

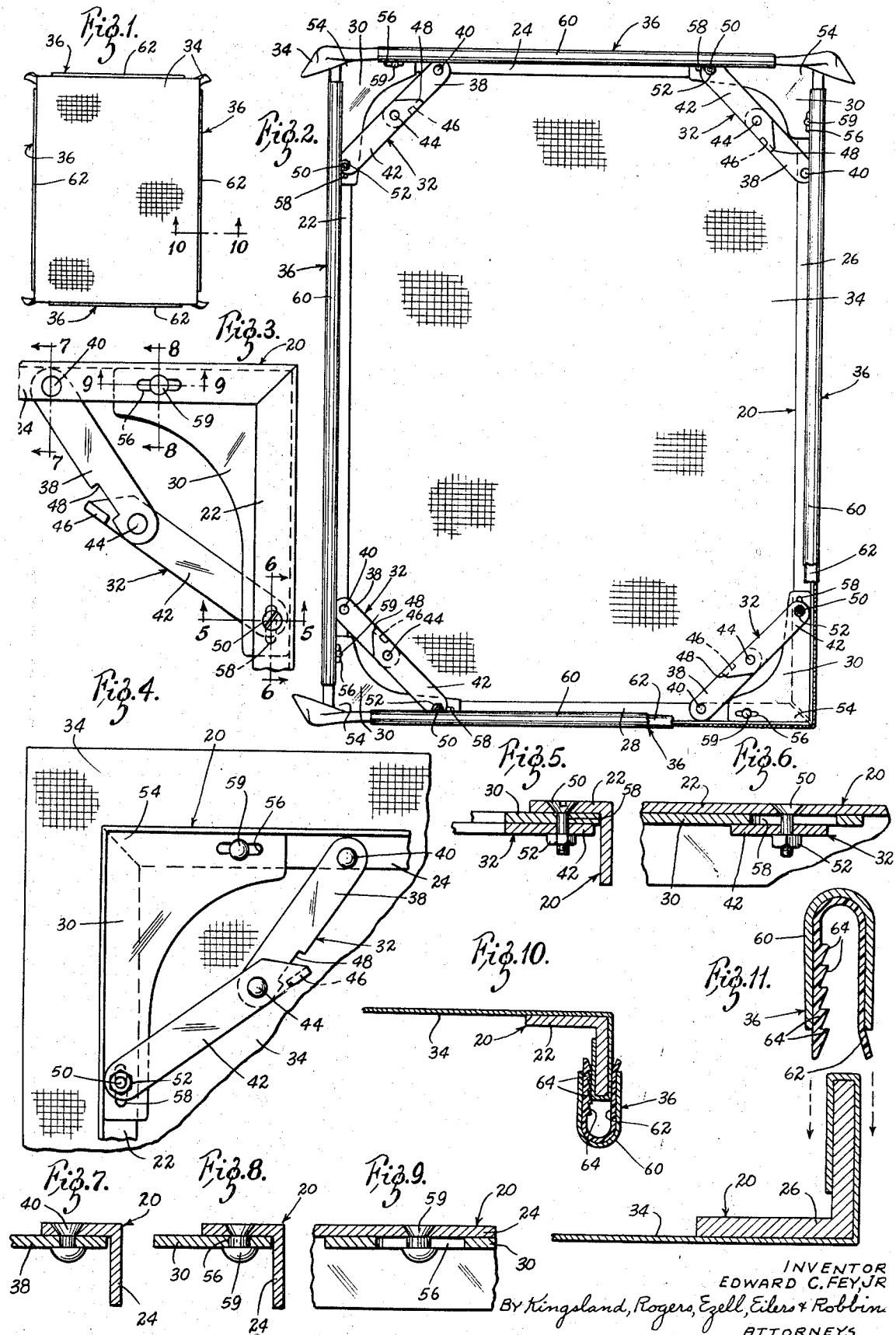
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EXPANDABLE FRAME FOR PAINTING CANVAS

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EXPANDABLE FRAME FOR PAINTING CANVAS

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6 Claims

ABSTRACT OF THE DISCLOSURE

An expendable frame for fabrics such as artists' canvas. The frame comprises four side sections which may be broken down into individual pieces for easy transport. The side sections are adapted to be connected to tensioning braces to provide a rigid frame structure. Through the use of channel rails for the side sections, together with a U-shaped retainer channel, the canvas can be tightly stretched to the frame and when tensioning braces are tensioned there is provided a taut canvas upon the frame.

SUMMARY OF THE INVENTION

In the past artists' canvas have been conventionally attached to wooden frames or the like by means of nails or other semi-permanent affixation. This is a laborious procedure in providing a taut canvas which has consumed unnecessary time and unnecessary space in the storage of the frames.

By means of this invention there has been provided a simply broken down rigid frame. The frame is comprised of four flanged side sections. Each section is provided with a brace which can be removably fastened to an adjacent brace together with a guide plate to provide for rigidity of the corners. The braces can be tensioned to square the frame simply and expediently. Through the use of U-shaped retainer channels having a toothed plastic or other elastic material insert, the canvas can be attached to the flanged portion of the frame side sections in a simple and expedient manner. Thus, there has been provided a simply broken apart expandable canvas frame which can be easily stored and set up by relatively unskilled users.

The above features are objects of this invention and other objects will appear in the detailed description which follows and will be otherwise apparent to those skilled in the art.

For the purpose of illustration of this invention, there is shown in the accompanying drawings a preferred embodiment thereof. It is to be understood that these drawings are for the purpose of example only and that the invention is not limited thereto.

In the drawings:

FIG. 1 is a top plan view of the frame with the attached canvas;

FIG. 2 is an enlarged bottom plan view of the frame and canvas;

FIG. 3 is an enlarged fragmentary top plan view of one corner of the frame in the unexpanded position;

FIG. 4 is an enlarged fragmentary bottom plan view of one corner of the frame overlying the canvas prior to assembly;

FIG. 5 is an enlarged view in section taken on the line 5—5 of FIG. 3;

FIG. 6 is an enlarged view in section taken on the line 6—6 of FIG. 3;

FIG. 7 is an enlarged view in section taken on the line 7—7 of FIG. 3;

FIG. 8 is an enlarged view in section taken on the line 8—8 of FIG. 3;

FIG. 9 is an enlarged view in section taken on the line 9—9 of FIG. 3;

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FIG. 10 is an enlarged fragmentary view in section taken on the line 10—10 of FIG. 1;

FIG. 11 is an enlarged view in fragmentary section showing the positioning of the canvas prior to the insertion of the retainer channel in the assembly of the canvas.

DESCRIPTION OF THE INVENTION

Referring now to the drawings, the collapsible and expandable frame of this invention is generally identified by the reference numeral 20. It is comprised of four side members 22, 24, 26 and 28. As shown in the drawings, the opposite side members 22 and 26 are longer than the pair of members 24 and 28, and it will be understood that various rectangular sizes and configurations can be employed by using different sized pairs. Each of the four corners is squared by a guide plate 30 while tensioning braces 32 provide for the tightened adjustment. The canvas 34 is retained in place by means of specially designed channel retainers 36.

The side members 22, 24, 26 and 28 are each made up of flanged members such as an angle iron construction as best shown in FIGS. 3 through 9. This construction provides for a flat base piece and an upstanding flange portion which receives the channel retainer members.

As best shown in FIG. 4, the tensioning brace 32 is comprised of a link 38 pivotally connected by a rivet 40 to an end of each of the side members. A second link 42 is pivotally connected by a pivot pin 44 to the link 38 and is adapted to be locked in place by a flanged detent 46 interfitting with a notch 48. The link 42 is provided with a hole through which a bolt 50 may be interfitted to connect with a nut 52. It will be understood that a wing nut may be employed where desired for expediency.

The guide plates 30 are best shown in FIGS. 2 and 4. They are formed of a flat metal plate having a squared corner 54 and slots 56 and 58. Each guide plate is connected by a rivet 59 to an end of a side member adjacent the rivet connection of the tensioning brace 32, as best shown in FIG. 4.

The channel retaining members 36 are best shown in FIGS. 10 and 11. They are comprised of a U-shaped rigid channel element 60 within which is seated the plastic or other elastic material insert 62 of mating configuration. The insert is provided with teeth 64 or other type of roughened or irregular fabric gripping surface, which serve to grip the canvas damaging it because of the soft material of construction.

OPERATION

The erection of the expandable frame is conveniently effected. It will be understood that each of the four side members 22, 24, 26 and 28 is, when broken apart, connected to one of the corner guide plates 30 and one of the tensioning braces 32. To assemble the four side sections together, they are placed in a squared configuration such as shown in FIG. 4, and the link 42 on the corner brace is then connected through the guide plate slotted opening 58 by insertion of the connecting bolt 50 through a mating opening in the adjacent side section. Thus, the four side sections are very simply assembled by merely interfitting the bolts and connecting the nuts 52 to provide the rectangular set up of the frame.

Once the frame has been assembled, the canvas 34 with which it is to be used is laid face down on a flat surface. The assembled frame is then placed on top with the tensioning braces open in the position shown in FIG. 4. The edge of the canvas is then brought over the rail as shown in FIG. 11 and manually pulled to a snug position. The retainer channel 60 is then moved downwardly in the direction of the arrows as shown in FIG. 11 to frictionally engage the edges of the canvas and retain it upon the upstanding flange portion of the side section members. This

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operation is then repeated on the opposite rail with another channel retainer after the canvas is pulled snugly over the side rail. The additional sides are then stretched in a like fashion to connect all four sides and edges of the canvas to the frame.

Once the canvas has been retained upon the frame through the affixation of the channel retainers, the tensioning braces are then closed by moving them from the position shown in FIG. 4 to the locked position as shown in FIG. 2. The slotted openings 58 provide a degree of adjustment should this be required by simply moving the nut and bolt in the slot and repositioning and tightening the nut and bolt.

Disassembly is effected by simply removing the channel retainer members. Thus, the canvas can be removed in a matter of seconds and a new canvas can be stretched upon the frame where desired. For complete disassembly of the frame, the corner guide plate and the braces are removed so that the individual side section members can be broken down for easy storage.

Various changes and modifications may be made within the invention as will be readily apparent to those skilled in the art. Such changes and modifications are within the scope and teaching of this invention as defined by the claims appended hereto.

What is claimed is:

1. An expandable frame for stretching fabric comprising four side sections having rearwardly extending flange elements, means for loosely connecting said sections in a rectangular shape, means for clamping a sheet of fabric to each of said sections, the clamping means comprising U-shaped channel fabric retaining members frictionally engaging the fabric against rearwardly extending flange elements on said side sections and means for expanding said sections to stretch said fabric and brace said sections in the expanded section, the means for expanding said sections comprising a toggle brace connected to

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contiguous sections adjacent the ends thereof in which the braces are comprised of a pair of pivotally connected links, each of said links being pivotally connected to a side section across the corner of the frame.

2. The frame of claim 1 in which the channel retaining members are provided with a protective plastic insert, said insert having an irregular fabric gripping surface.

3. The frame of claim 1 in which one of the links is removably connected to a side section whereby the frame may be dismantled into four separate sections.

4. The frame of claim 1 in which a corner guide plate is provided at the corners of said frame to square the corners thereof.

5. The frame of claim 4 in which said corner guide plate abuts against the rearwardly extending flange elements.

6. The frame of claim 5 in which the guide plate is connected to one of said side sections by a rivet fixed to said section and fitting through a slot in said guide plate to provide for a limited degree of relative movement in the expanding of said sections.

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