H. ADLER.

CURTAIN STRETCHER.

APPLICATION FILED NOV. 1, 1907.

929,181.

Patented July 27, 1909.

3 SHEETS—SHEET 1.

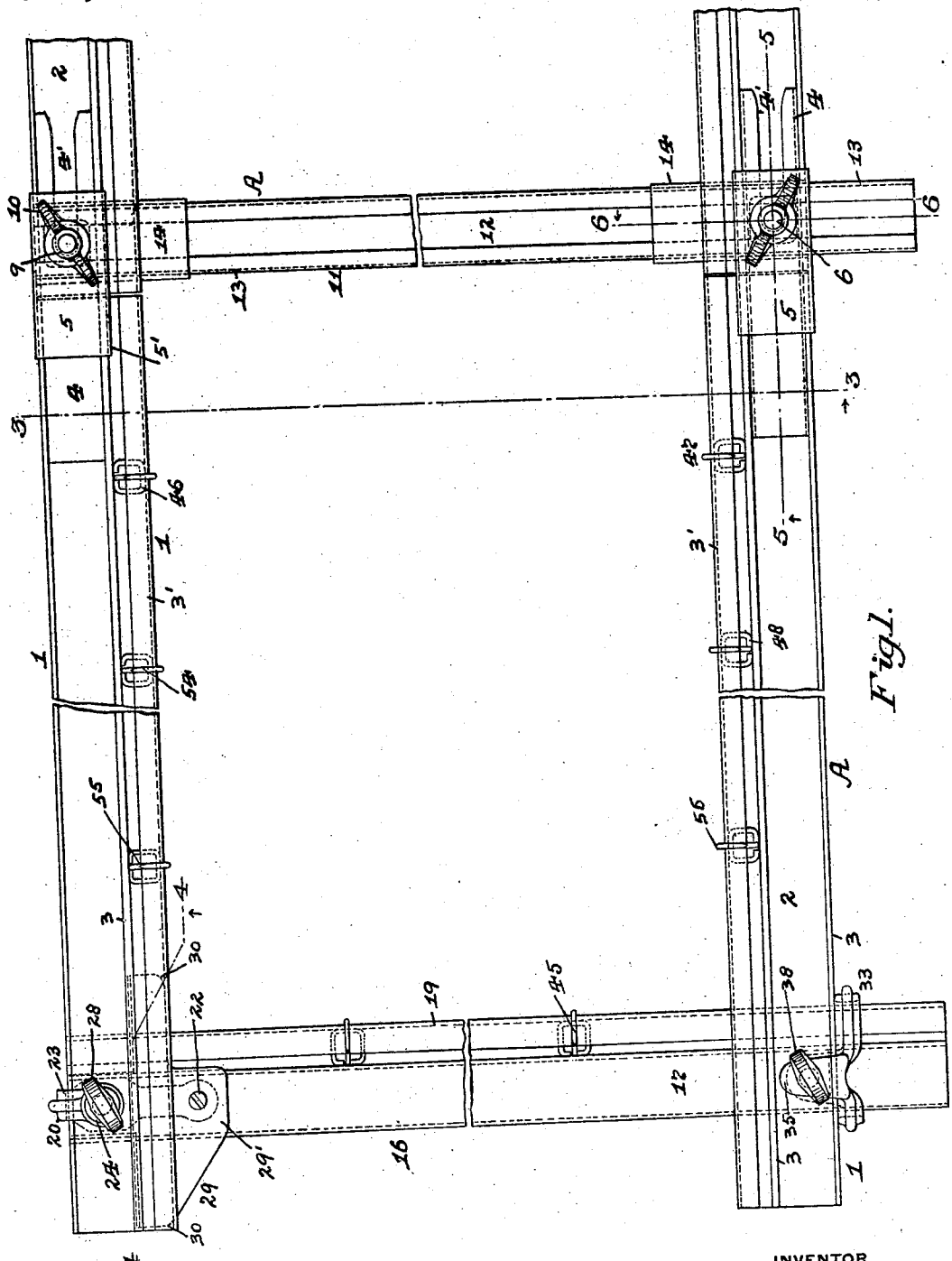

Fig. 1.

WITNESSES

Walter Lamarius

O. L. Thompson.

INVENTOR

Henry Adler,

By J. H. Cooke

Attorney.

ANDREW. B. GRAHAM CO., PHOTO-LITHOGRAPHERS, WASHINGTON, D. C.

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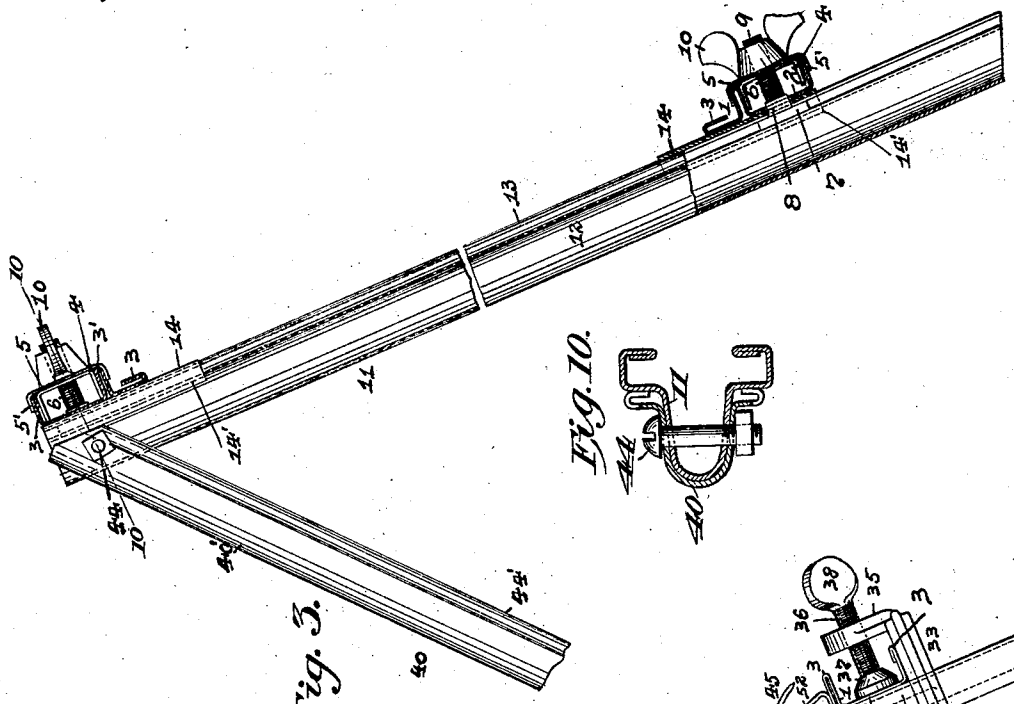

Fig. 3.

Fig. 10.

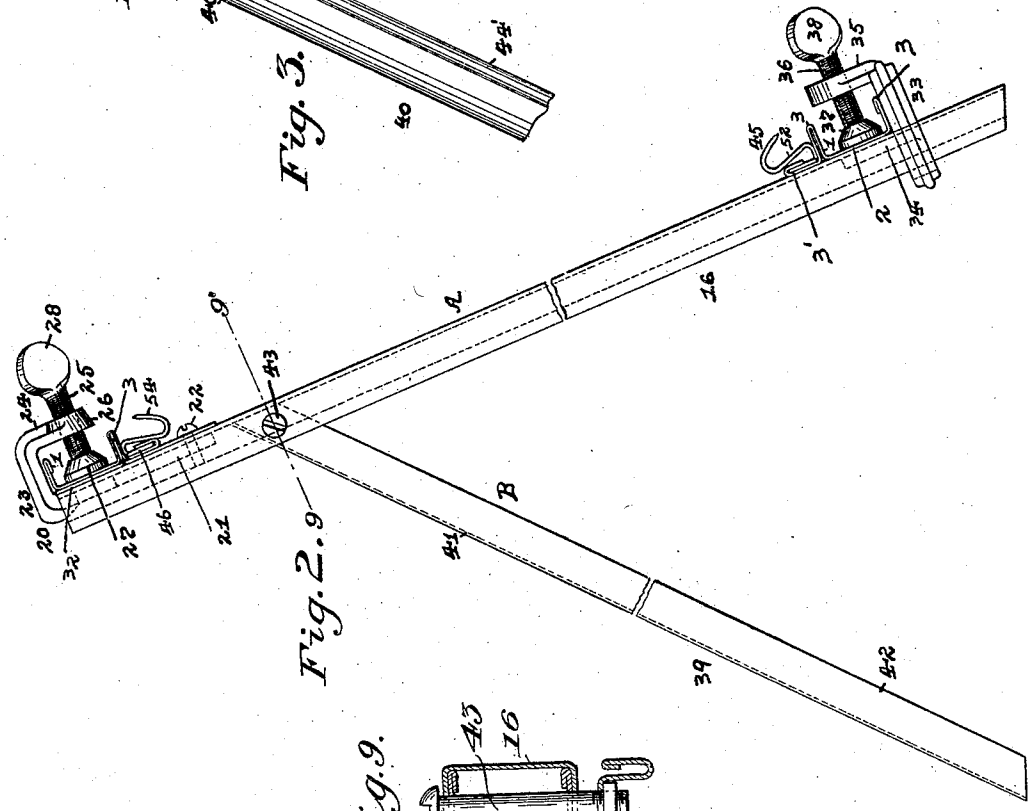

Fig. 2.

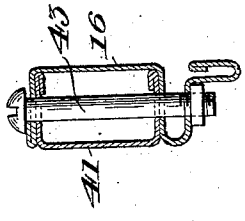

Fig. 9.

WITNESSES

Walter Lamarre

O. L. Thompson.

INVENTOR

Henry Adler,

By J. N. Cooke

Attorney.

ANDREW B. GRAHAM CO., PHOTO-LITHOGRAPHERS, WASHINGTON, D. C.

H. ADLER.

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3 SHEETS—SHEET 3.

Fig. 4.

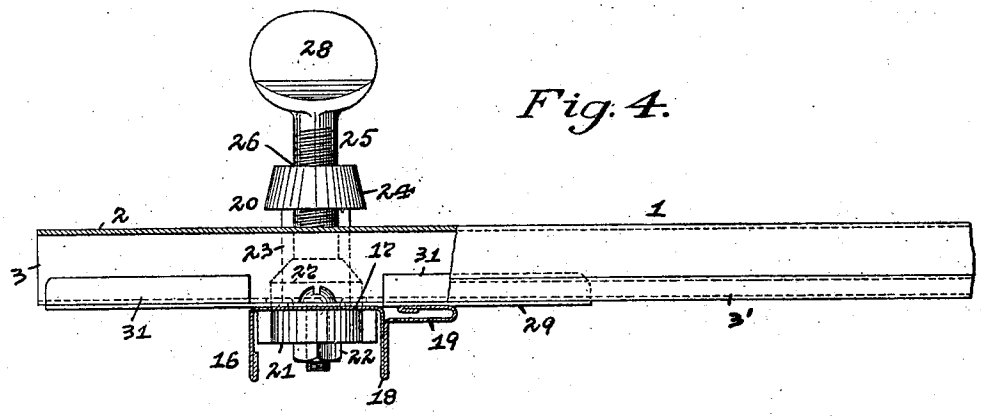


Fig. 5.

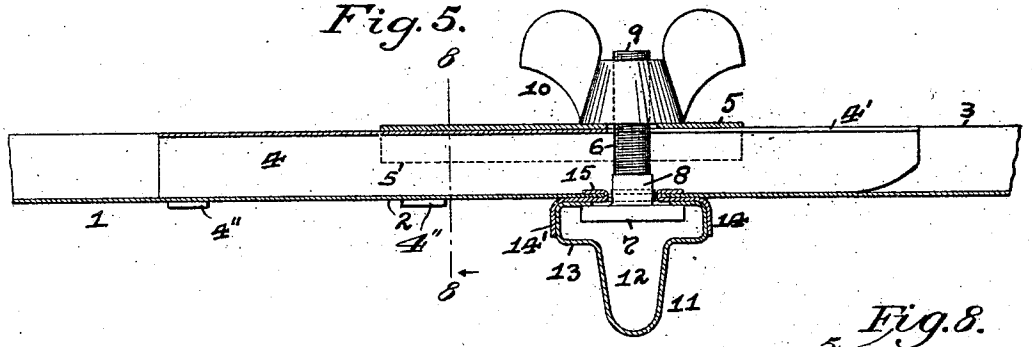


Fig. 8.

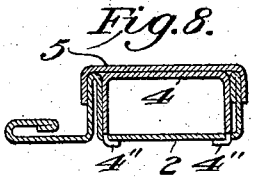


Fig. 6.

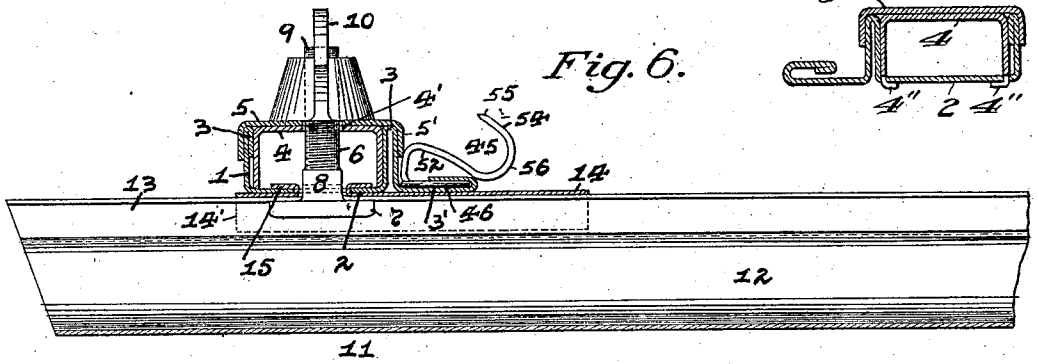
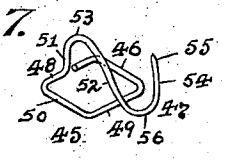


Fig. 7.



WITNESSES

Walter Samaris.

O. L. Thompson.

INVENTOR

Henry Adler,

By J. N. Cooke.

Attorney.

ANDREW. B. GRAHAM CO., PHOTO-LITHOGRAPHERS. WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

HENRY ADLER, OF PITTSBURG, PENNSYLVANIA, ASSIGNOR TO H. ADLER COMPANY, OF CARNEGIE, PENNSYLVANIA, A CORPORATION OF PENNSYLVANIA.

CURTAIN-STRETCHER.

No. 929,181. Specification of Letters Patent. Patented July 27, 1909.

Application filed November 1, 1907. Serial No. 400,244.

To all whom it may concern:

Be it known that I, HENRY ADLER, a resident of Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Curtain-Stretchers; and I do hereby declare the following to be a full, clear, and exact description thereof.

My invention relates to curtain-stretchers, and has special reference to metallic stretchers for curtains, etc., such as is shown, described and claimed in United States Letters Patent No. 835,271 granted to me on November 6th, 1906.

The object of my invention is to provide a cheap, simple and efficient curtain-stretcher from sheet metal, in which the parts can be easily and quickly set up for use and separated, as well as one which can be easily and rapidly manufactured and will be light in weight and strong and durable when in use.

My invention consists, generally stated, in the novel arrangement, construction and combination of parts, as hereinafter more specifically set forth and described, and particularly pointed out in the claims.

To enable others skilled in the art to which my invention appertains to construct and use my improved curtain-stretcher, I will describe the same more fully, referring to the accompanying drawings, in which:—

Figure 1 is a front elevation of my improved curtain-stretcher. Fig. 2 is an end elevation of the same in position for use. Fig. 3 is a cross-section on the line 3—3 Fig. 1 looking in the direction of the arrow. Fig. 4 is an enlarged section on the line 4—4 Fig. 1 looking in the direction of the arrow. Fig. 5 is a like view on the line 5—5 Fig. 1 looking in the direction of the arrow. Fig. 6 is a similar section on the line 6—6 Fig. 1 looking in the direction of the arrow. Fig. 7 is a perspective view of one of the attaching hooks or pins. Fig. 8 is a cross section on the line 8—8, Fig. 5 looking in the direction of the arrow. Fig. 9 is a cross section on the line 9—9, Fig. 2, showing the parts in their closed position. Fig. 10 is a like section on the line 10—10, Fig. 3, with the parts in their closed position and with some of the parts removed.

Like characters of reference herein indicate like parts in each of the figures of the drawings.

As illustrated in the drawings A is the frame of the stretcher, of which 1 represents the two side rails, which are each formed from a piece of thin sheet metal and bent to form a channel-shape in cross-section having the body 2, the double flanged side edges 3, and the slotted portion 3′. These side rails 1 are made in two sections, which are connected together at their inner ends through a slotted extension 4 secured to the inner end of one section by the clips 4″ thereon bent through slits in the body 2 and formed of thin sheet metal and bent to channel-shape for fitting within the channel of its carrying section and within the channel of the opposite section. A clamping piece 5 formed of thin sheet metal and in like manner and shape fits loosely around the flanged edges 3 of one rail section 1 and around flanged edges 3 of the opposite rail section 1 by its flanges 5′ and is carried by the former. A bolt 6 passes through the same and through the slot 4′ in the extension 4. The bolt 6 also has a head-plate 7 at its rear end beyond the body 2 of the said rail section 1 and a square portion 8 adjacent to said plate which fits within a similar shaped hole in the said body 2, while such bolt at its outer threaded end 9 has a thumb-nut 10. A center or intermediate rail 11 of like metal for the frame A is formed in like manner and of a shape having a grooved central portion 12 and grooved wing portions 13 extending out at right angles from the grooved portion 12, so that such rail can be connected to the said rails 1 by means of the plate 7 on the bolt 6 fitting within the wing portions 13 on the rail 11 and within a center guide or brace 14 formed of like metal, in like manner and of channel shape. This brace 14 fits around the wing portions 13 on the rail 11 by its flanges 14′ and is carried by the section of the side rails 1 carrying the clamping piece 5 by being secured under the plate 7 on the bolt 6 and against the rear face of said section through the attaching portions 15 thereon being passed through the bolt hole in the said section and clenched against said section and around said bolt.

The sections of the rails 1 and the rail 11 are secured together by the screwing up of the nuts 10 on the bolts 6, and the lower side rail can be adjusted along the rail 11 and the end rails 16, as hereinafter described.

The two end rails 16 of the frame A are each formed from the same metal and bent

to the same channel shape as the rails 1 with the body 17, the doubled flanged side edges 18 and the slotted portions 19 extending out from the inner side edge of said flanged edges. The upper ends of the rails 16 are provided with the clamps 20 and the body portions 21 thereon are secured within the channel in the rear of said rails and connected thereto by the bolts 22. Extending from said portions 21 and around the upper end of the rails 16 is an arm 23 which has a depending portion 24 for projecting down in front of said rails and upper side rail 1, so that said upper rail can be inserted within and through the clamps 20 and be secured to said end rails by a screw-bolt 25 in a threaded bearing 26 at the end of said portion 24. The bolts 25 have a swiveled cap 27 at their inner ends for engaging with the upper rail 1 and in the channel thereof and the outer ends of said bolts are provided with a thumb piece 28 for operating the same.

Mounted on and carried by the upper portions of the end rails 16 is a brace 29 and formed of like metal as said rails, which is secured through its body 29′ to said rails by the lower bolt 22 and is provided with the extensions 30 on each side of the same for projecting beyond the sides of said rails. These extensions 30 are each provided with the forwardly projecting flanges 31 at the upper ends of the same for fitting within the doubled flange edge 3 on the rails 1 adjacent to the slotted portion 3′, such flanges enabling the adjustment of the rails 16 along the rails 1 and also acting to brace the rail 1. Extending up from the body 29′ of the brace 29 and between the flanges 31 is a projecting portion 32 which is adapted to fit under the rail 1 and is secured to the end rails 16 by clenching in the same manner as the brace 14.

The end rails 16 are also provided with the clamps 33 for holding and adjusting the lower side rail 1 in conjunction with the bolt 6 on said rail connecting the rail 11 and these clamps fit around said end rails, with a guiding portion 34 thereon fitting within the channel of said rails and against the body 17 of the same. An upwardly extending arm 35 is formed on the front of the clamps 33 so that the lower rail 1 can be inserted within and through said clamps and be secured and adjusted to said end rails 16 through a screw-bolt 36 passing through a threaded hole in the end of said arm, which bolt has a swiveled cap 37 at its inner end for engaging with said rail 1 and within the channel thereof, while the outer end of said bolt has a thumb-piece 38 thereon for operating the same in securing and adjusting the said rail 1 to and along said end rails.

The frame A is provided with the end legs 39 and center leg 40, which serve to support said frame in an inclined position, as shown in Figs. 2 and 3 and these legs are each formed from the same metal and to the same shape in like manner as the rails of said frame. The end legs 39 are formed in channel-shape having a body portion 41 and doubled flanged side edges 42, so that such legs can fit within the end rails 16 of the frame A, with their body portions 41 when said legs and rails are closed together, and such legs and rails are detachably connected together by a screw-bolt 43 passing through the flanged sides on each of said legs, and rails, which bolt also permits the pivoting or hinging of said legs to said rails for the opening and closing of the same.

The center or intermediate leg 40 is formed in such shape as to fit around the middle rail 11 by having the same shape as said rail, so that the central groove portion 40′ on said leg will fit around the like grooved portion 12 on said rail and the flanged wing portion 44′ on said leg will fit against the like winged portion 13 on the rail when these parts are closed together. This leg and rail are detachably connected together by a screw bolt 44 passing through the sides of the same and such bolt also permits the pivoting and hinging of said leg to said rail for the opening and closing of these parts.

The curtain attaching pins are shown at 45 and are formed from a piece of wire and bent to the shape shown, in which there is the main rectangular body portion 46 formed of a substantially square shape and the attaching or pin portion 47. These pins 45 are bent so that the ends of the piece of wire are brought to the rear of the body portion 46 and in so doing the rear portion 48, front portion 49 and side portions 50 are formed in said body portion. One of the said ends in forming one side of the rear portion 48 is terminated at or about the center of said rear portion 48, and the other one in forming the other side of said portion 48 is also bent to form the attaching or pin portion 47. The inner end of the section or side forming the rear portion 48 is extended slightly outward, and the pin portion 47 has the upward portion 51 extending from the one continuous section of the rear portion 48 and the forwardly extending spring portion 52 which connects with said upright portion 51 through the curved portion 53 and its forward end rests upon the front portion 49. The end of the wire beyond the forward portion 52 is bent to form the attaching portion 54 having the pointed end 55 thereon and such portion 54 is bent inwardly over the said portion 52, so as to form a hook shape with said portion 52 and is connected to said portion by the curved portion 56 extending forward of the front portion 49.

The attaching pins 45 are placed within

the slots of the slotted portions 3′ and 19 of the rails 10 and 16, respectively, and are of such size and shape that the front portion 49 on the body portion 46 will fit snugly against the outer end walls of said slotted portions, while the central or outward extended sections on the rear portion 48 will fit against the side walls of said rails in forming the channel sections thereof. The pin portion 47 will also fit snugly against the upper face of the slotted portions 3′ and 19 by reason of said portion 47 being sprung over the same, so that by reason of the pins 45 being thus held snugly throughout they can be placed or set in position and can easily be pushed along by hand to any position desired on account of the outer ends of the rear portion 48 thereon being normally a slight distance away from the side walls of said rails. The possible falling out of the pins 45 from the slotted portions 3′ and 19 is prevented by any suitable means at the ends of the said slots and such means can be made through an ordinary cotter pin extending through the metal of the said slotted portions or by the pressing of said metal together, and in either case the pins are thus made removable at any time desired.

The manner of assembling and using my improved curtain-stretcher is as follows:— In practice the stretcher is packed or shipped with the parts separated or detached, with the exception of the rails 11 and 16 and legs 39 and 40 respectively, which are connected together by the bolts 43 and 44 respectively, so that such rails and legs can be telescoped together. In the putting together of the parts for the stretcher the floor can be used, if desired, so that the two sections composing each of the side rails 1 for the frame A with the pins 45 within the same can be connected together by inserting the slotted extensions 4 on one section of the rails 1 to its position within the channel of the other section of said rails and within the clamping pieces 5 and around the bolts 6 through the slots 4′ in said extensions. After the rails 1 are thus put together, the middle rail 11 carrying its leg 40 is connected to said rails by passing the same under and within the braces 14 and by passing the plates 7 on the bolts 6 within the grooves of the wing portions 13, so that they can contact with the flanges forming said portions. By sliding the rails 1 along the rail 11 to their positions the bolts 6 can be screwed up tight to hold said rails 1 together and to the rail 11. The end rails 16 carrying their legs 39, and with the pins 45 within the same, can now be placed in position against the rails 1 and connected thereto by the clamps 20 and 33 and their bolts 25 and 36, respectively, the clamps 20 and bolts 25 being carried by the upper ends of said rails and the clamps 33 and bolts 36 being separate from said rails, so that they can be placed around said rails for securing the rails 1 and 16 together and for adjusting the lower rail 1 along the rails 11 and 16. The upper rail 1 remains stationary with flanges 31 on the braces 29 fitting within the groove of the flanged edge 3 on said rail, and the adjustment of the lower rail 1 is made by unscrewing the bolts 6 and 36, so that said rail can be slid along the rails 11 and 16 and be held in position in its movement by the plates 7 on the bolts 6 within the grooved wings 13 on the rail 11, while the rails 16 will slide through the clamps 33, and when the lower rail 1 is in its proper position the bolts 6 and 36 can be screwed up to hold said rail to the rails 11 and 16. The frame A being now attached the stretcher is ready for use, so that the legs 39 and 40 can be opened to set the frame at an inclined position, and such legs can be limited in such open movements in any suitable manner. After the legs 39 and 40 are thus opened out the curtain or other article to be stretched can be connected at its edges to the attaching portions 47 of the pins 45 in the rails 1 and 16, and such pins, if necessary, can be adjusted within the slotted portions 3′ and 19 on said rails by moving the same by hand in case the curtain is worn at a point, or you are unable to catch the same at a certain point by the portions 47.

The parts of the stretcher when not in use can be removed and folded away by unscrewing the bolts 6, 25 and 36, so that the rail sections 1 can be separated and the rail 11 with its leg 40, slid or removed therefrom and the rails 1 from the rails 16 within the clamps 20 and 33, after which the rails 11 and 16 can have their legs 39 and 40 fold or telescope over the same, while this folding of said rails will enable the other sections for the rails 1 to be placed together with such folded parts, so that the stretcher will be brought into a small space or compass for storing away when not in use and for shipping, all the parts being at the same time retained together.

The shape of the clamps for the lower side rail and the central groove in the middle rail will enable said side rail to be moved from the extreme bottom of the rails 11 and 16 to the top rail 1 and set at any position thereon, while the overlapping or clamping connection between the side rails will give a double strength at such joint when the parts are brought together by the bolts at this point, thereby preventing any sagging or bending of these rails at such joint, and giving additional strength at the point where the greatest strength is had and the greatest support is needed.

In case of any unevenness in the floor or other place on which the stretcher is used the center brace 14 at the upper end of the

rail 11 will permit the middle portion of the upper side-rail 1 to be adjusted slightly at this point along the rail 11, to take up any such unevenness, while such braces 14 and the braces 29 will enable the parts at such points to be firmly held and braced at all times, to overcome any wabbling, sagging, bending or other objectionable features, to take place in the parts.

The attaching pins 45 are readily applied to the rails 1 and 16 by inserting the rectangular body portions 46 within the slotted portions 3′ and 19 at the ends of said rails and sliding said pins along, so that each pin will have its attaching portion 47 bearing against the metal forming the upper part of said slotted portions, and can be moved to its desired point and be adjusted and held without further attention or without any liability to slip or slide after an adjustment is once obtained. The pins 45 can be moved or slipped along the slotted portions 3′ and 19 by the operator simply grasping the attaching portion 47 gently, and by a slight forward or backward movement of the same, allow one inclined rear portion 48 to assume a straight position, within its slotted portion, so that the pin can be slid along the same. If desired, the rails 11 and 16 can be provided with stationary hooks or pins of any desired shape and size and such pins securely held within the grooved or slotted portions of said rails in the position desired in any suitable manner or by any suitable means.

What I claim as my invention, and desire to secure by Letters Patent, is:—

1. In a sheet metal stretcher-frame, the combination of side rails formed in sections and connected together, end rails, an intermediate rail connected to said side rails at the connecting point and adapted to permit said rails to move along the same, and a brace connected to said side rails and fitting around said intermediate rail for bracing the same.

2. In a sheet metal stretcher-frame, the combination of side rails formed in sections and connected together, end rails, an intermediate rail having wing portions thereon for being connected to said side rails at the connecting point and adapted to permit said rails to move along the same, and a brace connected to said side rails and fitting around said wing portions for bracing the same.

3. In a sheet metal stretcher-frame, the combination of side rails formed in sections and connected together, end rails, an intermediate rail having wing portions thereon, a brace connected to said side rails and fitting around said wing portions to brace the same, and a clamping bolt around said wing portions to brace the same, and a clamping bolt having a head thereon for fitting within said wing portions to hold said rails in position and permit said side rails to be moved along said intermediate rail.

4. In a stretcher-frame, the combination of side rails formed of channel shape, end rails, and a brace on said end rails and engaging with the channels of said side rails for bracing the same.

5. In a sheet metal stretcher-frame, the combination of side rails formed of channel shape, end rails, and a brace on said end rails having flanges thereon engaging with the channels of said side rails for bracing the same.

6. In a sheet metal stretcher-frame, the combination of side rails formed of channel shape with a double flanged side, end rails, and a brace on said end rails having flanges thereon fitting within said double flanged side for bracing the same.

7. An attaching-pin for curtain stretchers formed of bent wire having a rectangular body portion, and an attaching portion bent over from the rear of said body portion and having a spring portion thereon adapted to extend over the front of said body portion and normally bear against the same.

8. An attaching-pin for curtain stretchers formed of bent wire having a rectangular body portion, and an attaching portion bent over from the rear of said body portion and having a spring portion thereon adapted to extend over the front of said body portion and normally bear against the same, and said body portion having inclined rear side portions.

9. In a sheet metal stretcher-frame, the combination of side rail sections formed in channel shape, and an extension formed of channel shape carried on the end of one rail section and fitting within the end of the other rail section, said extension having bent clips thereon passing through slits in the carrying section for securing said extension thereto.

In testimony whereof, I, the said HENRY ADLER, have hereunto set my hand.

HENRY ADLER.

Witnesses:
JAMES E. FIELD,
H. C. GIBBS.