawn back and forth to form the needlepoint pattern on the canvas. Needlepoint stitches may be of any one of several types, but each involves yarn threads which extend diagonally from one opening to another in the canvas when the pattern is completed.

As a result, when the needlepoint design formed by the yarn stitches through the stitched portion of the canvas has been completed, the canvas is distorted or warped at its extremities from its original generally rectangular shape to a diamond-like shape with acute angles at two opposite corners and obtuse angles at the other two opposite corners.

This diamond-shaped distortion as indicated, results from the diagonal pull of the yarn stitches which make up the needlepoint design applied to the canvas. The canvas, thus, must be blocked, that is stretched to counteract the distortion imparted thereto during needlepoint stitching and to regain its original and a desired rectangular shape before the canvas can be finished for mounting. The completed canvas may form a picture or a pillow cover, or a handbag, luggage rack strap, glass case or similar article.

Blocking is accomplished by stretching the canvas in some manner and holding it in rectangular shape while the canvas is moistened and then permitted to dry so that it will hold its shape. Heretofore, the blocking of needlepoint canvases has involved time-consuming procedures. One prior method of blocking has been carried out by using a series of thumb tacks closely adjacent one another to tack the canvas to a rigid board in rectangular position. This thumb tacking has involved hand stretching the canvas as the tacks are positioned tack-by-tack, first along one edge, then along a second edge at right angles to the first edge, then along a third edge parallel to the first edge, and finally along a fourth edge of the canvas. The tacking of the fourth canvas edge requires hand stretching the canvas as each tack is placed so as to provide a final rectangular shape, thus the canvas must be stretched so that the canvas threads along the edges extend in straight lines and at right angles to one another at each corner.

After the canvas has been hand stretched and thumb tacked to a board, it then has been moistened and permitted to dry or ironed with a steam iron using a protective ironing cloth.

We are not aware of any equipment available on the market or in the art arranged specifically to hold and accurately block various needlepoint canvases of various sizes.

The art, however, abounds with various specially arranged adjustable frame structures for stretching window curtains, window screens and the like or for stretching and laying carpet.

However, no prior art curtain or other stretcher of which we are aware, even though adjustable, is adapted for or can be used for properly, uniformly and accurately blocking needlepoint canvases of various sizes. Such a blocking device to be practical must be adjustable and able to accept and permit blocking of a needlepoint canvas, say having a shape of say from 2 to 30 inches or more on one side and from 2 to 30 inches or more on an adjacent side at right angles to the one side, while at the same time providing flush canvas engaging surfaces against which the canvas is held on pins at each side to stretch the canvas with the required amount of tension in each of two directions extending at right angles to one another to impart a rectangular shape to the canvas when blocking is completed.

Accordingly, a need has existed for a great many years and the need has increased in recent times with the advent of more interest in making needlepoint articles, for a needlepoint blocking device which will accept and block accurately and efficiently a needlepoint canvas of any size in the flat plane engaged by pins at closely spaced intervals on flush frame surfaces at each of the four rectangular edges of the canvas.

SUMMARY OF THE INVENTION

Objectives of the invention include providing a needlepoint blocking device on which a needlepoint canvas may be accurately located in truly rectangular shape in a flat plane and stretched in two directions at right angles to one another with the edges of the rectangular canvas held in straight line position while being stretched so that the canvas may be moistened and then dried to impart and hold a rectangular shape; providing an adjustable frame which will accept and stretch and enable blocking of canvases of any size, within the limits of the size of the outer frame of the device, within which adjustable frame members are mounted, and which provides flush surfaces in the same plane for all the active blocking frame members in adjusted position forming a blocking frame of a size matching the size of the canvas; providing an adjustable needlepoint blocking frame in which each of the adjustable blocking frame members movable within an outer frame may be moved accurately to stretch the canvas in parallelism with the opposite outer frame members between which the adjustable blocking frame member is moved; and providing a construction which is rugged, which may be easily assembled and adjusted, which may be manufactured readily to perform accurately its blocking function, and which satisfies the foregoing objectives and solves problems and satisfies a long felt need in the field of needlepoint blocking.

These objectives and advantages may be obtained by the needlepoint blocking device construction, the general nature of which may be stated as including, first and second pairs of spaced frame members having coplanar top surfaces connected at corners to form an outer rectangular frame; first and second intermediate frame members located parallel with and extending in spaced relation respectively one between the side members of each pair and having top surfaces coplanar with the outer frame top surfaces; means journaled in the respective pairs of frame side members and engaging the intermediate members to adjust said members in parallel relation toward and away from their respec-

tive side members; sets of spaced aligned pins projecting upward from the top surfaces of side members of the two pairs connected at a corner and projecting upward from the top surface of one of the intermediate frame members; the other intermediate frame member extending beneath the one intermediate frame member and having sectional blocks removably mounted thereon between one of the frame side members and said one intermediate frame member, and having top surfaces coplanar with the outer frame top surfaces; staples hinged to the sectional blocks at spaced intervals having pointed ends movable to engage position projecting from above into aligned grooves formed in said blocks parallel with the pins in one of the frame side members; scales mounted on certain of the frame members; and the sets of pins and staples being spaced at ½ inch intervals.

BRIEF DESCRIPTION OF THE DRAWINGS

A preferred embodiment of the invention — illustrative of the best mode in which applicants have contemplated applying the principles — is set forth in the following description and shown in the drawings and is particularly and distinctly pointed out and set forth in the appended claims.

FIG. 1 is a plan view of the blocking device assembled in position to accept a needlepoint canvas of a certain size, but omitting the canvas and showing the stretching pins in raised position on one of the adjustable members forming the stretching frame;

FIG. 2 is a side view of the device of FIG. 1 looking in the direction of the arrows 2—2, FIG. 1;

FIG. 3 is a fragmentary enlarged section taken on the line 3—3, FIG. 1;

FIG. 4 is a fragmentary enlarged section taken on the line 4—4, FIG. 1;

FIG. 5 is an enlarged fragmentary section looking in the direction of the arrows 5—5, FIG. 1;

FIG. 6 is an enlarged view of the lower left hand corner portion of FIG. 1 with a canvas partially mounted thereon illustrating a step in the procedure of securing the canvas on the blocking device;

FIG. 7 is an enlarged sectional view looking in the direction of the arrows 7—7, FIG. 6 illustrating the hook pins in disengaged position;

FIG. 8 is a perspective view of one of the segment blocks detached from the adjustable segment block frame member;

FIG. 9 is a view similar to a portion of FIG. 6 showing some of the hook pins moved to engage the canvas;

FIG. 10 is a view similar to FIGS. 6 and 9 showing the canvas engaged on pins in a flat plane against flush frame surfaces at all four canvas edges in accurately stretched position for blocking;

FIG. 11 is a sectional view similar to FIG. 7 looking in the direction of the arrows 11—11, FIG. 10; and

FIG. 12 is a small diagrammatic view of a canvas to be blocked.

Similar numerals refer to similar parts throughout the various figures of the drawings.

DESCRIPTION OF THE PREFERRED EMBODIMENT

The improved blocking device generally indicated at 1 has outer rectangular frame side members 2, 3, 4 and 5 preferably secured together by bolts 6 at each of the four right angled corners of the frame as shown in FIGS. 1 and 2. The frame side members 2 and 3 are parallel and the frame side members 4 and 5 are parallel and preferably the frame is a square frame although it may be rectangular if desired.

Canvas engaging pins 7 project upward from the top surface of frame side members 2 and 4 and the upper surfaces of members 2, 3, 4 and 5 are flush with one another lying in the same plane. Pins 7 preferably are spaced apart uniformly at intervals. A scale 8 which may be graduated in inches, as shown, preferably is provided along the length of each frame side member 2 and 4, the scale 8 on member 4 starting at the lower left hand corner and the scale 8 on member 2 also starting from the same corner. In each instance, the scales 8 measure from the row of pins 7 on the adjacent frame member 2 or 4, as the case may be.

The upper frame side member 5 also may be provide with a scale 8, as shown. No pins are provided on frame side members 3 and 5 and no scale is provided on frame side member 3 for reasons described below.

The blocking device 1 preferably also has legs 9 extending downward adjacent each of the four frame corners, as shown in FIGS. 1 and 2, the legs 9 being offset slightly from the corners along frame side members 4 and 5. The legs are connected to the side members preferably with screws 10. The frame members preferably are formed of wood but may be formed of plastic or other suitable material.

An intermediate blocking frame member 11 has tongues 12 slidably engaged in grooves 13 formed in the upper and lower frame side members 5 and 4 (FIGS. 1 and 3) for adjustable movement between and parallel with frame side members 2 and 3. Preferably, the adjustment is accomplished by crank arm screws 14 and 15 which are journaled at their ends adjacent the upper and lower ends of frame side members 2 and 3 and are threaded through nuts 16 carried by intermediate blocking frame member 11 (FIG. 5). Pins 7 also project upward at spaced intervals from the top of member 11.

Another intermediate blocking frame member 17 is mounted by tongues 18 slidable in grooves 19 formed in frame side members 2 and 3 for adjustable movement between and parallel with frame side members 4 and 5 (FIGS. 1 and 4). Adjustment of member 17 may be accomplished by actuating crank arm screws 20 and 21 which are journaled at their ends adjacent the ends of frame side members 4 and 5 and which have threaded engagement with nuts 22 carried by member 17. The crank arms on the ends of screws 14, 15, 20 and 21 are located outside of the outer frame side members.

The adjustment of the blocking frame members 11 and 17 is possible because member 11 is at an upper level with its top surface 23 flush with the top surfaces of frame side members 2, 3, 4 and 5 (FIGS. 3 and 5), and member 17 is at a lower level so that it passes underneath member 11. The thicknesses of members 11 and 17 are approximately the same (FIGS. 3 and 4) and about half the height or thickness of the frame side members 2, 3, 4 or 5.

A series of removable blocks of different lengths, indicated at 24, 25 and 26, is removably mounted on member 17 between side member 2 and intermediate blocking frame member 11. One of the blocks 25 is illustrated in FIG. 8. Each block has a hook-shaped flange 27 which engages around one edge 28 of mem-

ber 17 and hooks into recessed corner 29. Spring latch members 30 removably clamp the blocks 24, 25 and 26 to member 17. Three blocks 24, 25 and 26 which may have lengths, for example, of 6 inches, 2 inches and 1 inch, respectively, are shown in FIG. 1 mounted on blocking frame member 17 to fill out the 9 inch top member length of the blocking frame illustrated. Similarly, in FIGS. 6, 9 and 10, blocks 24 and 25 only are mounted on blocking frame member 17 to provide an 8 inch length for the top member of the blocking frame illustrated.

Each of the removable blocks 24, 25 and 26 has a series of staples 31 pivotally mounted at 32 at spaced intervals along the outer block corner 33. The staples 31 preferably are formed with projecting U-shaped portions 34 which are gripped to move the staples from the open position shown in FIG. 7, to the closed or engaged position shown in FIG. 11. The dot-dash position in FIG. 7 illustrates such movement.

Each staple 31 terminates in a pointed end 35 which is received in a groove 36 when the staple 31 is moved to closed or engaged position as illustrated in FIG. 11. The pointed ends 35 are adapted to pass through and engage needlepoint canvas in a manner similar to engagement by pins 7, to be described.

The frame illustrated with the scales 8 thereon represent a frame which will receive and block a needlepoint canvas having a design approximately 18 by 18 inch square. However, various frame members may be as large as desired, for example, a 36 by 36 inch frame may be used to receive and block needlepoint patterns up to 36 inches square.

The number and sizes of various blocks, such as the blocks 24, 25 and 26, which accompany a frame 1 are such that one or more blocks may be assembled on blocking frame member 17 between frame side member 2 and blocking frame member 11 in, say ½ inch increments, to provide a blocking frame of any desired size within the limits of the size of the main frame 1.

The term "blocking frame" as used herein, comprises frame side members 2 and 4, blocking frame member 11 and blocking frame member 17 equipped with blocks such as blocks 24, 25 and 26, so as to present a series of pins 7 and staple pointed ends 35 around the periphery of such a blocking frame as is indicated in FIG. 1.

The staples 31 are indicated as having pointed ends 35 and sometimes are referred to herein as "staple pins." Furthermore, the second intermediate frame member 17 on which the series of removable blocks of varying length is mounted to provide staple zones variable by uniform increments is sometimes referred to herein as a "staple mounting member."

When the staple blocks are mounted on the staple mounting member 17 between frame side member 2 and blocking frame member 11, for example as shown in FIGS. 1, 6, 9 and 10, the top surfaces 37 of blocks 24, 25 and 26 are flush with and lie in the same plane as or are coplanar with the top surfaces of frame members 2 and 4 and blocking frame member 11, so that the blocking frame of the size selected has a top surface extending in one plane or at one one level on and against which a needlepoint canvas may be blocked.

The uniform increments of adjustability of the blocking frame may as stated be ½ inch increments. For this purpose, and for the 18 by 18 inches main frame illustrated, staple blocks such as the blocks 24, 25 and 26 are provided in ½, 1, 2, 3, 6, 10 and 14 inch lengths from which any size of blocking frame from ½ inch to 18 inches square may be formed.

The improved needlepoint blocking device 1 may be used to block a needlepoint canvas generally indicated at 38 in FIGS. 6, 9, 10, 11 and 12, which, for example, may have a needlepoint pattern 8 by 8 inches thereon represented by the dot-dash square 39 in FIGS. 6, 9, 10 and 12. The intermediate blocking frame members 11 and 17 are adjusted to the proper positions, and the required number of staple blocks are mounted on member 17 as shown, for example, in FIG. 6. The necessary adjustments are made by adjusting the various crank arm screws 14, 15, 20 and 21.

A soft lead pencil is used to draw guidelines on the canvas approximately one-half inch outside of each outer edge of the finished needlepoint pattern along canvas thread rows. Such guidelines at each edge are shown at 40, 41, 42 and 43, in FIGS. 6, 9 and 10. These guidelines 40–43 preferably should each be at least three-fourths inch from an outer edge of the canvas, so that the canvas thread rows do not pull out during blocking.

The dry canvas, with the finished side of the work or needlepoint pattern presented upward, then is applied to the pins 7 (FIG. 6) extending from frame side member 2 along guide line 40 starting at the left hand bottom corner of the frame and stretching the canvas 38 evenly from pin to pin. Next, the canvas is applied along guideline 41 to the pins 7 in frame side member 4 in the same manner. Next, the canvas is applied along guideline 42 to the pins 7 projecting upward from blocking member 11. At this stage, the canvas will be bowed or distorted concavely along its upper edge, as illustrated in FIG. 6. The staple mounting member 17 at this time is in the position shown in FIG. 6 with staples 31 in open position.

Then member 17 is moved downward toward the upper bowed edge of the canvas 38 to a position such as shown in FIG. 9 until the central staple pins 31 can be pivoted to the closed position shown in FIG. 9 to engage the canvas along the central portion of the guideline 43. Tension then is applied gradually to the canvas 38 by moving staple mounting member 17 uniformly upward by adjustment of crank arm screws 20 and 21, successively positioning staples 31 from the center of the upper edge of the canvas toward the side edges thereof so that the staple pins 31 engage the canvas guideline 43. When all of the staple pins 31 have engaged the canvas 38 along guideline 43, as shown in FIG. 11, the canvas will be stretched to rectangular shape as illustrated in FIG. 10.

At this time, both sides of the canvas are dampened lightly and evenly with cold water. This may be accomplished using a fine spray bottle or a sprinkling bottle, such as frequently is used for dampening clothes for ironing. If the canvas 38 is badly distorted, it may be dampened until limp before engaging the canvas 38 on the pins 7 of the blocking device.

Further tension then preferably is applied to the canvas 38 after moistening, using the crank arm screws 14, 15, 20 and 21 to pull the canvas taut in each direction, using the scales 8 to insure that the finished work is square with 90° corners.

The canvas 38 is then allowed to dry until thoroughly dry and when removed, a perfectly blocked needlepoint canvas will result. The same procedure may be

carried out and the improved blocking device used for crewel or other needlecraft work.

Where the canvas may have been badly distorted and it is not immediately mounted in a picture frame after blocking, such canvas sometimes does not hold its finished shape after blocking, and it may be necessary to block the same two or three times until the canvas has lost its memory of its distorted shape.

One aspect of the new blocking device concept involves the coplanar arrangement of the frame members and blocking frame formed of any size between frame side members and blocking members with one of the blocking members carrying staples **31.** This insures that the canvas is stretched in a flat plane while being blocked. Another aspect of the new concept is the ability to engage and stretch the central portion of the bowed or warped upper edge of the canvas (FIG. **9**) at its central portion and then to gradually apply tension to the canvas as the canvas is being stretched along the guidelines. This is facilitated by the use of the pivoted staple pins **31** which engage over the top surface of the canvas with the pins projected downward through the canvas during the final stretching, and with the staple pins extending in the opposite direction from that in which the pins **7** at the other three edges of the canvas project in initially engaging the canvas.

Accordingly, the new blocking device of the present invention provides a rectangular frame construction having adjustable frame members which may be moved to accurately engage, hold and tension a needlepoint or other art needlework canvas in truly rectangular form while it is being blocked to remove the distorted or warped condition of the canvas prior to blocking; provides a frame construction which will accept and block any size of canvas, say canvases having shapes of from 2 to 30 inches or more on one side and similarly from 2 to 30 inches or more on an adjacent side at right angles to the one side; provides a blocking frame construction which may stretch a canvas in a flat plane with the proper amount of tension applied in each of two directions extending at right angles to one another; provides a construction in which the edges of a rectangular canvas are held in straight line position while being stretched so that the canvas after moistening and drying will have and hold rectangular shape; provides a construction which is rugged, easily assembled, easily adjusted and readily manufactured to perform a blocking function accurately; and provides a construction which satisfies the objectives stated and which presents a solution to a long felt need which has existed in the field of needlepoint blocking.

In the foregoing description, certain terms have been used for brevity, clearness and understanding; but no unnecessary limitations are to be implied therefrom beyond the requirements of the prior art because such terms are used for descriptive purposes and are intended to be broadly construed.

Moreover, the description and illustration of the invention is by way of example, and the scope of the invention is not limited to the exact details shown or described, since the features of the invention may be applied to different frame sizes.

Having now described the features, discoveries and principles of the invention, the manner in which the improved structure achieves the objectives, and the advantageous, new and useful results obtained; the new and useful structures, devices, elements, arrangements, parts, combinations, and subcombinations are set forth in the appended claims.

I claim:

1. A needlepoint canvas blocking device including first and second pairs of spaced frame side members having coplanar top surfaces connected at corners to form an outer rectangular frame; a first intermediate blocking frame member located parallel with and extending in spaced relation between the side members of the first pair and having a top surface coplanar with the coplanar outer frame top surfaces; means journaled in the first pair frame side members and engaging the first intermediate member for adjusting said first intermediate member in parallel relation to and toward and away from one of the side members of said first pair; a set of spaced aligned pins projecting upward from the top surface of said one member of said first pair, a second set of spaced aligned pins projecting upward from the top surface of one member of the second pair extending from a corner connection with said one member of said first pair, and a third set of spaced aligned pins projecting upward from the top surface of said first intermediate frame member; a second intermediate blocking frame member located parallel with and extending in spaced relation between the side members of the second pair and beneath the first intermediate frame member; sectional blocks removably mounted on the second intermediate frame member between the one side member of the first pair and the first intermediate frame member having top surfaces co-planar with the coplanar outer frame top surfaces; staples hinged to the sectional blocks at spaced intervals having pointed ends movable to engaged position projecting from above into aligned grooves formed in said blocks parallel with the pins in the one member of the second pair; and means journaled in the second pair frame members and engaging the second intermediate member for adjusting the second intermediate member with sectional blocks thereon in parallel relation to and toward and away from said one member of the second pair.

2. The device set forth in claim **1** in which spring latch means on the sectional blocks removably mount the sectional blocks on the second intermediate frame member.

3. The device set forth in claim **1** in which the sectional blocks each have hook-shaped formations thereon, in which a corner recess is formed in the second intermediate frame member, and in which said block hook-shaped formations engage with said corner recess.

4. The device set forth in claim **1** in which the adjusting means for adjusting the first and second intermediate members comprise screws journaled in the pairs of frame side members and engaging nuts carried by the first and second intermediate members, and in which the screws each have a crank arm located outside of the outer frame side members.

5. The device set forth in claim **1** in which scales are provided along the top surfaces of the one side member of the first pair, along the side members of the second pair, and along the first intermediate member to determine parallelism between the intermediate members and their respective members with which each intermediate member is to be maintained in parallelism.

6. The device set forth in claim **1** in which the pins of each set of spaced aligned pins are spaced apart at ½ inch intervals.

7. The device set forth in claim 6 in which the sectional blocks have varying lengths predetermined to provide combinations of blocks to form total block lengths extending between the one side member of the first pair and the first intermediate frame member variable at ½ inch intervals.

8. The device set forth in claim 7 in which staples are hinged to the sectional blocks at ½ inch intervals.

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