Oct. 24, 1933. G. H. GILLIGAN 1,931,690

DEVICE FOR APPLYING TRAVELERS TO RINGS

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Fig. 1.

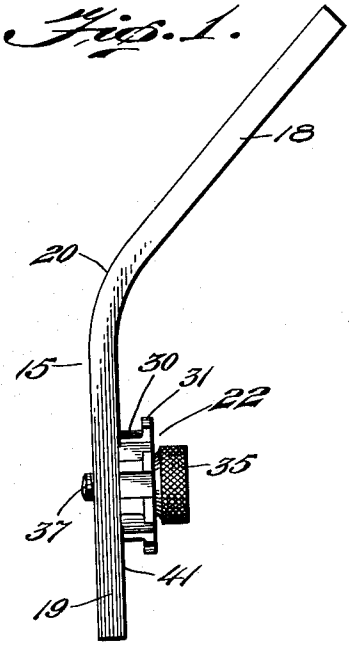


Fig. 2.

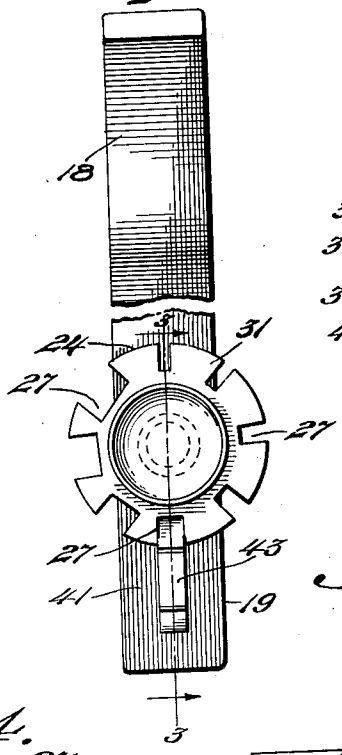


Fig. 3.

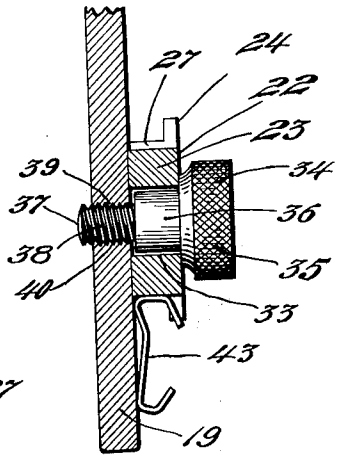


Fig. 4.

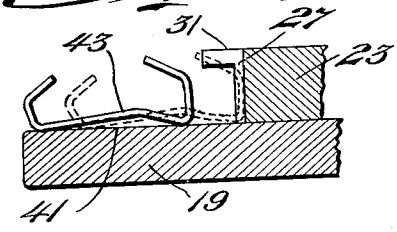


Fig. 5.

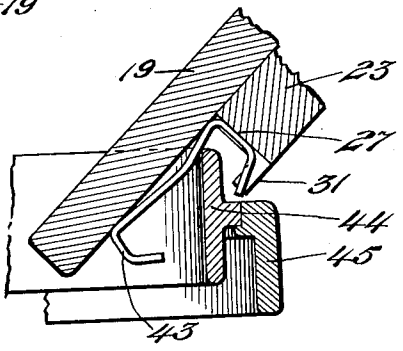


Fig. 6.

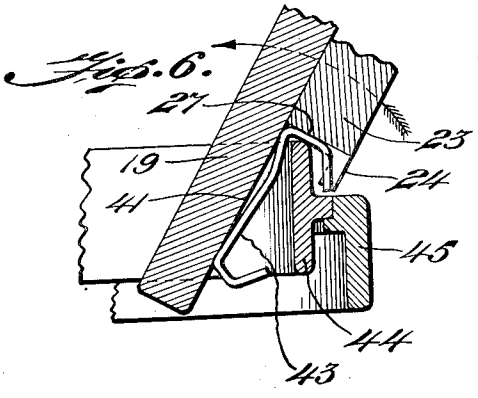
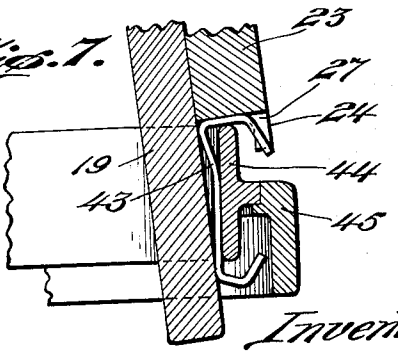


Fig. 7.



Inventor.

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Fig. 8.

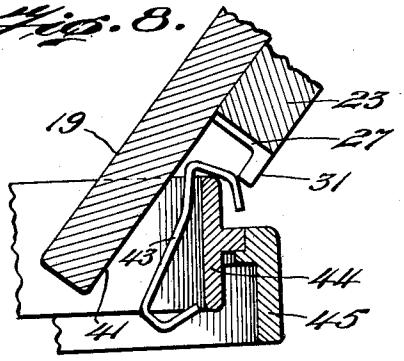


Fig. 9.

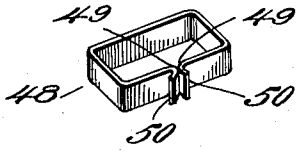


Fig. 10.

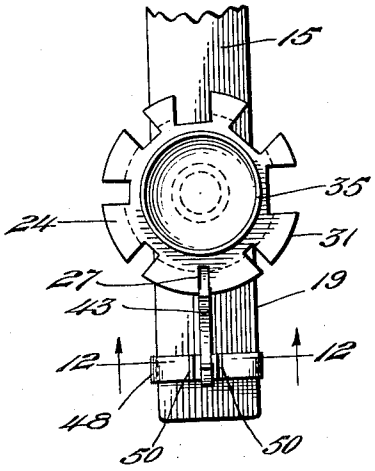


Fig. 11.

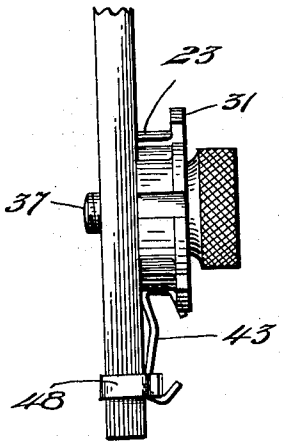
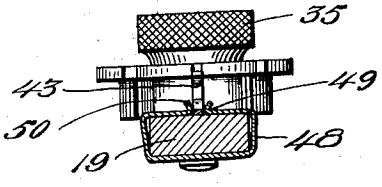


Fig. 12.



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UNITED STATES PATENT OFFICE

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DEVICE FOR APPLYING TRAVELERS TO RINGS

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Application January 24, 1933. Serial No. 653,250

18 Claims. (Cl. 29—84)

My invention relates to devices purposed to interengage ring travelers with rings for spinning or twisting frames.

Essential objects of my invention are to make possible in a single composite device the accommodation and manipulation of travelers of different width and sizes; thus making unnecessary a device for each size.

Further objects are to enable the traveler to be completely and independently supported by the device before and during the engagement of the ring to the traveler; to utilize magnetism for this purpose; to make the accidental escape of the traveler from its position on the device impossible.

An additional object is to initially position and permanently maintain a traveler, particularly those of small size, in a plane at perfect right angles to the wall of the ring, thus preventing tilting of the traveler during the clamping movement whereby the latter is distorted and destroyed.

Additional objects are to insure precision of operation of the device upon a traveler initially hung upon the ring rather than originally mounted upon the device; and to facilitate the application of a bronze traveler to the ring.

With the above and other objects and advantageous features in view, the invention consists in the elements, parts and arrangement of parts more fully disclosed in the detailed description following, in conjunction with the accompanying drawings, and more particularly defined in the claims appended hereto.

In the accompanying drawings which form a part of this specification,

Figure 1 is a side elevation of my novel traveler applying device,

Figure 2, an enlarged rear elevation of the same with a traveler mounted thereon,

Figure 3, a fragmentary section of the same on line 3—3 of Figure 2,

Figure 4, a similar section of my device positioned with its rear face upward, and showing in full lines a traveler resting thereon, and in broken lines, the traveler engaged with the fulcrum member,

Figure 5, a fragmentary vertical central section of my device engaging a vertical traveler, shown in side elevation, initially positioned for application of the traveler to a vertical ring mounted in a ring holder, the ring and holder being shown in fragmentary diametrical section,

Figures 6 and 7, similar section of the same showing a second and third position of the parts in the application of the traveler to the ring,

Figure 8, a similar fragmentary section of parts showing the first position of the parts in applying the traveler when the latter is initially placed upon the ring,

Figure 9, a perspective view of the auxiliary clamp,

Figures 10 and 11, a rear and side elevation respectively of the lower end of my device showing the clamp applied thereto and engaging a traveler, and

Figure 12, a section of the same taken on line 12—12 of Figure 10.

Similar reference characters indicate similar parts throughout the views.

The embodiment of my device herein illustrated includes a lever bar 15 of hardened steel or kindred metal electrically impregnated or charged to constitute a magnet of which the end portions are the poles. As herein shown it is transversely rectangular and comprises a grasping or handle portion 18 and an operating or lower end portion 19. The portion 18 is intermediate its length curved, bent or inclined rearwardly, as at 20. This not only facilitates the manipulation thereof, but directs the operator's hand away from the spool flanges and contents of the spindle within the ring.

Mounted upon the clamping or operation portion 19 of the lever bar is a steel fulcrum member 22 comprising a cylindrical hub or disk 23 abutting at its forward end against the rear face of the bar adjacent the lower end of the latter, and a lateral annular flange 24 upon its rear end. A plurality of longitudinally disposed annularly arranged peripheral slots or grooves 27 of different or graduated widths throughout the length of the hub extend through the flange 24 and form resultant hub segments 30 and flange segments 31.

The hub is provided with a central hole 33 adapted to loosely receive a pivot member 34 which in this instance is of the fillister type comprising a knurled head 35 overlapping the end of the hub, a smooth shank portion 36 which the hub surrounds, and a reduced terminal shank portion 37 provided with a thread 38 engaging a thread 39 in an orifice 40 in the lever bar portion 19, equidistant from its lateral edges and spaced from its end, thus leaving an ample longitudinal area 41 intermediate the fulcrum member 22 and the lower end of the lever bar to receive lengthwise a vertical traveler 43 purposed for ultimate attachment to a vertical steel ring 44 supported in this instance by a ring holder 45, both of any usual or preferred construction.

It will be understood that the variety of sizes

and widths of travelers in common use is extensive. The various widths of the slots 27 are for the accommodation of the upper portions of travelers 43 of substantially corresponding widths. By turning the head 35 of the pivot member 34 the hub 23 may be manually rotated to bring the notch 27 approximating the width of the selected traveler 43 intended to be operated upon into lowermost position of rotation.

In using my implement the fulcrum member 22 is rotated to bring the required width of the slot 27 into lowermost position and there clamped. The selected traveler 43 is placed or brought into contact with the operating face 41 as shown in full lines in Figure 4 where it is firmly held against accidental dislodgement by the magnetism of the lever arm while it is being manually slid to the broken line position in the already centered slot 27.

The operator may now turn the implement from its described reversed position preparatory to applying the traveler to the ring, to some such position as shown in Figure 5, without danger of the traveler escaping from magnetic engagement. In Figure 6 the traveler is shown in initial contact with the ring 44 with its head overlapping the latter whereupon the implement is tilted in the direction of the arrow, fulcruming upon the hub 23 until the flange 24 abuts against the outer face of the ring and forms a second fulcrum. This movement snaps the foot or lower horn over the lower edge of the ring 44, thus completing the interengagement of the traveler and the ring.

During the described attaching movements the traveler, by virtue of the walls of the slot 27 between which the head of the traveler rested, was prevented from lateral tilting and maintained in a plane at right angles to that of the ring 44, which prevented bending or mutilation of the traveler.

If through long continued use or otherwise the lever 15 should become demagnetized it still retains many, but not all, of the novel advantages referred to in the preamble of this specification. In such condition, until remagnetized, it is preferable, in applying the traveler to the ring, to first manually suspend the traveler 43 by its head upon the ring independently of the implement, as shown in Figure 8. The implement may then be brought down into engagement with the traveler, the head of the latter registering in the slot 27, and the clamping of the traveler to the ring be proceeded with.

Travelers are usually of steel or material subject to the influence of a magnet. Occasionally travelers of bronze or other material non responsive to magnetic influence are used. In such case an auxiliary means is employed for maintaining the traveler upon the device. This consists of an auxiliary clamping or supporting means, one form of which is shown in Figures 9 to 12 inclusive. It consists of a detachable clamp bent up from a strip of resilient material into the form of a band 48 conforming to the cross sectional contour of the lever bar.

The band is slidable upon the bar with a sufficient degree of friction to retain its position at any point to which it is moved along the operating portion 19. The ends 49 of the band normally abut against each other and terminate in diverging lips 50. The line of abutment of the band ends is equidistant from the sides upon the back of the bar 19. In applying the traveler its shank is pressed between the lips 50, which distends the band, and seats between the ends 49 of the latter where it is clamped by the resiliency of the band.

While I have herein shown and described merely for illustrative purposes certain specific embodiments of my invention, and have disclosed and discussed in detail the construction and arrangement incidental to such disclosure, it is to be distinctly understood that the invention is limited neither to the mere details or relative arrangement of parts nor to the specific applications shown, but that extensive variations from the illustrations may be made without departing from the principles thereof.

I claim:—

1. In a device for applying travelers to rings, a magnetic lever bar, and a rotatable fulcrum member upon the bar provided with a plurality of radial slots of different widths.

2. In a device for applying travelers to rings, a lever bar and a fulcrum member including a hub pivotally supported upon the bar and a lateral annular flange, said hub being provided with a plurality of longitudinally disposed peripheral slots extending through the flange.

3. In a device for applying travelers to rings, a lever bar, a fulcrum member upon the back of the bar defining a bearing portion between the fulcrum member and the end of the bar, said bearing portion being magnetized to cause the shank of a traveler to adhere thereto, and said fulcrum member being provided with a longitudinally disposed slot extending to the bar adapted to receive the head of the traveler.

4. In a device for applying travelers to rings, a magnetized lever bar, a rotatable fulcrum member adjacent one end of the bar provided with a plurality of annularly arranged peripheral slots.

5. In a device for applying travelers to rings, a lever bar, a fulcrum member including a movable hub upon the bar, said hub being provided with a radial longitudinally disposed slot extending to the bar.

6. In a device for applying travelers to rings, a lever bar, a fulcrum member rotatably mounted upon the bar including a hub abutting against the bar, and an annular lateral flange, said hub being provided with a plurality of slots of varying dimensions extending through the flange.

7. In a device for applying travelers to rings, a lever bar provided with an orifice, a thread in the orifice, a pivot member comprising a head, a smooth shank portion, and a reduced terminal shank portion provided with a thread engageable with the first thread, a hub loose on the smooth shank portion engageable with the head, a flange upon the hub, said hub being provided with a plurality of slots of different widths extending through the flange.

8. In a device for applying travelers to rings, a lever bar, a fulcrum member upon an intermediate portion of the bar defining a bearing portion between the fulcrum member and the end of the bar, said fulcrum member being provided with a longitudinal slot, and a resilient band embracing the bearing portion and having abutting ends in alignment with the slot, and diverging lips upon the abutting ends.

9. In a device for applying travelers to rings, a lever bar, a pivotal fulcrum member upon an intermediate portion of the bar defining a bearing portion between the fulcrum member and the end of the bar, said fulcrum member being provided with a plurality of slots of various dimensions upon its periphery adapted to receive

the head of a traveler, and resilient means upon the bearing portion for clamping the shank of the traveler.

10. In a device for applying travelers to rings, a lever bar, and a rotatable fulcrum member upon the bar provided with a plurality of radial slots of different widths.

11. In a device for applying travelers to rings, a lever bar, and a rotatable fulcrum member upon the bar provided with a slot adapted to receive one end of the traveler.

12. In a device for applying travelers to rings, a magnetic lever bar and a movable fulcrum member upon the bar provided with a plurality of radial slots of different widths.

13. In a device for applying travelers to rings, a lever bar and a movable fulcrum upon the bar provided with a slot adapted to receive one end of the traveler, with the head of the traveler in contact with the closed end of the slot.

14. In a device for applying travelers to rings, a magnetized lever bar, and an adjustable fulcrum member provided with a slot adapted to receive one end of the traveler.

15. In a device for applying travelers to rings, a lever bar adapted to be contacted by the shank of a traveler, a fulcrum member extending laterally therefrom and having slot means for receiving the head of a traveler, and means for setting said fulcrum member to position a slot of desired width at right angles to said lever bar.

16. In a device for applying travelers to rings, a lever bar adapted to be contacted by the shank of a traveler, a fulcrum member extending laterally therefrom and having slots of different width for receiving the head of a traveler, and means for setting said fulcrum member to position a slot of desired width at right angles to said lever bar.

17. In a device for applying travelers to rings, a magnetized lever bar adapted to be contacted by the shank of a traveler, a fulcrum member extending laterally therefrom and having slots of different width for receiving the head of a traveler, and means for setting said fulcrum member to position a slot of desired width at right angles to said lever bar.

18. In a device for applying travelers to rings, a lever bar and an adjustable fulcrum member upon the bar provided with a plurality of radial slots of different widths adapted to receive travelers of different widths.

GEORGE H. GILLIGAN.