F. T. SHEEHAN.

KNEE SUPPORTER.

APPLICATION FILED FEB. 24, 1921.

1,388,772.

Patented Aug. 23, 1921.

2 SHEETS—SHEET 1.

FIG. 1.

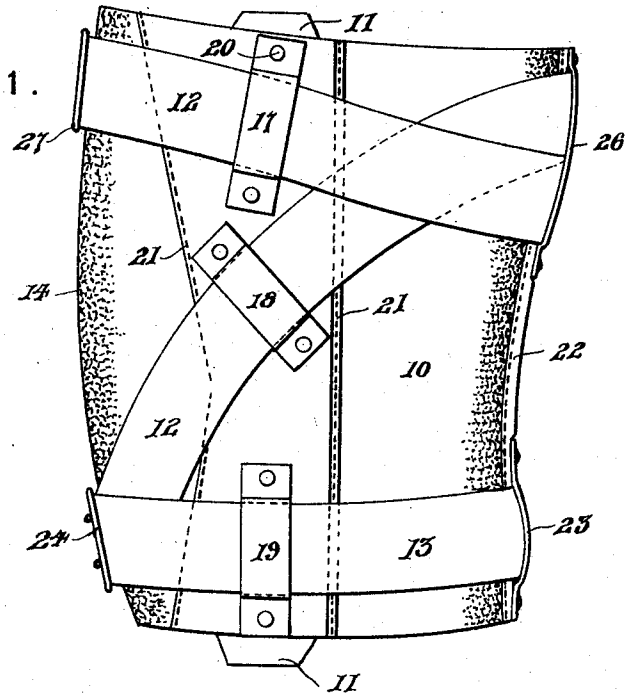
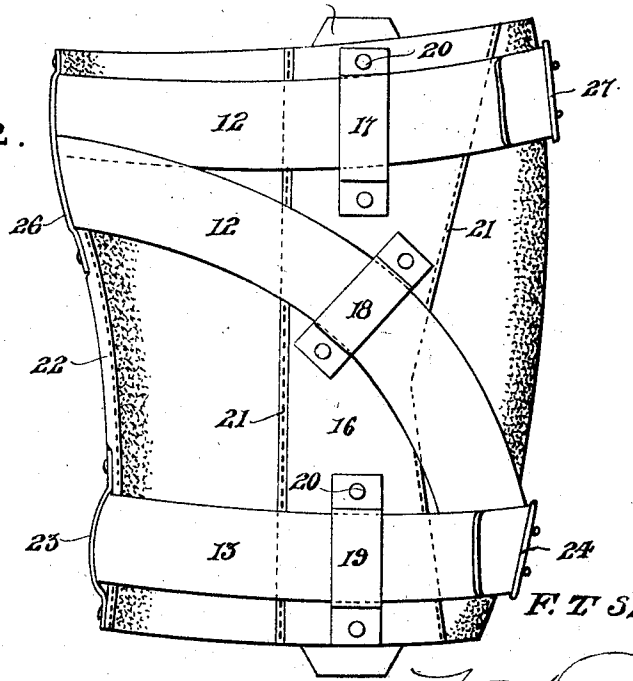


FIG. 2.



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2 SHEETS—SHEET 2.

FIG. 3.

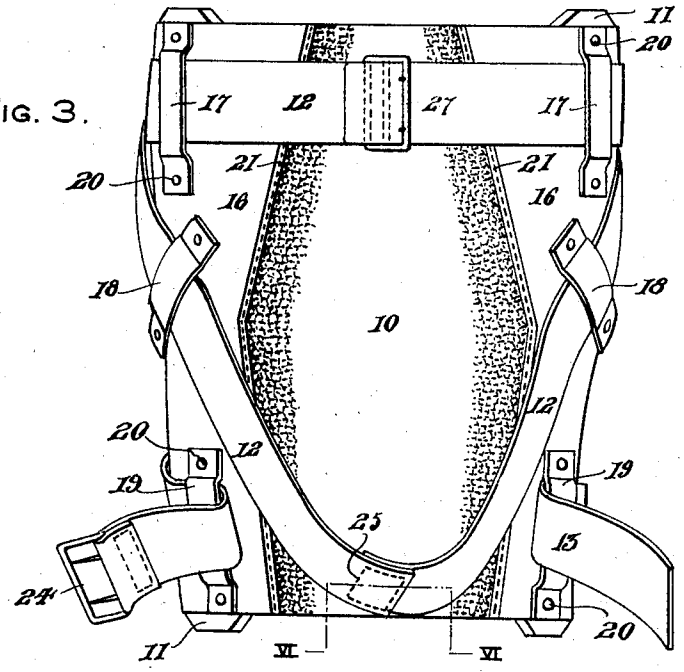


FIG. 4.

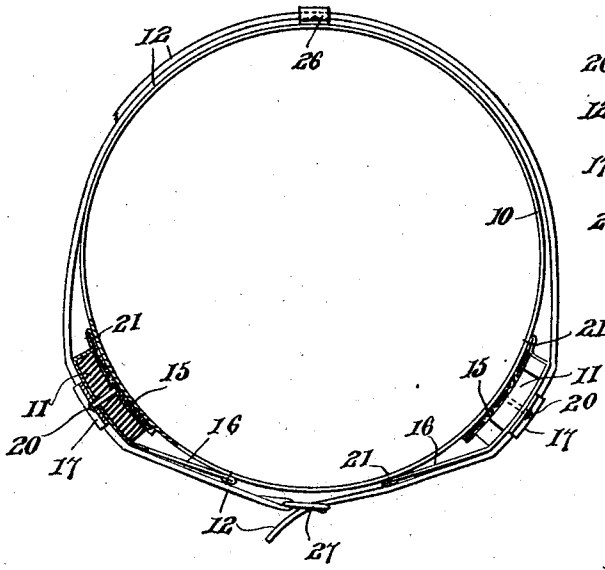


FIG. 5.

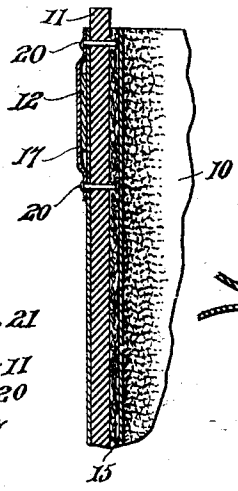
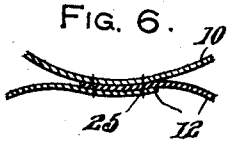


FIG. 6.



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UNITED STATES PATENT OFFICE.

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KNEE-SUPPORTER.

1,388,772. Specification of Letters Patent. Patented Aug. 23, 1921.

Application filed February 24, 1921. Serial No. 447,627.

To all whom it may concern:

Be it known that I, FRANK T. SHEEHAN, a citizen of the United States of America, residing at Ithaca, in the county of Tompkins and State of New York, have invented certain new and useful Improvements in Knee-Supporters, of which the following is a specification.

The primary object of the present invention is the provision of a supporter or brace for the knee especially adapted to be worn by athletes in different branches of sports such as running and jumping, the device being close fitting and comfortable to wear.

A further object of the invention is the provision of a combined brace and supporter for the knee that affords the desired protection by means of a substantial covering and is not only comfortable to wear but is rendered safe by the employment of a particular form of adjustable securing means.

A still further object of the invention is the provision of an elastic encircling supporter for a joint of the human body, the device being easy and inexpensive to manufacture and possessing great strength and durability.

With these general objects in view the invention consists in the novel combination and arrangement of parts hereinafter more fully described in connection with the accompanying drawings and in which like reference characters designate corresponding parts throughout the several views.

In the drawings,

Figures 1 and 2 are elevational views of the opposite sides of the device with the buckles secured in position,

Fig. 3 is a front elevational view thereof with the lower buckle released,

Fig. 4 is a top plan view of the same with a side portion shown in section,

Fig. 5 is a fragmentary longitudinal sectional view through one of the side braces and

Fig. 6 is a sectional detail view taken upon line VI—VI of Fig. 3.

It being understood that my invention is especially adapted for wearing upon the knee, the same essentially comprises a tubular portion or bandage of elastic material such as the webbing 10 in the nature of a close fitting sleeve for readily encircling the knee of the wearer when in use and provided with side ribs or stays 11, the device being adapted for retention in its operative position by the disclosed arrangement of coöperating straps 12 and 13.

The stays 11 are preferably formed of leather positioned at opposite sides of the webbing sleeve 10 slightly spaced from the forward side 14 of the sleeve with a felt cushioning strip 15 between the outer face of the sleeve 10 and the stays 11. Retaining pockets for the stays 11 are provided by sewing leather portions 16 upon the sleeve 10 for receiving the stays and the felt 15. Three loops 17, 18, and 19 are provided upon each stay 11, with securing means such as rivets 20 firmly connected through the said loops, the leather portion 16, stays 11 and cushions 15, the inner heads of the rivets 20 being protected by the webbing 10 to which the leather portions 16 are marginally secured by stitching 21.

The rear seam or strengthening portion 22 of the sleeve 10 has a loop 23 adjacent the bottom thereof for receiving the lower strap 13 which also passes freely through the lower loops 19 of the stays 11 and is provided with a securing buckle 24 at the front of the device for securing the latter firmly with the lower portion thereof below the patella of the wearer. The strap 12 may be formed of a single piece of elastic which is also true of the strap 13 or the strap 12 may be formed in two portions as illustrated in Fig. 3 and in either event the central part of the strap member 12 is secured as at 25 to the lower front portion of the webbing 10. The opposite end portions of the strap 12 then pass obliquely through the intermediate loops 18 of the opposite stays 11 and cross each other within the upper loop 26 of the rear seam 22 and are then returned forwardly through the upper loop 17 of the stays 11 for securing the end portions of the straps 12 by means of a buckle 27 substantially centrally adjacent the top of the webbing 10. The stays 11 possess flexibility outwardly and inwardly but are substantially rigid longitudinally of the device as well as forwardly and rearwardly and constitute braces for the knee joint and anchoring means for the elastic webbing 10 forwardly and rearwardly of the stays 11. The manner of positioning the device upon the knee for actual service will be apparent from the detailed description thereof, the device being slipped over the knee after the manner of the usual elastic bandages and the lower strap 13 is then tightened by means of the

buckle 24. The strap 12 is then tightened placing the oblique portions under tension which pass through the loops 18 as well as stretching to the desired degree the upper encircling end portions of the strap 12 passing through the loop 17 while the buckle 27 retains the strap 12 in its operative position as herein fully illustrated. The device is then worn after proper adjustment permitting the bending of the knee but strengthening and bracing the knee joint at the outer and inner sides of the leg.

While the form of the invention herein shown and the material from which the same is manufactured is believed preferable, it will nevertheless be understood that minor changes may be made therein without departing from the spirit and scope of my invention.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent, is:—

1. A device of the class described comprising an elastic sleeve, longitudinal side stays upon the sleeve, a strap centrally secured adjacent the bottom of the sleeve extending diagonally upwardly overlapping at the rear and adjacent the top of the sleeve with the ends of the strap adapted to be secured together forwardly of the sleeve above said point of attachment between the strap and sleeve.

2. A device of the class described comprising an elastic sleeve adapted for encircling the knee, laterally flexible stays at the opposite sides of the sleeve, cushions between said stays and sleeve, loops outwardly of the stays secured to the stays and cushions, said loops being three in number for each stay, an elastic strap secured at its central portion adjacent the lower edge of the device extending obliquely upwardly encircling the same and overlapped rearwardly thereof and passing forwardly through the upper loops around the upper part of the device and an encircling strap surrounding the lower portion of the device and the point of attachment between the first named strap and sleeve.

3. A device of the class described comprising an encircling sleeve, leather receiving portions longitudinally of the opposite sides of the sleeve, a stay and a cushion within each of said leather portions, three loops outwardly of each leather portion longitudinally of the device, holdfast devices secured through said loops, leather portions, stays and cushions and two securing straps three times encircling the device with each loop receiving a single strap.

4. A device of the class described comprising an encircling sleeve, leather receiving portions longitudinally of the opposite sides of the sleeve, a stay and a cushion within each of said leather portions, three loops outwardly of each leather portion longitudinally of the device, holdfast devices secured through said loops, leather portions, stay and cushions, relatively long and short straps encircling the upper and lower portions of the device respectively adjustably extending through the upper and lower loops, the longer strap having its middle portion obliquely downwardly encircling the sleeve passing through intermediately positioned ones of said loops and secured at its central point adjacent the lower edge of the device inwardly of the shorter strap when positioned for use.

In testimony whereof I affix my signature.

FRANK T. SHEEHAN.