

Aug. 27, 1963

S. C. PEPLIN

3,101,945

BALL WHEEL WITH REINFORCED RESILIENT INSERT

Filed March 25, 1959

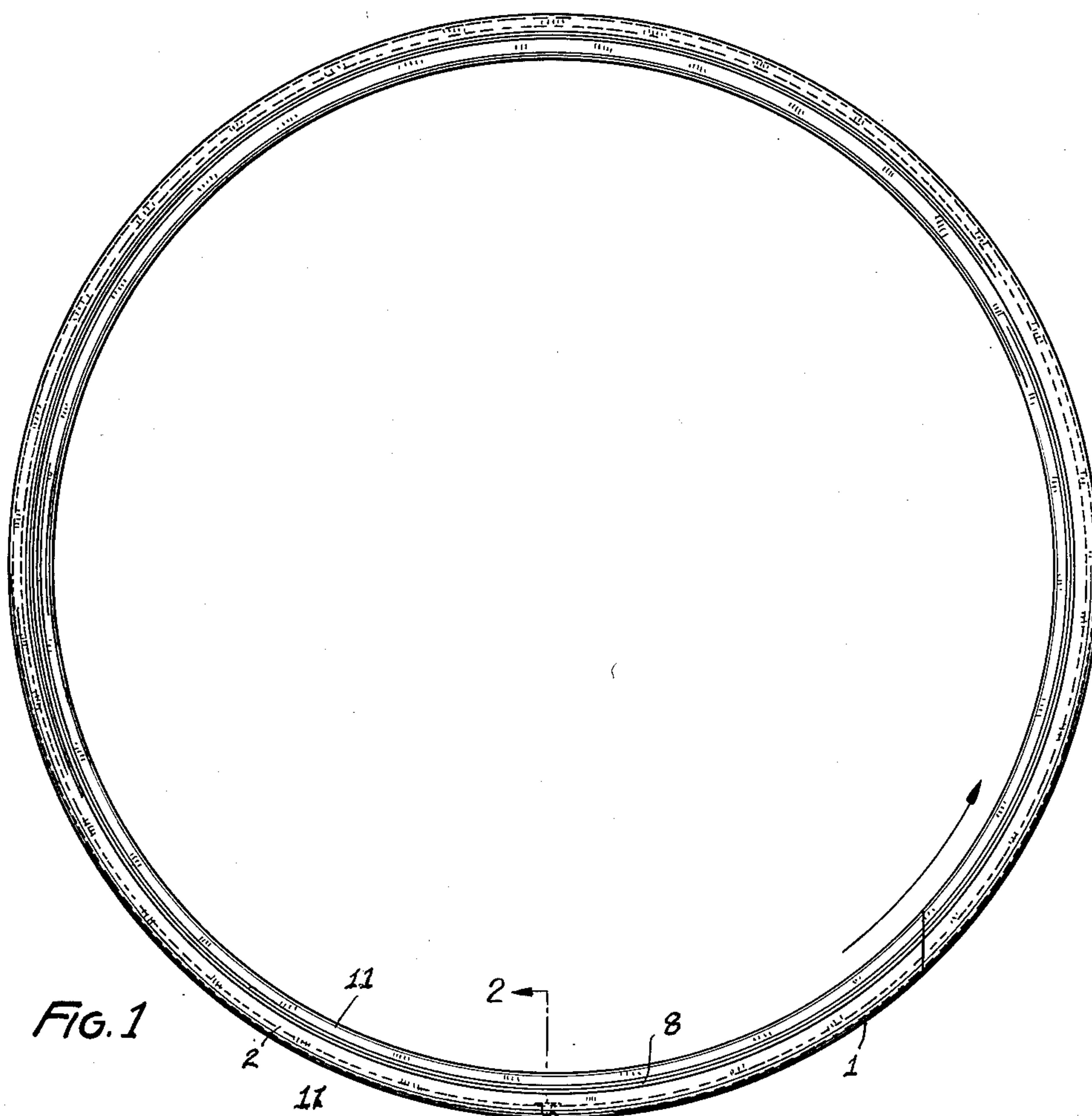


FIG. 1

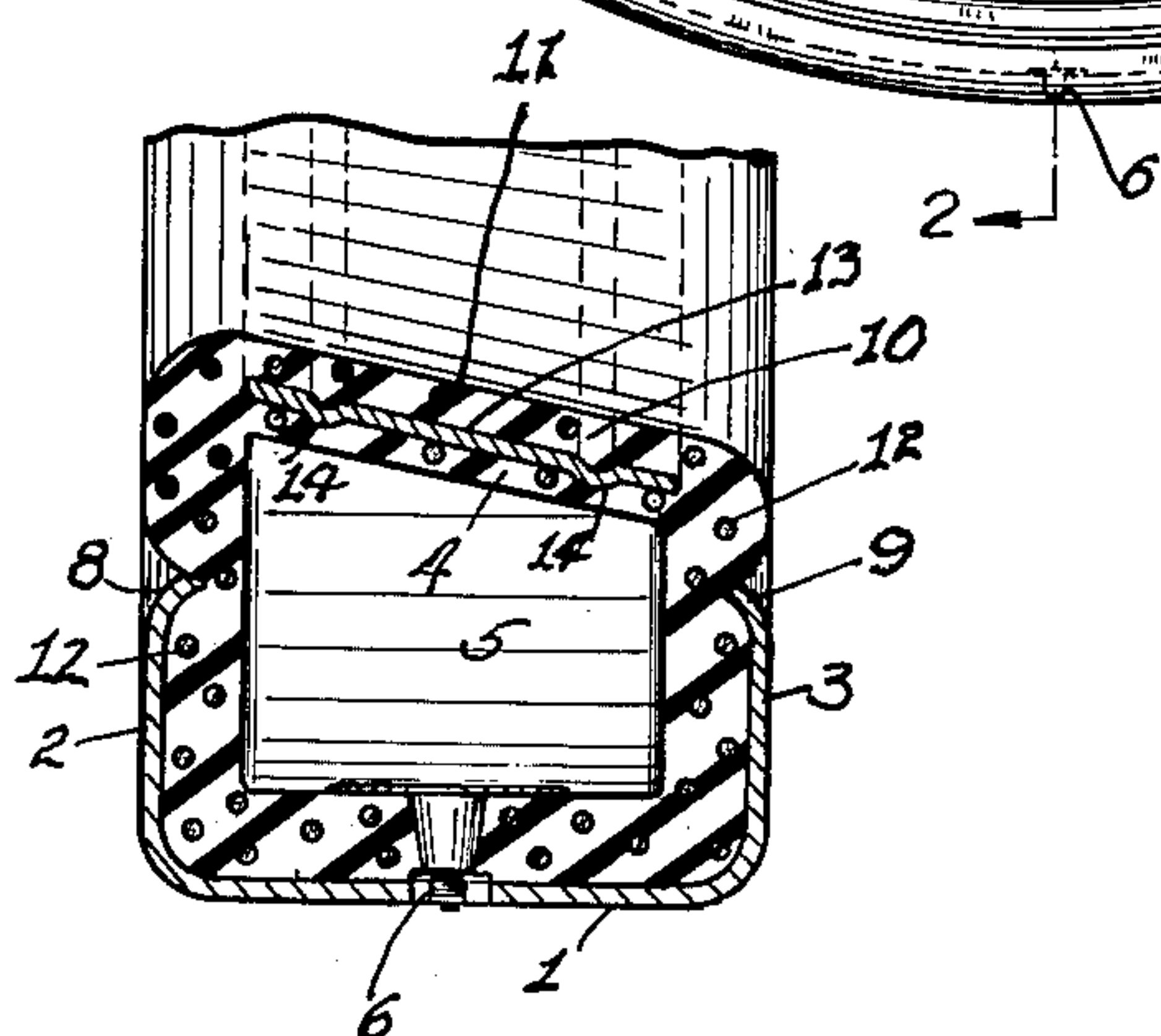


FIG. 2

INVENTOR.
STEPHEN C. PEPLIN
BY *William A. Jones Hony*
ATTORNEY

1

3,101,945

BALL WHEEL WITH REINFORCED RESILIENT INSERT

Stephen C. Peplin, Lakewood, Ohio, assignor to Lakewood Manufacturing Co., Westlake, Ohio, a corporation of Ohio

Filed Mar. 25, 1959, Ser. No. 801,920
2 Claims. (Cl. 273-49)

This invention relates to mechanism employed with automatic pin-setting and ball return constructions for bowling apparatus and relates more particularly to a ball wheel construction per se forming a part of said mechanism.

An object of the invention is to provide a device of the kind disclosed which is simple in construction, durable, sturdy and quiet in use.

Another object of the invention consists in a device comprising an annulus of channel form in which is secured an annular resilient cushion having a ball engaging face which, when assembled in the channel, provides an inner circumferential resilient angularly disposed face.

Another object of the invention consists in a construction comprising a channeled annulus of rigid material and a resilient annulus secured within the channel and having a portion extending beyond the channel to provide a resilient ball engaging face and in which the insert is secured within the channel against removal by forming or rolling the edges of the channel into the resilient material of the annulus.

Another object of the invention is to provide a ball wheel comprising a rigid channeled annulus and an annular cushion insert secured in the channel, the said insert having reinforcement and stiffening members embedded therein, the exposed annular face of the insert being adapted to be contacted by bowling balls as they are elevated from the pit to a ball return.

Still another object of the invention is a device of the kind disclosed in which the cushion insert consists of a hollow annular pneumatic tube extending radially inwardly of the annulus and having a ball engaging face inclined annularly at approximately 10° to the radii of said annulus.

Another object of the invention consists in a construction in which the walls of the tube are provided with reinforcing elements embedded therein.

Another object of this invention is to provide in the annularly inclined wall of the resilient member a reinforcing continuous annular plate embedded therein.

Other objects and advantages of this invention will become more apparent as the following description of an embodiment thereof progresses, reference being made to the accompanying drawing in which like reference characters are employed to designate like parts throughout the same.

In the drawings:

FIGURE 1 is a side elevation of a ball ring embodying my invention; and

FIGURE 2 is a transverse section on line 2-2 of FIGURE 1.

As is well known in the bowling art, a conventional means of conveying a bowling ball from a pit conveyor to a ball return track includes a ball wheel which is rotated within supporting guide rollers to convey a bowling ball frictionally engaging the inner circumferential surface of the ring and ball lift rods disposed within the rotating ring to a ball return track. The present invention resides in the ball wheel per se.

In carrying out my invention, I provide an annulus

2

of channel form preferably formed of metal or other rigid material, the annulus having a bottom or outer wall or face 1 and annulus side walls 2 and 3. The channel thus formed inwardly of the wheel is open at its side opposite to the bottom wall 1 and is adapted to receive therein an annular tube 4 which is preferably hollow to provide a chamber 5 therein. A valve 6 through which a source of air under pressure may be supplied to the chamber 5 is secured in place.

The tube 4 is inserted in the open side of the annular channel member and, when in place, as indicated in FIG. 2, the upper edges of the walls 2 and 3 of the U-shaped channel are crimped or rolled, as indicated at 8 and 9, into the resilient material 4, thereby firmly gripping the insert within the rigid channel.

The insert extends radially inwardly beyond the crimped portions of the annulus and thus forms a cushioned inner rim or face of annular form which lies entirely within the confines of the wheel, as indicated at 10. The face 10 of the cushioning member is inclined annularly from one side of the wheel to the other, as shown more clearly at 11, in FIG. 2, and forms a cushioning traction surface for engagement with a bowling ball as it is transported by suitable conventional means (not shown) from the pit to a ball return.

I provide means whereby the walls of the resilient tube may be reinforced annularly and such means may consist of a plurality of reinforcing wires 12 which are embedded in the material of the walls of the insert. In addition to the reinforcing wires, I also provide a continuous reinforcing annular plate 13 which is embedded in the inclined wall 11. The plate 13 may be crimped, as at 14, for added stiffness. By such reinforcing means, the cushioning effect of the construction is not diminished to any appreciable degree while at the same time a certain amount of strength and stiffness is present to prevent collapsing of the resilient tube under impact.

It will thus be seen that by such a construction I have provided a ball wheel track which is of extremely simple construction and which is quiet and durable in use.

Various changes may be made in the details of construction and arrangement of parts of the invention without departing from the spirit thereof or the scope of the appended claims.

I claim:

1. In a ball wheel forming an operative part of a bowling ball elevating and return mechanism, a channeled annulus opening inwardly of the annulus and an insert comprising a pneumatic tube of resilient material secured in the opening and extending throughout the circumference of the annulus and projecting radially inwardly thereof to provide a continuous annular bowling ball engaging surface.

2. In a ball wheel forming an operative part of a bowling ball elevating and return mechanism, a channeled annulus opening inwardly of the annulus and a pneumatic tube secured in the channel opening to provide a continuous annular exposed traction surface for engagement with a bowling ball.

References Cited in the file of this patent

UNITED STATES PATENTS

2,729,449	Montooth	Jan. 3, 1956
2,892,632	Montooth	June 30, 1959
2,915,313	Montooth	Dec. 1, 1959
2,967,708	Huck et al.	Jan. 10, 1961