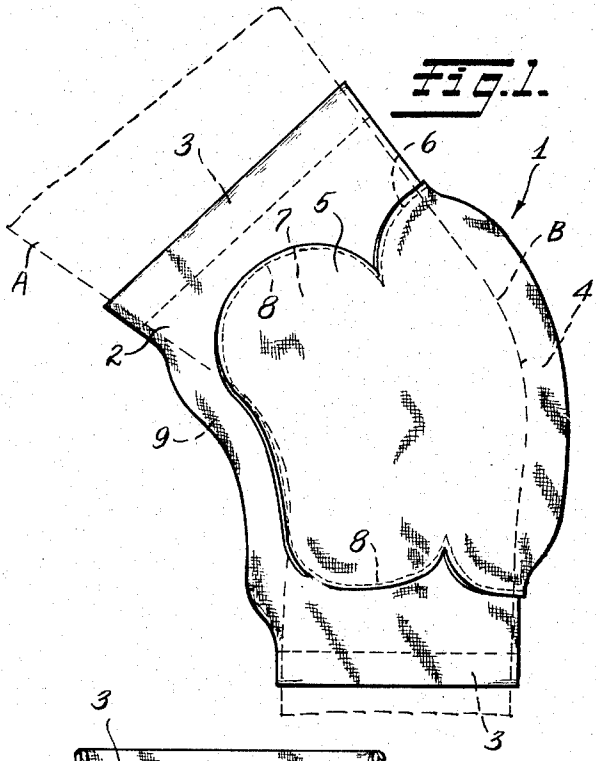
April 2, 1968 C. P. MEEK 3,375,821

KNEEPAD

Filed July 14, 1965

Fig. 1.



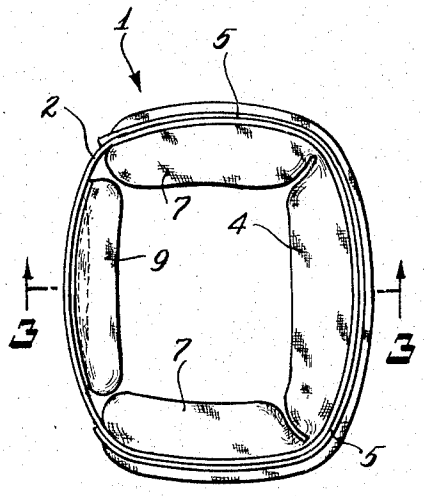


Fig. 2.

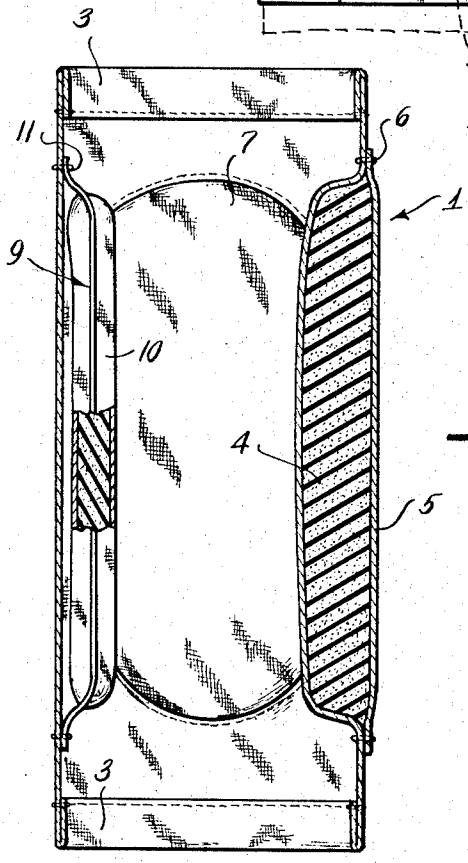


Fig. 3.

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ABSTRACT OF THE DISCLOSURE

The tubular elastic sleeve has a fixed resilient pad at the front and has a floating resilient pad at the rear which is attached only at its upper and lower ends to the inner wall of the elastic sleeve. The rear pad is mounted so as to readily adapt to the bending of a knee or elbow. Resilient side pads may be fixed to the elastic sleeve to cover substantially the entire area between the front and rear pads.

This invention relates in general to a kneepad construction, but it should be understood that the device is also applicable for installation on other parts of the body, as by being mounted upon the elbow. While the invention is primarily adapted to protect against external blows, such as those which might be encountered when playing football, it also serves as a brace by tending to prevent the joint from being wrenched suddenly from its normal position.

While devices of this general type have been designed and used before, they have been subject to a number of shortcomings. For example, such prior attempts have provided padding for only one portion of the joint on which they are installed, usually at the front in the case of a kneepad, and no protection is afforded to the remaining portion of the joint. Where additional padding has been provided in sufficient amounts to be effective, the resultant device has invariably become so rigid that it prevents the normal flexing of the joint.

It is, therefore, a primary object of this invention to provide a kneepad or the like which protects the limb both at the front and the rear, as well as on both sides, and which will still enable the joint to be flexed in the normal manner.

Another object is to provide a kneepad of the type referred to wherein the pad can be quickly and conveniently installed and one which will tend to stay in position during use.

A more specific object is to provide a kneepad construction having a padding element at the rear thereof which is mounted in a floating relationship and can readily adapt itself to the bending of the knee without wrinkling or otherwise tending to cause a constriction of the wearer's circulation.

Another object is to provide a kneepad which is light in weight, economical to manufacture and variable in size, in order to accommodate any wearer.

Other objects and advantages will be apparent from the following description, when read in conjunction with the accompanying drawings, in which:

FIG. 1 is a side elevational view illustrating the kneepad of the present invention in installed position;

FIG. 2 is a top plan view on a slightly reduced scale illustrating the kneepad of FIG. 1 in its normal condition prior to installation; and

FIG. 3 is a vertical sectional view taken on the line 3—3 of FIG. 2, the rear padding portion thereof being slightly displaced and being shown only partially in section for the purposes of illustration.

Referring now in more detail to the drawings, the kneepad assembly, indicated generally by the numeral 1 in FIG. 1, is illustrated there as being mounted on the leg A of a wearer with the central portion thereof being

mounted directly over the knee B. The device comprises a generally tubular sleeve 2 formed of flexible and elastic material adapted to stretch in all directions. The size of sleeve 2 is chosen in order to provide a snug engagement on the wearer's leg, and it should normally be of sufficient length to extend approximately three inches above and below the level of the kneecap. The upper and lower ends of sleeve 2 are preferably turned inward and stitched in position to provide hems 3 for comfort and durability.

A front pad 4 is mounted at the front of sleeve 2 and is held firmly in position by means of a sheet 5 of flexible elastic material which is stitched as at 6 to provide a pocket therefor. In the embodiment shown, the sheet 5 is positioned externally of the sleeve 2, but it will be appreciated that the same type of pocket could be formed equally well by disposing it internally with respect to sleeve 2.

Front pad 4 is preferably of a generally elliptical configuration and is large enough to fully cover the entire area of the wearer's kneecap. The pocket provided by sheet 5 is similar in size and configuration so that the pad 4 is held firmly against movement therein.

In the embodiment illustrated, the front pad 4 is connected at either side thereof to rearwardly extending side pad members 7. Side pads 7 may also be elliptical in configuration and are of sufficient size to cover the entire area behind the kneecap, particularly the area where the tendons are disposed. For simplicity of construction, it is desirable to have the sheet 5 extend rearwardly and be stitched as at 8 to provide pocket portions for the side pads 7. Thus, side pads 7 and front pad 4 are held rigidly in position as a unit and any tendency for them to slip is inhibited by the tight engagement of the wearer's leg A by the upper and lower ends of sleeve 2. It will be recognized, however, that pads 4 and 7 do not interfere with the normal flexing action of the knee, since they are not disposed rearwardly of the knee in the path of pivotal movement.

A rear pad 9 is mounted at the back of sleeve 2 and substantially covers the area between side pads 7. As opposed to the relatively stationary mounting of pads 4 and 7, the rear pad 9 is mounted in a floating type of relationship on the inside of the rear portion of sleeve 2. This mounting is effected by encasing the pad 9 in a closely fitting cloth sleeve 10 which overlaps the pad 9 at its upper and the lower ends. The overlapping ends of sleeve 10 are stitched as at 11 to the inner wall of sleeve 2. In the embodiment illustrated, the pad 9 is of a generally rectangular elongated configuration, and both the pad 9 and the sleeve 10 remain unattached between the upper and lower extremities thereof with respect to the sleeve 2. Thus, the entire central portion of the pad 9 is free to move independently of sleeve 2 and being relatively narrow, tends to freely flex to adapt itself to the articulated movement of the knee joint. Any wrinkling of the pad rear portion of sleeve 2 during such movement does not have a constricting effect on the back of the knee since the pad 9 serves as a cushion. Pads 4, 7 and 9 may be formed of any suitable material such as sponge rubber, or any other resilient padding material.

It should be understood that a wide range of modifications may be adopted in the construction, design, or materials employed without departing from the essential concept and principles of the invention, as outlined in the annexed claims.

I claim:

1. A protective device for application to a joint on one of the wearer's limbs, comprising: a tubular sleeve member formed of flexible elastic material adapted to snugly engage the wearer's limb in the vicinity of said joint; a first resilient pad means mounted in fixed position at the

front of said tubular sleeve at either side thereof; and a second resilient means comprising a pad member having its upper and lower ends secured to the inner wall of said tubular sleeve at the rear portion thereof, said second pad means being otherwise unattached with respect to said tubular sleeve and being free to move independently thereof.

2. The device of claim 1 wherein said first means comprises a pad member is mounted within a pocket of substantially identical size and configuration, said pocket being provided by a sheet of flexible elastic material stitched on the front of said tubular sleeve member.

3. The device of claim 1 wherein said pad member is of narrow rectangular configuration and is mounted in a closely fitting sleeve having its upper and lower ends overlapping said second pad and being stitched to the inner walls of said first-mentioned sleeve, said closely fitting sleeve and said pad member being otherwise unattached and thereby disposed in a floating relationship.

4. The device of claim 1 wherein said second pad means comprises individual pad members provided on either side of said tubular sleeve and mounted in fixed relation with respect thereto.

5. The device of claim 4 wherein said individual pad members are formed as a unit with respect to another pad member disposed at the front of said tubular sleeve.

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