June 25, 1957 J. BERNHARD ET AL 2,796,928

SUPPORTING AND PLEATING DEVICE FOR DRAPERIES

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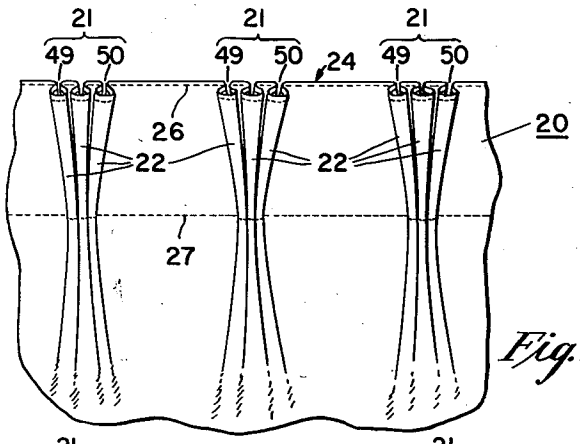


Fig. 1.

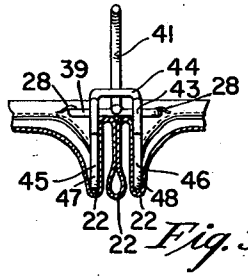


Fig. 3.

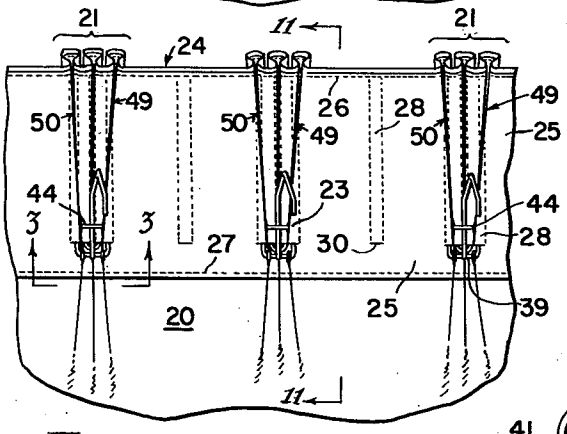


Fig. 2.

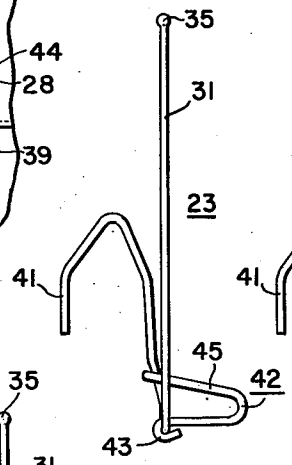


Fig. 6.

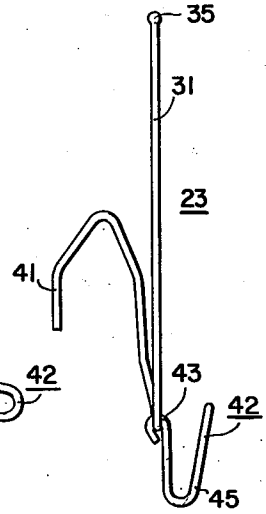


Fig. 7.

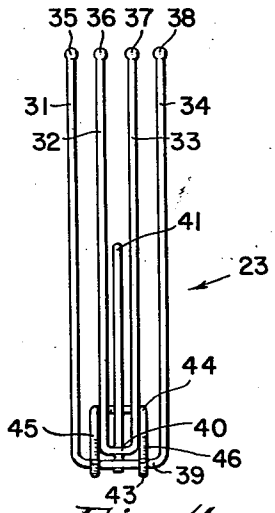


Fig. 4.

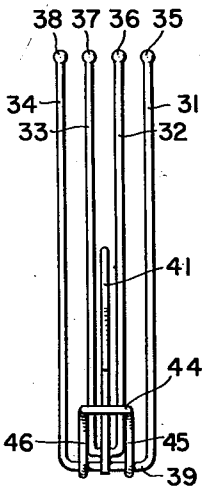


Fig. 5.

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Fig. 8.

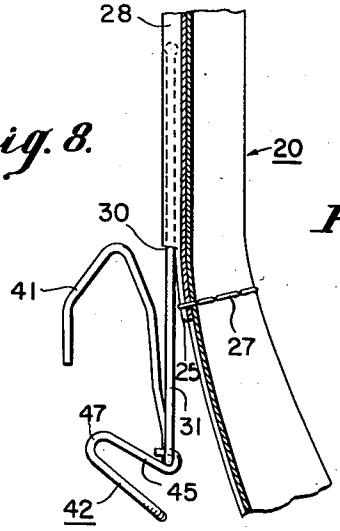


Fig. 12.

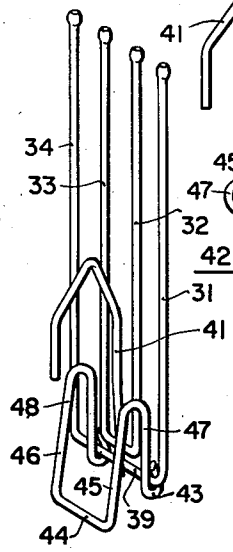


Fig. 9.

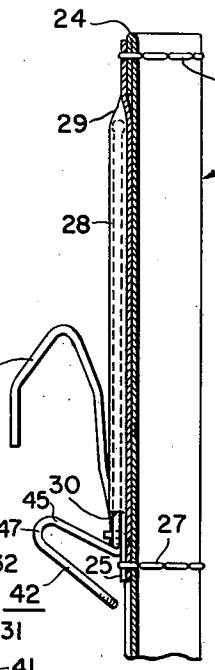


Fig. 10.

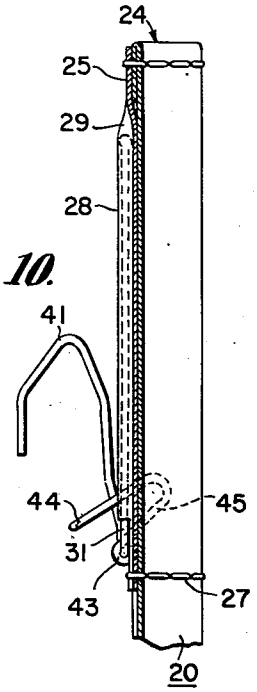


Fig. 13.

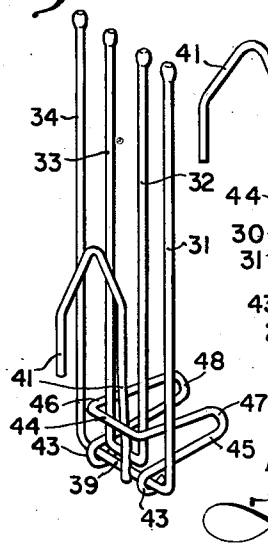
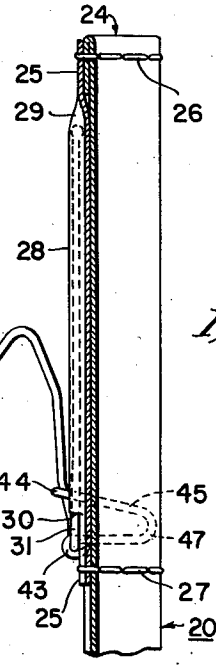


Fig. 11.



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2,796,928

SUPPORTING AND PLEATING DEVICE FOR DRAPERIES

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Application February 24, 1954, Serial No. 412,282

14 Claims. (Cl. 160—348)

The present invention relates to an improved pleat-forming drapery or curtain supporting device, and relates more particularly to a supporting device adapted to form pleats in the top portion of draperies or curtains and to flank and pinch together the folds of the pleat near the lower ends thereof by means of a movable anchored pleat-pincher, so as to resist the separation thereof, which device may be locked in its operative position within the pleated drapery, curtain or the like without tearing the hook-tubes of a drapery or curtain.

Various types of hooks have been provided for supporting draperies on supporting rods. Thus, in some cases the hooks are sewn in the inner or back side of the heading of a drapery, and in others the hooks are provided with pin portions or upwardly extending fingers for insertion into spaced vertical "tubes" formed in the pleat-forming drapery "heading" sewn onto the top of the drapery, whereby the latter can be pleated and be supported on rods.

This invention has as an object the provision of an improved supporting and pleating device for draperies or curtains which overcomes the disadvantages of the prior forms of such devices.

This invention has as a further object the provision of a supporting and pleating device with which an attractive pleat configuration is achieved.

This invention has as a still further object the provision of a supporting and pleating device which may be locked in position within the drapery.

This invention has as a further object a supporting and pleating device which will not tear the hook-tubes of a drapery or curtain.

For the purpose of illustrating the invention, there is shown in the accompanying drawings one form thereof which is at present preferred, although it is to be understood that the various instrumentalities of which the invention consists can be variously arranged and organized and that the invention is not limited to the precise arrangements and organizations of the instrumentalities as herein shown and described.

In the following drawings in which like reference characters refer to like parts:

Figure 1 is a fragmentary perspective view of the front side of an embodiment of the drapery pleating construction of this invention.

Figure 2 is a fragmentary perspective view of the back side of the drapery pleating construction of this invention shown in Figure 1.

Figure 3 is a cross-section taken on line 3—3 of Figure 2.

Figure 4 is a front elevational view of the supporting and pleating device of this invention.

Figure 5 is a rear elevational view of the device shown in Figure 4.

Figure 6 is a side elevational view of the device shown in Figure 4, with the pleat retaining and locking element or pleat-pincher in locking position.

Figure 7 is a side elevational view of the device shown in Figure 4, with the pleat retaining and locking element or pleat-pincher in its unlocked or inoperative position.

Figure 8 is a side view of the supporting and pleating device being inserted into (or withdrawn from) its operative position in the drapery.

Figure 9 is a later stage of the insertion (or an earlier stage of the withdrawal) of the supporting and pleating device than that shown in Figure 8.

Figure 10 is a still later stage of the insertion (or a still earlier stage of the withdrawal) of the supporting and pleating device than that shown in Figure 9 namely, the stage wherein the pleat-pincher is partly in the rearwardly-opening folds of the pleat.

Figure 11 is a side section on line 11—11 of Figure 2.

Figure 12 is a perspective view of the supporting and pleating device with the pleat retaining and locking element or pleat-pincher in a rearward inoperative or unlocked position.

Figure 13 is a perspective view of the supporting and pleating device with the pleat retaining and locking element or pleat-pincher in its forward operative or locking position.

The pleated drapery, employing pleating devices of the present invention, generally designated **20**, has a plurality of spaced-apart pleats **21** (three front-folds **22** per pleat **21** being shown in the illustrated embodiment of the present invention) formed in drape **20**, which pleats **21** extend downwardly below the region adjacent the bottom portion of the supporting and pleating device designated **23**, when the supporting and pleating device **23** is in its operative position (see Figure 2).

The upper portion of the drape **20** is preferably folded over and overlapped about the fold-line **24** (Figures 9–11). A header or pleating tape **25** is sewn or otherwise fastened to the back of the drapery by means of a pair of parallel lines of stitching **26** and **27**, which are generally parallel to the fold-line **24**.

Any suitable header or pleating tape can be used, such header or tape having a plurality of similarly-spaced cross-wise parallel vertical tubes, tunnels or pockets **28**, whose upper ends **29** are closed, as by line of stitching **26**, and whose lower ends **30** are open.

The drapery supporting and pleating device **23** of the present invention is formed of resilient and generally form-retaining wire, or the like, of sufficient thickness to maintain its shape and resist permanent deformation during use, and includes four upstanding pleating or pleat-retaining fingers **31**, **32**, **33** and **34**, which lie generally in the same plane, and which may be generally parallel to each other, or may flare outward slightly.

The upper end **35**, **36**, **37** and **38** of each of the respective pleating fingers **31**, **32**, **33** and **34** is beaded or shaped in the form of a globule, bulb, knob or the like. This bulb or slight globule is integral with the remainder of pleating fingers **31**, **32**, **33** and **34** and may be formed by any of the methods known in the art, such as by upsetting the head of the pleating fingers, or by melting the free ends of the pleating fingers, etc.

The globule at the end of each of the pleating fingers permits the facile insertion thereof into tube **28** in the header or pleating tape **25** without the risk of tearing the header or pleating tape fabric.

The two outer pleating fingers **31** and **34** are preferably formed from a single piece of wire so that the fingers **31** and **34** are joined together at their base by cross-bar **39**. Similarly, the two inner pleating fingers **32** and **33** may be formed from a second, somewhat smaller, i. e., shorter, piece of wire so that these fingers are joined together by cross-bar **40**. A rearwardly extending drape-hanging or drapery suspension hook **41** has the lower end of its stem fixed to the lower ends of the fingers **31**, **32**, **33** and **34** and also serves to join the U-shaped wire piece forming pleat-

ing fingers 31 and 34 with the U-shaped wire piece forming pleating fingers 32 and 33, which is nested within the former U-shaped wire piece; the lower end of the stem of the hook 41 being preferably spot-welded to cross-bars 39 and 40, as shown particularly in Figure 4, 5 and 13. Alternatively, the pleating fingers may be otherwise connected to each other and to the hook 41.

The pleat retaining and locking or pleat-pincher element designated 42 comprises a generally U-shaped wire, similar to the wire used to form hook 41 and fingers 31, 32, 33 and 34, bent back upon itself in the central portions of the legs 45 and 46 of the U, to form the two elbow-shaped pleat-pinching arms 47 and 48, each of which elbow-shaped pincher-arms is, in turn, generally U-shaped, in and of itself. The free ends of the legs 45 and 46 of the pleat retaining and locking element or pleat-pincher 42 are formed or shaped into loops 43, and looped around the pincher-anchorage or cross-bar 39. The base of the U comprises a stop bar 44.

The pleat retaining and locking element or pleat-pincher 42 may be pivoted about cross-bar 39, from the unlocked or inoperative position shown in Figure 12 in which the major portion of the pleat retaining and locking element or pleat-pincher 42 is positioned rearwardly of the fingers (or from the position shown in Figure 7 in which its major portion is below cross-bar 39), to the locked position shown in Figures 4–6, 11 and 13, wherein the stop bar 44 is engaged against the stem of the hook 41 and wherein the pleat retaining or pleat-pinching legs 45 and 46 or the elbow-shaped arms 47 and 48 thereof are in front of pleating fingers 31, 32, 33 and 34 and above cross-bar 39 and entered into the folds 49 and 50 of the pleat 21. Each of the pleat retaining or pleat-pinching leg elements 45 and 46 (or the elbow-shaped arms 47 and 48 thereof) extends or projects forwardly, namely, in the direction opposite to the direction in which the hook 41 extends, for a distance generally equal to the depth of the folds 22 of the pleats 21 and these leg elements 45 and 46 are spaced from each other a sufficient distance to permit them to more or less snugly embrace the pleats when the legs 45 and 46 (or the elbow-shaped arms 47 and 48 thereof) are moved into their forward operative positions shown in Figure 6 and entered into the rearwardly-opening folds 49 and 50 of the pleat 21 formed by the device 23, thus pinching and retaining the pleats in the zone of the pleat-pincher 42.

The drapery pleating and suspending device of the present invention is applied to the drapery by inserting pleating fingers 31, 32, 33 and 34 thereof into consecutively adjacent tubes 28 on the header or pleating tape 25 (Figures 8 and 2). While this insertion is being effected, the pleat retaining and locking element or pleat-pincher 42 is in its unlocked position shown in Figures 12, 8 and 9, with the pleat retaining leg elements 45 and 46 preferably behind pleating fingers 31, 32, 33 and 34. In this position, the pleat retaining and locking element or pleat-pincher 42 may serve the useful function of a handle for guiding the fingers of the supporting and pleating device 23 into operative position within tubes 28.

When pleating fingers 31, 32, 33 and 34 are inserted within tubes 28 and reach substantially to the upper end 29 of each of such tubes 28, or have attained their operative position; supporting and pleating device 23 will be in the position shown in Figures 2 and 9. In this position the pleats 21 in the drape 20 tend to rapidly flare outwardly and lose their structure below cross-bar 39, and moreover there is a pronounced tendency for the supporting and pleating device 23 to drop from tubes 28 and become detached from the drape 20 when the drape is handled before it is hung.

In order to lock supporting and pleating device 23 in its operative position and to retain the pleats 21 from spreading, pleat retaining and locking element or pleat-pincher 42 is pivoted about cross-bar 39 through the position shown in Figure 10, so that the pleat retaining leg elements 45 and 46 are inserted into the rearwardly opening folds 49 and 50 formed in the outermost of the front-folds 22 of each group of pleats 21.

The final locked position is shown in Figures 2, 3 and 11. In this position, stop bar 44 is engaged with the back of hook 41 and pleat retaining leg elements 45 and 46 (or the elbow-shaped arms 47 and 48 thereof) are in their most advanced frontward position. In this locked position the folds 22 of the pleats 21 are retained from spreading in the region below the cross-bar 39 of the supporting and pleating device 23. Moreover, supporting and pleating device 23 is locked in this operative position and cannot fall therefrom during handling of the drape, such as during the mounting thereof.

The so pleated drapery may then be hung on a curtain rod by means of hooks 41. The withdrawal of supporting and pleating device 23 from the drapery is effected by a reverse order of the operative positions set forth above. Thus, the pleat retaining and locking element or pleat-pincher 42 is moved from its locked position shown in Figures 2, 3 and 11 by grasping stop bar 44 and pulling the pleat retaining and locking element or pleat-pincher 42 outwardly about cross-bar 39, to its unlocked position shown in Figure 9. The supporting and pleating device 23 may then be withdrawn from tubes 28 by a downward pull on pleat retaining and locking element or pleat-pincher 42.

The present invention may be embodied in other specific forms without departing from the spirit or essential attributes thereof, and it is therefore desired that the present embodiment be considered in all respects as illustrative and not restrictive, reference being had to the appended claims rather than to the foregoing description to indicate the scope of the invention.

Having described our invention, we claim:

1. A supporting and pleating device for draperies including a plurality of upwardly projecting, elongated, resilient, pleating fingers, two of said pleating fingers being connected together at their lower ends by a cross-bar, a drape-hanging, hook-like portion extending in back of said fingers, and a pleat retaining and locking element having an end portion pivotally mounted on said cross-bar and having leg portions swingable, on pivotal movement of said pleat retaining and locking element, between a position wherein at least a major portion of said element is in back of said pleating fingers and a position projecting between two adjacent pleating fingers and wherein at least a portion of it is in front of said pleating fingers.

2. A supporting and pleating device for draperies including a plurality of upwardly projecting, elongated, resilient, pleating fingers, two of said pleating fingers being connected together at their lower ends by a cross-bar, a drape-hanging, hook-like portion extending in back of said fingers, and a pleat retaining and locking element comprising a generally U-shaped member having the ends of its legs pivotally looped about the cross-bar, each leg of said element being bent back upon itself at a substantially central portion thereof whereby said element is swingable about said cross-bar from a position wherein the major portion of the legs of the U are in back of said pleating fingers to a position wherein the base of the U is in back of said pleating fingers with at least a portion of each of the legs of the U projecting in front of said pleating fingers through a different space between adjacent fingers, so that when said pleating fingers are disposed within spaced hook-tubes in the upper portion of a drape to form pleats, with the legs of said U-shaped pleat retaining and locking element in their second-mentioned position, each of the frontwardly projecting portions of the legs may penetrate the pleat between adjacent hook-tubes and maintain said pleats in position.

3. A supporting and pleating device for draperies including four upwardly projecting, elongated, resilient, pleating fingers, the outer two fingers being joined together by a basal cross-bar, a drape-hanging, hook-like

portion extending in back of said fingers, and a pleat retaining and locking element comprising a generally U-shaped member having the ends of its legs pivotally looped about the cross-bar, each leg of said element being bent back upon itself at a substantially central portion thereof whereby said element is swingable about said cross-bar from a position wherein the major portions of the legs of the U are in back of said pleating fingers to a position wherein the base of the U is in back of said pleating fingers with at least a portion of each of the legs of the U projecting in front of said pleating fingers through a different space between adjacent fingers, so that when said pleating fingers are disposed within spaced hook-tubes in the upper portion of a drape to form pleats, with the legs of said U-shaped pleat retaining and locking element in their second-mentioned position, each of the frontwardly projecting portions of the legs may penetrate the pleat between adjacent hook-tubes and maintain said pleats in position.

4. A supporting and pleating device for draperies including a plurality of upwardly projecting, elongated, resilient pleating fingers connected together at their lower ends by a cross-bar, a drape-hanging, hook member extending rearwardly from said fingers, and a pleat retaining and locking element comprising a pair of spaced apart, generally U-shaped leg portions each having one end looped around the cross-bar for pivotally mounting said element thereon and said leg portions being bent back upon themselves at a substantially central portion and having their opposite ends connected together by a base bar spacing the leg portions for entry on swinging movement about said cross-bar into separate spaces between pairs of adjacent fingers whereby, when the fingers are inserted into spaced hook-tubes in the upper portion of a drape to form pleats, the pleat retaining and locking element may be swung pivotally to project said leg portions into spaces between pleats to maintain the form of said pleats.

5. A supporting and pleating device for draperies including inner and outer pairs of upwardly projecting, elongated, resilient pleating fingers, the outer pair being connected together at their lower ends by a cross-bar and the inner pair being connected to said cross-bar in nesting relation to said outer pair, a drape-hanging, hook member extending rearwardly from said fingers, and a pleat retaining and locking element comprising a pair of spaced apart, generally U-shaped leg portions each having one end looped around said cross-bar between adjacent fingers of an inner and an outer pair for pivotally mounting said element on said cross-bar and said leg portions being bent back upon themselves at a substantially central portion and having their opposite end portions connected together by a base bar spacing the leg portions for entry on swinging movement about said cross-bar into the respective spaces between said adjacent fingers whereby, when the fingers are inserted into spaced hook-tubes in the upper portion of a drape to form pleats, the pleat retaining and locking element may be swung pivotally to project said leg portions into spaces between pleats to maintain the form of said pleats.

6. A drapery pleater including a pair of inner fingers and a pair of outer fingers disposed generally upright when the pleater is in its operative position and connected at their lower ends, a cross-bar near the lower ends of said fingers and connecting at least two of said fingers, a supporting hook connected with said fingers near their lower ends and extending rearwardly thereof, and a pleat-engaging member pivotally connected with said cross-bar, said pleat-engaging member including a pair of pleat-pinching elements and being swingable from a position generally in back of the fingers to a position substantially forwardly of said fingers and with said pleat-pinching elements thereof entering the folds of the pleat formed by said fingers.

7. A pleater for pleating and supporting draperies and curtains, including a pair of inner fingers and a pair of outer fingers disposed generally upright when the pleater is in its operative position and connected at their lower ends, a cross-bar near the lower ends of said fingers and connecting at least two of said fingers, a supporting hook connected with said fingers near their lower ends and extending rearwardly thereof, two elbow-shaped pleat-pinching elements, each including two legs and an elbow-like bend connecting said legs, one leg of each of said pinching elements being pivotally connected to the pleater near the lower ends of the fingers thereof, a cross bar connecting the other legs of said pleat-pinching elements to each other, said pleat-pinching elements being movable in relation to said fingers about said pivotal connections from an inoperative position generally back of the fingers to an operative pleat-pinching position substantially forwardly of said fingers and flanking and engaging the folds of the pleat formed by said fingers, with the aforementioned elbows leading as the pleat-pinching elements are moved from their inoperative position generally in back of the fingers to their operative pleat-pinching position substantially forwardly of the fingers.

8. A supporting and pleating device for draperies including a plurality of upwardly projecting, elongated, resilient, pleating fingers, two of said pleating fingers being connected together at their lower ends by a cross-bar, a drape-hanging, hook-like portion extending in back of said fingers, and a pleat retaining and locking element comprising a generally U-shaped member having the ends of its legs formed into loops pivotally mounted about the cross-bar, each leg of said element being bent back upon itself at a substantially central portion thereof whereby said element is swingable about said cross-bar from a position wherein the major portion of the legs of the U are in back of said pleating fingers to a position wherein the base of the U is in back of said pleating fingers with at least a portion of each of the legs of the U projecting in front of said pleating fingers through a different space between adjacent fingers, so that when said pleating fingers are disposed within spaced hook-tubes in the upper portion of a drape to form pleats, with the legs of said U-shaped pleat retaining and locking element in their second-mentioned position, each of the frontwardly projecting portions of the legs may penetrate the pleat between adjacent hook-tubes and maintain seat pleats in position.

9. A drapery pleater including a pair of inner fingers and a pair of outer fingers disposed generally upright when the pleater is in its operative position and connected at their lower ends, the fingers lying in substantially the same plane, a supporting hook connected with said fingers at their lower, connected ends and extending rearwardly thereof, and a pleat-engaging member including a pair of pleat pinching elements and pivotally connected to said pleater adjacent said lower, connected ends for vertical swinging movement in a plane normal to the plane of said fingers, said pleat-engaging member being swingable from a position generally in back of the fingers to a position substantially forward of said fingers and entering the folds of the pleat formed by said fingers.

10. A drapery pleater including a pair of inner fingers and a pair of outer fingers disposed generally upright when the pleater is in its operative position and connected at their lower ends, the fingers lying in substantially the same plane, a supporting hook connected with said fingers at their lower, connected ends and extending rearwardly thereof, and a pleat-engaging member including a pair of pleat retaining elements and pivotally connected to said pleater adjacent said lower, connected ends for vertical swinging movement in a plane normal to the plane of said fingers, said pleat-engaging member being swingable from a position generally in back of the fingers to a position substantially forward of said fingers and entering the folds of the pleat formed by said fingers.

11. A supporting and pleating device for draperies in-

cluding a plurality of upwardly projecting, elongated, resilient, pleating fingers, two of said pleating fingers being connected together at their lower ends by a cross-bar, a drape-hanging, hook-like portion extending in back of said fingers, and a pleat engaging and retaining element comprising a generally U-shaped member having the ends of its legs formed into loops pivotally mounted about the cross-bar, each leg of said element being bent back upon itself at a substantially central portion thereof whereby said element is swingable about said cross-bar from a position wherein the major portion of the legs of the U are in back of said pleating fingers to a position wherein the base of the U is in back of said pleating fingers with at least a portion of each of the legs of the U projecting in front of said pleating fingers through a different space between adjacent fingers, so that when said pleating fingers are disposed within spaced hook-tubes in the upper portion of a drape to form pleats, with the legs of said U-shaped pleat engaging and retaining element in their second-mentioned position, each of the frontwardly projecting portions of the legs may penetrate the pleat between adjacent hook-tubes and maintain said pleats in position.

12. A multi-finger drapery-suspending and pleat-retaining device for draperies, curtains and the like, including four spaced-apart elongated pleat-retaining fingers disposed generally upright when the device is in its operative position, a suspension hook including a stem fixedly connected with said fingers near their lower ends and extending upwardly therefrom and having its hook portion rearwardly of said fingers, a pincher-anchorage fixed near the lower ends of said fingers, and a pleat-pincher permanently anchored to said pincher-anchorage and having two spaced-apart pleat-pinching arms fixedly connected with each other at one end, said pleat-pincher being so movably anchored to said anchorage as to be movable to and fro about said anchorage, in a direction transversely of said fingers between a rearward inoperative position and a forward operative position with its anchored zone held by said anchorage against any substantial movement parallel to said finger; said pleat-pincher being arranged so that one of its arms enters the rearwardly-opening fold of the pleat retained by one outer finger and the adjacent inner finger and the other of its arms enters the rearwardly-opening fold of the pleat retained by the other outer finger and the adjacent inner finger.

13. A multi-finger drapery-suspending and pleat-retaining device for draperies, curtains and the like, including plurality of spaced-apart elongated pleat-retaining fingers disposed generally upright when the device is in its operative position, a pincher-anchorage fixedly connected with the lower ends of said fingers and extending generally transversely of said fingers, a suspension hook including a stem fixedly connected with said fingers near their lower ends and extending upwardly therefrom and having its hook portion rearwardly of said fingers, and a pleat-pincher permanently anchored to said pincher-anchorage and having two spaced-apart pleat-pinching arms fixedly connected with each other at one end, said pleat-pincher being so movably anchored to said pincher-anchorage as to be movable to and fro about said anchorage, in a direction transversely of said fingers, between a rearward inoperative position and a forward operative position with its anchored zone held by said anchorage against any substantial movement parallel to said fingers.

14. A multi-finger pleater for draperies, curtains or the like, including at least a pair of inner fingers and a pair of outer fingers disposed generally upright when the pleater is in its operative position and connected at their lower ends, a cross-bar near the lower ends of said fingers and connecting at least two of said fingers, a drapery-suspension hook connected with said fingers near their lower ends and extending rearwardly thereof, at least two elbow-shaped pleat-pinching elements, each including two legs and an elbow-like bend connecting the two legs, said two elbow-shaped pleat-pinching elements being connected with each other at their rear ends by a connecting member disposed transversely of said fingers and rearwardly thereof and connecting a leg of one elbow-shaped pleat-pinching element with a leg of the other elbow-shaped pleat-pinching element and holding the two elbow-shaped pleat-pinching elements in spaced relation to each other, each of said elbow-shaped pleat-pinching elements being permanently looped around said cross-bar for removably anchoring and guidingly connecting said elbow-shaped pleat-pinching elements to said cross-bar in movable relation to said fingers, permitting the to and fro movement of said pleat-pinching elements in parallel planes which are transverse to the median plane of said fingers, between a rearwardly retracted inoperative positio nand a forwardly projecting operative pleat-pinching position substantially forwardly of said fingers, with the aforementioned elbow-like bends leading as said pleat-pinching elements are moved from their rearward inoperative position to their forward operative pleat-pinching position, said anchorage at all times holding the anchored zones of said elbow-shaped pleat-pinching elements against any substantial movement parallel to said fingers.

References Cited in the file of this patent

UNITED STATES PATENTS

731,844	Billings	June 23, 1903
1,068,837	Barnes	July 29, 1913
2,552,922	Andreou	May 15, 1951
2,553,272	Perlmutter	May 15, 1951
2,623,583	Handley	Dec. 30, 1952
2,718,923	Moser	Sept. 27, 1955

FOREIGN PATENTS

2,467	Great Britain	1890
474,716	Canada	June 26, 1951
488,819	Canada	Dec. 16, 1952