Feb. 28, 1933. T. K. POWRIE 1,899,635

MEANS FOR LUBRICATING RINGS AND TRAVELERS IN DOUBLING AND LIKE FRAMES

Filed April 22, 1931

FIG. 1.

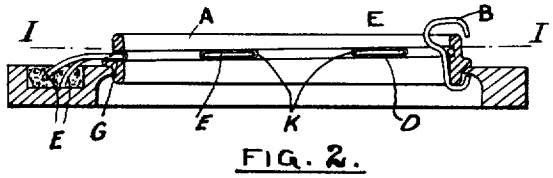


FIG. 3.

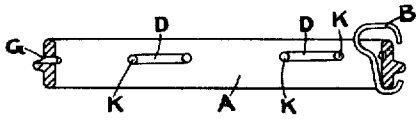


FIG. 2.

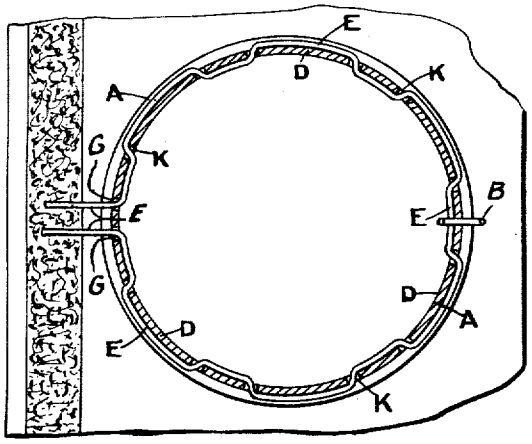


FIG. 4.

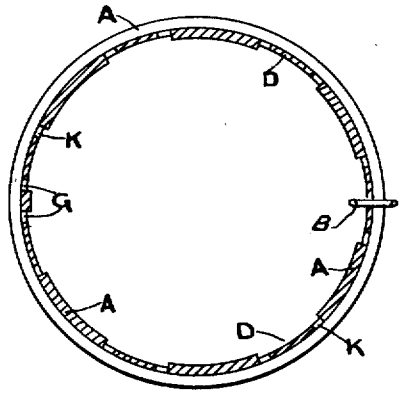


FIG. 5.

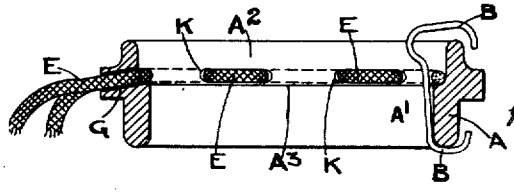


FIG. 6.

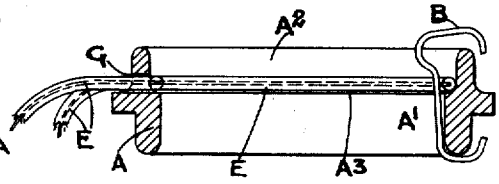
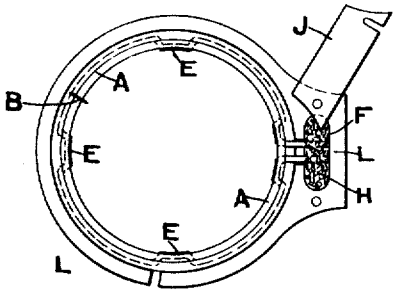
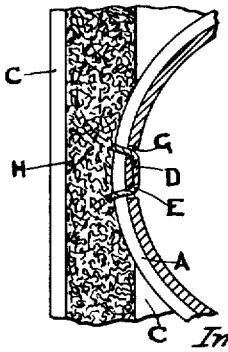


FIG. 7.

FIG. 8.





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UNITED STATES PATENT OFFICE

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MEANS FOR LUBRICATING RINGS AND TRAVELERS IN DOUBLING AND LIKE FRAMES

Application filed April 22, 1931. Serial No. 532,038.

The invention relates to lubricating devices for lubricating rings and travelers of spinning, doubling and like frames, and consists of improvements or modifications of the invention set forth in the specification of Patent No. 1,781,828 of 1930, wherein is described and shown an annular groove disposed in an inclined or horizontal plane in the interior of said rings, said groove being provided with an absorbent wick the two ends of which communicate through a bore in the side of the ring with an oil pad extending along the ring plate or rail.

The present invention has for its object to secure the wick within the interior surface of said rings described and shown in the patent specification before mentioned, by a method of lacing or threading said wick either in and out around the ring or a portion thereof, whereby the retarded system of lubrication described in said patent specification may be applied to spinning rings, or, to rings known as small section doubling rings where, because of their shape or size, an annular groove of the usual depth cannot be cut therein, and the use of a smaller or less stable wick is essential. Also, the wick may be secured on the inside of the ring without lacing or where the annular groove previously formed therein, is dispensed with.

The lacing or threading of the wick in the ring may be in an inclined or a horizontal plane. The holes bored in the side of the ring for this purpose may communicate with a similarly arranged internal groove or grooves therein. Where the groove or grooves is or are dispensed with, the interior surface of the ring comprises two diameters and the wick is adapted to rest upon the shoulder formed thereby. Otherwise, the two ends of the wick communicate through a bore or bores in the side of the ring with the absorbent pad on the ring plate in the manner described in the former patent specification aforesaid. Also, for some classes of spinning, the oil pad supplying the wick with lubricant, in place of being housed in the ring plate, may be housed in the ring holder.

I attain these objects by the means illustrated in the accompanying drawing, in which:—

Figs. 1 and 2 are sectional elevation and plan respectively of a small section doubling ring with the improvements applied.

Figs. 3 and 4 are similar views of a modification of Figs. 1 and 2, showing the annular groove on the inside of the ring dispensed with and a number of short length aligned grooves substituted therefor.

Fig. 5 is a sectional elevation of a modification of Figs. 1 and 2 showing a ring provided with a shoulder on its interior surface and the wick laced in the ring in engagement with said shoulder.

Fig. 6 is a sectional elevation of a modification of Fig. 5, showing a lubricating wick provided with a metal spring wire core or strand adapted to rest in engagement with an internal shoulder on the ring.

Fig. 7 is a plan view wherein the ring is mounted in a ring holder in the ring plate, showing the wick laced or threaded in said ring, communicating with an oil pad housed in the ring holder.

Fig. 8 is a modification of Figs. 3 and 4, showing a single form of lacing of the wick in the ring.

Referring to Figs. 1 and 2 of the drawing:—A is the ring, B the traveler, D is the annular groove disposed in an inclined or horizontal plane in the interior surface of the ring. E is a wick and G are holes in the side of the ring whereby the two ends of said wick are afforded communication with the oil pad on the ring plate. In rings where the thickness of metal will not permit of a groove being cut therein of the desired depth, a shallow groove D may be cut disposed in the manner before described, and holes communicating therewith are bored in the side of said ring a suitable distance apart. Where a comparatively small or less stable wick must necessarily be used for lubricating the ring and traveler, the wick E may be correctly positioned for this purpose by threading the same in and out of corresponding holes K around the ring, with the two ends finally communicating with the oil pad on the ring plate. The traveler B in its ro-

tations engages the sections of the wick projecting inside the ring, and in so doing picks up sufficient lubricant to efficiently lubricate the ring.

Referring to Figs. 3 and 4 of the drawing:—the annular groove is dispensed with and a number of comparatively short grooves D provided, with holes K at each end thereof, otherwise, the securing of the wick in the ring and the functioning thereof is the same as before described with reference to Figs. 1 and 2.

In Fig. 5, the bore of the ring A comprises two diameters A^1, A^2, and a shoulder A^3 formed thereby, curved to correspond to the bore, is adapted to serve as an additional support to the laced wick the holes for which are bored level therewith in the side of the ring; or, where the holes K and grooves D are dispensed with (see Fig. 6), said shoulder may be adapted to wholly support the wick in the ring, which may for this purpose be stiffened by having a metal or spring wire core or strand therein.

When spinning fine counts of yarn it may be necessary for efficient lubrication, that each ring be self contained or adapted to receive its lubricant from a separate pad. In this instance (see Fig. 7) the laced wick E is afforded communication with an oil pad H housed in a receptacle F incorporated in a ring holder L let into the ring plate. The said pad is preferably prevented from being fouled by extraneous matter by means of a cover J pivoting on said holder.

In Fig. 8 where a single form of lacing the wick is shown, the wick is passed through the bores G with the two ends in communication with the oil pad H in or on the ring plate C or the like. When that part of said wick adapted to engage and lubricate the traveler becomes more or less inefficient by foreign matter adhering thereto, a fresh part of said wick may be moved into position to engage said traveler, by pulling one of the ends of the wick.

It will be noted that in each of the several modifications disclosed, the wick is supported by a substantially horizontally disposed wick supporting surface formed on the ring, adjacent the vertically disposed bearing surface for the traveler. In the forms shown in Figures 1, 2, 3, 4 and 8, this substantially horizontal surface comprises the lower surface of the groove D. In the modifications shown in Figures 5, 6 and 7, the substantially horizontal surface comprises the shoulder between the larger and smaller diameters of the ring. Thus, the wick is supported by the combined action of the horizontal surface and the substantially radial openings through which the wick is threaded.

What I claim as my invention, and desire to secure by Letters Patent, is:—

1. In a device for lubricating rings and travelers, the combination of a ring plate having an annular opening, a ring in said opening and having a multiplicity of grooves disposed in annular alignment formed in its inner wall, openings at each end of each of said grooves, a lubricant saturated pad carried by said plate, an absorbent wick threaded through said openings and into engagement with said pad, and a traveler adapted to contact with said absorbent wick.

2. In a device for lubricating rings and travelers, the combination of a ring plate having an annular opening, a holder in said opening, a ring in said holder and having a multiplicity of grooves disposed in annular alignment formed in its inner wall, openings at each end of each of said grooves, a lubricant saturated pad carried by said holder, an absorbent wick threaded through said openings and into engagement with said pad, and a traveler adapted to contact with said absorbent wick.

3. In a device for lubricating rings and travelers, the combination of a ring plate having an annular opening, a ring in said opening whose inner wall is of two diameters and having a curved shoulder, a lubricant saturated pad carried by said plate, an absorbent wick in engagement with the larger diameter of said wall, supported by the said shoulder, and threaded through said larger diameter and into engagement with said pad, and a traveler adapted to contact with said absorbent wick.

4. In a device for lubricating rings and travelers, the combination of a ring plate having an annular opening, a ring in said opening and having a plurality of segmental grooves disposed in annular alignment formed in its inner wall, openings at each end of said grooves, a lubricant saturated pad carried by said plate, an absorbent wick threaded through said openings and into engagement with said pad, and a traveler adapted to contact with said absorbent wick.

5. In a device for lubricating rings and travelers, the combination of a ring plate having an annular opening, a ring in said opening whose inner wall is of two diameters, and having a curved shoulder, a lubricant saturated pad carried by said plate, an absorbent wick in engagement with the larger diameter of said wall supported by said shoulder and threaded through said larger diameter into engagement with said pad, and a traveler adapted to contact with said absorbent wick.

6. In a device for lubricating rings and travelers, the combination of a ring plate having an annular opening, a lubricant saturated pad carried by said plate, a ring in said opening, a traveler on said ring, and a wick for conducting lubricant from said pad to the bearing surface of said ring, said ring comprising a vertically disposed bear-

ing surface for said traveler, a substantially horizontally disposed wick supporting surface merging with said vertically disposed bearing surface, and a plurality of spaced openings extending through the body of said ring and aligned with said wick supporting surface, said wick being threaded through said openings and having a portion of its length lying upon and supported by said horizontally disposed wick supporting surface in position to be contacted by the traveler flying on said vertically disposed bearing surface, said wick having another portion of its length disposed exteriorly of said ring in contact with the outer surface thereof and positioned to facilitate maintaining said first mentioned portion of said wick in contact with said horizontal wick supporting surface, the ends of said wick being in communication with said lubricant saturated pad.

7. In a device for lubricating rings and travelers, the combination of a ring plate having an annular opening, a lubricant saturated pad carried by said plate, a ring in said opening, a traveler on said ring, and a wick for conducting lubricant from said pad to the bearing surface of said ring, said ring comprising a vertically disposed bearing surface for said traveler, a substantially horizontally disposed wick supporting surface merging with said vertically disposed bearing surface, and a plurality of spaced openings extending through the body of said ring and aligned with said wick supporting surface, said wick being threaded through said openings and having spaced alternate portions of its length lying upon and supported by said horizontally disposed wick supporting surface in position to be contacted by the traveler flying on said vertically disposed bearing surface, said wick having other alternate portions of its length disposed exteriorly of said ring in contact with the outer surface thereof, said exteriorly disposed alternate portions serving to maintain said first mentioned portions in contact with said horizontal surface, the ends of said wick being in communication with said lubricant saturated pad.

In testimony whereof I affix my signature.

THOMAS KILPATRICK POWRIE.

DISCLAIMER

1,899,635.—*Thomas Kilpatrick Powrie*, Paisley, Scotland. MEANS FOR LUBRICATING RINGS AND TRAVELERS IN DOUBLING AND LIKE FRAMES. Patent dated February 28, 1933. Disclaimer filed October 5, 1937, by the patentee; the assignee, *Eadie Brothers & Company Limited;* and the exclusive licensee, *Whitinsville Spinning Ring Company.*

Hereby enters this disclaimer of claims 1, 2, and 4 in said specification.

[*Official Gazette November 2, 1937.*]

ing surface for said traveler, a substantially horizontally disposed wick supporting surface merging with said vertically disposed bearing surface, and a plurality of spaced openings extending through the body of said ring and aligned with said wick supporting surface, said wick being threaded through said openings and having a portion of its length lying upon and supported by said horizontally disposed wick supporting surface in position to be contacted by the traveler flying on said vertically disposed bearing surface, said wick having another portion of its length disposed exteriorly of said ring in contact with the outer surface thereof and positioned to facilitate maintaining said first mentioned portion of said wick in contact with said horizontal wick supporting surface, the ends of said wick being in communication with said lubricant saturated pad.

7. In a device for lubricating rings and travelers, the combination of a ring plate having an annular opening, a lubricant saturated pad carried by said plate, a ring in said opening, a traveler on said ring, and a wick for conducting lubricant from said pad to the bearing surface of said ring, said ring comprising a vertically disposed bearing surface for said traveler, a substantially horizontally disposed wick supporting surface merging with said vertically disposed bearing surface, and a plurality of spaced openings extending through the body of said ring and aligned with said wick supporting surface, said wick being threaded through said openings and having spaced alternate portions of its length lying upon and supported by said horizontally disposed wick supporting surface in position to be contacted by the traveler flying on said vertically disposed bearing surface, said wick having other alternate portions of its length disposed exteriorly of said ring in contact with the outer surface thereof, said exteriorly disposed alternate portions serving to maintain said first mentioned portions in contact with said horizontal surface, the ends of said wick being in communication with said lubricant saturated pad.

In testimony whereof I affix my signature.

THOMAS KILPATRICK POWRIE.

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