Oct. 23, 1934. J. M. PATTERSON 1,977,775

PROTECTOR FOR HOSE AND SIMILAR ARTICLES

Filed Nov. 19, 1932

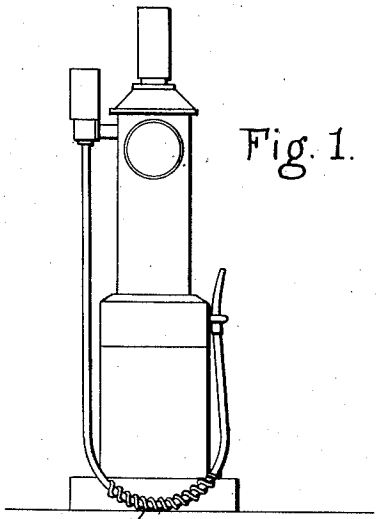


Fig. 1.

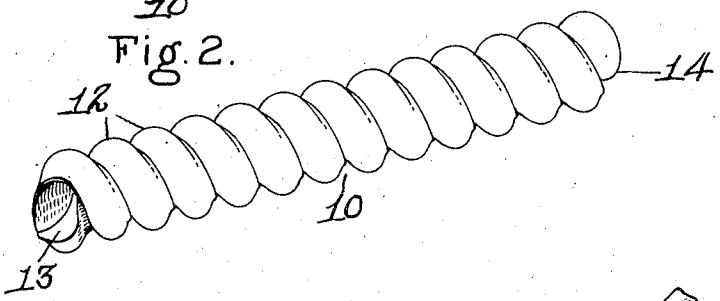


Fig. 2.

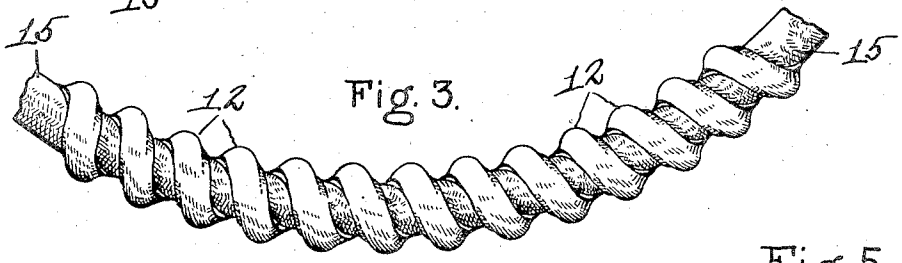


Fig. 3.



Fig. 5.

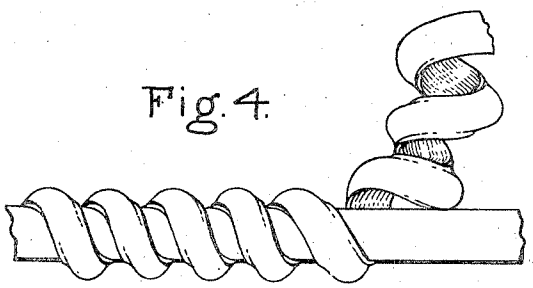


Fig. 4.

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Patented Oct. 23, 1934

1,977,775

UNITED STATES PATENT OFFICE

1,977,775

PROTECTOR FOR HOSE AND SIMILAR ARTICLES

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Application November 19, 1932, Serial No. 643,471

2 Claims. (Cl. 137—90)

This invention relates to a protector for elongated members, such as tubing, hose, rope, railings, and the like.

One object of the invention is to provide a novel protector which is capable of efficiently protecting a substantial length of the elongated member, such as the tubing, hose, rope, railing, or the like, and which may be made at a minimum expense and installed in a simple and efficient manner.

A further object of the invention is to provide a novel protected member which may be manufactured at minimum expense and is capable of use for various purposes, such as a hose, bumper for a boat, and wherever an elongated member is subjected to wear.

With these objects in view and such others as may hereinafter appear, the invention consists in the protector and in the protected member hereinafter described and particularly defined in the claims at the end of this specification.

In the drawing illustrating the preferred embodiment of the invention, Fig. 1 represents a conventional form of gasoline pump used in dispensing gasoline at gasoline filling stations, showing the present protector mounted in operative position upon the dispensing hose; Fig. 2 is a perspective view of the present protector; Fig. 3 is an enlarged detail in perspective, illustrating the protector mounted upon a section of the hose; Fig. 4 is a view illustrating the preferred manner of applying the protector to a hose or other elongated member; and Fig. 5 is a sectional detail through one turn of the rubber protector.

In general, the present invention contemplates a protector and preferably a rubber protector which is capable of use in protecting elongated members such as hose, tubing, rope, railings and the like, from excessive wear. In its preferred form the protector comprises a rubber strip shaped into helical form and vulcanized in such form to impart permanency thereto. The structure is analogous to a coil spring in that it is capable of elongation under tension and also of stretching radially of the individual turns comprising the coil. The rubber protector may be made to be applied to the hose, rope, or other elongated member after it has been formed into helical form and vulcanized, or in some instances it may be desirable to form the protector in helical form directly upon the elongated member to be protected and vulcanized thereon.

Referring now to the drawing, as therein shown the rubber protector comprises a strip 10 of rubber having the sectional shape shown in Fig. 5 and which is wound into helical form, as shown in Fig. 2, and vulcanized in such form. The rubber protector comprises preferably a substantial number of turns 12, so that when application is made thereof to a hose, tube, or other article, a substantial length of the hose may be protected. The rubber protector is provided at its opposite ends with free ends 13, 14 by which the protector may be wound about the elongated member 15 to be protected, and during the winding application the individual turns 12 of the coil may be spaced at desired distances in order that a predetermined length of protector may be made to protect a substantial and variable length of the elongated member. In addition, by increasing the distance between adjacent turns in the application of the protector to an elongated member 15 such as a hose, rope, railing, or the like, the internal diameter of the coil may be automatically reduced to adapt the single size of protector to use upon variable sizes of elongated members.

In the manufacture of the improved protector, a strip of suitably compounded rubber may be formed by extrusion or in any other desired manner to impart thereto any desired cross-sectional shape and size, depending upon the use to which the protector is to be put. In most instances I prefer to shape the strip of rubber so that it will have a sectional shape shown in Fig. 5 and long straight lengths of such a rubber strip may then be wound upon a mandrel at any desired pitch. The free ends of the rubber strip are then secured in any suitable manner to the mandrel to maintain the strip in predetermined coiled or helical shape, and the mandrel with the coil mounted thereon is then vulcanized or cured in accordance with the usual practice in curing rubber articles. After the vulcanizing operation has been completed, desired lengths each made up of a number of turns, may then be cut from the vulcanized coil forming the rubber protector.

In some instances it may be desirable to form and vulcanize the rubber protector directly upon the elongated member and the ends fastened thereto and the elongated member with the coil mounted thereon may then be subjected to vulcanization.

One of the most advantageous uses of the present protector resides in its use as a protector for the flexible hose used in dispensing gasoline at gasoline filling stations. As illustrated in Fig. 1, the usual gasoline pump is provided with a hose of from ten to twelve feet in length and connected at its inlet end with the pump and provided at its outlet end with a dispensing nozzle. When

not in use the dispensing nozzle is designed to be hung on a pin located on the pump tower so that the flexible hose is caused to form a loop, as shown in Fig. 1. Experience has shown that in practice the flexible hose will tend to chafe or wear at the bottom of the loop and the end portion of the hose is often subjected to excessive wear in being dragged over rough metal edges such as automobile fenders, bumpers, etc. By providing the flexible hose of the gasoline pump with the present protector wound thereon in such manner that adjacent turns of the hose are spaced a substantial distance apart, it has been found possible to efficiently protect substantial lengths of the hose at a minimum expense, and in this manner those portions of the hose which are subjected to excessive wear may be protected and the life of the hose extended without materially adding to the cost of the hose.

While it is preferred to construct the present protector of rubber, and of a truly helical shape, nevertheless for some purposes other compositions may be used, and also by the term "helical" I intend to include those shapes in which the individual turns of the coil may not be circular but which I regard as of general helical form.

While the preferred embodiment of the invention has been herein illustrated and described, it will be understood that the invention may be embodied in other forms within the scope of the following claims.

Having thus described the invention, what is claimed is:—

1. A protecting and wear-resisting member for a hose or the like comprising a resilient rubber strip of normally helical shape, having the individual convolutions thereof formed with a rounded outer surface to provide a protecting bead arranged to project beyond the surface of the hose, said strip being capable of being wound upon the hose with the convolutions spread apart beyond the normal relationship whereby to cause the convolutions to exert a gripping effect upon the hose.

2. The combination with a hose or the like, of a rubber protecting and wear-resisting member therefor, comprising a resilient rubber strip of a preformed normally helical shape, having the individual convolutions of the strip rounded to form a protecting bead adapted to project beyond the surface of the hose, the thickness of the convolutions being sufficient to impart substantial resiliency to the individual convolutions to enable them to tightly grip the hose or the like when the protecting member is wound thereon with the individual convolutions spread apart beyond normal relationship.

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