(No Model.)

A. S. SMEAL.

REIN RING.

No. 506,380. Patented Oct. 10, 1893.

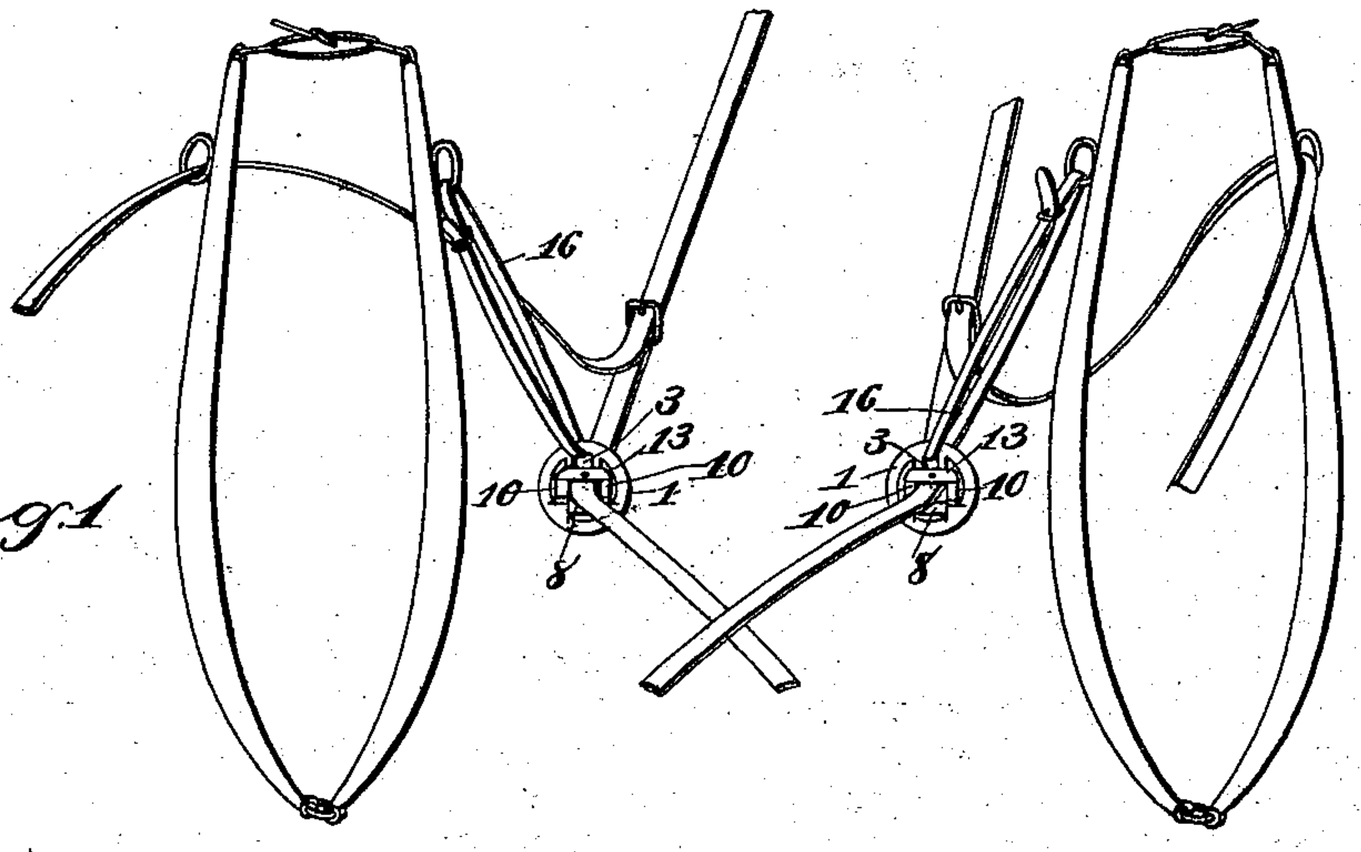


Fig. 1

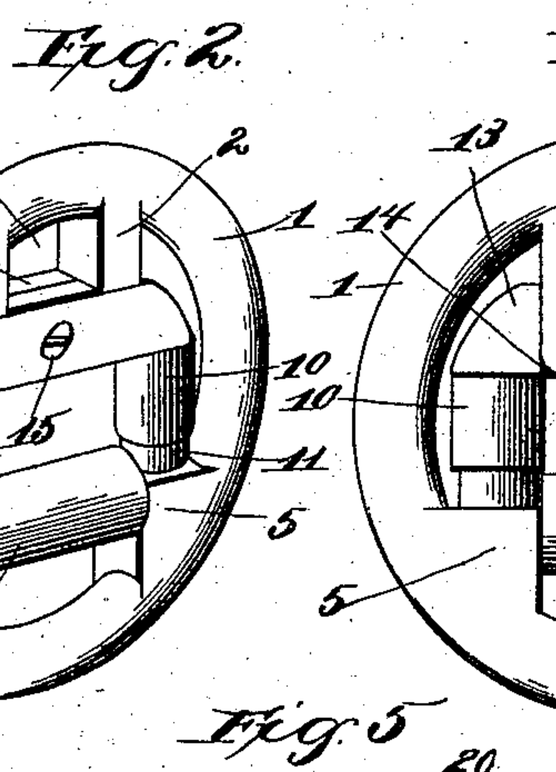


Fig. 2.

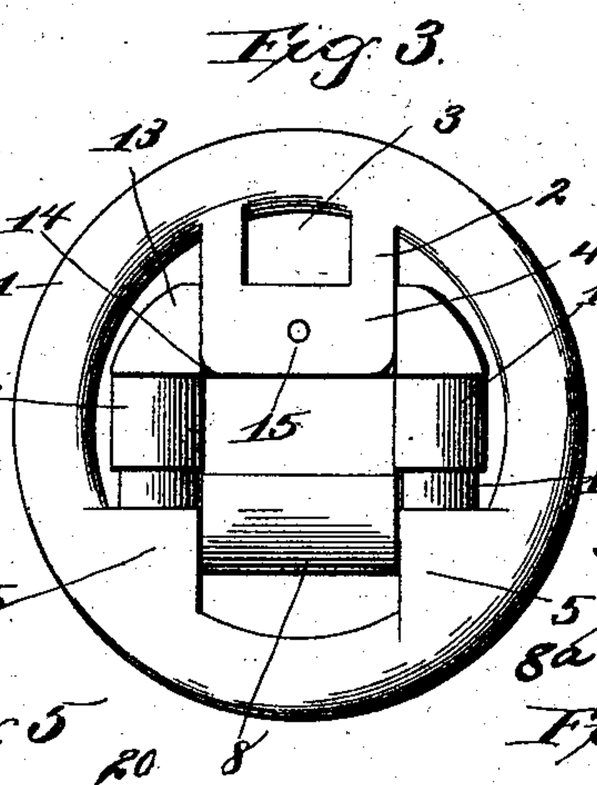


Fig. 3.

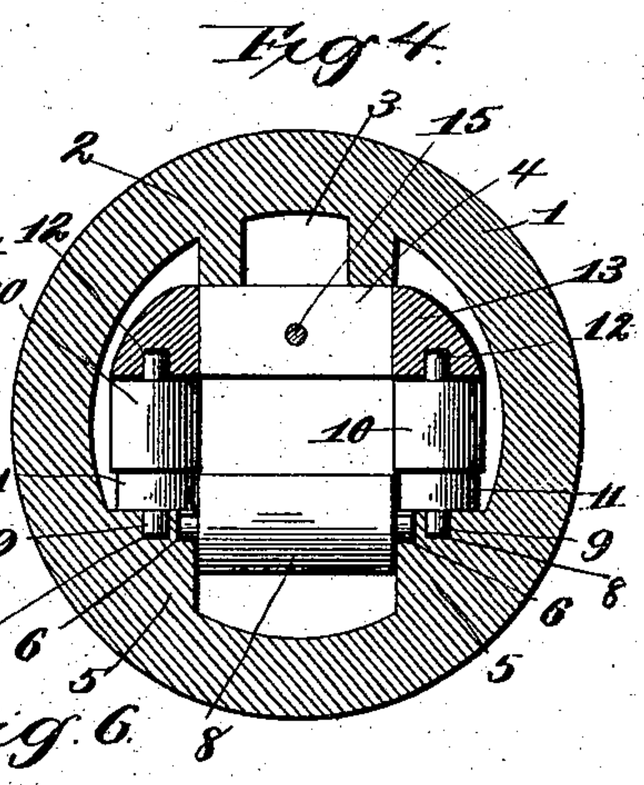
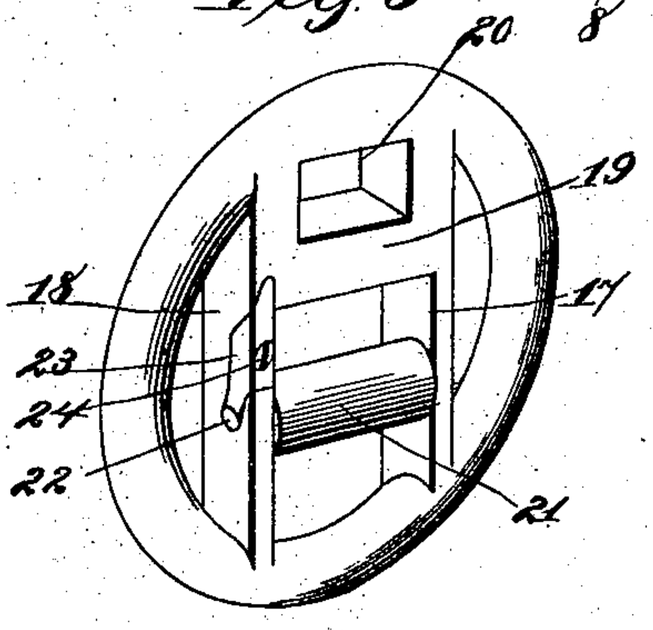
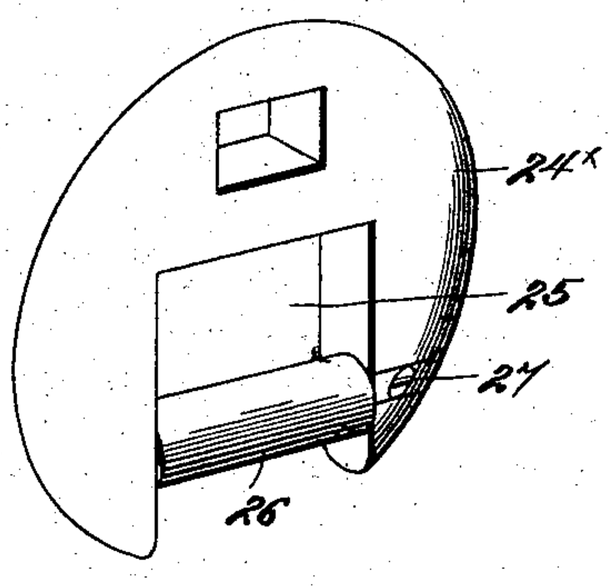


Fig. 4.

Fig. 5

Fig. 6





Witnesses

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UNITED STATES PATENT OFFICE.

ARCHIE S. SMEAL, OF KYLERTOWN, PENNSYLVANIA.

REIN-RING.

SPECIFICATION forming part of Letters Patent No. 506,380, dated October 10, 1893.

Application filed April 8, 1893. Serial No. 469,597. (No model.)

To all whom it may concern:

Be it known that I, ARCHIE S. SMEAL, a citizen of the United States, residing at Kylertown, in the county of Clearfield and State of Pennsylvania, have invented a new and useful Roller-Guide for Harnesses, of which the following is a specification.

This invention relates to roller guide-rings for harness, especially double harness, and has for its object to prevent the reins on the inside from becoming twisted around the hames, and at the same time serve as antifrictional supports for the said inside reins.

With these and other objects in view, the invention consists of the construction and arrangement of the parts thereof as will be hereinafter more fully described and claimed.

In the drawings: Figure 1 is a perspective view of a set of double harness, showing the improved roller-guide in connection therewith. Fig. 2 is a perspective view of the form of roller-guide shown in Fig. 1 disconnected. Fig. 3 is an elevation of the roller-guide, looking toward the side opposite to that shown by Fig. 2. Fig. 4 is a section taken longitudinally and vertically through the roller-guide. Fig. 5 is a detail perspective view of a modified form of the roller-guide. Fig. 6 is a similar view of a still further modification.

Similar numerals of reference indicate corresponding parts in the several figures of the drawings.

Referring to the drawings, the numeral 1 designates a circular frame or ring, as shown in Figs. 1, 2, 3, 4, and 5; and as shown in Figs. 1, 2, and 3 is formed with a pair of downwardly-projecting lugs 2, interiorly arranged and spaced apart to form an eye 3, with the adjacent part of the outer frame or ring, and connected at their lower ends by a cross-bar 4, which is only about one-half, or a little more than one-half, the thickness of the said lugs to provide a seat at the lower ends of the latter. The lower part of the frame or ring 1 is formed with a pair of angular lugs 5, having their upper edges in alignment with each other and formed with bearing grooves 6, in which are rotatably fitted the journals 7 of a horizontally-disposed roller 8, that projects downwardly a short distance between the vertical walls of the said lugs 5. The said lugs 5 are also formed with vertical bearing-openings 8^a, in which the lower journals 9 of a pair of vertically-disposed rollers 10 are rotatably fitted, the said vertical rollers moving close to the opposite ends of the horizontal roller 7 and slightly cut away circumferentially, as at 11, to make a close fitting and avoid interference of one roller with the other in the movement of the same. The upper journals 12, of the rollers 10, are rotatably fitted in bearing openings formed in the opposite ends of the under edge of a horizontally-disposed bearing-bar 13, that is constructed with the recess or slot 14 in one side to fit over the cross-bar 4, and is secured in place by a screw 15, and by this means, and the formation of the seat at the lower ends of the lugs 2, a flush fitting of the several parts is provided and they are so positioned as to relatively coact with each other and at the same time the rollers are detachable for purposes of repair, replacement, &c. The vertical bearing-openings in the lugs 5, for the journals on the lower ends of the rollers 10, are situated to one side of the grooves 6, in order to permit the formation of the said grooves centrally in the lugs and not interfere with the action of the lower or horizontal roller. By this means it will be seen that the reins or lines passing through the opening formed by the lower horizontal roller 7, the two side rollers 10, and the lower edges of the cross-bar 4, and bearing-bar 13, prevent the same from becoming twisted and at the same time produce an antifrictional bearing through the position of the said rollers. The eye formed between the lugs 2 is for the purpose of receiving a supporting-strap 16, that is connected to the inside terret or rein-guide of the inside hame, as fully shown in Fig. 1; and this form of strap is employed in connection with all the forms of the device to properly suspend the same in the manner shown.

In Fig. 5 the frame or ring 1 is constructed with a pair of integral cross-bars 17 and 18, that extend vertically and are connected at their upper ends by a cross-web 19, in which an eye 20 is formed to receive the strap 16 heretofore referred to. As shown, the metal is removed between the lower parts of said bars 17 and 18, and between the same is mounted a single horizontal roller 21 that forms, with the lower termination of the web

19 and the adjacent parts of the bars 17 and 18, an opening through which the rein or line passes for the same purpose as stated in connection with the form heretofore set forth. One journal of the roller 21 is mounted in the bar 17, and the opposite journal of said roller is removably mounted in a groove 22, in the bar 18, and is held in place therein by a removable cap-piece 23, having a fastening screw or bolt 24, and which is fitted down in a recess in the bar 18 in such manner as to form a flush surface.

In Fig. 6 a circular plate $24^{\times}$ is used instead of the ring or open form of frame of circular contour, as heretofore set forth, and has a slot 25 opening thereinto from the bottom in which is mounted a single roller 26, that is held in removable position with one side of the said plate by a detachable cap-plate 27. In this instance the eye for the strap 16 is also provided in the upper part of the plate 24, as fully shown. Thus in each of the above-described forms of my invention, the roller, or rollers, are removable by the detachment of a portion of the frame, thus simplifying the construction of the guide by enabling the parts to be manufactured separately and assembled after completion, and by facilitating the separation of the parts for the purpose of repair.

Either of the devices herein set forth may be constructed from suitable material, such as celluloid, composition, or any desirable substance, and where the frame or ring is formed open it lightens the structure of the device without detracting from the strength of the same.

The cost of the device is reduced to a minimum by its simplicity of arrangement of parts, and it is obviously apparent that changes in the form, proportion, and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of this invention.

Having described the invention, what is claimed as new is—

1. A rein guide comprising a ring or frame provided with an eye for the attachment of a supporting strap and an adjacent guide opening, a guide roller arranged in said guide-opening and mounted in bearings in the ring or frame, and lateral guides arranged at the terminals of said guide roller to prevent lateral deflection of the reins, the ring or frame being provided with a detachable section to permit the removal of the roller, substantially as specified.

2. In a device of the class described, the combination of a supporting frame, a horizontal roller mounted in the lower part thereof, a vertically-disposed roller located adjacent to each end of said horizontal roller, and a removable bearing-bar located above the said vertically-disposed rollers, substantially as described.

3. In a device of the class described, the combination of a ring having inwardly-projecting lugs, a horizontal roller movably mounted on a part of said lugs, a vertical roller located adjacent to the opposite ends of the said horizontal roller, a removable bearing-bar engaging the upper ends of said vertical rollers, and a screw for holding said bearing-bar in position, the upper part of the said ring being formed with an eye for the purpose of receiving a supporting-strap, substantially as described.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

ARCHIE S. SMEAL.

Witnesses:
E. J. HUBLER,
A. R. HUBLER.