

[72] Inventors **Robert C. Gossling**
Cincinnati, Ohio;
George Armstrong, Sydney, N.S.W.,
Australia
[21] Appl. No. **882,055**
[22] Filed **Dec. 4, 1969**
[45] Patented **May 25, 1971**
[73] Assignee **said Gossling**
Clopay Corporation
Cincinnati, Ohio

1,408,605	3/1922	Kehnes.....	160/263
1,791,647	2/1931	Stacks.....	160/263
1,834,669	12/1931	Yeates.....	160/263
2,307,095	1/1943	Zaferskis.....	160/263
3,203,468	8/1965	Gossling et al.....	160/250X
3,299,944	1/1967	Gossling et al.....	160/263

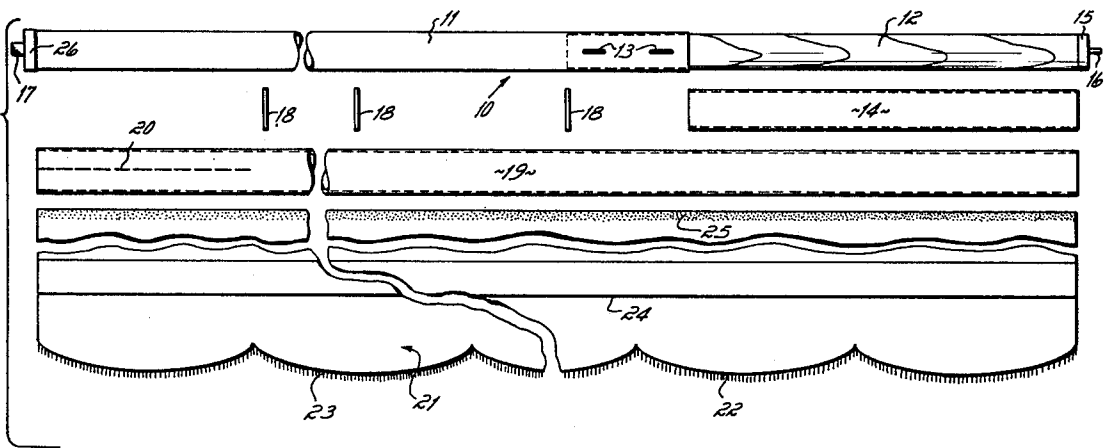
Primary Examiner—Peter M. Caun
Attorney—Wood, Herron & Evans

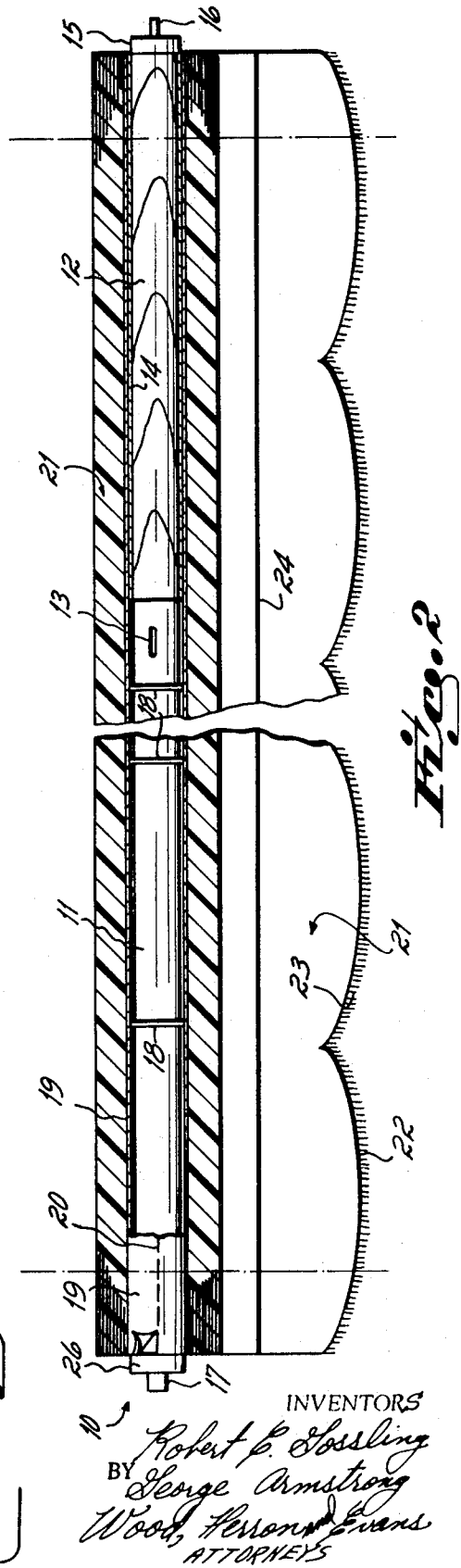
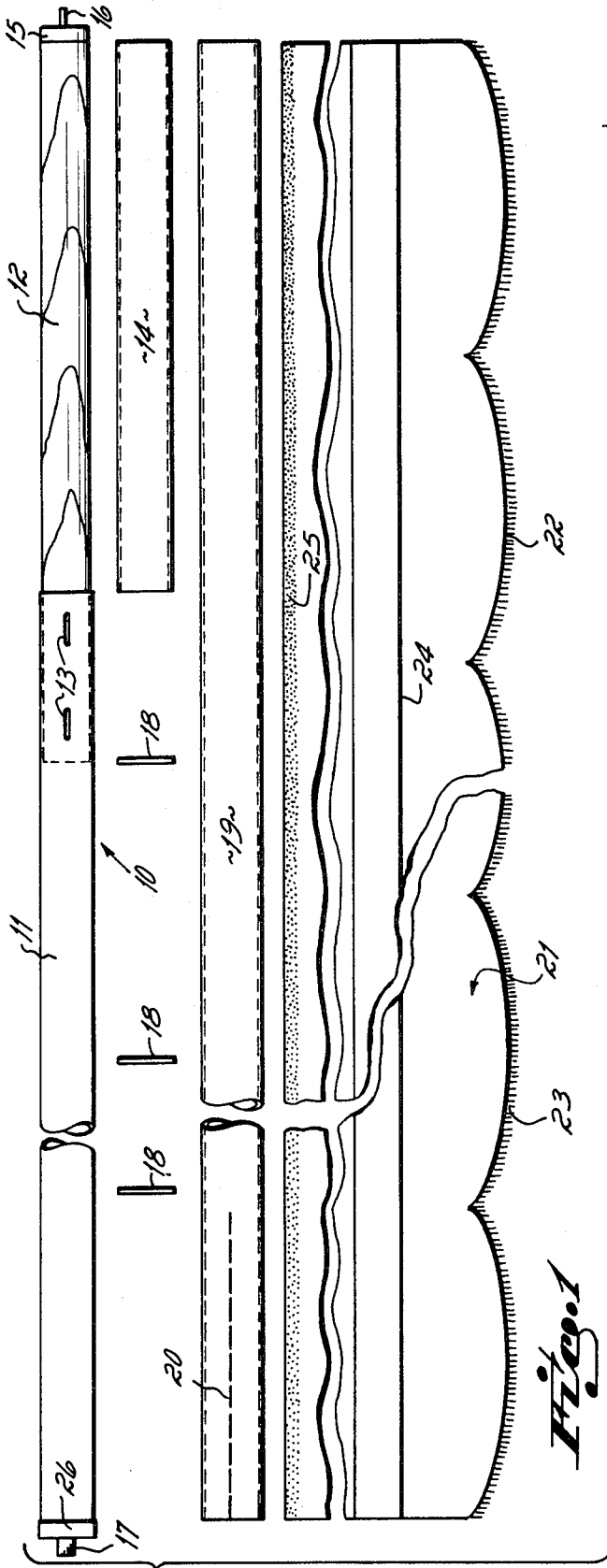
[54] **WINDOW SHADE**
6 Claims, 5 Drawing Figs.

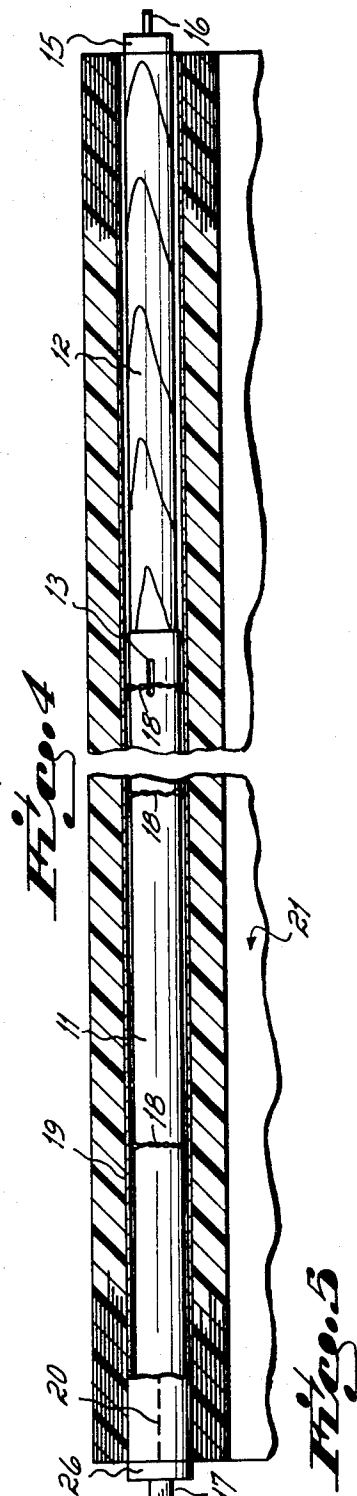
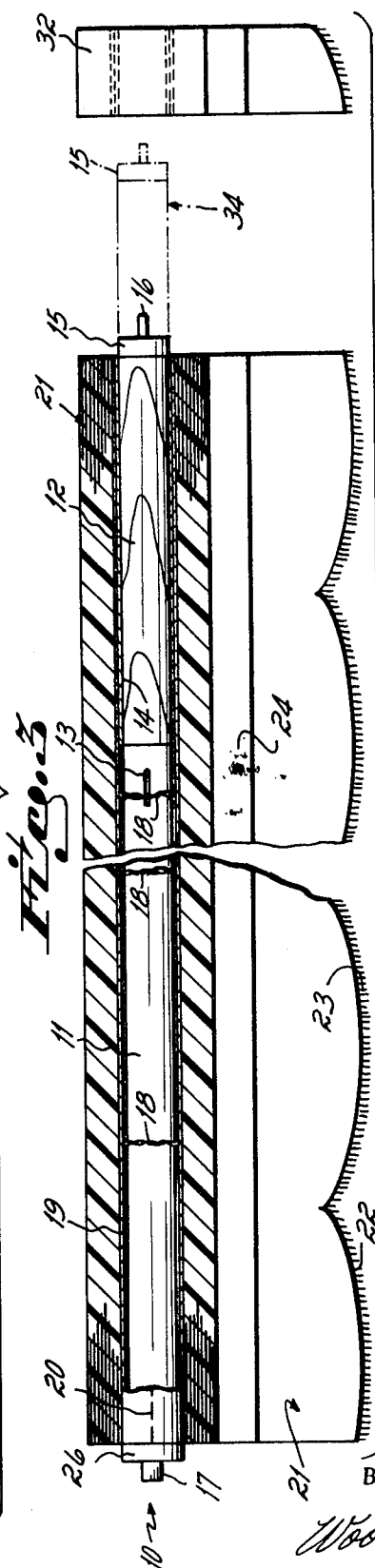
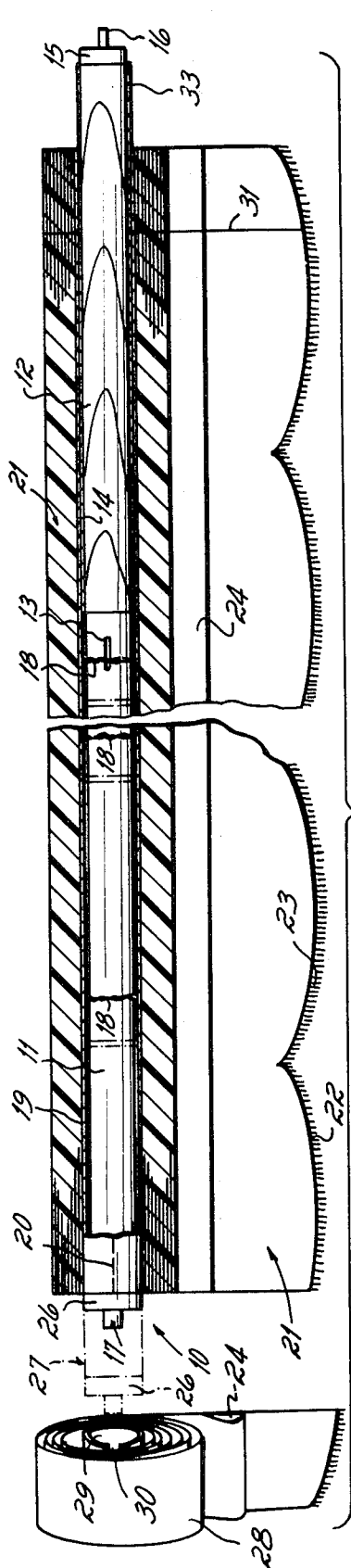
[52] U.S. Cl.....	160/263, 160/323
[51] Int. Cl.....	A47g 5/02, A47h 1/022
[50] Field of Search.....	160/250, 263, 323—326

[56]	References Cited	
	UNITED STATES PATENTS	
1,359,622	11/1920 Ross.....	160/263

ABSTRACT: A window shade having a transversely symmetrical design. By a "transversely symmetrical design" is meant a design that extends across the shade either in the form of a scalloped or otherwise configured lower edge, or in the form of an overall print so that the two edgewise areas of the design are the same. The disclosure is concerned primarily with a window shade roller of the type set forth that is adapted to be shortened quickly and easily by first cutting and removing equal widths of shade material from both ends of the roller, in order to preserve the symmetry of design, and second, telescoping the roller to bring the respective ends of the roller into proper relationship with the newly cut edges of the shade.







INVENTORS
 Robert C. Gossling
 BY George Armstrong
 Wood, Heron & Evans
 ATTORNEYS

WINDOW SHADE

This invention relates to rollup window shades of the general type disclosed in U.S. Pat. Nos. 3,203,468 and 3,299,944. These shades have rollers that are made in two sections, one of which may be telescoped into the other. The objective is to minimize the work involved in reducing the width of a shade to fit a window of a particular size. As disclosed, the rolled up shade material at one end of the roller may be cut through to the roller and then slid off the end of the roller leaving a projecting end of one of the telescoping sections. Thereafter, the roller itself is shortened by pushing the projecting roller section back into the other section. The point is that, as a practical matter, one edgewise area only of the shade material may be so removed.

The present invention is addressed primarily to the problem posed by a window shade having a transversely symmetrical design wherein the removal of one edgewise area only of the shade material would in most instances destroy the symmetry of design. More specifically, the invention is directed to a shade construction that may be reduced in size quickly and easily by removing equal widths of shade material from both edgewise areas of the shade, thereby preserving symmetry of design, with provision being made to telescope both sections of the roller back into the shade.

Although the shade construction of this invention is best suited for operations wherein shade material is cut and removed from both ends of a roller, as will be seen, it has equal utility wherein it is desired to remove shade material from one end of the roller only, and at either end with equal facility.

In the drawings:

FIG. 1 is an exploded view illustrating the components of a preferred shade construction incorporating the principals of the present invention;

FIG. 2 is a longitudinal cross-sectional view of an assembled shade;

FIG. 3 is a view similar to FIG. 2 showing shade material removed from one end of the shade;

FIG. 4 is a view similar to FIG. 2 showing shade material removed from the opposite end of the shade; and

FIG. 5 is a view similar to FIG. 2 showing a modified form of the invention.

For the purposes of this disclosure the phrase "window shade" includes the entire assembly of shade roller, the components associated with it, and the sheet of window shade material that is attached to the roller. The window shade of this invention has many of the advantages from a commercial point of view that are set forth in U.S. Pat. No. 3,203,468, the disclosure of which is incorporated herein by reference.

The components of the preferred embodiment of the present invention are illustrated in FIG. 1. At the top of this figure there is shown a shade roller 10 that is made in two telescoping sections. One of these, a tubular first roller section, is designated 11, and the other, a second roller section, is designated 12. The tubular first roller section 11 preferably is made of sheet metal and it includes the usual spring motor, not shown. The second roller section 12 may comprise a wooden dowel that fits snugly into the open end of the tubular first roller section 11. Two elongated dimples 13-13 are formed in the wall of the tubular first roller section 11, these dimples are friction elements, biting into the wood dowel comprising second roller section 12. Obviously, other materials may be used for the second roller section. In addition, if desired, the second roller section 12 may have the spring motor mounted within it.

A first tube 14 of readily cuttable material such as paper or plastic is provided that is adapted to slide over the second roller section and it is of a length to abut the one end of the first roller section 11 and extend to the adjacent end cap 15 for the roller. This end of the roller also carries a conventional gudgeon pin 16 whereas the opposite end of the roller has the usual flat spear 17 by which the assembly may be mounted in conventional window shade brackets. The elements described

to this point are identical to their counterparts in U.S. Pat. No. 3,203,468.

With first tube 14 in place on the second roller section 12, the subassembly thus formed is of the same diameter throughout its length, excepting the end caps of the roller. In the instance shown, three rubber bands 18 are provided. There rubber bands are engaged around the first roller section 11 in spaced relation along its length. The rubber bands are of a diameter such that they tend to grip the outer surface of the first roller section when in place upon it. There is also provided a second tube 19 of readily cuttable material such as paper, light cardboard, plastic or the like. One end of second tube 19 is serrated longitudinally as shown at 20 for reasons to be explained later. In assembling the components described to this point, the first tube 14 is slipped over the exposed end of second roller section 12, the rubber bands 18 placed on first roller section 11, and second tube 19 slid into place such that it surrounds and is coextensive with first roller section 11 and first tube 14. In this assembly the rubber bands 18 are interposed between the inner surface of second tube 19 and the outer surface of first roller section 11. In making this assembly the second tube is slipped into place starting over end cap 15. When the second tube encounters the rubber bands 18 they are caused to roll along first roller section 11, the rubber bands being displaced longitudinally of the assembly by an amount equal to one-half of the distance of travel of second tube 19 as it is being moved into place on first roller section 11. Thus the rubber bands are placed initially with this shift in mind.

An important consideration of this invention is that the rubber bands provide a means of permitting relative longitudinal shifting movement between second tube 11 and the subassembly which it encloses while, for all practical purposes, preventing any relative rotational movement between second tube 19 and said subassembly.

A typical shade is shown fragmentarily only in FIG. 1 designated generally by the numeral 21. As shown, this shade has a transversely symmetrical design in the form of a scalloped lower edge 22. The lower edge 22, as shown, may have decorative fringe 23 on it. For a shade construction of this type the usual slat pocket, shown here at 24, is formed to extend across the shade a slight distance above the scalloped lower edge. The usual wooden slat (not shown) is carried within pocket 24.

The upper end of shade 21 has a line of adhesive 25 on it by means of which the shade may be attached to second tube 19. Thus, the only attachment of the shade to the roller assembly is on second tube 19.

In a typical shade cutting operation, the rolled up shade, with the wooden slat removed from pocket 24, is chucked in a horizontal position and rotated against a circular knife, the knife itself being movable such that it cuts down through the shade material. It makes little difference which end of the shade is cut first, although as shown in the drawings it is the left end. In this operation the knife passes down through the material of shade 21 and on through second tube 19 to the outer surface of first roller section 11. In most instances, an end cap 26 at the motor end of the window shade is employed that is slightly larger in diameter than first roller section 11, and in order to remove the free end of second tube 19 and the roll of shade material wound on it, a pointed instrument may be used to split the serrations 20 at this end of second tube 19 so that the freed end of the tube may be slipped from the end of the roller over end cap 26.

The first cutting operation leaves a projecting end of the first roller section 11 as shown by the dot-dash lines 27 in FIG. 3. Also shown in this figure is the rolled up, waste cut end 28 of shade material wound around the cut end 29 of second tube 19. The split in the cut end of second tube 19 permitted by serrations 20 is shown at 30.

The next cutting operation is at the opposite or right end of the window shade as shown in FIG. 3, the cut being made along the line 31. In this case, the cut is made down through

the shade material and through first tube 14. Thereafter, the rolled up waste shown at 32 may be slipped off the end of the roller over cap 15 which, in this instance, is equal in diameter to the second roller section 12 so that serrations of the type shown at 20 are not necessary in this end of second tube 19. Obviously, if a larger end cap is employed serrations 20 may be duplicated at this end of second tube 19 and in the first tube 14, if desired.

As shown in FIG. 3, the projecting end 27 of the roller is pushed into the freshly cut end of window shade material. In so doing, there is relative longitudinal movement between first roller section 11 and second tube 19, this movement being permitted by the rolling of the rubber bands 19 interposed between first roller section 11 and second tube 19. Such movement causes the opposite end of the roller to project as shown at 33 at the right of FIG. 3. Once the scrap end shown at 32 of the cut shade material is removed from the shade roller, the projecting end shown by the dot-dash lines 34 in FIG. 4 of second roller section 12 may be pushed back into the window shade to bring end cap 15 into its proper relation with the freshly cut edge of the shade. In this movement, the second roller section 12 telescopes within the first roller section 11.

This invention permits the removal of equal amounts of shade material from opposite ends of the window shade in order to preserve the overall symmetry of the design in the scalloped lower edge of the shade itself. The symmetry of other designs may be preserved in the same way. It will be apparent, however, that the shortening operation may be made by cutting material from one end, i.e. either end, only of the window shade, when preserving design symmetry is not required.

Although preferred, it is not necessary to utilize first tube 14 in the finished assembly and this type of shade construction is shown in FIG. 5. In this case, a cutting operation may proceed as described above wherein it is desired to preserve design symmetry. If one end only is to be cut, and it makes no difference which end, shortening of the roller itself is a result of telescoping the second roller section 12 into the first roller section 11; whereas the relative shifting movement, to bring the two end caps into their proper positions with respect to the rolled up shade, is a result of the rolling movement permitted by the rubber bands 18.

It will be apparent that means other than the rubber bands 18 may be employed so long as the means has the characteristic of permitting relative longitudinal shifting movement between first roller section 11 and second tube 19 while preventing relative rotational movement between these two parts.

We claim:

1. In a window shade and roller combination wherein the shade is of readily cuttable material and is characterized by having a transversely symmetrical design thereon, the improvement to permit shortening of the overall length of the combination while preserving the symmetry of the design which comprises;

- a first roller section, said first roller section being tubular;
- a second roller section, said second roller section having one end thereof telescopically seated within said first section and a substantial portion thereof projecting axially from said first section;
- a tube of readily cuttable material coextensive with and surrounding both of said roller sections;

adhesive means securing the upper end of said window shade to said tube; and

friction means interposed between said tube and said first roller section, said friction means characterized in permitting longitudinal telescoping movement but resisting relative rotative movement between said tube and said first roller section, whereby the cutting of said shade and said tube in a plane normal to the longitudinal axis of said roller at one end of said combination frees and end part of said shade and said tube to permit removal thereof and the similar cutting of an equal end part of said shade and said tube at the opposite end of said combination permits removal thereof, whereupon the first roller section may be telescoped into said tube and said second section may be telescoped into said first section.

2. The combination as set forth in claim 1 in which said friction means comprises at least one rubber band seated on and extending circumferentially around said first roller section.

3. The combination as set forth in claim 1 in which said tube is serrated longitudinally in the outer endwise portion thereof at said one end of said combination.

4. In a window shade and roller combination wherein the shade is of easily cuttable material and characterized by having a transversely symmetrical design, the improvement to permit shortening of the overall length of the combination while preserving the symmetry of the design which comprises;

- a first roller section, said first roller section being tubular;
- a second roller section, said second section having one end thereof telescopically seated within said first section and a substantial portion thereof projecting from said first section;

- a first tube of readily cuttable material having an outside diameter approximately equal to the outside diameter of said first section and an inside diameter of a size to permit free-sliding movement between the inside of said first tube and said first section;

- said first tube surrounding said projecting portion of said second section and having one end thereof abutting the end of said first section;

- a second tube of readily cuttable material coextensive with and surrounding said roller sections, including said first tube;

- adhesive means securing the upper end of said window shade to said second tube;

- friction means interposed between said second tube and said first roller section, said friction means characterized in permitting relative longitudinal telescoping movement but resisting relative rotative movement between said second tube and said first roller section; and

- whereby upon the cutting and removal of an end part of said shade and of said second tube at the one end of said roller the roller may be telescoped into said second tube and whereby the cutting of an equal end part of said shade and said second tube and said first tube at the opposite end of said roller, the second roller section may be telescoped into said first roller section.

5. The combination as set forth in claim 4 in which said friction means comprises at least one rubber band seated on and extending circumferentially around said first roller section.

6. The combination as set forth in claim 4 in which said second tube is serrated longitudinally in the outer endwise portion thereof at said one end of said roller.