DEVICE FOR HOLDING SPINNING RINGS

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This invention relates to devices for holding or supporting the rings of spinning or twister frames.

It is a common practice to mount such rings in holders and to support the holders removably in the ring rail of the machine. The present invention is particularly concerned with the mounting of the rings or their holders and it aims to devise a construction which can be manufactured and assembled more economically than prior arrangements while still serving to hold the spinning or twister ring securely in its operative position.

The nature of the invention will be readily understood from the following description when read in connection with the accompanying drawings, and the novel features will be particularly pointed out in the appended claims.

In the drawings,

Figure 1 is a perspective view of a twister ring mounted in a holder embodying features of this invention;

Fig. 2 is a perspective view, partly in cross-section, of a part of a ring rail showing one of the apertures in which the ring holder is mounted;

Fig. 3 is a perspective view of a split spring ring which preferably is used to maintain the holder in position;

Fig. 4 is a vertical sectional view through a ring rail showing a ring and holder therefor mounted in it; and

Fig. 5 is a vertical sectional view, partly in elevation, of a ring and spindle in their normal relationship to each other.

Referring first to Fig. 5 the spindle rail or box rail of a twister frame is shown at 2, the ring rail at 3, and a spindle at 4. The traveler is indicated at 5 and the ring on which it runs at 6. These parts are shown in the relationship which they normally occupy in a twister frame or ring spinning frame.

The ring 6 is supported in a holder 7 which consists of a split annulus, usually made of cast iron, and provided with a groove or seat in its upper surface to receive the lower flange of the ring. The holder grips the ring due to its inherent resiliency, but it can be spread or expanded slightly to release the ring.

The present invention is particularly concerned with the construction of this holder and the mounting of it in the ring rail. Referring more particularly to Figs. 1 to 4, inclusive, it will be seen that the holder 7 includes a flange a to rest on the upper surface of the ring rail and a tapered Shank which projects through a circular aperture 8, Fig. 2, in the ring rail. The shank includes a short cylindrical shoulder b and a tapered or frusto-conical portion c which extends downwardly from the shouldered portion. The shoulder b may be made of such a diameter as to fit snugly in the aperture 8, and the lower end of the tapered part c should be made of the same diameter as the part b or slightly smaller in diameter than said part, so that the holder can be inserted readily in the aperture 8. A split spring ring 9 substantially encircles the tapered shank c, and due to its inherent tendency to contract and its engagement with the lower surface of the ring rail, it acts on the tapered portion of the shank to draw the holder 7 downwardly and thus to keep it seated firmly on the ring rail. Preferably the lower wall of the aperture 8 is bevelled or countersunk, as indicated at 10, Fig. 2, so that the spring ring 9 cooperates with the tapered or bevelled surfaces of both the rail and the ring holder shank to center the holder and also to resist any movement of the holder upwardly out of its normal or operative position.

It will be observed that the surface e of the ring holder is tapered in the same general direction as the tapered or bevelled surface 10 on the lower side of the ring rail, but that the former has a sharper pitch or steeper slope than the latter, the two tapered surfaces converging as they extend upwardly. The spring 9 engages both of these surfaces and because of its tendency to contract, it not only holds the ring holder seated on the rail, but also tends to center the tapered surface of the ring holder shank in the countersunk aperture through which the shank extends. In addition, the tapered surface 10 on the ring holder resists any expanding movement of the spring ring which must take place when any upward movement of the ring holder.
often being referred to as "solid" rings. In placing a holder in the ring rail initially it is simply inserted in the aperture 8 and the spring 9 is snapped around the tapered shank portion c. Whenever it is desired to remove the holder for any reason the spring 9 can readily be snapped off the shank c after first prying one end of the spring down over the base or largest portion of the shank.

The invention thus provides a holder construction which can be manufactured economically and which can be very quickly mounted in a ring rail or removed therefrom. In some instances the ring and the holder are made integral or in one piece, such rings often being referred to as "solid" rings. It is obvious that the construction provided by this invention is equally adaptable to this type of ring as to that having a separate holder. The two constructions, therefore, are regarded as equivalents so far as this invention is concerned.

While I have herein shown and described a preferred embodiment of my invention, it will be understood that the invention may be embodied in other forms without departing from the spirit or scope thereof. The construction shown is used more commonly in spinning frames and for this reason the ring 6 has been referred to as a "spinning ring", but it can also be used in twister frames and the term "spinning frame" or "spinning ring", therefore, as used in the claims will be understood to include twister frames, or twister rings, respectively.

Having thus described my invention, what I desire to claim as new is:

1. In a spinning frame, the combination of a ring rail having a circular aperture therethrough, the wall of said aperture being bevelled at the lower side of the rail, a ring holder seated on said rail and having a shank projecting through said aperture, said shank including an outer surface tapered in the same general direction as said bevelled surface on the ring rail, and a split spring ring engaging the tapered surfaces of both said rail and holder and tending to contract, whereby it acts on said tapered surfaces to draw said holder downwardly against said rail and tends to lock the holder in said position.

2. In a spinning frame, the combination of a ring rail having a circular aperture therethrough, the wall of said aperture being bevelled at the lower side of the rail, a ring holder seated on said rail and having a shank including a frusto-conical portion projecting through said aperture, said frusto-conical