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L. L. BROWN

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GRUTCH TIP

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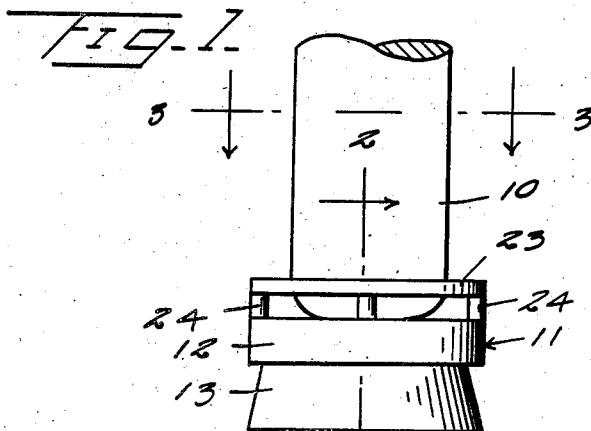


Fig. 2

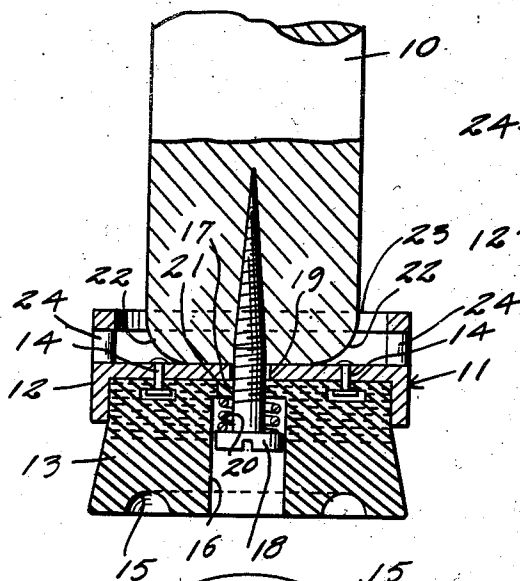


Fig. 3

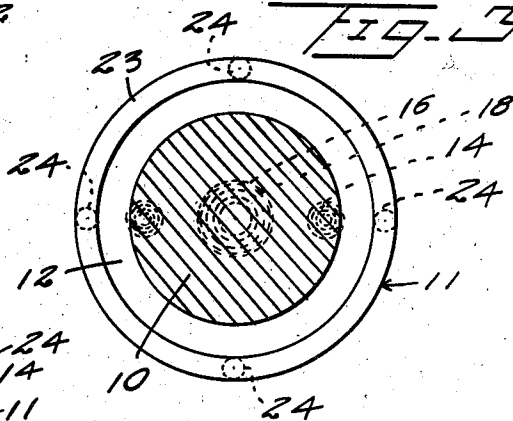
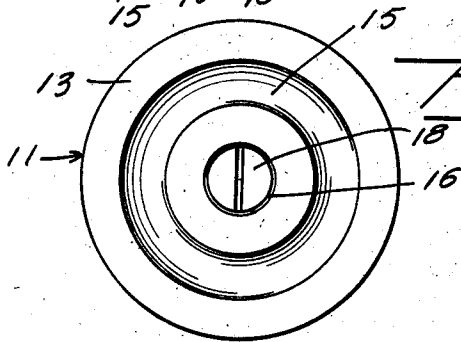


Fig. 4



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CRUTCH TIP

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5 Claims. (Cl. 135—53)

1

This invention is directed to crutch tips and has for its ultimate object the provision of a simple and rugged crutch tip structure which simulates a universal joint action with respect to the crutch leg without necessitating the complicated and cumbersome universal joint structures usually employed for the purpose.

Among other objects of the present invention is the provision of a guard for the crutch tip whereby weeds, string, and the like are prevented from engaging the joint between the crutch tip and leg, thereby to prevent a fouling or entangling of the joint which otherwise might trip the user of the crutch and cause severe injury to him as result of the fall.

Still other objects and advantages of the invention are those inherent in or implied from the novel construction, combination, and arrangement of parts to be described in greater detail as the description proceeds, reference being had to the accompanying drawing in which:

Figure 1 is a view in elevation of the crutch tip structure according to a preferred embodiment of the invention, the crutch tip being shown attached to a portion of a crutch tip.

Figure 2 is an enlarged sectional view of the crutch tip as seen along the line 2—2 of Figure 1.

Figure 3 is an enlarged sectional view of the crutch tip taken along the line 3—3 of Figure 1, and

Figure 4 is a bottom plan view of the crutch tip.

Referring now to the drawing, the numeral 10 designates the lower extremity of a crutch, cane, or the like, to which the crutch tip structure, generally designated 11, is attached in a manner to be subsequently described herein.

The crutch tip structure 11 comprises a shallow cup-shaped washer 12 adapted to receive interfittingly therewith the rubber tip or pad 13, the pad being additionally secured to the washer by being vulcanized thereto, for example, or by use of the rivets or anchors 14, or otherwise secured thereto in any suitable fashion. It will be understood that the tip or pad 13 may be composed of any conventional material suitable for the purpose such, for example, as rubber or rubber fabric, and preferably is provided on the lower face or contacting surface thereof with an annular groove 15 whereby slippage on the contacted surface is prevented as pressure is applied to the crutch or cane, whichever the case may be.

Pad 13 is additionally provided with a central

2

opening or bore 16, which terminates in a restricted opening 17, to receive a screw 18 by means of which the crutch tip structure is attached to the leg 10, washer 12 being provided with a central opening 19 to permit free passage of the screw therethrough whereby the screw may move freely with respect to the washer as relative movement occurs between the washer and the crutch leg.

The washer is normally yieldably urged into engagement with the end of leg 10 by means of the coil spring 20 interposed between the head of the screw 18 and the shoulder 21 provided between openings 16 and 17 in pad 13. Thus, by reason of this arrangement, the leg 10 is permitted to rock or pivot in any direction on the washer 12 against the biasing or restoring action of coil spring 20, thereby simulating a universal joint action between the leg 10 and the crutch tip structure 11, the end of the leg preferably being rounded as at 22 to facilitate this action. An important advantage of this arrangement will be appreciated when it is considered that substantially all of the wear in the tip structure 11 by reason of the universal action provided thereby occurs between the leg 10 and washer 12 and, accordingly prevents premature wearing of the pad 13.

In order to prevent string, grass, weeds, wires, and the like from working between the leg 10 and washer 12, a guard comprising a ring 23 and upright supports 24 therefor are provided, the supports also serving to maintain the ring in fixed spaced relation with respect to the washer 12. It will be understood that the guard may be provided in any convenient manner suitable for the purpose but preferably is formed integrally with the washer, substantially as shown.

From the foregoing, it should now be apparent that I have provided a crutch tip structure which is characterized by its simplicity of construction, ease of attachment to conventional crutches, canes, and the like, and its reliability and serviceability in use.

While the invention has been described in particularity with respect to an embodiment thereof which gives satisfactory results, other embodiments will suggest themselves to those skilled in the art, and it is my intention, therefore, to cover the full range of equivalents commensurate with the spirit and scope of the invention as defined in the appended claims.

I claim as my invention:

1. A crutch tip of the character disclosed for attachment to a crutch leg comprising, in combi-

3

nation, a resilient tip or pad, a cup-shaped washer for receiving said pad interfittingly therewith and disposed adjacent to said crutch leg, a screw having a head for attaching said pad and tip to said crutch leg, and a coil spring interposed between said screw head and said pad whereby said screw is permitted to move with respect to the washer as the crutch leg pivots thereon.

2. A crutch tip of the character disclosed for attachment to a crutch leg comprising, in combination, a resilient tip or pad, a cup-shaped washer for receiving said pad interfittingly therewith and providing limited pivotal connection with said crutch leg, and means including a screw and spring for yieldably urging said washer into engagement with the end of said crutch leg whereby relative movement simulating a universal action is provided therebetween as the crutch pivots on the washer.

3. A crutch tip of the character disclosed for attachment to a crutch leg comprising, in combination, a resilient tip or pad, a cup-shaped washer for receiving said pad interfittingly therewith and providing limited pivotal connection with said crutch leg, means including a screw and spring for yieldably urging said washer into engagement with the end of said crutch leg whereby relative movement simulating a universal action is provided therebetween as the crutch pivots on the

4

washer, and guard means carried by said washer and disposed adjacent to the connection between said washer and crutch leg for preventing string, weeds and the like from working therebetween.

4. A crutch tip of the character disclosed for attachment to a crutch leg comprising, in combination, a resilient pad, a cup-shaped washer for receiving said pad interfittingly therewith and providing limited pivotal connection, means for securing said pad to said washer, a screw attachment for connecting said pad and washer to said crutch leg and adapted to simulate a universal joint connection therebetween, and means for yieldably urging the pad and washer into a normal position as the crutch leg pivots with respect to the washer.

5. A crutch tip of the character disclosed for attachment to a crutch leg comprising, in combination, a resilient pad having a central recess formed in the contacting surface thereof and providing limited pivotal connection, a retainer for said pad, a screw attachment for connecting said retainer to said crutch leg and adapted to simulate a universal joint connection therebetween, and means for yieldably urging the retainer into a normal position with respect to the crutch leg as relative movement occurs therebetween.

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