(No Model.)

D. LAUER.

SHADE ROLLER.

No. 516,018. Patented Mar. 6, 1894.

Fig. 1.

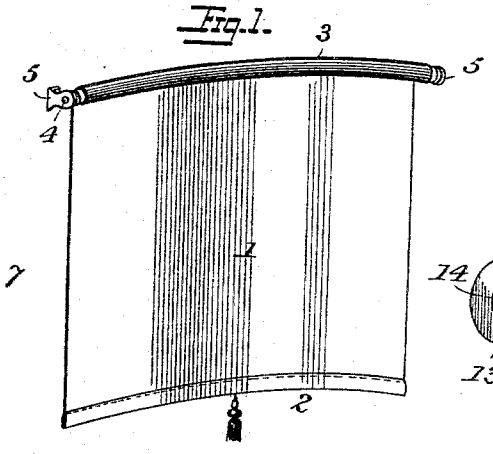


Fig. 7.

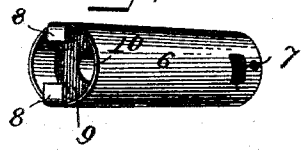


Fig. 8.

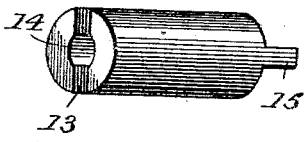


Fig. 2.

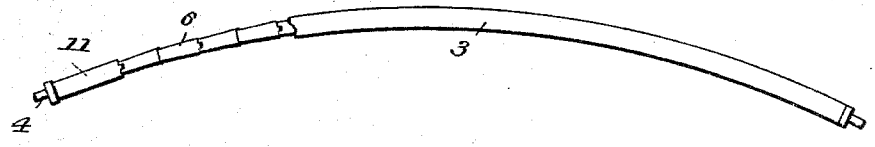


Fig. 3.

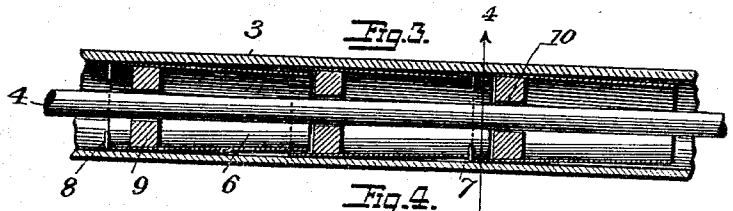


Fig. 4.

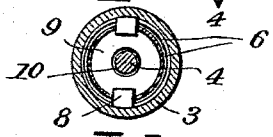


Fig. 5.

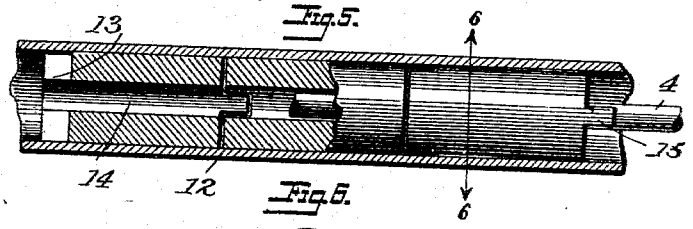
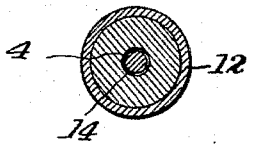


Fig. 6.



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UNITED STATES PATENT OFFICE.

DANIEL LAUER, OF YORK, PENNSYLVANIA.

SHADE-ROLLER.

SPECIFICATION forming part of Letters Patent No. 516,018, dated March 6, 1894.

Application filed September 9, 1893. Serial No. 485,152. (No model.)

To all whom it may concern:

Be it known that I, DANIEL LAUER, a citizen of the United States, residing at York, in the county of York and State of Pennsylvania, have invented certain new and useful Improvements in Shade-Rollers, of which the following is a specification.

My invention relates to shade rollers for curved or bow windows, and it consists more particularly in an articulated roller, adapted to rotate upon a rod which is suitably bent to conform to the curvature of the window, and has its ends fixed in brackets upon the window casing.

In the accompanying drawings, in which like reference signs refer to similar parts throughout the several views, Figure 1 is a perspective view of a shade mounted upon one of my improved rollers. Fig. 2 is a plan view of a roller having part of its covering removed to show the articulation of joints. Fig. 3 is a longitudinal section of a preferred form of roller. Fig. 4 is a section on the line 4—4 of Fig. 3. Fig. 5 is a longitudinal sectional view showing another form of jointed roller. Fig. 6 is a cross-section on the line 6—6 of Fig. 5, and Figs. 7 and 8 are perspective views of single sections of the rollers indicated in Figs. 3 and 4 respectively.

In shade rollers for curved or bow windows, as heretofore constructed, the rollers proper have consisted of a flexible tube of rubber or similar substance, mounted upon a fixed curved rod. A simple flexible tube, whether for a straight or curved roller, does not operate satisfactorily, for the reason that the power used to rotate the roller, usually a spiral spring, is located at one end, while it is customary to take hold of the shade at the middle, thus creating a torsional strain in the flexible roller and twisting it. This causes the shade to be wound up more rapidly at the spring end than at the middle, thus winding it crookedly upon the roller, and sometimes causing the edge of the shade to overlap the end of the roller.

My improved roller is made up of short rigid sections, which are connected or are articulated in such a manner that it does not yield to torsional strain, and hence all parts of the shade are wound or unwound evenly. In order to deaden any noise due to the action of the sections upon each other, and to provide a suitable surface material to which the shade may be attached, I inclose my sectional roller within an envelope or tube of soft fabric, such as felt or other cloth. To this envelope the end of the shade is fastened by sewing, or otherwise.

Referring to the drawings, 1 indicates a shade having a curved stick or rod in its lower loop, 2, and a curved roller, 3, to which its upper end is attached. The curved roller is mounted upon a stationary rod, 4, which, in turn, is supported by brackets, 5, upon the window casing. The roller 3 is made up of a series of sections connected together by joints which are rigid against torsional strain, but which permit the roller to rotate upon a curved axis.

In Figs. 2, 3, 4 and 7, 6 represents the sections of the roller, which are formed of sheet metal, preferably tin. Each section of the roller is slightly tapered or reduced at one end, so as to fit into the larger end of the adjacent roller. The tongues 8 fit snugly within the openings 7, in the direction of the circumference of the roller, so as to prevent any lost motion in transmitting rotation from one part of the roller to the other, but the tongues are allowed considerable play in the openings 7 in the direction of the axis of the roller, so as to permit the sections to rotate upon a curved axis. Near the larger end of each section, 6, is a circular block or ring of wood, 9, having a central perforation, 10, through which the curved supporting rod, 4, passes. The section, 11, at one end of the roller, is made longer than the other sections, and is adapted to form a casing for the usual spiral spring which winds up the roller automatically when it is released from the dogs by a sudden pull upon the shade.

Upon the outer surface of the roller is an envelope or covering, 12, of flexible fabric, such as felt, cloth or rubber,—preferably one to which the shade may be attached by pins or stitches.

In the modification shown in Figs. 5, 6 and 8, the sections are cylindrical blocks of wood, 13, each having a central perforation, 14, tongues 15 at one end, and corresponding grooves 16 at the opposite end. The ends of the sections are preferably slightly rounded,

and the tongues of one section fit into the corresponding grooves of the adjacent section, the blocks being thus adapted to transmit rotary movement from one to the other without any lost motion when the sections are mounted upon a curved axis.

Broadly considered, my invention consists in a shade roller, composed of a series of rigid sections connected by suitable joints, and mounted upon a curved supporting rod. It will be evident that other forms of sections and joints may be substituted for those shown in the drawings without departing from the spirit of the invention, so far as its broader aspect is concerned.

Therefore, without limiting myself to the precise construction and arrangement of parts shown and described, what I claim, and desire to secure by Letters Patent, is—

1. In a shade roller the combination with a curved rigid supporting rod, of a series of short rigid roller sections mounted thereon and suitably articulated to admit of rotation upon a curved axis, substantially as described.

2. The combination with a curved rigid supporting rod, of a shade roller mounted upon the rod, consisting of a series of short rigid sections suitably articulated, and a covering or envelope of fabric surrounding the roller to which a shade may be attached, said fabric being attached to the roller sections, substantially as described.

3. In a sectional shade roller for curved windows, the combination with a curved supporting rod, of the roller composed of sections, each section consisting of a tubular sheet metal body having inwardly bent tongues at its larger end, slots at the opposite ends to receive the tongues of the adjacent section, and an interior bearing block, centrally perforated, substantially as described.

4. In a sectional shade roller for curved windows, the combination with a curved supporting rod, of the sheet metal tubular sections provided with bearing blocks and suitably jointed together and a covering of fabric to which a curtain may be attached, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

DANIEL LAUER.

Witnesses:

CHARLES F. LEASE,

JACOB E. WEAVER.