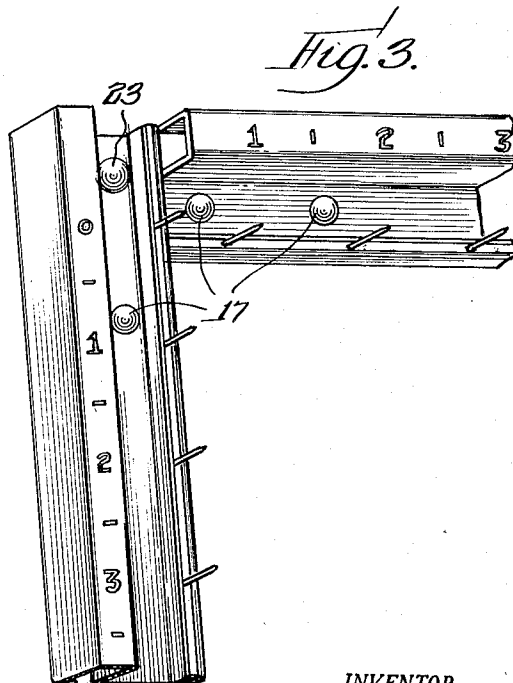
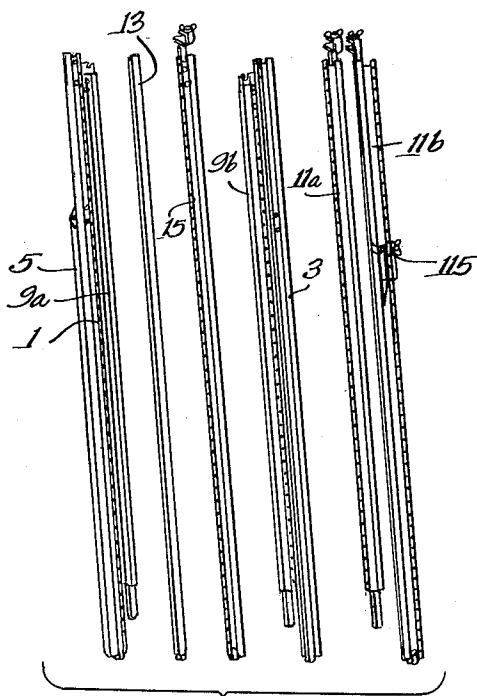
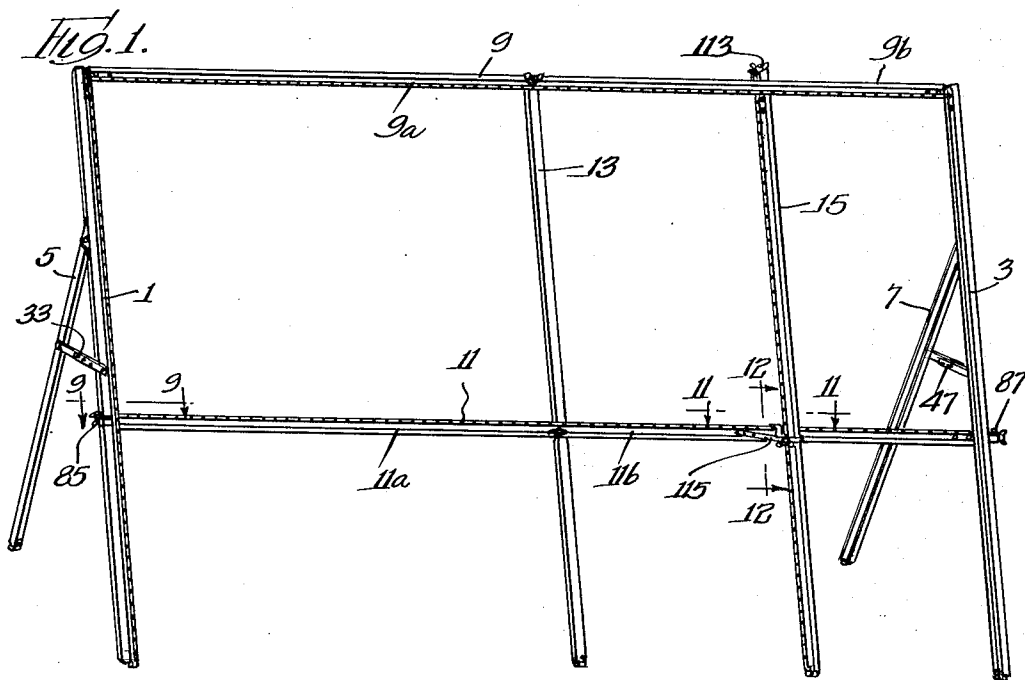


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CURTAIN STRETCHER CONSTRUCTION

3 Sheets-Sheet 1



INVENTOR.

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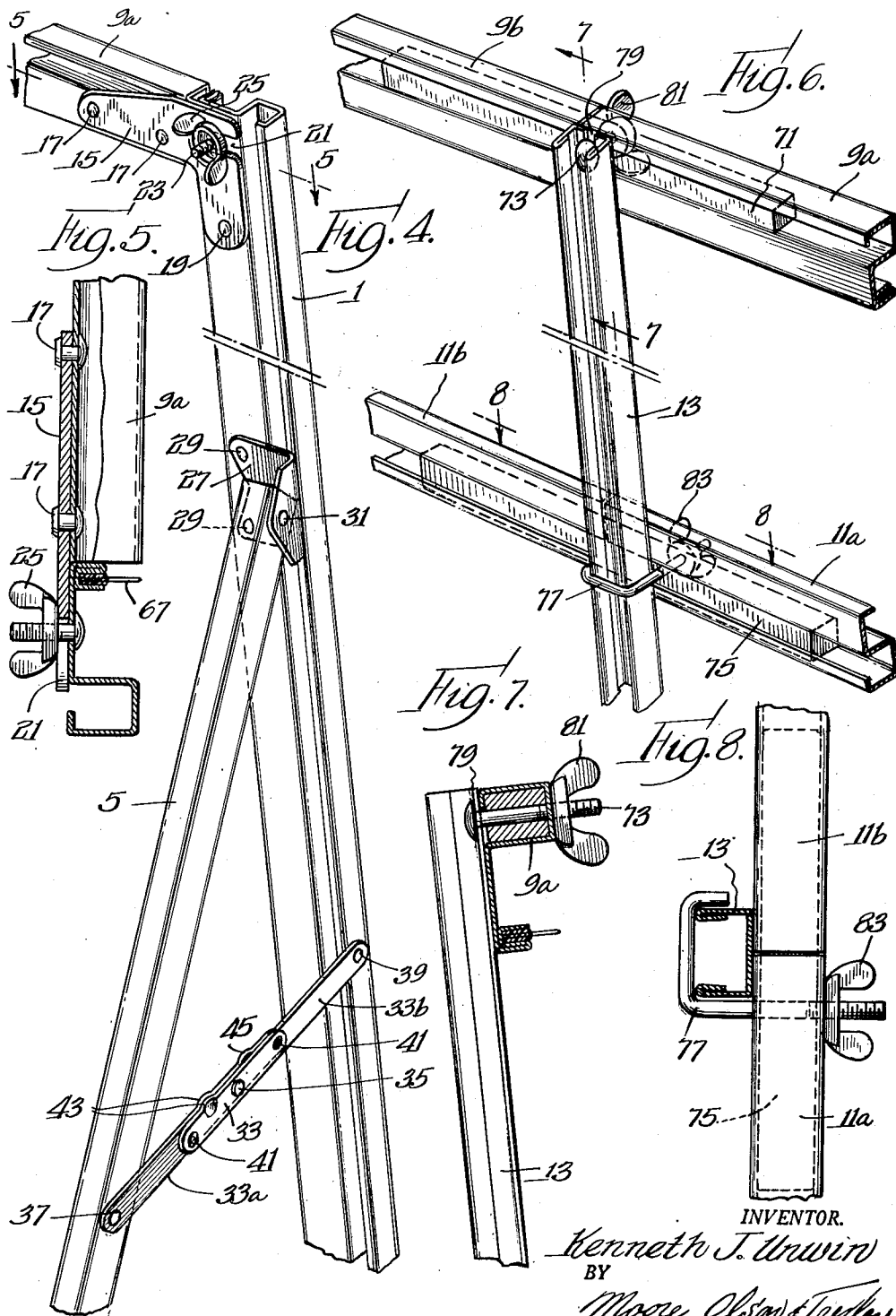
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CURTAIN STRETCHER CONSTRUCTION

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3 Sheets-Sheet 2



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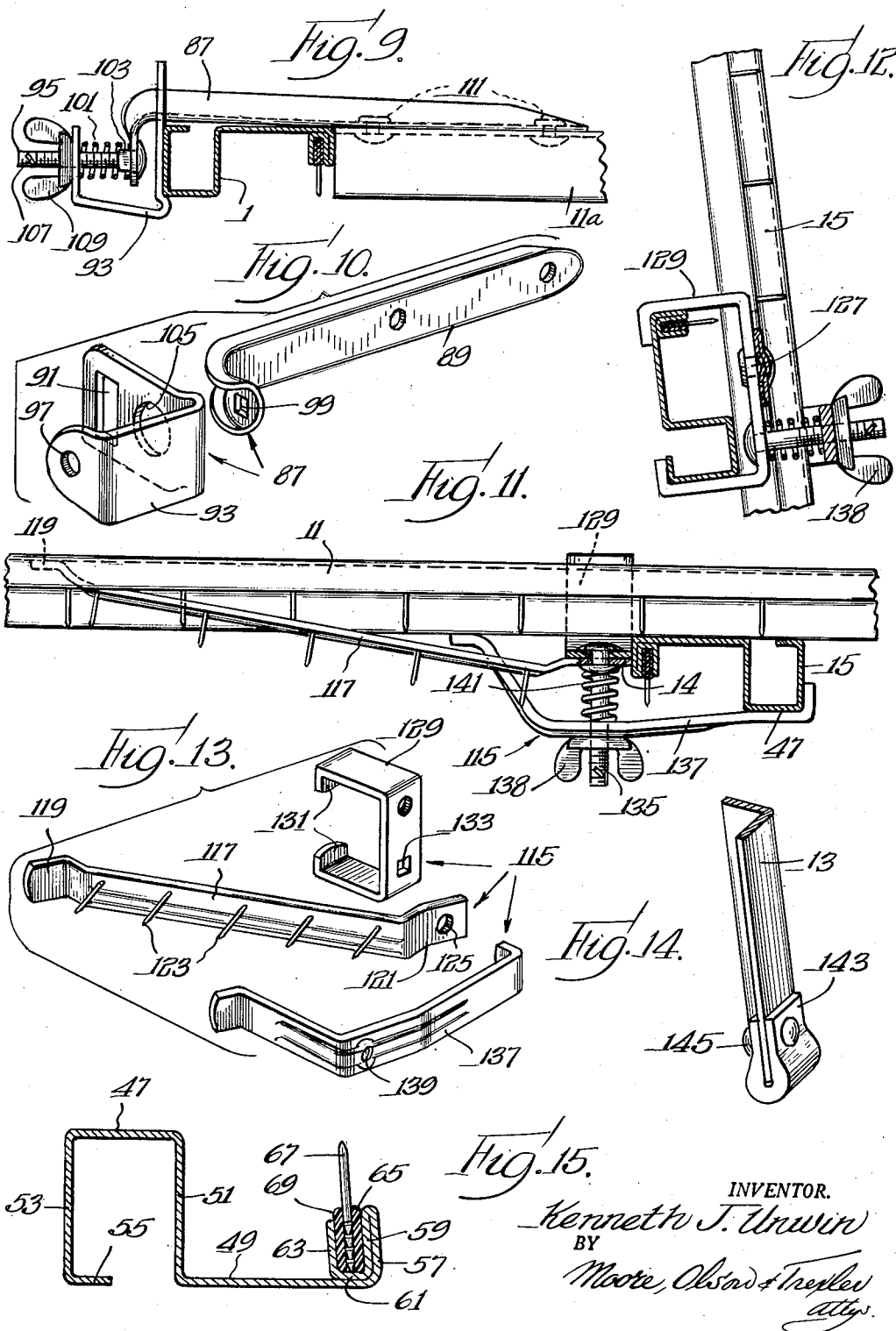
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CURTAIN STRETCHER CONSTRUCTION

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3 Sheets-Sheet 3



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CURTAIN STRETCHER CONSTRUCTION

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Application May 21, 1949, Serial No. 94,676

3 Claims. (Cl. 45—24)

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This invention relates to a curtain stretcher and more particularly it relates to a metal curtain stretcher to which curtains are held by a plurality of impaling pins.

Heretofore it has been common practice to make curtain stretchers of wood having metal impaling pins for holding curtains or other material. These stretchers have been heavy and unwieldy and are for this reason disliked by many users. A further disadvantage of wooden stretchers is that the wood is adversely affected by atmospheric and climatic conditions, causing the wood to expand or split and thus loosen the grip of the wood on the impaling pins. Attempts to construct curtain stretchers of metal have encountered many difficulties. A primary difficulty has been that of satisfactorily securing the impaling pins so that they would not work loose through use. Another disadvantage found in earlier attempts was the inherent weight of the iron or steel used.

It is accordingly an object of this invention to present a metal curtain stretcher having a plurality of impaling pins and preferably made of a light weight metal such as aluminum and utilizing a non-metallic insert in the metal frame to secure the impaling pins.

It is a further object of the present invention to present a metal curtain stretcher having a plurality of impaling pins for holding curtains or other fabric in which the component parts of the stretcher are of a substantially uniform length and are joined by novel hinging and clamping means so that the stretcher may be collapsed into a compact bundle of a substantially uniform length.

It is a still further object of the instant invention to provide a metal curtain stretcher having a plurality of impaling pins, said stretcher being preferably formed of sheet metal folded in such a fashion as to be strong and rigid while being light in weight and easy to handle.

It is yet another object of the present invention to provide a metal curtain stretcher as just described having a bridge for connecting adjacent curtain supporting surfaces lying in different planes and having resilient feet to prevent scarring of the floor or other supporting surface.

Other and further objects and advantages of the current invention will be apparent to those skilled in the art upon a perusal of the following description taken in conjunction with the accompanying drawings in which:

Fig. 1 is a perspective view of the metal curtain stretcher having impaling pins;

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Fig. 2 is a perspective view of the curtain stretcher in disassembled and folded position;

Fig. 3 is a perspective view of a hinged corner of the stretcher frame;

Fig. 4 is a perspective view of the back of a corner showing the hinge and showing a supporting leg and its fastening means;

Fig. 5 is a horizontal sectional view taken along the line 5—5 in Fig. 4;

Fig. 6 is a perspective view showing the joints of the two horizontal members and the means by which they are fastened to the central leg;

Fig. 7 is a vertical sectional view taken along the line 7—7 in Fig. 6;

Fig. 8 is a horizontal sectional view taken along the line 8—8 in Fig. 6;

Fig. 9 is a horizontal sectional view taken along the line 9—9 in Fig. 1;

Fig. 10 is an exploded perspective view showing part of the clamping means shown in Fig. 9;

Fig. 11 is a horizontal sectional view taken along the line 11—11 in Fig. 1 showing the levelling bridge;

Fig. 12 is a vertical sectional view taken along the line 12—12 in Fig. 1 showing another view of the bridge;

Fig. 13 is an exploded perspective view showing parts of the levelling bridge;

Fig. 14 is a fragmentary perspective view of a portion of the center leg showing the resilient foot; and

Fig. 15 is a cross sectional view of the body or frame member of the curtain stretcher.

Referring now in greater detail to the figures, it may be seen that the curtain stretcher consists generally of a pair of end legs 1 and 3, supporting brace legs 5 and 7, and upper and lower horizontal frame members 9 and 11 joined and supported by a substantially vertical leg 13 and a substantially vertical curtain supporting member 15. The substantially vertical leg which is joined to the left half 9a of the horizontal frame member 9 by a hinge construction is best seen in Figs. 3 and 4. The hinge member consists of an angular plate-like member 15 securely riveted to the horizontal member 9a by rivets 17. The plate-like member 15 is pivotally connected to the substantially vertical leg 1 by means of a rivet 19. A slot 21 in the member 15 accommodates a threaded bolt 23 projecting from the leg 1. The bolt 23 is secured against rotational movement in the leg 1 by a square portion under its head cooperating with a square aperture in the leg 1. A wing nut 25 is threaded onto the screw 23 and clampingly engages the member 15 for securing the horizontal member 9a and the

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leg 1 at substantially right angles and may be loosened for folding these two members into substantial parallelism. The curtain stretcher is held in substantially upright position by the legs 5 and 7. A flanged plate 27 is riveted to the leg 1 by means of the rivets 29. The flange portion of the member 27 is pivotally secured to the leg 5 by means of a rivet 31. A folding brace 33 prevents the supporting leg 5 from accidentally moving toward the leg 1. The left portion 33a of the brace is pivotally joined to the right portion 33b of the brace by a rivet 35. The left and right portions of the brace are pivotally joined to the legs 5 and 1 by means of the rivets 37 and 39. Cooperating indents 41 in the two halves 33a and 33b of the brace secure the brace 33 in an extended position, but fit loosely enough that the center portion of the brace 33 may be positioned upwardly to fold it and thus fold the leg 5 into substantial parallelism with the leg 1. Cooperating shoulder portions 43 in the raised portions 33a and 33b impart rigidity to the opened brace and prevent the center portion of it from being forced downwardly. A relieved channel-like portion 45 is provided in the brace member 33a so that the shoulder portion 43 of the brace member 33b may pass adjacent the brace portion 33a when the brace 33 is folded. The means for joining the right upper horizontal portion 9b to the leg 3 is the same as that for joining the left portion 9a to the leg 1 and need not be described. Similarly, the leg 7 is joined to the leg 3 and braced by a brace member 47 in a fashion similar to that just explained in regard to the legs 5 and 1.

The cross sectional shape of the leg 1 and horizontal member 9 as well as that of the lower horizontal member 11 and the vertical curtain supporting member 15 is shown in Fig. 15. The leg 3 has a cross section very much like this and will be described at the same time. The frame member consists preferably of a sheet of light weight metal such as aluminum folded to form front and rear faces 47 and 49 respectively. These faces are joined by a transverse face 51, and a face 53 parallel to this latter one extends rearwardly from the front face 47 and is provided with a flange 55 for greater rigidity and strength. The rear face 59 is folded forwardly at 57 and back parallel to 57 at 59, then upon itself at 61 and forwardly again at 63 to form a substantially U-shaped channel. This channel is somewhat narrower at the top than at the bottom and securely grips an insert 65 of plastic or other resilient material which firmly secures the impaling pins 67. The impaling pins are preferably roughened or barbed at their lower portions 69 for more secure gripping. The leg member 3 differs from the other cross sections referred to in that it does not have the impaling pins in the insert and consequently does not have the bottom 61 and side wall 63 of the U-shaped channel.

The lower horizontal member 11 is composed of left and right sections 11a and 11b, respectively, similar to the top horizontal member 9. As best seen in Fig. 6, the portions 9a and 9b of the top member are held together by a solid rectangular insert 71 which may be of the same material as the rest of the frame. The insert 71 is fitted tightly within the frame member 9a and secured against longitudinal movement by a threaded bolt 73. The insert 71 frictionally fits within the right upper horizontal member 9b to

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secure the two halves of the member 9 together. The left half 11a of the lower horizontal member tightly holds an insert 75 similar to the insert 71. A hook-like threaded rod 77 extends through the member 11a and insert 75 and positively insures against relative longitudinal movement. The insert 75 frictionally fits within the right half 11b of the lower horizontal member to secure it to the left half 11a. The central supporting leg 13 is provided at its top and with a rectangular slot 79 which fits under the head of the threaded bolt 73. The bolt 73 is provided with a square portion directly under its head for cooperation with the rectangular slot 79 to prevent rotation of the bolt 73. A wing nut 81 is threaded onto the bolt 73 and is tightened to secure the center supporting leg 13 to the upper horizontal member 9 and further secures the insert 71 within the member 9a. The hook shaped rod 77 hooks around a portion of the leg 13 and is pulled tight against it by a wing nut 83 threaded onto the end of the rod projecting through the insert 75 and lower horizontal frame member 11a. The cross section of the leg 13 is best seen in Fig. 8 and is substantially U-shaped with the edges folded down for greater strength and rigidity.

The lower horizontal member 11 is secured by means of clamps 85 and 87 to the legs 1 and 3. As these clamps are identical only one will be described. The clamp 87, as best seen in Fig. 10, consists of a bar 89 of essentially channel-shaped cross section which is bent near one end to form a substantially right angle. The bar 89 fits through a slot 91 in an essentially J-shaped member 93. A threaded bolt 95 extends through a hole 97 in the J-shaped member and a hole 99 in the bar 89 and is surrounded by a compression spring 101. The hole 99 is square as is the portion 103 of the bolt adjacent the head for securing the bolt against rotative movement. A hole 105 is provided in the side of the J-shaped member 93 for clearance of the head of the bolt 95, and the bolt 95 has a diagonal crimp 107 near its end to prevent accidental removal of the wing nut 109. This feature of the crimp is found in all of the bolts in the stretcher. The bar 89 is secured by rivets 111 to the end of the lower horizontal member 11a. When the wing nut 109 is tightened it forces the J-shaped member 93 to the right and clamps the leg 1 between the J-shaped member 93 and the end of the lower horizontal member 11a. The horizontal member may thus be slid up and down at will and secured at any desired elevation.

The vertical curtain supporting member 15 is secured at one end to the upper horizontal member 9 by a clamp 113 similar to the clamps 85 and 87. This vertical member 15 overlies the horizontal member 11 and consequently the curtain supporting surfaces of these two members lie in different planes at the intersection of these two members. A bridge member 115 is accordingly incorporated as a clamp to smoothly join these two surfaces together. As may best be seen in Fig. 13, the bridge member 115 consists of a metal strip 117 bent so as to have substantially parallel surfaces 119 and 121 at each end. A plurality of impaling pins 123 are secured in the strip 117. The surface 121 is perforated by a hole 125 through which a rivet 127 passes to secure the strip 117 to a modified U-shaped portion 129. This U-shaped portion is modified by having inwardly turned flanges 131 at its ends. A square hole 133 is provided in the U-shaped portion 129 through which a bolt 135 passes and is secured against rotating

movement by its square portion directly below the head. An angular clamping piece 137 having a hole 139 is also placed over the bolt 135 with a compression spring 141 disposed between the surface 121 and the clamping piece 137. The U-shaped member 129 is slipped over the member 11b before the member 11b is secured to member 11a. The clamping piece 137 fits over the vertical curtain support 15 and bears at its right edge against the front face 47 of the member 15. The left end of the clamping piece 137 bears against the front face of the horizontal member 11b. The left end 119 of the strip 117 bears against the front surface of the rear face of the member 11b, and the right end 121 lies adjacent to the curtain supporting surface of the upright member 15. A wing nut 138 threaded onto the bolt 135 holds the various pieces clamped together.

Each of the upright members, with the exception of the curtain supporting member 15, bears on a floor or other supporting surface and is provided with resilient feet 143 of rubber or the like which are folded over the ends of the substantially upright members as 13 and secured by rivets 145. The upright members 1, 3, 13 and 15 and the horizontal portions 9a, 9b, 11a, and 11b are all of a substantially common length so that when the stretcher is disassembled and folded it will form a neat, compact bundle, as shown spread out in Fig. 2. It is apparent that due to the clamp securing means the horizontal member 11 and the vertical curtain supporting member 15 may be moved about to fit various sized curtains.

It is apparent that this invention provides a metal curtain stretcher having a plurality of impaling pins for securing curtains or other fabric pieces. This stretcher is light weight, yet strong and rigid and may be collapsed into a neat, compact bundle and when in use may be adjusted to accommodate a variety of different sized curtains. Obviously various changes may be made in the specific embodiment set forth for purposes of illustration without departing from the principles of the invention. The invention is accordingly not to be limited to the precise details disclosed herein, but includes all modifications thereof within the spirit and scope of the appended claims.

I claim:

1. A metal curtain stretcher including a plurality of metal body or frame members, a plurality of said metal frame members comprising substantially parallel front and rear faces, a surface disposed at substantially right angles to said front and rear faces and joining them in spaced relation, a surface extending rearwardly from said front face and substantially perpendicular thereto, an inwardly turned flange extending from said last identified surface imparting rigidity to said frame member, and an extension of said rear face extending forwardly therefrom and substantially normal thereto, said extension folded rearwardly upon itself, to one side parallel to and in contact with said rear face, and finally forwardly and substantially normal to said rear face so as to form a substantially U-shaped channel, an insert in said U-shaped channel and of material softer than the material of said body or frame members, and a plurality of impaling pins imbedded in said insert.

2. A metal curtain stretcher as defined in claim 1 in which the substantially U-shaped channel is narrower at the top than at the bottom.

3. A metal curtain stretcher as defined in claim 1, in which the insert secured within said U-shaped channel portion is non-metallic.

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