R. T. JENNEY & R. J. LANGER.

KNEE PROTECTOR.

APPLICATION FILED JUNE 3, 1916.

1,251,040. Patented Dec. 25, 1917.

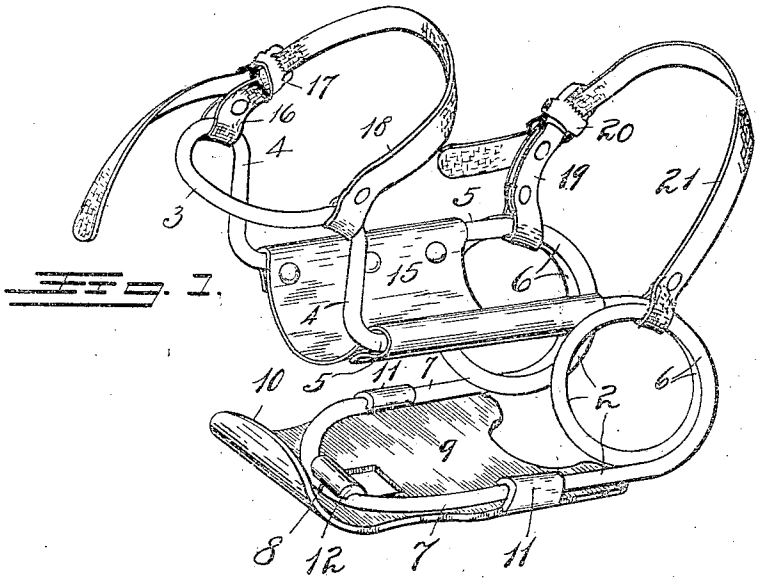


FIG. 1.

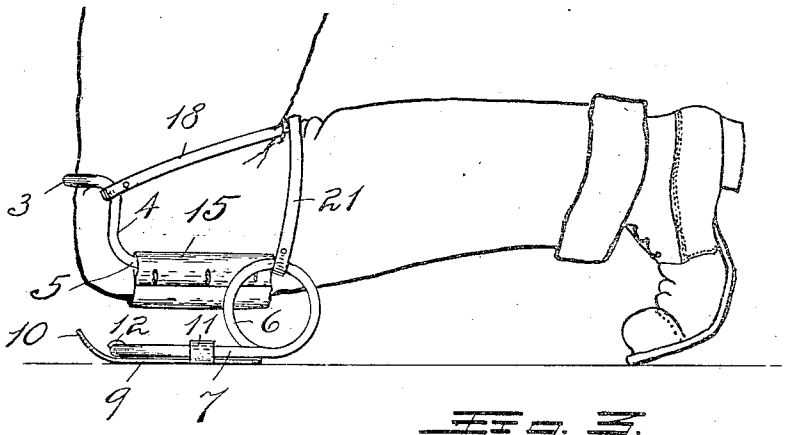


FIG. 2.

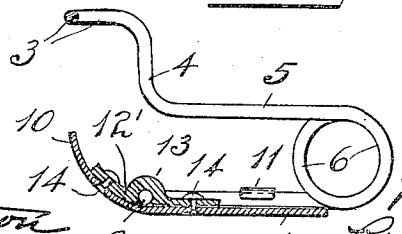


FIG. 3.

WITNESS.

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UNITED STATES PATENT OFFICE.

ROBERT T. JENNEY AND RUDOLPH J. LANGER, OF MONTICELLO, IOWA, ASSIGNORS TO HALL MANUFACTURING COMPANY, OF MONTICELLO, IOWA, A CORPORATION OF IOWA.

KNEE-PROTECTOR.

1,251,040. Specification of Letters Patent. **Patented Dec. 25, 1917.**

Application filed June 3, 1916. Serial No. 101,536.

To all whom it may concern:

Be it known that we, ROBERT T. JENNEY and RUDOLPH J. LANGER, both citizens of the United States, and residents of Monticello, in the county of Jones and State of Iowa, have jointly invented a new and useful Improvement in Knee-Protectors, of which the following is a specification.

Our invention relates to a yielding pad or support for the knees of miners, cement-workers, gardeners and others whose work necessitates pressure on the knee and also moving about or "walking" thereon.

The primary object of the invention is to generally improve the construction and increase the utility and efficiency of devices of this character, the improvements being directed more particularly toward the prevention of the knee-supporting fabric coming in contact with the ground or other surface being worked over; toward making the device strong and stable and therefore not liable to distortion by the innumerable strains imposed upon it; toward the provision and novel arrangement of the means for securing it to the leg of the user; toward the provision of a superior base or foot and means for attaching it to the frame; toward the provision in the frame of a portion which acts to rock the base or foot as the wearer advances; and toward the provision of novel and beneficial structural peculiarities presently described.

In the accompanying drawing:

Figure 1 is a perspective of the preferred embodiment of our invention;

Fig. 2, a side elevation illustrating the application of the device; and

Fig. 3, a modification, partly in elevation and partly in section.

Considering the drawings in detail and referring to each element and, where necessary, to each part thereof, by a distinguishing reference numeral, uniformly employed, 2 indicates a yielding frame preferably constructed of a single piece of heavy wire. It is bent at its midlength to form a cross-arm 3 from which depend vertical portions 4 the lower ends of which are projected rearwardly to form pad-supporting arms 5, the rear ends of these being continued and bent to form double-coil springs 6 the terminals of which extend thence forwardly to provide foot-engaging arms 7 which are curved inwardly and the ends of which meet at 8.

9 indicates a foot or base, preferably formed of sheet-metal and turned up at its front end to form a rocker 10 which facilitates and eases the advancing movement of the user. It is provided also with clips or ears 11 each of which firmly embraces one of the arms 7. Struck up from the forward portion of the foot 9 is a clip or ear 12 which binds firmly together the terminals of the frame.

In Fig. 3 we show a clip 12′ having a transversely arranged eye 13 which embraces said terminals, the clip being secured to the foot by rivets 14.

Riveted or otherwise secured to the arms 7 is a knee-rest or pad 15, which of course may be of any suitable material.

Secured to the juncture of the portions 3 and 4 and at one side of the device is a loop 16 carrying a buckle 17 adapted to be engaged by the free end of a strap 18 suitably secured to the opposite portions 3 and 4, whereby to attach it to the wearer's leg, above the knee. Secured to one of the double-coil springs 6 is a loop 19 carrying a buckle 20 adapted to be engaged by the free end of a strap 21 secured to the opposite spring.

It is to be observed that the weight of the user comes on the front end portion of the pad or rest 15, and that as said front end is at the extreme front ends of the arms 5 much more yielding is permitted than if the weight were placed at or substantially in the same vertical plane as are the coils. No welding or soldering is required. The plate 9 prevents the pad 15 from coming into contact with wet ground, wet cement, etc., to thereby allow moisture and dirt to collect on the garments. As the user inclines forward, as in taking a step, that portion of his leg above his knee will bear against the cross-arm 3 and cause the device to rock forward with facility and ease. Should one of the clips on the foot 9 become broken, the others will hold the frame thereon until a new foot can be secured on the frame, and should the foot become badly worn, as it will when working over the cinders, grout, sand and cement of concrete work, it may quickly be knocked off and a new one substituted. The points of attachment for the several securing straps are advantageously located at such positions that the wearer will not be inconvenienced or chafed.

We realize that considerable variation is possible in the details of this construction without departing from the spirit of the invention. Therefore we do not intend to limit ourselves to the specific form herein shown and described except as pointed out in the following claims, in which it is our intention to claim all the novelty inherent in the invention as broadly as is permitted by the state of the art.

Accordingly we claim:

1. In a knee-protector, a yielding frame including coil springs and parallel side-arms, a knee support secured to said side-arms, the continuation of each side-arm bent to form a coil spring disposed at the extreme rear end of the device and the terminals of said springs projected forwardly, and a supporting foot secured to the last recited portions.

2. A knee-protector frame formed of a single piece of wire bent at its midlength to form a cross-arm, the terminal portions of the arm extended thence downward and thence rearward and formed into coil springs and terminal portions of the springs extended forwardly and substantially parallel with said rearwardly extended portions.

3. A knee-protector frame formed of a single wire bent to form horizontal pad-supporting arms, the extensions of which are coiled to form springs which constitute the rear end of the frame, the terminals of the springs extended forwardly to form foot-carrying arms.

4. In a knee-protector, a frame with a pair of oppositely arranged coil springs at its extreme rear end, both terminal portions of each spring projected forwardly and arranged one in a higher horizontal plane than the other, a knee-rest secured to the upper ones, and a base secured to the lower ones.

5. A knee-protector frame formed of a wire bent to form horizontal pad-supporting arms the extensions of which are coiled to form springs arranged at the extreme rear end of the frame, the terminals of the springs extended forward to form foot-carrying arms, and a securing strap engaged with each coil spring, its free ends adapted for engagement with each other.

In testimony that we claim the foregoing as our joint invention we hereunto sign our respective names, this 27th day of May, 1916.

ROBERT T. JENNEY.
RUDOLPH J. LANGER.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."