June 5, 1962 I. ZUCKERMAN ET AL 3,037,556

DEVICE FOR FORMING BARREL-PLEATS IN DRAPERIES

Filed April 14, 1959

FIG.1.

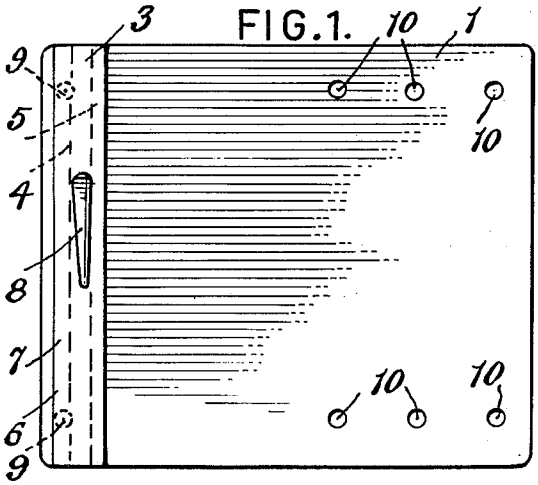


FIG.2.

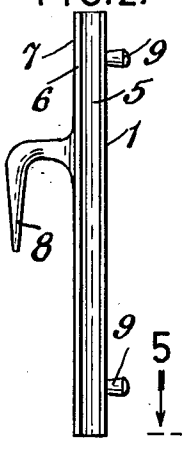


FIG.3.

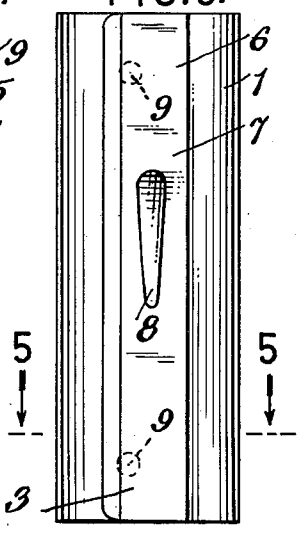


FIG.4.

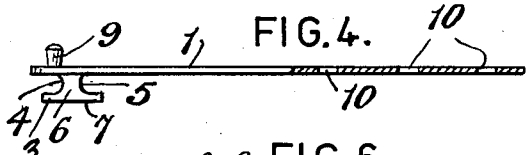


FIG.5.

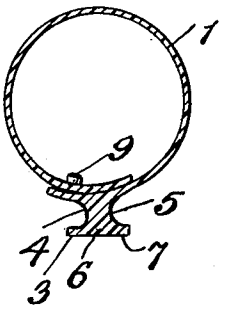


FIG.6.

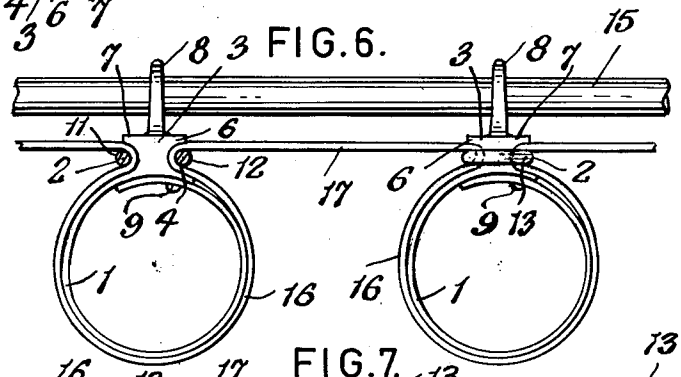


FIG.7.

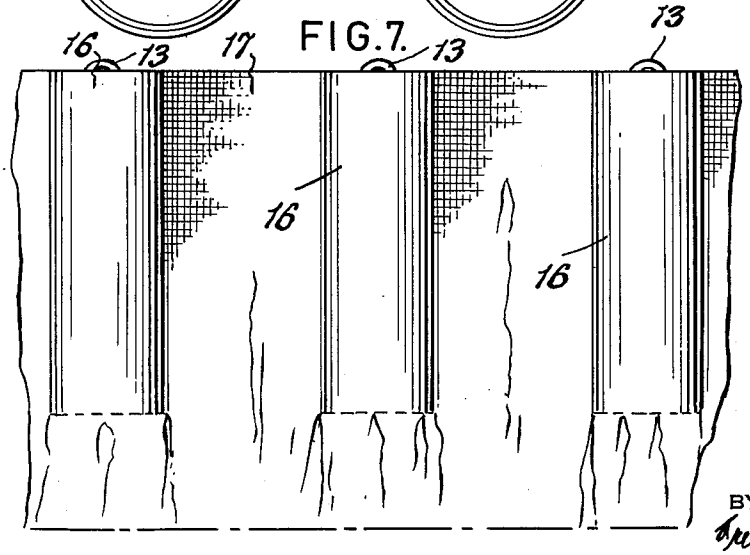
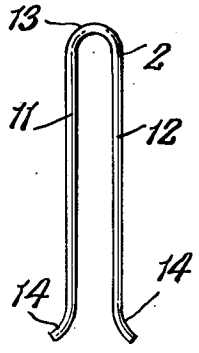


FIG.8.



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DEVICE FOR FORMING BARREL-PLEATS IN DRAPERIES

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This invention relates generally to draperies, and has particular reference to pleat-forming devices intended to aid in the creation of rounded, tubular pleats often referred to as "barrel pleats." Such pleats are formed along the upper marginal edge area of a curtain or drapery to attain graceful folds when the curtain or drapery is suspended.

It is an object of the invention to provide a simple, inexpensive pleat-forming device which can be used in quantity by the home owner, enabling her to produce the desired pleated effect with great facility, and to obtain uniformity in the pleats with a minimum of time and effort.

It is another object of the invention to provide a pleat-forming device whose basic part can be made economically of plastic material, and which, when used in conjunction with a simple clip, will function to hold the curtain or drapery material smoothly and evenly around it in the desired tubular or barrel-pleat formation.

Another object of the invention is to provide a pleat-forming device of tubular formation which can be adjusted to produce tubes of various diameters, whereby different decorative effects may be selectively secured.

Many types of pleat-defining forms have been heretofore proposed. Usually they are of relatively expensive character and of complex structure. An objective of this invention is to provide a construction which involves a minimum of parts, which can be manufactured in commercial quantities at low cost, and whose mode of use is uncomplicated and can be readily understood whereby the device can be used and re-used successfully by even inexperienced persons.

The improved pleat-forming device consists of only two parts. One is a body, preferably of plastic and preferably made of a single piece, and the other is a clamp or clip which cooperates with the body and may advantageously be composed of metal. The body is used as a tubular form around which the drapery material is snugly laid, and the clip serves to retain the material and the form together.

More particularly, the invention contemplates the provision of a sheet of relatively thin and flexible plastic material capable of being formed into a cylinder or tube, with the ends of the sheet detachably and adjustably connected together to maintain the sheet in its desired tubular form. On the outer face of the sheet there is a raised, grooved rib which receives the clip in its grooves to hold the curtain material smoothly about the tube. The rib is provided on its outer face with an outwardly-facing, integrally-formed suspension hook, by which the pleat-forming device and the curtain engaged by it, can be supported from the curtain rod.

In the accompanying drawing, wherein an illustrative embodiment of the invention is shown—

FIG. 1 is a face view of the plastic element of which the tubular body of the improved pleat-forming device is made;

FIG. 2 is an edge view of the element of FIG. 1;

FIG. 3 is a rear view of the tube that is formed from the sheet of FIG. 1;

FIG. 4 is a top edge view of the sheet of FIG. 1, with a portion of the same shown in section to disclose construction;

FIG. 5 is a sectional view, substantally on the line 5—5 of FIG. 3;

FIG. 6 is a top view of two of the pleat-forming devices supported on a curtain rod, with the curtain or drapery material in position;

FIG. 7 is a front elevational view of the upper margin of a part of a curtain or drapery with three of the pleat-forming devices applied thereto; and

FIG. 8 shows the spring clip.

The improved pleat-forming device consists merely of a tube-forming element **1**, made of a flat plastic sheet, and a spring clip **2** of hair-pin or U-shape shown in FIG. 8. These parts are simple and inexpensive to manufacture and easy to use.

The sheet **1**, shown in its flattened condition in FIG. 1, is substantially rectangular in shape. Formed integrally with the body of the sheet and extending from one of its faces near one end of the sheet is a projecting rib **3**. The rib extends from the top of the sheet to its lower edge and is provided along its opposite edges with the grooves or channels indicated at **4** and **5**. The outer end of the rib consists of the flange **6**, and the rear face **7** of the flange **6** is provided with an outwardly projecting suspension hook **8** formed integrally with the rib. Thus the sheet **1** and all the parts described, are integral, being preferably formed of a single piece of molded plastic.

In preparing the pleat-forming device for use, the sheet **1** is rolled by the user to form it into tubular shape as shown in FIGS. 3 and 5. It is maintained in this condition by separable fasteners carried by the plastic body and connectable in various combinations so that the diameter of the tube may be selectively altered. One way of achieving this advantage, while still restricting the body construction to a single integral element, is to provide on the inner face of the sheet **1** a plurality of integral studs **9** adapted for selective engagement with holes **10** formed through the sheet adjacent to its opposite end. The spacing and arrangement of the holes **10** is such that by the fitment of the studs **9** through selected holes the diameter of the resultant tube can be varied to suit different decorative purposes. The shape of the studs **9** with respect to the diameter of the holes **10** is such that a snap-fastener engagement is attained.

The spring clip **2**, which cooperates with the tube formed from the sheet **1**, is shown in FIG. 8. It is of substantially hair-pin or U-shape, consisting of the two spring legs **11** and **12** integrally connected at one end by the loop portion **13**. The free ends of the legs **11** and **12** may be outwardly splayed, as shown at **14**, to facilitate the fitting of the clip in endwise manner to the rib **3**.

In use, a substantial number of the pleat-forming devices is fitted along the upper margin of a curtain or drapery. After the sheets **1** are formed into tubes as shown in FIGS. 3 and 5, they are applied to the upper margin **17** of the drapery material, usually at uniformly spaced distances, and the fabric is laid smoothly around the tubes in the manner shown in FIGS. 6 and 7, to form the desired barrel pleats **16**. As the fabric is thus extended around each of the tubes, portions are brought into the rib grooves **4** and **5**. One of the spring clips **2** is then fitted over the top of each rib **3** so that it straddles the rib and its legs **11** and **12** extend into the grooves **4** and **5**, thus clamping the curtain material **17** therein and drawing the curtain smoothly and evenly around the forming tube.

After the devices have been fitted on the curtain as above described, the drapery is in readiness for immediate hanging on its rod, a portion of which is shown at **15** in FIG. 6. This is quickly and simply done by merely placing the hooks **8** over the rod.

It will thus be apparent that the improved pleat-forming devices have numerous advantages. Being formed of

molded plastic, with the parts integrally attached, they can be manufactured economically. They are easy to use and re-use. They remain attached to the curtain, requiring removal only when the curtain is to be washed or cleaned. Removal involves nothing more than an endwise withdrawal of the clamp pins. The devices can be arranged as close together or as far apart as desired; and this, coupled with the ability of the user to alter the diameter of the pleat-forming devices, makes its possible to produce many different decorative effects.

Although only a single embodiment of the invention has been described and illustrated, it is obvious that the invention is not necessarily restricted thereto, but is broad enough to cover all structures coming within the scope of the annexed claims.

What is claimed is:

1. A pleat-forming device for curtains or draperies, comprising a flexible sheet of plastic material having a relatively thick rib on one of its faces near one end, the opposite edges of the rib being grooved, the outer face of the rib having a projecting suspension hook, the opposite face of the sheet having a row of projecting studs near said one end, and the sheet being provided near an end remote from the rib with a row of holes for accommodating the studs when said sheet is rolled into tubular form, said studs and holes cooperating to maintain said sheet in tubular form.

2. A pleat-forming device according to claim 1 wherein said sheet is provided with a plurality of rows of holes for selectively accommodating said studs whereby said sheet may be maintained in tubular forms having different diameters.

3. Pleat-forming means for curtains and draperies comprising a plurality of independent pleat-forming members, each of said members comprising an element of stiff yet relatively flexible sheet material capable of being

rolled into a tube whose length exceeds its diameter, means for temporarily maintaining said element in tubular form but permitting said element to be readily unrolled into flat condition when desired, an outwardly projecting rib located adjacent to one end of the sheet and extending in a direction parallel to the longitudinal axis of the tube formed from the sheet, said rib being narrow with respect to the length of the sheet and having grooves formed in its opposite edges, and a clip straddling the top of the rib and provided with resilient legs extending into the grooves for holding parts of a curtain in said grooves, said members being entirely disconnected and separate from one another whereby they may be spaced at any desired intervals along the curtain, said means for temporarily maintaining said element in tubular form comprising fastener elements for separably maintaining the ends of said element of sheet material in overlapping relationship, said fastener elements being readily separable to permit the tubular form to be opened.

4. Pleat-forming means according to claim 3 wherein several sets of fastener elements are provided which may be engaged alternately, the diameter of the tube formed being different depending upon the fastener elements employed.

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