March 8, 1966 B. MUNN 3,238,996

STRETCHER FRAME FOR OIL PAINTINGS

Filed Jan. 9, 1964 2 Sheets-Sheet 1

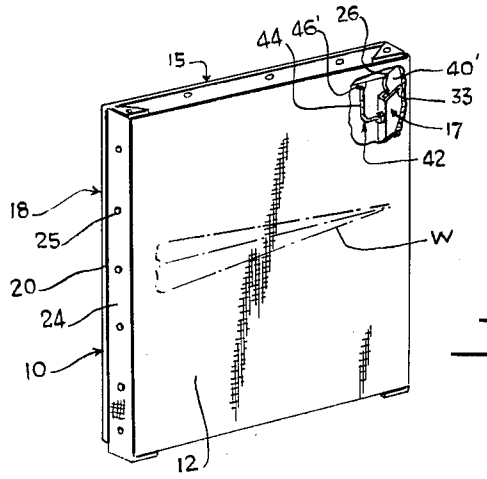


Fig. 1.

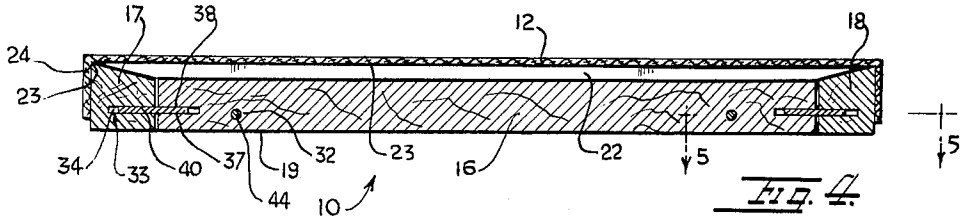


Fig. 4.

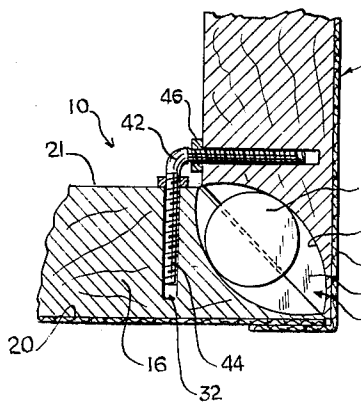


Fig. 5

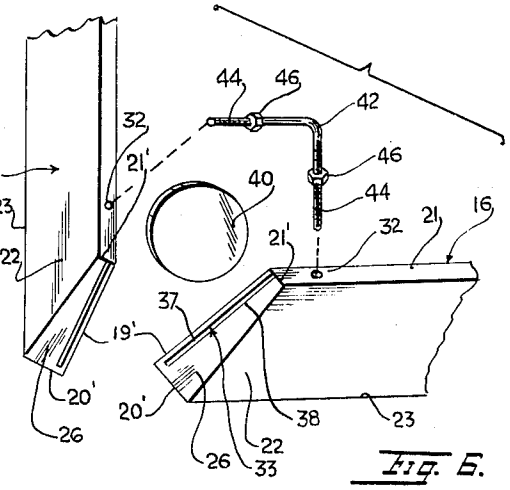


Fig. 6.

INVENTOR.
BEN MUNN
BY Polacek & Saulsbury
ATTORNEYS

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STRETCHER FRAME FOR OIL PAINTINGS

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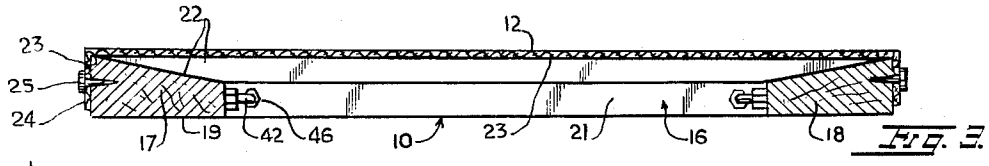


Fig. 3.

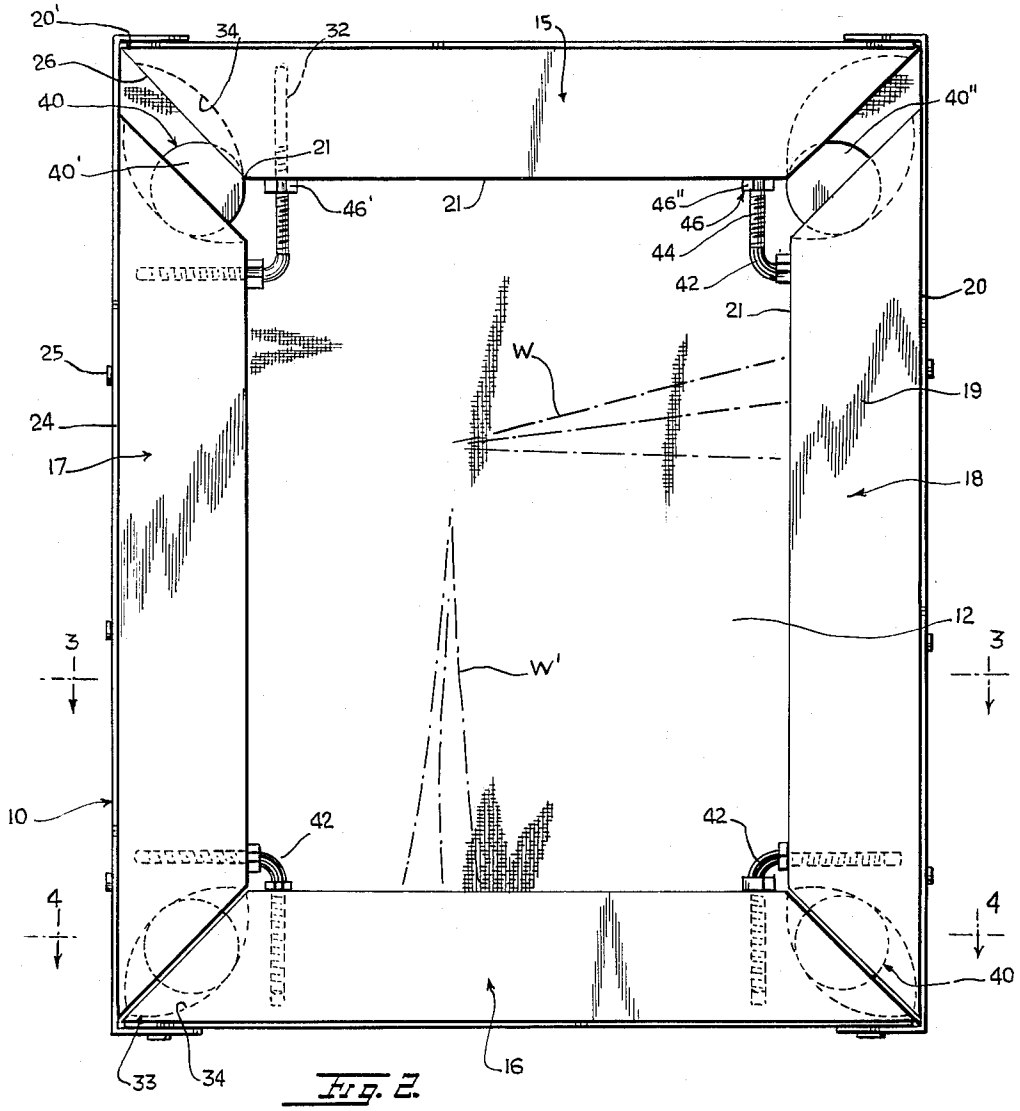


Fig. 2.

INVENTOR.
BEN MUNN
BY Polachek & Saulsbury
ATTORNEYS

United States Patent Office

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STRETCHER FRAME FOR OIL PAINTINGS

Ben Munn, 87—41 Santiago St., Hollis, N.Y.

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1 Claim. (Cl. 160—374.1)

This invention relates to a frame assembly for use in connection with an artist's canvas and more particularly concerns a frame assembly for stretching and holding in a taut condition a canvas secured thereto.

One object of the invention is to provide an improved rectangular frame assembly of simplified construction having frame bars which are independently adjustable at each of the corners of the frame assembly for stretching and holding a canvas in a wrinkle-free condition.

A further object is to provide a frame assembly as described wherein the adjustment means for the bars includes right-angle bolts having ends slidably disposed in holes in the bars at each corner of the frame assembly, with a cam disk movably disposed in slots in the adjacent ends of each pair of bars at each corner of the frame assembly to retain uniform tension throughout the canvas.

For further comprehension of the invention, and of the objects and advantages thereof, reference will be had to the following description and accompanying drawings, and to the appended claim in which the various novel features of the invention are more particularly set forth.

In the accompanying drawings forming a material part of this disclosure:

FIG. 1 is a perspective view of a frame assembly embodying the invention, with a canvas mounted thereon, a part of the canvas at one corner of the frame assembly being broken away.

FIG. 2 is an enlarged rear view of the frame assembly with the canvas mounted thereon.

FIG. 3 and FIG. 4 are cross-sectional views taken on lines 3—3 and 4—4, respectively, of FIG. 2.

FIG. 5 is a fragmentary sectional view taken on line 5—5 of FIG. 4.

FIG. 6 is an exploded perspective view of parts of the frame assembly.

Referring to FIGS. 1–6 of the drawing, there is shown a frame assembly **10** upon the front or forward side of which is stretched a sheet of canvas **12**. The frame assembly includes two parallel end bars **15, 16** and two side bars **17, 18** arranged to define a rectangular frame. Each bar in cross section, as best shown in FIGS. 3 and 4, has a trapezoidal cross section. The wide rear side or wall **19** of each bar is perpendicular to the narrower outer wall **20** and inner wall **21**. Inner wall **21** is parallel to and narrower than outer wall **20**. Front wall **22** is disposed at an obtuse angle to inner wall **21** and at an acute angle to outer wall **20**. Thus the stretched canvas sheet contacts each of the frame bars only at the common forward edge **23** where front wall **22** joins outer wall **20**, and extends over but out of contact with the front walls **22** of all the bars. The edges **24** of the canvas are secured by tacks **25** to the outer walls **20** of the bars all around the frame.

Each bar has oppositely inclined end faces **26**, each of which is trapezoidal in shape with wide front and back edges **22'**, **19'** and narrow inner and outer edges **21'**, **20'**. Edge **21'** is shorter than edge **20'**. The end faces **26** extend oppositely at angles of 45° to the inner wall **21** and outer wall **20** of each bar. An unthreaded, smooth bore or hole **32** with a blind outer end is formed in each end of each bar. The hole extends outwardly from inner wall **21** perpendicular to outer wall **20** and parallel to rear wall **19**. A flat, narrow slot or groove **33** is formed in each end of each bar. This slot has a circularly curved inner side **34** and flat, parallel opposing walls **37, 38**. Each slot extends from inner end corner or edge **21'** to a point near outer end corner or edge **20'** of each end of each bar. Opposing slots **33** in adjacent ends of the bars at each corner of the frame define an elongated flat pocket. The flat opposing sides **37, 38** of each slot **33** are aligned with the corresponding flat opposing sides of the adjacent slot. The adjacent corner slots of the frame receive circular disks **40** which serve as cam members in the slots between walls **37, 38** and the opposing curved sides **34**.

Right-angle bolts **42** are provided at the four corners of the frame. Each bolt **42** has two threaded arms **44**. Nuts **46** are threaded on the arms. The arms **44** have their free ends axially and slidably disposed in the holes **32** at adjacent ends of each pair of arms of the frame.

The canvas is shown in FIG. 1 in a perfectly smooth, unwrinkled and stretched taut condition at the front of the frame assembly. When the canvas was first tacked to the frame wrinkles W indicated by dotted lines in FIGS. 1 and 2 extended irregularly across the canvas. To remove these wrinkles, nuts **46'** and **46''** at the upper corners of the frame as viewed in FIGS. 1 and 2 were tightened or adjusted on the arms **44** of the bolts **42** thereat to move the arms axially in holes **32** at the opposite ends of upper bar **15**. This caused the bar **15** to separate from the upper ends of bars **17, 18**. The upper disks **40'**, **40''** are cammed in the slots at the upper corners of the frame, and as shown in FIG. 2 are stabilized by contact between curved sides **34** of the slots **33** at the ends of bar **15**, and the opposing curved sides of the slots at the upper ends of bars **17, 18**. Thus a rigid joint is formed at each corner of the frame with tension applied uniformly across the canvas between the upper and lower bars **15, 16** and between side bars **17, 18**. If wrinkles W' should extend longitudinally of the canvas they can be eliminated by adjusting any one or more of the nuts at the side bars **17, 18**. After all wrinkles have been eliminated, further tightening of the nuts on the arms **44** of all the bolts **42** will tension the canvas in all directions to form a uniformly taut, flat surface supported only at its edges, which is most desirable for painting purposes.

It will be noted that a particularly characteristic feature of the invention is the independent adjustment provided for each end of each bar. Two adjustments are provided at each corner of the frame, or eight adjustments in all. The cam disks cooperate with the nut and bolt adjustments in that they automatically are cammed into positions where the corner structure is stabilized at each corner of the frame as the nuts thereat are tightened against inner sides **21** of the frame bars.

The invention may be applied to frames of different sizes, to bars of different thicknesses, and to canvas of different sizes and weights. The frame bars are preferably made of wood but they may be made of plastic, metal or other materials. The frame bars can be shaped inexpensively on mass production woodworking or metal working machinery, or they can be extruded inexpensively in plastic molding machinery at high speed and low cost. The frames are easy to assemble and use. They can be supplied commercially in kits which can be stored compactly in small packages for assembly into frames when desired.

While I have illustrated and described the preferred embodiment of my invention, it is to be understood that I do not limit myself to the precise construction herein disclosed and that various changes and modifications may be made within the scope of the invention as defined in the appended claim.

Having thus described my invention, what I claim as new, and desire to secure by United States Letters Patent is:

A frame assembly for stretching and holding a painting canvas, comprising a plurality of straight bars dis-

posed in a rectangular array with each end of each bar disposed adjacent to an end of another bar to define a frame corner, each bar having inner and outer opposing parallel walls, a rear wall perpendicular to the inner and outer walls, and a front wall disposed at an acute angle to the outer wall to define a forward outer edge and disposed at an obtuse angle to the inner wall to define a recessed inner edge located in a plane rearwardly of the forward edge, whereby a canvas sheet stretched over the front walls of the bars will contact only the forward outer edges, each bar having an elongated semielliptical narrow slot formed in each end thereof, each slot having a curved inner side terminating at opposite ends at an end face of the bar, a circular cam disk adjustably disposed in each pair of opposing slots at each frame corner, each bar having a hole near each end thereof extending outwardly from the inner wall toward and axially perpendicular to the inner and outer walls, a plurality of right-angle bolts having mutually perpendicular threaded arms slidably engaged respectively in the holes at adjacent ends of two bars at each frame corner, and nuts threaded on the respective arms and engaging the inner walls of said bars

for adjustably sliding the arms in the holes to adjust the spacing of the adjacent bars with respect to each other, the disks being adjustably cammed in opposing slots at the frame corners while the nuts thereat are adjusted on the arms of the bolts, whereby wrinkles in said canvas are eliminated and said canvas is stretched and held taut on the bars.

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HARRISON R. MOSELEY, *Primary Examiner.*

FRANK B. SHERRY, *Examiner.*

C. A. NUNBERG, P. C. KANNAN, *Assistant Examiners.*