

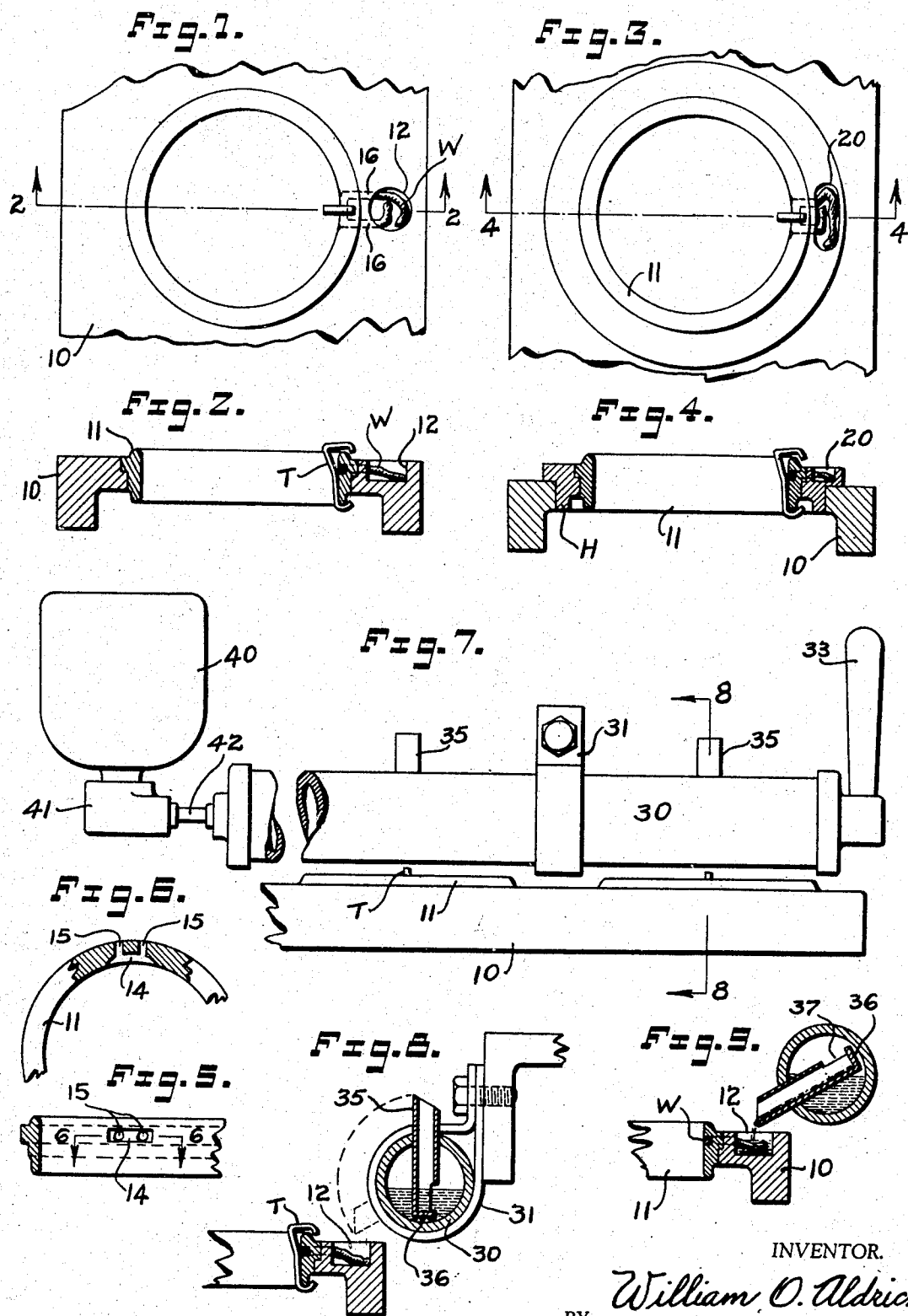
Jan. 8, 1935.

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1,986,909

DEVICE FOR LUBRICATING TWISTER RINGS

Filed Jan. 20, 1932



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UNITED STATES PATENT OFFICE

1,986,909

DEVICE FOR LUBRICATING TWISTER RINGS

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Application January 20, 1932, Serial No. 537,738

2 Claims. (Cl. 184—7)

This invention relates to machines for twisting yarn, and particularly to devices for supplying lubricant to twister rings of the vertical type, which are largely used in machines for twisting heavy yarn.

It has been found that the excessive friction developed between the rings and the travelers, when several strands are to be twisted together, causes very rapid traveler wear, unless the rings are lubricated. Devices have been heretofore suggested for this purpose, but these prior devices have not furnished a very satisfactory solution of the problem.

It is the general object of my present invention to provide an improved means for conducting lubricant to the inner face of a vertical traveler ring. A further object is to provide means by which a definite or measured quantity of oil may be conveniently supplied at intervals for each of a plurality of twister rings.

My invention also relates to arrangements and combinations of parts which will be hereinafter described and more particularly pointed out in the appended claims.

Preferred forms of the invention are shown in the drawing in which,

Fig. 1 is a plan view of a twister ring and a portion of a ring rail having my improvements embodied therein;

Fig. 2 is a sectional elevation taken along the line 2—2 in Fig. 1;

Fig. 3 is a plan view of a portion of a ring rail with a twister ring and ring holder mounted thereon and embodying my improvements;

Fig. 4 is a sectional elevation taken along the line 4—4 in Fig. 3;

Fig. 5 is a detail elevation showing a portion of the inner face of a vertical twister ring;

Fig. 6 is a detail plan view of the ring, but partly in section along the line 6—6 in Fig. 5;

Fig. 7 is a partial side elevation of my improved oil feeding mechanism;

Fig. 8 is a sectional view taken along the line 8—8 in Fig. 7, and

Fig. 9 is a view similar to Fig. 8 but showing the parts in a different position.

Referring to particularly Figs. 1 and 2, I have shown a portion of a ring rail 10 having a twister ring 11 of the usual type mounted in a circular opening therein. A recess or receptacle 12 is formed in the rail 10 adjacent to each ring 11 and is adapted to contain a limited amount of oil or other lubricant.

Each ring 11 is provided on its inner face with a recess 14 (Figs. 5 and 6) and with outwardly

extending and substantially radial passages 15, communicating with the recess 14 near each end thereof.

A wick W is inserted in the recess 14, with the ends of the wick projecting outward through the passages 15 and through corresponding passages 16 (Fig. 1) in the ring rail 10. These passages 16 communicate with the oil receptacle or recess 12, and the ends of the wick W extend into the recess 12 and engage the oil contained therein.

The oil is thus fed by capillary action to the portion of the wick which is disposed in the segmental recess 14 on the inner face of the ring 11. The inner face of the ring is thus lubricated to a sufficient extent to materially reduce the friction of the traveler T, while at the same time an excessive and objectional supply of lubricant is avoided.

It will be noted that the portion of the wick W in the recess 14 lies substantially flush with the inner surface of the ring but may project very slightly therefrom to effectively engage and lubricate the traveler T.

In a somewhat similar construction previously used, the ends only of the wick were presented at the inner surface of the ring, but this construction was found unsatisfactory, as the ends of the wick became hardened in a very short time, due to the action of the traveler thereon, and it was necessary to frequently pull out the wick and cut off the ends to present fresh surfaces thereof to the traveler.

In my improved construction, the extended and continuous portion of wick disposed in the recess 14 effectively lubricates the traveler and ring and remains in operative condition for a long period of use.

In Figs. 3 and 4, I have shown a quite similar construction in which the ring is provided with a recess and radial passages as in the form previously described, but in which the oil receptacle 20 is formed in a ring holder H instead of in the ring rail 10. The receptacle 20 is also shown as being of elongated form, in order to provide the same oil capacity in the narrower surface of the ring holder H. Otherwise the construction and operation is as previously described.

In Figs. 7, 8, and 9 I have shown mechanism by which the oil receptacles 12 or 20 may be conveniently supplied with lubricant.

For this purpose I provide a horizontally extending pipe 30, mounted in suitable strap bearings 31. The pipe is snugly held in the bearings 31 but may be turned angularly by the use of a handle 33.

5 Tubes 35 are inserted in the pipe 30 and are longitudinally spaced at intervals corresponding to the spacing of the rings 11. Each tube 35 has a bevelled open outer end, but the inner end thereof is closed as indicated at 36 in Figs. 8 and 9. Each tube is also provided with an opening 37 in its upper side and adjacent its closed inner end 36.

10 Oil or lubricant is supplied to the pipe 30 and is maintained at a constant level therein. The oil may be thus supplied in any convenient manner, as from an inverted tank 40 mounted in a support 41 connected by a small pipe 42 to the large pipe 30. The tank 40 is open at its lower end 15 portion which is inserted in the support 41, and oil is fed therefrom to maintain a constant level in the pipe 30 in a manner well known in such feeding devices.

20 In Figs. 7 and 8, the pipe 30 is turned to such a position that the tubes 35 extend vertically upward, with their inner ends dipping below the surface of the oil in the pipe 30. As the pipe is then turned to the position shown in Fig. 9, each tube takes up a definite and limited quantity of 25 oil and transfers it to the associated oil receptacles 12 or 20. The pipe 30 may extend continuously the full length of a twister frame, or may be made in two or more sections as seems most desirable.

It will thus appear that I have provided improved means for supplying measured quantities of oil to the receptacles 12 or 20, and also improved means for effectively conducting a limited supply of oil to the inner face of each twister ring 11. 5

Having thus described my invention and the advantages thereof, I do not wish to be limited to the details herein disclosed otherwise than as set forth in the claims, but what I claim is:—

1. In a twisting machine, a plurality of twister 10 rings, oil receptacles for said rings, and means mounted on said twisting machine and effective to simultaneously supply a measured quantity of oil to a plurality of said oil receptacles, said means 15 comprising a pivotally mounted and partially rotatable horizontally disposed cylinder, means to move said cylinder about its pivotal axis, means to maintain oil at a predetermined level therein, and a delivery tube in said cylinder for each oil 20 receptacle.

2. In a twisting machine, a plurality of twister rings, an oil receptacle for each ring, an oil conduit mounted on the machine, and means associated with said conduit to cause a measured 25 quantity of oil to pass from said conduit simultaneously to each oil receptacle.

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