L. T. HOUGHTON.

FASTENING DEVICE FOR PERMITTING THE INTERCHANGE OF SPINNING RINGS.

APPLICATION FILED SEPT. 6, 1905.

990,360. Patented Apr. 25, 1911.

Fig. 1

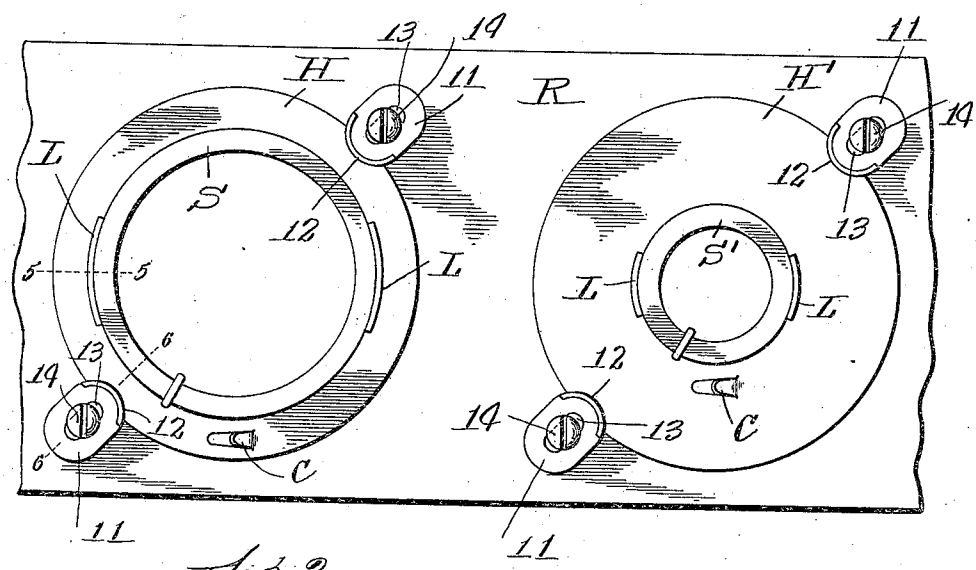


Fig. 2.

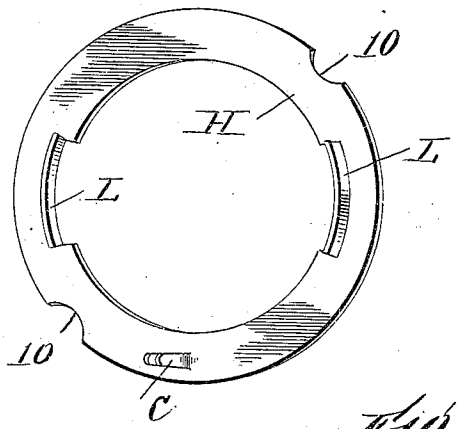


Fig. 3.

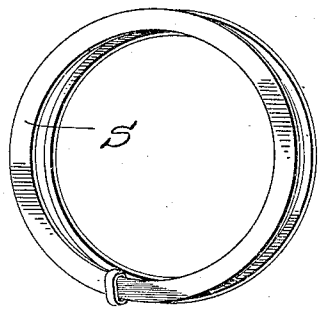


Fig. 4.

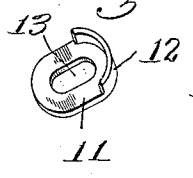


Fig. 5.

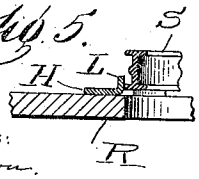
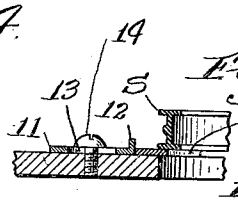


Fig. 6.



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FASTENING DEVICE FOR PERMITTING THE INTERCHANGE OF SPINNING-RINGS.

990,360. Specification of Letters Patent. Patented Apr. 25, 1911.

Application filed September 6, 1905. Serial No. 277,151.

To all whom it may concern:

Be it known that I, LEWIS T. HOUGHTON, a citizen of the United States, residing at Worcester, in the county of Worcester and State of Massachusetts, have invented a new and useful Fastening Device for Permitting the Interchange of Spinning-Rings, of which the following is a specification.

This invention relates to a new way of fastening spinning rings in place on the ring-rails of spinning or twisting frames.

The especial object of this invention is to equip spinning or twisting frames with interchangeable sets of different sized spinning rings which can be readily and quickly set in place or removed from the machine, and which will be held in proper position without re-adjustment whenever it is desired to change the size of rings employed.

To these ends, this invention consists in providing means for securing a detachable connection between a ring-rail and the fixture or fixtures to be carried thereby.

The invention also consists of improved details of construction and combinations of parts as hereinafter described and more particularly pointed out in the claims at the end of this specification.

In the accompanying drawing, Figure 1 is a plan view of a section of a ring-rail showing the means preferably employed for detachably fastening two different sized spinning rings thereon. Fig. 2 is a perspective view of the larger ring-holder. Fig. 3 is a perspective view of the larger spinning-ring. Fig. 4 is a perspective view of one of the fastening clips. Fig. 5 is a detail sectional view taken on the line 5—5 of Fig. 1, and Fig. 6 is a sectional view taken on the line 6—6 of Fig. 1.

In the art of spinning, and particularly in the ordinary cotton mills where most ring-spinning frames are employed, the number or weights of yarns which it is desired to produce vary according to the particular product into which the yarn is to be woven. In ordinary mill practice, where the number of yarn to be spun is to be changed, it is done by simply adjusting the gears of the spinning frame, the same size of rings being employed for spinning a considerable variety of different yarns. In practice it is well recognized that different numbers of yarns ought to be spun with different sized rings, for example, in order to produce the best results the finer yarns should be spun with the smallest sizes of spinning rings. In order to produce good spinning, it is essential that the spinning rings should be adjusted exactly centrally with respect to their spindles, and it is on account of the expense and time required for the careful setting of different sets of spinning rings that the practice now prevails of using the same rings for an undesirably large variety of products.

The especial object of my present invention is to provide an equipment for a spinning or twisting frame which will permit the use of a variety of sizes of spinning-rings, and which will permit a set of rings to be quickly removed from a spinning frame and different sized rings substituted therefor without requiring the resetting or re-adjusting of the rings, the fastening devices for such set of rings being so designed that when the rings are replaced they will all be accurately centered with respect to their spindles without special attention. I accomplish this object by using fastening clips which are capable of adjustment to permit the rings to be accurately centered, and which thereafter detachably hold the fixtures on the ring-rails so that when one set of fixtures is removed another set of fixtures may be snapped back into place and accurately centered without individual adjustment, the fixture for the ring which is illustrated as constituting a separate holder, being provided with means for engaging the clips and preventing the fixture or holder from turning.

Referring to the accompanying drawing and in detail R designates the ring-rail of an ordinary spinning or twisting frame. Carried by the ring-rail R are holders H and H′ for carrying two different sized spinning rings S and S′. The holders H and H′ are of the same construction, except that one is adapted to hold a spinning ring S of comparatively large diameter; while the other holder H′ is adapted for holding a spinning ring S′ of considerably smaller diameter.

Each of the ring-holders is provided with the two usual upwardly extending lugs L between which the rings are snapped in place, and each of the ring-holders is also provided with the usual clearing finger C. These rings and ring-holders are substan-

tially of the ordinary construction, except that each of the ring-holders, instead of being provided with slots or holes for receiving screws, has fastening notches 10, and instead of being screwed onto the ring-rail in the ordinary manner, the ring-holders are detachably snapped into place between the fastening clips 11. Each of these fastening clips 11, as shown most clearly in Fig. 4, is provided with a slightly forwardly inclined curved or partially circular flange 12 and with a slot 13 for receiving a fastening screw 14. When a clip 11 is adjusted to proper position the fastening screw 14 thereof is preferably substantially concentric with the overhanging fastening flange 12.

Considering now the application of this invention to an ordinary spinning frame, when the frame is to be started up, a set of ring-holders containing the desired size of spinning rings is first put in place and is accurately centered or adjusted by loosening the fastening screws so as to permit the moving or shifting of the fastening clips, this adjustment being facilitated by the curved shape of the overhanging flanges of the clips. When the rings are accurately centered the screws are permanently tightened, and will not again require readjustment; while, at the same time, any one of a number of different sets of ring holders may be substituted for the ring holders originally placed in the machine.

By means of this invention I am enabled to provide for the ready substitution of different sizes of spinning rings, and I have accomplished this result without adding materially to the cost of the spinning frame itself, substantially the only additional expense arising from applying this invention to spinning frames being the small cost of the fastening clips 11, all the other parts corresponding substantially to the parts already employed in ordinary spinning frame equipment.

In some cases the fastening clips may be used for fastening the spinning rings directly to the ring-rails without the use of ring-holders, the different sized spinning rings being provided with bottom flanges of uniform diameter to coöperate with said clips. In practice, however, I prefer to use different sets of ring-holders as herein illustrated.

I am aware that changes may be made in the shapes and proportions of parts required in applying my invention to different makes and styles of spinning frames. I do not wish, therefore, to be limited to the particular construction I have herein shown and described, but

What I do claim and desire to secure by Letters Patent of the United States is:—

1. In a spinning or twisting frame, the combination of the ring-rail with a plurality of disconnected individually-adjustable fastening clips on the ring-rail for each fixture which is to be carried by the ring-rail, and fixtures, each having means for detachably engaging the clips and positively preventing the fixture from turning with respect thereto, said fixtures being adapted to be snapped in between the clips by a downward motion from above, whereby the fixture may be applied and removed without changing the adjustment of the clips.

2. In a spinning or twisting frame, the combination with a ring-rail, of a plurality of individually adjustable means secured thereon for receiving spinning ring-holders or fixtures for different sized rings after the adjustment of said means is made, whereby the holders may be removed and replaced vertically without disturbing the adjustment, and ring holders or fixtures fitting said receiving means, and which may be detachably snapped into position from above against the surfaces of said receiving means so as to be held thereby.

3. In a spinning or twisting frame, the combination of a ring-rail, fastening clips, each having a partially circular fastening edge and being adjustably located on the ring rail, and means substantially concentric with the fastening flange of each clip for holding the same in adjusted position, said clips being adapted to receive any one of a plurality of sets of ring-holders for different sizes of rings.

4. In a spinning or twisting frame, the combination of a ring-rail, and fastening clips, each having an upwardly projecting partially circular fastening flange, and being slotted to receive a fastening screw located substantially concentrically with the fastening flange of its clip when holding the same in adjusted position, and adapted to receive any one of a plurality of sets of ring-holders for different sizes of rings, having notches coöperating with the fastening flanges of a plurality of clips, whereby means is provided for the interchange of sets of spinning rings without individual adjustment of said rings.

5. The combination with a spinning ring fixture having notches in its edge, of clips each having a projection fitting one of said notches, the notches and projections being in the same plane, whereby the ring may be snapped into place between the clips.

6. The combination with a spinning ring fixture, of clips for holding it in position, the clips and fixture having mutually engaging means in the same plane at their edges comprising notches, and projections entering said notches for holding the ring between the clips.

7. The combination with a spinning ring fixture or holder, of adjustable clips for holding it in position, the clips and fixture

having mutually engaging means comprising curved notches, and projections fitting the curves of said notches for holding the ring between the clips, whereby the clips will hold the fixture even when said projections are turned out of normal position.

In testimony whereof I have hereunto set my hand, in the presence of two subscribing witnesses.

LEWIS T. HOUGHTON.

Witnesses:
PHILIP W. SOUTHGATE,
MARY E. REGAN.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."