March 8, 1932. G. H. GILLIGAN 1,848,167

TWISTER RING AND TRAVELER

Filed Aug. 12, 1931

Fig. 1.

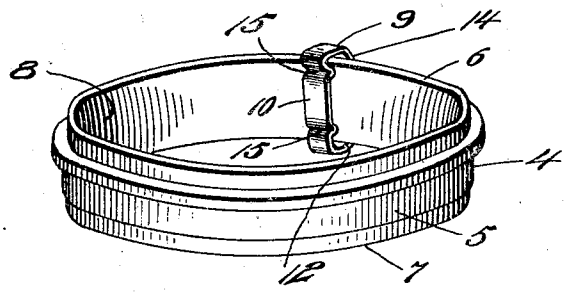


Fig. 2.

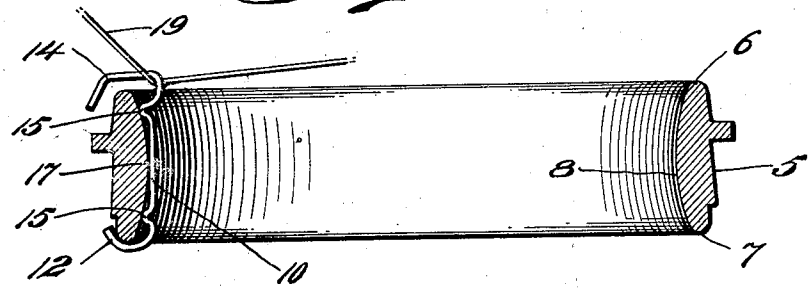
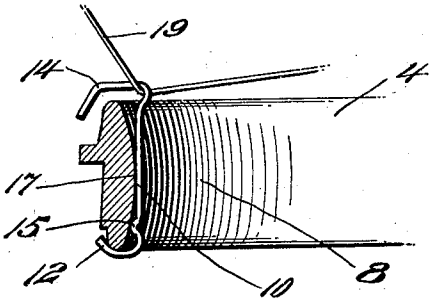


Fig. 3.



Inventor.
George H. Gilligan
By Horatio E. Bellows,
Attorney

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UNITED STATES PATENT OFFICE

GEORGE H. GILLIGAN, OF PROVIDENCE, RHODE ISLAND, ASSIGNOR TO U. S. RING TRAVELER COMPANY, OF PROVIDENCE, RHODE ISLAND, A CORPORATION OF RHODE ISLAND

TWISTER RING AND TRAVELER

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My invention relates to twister rings and cooperating travelers, both of the vertical type

The essential objects of my invention are to prevent excessive friction between the traveler and ring during the rotation of the former around the latter; to afford free delivery of the lubricant upon the ring face at all possible points of contact therewith by the traveler; to enable the maintenance of the traveler in an upright or floating position relatively to the ring; to prevent lateral tipping of the traveler whereby gripping or binding of the latter upon the ring is often induced; to afford a maximum of clearance for the filament engaged by the traveler; to maintain the traveler in a uniform horizontal plane throughout its rotation around the ring; and inexpensiveness of construction.

Other objects and advantages will be apparent to those familiar with the art and will be hereinafter adverted to.

My invention consists primarily in the means for accomplishing the above objects.

In the accompanying drawings which form a part of this specification,

Figure 1 is an isometric view of my ring and of my traveler mounted thereon,

Figure 2, an enlarged diametric section of the ring showing the traveler in side elevation thereon engaging a thread, and

Figure 3, a fragmentary section of the ring supporting a modified form of my traveler.

Similar characters of reference indicate like parts throughout the views.

As herein shown my twister ring 4 includes an upright annular body 5 having transversely rounded upper and lower bearing edges 6 and 7, and provided with a transversely arcuate convex annular inner face 8 extending continuously from one bearing edge to the other.

A ring traveler 9 of the vertical type is slidably mounted upon the ring. This traveler, formed from a flat oblong metallic strip, comprises a substantially straight vertical shank 10; an upwardly and outwardly directed arcuate horn or foot 12 upon its lower end, and an outwardly and downwardly directed horn 14 integral with the upper end of the shank.

At or adjacent the ends of the shank are interspaced horizontally disposed outwardly directed oblong bearing loops or projections 15 for impingement against the convex surface of the ring near the top and bottom of the latter, while the shank 10 at the apex 17 of the arc midway the loops 15 is adapted to contact with the center of the arc of the face 8.

In operation the thread 19 extending from the delivery rolls to the bobbin propels the traveler circularly upon the ring, with the foot 12 in more or less constant contact with the bearing edge 7. During this rotary travel the projections 15 of the traveler cooperate with the convex face 8 of the ring to insure a minimum degree of frictional contact between the parts, tends to maintain the traveler in an upright, floating, or nontilted position or in a uniform horizontal plane throughout its rotary course of travel; and insures ample clearance for the thread 19 to pass through the upper end of the traveler.

The convex form of the ring face 8 facilitates the delivery thereover of any lubricant, if for any reason lubrication of the foot 12 or the projections 15 should be deemed necessary.

A modified form of my invention is shown in Figure 3 wherein one of the projections 15 is omitted.

It will be understood that any changes of detail of construction, within the scope of the language of the claims, is permissible without departing from the spirit of the invention.

I claim:—

1. In a ring twisting device, a ring comprising a vertical annular body, the inner face of said body extending in a continuous and unobstructed convex arc from the top to the bottom of the body, and a traveler comprising a vertical shank within the ring, horns upon the shank extending outwardly beyond the top and bottom of the body, and an outwardly directed bearing member upon the shank engageable with the convex face of the body.

2. In a ring twisting device, a ring compris-

ing a vertical annular body, the inner face of said body extending in a continuous convex arc from the top to the bottom of the body, and a traveler comprising a vertical shank within the ring, horns upon the ends of the shank, and looped bearing members upon the shank engageable with the convex face of the body.

3. In a ring twisting device, a ring comprising a vertical annular body, the inner face of said body extending in a continuous convex arc from the top to the bottom of the body, and a traveler comprising a vertical shank within the ring, horns upon the ends of the shank, an intermediate portion of said shank being adapted to contact with the apex of the face, and a looped bearing member upon the shank spaced from said intermediate portion engageable with the face.

4. In a ring twisting device, a ring comprising a vertical annular body, the inner face of said body extending in a continuous convex arc from the top to the bottom of the body, and a traveler comprising a vertical shank adapted to contact intermediate its length with the convex face, horns upon the ends of the shank, and bearing members upon the shank between the horns and the contacting portion of the shank engageable with the convex face.

5. In a ring twisting device, a ring comprising a vertical annular body, the inner face of said body extending in a continuous convex arc from the top to the bottom of the body, and a traveler comprising a vertical shank, horns upon the ends of the shank, and horizontally disposed bearing members projecting from the shank engageable with the convex face.

6. In a ring twisting device, a ring comprising a vertical annular body provided with a convex face, and a traveler comprising a vertical shank within the ring, horns upon the ends of the shank, and an outwardly directed bearing member upon the shank engageable with the convex face of the body.

In testimony whereof I have affixed my signature.

GEORGE H. GILLIGAN.