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2,587.927

BOWLING BALL CLEANER

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FIG. 1.

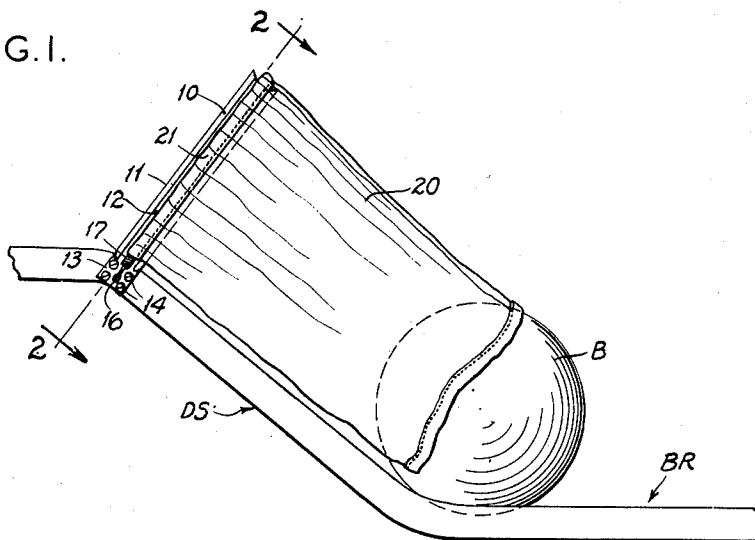


FIG. 2.

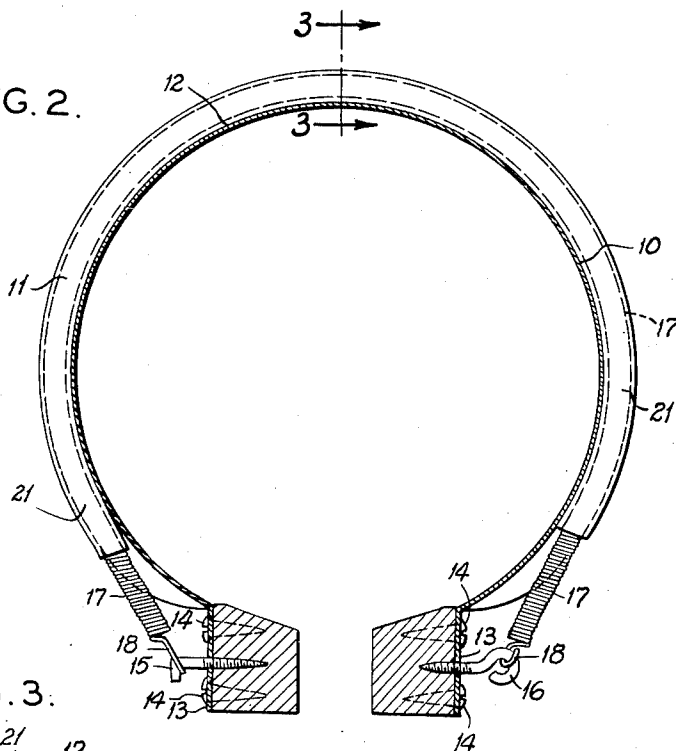
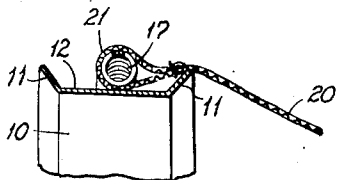


FIG. 3.



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BOWLING BALL CLEANER

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6 Claims. (Cl. 273-47)

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This invention relates to improvements in bowling ball cleaners, and more particularly to an improved ball cleaner embodying a cloth and anchorage therefor, and an improved combination of such elements with the drop sweep of a ball return, which latter may be of conventional type.

Ball cleaners have heretofore been known as attachments in overlying relation to the ball returns usually employed in a bowling alley. However, in such devices as have heretofore been made available to the trade, great difficulty is encountered in maintaining a rigid mounting of a cloth-supporting member in proper position over the return, and in the requirement of considerable time for removal and replacement of the cleaning cloth, incident to its laundering or replacement. It is accordingly a principal objective of the present improvements to provide a rugged, rigid device for positively positioning a ball cleaning cloth in optimum relation to the ball return, and to provide for quick and easy detachment and reassembly of the cleaning cloths, as is required from time to time.

The present invention may be summarized by reference to the current disclosure, being a preferred embodiment of the improvements as embodying a rigid arch or partial hoop, usually of metal, and which is provided with wide plate-like tangs for attachment of the arch rigidly in a position to form, with the cleaning cloth, a tunnel over the drop sweep portion of the return. So as to assure a firm anchorage for the ball-entrance end of the cloth tunnel, the metal arch or hoop is characterized by an outwardly opening channel section, or at least with an outstanding peripheral flange along its rear margin. Means are provided at the forward end of the cloth for anchorage thereof to a contractile spring embracing the arcuate portion of the hoop. Such spring may take the form of a coil tension spring, provided with hook ends or tangs, the spring being extended for example through a hem at the leading end of the cloth, thence circumferentially embracing the channeled hoop with its ends anchored to screw hooks or the like, at the sides of the ball return rails. Release of at least one end of the spring enables a quick and easy separation of the cloth and the spring, followed by easy insertion of the spring through the hem of a replacement cloth.

Among the many other objectives of the invention there may be noted the use of a special coil tension spring of non-rusting characteristics, and of a relatively light loading; the utilization

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of the hoop or arch supporting the leading end of the cloth, which is of channel section both for greater rigidity and to provide frontal and rear peripheral abutments for the spring and hem, so as positively to secure the end of the cleaning cloth in fixed position despite the drag of the ball on the cloth incident to the cleaning operation as the ball is returned.

The foregoing and numerous other objects and advantages will more clearly appear from the following detailed description of the currently preferred embodiment, particularly when considered in connection with the accompanying drawing, in which:

Fig. 1 is a side elevation of a bowling ball return, to which is attached, specifically to the drop sweep thereof, a ball cleaner embodying the present improvements;

Fig. 2 is an enlarged end elevation of the device, shown partly in section, the sectional portions being taken on line 2-2 of Fig. 1, and

Fig. 3 is an enlarged fragmentary transverse section through the hoop or arch, with an anchorage spring and portions of the hem of a cleaning cloth as same would appear with the parts in operative position, the sectional portions being taken along line 3-3 of Fig. 2.

Referring now by characters of reference to the drawing, the device is designed for rigid attachment to the ball return BR, the latter including a horizontal, relatively raised portion, and a second horizontal lower portion extending along the alley, an intermediate sloping section of the return known as a drop sweep, being indicated at DS. To show the proportion of parts, and for completeness, a bowling ball which may be of any suitable or conventional type is indicated at B.

As an anchorage and support for the cleaning cloth later to be described, there is provided an incompletely circular hoop or arch formed of strip steel stock and indicated at 10, and by preference formed of a channel section, such channel being defined by outstanding sides each constituting a peripheral flange, the channel trough being indicated at 12, the sectional shape of which will best appear from Fig. 3. Such channel formation of the arch or hoop 10, serves at least two purposes, viz., the channel section results in a normally more rigid element than would be the case were the member 10 formed of a flat strip stock; secondly, as will later more clearly appear, the provision of at least one flange 11 along the rearmost periphery of the hoop, provides a distinct abutment for the front

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or leading end of the cleaning cloth and a retention spring therefor, so as to prevent these elements from being drawn away from the arch, when the cloth is frictionally engaged by the ball in the course of passage down the drop sweep.

As a convenient and practical expedient for anchoring the supporting hoop in place on the return, the hoop is provided in the region where its circle is interrupted, with a pair of spaced, outwardly or downwardly extending tangs 13. These preferably are flattened, so that each is of a planar aspect, and each is provided with a plurality of screw holes for the reception of screws 14 extending into the vertical side faces of the return rails. An added opening is preferably provided in each of the tangs 13 for the reception of a screw hook or screw eye. It is a preference that one end of the spring later referred to, be attached to a screw eye, the loop of which may if desired be closed upon itself so as to prevent casual disengagement of one of the tangs or end loops of the spring from such eye, thus preventing displacement or loss of the spring. According to such preference, a screw eye 16 is located at one side, and for somewhat greater ease of attachment as will appear, a downturned L hook, provided with a threaded shank and indicated at 15, extends through the opposite plate or tang of the hoop.

The spring as indicated at 17, is by preference of a relatively lightly loaded character to facilitate its attachment and detachment incident to removal and replacement of the cleaning cloth. Such spring acts as a contractile or constricting element over the forward end of the cleaning cloth, as will appear. The spring 17 is by preference of a type in which when unstressed, its coils are substantially contiguous, thus minimizing the space between such coils when the spring is stretched or stressed. Each end of the spring 17 is provided with a tang or loop indicated at 18, one of which engages the screw eye 16 and the other, the L hook 15.

The cleaning cloth, indicated at 20, may consist of a rectangular section of a suitable soft woven fabric and is provided along its forward margin with a stitched hem 21 extended over the full front width of the cloth, the hem being open at its opposite ends so as to facilitate insertion and withdrawal of the spring 17, incident to change of cloths.

The manner of usage of the elements characterizing the present improvement, is thought to have been rendered fully apparent from the description of its parts and associated structure, but it may, for completeness, be noted that installation of the attachment involves a location of the arch or hoop 10 in a position at about a right angle to the upper portion of the drop sweep DS of the ball return. Such location assures that the ball has attained a sufficient impetus, after starting its return movement, prior to entrance of the tunnel constituted by the cleaning cloth and the hoop. Such position results in a location of the hoop at a substantial angle to the horizontal, as is preferred, but without restriction. Attachment of the metal arch 10 is completed by driving wood screws through the apertures therefor in the side plates or tangs 13, following which the screw hook and eye 15 and 16 are similarly applied. Attachment of the cloth to the arcuate channel element 10 consists of threading the spring 17 through the hem 21 of the cloth 20, and centering the spring in

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the hem so that there occurs about an equal projection of the spring ends from the opposite ends of the hem. Assuming the spring 17 to have been detached from the screw eye 16, the adjacent tang 18 of the spring is hooked into the eye 16, and the spring tensioned over and in the peripheral channel portion of the arch 10, and its opposite spring tang 18 hooked over the L hook 15 substantially as shown. In such relation of parts, the cleaning cloth 20 extends downwardly to and preferably somewhat overlaps the sides of the rails of the ball return, so that the hoop 10, the cleaning cloth and the ball return form substantially a fully tubular passage for the ball as same moves by gravity down the drop sweep.

The function of the cloth in the course of cleaning the ball, will have become obvious, but it may be briefly noted that the inside diameter of the arcuate element 10 just slightly exceeds the diameter of the ball. Thus the ball will be definitely guided into position under the cloth, in moving down the drop sweep DS. In case the ball may not be exactly centered at least momentarily, when in its entrance position, the channel side or flange 11 at the upper or entrance end of the cleaner assembly, will serve as an entrance throat, tending to center the ball on the return. As the ball proceeds down the drop sweep it will of course deflect the cleaning cloth, which produces a wiping action on the ball to remove therefrom all dirt, wax and other foreign particles which, but for removal, would be apt to interfere with true ball direction in the course of play.

It will now have appeared that the device as described, will serve fully to realize each of the several objectives hereinabove expressed, as well as others implied from the description of parts and function. Although the invention has been described by detailed reference to a preferred embodiment, such detail of description should be understood solely in an instructive rather than in any limiting sense, numerous variants being possible within the scope of the claims hereunto appended.

I claim as my invention:

1. In a bowling ball cleaner for use as an attachment to a ball return, a rigid arcuate element attached to the return and defining therewith a ball-receiving opening, a flexible ball-cleaning element extended from the rigid element along and in overlying relation to the return, a hem in one end of the ball cleaning element, a contractile spring extended through the hem of the ball cleaning element and detachably connected at least by one of its ends, to an anchorage adjacent the ball return, the spring and hem of the cleaning element being normally located in embracing relation to the rigid arcuate element.

2. In an attachment for a ball return, to serve as a bowling ball cleaner, a rigid arch formed in plan as a part circle and provided with wide flat tangs extended outwardly and below such circular portion, the tangs being normally attached to the sides of the ball return, a cleaning cloth draped rearwardly of the arch and over the ball return, a hem in one end of the cleaning cloth, a spring extended through said hem, anchorage means for the ends of the spring in the region of the tangs of said arch, the arch being provided with a marginal projection on its rearmost side, forming an abutment for the hem of the cleaning cloth, and the spring therein.

3. In a bowling ball cleaner for attachment to a ball return, a hoop of a size to pass the ball

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therethrough, the hoop normally transversely overlying the return, and being incompletely circular in plan and provided in its interrupted region with a pair of outwardly extended tangs or attachment plates normally fastened to the vertical sides of a ball return, a cleaning cloth normally draped over the return beyond the hoop, a coil tension spring normally overlying the arcuate portion of the hoop, the hoop provided with integral, outturned spring-stop portions, anchorage means in one end of the cleaning cloth formed to embrace and detachably to engage said spring, a hook on each side of the ball return for detachably engaging the ends of the spring, the hoop forming together with the return, a substantially completely tubular ball passage through which the ball is adapted to pass in engagement with the cloth for wiping action on the ball by the cloth.

4. In a ball cleaning attachment for use in a bowling alley, a rigid metal arch having flat plate extensions spaced from each other in its lower portion for attachment of the arch in fixed angular position across and above a ball return, a circumferential flange extended outwardly of the arch along its rear margin, a tunnel cloth draped, when in a position of use, over the return rearwardly of the arch, the arch-engaging part of the tunnel cloth being formed to provide a sleeve therein, a coil tension spring detachably extending through the sleeve of the tunnel cloth over the arch and forwardly of said flange, hooks for the ends of the spring located at the sides of the ball return, the spring being provided with terminal tangs at least one of which is detachably connected to one of the hooks to enable a quick release of the spring and cloth from the arch.

5. A ball-cleaning accessory for use in a bowling alley as an attachment to a ball return, said attachment comprising an incompletely circular metal hoop or arch provided with a pair of outwardly extended tangs or plates of planar aspect and provided with screw apertures, attachment screws by which said tangs are secured to the opposite vertical sides of the ball return, with the

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hoop or arch at a substantial angle to the vertical and located proximate to the upper end of the drop sweep of the ball return, the hoop or arch being of a channeled section, with the trough of such channel opening outwardly of the hoop, a cleaning cloth provided with a hem along its front margin, the hem being open at its ends, a coil tension spring extended through the hem and projecting from both ends thereof, the hem and tensioned spring therein normally being seated in the deeper portion of the hoop channel, and thus blocked by one side of the channel against separation from the hoop due to drag of the ball in engagement with the cloth, an anchoring hook at each side of the ball return and extended through the adjacent said tang of the hoop, the terminal portions of the spring being detachably engaged with said hooks, whereby to enable, upon release of at least one end of the spring, withdrawal of the hem end of the cleaning cloth from said spring as for cleaning or replacement.

6. In a bowling ball cleaner for use as an attachment to a ball return, a rigid arcuate element attached to the return and defining therewith a ball-receiving opening, a flexible ball-cleaning element extended from the rigid element along and in overlying relation to the return, a hem in one end of the ball cleaning element, an elastic contractile member extended through the hem of the ball-cleaning element and detachably connected at least by one of its ends, to an anchorage adjacent the ball return, the elastic contractile member and hem of the cleaning element being normally located in embracing relation to the rigid arcuate element.

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