April 22, 1969 M. E. TUSKOS 3,439,438

DRAPERY MANUFACTURING DEVICE

Filed June 7, 1966 Sheet 1 of 4

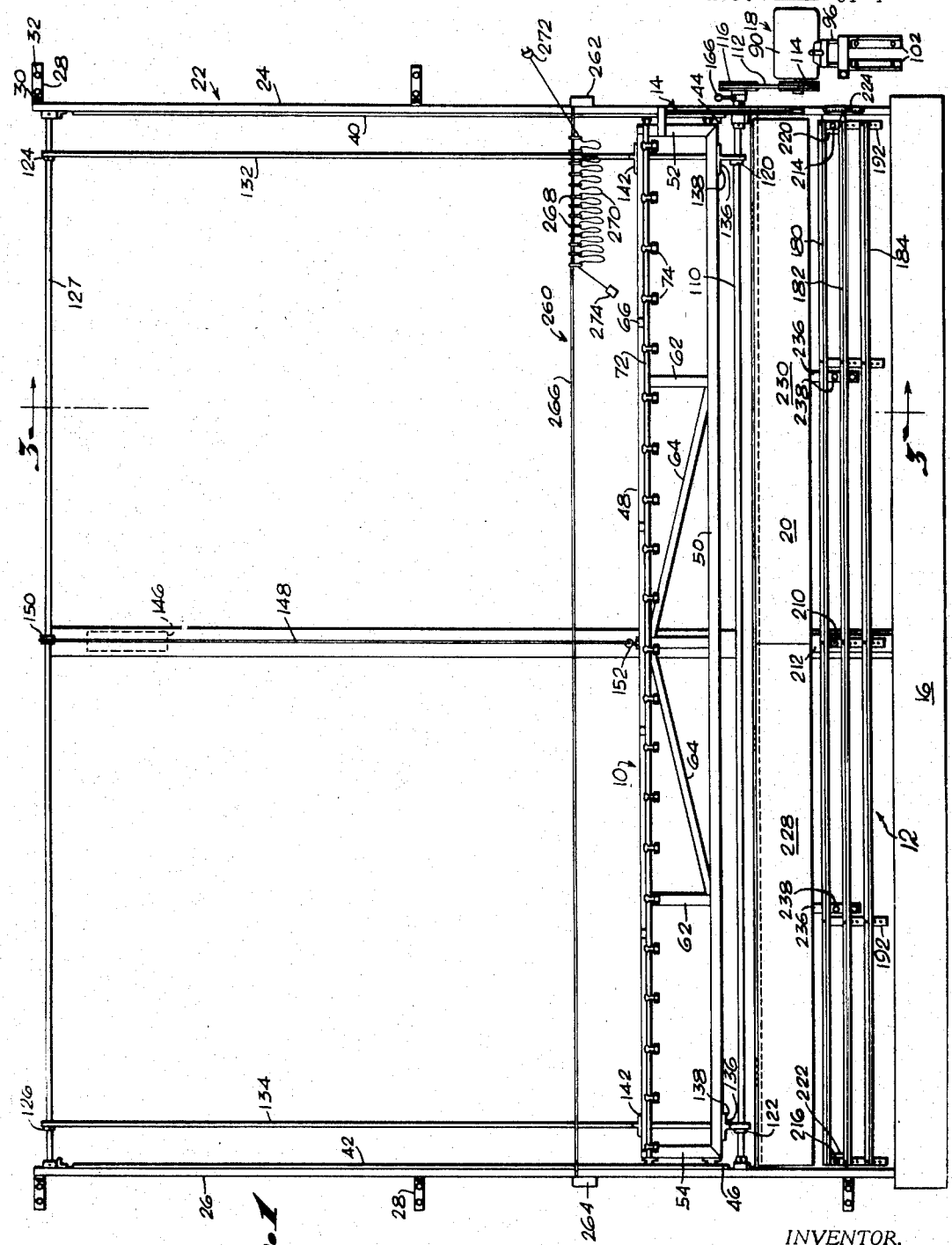


Fig. 1

INVENTOR.
MICHAEL E. TUSKOS

BY John Aziel Mallory

ATTORNEY.

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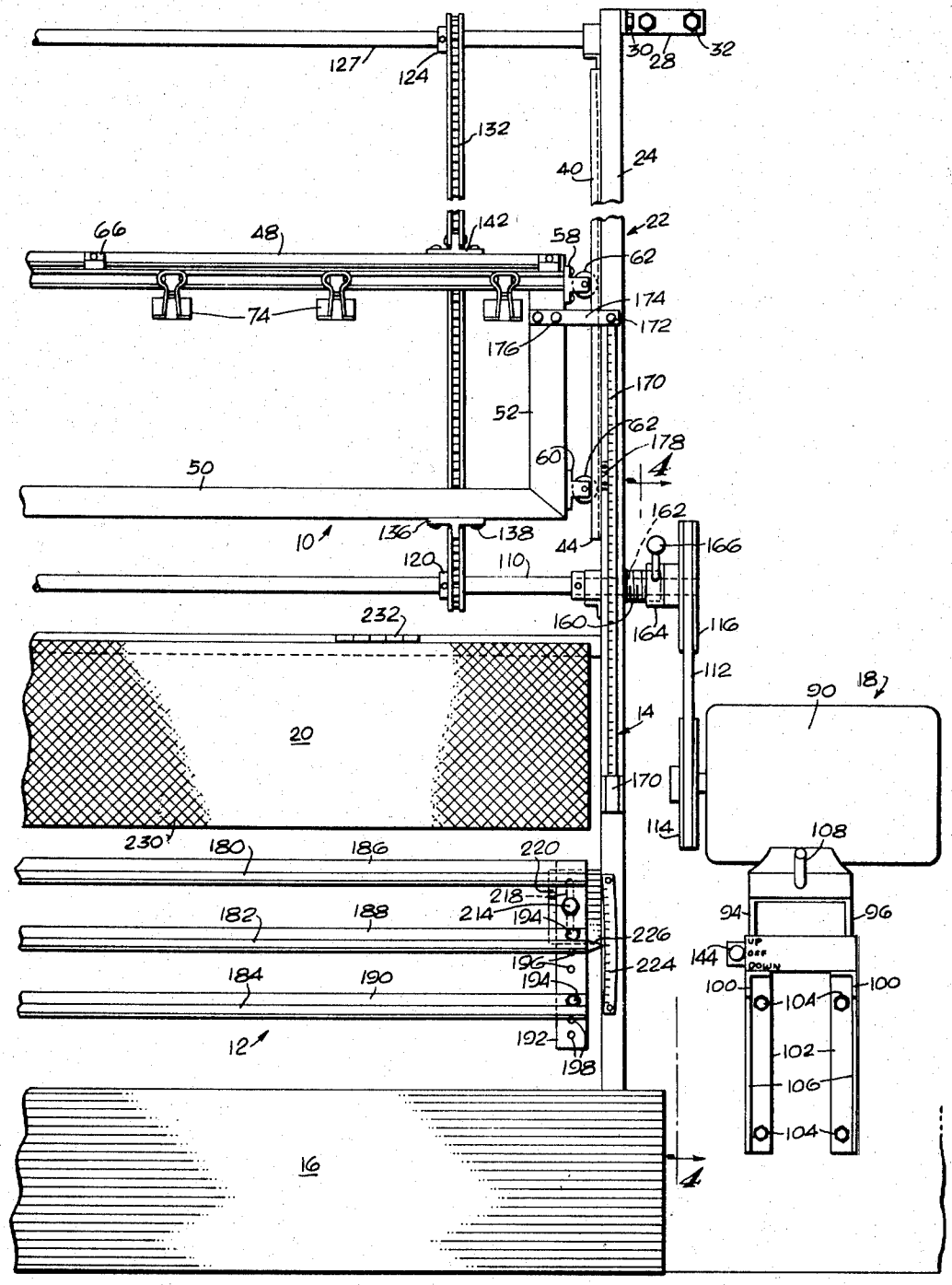


Fig. 2

INVENTOR.
MICHAEL E. TUSKOS

BY John Aziz Malloy

ATTORNEY.

April 22, 1969 M. E. TUSKOS 3,439,438

DRAPERY MANUFACTURING DEVICE

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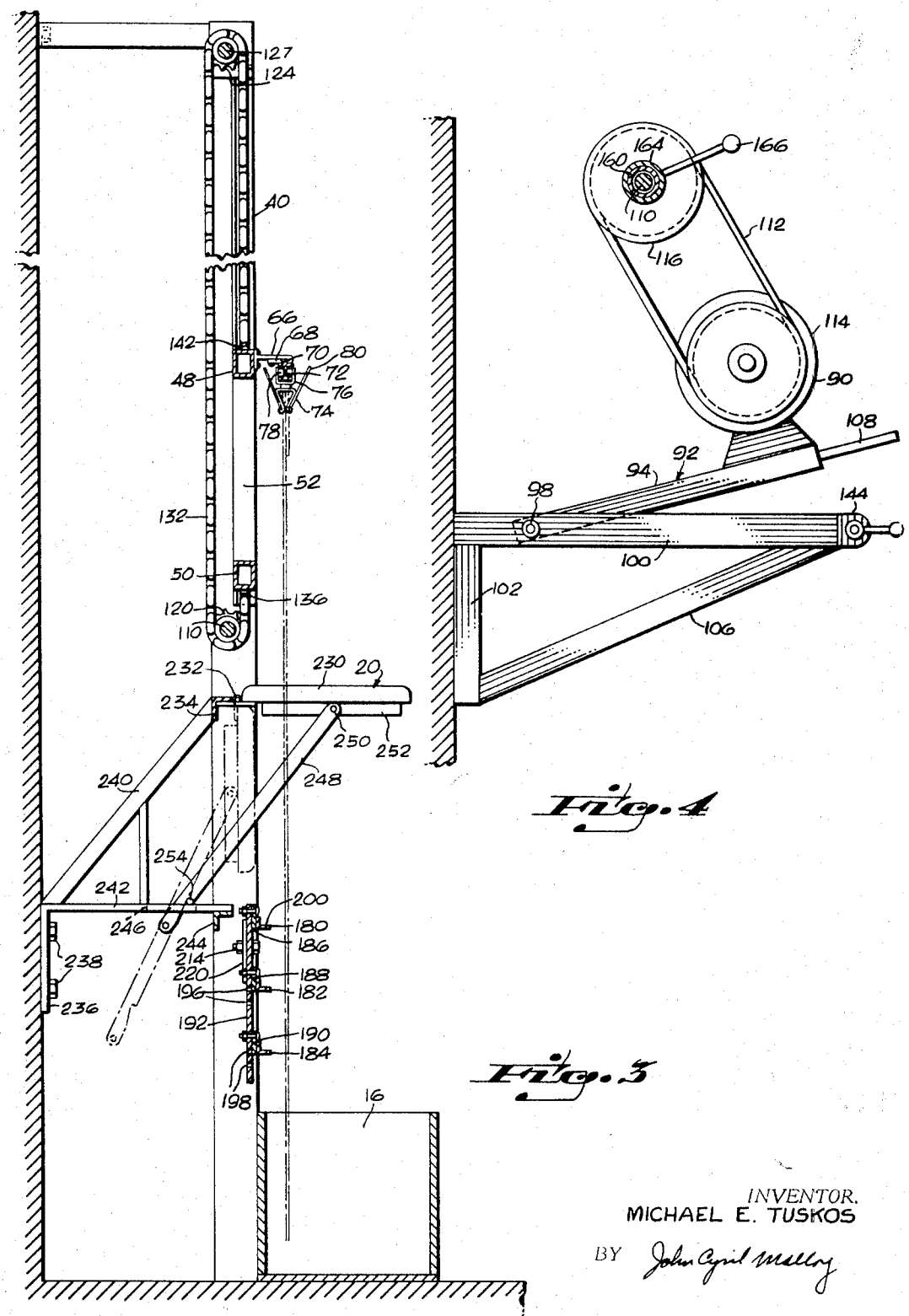


Fig. 4

Fig. 3

INVENTOR.
MICHAEL E. TUSKOS

BY John Cyril Malloy

ATTORNEY.

April 22, 1969 M. E. TUSKOS 3,439,438

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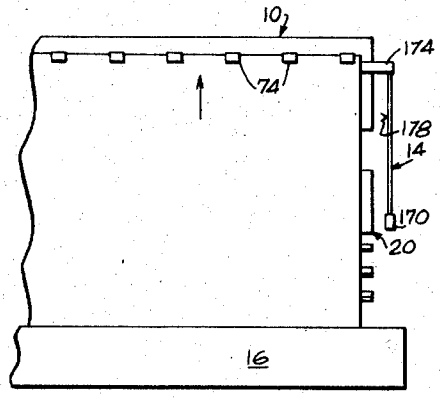


Fig. 5

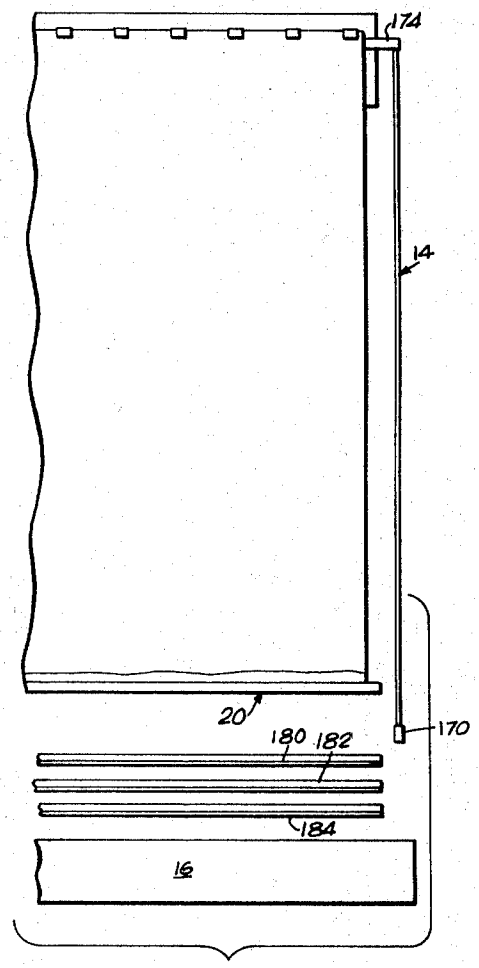


Fig. 7

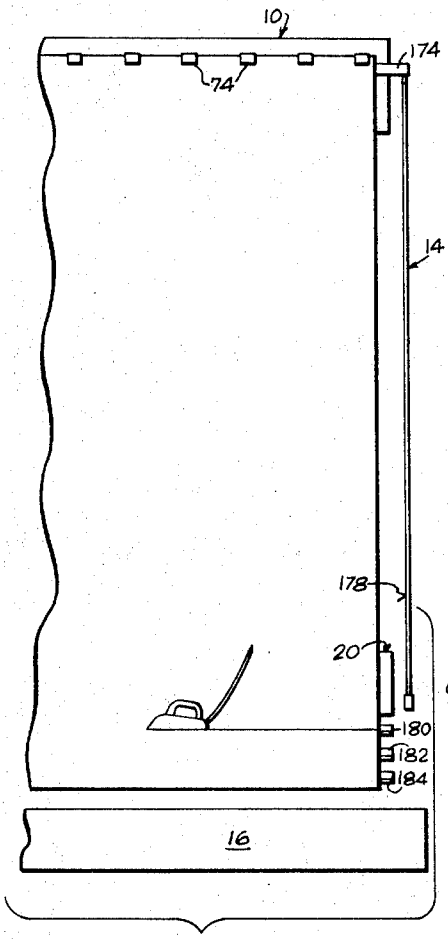


Fig. 6

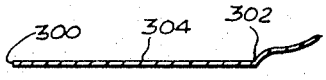


Fig. 8



Fig. 9

INVENTOR.
MICHAEL E. TUSKOS

BY John Cyril Malloy

ATTORNEY.

United States Patent Office 3,439,438 Patented Apr. 22, 1969

3,439,438

DRAPERY MANUFACTURING DEVICE

Michael E. Tuskos, Miami, Fla.
(2507 Saratoga Drive, Louisville, Ky. 40205)

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Int. Cl. D06f 81/00
U.S. Cl. 38—104 17 Claims

ABSTRACT OF THE DISCLOSURE

A drapery manufacturing device comprising a vertical frame with a track, a trolley with means to connect along one edge of a drapery panel so that the trolley may be raised to lift the drape and suspend it in a vertically hanging plane beneath the trolley, drive means to move a trolley with respect to a reference means beneath the trolley including a transversely extending catch shelf over which the drapery falls when raised so that when the proper height has been obtained, a crease may be placed across the lower end of the drape which is horizontal and which defines the bottom edge of the drape.

The present invention pertains to aligning a drapery hem mechanism and is more particularly directed to a mechanism used in the manufacturing of window draperies or the like, which enables the operator to quickly and accurately determine the desired length of a drapery and to establish and mark, as by a crease, a line or lines across the bottom of the drapery, adjacent the marginal edge thereof in exact conformity with the requirements as reflected by the measurements of any particular installation site.

The general procedure in manufacturing draperies is to attach side by side, as by sewing, a sufficient number of vertical panels of material to provide the desired overall width of a main drapery section and to finish the top edge and the two vertical side edges as required. In an ordinary installation draperies are suspended or hung from rods which are horizontally disposed on walls; and a proper visual effect requires that the bottom hem line look fitted to the room also. Consequently, in common practice, a considerable amount of time is required to lay a drapery flat on large tables, called tabling, and to make spaced measurements from the top edge of the drapery and to pin the hem in as the operator works from one side edge of the drapery to the other marginal side edge. Additional problems are involved with various types of material in this type of operation due to uneven pulling and stretching of loose woven fabrics or the like.

One of the principal objects of the present invention is to provide a drapery manufacturing device to obviate the tabling operation and which includes a vertically-operated motor-driven trolley mechanism, to which a drapery is accurately attached by suitable spring clamps and carried upwardly by the trolly a predetermined distance, to establish the desired drapery length with a drapery hanging free under its own weight in the same manner as it would hang if installed, that is, subject to steady stress and strain conditions regardless of the delicacy or stretch characteristic of the fabric.

Another principal object of the present invention is the provision of a series of adjustable L-shaped cross rails, positioned adjacent the bottom edge of the suspended drapery to provide means for accurately pressing a straight crease or creases, laterally across the bottom of the drapery, which are spaced a predetermined distance from the bottom raw edge thereof, to establish an accurate finish line for the bottom hem. The series of adjustable L-shaped cross rails preferably includes one rail used for draperies with double hems, one rail for draperies with a single hem and a third rail for cutting or trimming off excess material in double hemmed draperies. The series of L-shaped rails are preferably fixed together with the lower two rails being adjustable for various hem widths and the entire three rail unit being centrally pivoted to provide means for tilting the rails to compensate for structural inaccuracies, such as sloping floors or window sills.

A further principal object of the present invention is the provision of a measuring means having one end fixed to the vertically-operated trolley and the other end fixed to an upright frame member. The measuring device is adapted to co-operate with the trolley, the series of adjustable L-shaped cross rails and a fixed marker or pointer to give a direct reading on the measuring device of the distance between the top marginal edge of the drapery and the bottom hem line crease.

A still further object of the present invention is the provision of a drive means for the vertically-operated trolley, preferably in the form of a speed reducer motor with a forward, reverse and stop control and which is pivotally mounted on one end of a suitable frame member in such a manner as to allow the weight of the motor to provide the necessary driving friction on the belt drive to the vertical trolley drive pulley. In this manner, the operator can quickly disengage the drive to the vertical trolley by lifting upwardly on an appropriate handle provided on the motor mount.

Another object of the present invention is to counterbalance the weight of the vertical trolley by means of an appropriate centrally-positioned counterweight to limit the actual load on the vertical trolley to the weight of the attached drapery. To prevent the trolly from descending under the weight of the drapery, a suitable locking means is provided to lock the trolley drive shaft to a vertical frame window.

A further object of the invention is the provision of a folding ironing board assembly between the series of L-shaped rails and the bottom-most position of the vertical trolley, to permit the operator to fold and pin the hem if necessary along the established crease line or lines. Additional pressing of the folded hem may also be done, if desired, at this point before the drapery is lowered and removed from the vertical trolley. The entire operation is, therefore, accomplished with far greater accuracy and in a fraction of the time required by presently employed methods.

For a better understanding of the present invention, together with other and further objects, advantages and capabilities thereof, reference is made to the following description of the accompanying drawings, in which there is illustrated a preferred structure in accordance with the invention.

In the accompanying drawings:

FIG. 1 is a front elevational view of the drapery hem aligning device in accordance with the present invention;

FIG. 2 is an enlarged fragmentary view of the operating end of the mechanism as seen in FIG. 1;

FIG. 3 is a vertical sectional view taken along the line 3—3 of FIG. 1 and looking in the direction of the arrows;

FIG. 4 is a vertical sectional view taken along the line 4—4 of FIG. 2, illustrating in detail the motor drive means associated with the invention;

FIG. 5 is a diagrammatic elevation illustrating a drapery in place on the mechanism of the present invention;

FIG. 6 is a diagrammatic elevation similar to FIG. 5, illustrating the drapery elevated a measured distance and a bottom lateral hem line crease being applied thereto;

FIG. 7 is a diagrammatic elevation similar to FIG. 6 with the drapery having been further elevated a distance sufficient to permit the proper folding, pinning, etc. of the hem on the outwardly extended ironing board;

FIG. 8 is a cross-sectional view of the lower portion of a drapery as it would appear on the ironing board, with the bottom hem line crease having been applied thereto; and

FIG. 9 is a cross-sectional view similar to FIG. 8 illustrating a typical double folded bottom hem on the drapery.

In the drawings, like reference numerals designate like or similar parts throughout the various views illustrating a preferred embodiment of the present invention.

As best illustrated in FIGS. 1 and 2, the principal components of the invention are a vertically-operated trolley mechanism, designated generally at **10**, an adjustable cross rail assembly **12**, a vertical measuring device generally designated by the numeral **14**, seen clearly in FIG. 2, a drop box **16** laterally spanning the bottom of the mechanism, a drive mechanism **18**, an ironing board assembly **20**, shown clearly in FIG. 3, and a frame **22** consisting primarly of a pair of the spaced parallel, vertical channel members **24** and **26** seen in FIG. 1. The frame or members **24** and **26** are spaced apart a distance sufficient to accommodate the widest drapery to be hung therebetween and are preferably fixed to a vertical wall surface, as illustrated, by means of a plurality of L brackets **28** having one arm of each fixed to a frame member **24** or **26** by bolts **30**, and the other arm fixed to the wall by bolts **32**. In general, the size, shape and means for attaching the frame members **24** and **26** to the walls depend on each individual installation, because of variations in wall construction materials as well as the presence of offsets in the wall to receive the mechanism.

A vertical trolley track for the trolley **10** is provided on the confronting faces of the vertical upright frame members **24** and **26** as by the members **40** and **42** rigidly fixed, as by welding thereto so as to extend from a position adjacent the top ends of a frame member downwardly to points **44** and **46**. The trolley **10** is generally rectangular in shape as seen in elevation in FIG. 1 and is comprised of at least one transverse member, and, as shown in the drawings, spaced parallel top and bottom rails **48** and **50** and connecting parallel side rails **52** and **54**, lying adjacent the vertical tracks **40** and **42**, with each side rail having rigidly fixed thereto a pair of roller brackets **58** and **60**, carrying rollers **62** engaged in the vertical tracks **40** and **42** respectively. Appropriate vertical and diagonal bracing members **62** and **64** are preferably included, centrally of the rectangular vertical trolley **10**, to provide rigidity thereto.

Referring to FIG. 3, the upper rail **48**, seen in cross section, of the trolley **10** carries a plurality of forwardly or outwardly extending brackets **66** on the front face thereof, which are adapted to clamp to a head portion **70** of a horizontally-disposed I-rail **72**, as at **68** extending across the entire width of the trolley **10**, in spaced parallel relation therewith. A series of spring clamps **74** are carried by the I-rail **72**, in trolley fashion, by the provision of a U-bracket **76** fixed to the top of each spring clamp and a pair of trolley rollers **78** carried by the upper ends of each arm of the U-bracket, extending inwardly therefrom to be respectively engaged in the opposed channels of the I-rail **72**. Consequently, any desired number of spring clamps can be readily moved into position to firmly clamp any particular width of drapery to be suspended from the trolley as described hereinafter and the unused clamps moved aside. A drapery of any width within the limits of the distance between the frame members **24** and **26** can therefore be suspended from the spring clamps by depressing the handles **80** of each clamp in the conventional manner and inserting the drapery into the jaws of the clamp until the top marginal edge of the drapery touches the inner top wall of the clamp. By repeating this process with each clamp, starting adjecent one of the frame members such as **24** as viewed in FIG. 1, and working across the trolley, clamping the edge of the drapery from clamp to clamp, the entire top marginal edge of the drapery can be quickly and accurately attached to the trolley unit **10** to be moved upwardly to a predetermined height, as will be explained.

The drive means for the trolley **10** consists of an appropriate speed reducer motor **90**, mounted on a pivotal base **92**, see FIG. 4, consisting of a pair of side rails **94** and **96** which are pivotally mounted as at **98** between a pair of top angle frame members **100**, extending outwardly from a pair of vertical mounting members **102**, rigidly fixed to the wall as by bolts **104**. A pair of diagonal braces **106** extend from the lower end of the mounting members **102** to the outer ends of the mounting members **100**. The motor base **92** extends diagonally upwardly from the pivot **98** and carries a handle **108** at its upper forward end to enable the operator to quickly disengage the drive from the motor to the trolley drive shaft **110**. By raising upwardly on the handle **108**, the frictional drive engagement between the belt **112**, motor pulley **114** and trolley drive shaft pulley **116** may be broken rapidly with no overrun.

The trolley drive shaft **110** which is horizontally disposed carries a pair of fixed sprockets **120** and **122**, one adjacent each end thereof, to co-operate with a pair of sprockets **124** and **126** fixed to a driven shaft **127**, horizontally spanning the side frame members **24** and **26** adjacent the upper end thereof. A pair of drive chains **132** and **134** are engaged about each co-operating pair of sprockets and as best illustrated in FIGS. 2 and 3, one chain **132** has its lower end fixed to a bracket **136**, which is in turn fixed to the underneath face of the bottom trolley rail **50** as by screws or rivets **138**. The chain **132** extends downwardly around the drive shaft sprocket **120**, upwardly over the driven shaft sprocket **124** and then downwardly to an attachment with a bracket **142** fixed to the upper face of the top trolley rail **48**. It is seen on reference to FIG. 4 that an up, down and stop control **144** is provided for the drive motor at the forward end of the frame members **100**.

A counterweight **146** is preferably included centrally of the trolley **10**, which is fixed to a cable **148** extending up and over a pulley **150** carried by the top driven shaft **127**, then extending downwardly and attached to the upper face of the top trolley frame rail **48** as at **152**. Also, locking means is provided to prevent the vertical trolley from traveling downward when elevated, under the weight of a large drapery. A screw threaded pipe nipple **160** extends outwardly from and is welded to the side vertical frame member **24**, surrounding the outwardly extending portion **162** of the drive shaft **110**. An internally threaded collar **164** provided with an operating handle **166** engages the nipple **160** and is adapted to be actuated to alternately lock or unlock the drive shaft pulley **116** to or from the vertical frame member **24**.

The measuring device **14** includes a conventional housing and retractable steel measuring tape **170**. It is employed to determine the distance of upward travel of the vertical trolley when the operating control **144** is moved to its up position. In this manner the upward travel of the vertical drapery carrying trolley **10** can be arrested at the proper time to establish the length for any given drapery by taking a direct reading from the extended measuring tape **170**, which has its upper end fixed as at **172** to a bracket **174** which is in turn fixed by screws or rivets **176** to the vertical side frame member **52** of the vertical trolley **10**, FIGURE 2. The steel tape housing is rigidly fixed in any suitable manner to the side vertical frame member **24** at a point below the lowermost position of the vertical trolley **10** and with the assistance of an indicia pointer **178**, the exact drapery length reading can be taken.

Co-operating with the vertical trolley and measuring tape is a transverse reference means defining a horizontal plane with respect to which the trolley moves vertically. Preferably, the reference means is adjustable and includes a plurality of adjustable, horizontal L-shaped rails in an

assembly preferably a series of three such rails **180**, **182** and **184** disposed in spaced parallel relationship one above the other. The three rails are preferably welded to elongated backing plates **186**, **188** and **190**, which are carried by a series of vertical brackets **192**, the upper rail backing plate being rigidly fixed to the upper ends of the brackets by bolts or welding and the lower pair of rails are adjustably fixed to the brackets **192** by means of appropriate bolts **194**, which are adapted to be engaged through a series of holes **196** and **198** in each bracket **192**, for the central and lower rails respectively. As will be apparent from the following description, the two lower rails can therefore be adjusted for three different hem widths, for instance, 4-inch, 5-inch or 6-inch widths. The upper or fixed rail **180** determines the bottom marginal edge of the finished hem and, consequently, the overall length of the finished drapery. The reading taken on the steel tape of the vertical measuring device **14** denotes this finished length, which extends from the top marginal edge of the drapery lying against the upper inner wall surface of the spring clamps, carried by the vertical trolley, to the upper surface of a catch shelf **200** extending outwardly across and beneath the plane of fall of a drapery suspended from the trolley and from a vertical or wall portion of the L-rail **180** defining a crotch line therebetween, and across which the lower portion of the drapery lies as it hangs. The center L-rail **182** is utilized in connection with single hem draperies while the lower L-rail **184** is utilized in connection with double hem draperies and the spacing between each of the rails **182** and **184** with respect to the finished rail **180** determines the hem widths.

As structural inaccuracies are often encountered, such as sloping floors, window sills or the like, especially when the area to be draped is rather extensive compensating means have been provided to always insure a pleasing visual appearance by having the finished hem line closely parallel the floor or sill line in spite of these inaccuracies. To accomplish this, the entire L-rail assembly **12** is pivotally connected centrally as at **210** to a frame member **212**, FIGURE 1, to permit the assembly to be sloped in either direction. The outer ends of the rail assembly **12** can be locked in any desired position by means of a pair of bolts **214** and **216** passing through the two end brackets **192** and a pair of appropriate arcuate slots **218** in brackets **220** and **222** fixed respectively to the vertical frame members **24** and **26**. An appropriate scale **224** and indicia pointer **226** are carried by the vertical frame member **24** and L-rail assembly **12** respectively, to enable the operator to adjust the rail assembly as required.

Because of the wide expanse, the ironing board assembly adjacent the upper rail of the L-rail assembly **12** is preferably composed of a pair of ironing boards **228** and **230** each of which is adjustable from a down or vertical plane position to an up or horizontal plane position as best illustrated in FIGURE 3. Each board is hinged as at **232** to a horizontal cross frame member **234**. A pair of wall brackets **236** fixed to the wall as by bolts **238** each include a diagonal brace member **240** and an outwardly extending horizontal arm **242**, the outer end of which is fixed as by welding to a second horizontal cross frame member **244**. Each arm **242** includes an appropriate slot **246** to be slidably traversed by an arm **248**, pivotally attached at its outer upper end at **250** to an appropriate cross bar **252** fixed to the underneath side of the ironing board. A notch adjacent the inner lower end of the pivotal arm **248** co-operates with a detent bar **254**, fixed to the horizontal bracket arm **242**, adjacent the front edge of the slot **246**, to provide means for maintaining the ironing board in its raised or horizontal position. By raising the ironing board slightly and pushing inwardly on the pivotal arm **248**, the ironing board can be lowered to its vertical plane position.

If desired, an electric cord extension trolley means **260** can be provided for convenient usage of an electric iron, electric scissors or the like, across the entire width of the mechanism. A pair of outwardly extending arms **262** and **264**, from the vertical frame members **24** and **26**, carry a cable **266** at their outer ends, spanning the width of the mechanism. A series of slidable rings **268**, engaged about the cable and slidable thereon, are adapted to carry the extension cord **270**, hanging loosely in folds therefrom, across the wire. Conventional male and female lugs **272** and **274** are fixed to the two ends of the extension cord respectively.

In operation, FIGURES 5 through 7, a drapery is attached to the top of the vertical trolley, as previously described, with the lower end extending into the drop box **16**, FIGURE 5. The control is moved to the up position and the indicia pointer and steel tape measure noted until the pointer indicates the desired length. At this point the control is moved to the off position and if necessary any fine adjustment necessary to arrive at the exact length required may be made by turning the motor pulley by hand. The clamp **166** is then actuated to hold the vertical trolley **10** in its exact position. As illustrated in FIGURE 6, for a double hem, an electric iron is utilized to apply a crease in the material draped across the crotch angle between the shelf and wall of the upper L-shaped rail **180** to establish an accurate line for the lower marginal edge of the finished hem. If desired, a second crease may be applied along the center rail **182** to establish the first fold line for a double hem. The excess material is then trimmed by means of an electric scissor or other conventional means along the bottom rail **184**.

In the final operation, FIGURE 7, the vertical trolley is elevated sufficiently to permit the operator to extend the ironing boards into position to fold and pin the bottom hem in place. If desired, an electirc iron may be utilized to press the completely folded hem. As illustrated in FIGURES 8 and 9, the lower marginal trimmed edge **300** of the drapery is folded back to the crease line **302** and the two folds are then folded together along the crease line **302** to complete a double hem. If an additional crease is applied along the center rail **182** as described, the position of this crease would be as indicated by the numeral **304**. In this instance the marginal trimmed edge **300** is folded back to the crease line **304** and the two folds are turned back together along the crease line **302** to complete a double hem.

If a single hem is being applied the excess material normally extends an inch or two below the center rail **182** and two crease lines are formed with an electric iron. The excess material is not trimmed in this circumstance but is turned back along the lowermost crease line, and the second fold is performed along the top crease line to form a single hem.

While there has been illustrated and described a preferred embodiment of the present invention, it will be obvious to those skilled in the art that various modifications and substitutions may be made therein without departing from the scope of the invention as defined by the appended claims.

What is claimed is:

1. A drapery manufacturing device comprising;

a frame in upstanding relation and including a first and a second spaced, vertical, plane defining, parallel guide track;

a trolley to span the guide track transversely, said trolley being movably connected in the guide tracks for vertical movement as a unit with respect to the frame and including a transverse member;

means on said transverse member of the trolley to to grasp along an edge the panel to be formed into a drapery to hold the edge of the panel in a vertically extending plane on movement of the trolley with respect to said frame;

drive means to move the trolley vertically with respect to the frame;

a reference means comprising an assembly defining a horizontal reference plane arranged adjacent the lower end of the frame and including a catch shelf extending outwardly of said plane, and a wall extending vertically from the shelf and defining an outwardly and upwardly opening crotch line angle between the shelf and wall so that a horizontal crease line is adapted to be defined by ironing across the shelf surface on the panel confined in the crotch, in combination with an ironing board and means to support the ironing board to smooth drapery panels.

2. A device as set forth in claim 1 wherein said assembly comprises a plurality of catch shelves and associated walls defining a crotch angle line therebetween, said plurality being arranged in parallel spaced relation.

3. A device as set forth in claim 1 wherein the catch shelf of said assembly is adapted to be rotatably tilted with respect to a horizontal and about a lateral axis perpendicular to said vertically extending plane.

4. A device as set forth in claim 3 wherein the lateral axis is on the vertical center line of the frame.

5. A device as set forth in claim 4 wherein said assembly comprises three parallel shelves and walls.

6. A device as set forth in claim 4 wherein a pointer is included on one end of the assembly and a tilt indicia strip is provided on said frame to measure the angle of tilt of said assembly.

7. A device as set forth in claim 1 wherein said means to support the drapery comprise a plurality of transversely movable hooks horizontally arranged on said trolley.

8. A device as set forth in claim 7 wherein said hooks are spring biased to a normally closed position.

9. A device as set forth in claim 1 wherein said drive means comprises, (a) a motor, (b) an upper transverse driven member journalled at its ends adjacent the upper end of the frame in bridging relation of said frame, (c) a lower transverse driving member journalled in spanning relation of the frame and intermediate the height of said frame in parallel relation to said upper transverse member, (d) chain and sprocket means mutually interconnecting the transverse members and said trolley, and (e) a driving connection between said motor and said lower transverse member to drive said members to effect vertical movement of said trolley.

10. A device as set forth in claim 9 wherein releasable coupling means are provided intermediate said drive means and said driving connection.

11. A device as set forth in claim 10 wherein lock means are provided to keep the trolley in a predetermined position against forces of gravity acting on the trolley.

12. A device as set forth in claim 1 wherein a counter-weight is provided, said counter-weight comprising pulley means suspended on the frame above said trolley and a flexible cord connected to the trolley at one end and having a weight attached to the other end.

13. A device as set forth in claim 1 wherein said ironing board is provided to project out of the vertical plane defined by said frame and said supporting means are provided to support said ironing board adjacent the lower end of said frame.

14. A device as set forth in claim 13 wherein said ironing board includes a first and a second planar section arranged in a horizontal, side-by-side relation.

15. A device as set forth in claim 14 wherein an electrical extension cord is provided, said cord being adapted to movably support a depending extension cord to provide electrical current to a device operable in transverse strokes across the lower portion of the frame.

16. A device as set forth in claim 15 wherein means are provided to hingedly connect the sections of said ironing board effective to fold the sections into vertically aligned side-by-side relation in an out-of-the-way position beneath the trolley.

17. A device as set forth in claim 1 wherein a measuring device is provided, said measuring device including a measuring tape housing, and a tape with the proximal end secured in the housing and the distal end being adapted to extend from the housing, means mounting said housing on the frame, and means connecting the distal end of said tape to said trolley so that the distance of movement of the trolley with respect to the frame is reflected by the length of tape drawn from the housing.

References Cited

UNITED STATES PATENTS

2,699,010	1/1955	Reed	38—102.5
2,954,907	10/1960	Bird	223—30
3,279,661	10/1966	Kirche	223—32
3,315,852	4/1967	Getchell et al.	223—32

PATRICK D. LAWSON, *Primary Examiner.*

GEORGE V. LARKIN, *Assistant Examiner.*

U.S. Cl. X.R.

26—51; 223—30; 38—139