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A. McL. NICOLSON

1,925,815

FLEXIBLE INCLOSURE CONSTRUCTION

Filed Aug. 4, 1931

FIG. 1

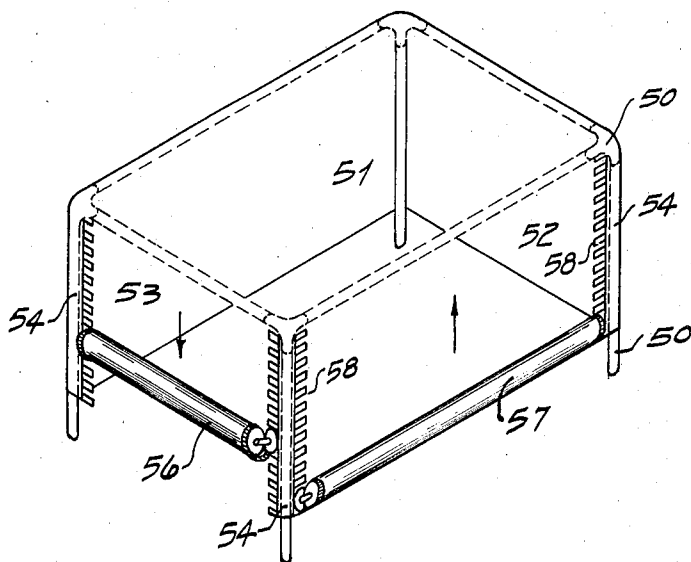


FIG. 2

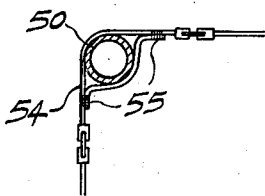


FIG. 3

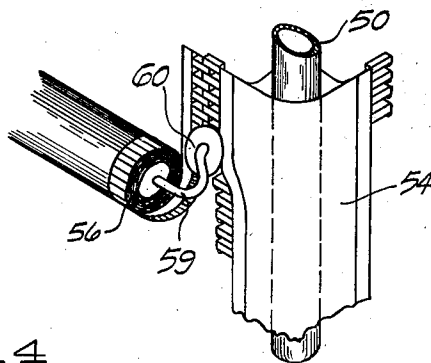
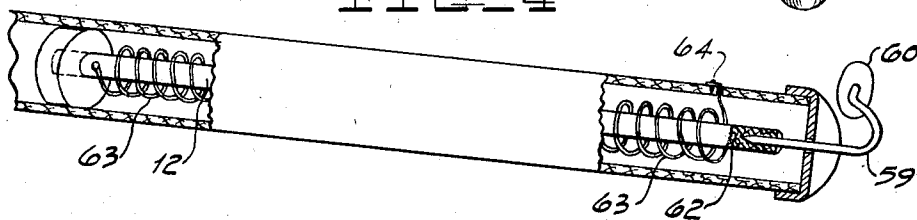


FIG. 4



INVENTOR
Alexander McLean Nicolson
BY *J. R. Goshaw*
ATTORNEY

UNITED STATES PATENT OFFICE

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FLEXIBLE INCLOSURE CONSTRUCTION

Alexander McLean Nicolson, New York, N. Y.,
assignor to Communication Patents, Inc.,
New York, N. Y., a corporation of Delaware

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6 Claims. (Cl. 135—1)

This invention relates to inclosure constructions, and particularly to such structures which may be quickly erected and dismantled.

The flexible fastener commonly known as the zipper type of fastener is well known in the art as disclosed by United States Patent No. 1,800,966, of April 14, 1931, and United States Patent No. 1,799,210, of April 7, 1931, these patents disclosing the fastener and the material used with them.

The present invention contemplates a structure employing such flexible fasteners, a feature of the invention being the manner in which the opening and closing of certain portions are accomplished. For instance, a shade type roller carries side wall or top material while the fastening and spreading members are carried at the ends of the roller. By the particular construction disclosed hereinafter, an inclosure such as a tent may be quickly erected and dismantled, while tops for vehicles or boats may be constructed with the shade type roller to form water tight enclosures which may be quickly opened and closed.

The novel features which I believe to be characteristic of my invention are set forth with particularity in the appended claims. The invention itself, however, will best be understood by reference to the following description taken in connection with the accompanying drawing, in which:

Fig. 1 is a perspective view of an enclosure embodying the roller zipper arrangement; and

Figs. 2, 3 and 4 are detailed views of certain parts of the structure of Fig. 1.

Referring to Fig. 1 an enclosure in accordance with the invention is illustrated such an inclosure being suitable for shelters, automobile tops, motor boat tops and vehicle enclosures in which the quick demountable feature is of importance. The structure consists of a frame 50 which may be of wood or metal of the tubular type as shown in Figs. 2 and 3. Over the top of this frame is stretched a roof section 51. The roof may also be constructed with a roller in the same manner as the side walls so that its removal may be quickly accomplished. The structure, of course, may be in any shape and may have a roof which is not flat but of a convex or peaked nature, and it may have more than four sides.

As shown in Fig. 1, the structure has side walls 52 and 53 attached to corner materials 54 by means of flexible fasteners or zippers 58. The corner material 54 may be flexible and

sewn together at 55 as shown in Fig. 2 to hold it in place with respect to the tubular posts of the frame 50. The inside strip may also be of metal with the outer flexible material riveted thereto, the rigidity of the metal holding the flexible material in shape. The zipper fasteners operate at each end of rollers 56 and 57 upon which the material of the side walls 52 and 53 is wound and unwound.

The particular method in which the zipper fastener is moved to spread or close the opening is shown in detail in Figs. 3 and 4 to which I now refer. The roller 56 has mounted at each end thereof a hook rod 59 which carries the fastening and spreading member 60. As the roller is pushed up or down, the side wall material is rolled thereon or unrolled therefrom in accordance with the direction of motion of the roller. Interiorly of the roller is a rod 62 surrounded by a spring 63, the spring being fastened to the rotatable part of the roller at 64. As the roller progresses downward unrolling the side wall, the tension in this spring is increased so that when the direction of motion is reversed it rolls the material up and maintains it in a tight roll. The friction of the spreaders is sufficient to hold the roller in any desired position although it is within the purview of this invention to use a ratchet arrangement common in window shades.

This type of roller fastener is adaptable to many uses wherein a large expanse of material is to be removed and put in place quickly such as in theater sets, shelters such as tents and the like. The rigidity of the roll lends a certain stiffness to the material and produces a comparatively solid side wall compared with one having no bracing member whatsoever. The chief advantage of the invention is the rapidity with which it may be opened and closed and the ease with which this may be accomplished.

Although I have shown certain embodiments of the principles of my invention, it is to be understood that there are other modifications which will occur to those skilled in the art and which are defined by the appended claims.

What is claimed is:

1. In a flexible inclosing structure, a roller member, a spring enclosed therein attached to said roller member, pieces of flexible material having interlockable edges adapted to be rolled on said roller member, and a flexible fastener element mounted on an end of said member adapted to unite one of said edges with a second

piece of material having a similar interlockable edge.

2. In a flexible fastening device, two pieces of flexible material, interlocking units attached to the edges of said pieces, a socket portion adapted to lock and unlock said interlocking units according to the direction of motion of said socket portion, a roller member substantially the length of one of said pieces and fastened thereto, and means internal of said roller for causing said pieces to wind on said roller when said socket portion separates said pieces.

3. In a flexible fastening device, two adjacent pieces of flexible material, interlocking units along the adjoining edges of said pieces, a socket portion adapted to lock and unlock said edges in accordance with the motion of said socket portion, a roller member fastened to one of said pieces, a spring located within said roller member, and means at an end of said roller for moving said socket portion along the interlocking units, said spring rolling said one piece of material on said roller member when the socket unlocks said pieces.

4. In a flexible inclosure, flexible material for covering a frame structure to form an enclosure, and means to roll up certain portions of said

material, said means including a roller carrying a flexible fastener element on at least one end of said roller for joining and separating one portion of said material to and from another in accordance with the direction of movement of said roller.

5. In a flexible inclosing structure, a cylindrical member adapted to rotate, flexible material of various sections adapted to be connected together, interlocking devices along the edges of said sections, a socket portion adapted to connect and disconnect said sections, said socket portion being mounted on the ends of said cylindrical member, and means internal of said cylindrical member for performing at least one of the functions of connecting and disconnecting said sections.

6. A flexible inclosing structure comprising flexible material for covering a frame on the top and sides thereof having interlocking edges adapted to be fastened and separated, a locking unit adapted to lock and separate said edges, and a roller member having mounted therein tensioning means connected to said locking unit, said tensioning means winding said material on said roller.

ALEXANDER McLEAN NICOLSON.

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