

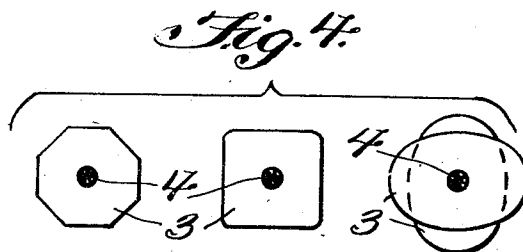
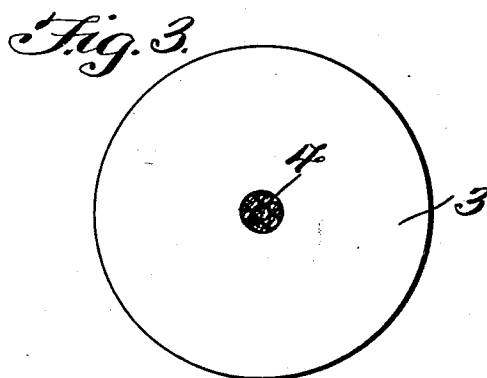
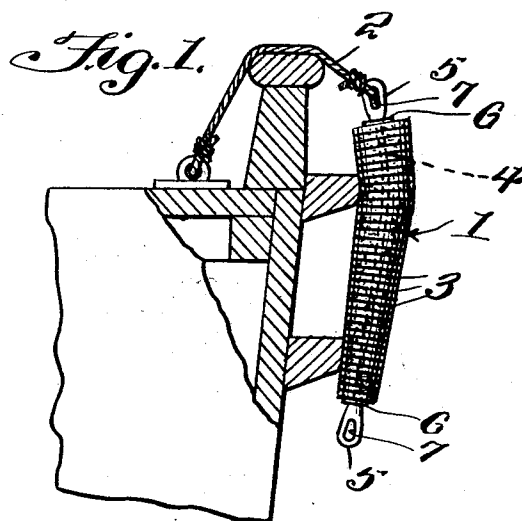
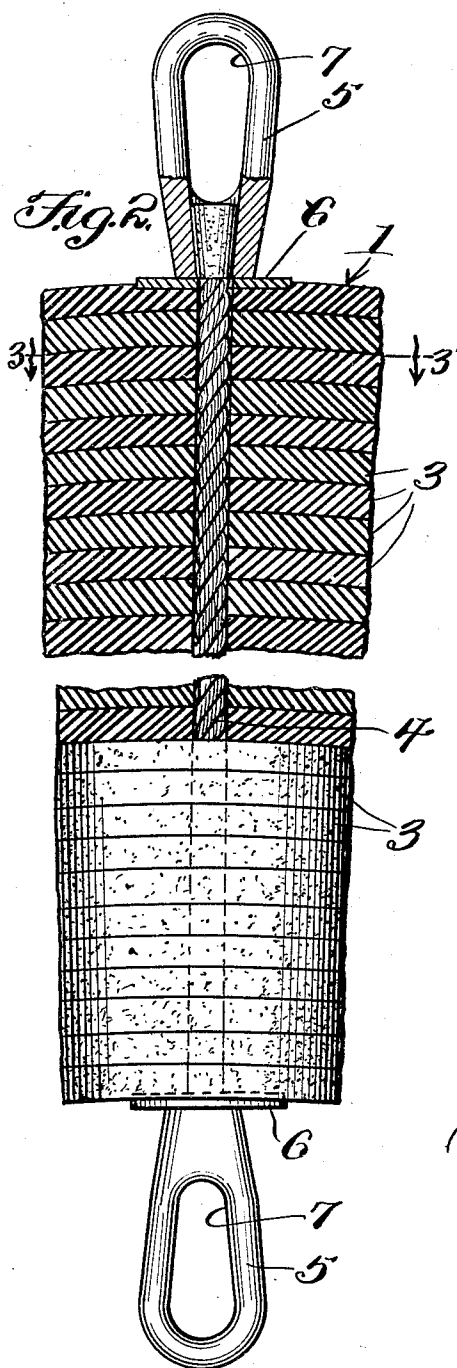
July 21, 1931.

H. W. LOCKWOOD

1,815,413

FENDER

Filed April 18, 1930



WITNESS

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FENDER

Application filed April 18, 1930. Serial No. 445,460.

This invention relates to new and useful improvements in fenders for boats and the like to prevent chafing when boats are closely attached as in towing or when tied up to each other or to a dock and has for the primary object, the provision of a device of the above stated character whereby discarded or worn tires of vehicles and the like may be utilized to provide the desired protection and which is capable of withstanding considerable abuse and wear.

Another object of this invention is the provision of a plurality of tightly compressed elements constructed from discarded material and so connected that they form a protecting member capable of withstanding considerable strain and which will yield when under strain or pressure to prevent chafing of one or more boats when closely associated with each other.

A further object of this invention is the provision of a flexible connection for securing the disks or elements together which will permit of the desired yielding and flexing of the device when assembled and in use.

A still further object of this invention is the provision of a fender of the above stated character which will be simple, durable and efficient, and which may be manufactured and sold at a comparatively low cost.

With these and other objects in view as will become more apparent as the description proceeds, the invention consists in certain novel features of construction, combination and arrangement of parts as will be hereinafter more fully described and claimed.

For a complete understanding of my invention, reference is to be had to the following description and accompanying drawings in which:

Figure 1 is a side elevation partly in section illustrating a fender constructed in accordance with my invention and applied to a boat or the like.

Figure 2 is an enlarged side elevation partly in section illustrating the fender.

Figure 3 is a sectional view taken on the line 3—3 of Figure 2.

Figure 4 is a diagrammatic view illustrating several shapes or forms of disks.

Referring in detail to the drawings, the numeral 1 indicates in entirety a fender adapted to be positioned between the sides of boats or wherever the side of the boat comes in contact with another boat or dock and is suspended by a rope or cable 2 as shown in Figure 1 of the drawings.

The fender 1 is constructed from a plurality of disks 3 constructed from any material suitable for the purpose and preferably made from worn or discarded tires or vehicles and the disks are arranged one upon the other as clearly shown in Figure 2 and provided with aligned openings to receive a flexible element 4 which may be in the form of a cable or rope and has the ends thereof secured in any well known manner to attaching elements 5. Washers 6 are interposed between the end disks 3 and the attaching elements 5. When assembling the disks 3 they are tightly compressed together and held in this position until the flexible element 4 has been passed therethrough and connected to the attaching elements 5. The attaching elements are provided with eyes 7 to receive the suspending element 2 which is tied or otherwise secured as shown in Figure 1.

The disks 3 may be constructed in any desired shape and thickness and as shown in Figure 3 may be of circular shape while as shown in Figure 4 they may be octagon, square or oval shape. When manufacturing the device, disks of different shapes may be assembled, one on the other to form the protecting unit of irregular contour. The flexible connecting element 4 passing centrally through the disks will hold the disks in proper relation and will permit said disks to yield to absorb shocks and prevent chafing. The device will return to normal shape when relieved of pressure or strain by the material from which the disks are constructed and will prevent marring or injury to the surface they engage.

The device may be constructed in different sizes to permit use in connection with all types of boats and docks. The disks may be covered with canvas or the like if desired.

While I have shown and described the preferred embodiment of my invention, it will

be understood that minor changes in construction, combination and arrangement of parts may be made without departing from the spirit and scope of the invention as claimed.

Having thus described the invention, what I claim is:

1. A fender for boats comprising a plurality of centrally apertured cushioned disks arranged one upon the other and tightly compressed with the apertures thereof in alignment, a flexible cable extending through the apertures of the disks, rigid disks engaging the end cushioned disks and of a diameter less than the diameter of the adjacent cushioned disks and having the cable extending therethrough, and looped attaching elements secured to the ends of the cable and bearing tightly against the rigid disks and constituting the sole clamping means, said flexible disks and flexible cable co-operating with each other in permitting a portion of certain disks to separate while the remaining portions of the respective disks bear tightly together when subjected to a pressure and allow the use of the device on a boat in the arc of a circle.

2. A fender for boats comprising a plurality of centrally apertured cushioned disks arranged one upon the other and tightly compressed with the apertures thereof in alignment, a flexible cable extending through the apertures of the disks, rigid disks engaging the end cushioned disks and of a diameter less than the diameter of the adjacent cushioned disks and having the cable extending therethrough, and looped attaching elements secured to the ends of the cable and bearing tightly against the rigid disks and constituting the sole clamping means, said cushioned disks being of different diameters to provide a device tapering gradually from one end to the opposite end.

In testimony whereof I affix my signature.

HENRY W. LOCKWOOD.