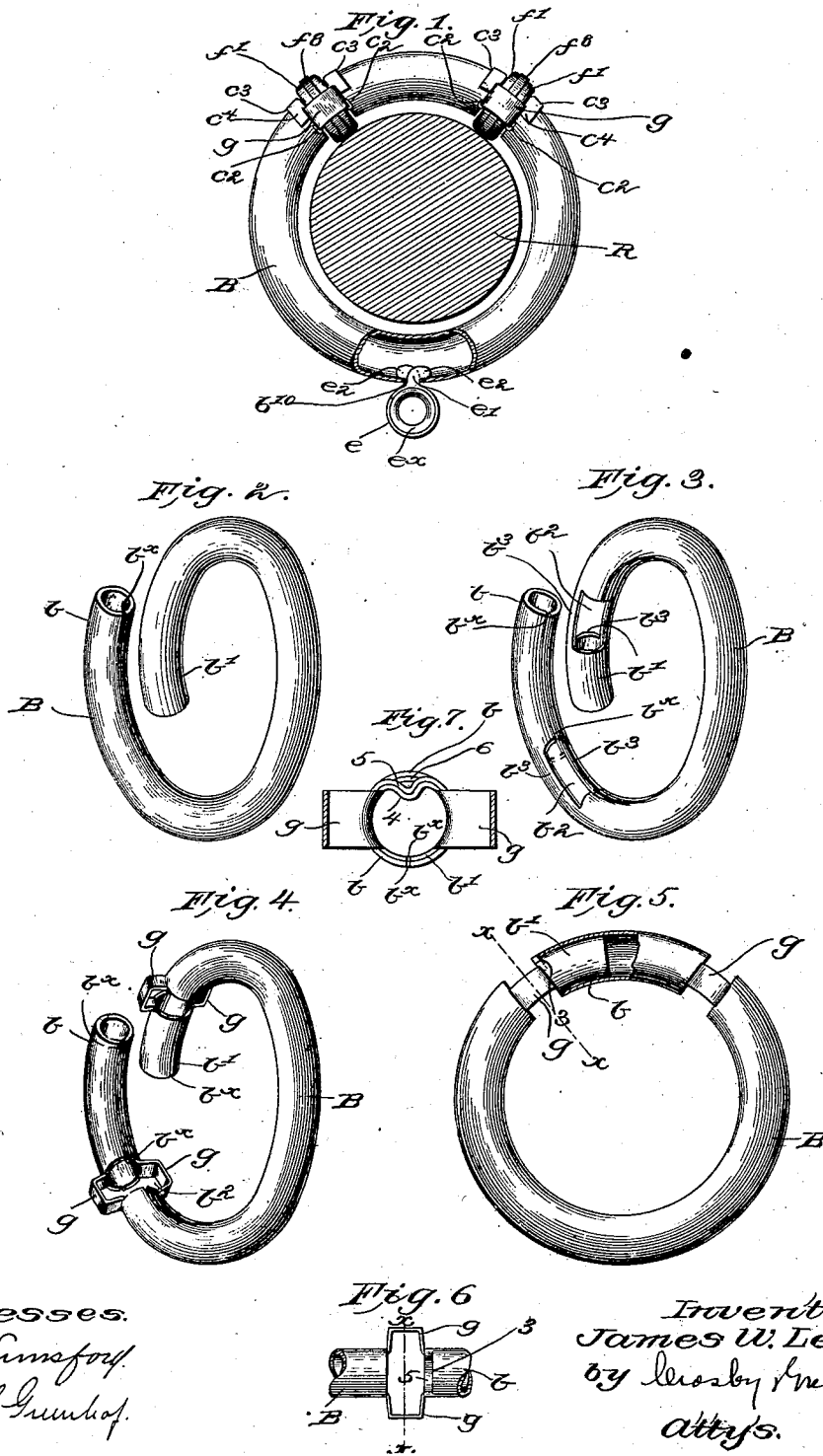


J. W. LESLIE.
CURTAIN RING.

APPLICATION FILED AUG. 27, 1900. RENEWED FEB. 5, 1903.

NO MODEL.

2 SHEETS—SHEET I.



Witnesses.
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NO MODEL.

2 SHEETS—SHEET 2.

Fig. 8.

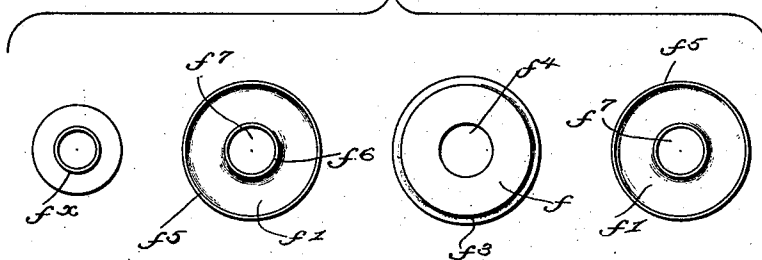


Fig. 9.

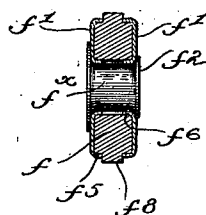


Fig. 12.

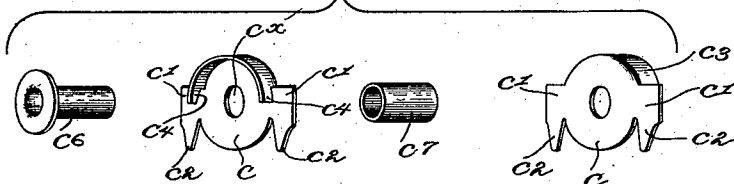


Fig. 13.

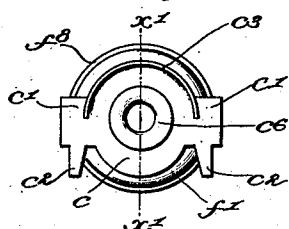


Fig. 14.

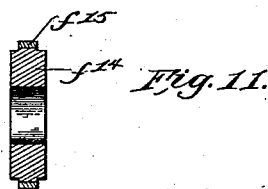
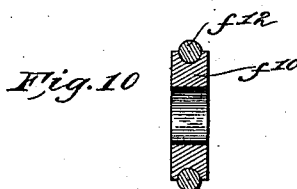
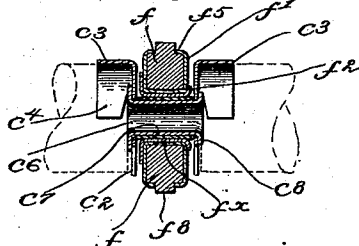


Fig. 16.

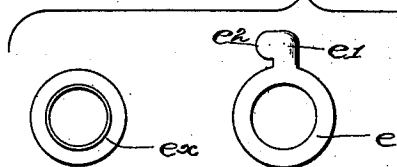
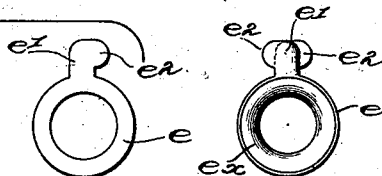


Fig. 15.



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UNITED STATES PATENT OFFICE.

JAMES W. LESLIE, OF WAKEFIELD, MASSACHUSETTS, ASSIGNOR TO
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A PARTNERSHIP.

CURTAIN-RING.

SPECIFICATION forming part of Letters Patent No. 722,370, dated March 10, 1903.

Application filed August 27, 1900. Renewed February 5, 1903. Serial No. 142,094. (No model.)

To all whom it may concern:

Be it known that I, JAMES W. LESLIE, a citizen of the United States, residing at Wakefield, county of Middlesex, State of Massachusetts, have invented an Improvement in Curtain-Rings, of which the following description, in connection with the accompanying drawings, is a specification, like characters on the drawings representing like parts.

This invention has for its object the production of a novel, durable, and efficient curtain-ring for use in hanging portières, curtains, and the like, the construction embodying my invention making the movement of the ring equally free in either direction of travel.

I have devised not only a simple, novel, and strong construction for the ring *per se*, combining lightness and durability, but I have also provided a novel form of traveler-roll, a roll-carrier, and a swivel-eye, the latter being used between the ring and the top of the curtain to prevent twisting of the ring on the pole by movements of the curtain. By means of guards, to be described hereinafter, I absolutely prevent the engagement of the traveler-rolls of one ring with those of the next ring or any part thereof, such engagement acting to brake the rolls, so that they scrape instead of roll upon the pole.

Various novel features of my invention will be hereinafter described, and particularly pointed out in the following claims.

I have herein shown the ring as consisting of a tubular body, preferably made of thin brass tubing of the requisite diameter, although any other suitable metal may be employed.

Figure 1 is a view in elevation of a curtain-ring embodying my invention supported on a pole in section, the ring being broken away to show the attachment for the swivel-eye. Fig. 2 is a perspective view of a tubular blank from which the ring is made. Fig. 3 is a similar view after the roll-receiving openings or slots have been made in the blank. Fig. 4 is also a perspective view showing the material of the blank forming the sides of the slots as bent outward laterally to form guards, the length of the blank having been decreased. Fig. 5 is an elevation of the ring after the ends

have been telescoped and locked, a portion of the body being shown in section. Fig. 6 is a top or plan view of one of the guards and the end lock. Fig. 7 is an enlarged cross-sectional view on the line $x x$, Fig. 6, to more clearly illustrate the locking device. Fig. 8 represents separated details, in side elevation, of the parts comprising compound roll to be described. Fig. 9 is a diametral section of the roll, the parts shown in Fig. 8 being assembled. Figs. 10 and 11 are similar views of modified forms of roll-bodies to be described. Fig. 12 represents the parts of the roll-carrier detached in perspective. Fig. 13 is an end elevation, enlarged, of the roll-carrier and roll. Fig. 14 is a sectional view thereof on the line $x' x'$, Fig. 13. Fig. 15 is a side elevation, enlarged, of the swivel-eye detached from the ring; and Fig. 16 represents the members constituting the swivel-eye separated from each other.

The curtain-ring herein to be described is of that type which is provided with rolls journaled in the ring transversely to its length to travel upon a curtain pole or rod R, Fig. 1, and prevent the scraping of the rings thereupon and also to reduce friction and facilitate ease of movement in manipulating a curtain or portière.

In constructing the ring in accordance with my invention I preferably wind thin brass tubing of the necessary diameter about a mandrel having substantially the diameter which it is desired the internal diameter of the completed ring shall be, and sections are cut from this spirally-wound tube to form blanks B, (shown in Fig. 2,) the length of the blank being greater than the length of the completed ring, the ends $b b'$ of the blank overlapping, as it were. The next step in the process is to slot the blanks or form longitudinal roll-receiving openings b^3 therein, (see Fig. 3,) the openings or slots being so located that when the ring is closed, as will be described, said openings will preferably be on opposite sides of the joint. The part of the body of the blank forming the sides b^3 is then spread laterally to form guards g , Fig. 4, the spreading and shaping of these portions to form the guards operating to

shorten the blank as a whole and also to form elongated openings transverse to the length of the blank, as will be clear from an inspection of Fig. 4. At such time the ends of the blank overlap to a much less degree than before, as may be seen by comparing Figs. 2 and 3 with Fig. 4, and the ends are then sprung apart sufficiently to permit the telescoping of one end into the other, as shown in Fig. 5, the end b' being therein shown as inserted in the end b . It should be stated that the tube from which the ring is made is not a seamless tube, but usually has a line of division along the inner circumference of the ring, as at b^x . (See Fig. 7.) The resiliency of the blank tends to keep the ends telescoped and the ring closed, as shown in Fig. 5; but to prevent any accidental opening of the ring and to positively lock the same after the ends have been telescoped I make a transverse saw-cut 3 through the two concentric walls adjacent one of the roll-openings and bend inward the metal of the two ends to form overlapping locking-lips 4 5, (see Fig. 7,) the lip 5 of the outer end b of the ring extending across the shoulder 6, formed by the saw-cut through inner end b' , so that it is impossible to accidentally separate the two telescoped ends to thereby open the ring unless sufficient force is exerted to break the locking device, and thereby smash the ring.

The rolls, by means of which the ring travels freely on the curtain-pole, I prefer to build up, and I have herein shown the roll (see Figs. 8 and 9) as comprising a circular or disk-like body f , provided with wear-plates f' , one of said wear-plates being applied to each side of the disk f and all held together by a headed tubular eyelet f^x , extended through the wear-plates and body and thereafter upset or headed, as at f^2 , Fig. 9. I prefer to make the body of the roll of wood or other non-metallic material, and I have herein shown the body as reduced in thickness on each side adjacent its periphery to leave an annular recess f^3 , the disk being also centrally apertured at f^4 , Fig. 8. The wear-plates f' are made as thin disks of brass or other suitable metal, having inturned annular flanges f^5 f^6 , the former entering the annular recess f^3 of the roll-body, while the latter enters the center aperture f^4 , as shown in Fig. 9, the flange f^6 surrounding the central opening f^7 of the wear-plate. When the wear-plates are in position on the body f , it will be seen by reference to Fig. 9 that the periphery of the body projects, as at f^8 , beyond the wear-plates to travel upon the curtain-pole or, in other words, to form the tread-surface of the roll. The tubular shank of the eyelet f^x passes snugly through the apertures of body and wear-plates and when headed up or upset, as shown in Fig. 9, securely holds all of the parts together, the shank of the eyelet also forming a smooth me-

tallic bushing for the axial supports, on which the roll rotates, as will be described.

In Fig. 10 I have shown a slight modification, the body f^{10} of the roll having an annular peripheral groove to receive a band of rubber f^{12} or other suitable non-metallic or non-abrading material, and in Fig. 11 the roll f^{14} is provided with a flat peripheral band or surface f^{15} , of suitable non-metallic material, such as felt, ground cork, &c.

Each roll is supported in a carrier of peculiar construction and adapted to be rigidly secured in place on the ring, the parts constituting the carrier being shown separately in Fig. 12, said parts comprising two like side plates c , substantially circular in shape and having oppositely-extended lateral wings c' , each wing having a depending prong c^2 , while the periphery of the plate between the tops of the two wings is bent to form an outwardly-turned segmental flange c^3 , the ends c^4 of the flange being reduced in width and extending somewhat below the tops of the wings. In assembling the carrier a rivet having a long tubular shank c^6 is passed through a central hole c^x in one of the side plates, and a distance-sleeve c^7 is slipped onto the projecting shank, after which the other side plate is applied to the shank and the latter is upset or headed, as at c^8 , Fig. 14. Preferably before the second side plate is applied the roll, constructed substantially as hereinbefore described, is slipped onto the sleeve, and when the parts are finally assembled the roll is held between the two side plates of the carrier and rotatably mounted upon the sleeve c^7 , as plainly shown in Fig. 14. The distance-sleeve c^7 preserves the side plates of the roll-carrier at the proper distance to prevent their binding or crimping the roll and interfering with its freedom of rotation, and when the carrier and roll have been assembled the segmental flanges c^3 extend oppositely at the outer sides of the side plates of the carrier, as shown. The diameter of the roll is such that it will enter easily the opening between the guards g of the ring, and when inserted in the carrier it is forced into position between the portions of the body of the ring forming the ends of the roll-openings, the segmental flanges c^3 overlapping the body of the ring on the outer circumference thereof, (see Fig. 1,) while the wings c' fit in between the guards, and the prongs c^2 are bent around the inner edges of the said guards to securely lock the carrier in place, the reduced ends c^4 of the segmental flanges passing down at the outside of the part of the body forming the guard g , so that each side plate of the carrier straddles the guard and is positioned by the segmental flange resting on the body of the ring, while the upturned prongs c^2 hold the carrier in place. The guards projecting, as they do, beyond the ring laterally in front and behind the rolls operate to prevent a roll on one ring from engaging a roll of the next ring or any

part of the next ring, such engagement frequently acting to cramp or brake the roll, so that instead of rotating they will scrape along the surface of the pole when the curtain is drawn. This has been particularly noticeable heretofore when drawing a curtain back, as at such time the rings are crowded up against each other, and the binding of the rings and the difficulty in drawing back a curtain is due to the cramping or braking of the rolls in previous types of roll-curtain rings.

The ring herein shown is provided with two rolls, which travel upon the upper portion of the pole, the rings being intersected by planes passing through the longitudinal center of the pole. When the roll-carriers are in position, the center of rotation of the rolls is substantially coincident with the cross-sectional center of the rings.

The construction of the carrier and also of the roll is very simple and cheap to turn out, as the metallic parts, such as the wear-plates of the roll and the side plates of the carrier, can be struck up or stamped out of sheet metal, and the tubular eyelets are of course readily accessible and cheap.

It is highly desirable to attach the curtain to the ring by means of a swivel-eye preferably to prevent twisting of the ring relative to the pole when the curtain is moved, and I have herein shown a novel and yet very efficient form of swivel-eye. (See Figs. 1, 15, and 16.) In accordance with the present embodiment of my invention the swivel-eye comprises two ring-like eyepieces *e*, each having a substantially T-shaped projection *e'*, adapted to be inserted in an opening *b*¹⁰ (see Fig. 1) in the ring opposite to the rolls and in the outer circumference of the ring. The head *e*² of the projection of one eye is turned in one direction, and when the other eye is positioned the head of its projection is turned in the opposite direction, as in Figs. 1 and 15, the body portions of the eyes *e* then being superposed, and a fastening-eyelet *e*^x is passed through the two eyes and upset to hold them securely together. As the opening *b*¹⁰ in the ring is only large enough to admit one of the projections *e'* singly, it will be manifest from an inspection of Fig. 1 that with the oppositely-extended heads *e*² the swivel-eye is securely held from removal, and yet it can rotate or swivel relatively to the ring. The construction is very cheap and efficient, and the parts can be assembled without skilled labor, so that the cost of the swivel is exceedingly small.

It will be noted that the ring-locking devices for the ends thereof and the roll-guards are all integral parts of the same structure, forming a one-piece ring, which while very light is yet exceeding strong, stiff, and durable.

My invention is not restricted to the precise construction and arrangement of parts herein shown and described, as I have shown

one practical embodiment of my invention without attempting to describe all the embodiments and changes which might be made therein by one skilled in the art without departing from the spirit and scope of my invention.

Having described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A curtain-ring consisting of a body tubular throughout its extent with its ends telescopically connected, and a locking-lip on the outer tubular end to engage and hold the inner end.

2. A curtain-ring consisting of a tubular body, with its ends telescopically connected, one end being provided with a transverse shoulder and a locking-lip on the other end bent inward to cross said transverse shoulder.

3. A curtain-ring consisting of a tubular body with its ends telescopically connected, each end being cut transversely and bent to form two cooperating locking-lips, the lip of the outer end engaging the edge of the transverse cut in the inner end.

4. A curtain-ring consisting of a tubular body with its ends telescopically connected, the inner end having a transverse shoulder in its tubular portion and the outer end having an intumed lip at its extremity integral therewith to cross the shoulder of the inner end.

5. A curtain-ring consisting of a one-piece tubular body having its ends telescopically connected, and integral guards extended laterally from the body.

6. A curtain-ring consisting of a one-piece tubular body having a plurality of slots there-through, the body forming the sides of the slots being bent outward to form guards.

7. A curtain-ring consisting of a one-piece tubular body having a plurality of slots there-through extended longitudinally of the body, the sides of the slots being bent outward laterally, to form guards and shorten the body.

8. A curtain-ring consisting of a tubular body having roll-receiving slots therethrough the sides of the slots being bent outwardly to form guards, and rolls rotatably mounted within the slots.

9. A curtain-ring consisting of a tubular body having roll-receiving openings therein, the sides of said openings being integral with and extended transversely from the body, roll-carriers secured to the body, and rolls rotatably mounted in the carriers within the openings of the body.

10. A curtain-ring consisting of a one-piece tubular body having roll-openings and lateral, integral guards forming the sides of the openings, and rolls rotatably mounted in said openings transversely to the length of the ring.

11. A roll-carrier for curtain-rings, comprising parallel plates each having an outturned segmental flange and holding-prongs, a con-

nection between the plates, and a roll rotatably mounted on the connection between the plates.

12. A roll-carrier for curtain-rings, comprising parallel circular plates each having oppositely-extended wings provided with holding-prongs, a segmental flange outwardly extended from the periphery of each plate between the wings, a connection between the plates, and a roll rotatably mounted on the connection.

13. A roll-carrier for curtain-rings, comprising two parallel plates having locking-prongs, a tubular connection for the plates, and a sleeve surrounding said connection and abutting at its ends against the inner faces of the plates, to maintain them separated a fixed distance.

14. A roll-carrier for curtain-rings, comprising two parallel plates, a tubular eyelet extended through the plates and externally headed at each end, and a distance-sleeve on said eyelet between the plates.

15. A tubular curtain-ring having openings therethrough and laterally-extended guards forming the sides of the openings, a roll-carrier in each opening, the roll-carrier comprising connected plates each having a segmental flange to overlap the adjacent body of the ring, and holding-prongs to engage the guards, and a roll rotatably mounted in each carrier.

16. A tubular curtain-ring having openings therethrough and laterally-extended guards forming the sides of the openings, a roll-carrier in each opening, the roll-carrier comprising connected plates abutting against the body forming the ends of the opening, each plate having a segmental flange to overlap the exterior circumference of the body, and holding-prongs to engage the guards, and a roll rotatably mounted on the connection between the plates.

17. A tubular curtain-ring having an aperture in its outer circumference, and an eye comprising two superimposed members hav-

ing oppositely-turned ears adapted to be inserted separately in the aperture, and means to secure the said members together and prevent withdrawal of the ears from the ring.

18. A hollow curtain-ring having an aperture in its outer circumference, and an eye comprising two ring-like members, each having an Γ -shaped projection adapted to be inserted in the aperture, and a tubular eyelet to hold the said members together with the ends of their projections oppositely extended inside of the ring.

19. An eye for curtain-rings, consisting of two ring-like members each having a substantially Γ -shaped projection, and a tubular eyelet to hold the said members together with the ends of their projections oppositely extended.

20. A tubular curtain-ring having an aperture in its outer circumference, and a swivel-eye comprising two superposed members having oppositely-turned ears adapted to be inserted separately in the aperture, and means to secure the said members together and prevent withdrawal of the ears from the ring.

21. A hollow curtain-ring having an aperture in its outer circumference, and a swivel-eye comprising two eyes each having an Γ -shaped projection adapted to be inserted in the aperture, and a tubular eyelet to hold the eyes together with the ends of their projections oppositely extended inside of the ring.

22. A swivel-eye for curtain-rings, consisting of two flat eyes each having a substantially Γ -shaped projection, and a tubular eyelet to hold the eyes together with the ends of their projections oppositely extended.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JAMES W. LESLIE.

Witnesses:

JOHN C. EDWARDS,
EDWARD F. ALLEN.