June 25, 1940. R. ZIEGLER 2,205,916

SPINNING RING FOR SPINNING MACHINES

Filed Feb. 4, 1939

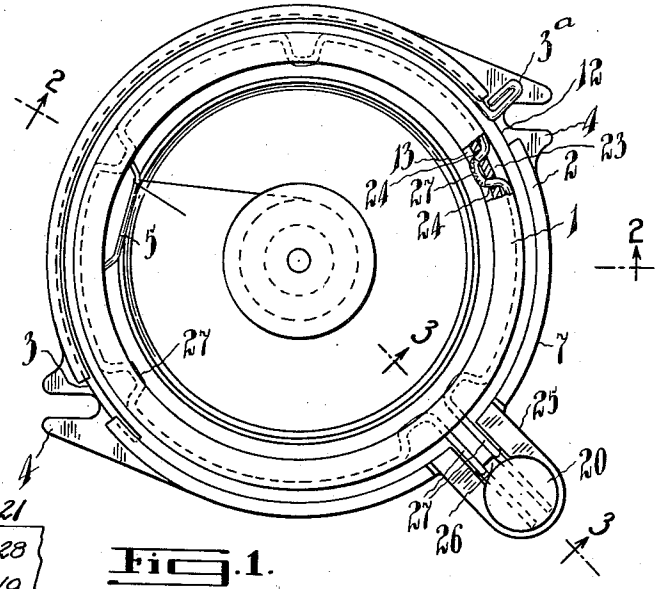


Fig. 1.

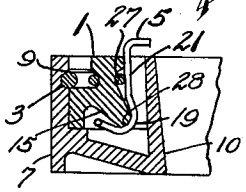


Fig. 5.

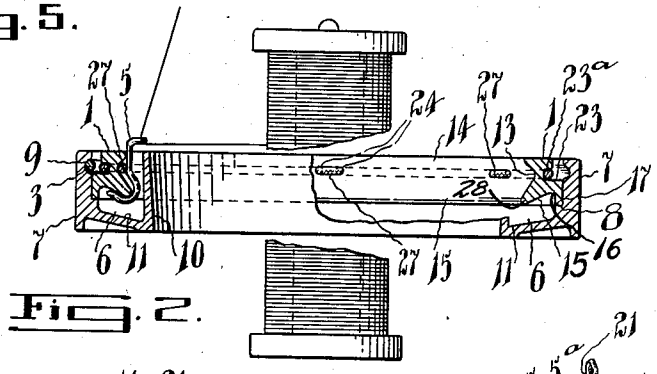


Fig. 2.

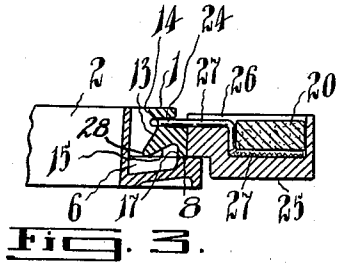


Fig. 3.



Fig. 4.

Inventor

R. Ziegler

By J. Edw. Maybee

Atty.

Patented June 25, 1940 2,205,916

UNITED STATES PATENT OFFICE

2,205,916

SPINNING RING FOR SPINNING MACHINES

Roy Ziegler, Galt, Ontario, Canada

Application February 4, 1939, Serial No. 254,555

6 Claims. (Cl. 57—120)

This invention relates to spinning rings which are particularly adapted for use with bar travelers.

The object of this invention is to provide a spinning ring for spinning machines which will allow the spinning machine to be run at a very high speed without the traveler throwing outwardly due to the effect of the centrifugal force, and a further object of this invention is to provide the spinning ring with proper lubrication so that the traveler will be free to rotate with the least possible friction, and to only supply lubricant to points around the spinning ring where lubrication is necessary.

The objects are attained by means of the construction which may be briefly described as follows. Carried within a holder, which is part of the spinning ring, is a traveler ring. This ring has upper and lower bearing surfaces on its inner side which are formed by cutting a groove mid-way of its upper and lower surfaces on the inner side of the ring and by grooving the under side of the ring. For the purpose of lubricating the traveler, there is provided an oil cup integral with the traveler ring, and to conduct the oil from the oil well to the inner side of the traveler ring, I provide a wicking coated with an oil-proof covering which is threaded through holes in the traveler ring which extend from the outer side into the groove on the inner side of the ring. The oil-proof coating is removed from the wicking on the parts which are in the groove. The holder for the traveler ring is substantially U-shaped in section, the outer wall being adapted to receive a spring clip which holds the traveler ring in position. The inner wall which extends substantially to the same height as the traveler ring is spaced a sufficient distance from the traveler ring to form an annular groove around which the bar traveler runs.

The invention is hereinafter more fully described and illustrated in the accompany drawing in which

Fig. 1 is a plan view of the spinning ring showing a traveler;

Fig. 2 a section on line 2—2 in Fig. 1;

Fig. 3 a section on line 3—3 in Fig. 1;

Fig. 4 a perspective view of the traveler; and

Fig. 5 a section on an enlarged scale through one side of the traveler ring and holder showing also a traveler bar in position as it appears when the device is in operation.

In the drawing like numerals of reference indicate corresponding parts in the different figures.

The traveler 5 which is of a well known type has a bar 5a which has its ends bent outwardly. Depending from the ends of the bar 5a are legs 21. Formed at the lower ends of the legs are hooks 19 which are offset inwardly relative to said legs.

The spinning ring consists of a traveler ring 1 which is locked to the holder 2 by means of the spring clip 3. The holder 2 is secured to the traverse bar (not shown) of the spinning machine by means of the lugs 4.

The holder 2 is annular in shape having a groove 6 formed therein to receive the traveler ring 1. The outside wall 7 of the holder 2 has formed on its inner side an annular shoulder 8 on which rests the traveler ring 1. Towards the upper part of the outside wall 7 on the inner side thereof, is formed an annular groove 9 which is adapted to receive the spring clip 3. The inner wall 10 of the holder 2 is inclined outwardly slightly off the perpendicular to prevent the traveler 5 from being pulled out of the spinning ring when doffing, at which time there is usually upward pull on the traveler. The bottom 11 of the groove 6 is inclined downwardly towards the centre of the ring to drain surplus oil away from the shoulder 8, on which the traveler ring rests, to a point where it will do no harm. Formed in the outer wall 7 of the holder 2 is an opening 12 through which passes the handle 3a of the spring clip 3 to facilitate its removal from the groove 9 in the wall 7.

The traveler ring 1 has formed on its inner side a groove 13 which forms an upper bearing surface 14 against which the legs 21 of the traveler 5 bear. On the underside of the traveler ring 1 is formed a groove 16. The upper side 15 of the groove 16 runs upwardly at an angle, and then turns down abruptly to form an annular shoulder 17 to contact the shoulder 8 formed in the groove in the holder 2. The junction of the surface 15 of the groove 16 with the lower part of the surface of the groove 13 forms a lower bearing surface 28 for the hooks 19 of the traveler. Such surface, when the traveler is in position, engages the middle of the hooks 19 substantially directly below the legs 21 of the traveler.

The inside diameter of the upper bearing surface 14 is slightly greater than the inside diameter of the lower bearing surface 28. The reason for this is that the lower bearing surface 28 contacts the hooks 19 of the traveler 5 and the upper bearing surface 14 contacts the depending legs 21 of the traveler. Since the hooks 19 of the traveler 5 are offset inwardly relative to the legs 21 and it is desirable that the traveler travels

around the traveler ring 1 with the legs substantially vertical, the inside diameter of the ring at the lower bearing surface 28 must be made smaller in diameter than the upper to compensate for this difference.

From the construction described it follows that the upper bearing surface engages the legs of the traveler bar well above the centre of gravity of the traveler so that under the centrifugal force generated by the high velocity of the device the traveler bar rocks on the upper bearing surface and tends to press outwardly against the lower bearing surface, thus preventing the jamming effect of the points of the hooks against the inclined surface 15. The traveler bar thus slides freely without any jamming effect against its bearing surfaces.

Formed in the outer side of the traveler ring 1 is a shoulder 23. The spring clip 3 when engaged in the groove 9 of the wall 7 contacts the shoulder 23 of the traveler ring 1 locking it in the holder. Formed on the outside of the ring 1 substantially on the same plane as the groove 13 is another groove 23^a extending around the circumference of the ring 1. Connecting this outer groove 23^a with the inner groove 13 are holes 24 which are spaced around the circumference of the ring in groups of two.

Integral with the ring 1 and the top of which is substantially on the same level as the top of the ring 1 is an oil well 20 which is formed in the lug 25. Formed in the lug 25 at the same level as the groove 23^a on the ring 1 is a channel 26. Running from the oil well 20 through the channel 26 in the lug 25 is the wicking 27. This wicking 27 is threaded through holes 24 in the ring 1 into the groove 13 on the inside of the ring 1 and is threaded back through the next adjacent hole into groove 23^a and so on around the ring until the wicking is finally returned to the oil well 20 through the channel 26. The wicking 27 is encased in an oil proof cover or coating except for the parts which extend into the groove 13 on the inside of the traveler ring 1. The object of the oil-proof covering on the wicking 27 is to prevent any seepage of oil except at points around the inner side of the ring 1 where the oil is required.

What I claim is:

1. In a spinning ring adapted to be used with a bar traveler having depending legs and inwardly offset and outwardly and upwardly facing hooks at the lower ends of the legs, the combination of the traveler ring formed with an upper bearing surface within the ring adapted to engage the upper parts of the legs of the bar traveler and with an inwardly and downwardly facing lower bearing surface adapted to engage the middle portions of the hooks of the bar traveler substantially directly beneath the upper parts of the said legs; a holder for said ring; and an inner wall on said holder forming an annular groove between the traveler ring and said wall around which the traveler bar travels.

2. A spinning ring according to claim 1 having a groove formed in the traveler ring between the upper and lower bearing surfaces for said traveler, the least diameter of the upper bearing surface being greater than the least diameter of the lower bearing surface.

3. In a spinning ring adapted to be used with a bar traveler, the combination of a traveler ring; a groove formed in said ring; bearing surfaces above and below the said groove for the traveler; an oil well carried by the ring, holes being provided in the periphery of the ring extending into the groove; wicking threaded through the holes and extending to the oil well to conduct the oil from the oil well to the bearing surfaces of the ring; an oil proof coating on the wicking, the wicking lying in the inner groove being sufficiently free of coating to permit the oil to escape on the inner side of the ring only; a holder for the traveler ring having an annular flange within which the traveler ring sits, said annular flange having a gap formed therein through which the oil well passes; and an inner wall on said holder forming an annular groove between the traveler ring and said wall around which the traveler bar travels.

4. In a spinning ring adapted to be used with a bar traveler, the combination of a traveler ring; an oil well carried by said ring; holes in the periphery of the ring extending to the inner side; wicking threaded through the holes and extending to the oil well; an oil proof coating on the wicking on the outer side of the ring between the oil well and said ring to prevent leakage of oil outside the ring; a holder for the traveler ring; and an inner wall on said holder forming an annular groove between the traveler ring and said wall around which the traveler bar travels.

5. A bar traveler having depending legs and inwardly offset and outwardly and upwardly facing hooks at the lower ends of the legs in combination with a traveler ring formed with an upper bearing surface within the ring adapted to engage the upper parts of the legs of the bar traveler and with an inwardly and downwardly facing lower bearing surface adapted to engage the middle portions of the hooks of the bar traveler substantially directly beneath the upper parts of said legs; a holder for said ring; and an inner wall on said holder forming an annular groove between the traveler ring and said wall around which the traveler bar travels.

6. A bar traveler for a spinning ring comprising a straight bar having its ends bent outwardly, vertical legs depending from opposite ends of the bar; and inwardly offset and outwardly and upwardly facing hooks at the lower ends of the legs.

ROY ZIEGLER.