

W. N. HEATON.
SHAFT LOOP FOR HARNESS.
APPLICATION FILED AUG. 28, 1908.

912,374.

Patented Feb. 16, 1909.

Fig. 4.

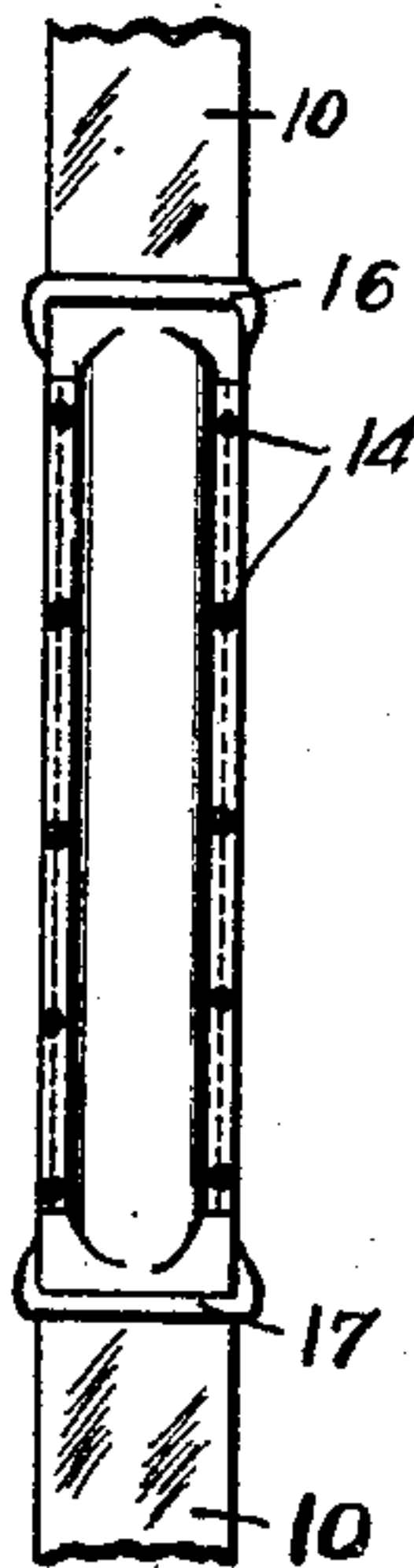


Fig. 1.

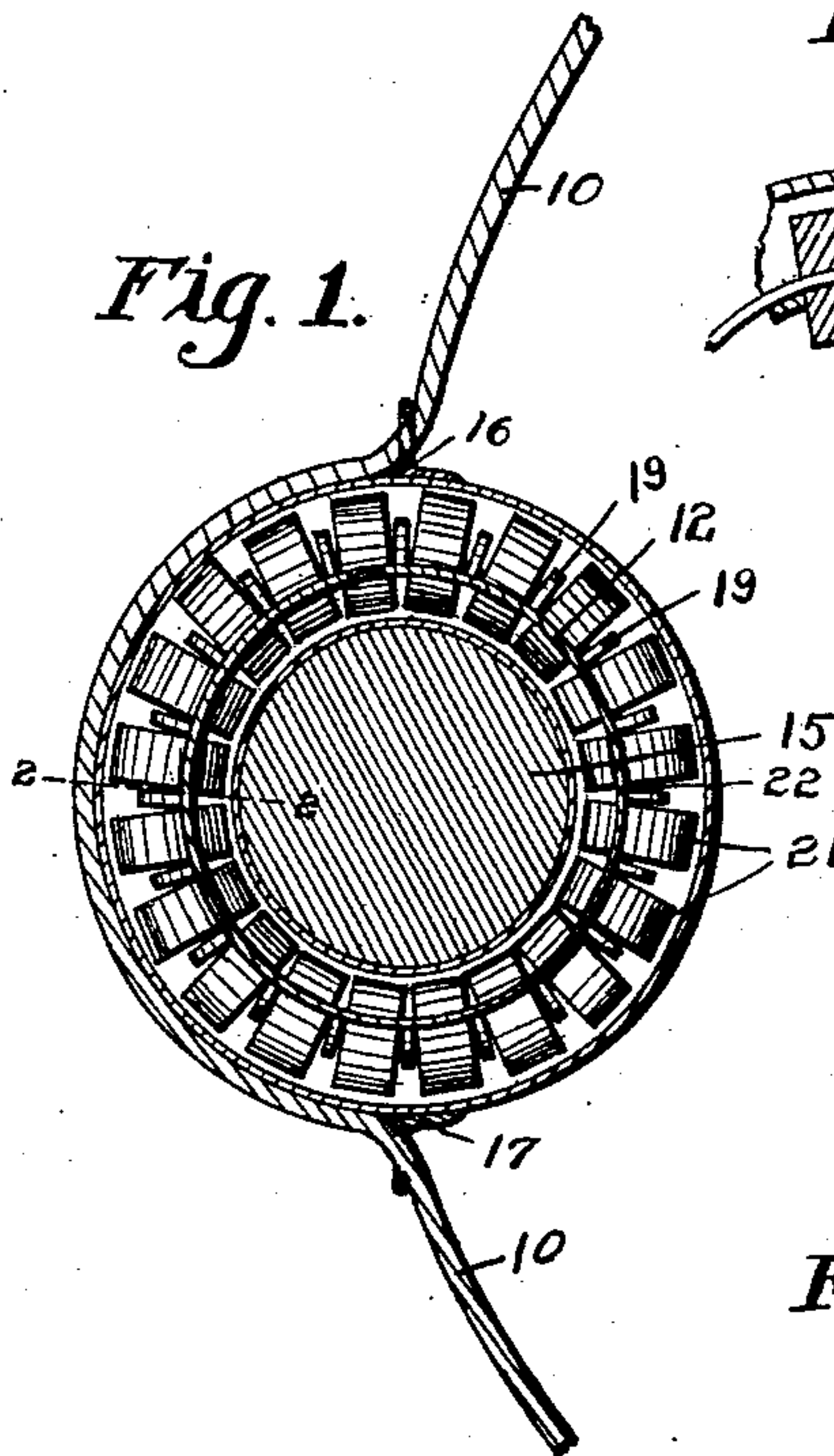


Fig. 3.

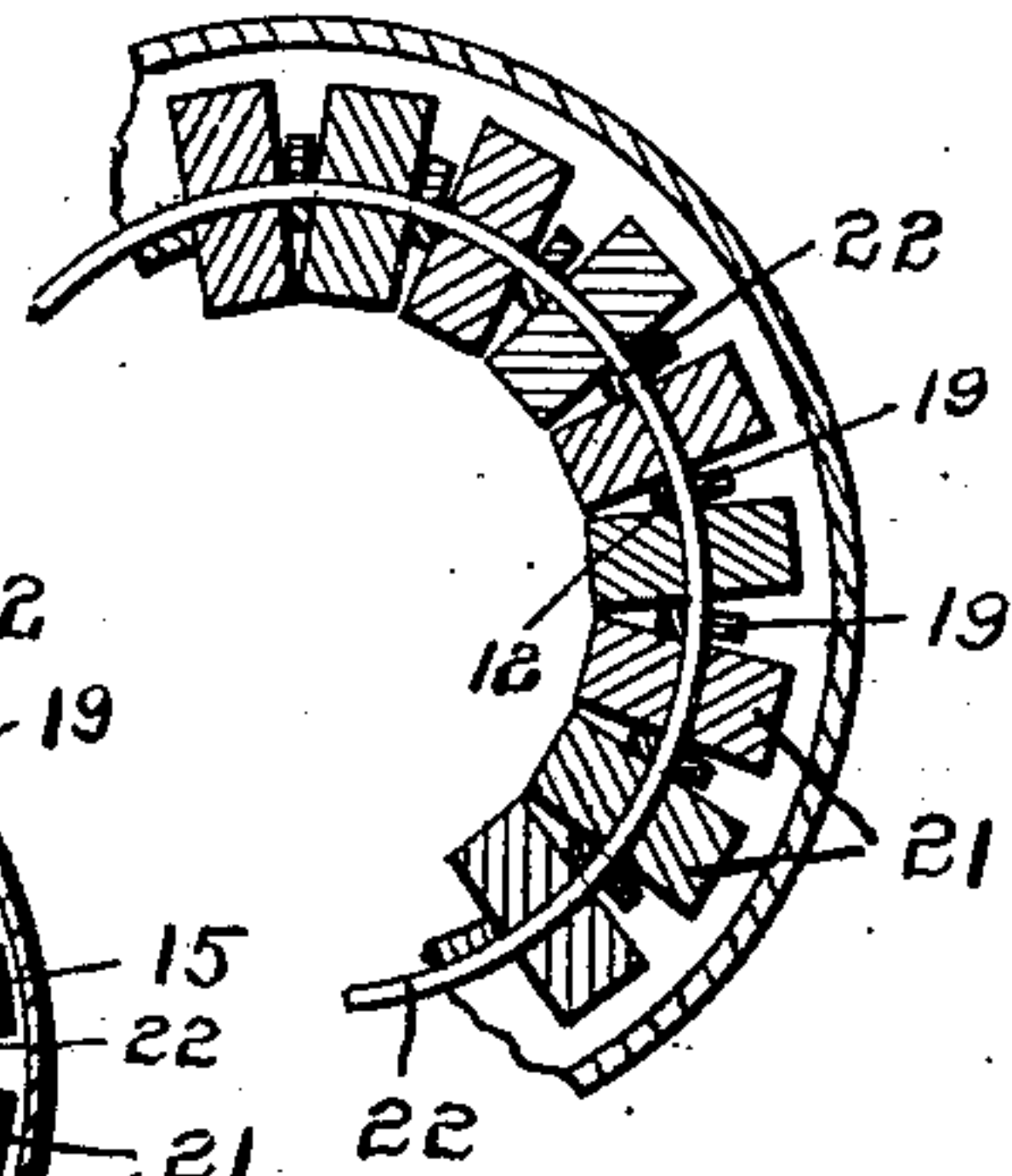


Fig. 5.

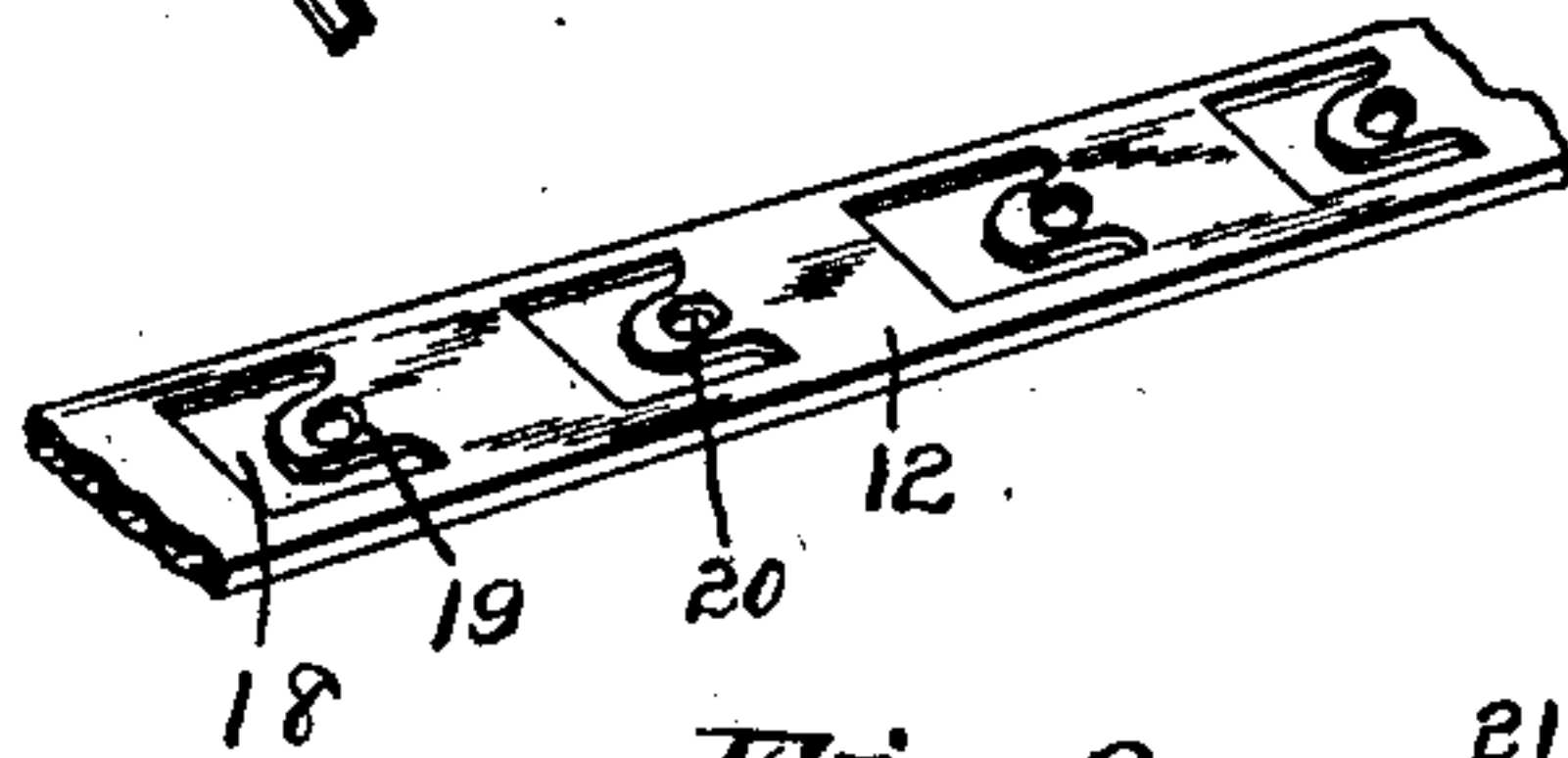


Fig. 2.

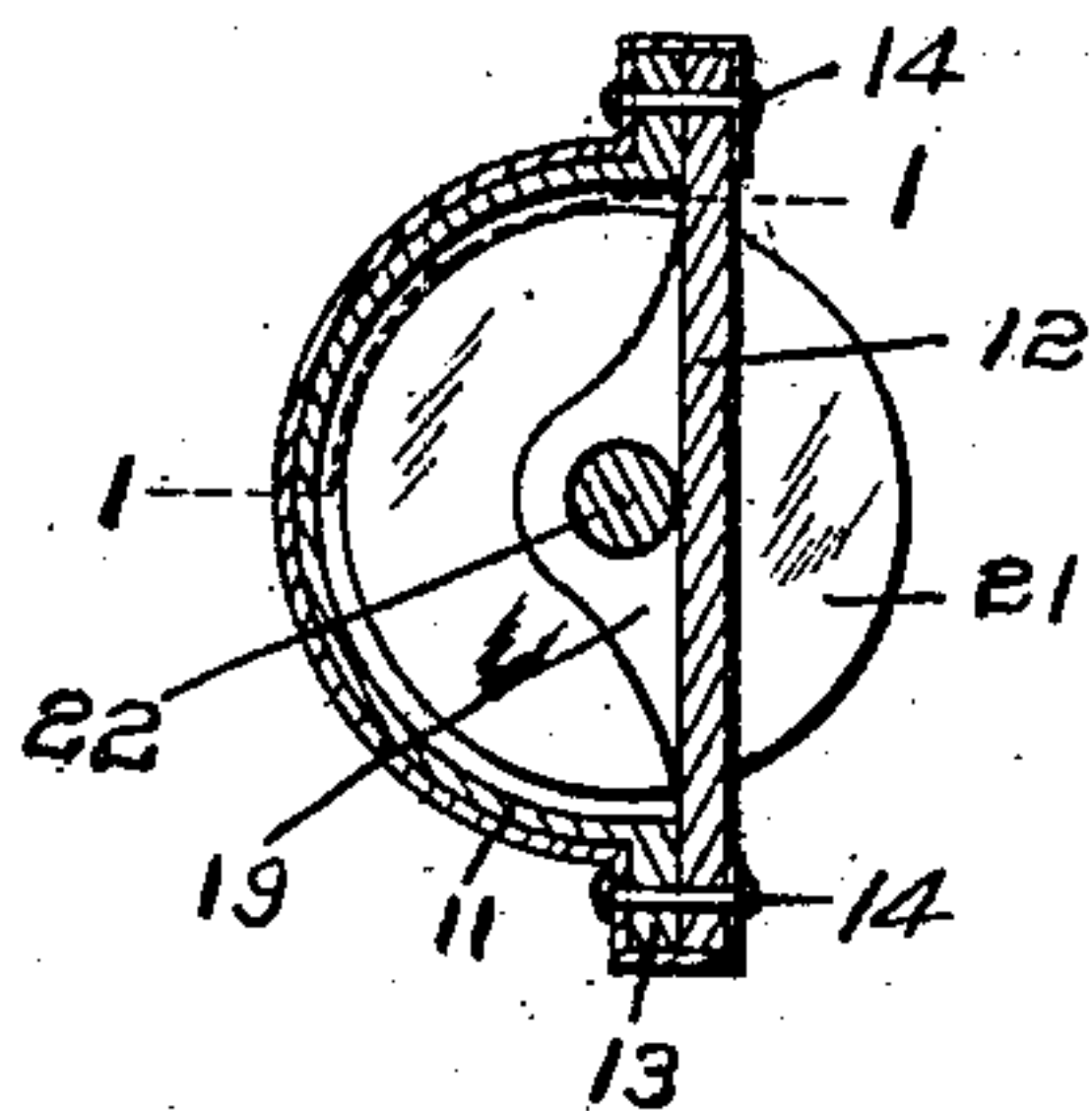
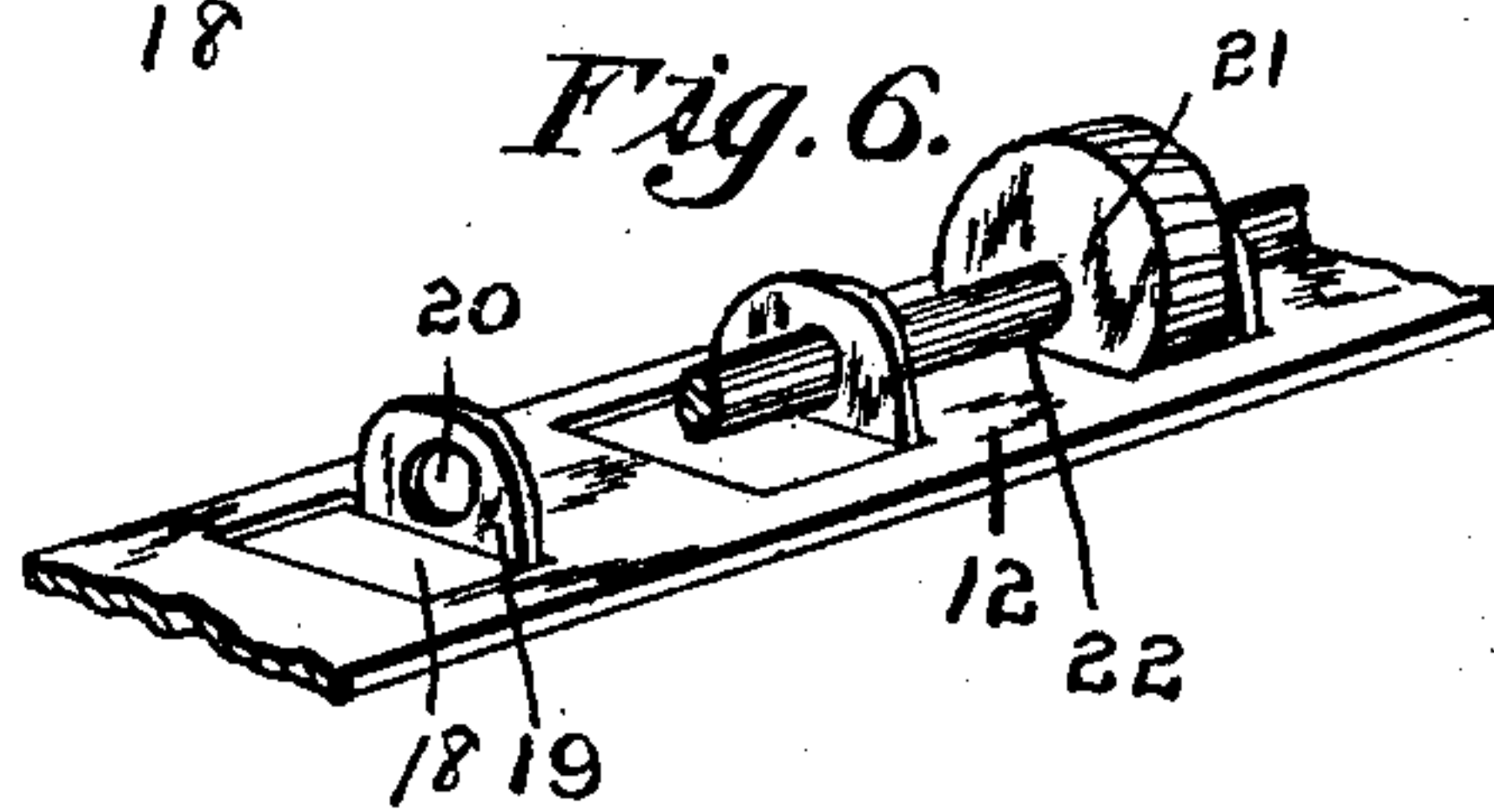


Fig. 6.



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UNITED STATES PATENT OFFICE

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SHAFT-LOOP FOR HARNESS.

No. 912,374.

Specification of Letters Patent.

Patented Feb. 16, 1909.

Application filed August 28, 1908. Serial No. 450,702.

To all whom it may concern:

Be it known that I, WILLIAM N. HEATON, a citizen of the United States, residing at Des Moines, in the county of Polk and State of Iowa, have invented a certain new and useful Shaft-Loop for Harness, of which the following is a specification.

The object of my invention is to provide a shaft loop for harness of simple, durable and inexpensive construction designed to receive a shaft and to permit said shaft to freely move longitudinally through the loop and in such a manner that the shaft will not engage or bind at any part of the loop so that the only function of the loops will be to hold the shafts in their proper position of elevation relative to the harness, and so that the alternate pulling forwardly and pushing backwardly of the draft animal in the harness will not tend to cause the saddle portion of the harness to rock upon the draft animal's back and thereby produce friction and wear such as might tend to cause soreness in the draft animal.

My invention consists in certain details in the construction, arrangement and combination of the various parts of the device whereby the objects contemplated are attained, as hereinafter more fully set forth, pointed out in my claims, and illustrated in the accompanying drawings, in which—

Figure 1 shows a sectional view of the shaft loop with a shaft therein, the shaft loop in said figure being taken on the line 1—1 of Fig. 2. Fig. 2 shows an enlarged sectional view on the line 2—2 of Fig. 1. Fig. 3 shows a detail sectional view taken through the central portions of the rollers to illustrate the wire for supporting the rollers. Fig. 4 shows a side elevation of the shaft loop taken from the outer side thereof. Fig. 5 shows a detail perspective view of the metal strip in which the rollers are supported, showing the shape of said strip before the lugs are bent at right-angles to receive the roller supporting wire, and Fig. 6 shows an enlarged, detail perspective view of a portion of the roller supporting strip with a roller supporting wire in position therein and a roller on the wire.

Referring to the accompanying drawings, I have used the reference numeral 10 to indicate that portion of the harness strap to which the shaft loops are ordinarily attached. This strap may, if desired, be pro-

vided with the usual buckles for connecting it with the saddle strap and the belly band of a harness.

The frame of the shaft loop is made of two sheet metal members 11 and 12, the member 11 being semi-circular in cross section and provided with flanges 13 at its edges, and the member 12 being flat in cross section and connected with the flanges 13 by rivets 14. These two members that form the shaft loop are jointly arranged in circular form with the flat member 12 on the inside, and so arranged as to form an opening large enough to freely admit a shaft 15, as shown in Fig. 1. I connect the strap 10 with the frame of the loop by providing brackets 16 and 17 at the upper and lower portions of the loop, through which brackets the strap 10 is extended. The strap is fitted close to the curved outer portion of the shaft loop and its side edges are connected to the flanges 13, as clearly shown in Fig. 4.

The frame member 12 is provided throughout its entire length with a series of openings 18 and with integral lugs 19 at one side of each opening, said lugs being bent outwardly to positions at right-angles to the frame member 12, as shown in Fig. 6. In constructing this frame member, I use suitable dies for cutting out the openings and lugs 19, and the frame member 12 is first formed in the position shown in Fig. 5, each of said lugs being provided with a central opening 20. Then after being thus cut out the lugs are bent at right-angles. In each of the openings 19, I place a roller 21. A portion of said roller projects inwardly from the frame 12 and said rollers are all rotatably mounted in position by means of a wire 22 which is extended through each roller and through all of the lugs 19. In this way the rollers are held suitably spaced apart and are so arranged that they may freely turn, the inner edges of the rollers being so positioned that they will loosely engage a shaft extended through the loop.

In practical use and assuming that a harness is provided with my improved shaft loops, and that the harness is placed on a draft animal and vehicle shafts placed in the shaft loops, and the tugs and hold-back straps attached, then it is obvious that when the draft animal pulls forwardly, the shafts will freely slide through the lugs and all of the strain upon the draft animal will be

applied to the tugs, then when the draft animal is backed, or holds back when going down hill, all of the strain upon the harness will be thrown upon the hold back straps and the shafts will freely slide through the shaft loops. In this way the only strains upon the saddle portion of the harness are those caused by carrying the weight of the shafts.

10 In cases where the shaft loops are firmly fixed to the harness, then the strains caused by the shafts will tend to rock the saddle upon the back of the draft animal and frequently causes soreness at the point where the saddle rubs on the draft animal. By means of my improvement, injury of this kind is avoided. I have found also that it is just as necessary to provide anti-friction rollers at the sides and top of the shaft loop as it is at the bottom, for the reason that the strain of the shaft upon the shaft loops is often times both lateral and in an upward direction, and without anti-friction rollers at said points some of the strains, at least, would be thrown upon the shaft loops and therefore upon the saddle portion of the harness. Furthermore, it is desirable that the frame of the shaft loop be of comparatively small diameter and of compact construction. By the arrangement herein shown and described, both of these results are accomplished and a frame is provided that is very inexpensive in construction and yet has great strength and is made no larger in outline than is demanded for containing small rollers between the shaft opening and the outer surface of the shaft loop.

I claim as my invention:

40 1. A shaft loop, comprising inner and outer sheet metal body portions arranged in circular form and provided with a central opening to receive a shaft, and a series of small rollers arranged therein in radial positions with their inner portions projecting

inwardly beyond the inner member of the shaft loop.

2. An improved shaft loop, comprising two frame members, the outer one being semi-circular in cross section and provided with flanges at its sides, and the inner one being flat and connected to said flanges, both of said frame members being formed in substantially circular shape with a central opening to receive a shaft, said flat frame member being provided with a series of openings and with outwardly projected lugs adjacent to said openings, rollers having their body portions contained between said frame members and their inner portions projected inwardly toward the center of the opening, and a wire ring passed through all of said lugs and all of said rollers.

3. An improved shaft loop, comprising two frame members, the outer one being semi-circular in cross section and provided with flanges at its sides, and the inner one being flat and connected to said flanges, both of said frame members being formed in substantially circular shape with a central opening to receive a shaft, said flat frame member being provided with a series of openings and with outwardly projected lugs adjacent to said openings, rollers having their body portions contained between said frame members and their inner positions projected inwardly toward the center of the opening, and a wire ring passed through all of said lugs and all of said rollers, and a strap permanently secured to the outer surface of the frame with its end portions extended respectively above and below the frame, and brackets at the top and bottom of said frame having said strap passed through them.

Des Moines, Iowa, July 30, 1908.

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Witnesses:

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