

April 21, 1936.

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2,037,757

STRETCHING FRAME

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2 Sheets-Sheet 1

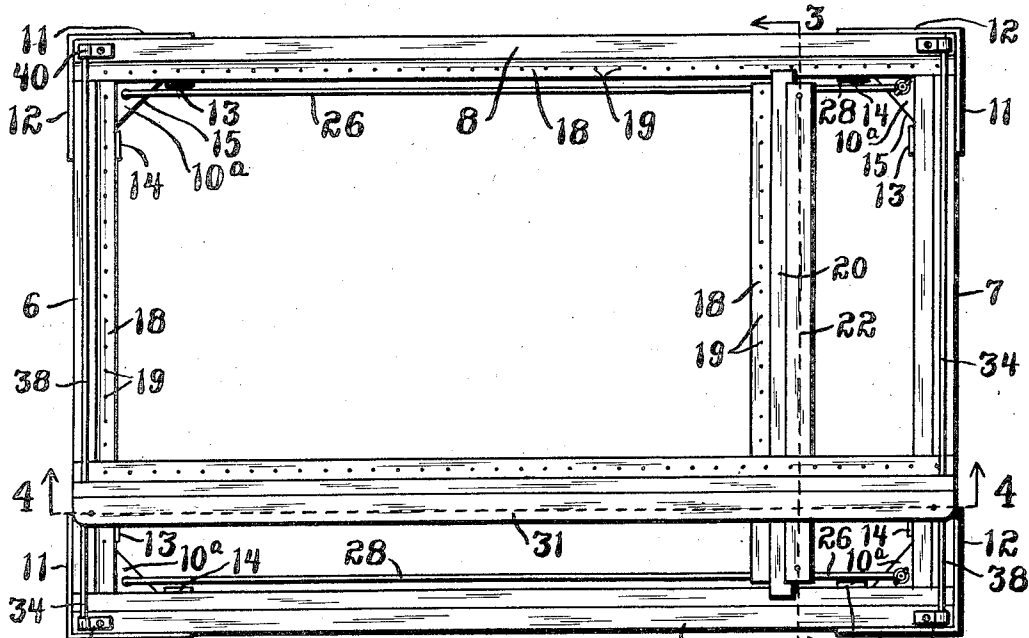


FIG 1

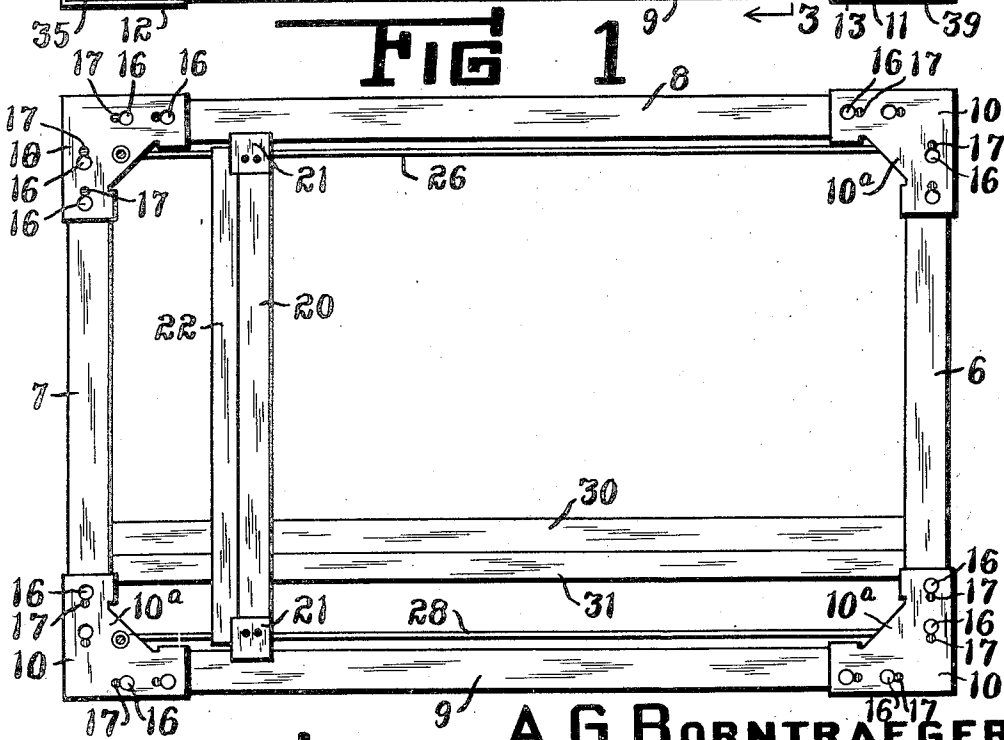


FIG 2

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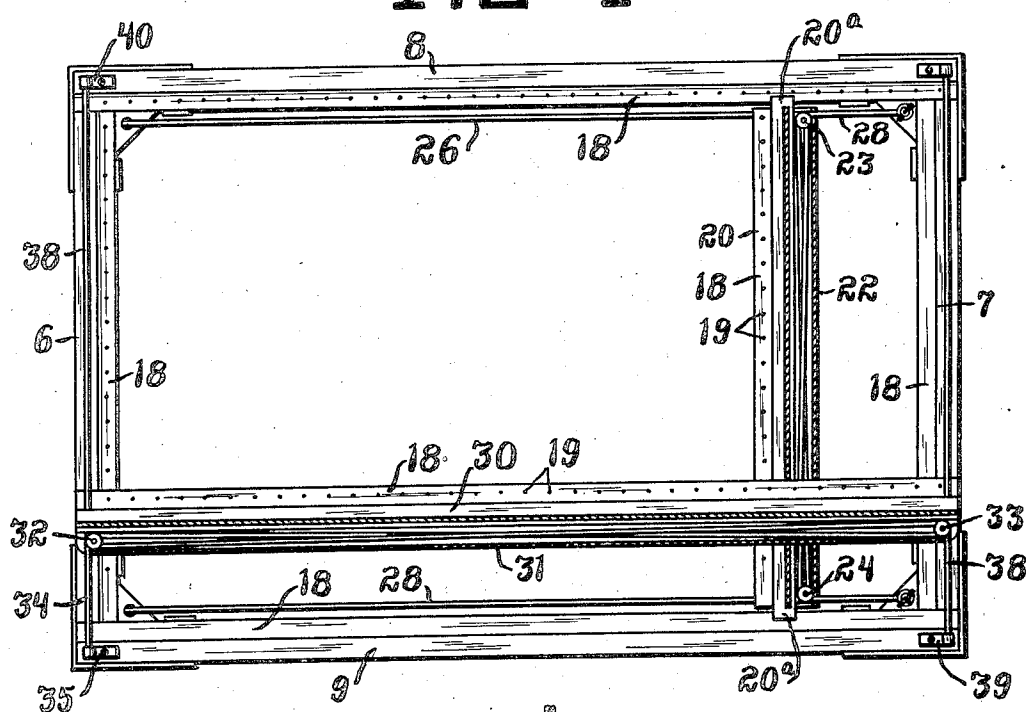
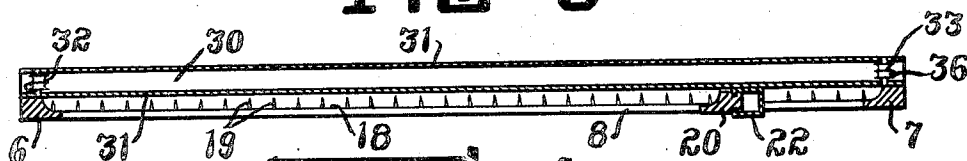
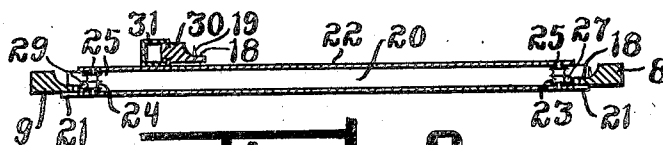
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2,037,757

STRETCHING FRAME

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Application December 20, 1934, Serial No. 758,360

7 Claims. (Cl. 45—24)

This invention relates to improvements in frames for mounting curtains or other sheet material in a taut or stretched condition while drying.

5 Objects of the invention are to provide a stretching frame of simple, durable construction which may be manufactured at a low cost; which is composed of separable sections and can be quickly and conveniently taken apart and packed
10 to occupy a relatively small amount of space in shipment or storage; which will retain a true rectangular shape even when subjected to a long period of hard usage; which will automatically hold a curtain or other flat rectangular sheet
15 material in its normal shape and size; which will be easily and conveniently operated and will be very efficient in use.

The above objects, which may be considered separately or collectively, are attained by the construction herein shown and described, it being understood that the invention is not confined to the illustrative adaptation disclosed in the drawings, and that changes and modifications may be made and various mechanical experiments employed in reducing different forms of the invention to practice.

In the drawings:—

30 Figure 1 is a front, elevational view of a curtain stretching frame constructed in accordance with this invention,

Figure 2 is a rear elevational view of same,

Figure 3 is a horizontal, sectional view taken through the horizontally movable, vertical bar as indicated by the lines 3—3 of Figure 1,

35 Figure 4 is a similar view taken through the vertically movable, horizontal bars as indicated by the lines 4—4 of Figure 1,

40 Figure 5 is a front, elevational view of a frame constructed in accordance with this invention, the same being shown with portions of the movable bars cut away and shown in section to more clearly illustrate the manner of mounting the same in the frame.

45 The invention will now be described with reference to the particular adaptation thereof disclosed in the drawings in which there is shown a rectangular frame composed of side rails 6 and 7, a top rail 8 and a bottom rail 9 which are held in assembled relation by the corner members 10.

50 Each of the corner members 10 are stamped or otherwise formed of relatively thin, sheet material having the outer edges thereof disposed at a right angle to each other.

55 The numeral 11 denotes a flange which projects forwardly at a right angle from the main

body of the plate 10 and extends along one of the outer edges thereof. The numeral 12 denotes a similar flange which extends along the other outer edge thereof. Each corner plate 10 is provided on the inner side thereof with a flange 13 which projects forwardly therefrom in parallel, spaced relation to the flange 11 and with a flange 14 which projects forwardly therefrom in parallel, spaced relation to the flange 12. The flanges 11 and 13 are designed to snugly receive one end portion of one of the side or end rails 6, 7, 8 and 9 and the flanges 12 and 14 are arranged to receive the end portion of the adjacent rail to hold said rails in rectangular form.

Each bracket 10 is also provided on the inner side thereof with the diagonal edge 15 leaving a portion 10a of the web thereof exposed for a purpose presently to appear. Each corner member 10 is provided in the web thereof with a plurality of openings 16, two of which are disposed in a line extending longitudinally between the flanges 11 and 13 and two of which are likewise disposed between the flanges 12 and 14.

Each opening 16 is provided on the side presented toward the corner member 10 with a relatively narrow extension. Each of the rails 6, 7, 8 and 9 are provided on the back thereof with a screw or headed pin 17 which are initially inserted in the opening 16 and the rail moved toward the corner to position the screw 17 in the extension of the slot with the head of the screw 17 engaging the rear face of the web of the corner member 10. The rails 6, 7, 8 and 9 are thus assembled in the corner members 10 to form a strong rigid frame.

35 The inner, marginal end portions of the rails 6, 7, 8 and 9 are offset rearwardly to provide a longitudinally extending, marginal surface 18 which is offset rearwardly from the forward face of the frame. Each of the bores 6 and 8 are provided with a row of closely spaced pins 19 which extend longitudinally of the marginal edge 18 in spaced relation to the inner edge thereof.

40 The numeral 20 denotes a vertical bar which is mounted in the plane of the frame and which is provided at each end thereof with a portion 20a which overlaps the extreme, outer edge portion of the marginal surface 18 of the rails 8 and 9.

50 The bar 20 is also provided at each end thereof on the rear face thereof with a plate 21 which is suitably secured thereto so as to overlap the portion of the rear face of each of the rails 8 and 9 thereby positioning the bar 20 in the frame for sliding movement horizontally of the frame. 55

The bar 20 is provided on the forward face thereof of adjacent the edge presented toward the rail 6 with a marginal face 18 which is similar to the face 18 on the rail 6 and is disposed in approximately the same plane. The marginal face 18 of the rail 20 is likewise provided with a longitudinally extending row of spaced pins 19. The rail 20 is provided on the side presented toward the rail 7 with the hollow extension 22 which is preferably composed of relatively, thin sheet metal and which extends longitudinally thereof.

The extension 22 is provided at the upper end thereof with a double grooved sheave 23 and at the lower end thereof with a similar sheave 24. The said sheaves are operatively secured between the walls of the extension 22 by means of the pins 25 so as to be operable in the plane of the frame.

The numeral 26 denotes a cable or other flexible element having one end thereof suitably secured to the web 10a on the corner bracket 10 which connects the rails 6 and 8 and which extends along the inner edge of the rail 8 through a suitable bore 27 in the upper end portion of the bar 20 and is operatively mounted in one of the grooves of the sheave 23. The flexible element 26 extends downwardly through the cavity of the extension 22 and is operatively mounted in one of the grooves of the sheave 24 from which it extends along the upper edge of the rail 9 with the other end thereof suitably secured to the web 10a of the corner member 10 which connects the rails 7 and 9.

The numeral 28 denotes a cable or other suitable, flexible element having one end thereof suitably secured to the web 10a in the corner member 10 which connects the rails 6 and 9 and which extends along the upper edge of the rail 9 and is entered through a suitable bore 29 in the lower end portion of the rail 20 and is operatively mounted in one of the grooves on the sheave 24 from which the flexible element 28 extends upwardly through the cavity of the extension 22 and is operatively mounted in the other groove of the sheave 23 from which the flexible member 28 extends along the lower edge of the rail and is suitably secured to the web 10a on the corner member connecting the rails 7 and 8.

It will thus be seen that the cables 26 and 28 pass over the sheaves 23 from opposite directions and that said cables are crossed between the sheave 23 and the sheave 24 so as to project from the sheave 24 in opposite directions thereby mounting the vertical bar 20 for movement longitudinally of the frame.

It will also be seen that the arrangement above described confines the top and bottom of the bar 20 to a like movement whereby the bar 20 while movable longitudinally of the frame will also be maintained in parallel relation to the side rails 6 and 7.

The numeral 30 denotes a bar similar to the bar 20 which is positioned to extend horizontally across the frame with the end portions thereof overlapping the forward face of the side rails 6 and 7. The forward face of the bar 30 is also provided along the upper edge thereof with a marginal face 18 which is similar to the marginal faces 18 on the other rails 6, 8 and 20 and which is similarly provided with a longitudinally extending row of pins 19. The rail 30 is provided along the lower edge thereof with a hollow extension 31 which is similar to the extension 22 and is preferably composed of sheet metal and which is secured to the bar 30 so as to extend longitudinally thereof.

The rail 30 is provided in the end portion thereof of overlapping the rail 6 with a double groove sheave 32 which is mounted between the walls of the extension 31 so as to be operable in a plane disposed in parallel relation to the plane of the frame. The rail 30 is provided at the other end thereof with a similar sheave 33 which is suitably mounted between the walls of the extension 31 so as to be operable in the same plane with the sheaves 32.

The numeral 34 denotes a cable or other flexible element having one end thereof secured to the rail 9 by means of the clamp 35 or other suitable fastening means and which extends upwardly along the rail 6 and is operatively mounted in one of the grooves of the pulley 32 from which it extends longitudinally through the cavity of the extension 31 and is operatively mounted in one of the grooves in the sheave 33 from which it extends upwardly through a suitable bore 36 in the rail 30 and extends along the rail 7 with the upper end thereof secured to the end portion of the rail 8 which contacts with the rail 7.

The numeral 38 denotes a similar cable or other flexible element which is secured to the lower rail 9 by means of the clamp 39 and which extends upwardly along the rail 7 and is operatively mounted in one of the grooves of the pulley 33.

Said cable 38 extends longitudinally through the cavity of the extension 31 and is operatively mounted in the other groove in the sheave 32 from which it extends upwardly through a suitable bore in the rail 30 and extends along the rail 6 with the upper end thereof secured to the rail 8 by means of the clamp 40 or other suitable fastening means.

It will also be seen that the flexible element 38 extends around the upper side of the sheave 33 and around the lower side of the sheave 32, while the flexible element 34 extends over the upper side of the sheave 32 and around the lower side of the sheave 33, thus providing a bar mounting which will permit the bar 30 to be moved vertically but will at all times maintain the same in parallel relation to the bars 8 and 9.

In using the frame herein described to dry curtains, the bar 20 is moved to a position where the distance between it and the rail 6 will approximately equal the length of the curtain. The bar 30 is likewise moved relative to the rail 8 to provide an intervening distance equal to the width of the curtain. One edge portion of the curtain is then evenly secured to the rail 8 by positioning the pins 19 through the edge portions of the curtain.

The one end of the curtain is then likewise secured to the rail 6 and the other end and side thereof are likewise respectively secured to the bars 20 and 30. The bars 20 and 30 then hold the curtain in a taut condition until the same is dry.

In actual practice, it has been found that while the bars 20 and 30 are easily movable in the frame that the same will hold the curtain in a taut condition without locking means but it is understood that any suitable means may be employed to hold the bars 20 and 30 in a fixed position.

While the bars 20 and 30 are shown composed of a solid rail with a tubular extension, the said bars may be formed of sheet metal to provide a hollow bar or otherwise formed to provide space for the cables 26, 28, 34 and 38 or,

the said cables may be mounted in an exposed position on said bars.

While the cables 18, 28, 34 and 38 are shown mounted on sheaves 23, 24, 32 and 33, it is understood that any suitable means may be employed for slidably mounting the said cables on the bars 20 and 30.

While I have shown and described a particular frame composed of separable sections, the bars 20 and 30 may be likewise mounted on any suitable frame or other structure.

I claim:

1. In a device of the character described, a rectangular frame, curtain engaging means along one side rail thereof, a movable curtain engaging bar arranged in parallel relation to said side rail, said bar slidably receiving two cables which extend longitudinally thereof and project from each end thereof with the opposite ends of each cable secured to diagonally opposite corner portions of said frame.

2. In a device of the character described, a rectangular frame; curtain engaging means on two adjacent side rails thereof; two movable curtain engaging bars; each of said bars arranged in parallel relation to one of said side rails; two cables extending longitudinally of each bar, means slidably securing the cables to each end of each bar with the end of each cable connected to diagonally opposite corners of the frame.

3. In a device of the character described, a frame having two adjacent, curtain-engaging side rails, two movable curtain engaging bars arranged in respective, parallel relation to said side rails; each bar slidably receiving two cables which extend longitudinally thereof with each cable projecting along the plane of the frame at right angles from each end thereof, with the opposite end portion of each cable projecting from an opposite side of the bar and means securing each end of each cable to the frame.

4. In a device of the character described, a frame having two adjacent, curtain-engaging side rails, two movable curtain-engaging bars ar-

ranged in respective, parallel relation to said side rails; each bar slidably mounted on two cables which extend longitudinally thereof with each cable projecting along the plane of the frame at a right angle from each end thereof, with the opposite end portion of each cable projecting from an opposite side of the bar with each end of each cable secured to diagonally opposite corners of said form.

5. In a device of the character described, a rectangular frame; curtain engaging means on two adjacent side rails thereof; two movable curtain engaging bars; each of said bars arranged in parallel relation to one of said side rails; each of said bars provided with a cavity which extends longitudinally thereof, two cables extending through the cavity of each bar and projecting laterally therefrom with the opposite end of each cable secured to diagonally opposite corner portions of said frame.

6. In a device of the character described, a rectangular frame, curtain engaging means along one side rail thereof, a movable curtain engaging bar arranged in parallel relation to said side rail, said bar having a cavity which extends longitudinally thereof; a sheave at each end of said cavity, two cables extending through the cavity of each bar, said cables oppositely mounted on said sheaves to project in opposite directions from each end of each bar with the opposite end of each cable secured to the diagonally opposite corner portions of said frame.

7. In a device of the character described, a rectangular frame having curtain engaging rails on two adjacent sides thereof, two movable curtain engaging bars, each bar having a hollow extension along one edge thereof; said bars respectively arranged in parallel relation to said curtain engaging rails; a pair of cables extending longitudinally through the cavity of said extension, a sheave at each end of said extension and said cables oppositely positioned on said sheaves with the end of each cable secured to diagonally opposite corner portions of said frame.

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