Nov. 6, 1928.

1,690,405

J. H. DU ROCHER

KNEE PAD

Filed June 29, 1926

Fig. 1

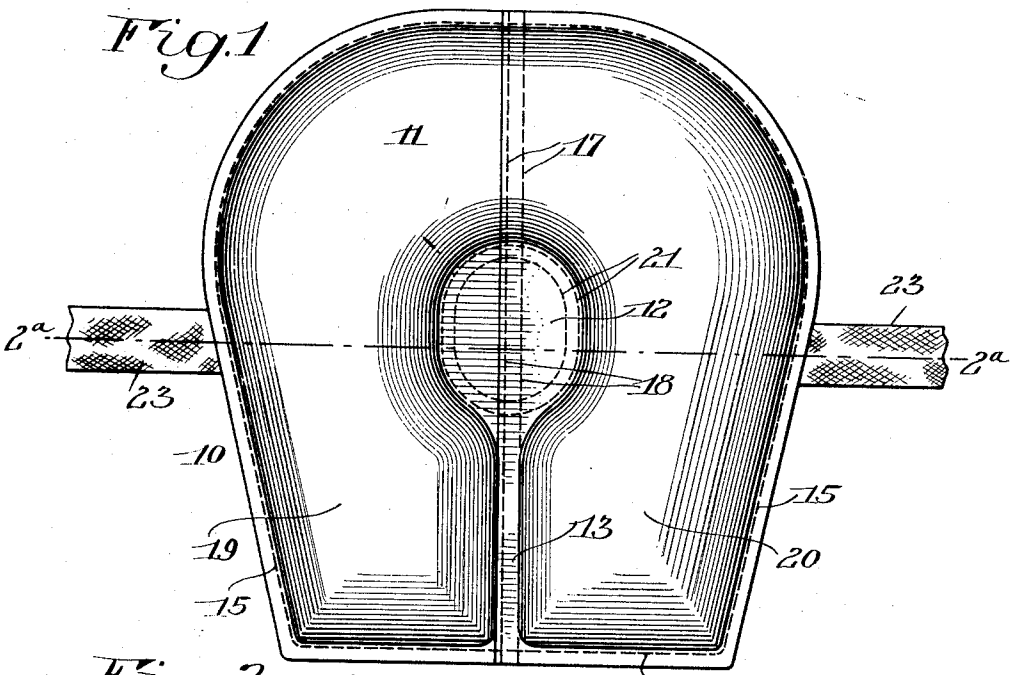


Fig. 2

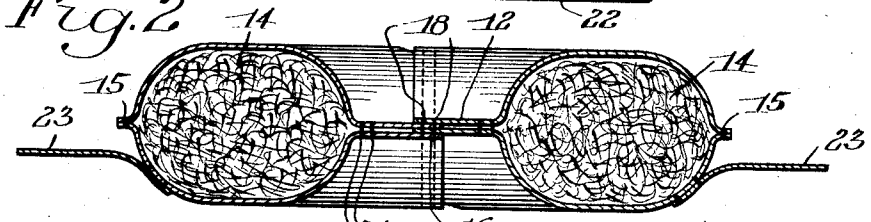


Fig. 3

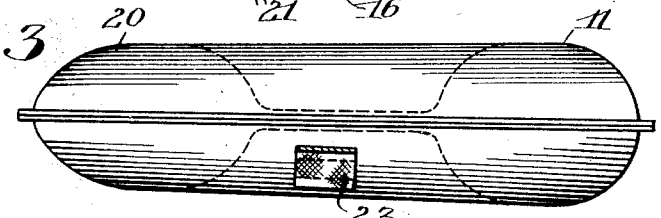
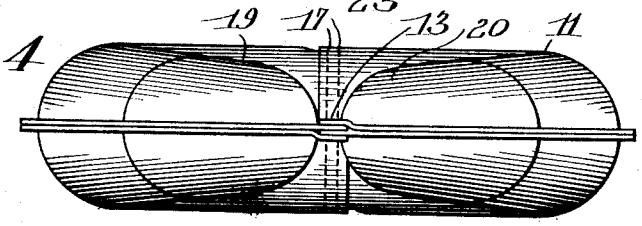


Fig. 4



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UNITED STATES PATENT OFFICE.

JOHN H. DU ROCHER, OF ROCHESTER, NEW YORK.

KNEE PAD.

Application filed June 29, 1926 Serial No. 119,421.

The present invention relates to knee pads and has for one object to provide a simple, efficient and economically constructed knee cushion adapted to comfortably support the knee of the user under all conditions of service.

A further object of the invention is to provide an improved reversible knee pad adapted in either position of use to support the knee in elevated position above the ground and arranged to afford an air circulating space beneath the knee.

A further object of the invention is to provide a knee pad embodying a cushion having a central web portion forming a knee cap support adapted to be tightened or held against sagging by causing the cushion to exert a pull thereon in opposite directions when the pressure of the knee is applied to the surrounding portion of the cushion.

To these and other ends the invention resides in certain improvements and combinations of parts, all as will be hereinafter more fully described, the novel features being pointed out in the claims at the end of the specification.

In the drawings:

Figure 1 is a plan view of a pad embodying the invention;

Figure 2 is a vertical section taken on line 2^a—2^a of Figure 1;

Figure 3 is a side elevation as viewed from the right in Figure 1, and

Figure 4 is a rear end elevation.

Similar reference numerals throughout the several views indicate the same parts.

The present knee pad has been designed to afford a light, durable and highly serviceable cushion which can be cheaply manufactured and which has been designed particularly with the idea in view of providing a cushion which will afford a maximum degree of service, comfort and protection to the wearer.

Heretofore knee pads of the inflatable type have been used and found to be unsatisfactory due to being easily damaged in service and having to be inflated from time to time, as well as to excessive cost of manufacture, particularly where protecting covers or casings have to be provided for the inflated tubes.

The present invention embodies a pad of the upholstered type which eliminates these objectionable features in that it is more durable, cheaper to make and affords at the same time more comfort and greater protection to the wearer than those heretofore in use.

Referring to the drawings, 10 represents generally my improved pad or cushion, the preferred form or shape of which is best indicated in Figure 1. The pad embodies generally a cushioned loop or roll 11 with the curved portion of the loop at the front of the pad, the inner edge of the loop being connected by a relatively thin web portion 12 disposed approximately mid-way between the opposite faces of the pad for a purpose which will hereinafter appear. The web portion 12 is preferably circular in shape, conforming generally to the shape of the knee cap. Extending rearwardly from the web 12 is a relatively narrow web portion 13 disposed substantially in the same plane as the web 12 and connecting the rear ends of the loop or roll as shown in Figure 1.

The pad may be constructed of one or more sheets of any suitable material such as leather or any suitable cloth or fabric formed or shaped as indicated in the several views of the drawings to afford a casing for a suitable filler or stuffing 14 as indicated in Figure 2. The casing may be filled with hair, wool or cotton or a mixture of two or more of these or other suitable materials.

In the particular embodiment of the invention shown in the drawings I employ four sheets of flexible material, preferably of similar shape and size, which may be cut by the use of a suitable machine from scrap material, preferably leather. These sheets are assembled in proper relation and stitched together along their peripheral edges as indicated at 15, except at the rear end of the casing which is temporarily left open to permit the subsequent insertion of the filler or stuffing material 14. The four sheets have their inner edges overlapped as shown at 16 in Figure 2 and are preferably connected by two rows of stitching 17 in advance of the web portion 12 where the opposite sheets of the casing are spaced apart to permit the stuffing to extend therebetween in order to form a continuous roll from one end of the loop to the other. The two rows of stitching 18 which extends from the forward end of the web 12 to the rear end of the pad serve to draw all four sheets together, as shown in Figure 2, whereby the connecting web portions 12 and 13 are formed in the same plane between the opposite side portions 19 and 20 of the pad which are tied together by said web portions. The web portion 12 which is approximately at the center of the pad is preferably circular in

shape and is formed by employing two rows of stitches 21 to connect the opposing sheets together. The web portions 12 and 13 lie approximately midway between the opposite ground engaging faces of the pad so that the latter is made reversible. The rear ends 19 and 20 of the loop are left open for the insertion of the stuffing 14 as above stated and are stitched together as shown at 22 after the casing has been tightly packed and expanded by the stuffing. The stuffing or filling material is preferably forced into the casing under considerable pressure so as to afford an extremely firm pressure resisting roll or loop which will support the weight of the user with but slight deflection, having sufficient cushioning effect however to render it comfortable in use.

The loop or roll which substantially surrounds the web 12 forms in effect a dish-shaped recess or cavity at each side of the pad for the reception of the knee, the cavity being preferably made relatively small so that the knee will tend to expand the loop when entering said cavity and the expanding action will in turn tend to exert a pull upon the web in opposite directions to place it under tension or prevent it from sagging. The web therefore becomes effective as a support or guard for preventing sagging of the knee and consequently the knee is held in spaced relation to the floor or ground in all conditions of service under which the pad may be used.

Furthermore, an air space is at all times afforded between the knee supporting web of the pad and the floor which is advantageous from the standpoint of ventilation both for the protection of the pad itself and the knee of the user as well.

By drawing the flexible sections together to form the web portion 13, an elongated depression is formed centrally of the pad on each side thereof which extends from the web 12 to the rear end of the pad whereby a recess is formed in each face of the pad for the reception of the tibia or shin bone of the leg so that the latter is relieved of undue pressure since with this arrangement practically all of the weight of the body will be carried by the knee. It will be noted that the loop or roll is thus shaped to conform substantially to the shape of the knee and tibia or shin bone, to effectively accomplish the above functions including the comfortable support of the limb and the tensioning of the central webs 12 and 13.

Straps 23 are secured to the opposite sides of the pad and may be employed when desired to connect it with the leg of the user, the straps being fastened one to another in any preferred manner.

From the above description it will be seen that the present pad has the advantage of being reversible and of supporting the knee cap in spaced relation to the ground and also the further advantage afforded by providing an air space beneath the knee for the circulation of air. The pad is well adapted for use by carpenters, painters, floor polishers or cleaners and those who lay floors or floor coverings, as well as by farmers, mechanics and workers in other branches of industry.

I claim as my invention:

1. A knee pad having relatively soft, opposite surfaces for contact respectively with the knee and a floor or the like comprising a pad curved to enclose a generally circular recessed portion and a narrowed extension thereof conforming substantially in size and shape to the knee and shin bone to receive and support the same and a limb-supporting web connecting the inner sides of said pad across said recessed portion and extension and between and spaced from said opposite surfaces of the pad.

2. A knee pad for use on floors and the like comprising a casing having a yielding, stuffed portion curved to enclose a generally circular recessed portion having a narrow extension between spaced ends of the stuffed portion of the casing and conforming substantially in size and shape to the knee and shin bone and adapted to be expanded outwardly by the weight of the limb and a limb-supporting web connecting the inner sides of said casing across said recess between the limb and floor engaging surfaces thereof and adapted to be tensioned by said expansion of the casing to support the limb in spaced relation to the floor.

JOHN H. DU ROCHER.