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L. S. HALL

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TRAVELER FOR TWISTER RINGS

Filed March 24, 1928

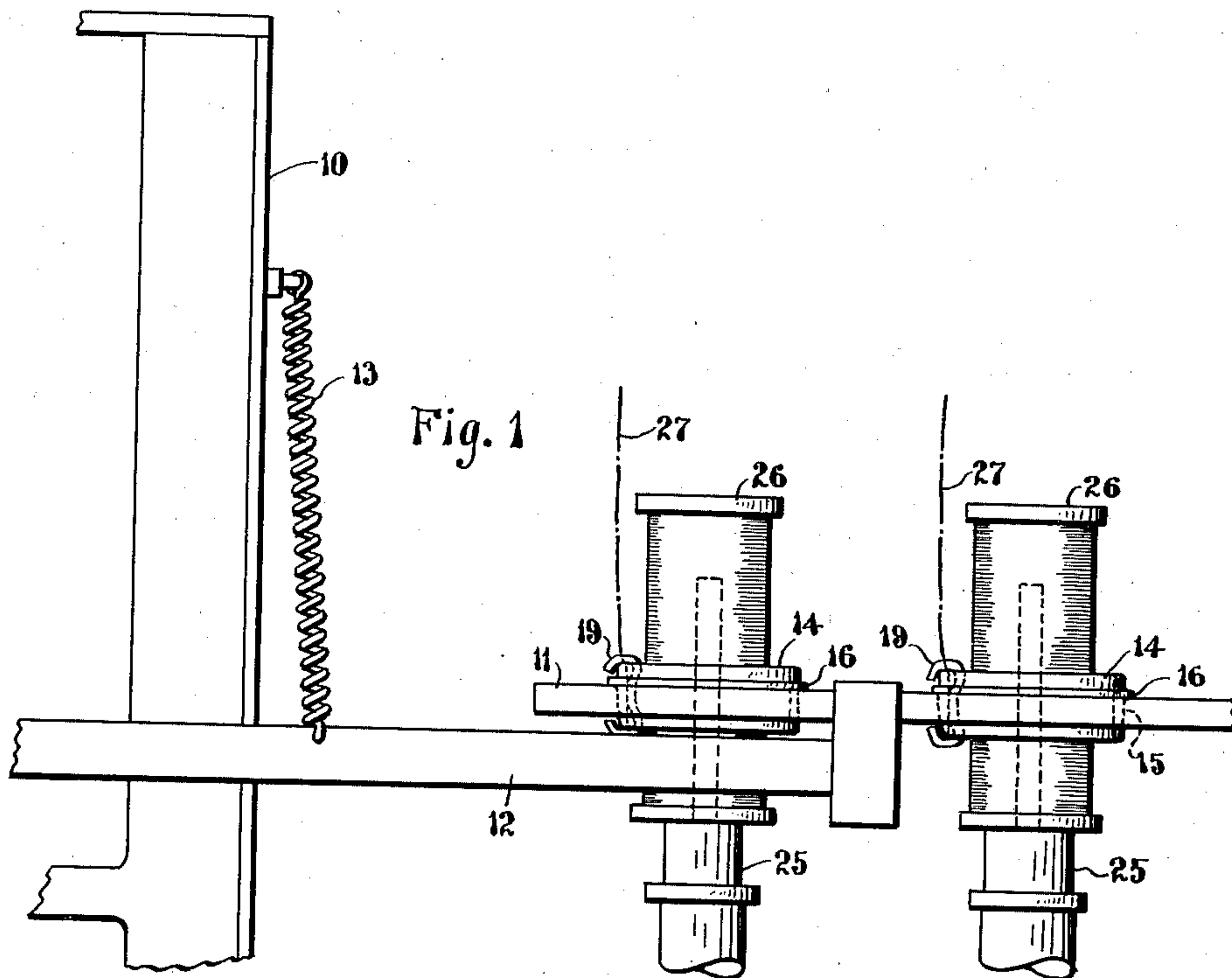


Fig. 2

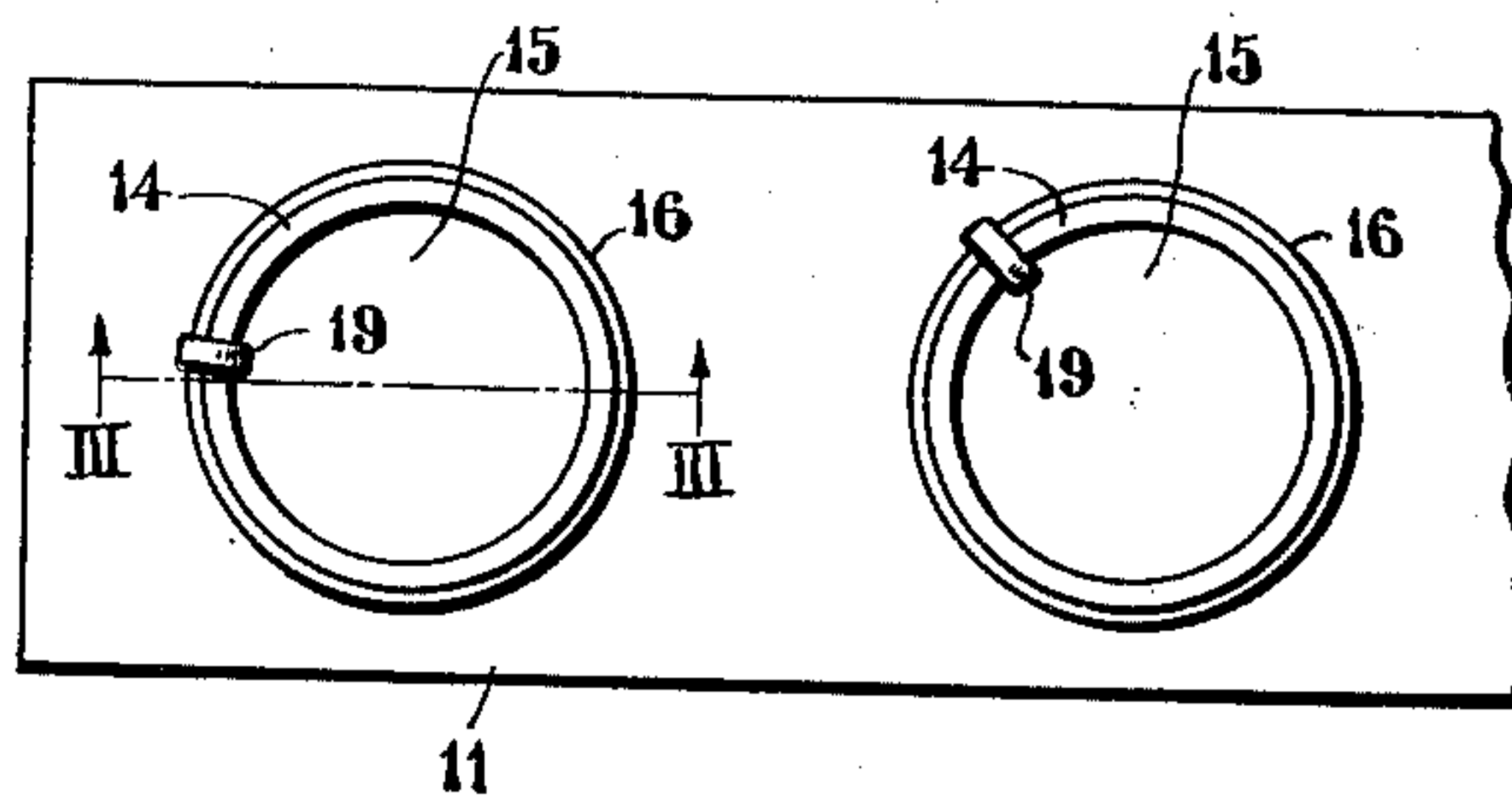
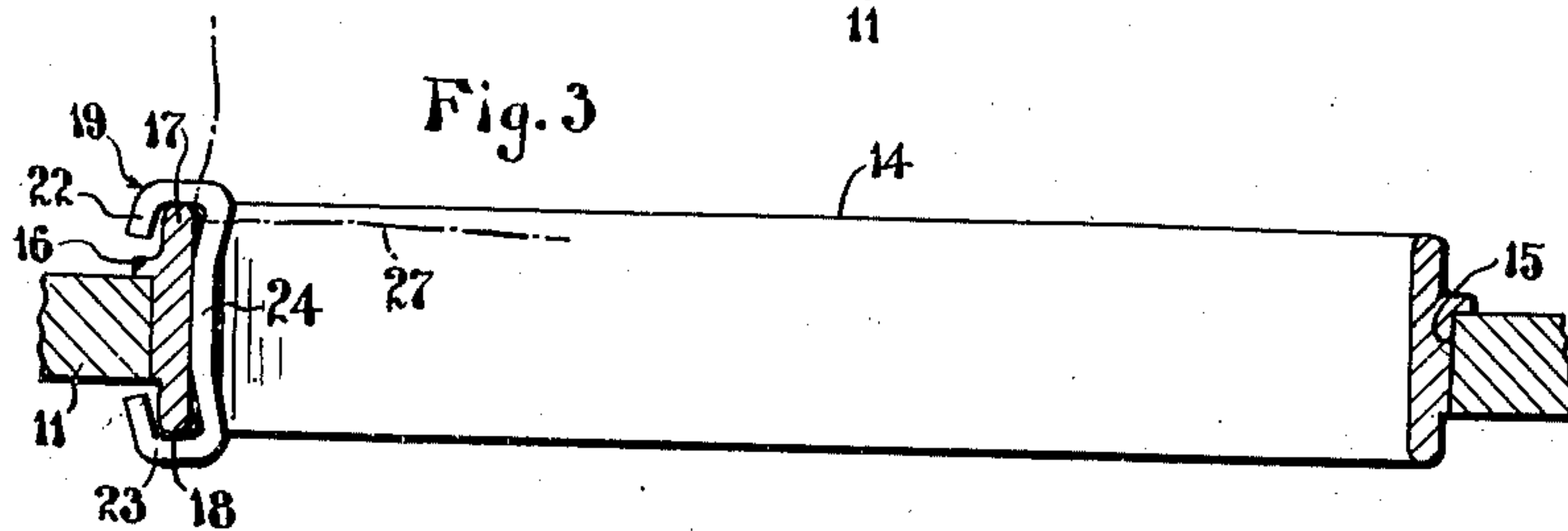


Fig. 3



Inventor
Lindsay S. Hall,

By

R. D. Trueman

Attorney

UNITED STATES PATENT OFFICE

LINDSAY S. HALL, OF NEW BEDFORD, MASSACHUSETTS, ASSIGNOR TO THE GOODYEAR
TIRE & RUBBER COMPANY, OF AKRON, OHIO, A CORPORATION OF OHIO

TRAVELER FOR TWISTER RINGS

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My invention relates to yarn twisting machines, commonly known in the textile industry as twist-
ers, and it has particular relation to the elements operative in conjunction
5 with the traverse rails of such machines.

One object of the invention is to provide a device designed to prevent lubricant from being thrown from the rings of traverse rails during the operation of the latter.

10 Another object of the invention is to provide an improved traveler and rail-ring adapted to be employed in conjunction with traverse rails of twist-
ers.

A common type of twister employed in the
15 textile industry includes a vertically movable horizontally disposed rail, known as a traverse or ring-rail, which is provided with a number of rings secured circumferentially within openings therein, through which ro-
20 tatably driven spools extend. By the operation of the twister, the rail moves upwardly and downwardly to guide the yarn upon the spools in evenly wound relation. Devices known as travelers have heretofore been
25 loosely mounted upon the circumferential edges of the rings and the yarns of textile material are directed therethrough to facilitate their winding upon the spools. As the twister operates, the travelers move rapidly
30 circumferentially about the ring. In order to insure minimum friction between the traveler and the ring it has been customary for the operator to smear a small amount or a thin film of lubricant about the inner cir-
35 cumferential surface of the ring before each twisting operation commences. Oftentimes the lubricant was thrown from the rings upon the yarn by centrifugal force as the traveler moved thereabout, and a considerable
40 loss was incurred, because soiled or oil-soaked yarn is practically useless. If lubricant were not employed, the frictional resistance between the rings and traveler hindered the proper winding of the yarn upon
45 the spools by causing weak yarn and causing the strands to break down.

One of the primary aims of this invention is to provide a traveler and rail ring so arranged and constructed that the engaging
50 portions thereof may be properly lubricated

without in any way soiling the yarn, thereby increasing the efficiency of the twist-
ers and improving the quality of the yarn twisted thereby. Such an arrangement consists of a
55 ring having an axial width, approximately equal to, or greater than that of conventional rail rings and a traveler which is so constructed that only its intermediate portion engages the inner circumferential surface of the ring at substantial distances between the
60 edges thereof.

For a better understanding of the invention, reference may now be had to the accompanying drawing, forming a part of this specification, of which:

65 Fig. 1 is a fragmentary elevational view of a twister having a device embodying my invention incorporated therein;

Fig. 2 is a fragmentary plan view of the
70 traverse rail of the twister; and

Fig. 3 is a fragmentary cross-sectional view, on a larger scale, taken substantially along the line III—III of Fig. 2.

Referring to Fig. 1 of the drawing, only a portion of a twister frame 10 is shown, which
75 is provided with a vertically movable traverse rail 11, and a doffing latch 12 having a resilient connection 13 to the frame. At regularly spaced intervals, rail rings 14 are tightly secured within openings 15 formed
80 in the traverse rail 11 and each ring is properly positioned therein by means of an annular abutment 16. It will be observed that the axial width of each ring is greater than the
85 thickness of the traverse rail and that opposite rounded edges 17 and 18 of the ring project above and below the rail, respectively.

A traveler 19, preferably composed of a metallic substance, is provided with hooked
90 end portions 22 and 23, which are disposed about the edges 17 and 18, respectively, and a central portion 24, which, in operative relation to the rail, projects against the intermediate inner surface of the ring at points
95 spaced from both edges 17 and 18.

Conventional rotatably driven spindles 25 comprising portions of the twister extend axially through the rings 14 and rotatably
operate spools 26 mounted thereon. While the spools 26 are rotated, yarns 27, which are
100

wound thereon, are directed or threaded through the upper end portions 22 of the travelers 19. In order properly to distribute the convolutions of the wound yarn upon the spools, the rail 11 moves upwardly and downwardly during the winding operation and the travelers 19 move circumferentially about the rings 14. Before the yarn has been wound upon the spools, the operator of the twister smears a thin film of lubricant upon the inner circumferential surfaces of the rings 14. Agitation of the lubricant by the travelers causes it to tend to flow toward the lower edges of the rings. However, since only an intermediate portion 24 of each traveler engages the lubricated inner surface of the ring at points spaced from the edges 17 and 18, the lubricant is not concentrated at the lower edge 18 of the ring and, consequently, is not thrown from the ring upon the yarn. In the event the outer lower edge 18 of the ring is heated by frictional contact of the lower portion of the traveler therewith, the lubricant will flow until it reduces the friction and arrests the heating of the engaging portions of the elements. At the completion of a winding operation, the ring and traveler will have been properly lubricated without in any way soiling the yarn.

From the foregoing description, it will be apparent that a construction embodying this invention is valuable in improving the quality of the yarn wound by twisters. Also, the invention involves practically no expense in excess of that formerly required in operating such twisters.

Although I have illustrated only one form which the invention may assume and have described that form in detail, it will be apparent to those skilled in the art that it is not so limited but that various modifications may be made therein without departing from the spirit of the invention or from the scope of the appended claims.

What I claim is:

1. An elongate traveler comprising a hook at each end thereof, a pair of angular portions converging from the hooks toward the central portion of the traveler, and an intermediate straight portion joining the converging portions and provided with a substantially flat bearing surface, the plane of the bearing surface being coincident with the traveler only at said straight portion and at points defining the intersection of the plane with the bight of each hook.

2. A traveler comprising a straight central bearing surface, portions extending angularly away from opposite extremities of the bearing surface and away from the plane of the bearing surface, and hooks merging into the angularly extending portions, the angularly disposed portions being entirely outside the plane containing the bearing sur-

face, said plane traversing an intermediate portion of each hook.

3. A traveler having a flat intermediate bearing surface normally contacting an inner cylindrical surface of a twister ring, the extremities of said bearing surface being materially spaced from the lower edge of the cylindrical surface of the ring, and hooked end portions disposed over opposite edges of the ring, the traveler being normally free of contact with the cylindrical ring surface from the lower extremity of the latter to an intermediate portion thereof.

4. A traveler having a flat intermediate bearing surface for engaging under the influence of centrifugal force an intermediate zone of the inner cylindrical surface of a twister ring, and hooked end portions converging toward the bearing surface, all centrifugal forces of the traveler being concentrated upon the bearing surface at locations materially spaced from the edges of the ring, the hooked end portions engaging the edges of the ring beyond the inner cylindrical surface thereof.

In witness whereof, I have hereunto signed my name.

LINDSAY S. HALL.