Feb. 10, 1959 J. C. FINEGAN 2,872,745

SPAT-TYPE PROTECTOR

Filed Aug. 8, 1956

Fig. 1

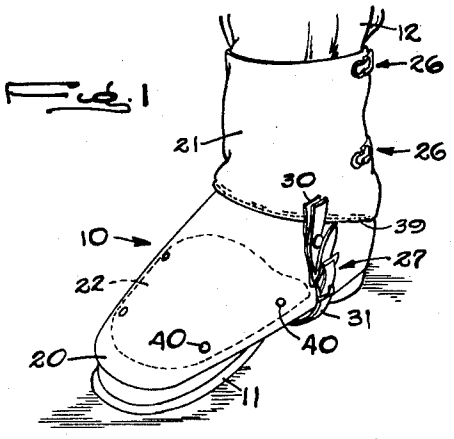



Fig. 2

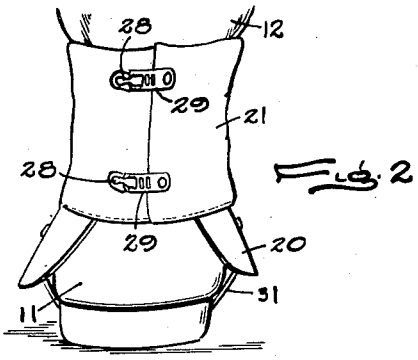



Fig. 3

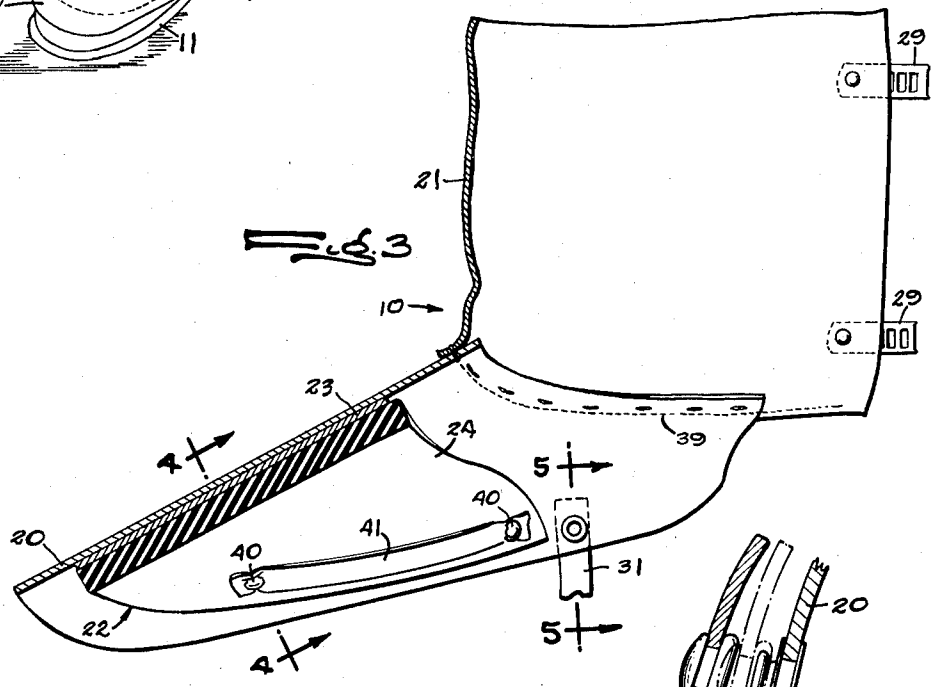
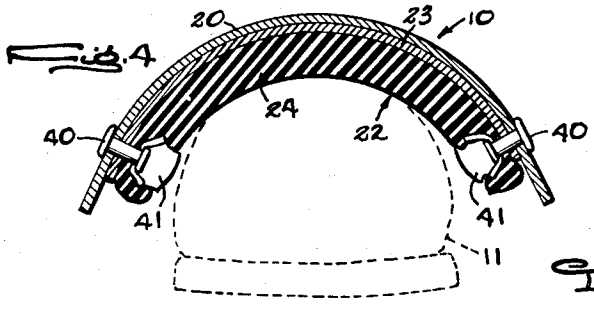



Fig. 4



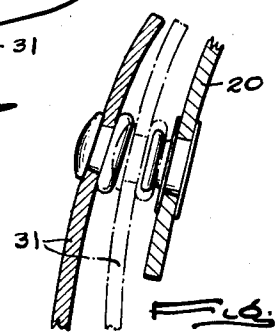




Fig. 5

INVENTOR

James Charles Finegan

Carlson, Gaylord, Kirkland & Wolfe

ATTORNEYS

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# SPAT-TYPE PROTECTOR

James Charles Finegan, Danville, Ill., assignor to Jess A. Brewer, Danville, Ill.

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2 Claims. (Cl. 36—2)

Protective wearing apparel for industrial use must afford protection in two major ways. First, shock protection is required where the worker is apt to be sharply struck, as by a falling object. Secondly, covering protection is needed to guard against spilling or splattering of corrosive fluids, molten metal, or the like. It has been found that the worker's foot is particularly vulnerable to shock injury and that the gap beneath a man's protective pants or leggings exposes the ankle and foot and requires covering protection.

It is an object of the invention to provide a single-unit spat-like protector of duckbill design to be worn over regular clothing that provides both covering and shock protection to the wearer's foot and ankle. It is a further object to provide a protector of the above type that is easily adjustable to snugly fit the foot and ankle of the wearer. It is a further object to provide a foot protector unit which not only provides greater protection but which is more comfortable than prior devices of this type.

It is a more detailed object to provide a protector of the above character that is effectively strong and durable, but that is of simple, light and sturdy construction that will assure a long life in heavy-duty use.

Other objects and advantages of the invention will become apparent upon reading the attached detailed description and upon reference to the drawings, in which:

Figure 1 is a perspective view of a protector constructed according to the invention being worn on a person's foot and ankle.

Fig. 2 is a rear view of a person wearing the protector shown in Fig. 1.

Fig. 3 is a longitudinal sectional view of the protector shown in Fig. 1.

Fig. 4 is a transverse sectional view taken along line 4—4 in Fig. 3.

Fig. 5 is a fragmentary sectional view taken along line 5—5 in Fig. 3.

While the invention will be described in connection with a preferred embodiment, it will be understood that I do not intend to limit the invention to that embodiment but, on the contrary, intend to cover such alternative embodiments and constructions as may be included within the spirit and scope of the appended claims.

Turning first to Figs. 1 and 2, there is shown a protector 10 constructed according to the invention being worn over a worker's foot and around his ankle. It can be seen that the protector covers the upper portion of the shoe 11 and surrounds the lower portion of the pants leg 12 which is gathered in at the ankle. Safety apparel for this part of the body should perform the double function of affording covering protection for the shoe and ankle and providing shock protection for the upper part of the foot.

In accordance with the present invention the protector comprises a "duckbill" shaped foot-covering portion and a pliable cuff that can be wrapped around the ankle, the



foot-covering portion carrying an integral shock resisting guard which is positioned above the foot when the protector is in place. In the preferred embodiment the foot-covering portion comprises a bill 20 of tough flexible leather. Secured to the top of the bill 20 is a cuff 21 that is an open single piece of pliable leather of sufficient length to enable the cuff to be completely wrapped about the ankle of the wearer. The bill 20 and the cuff 21 are cut and fitted so that the protector smoothly fits the foot and ankle which are substantially at right angles to each other. To securely unite the bill 20 and the cuff 21, the cuff is sewn to the bill and the stitched seam 39 is reinforced by a series of staples inserted at intervals of approximately one inch. The cuff 21 overlaps the bill 20 on the outer or top side of the bill, as can be seen in Figs. 2 and 3, so that dangerous fluid material may flow smoothly off of the protector. If the cuff overlapped on the under side of the bill, an upwardly directed gap or ridge would be formed that would tend to collect and retain such fluid permitting it to attack the protector and seep between the seam joining the cuff 21 and the bill 20. A guard 22 is secured beneath the bill 20 and its substantial rigidity serves to support the bill in its "duckbill" configuration.

To enable the guard 22 to protect the foot from shock it is formed of two layers. The upper layer is a hard, moulded-fiber shield 23, about ⅛ of an inch thick, and the lower layer is a relatively thick cushioning pad 24 of foam rubber or the like. The shield 23 serves to distribute the force of a blow which is absorbed by the pad 24 so that the guard is able to protect the metatarsal region of the foot against a severe shock. The bill 20, shield 23 and pad 24 are united in a single, multiple-layered assembly by means of rivets 40. To prevent the rivets from tearing or puncturing the normally weak pad 24, the pad is anchored in place by means of two leather strips 41. The strips are positioned along each edge of pad 24 and the rivets 40 pass through the ends of the strips thereby forming an inner anchoring layer at the points of riveting. The strips 41 thus secure the soft pad 24 without compressing and destroying its usefulness, so that it will not tear loose with hard usage.

In order to hold the protector firmly in place two adjustable buckles 26 are provided on the cuff 21 and an adjustable strap 27 is carried by the bill 20. The buckles 26 are of a well known type comprising a pivotable hook 28 and a multiple slotted hook receiver 29. The pivoted hooks may be placed in any one of the multiple slots so as to draw the cuff 21 snugly about the ankle. The strap 27 comprises a short length 30 having an ordinary buckle at its end, secured to one side of the bill 20 and a long length 31 secured to the opposite side of the bill and having a series of spaced holes to cooperate with the buckle. The strap lengths 30, 31 are each secured to the bill 20 by means of a snap fastener of the type well known in the apparel industry. These devices will withstand considerable tension in the strap when the force is exerted parallel to the surface of the bill 20 but permit easy detachment of the strap by exerting force normal to the surface of the bill. This arrangement permits an individual worker to adjust the strap 27 to the proper length for his foot and then enables him to secure or release the strap by snapping either end of the strap onto or off of the bill 20.

To adjust the bill 20 to the upper curve of the wearer's foot the moulded fiber shield 23 which imparts rigidity to the bill and guard assembly is capable of bending resiliently when pressure is exerted transversely of the bill. The shield 23 is moulded to assume a more gentle arch than the largest shoe size would define over a foot and therefore the lower edges of the bill and guard as-

sembly would, if unrestrained, extend outwardly from each side of the shoe 11, as shown in Fig. 4. However, when the strap 27 is tightened, the bill and guard assembly is drawn into a more pronounced arch and closely hugs the shoe 11 so that the pad 24 is uniformly supported and thus able to dissipate any shock loads incurred.

It can thus be seen that a single unit protector has been provided which smoothly fits the right-angled body members comprising the foot and ankle. Moreover, the protector has been provided with a three-layer protective assembly, each layer of which performs an important protecting function. The outer layer, bill 20, serves to cover the body portion and guard against corrosive or molten flying particles and also permits the assembly to be secured in place. The intermediate layer, shield 23, distributes the force of sudden shock while the inner layer, pad 24, cushions the blow and enables the entire assembly to be comfortably worn.

The protector is comfortable for the wearer since it is light, cool and flexible. The pad 24 cushions the bill 20 on the foot as a further aid to comfort, as well as performing the protective function referred to previously.

I claim as my invention:

1. A foot and ankle protector comprising a bill of tough leather having a "duckbill" configuration adapted to closely overlie and cover a wearer's foot, a cuff of pliable leather secured to the top of said bill and angled therefrom so that the cuff may be smoothly wrapped about the wearer's ankle when the bill overlies the foot, a shock resistant guard fastened to the underside of said bill, said guard comprising a hard shield adjacent said bill and a thick cushioning layer under said shield, and means to secure said bill, shield and cushioning layer in a unitary assembly, said means including a strip of tough pliable material underlying said cushioning layer and a plurality of fastenings extending through and drawing together said bill, shield, cushioning layer and strip.



2. A foot and ankle protector comprising an elongated bill of tough leather having a "duckbill" configuration, so that it arches transversely of the length thereof and closely overlies and covers completely the forward portion of the wearer's foot, a cuff of pliable leather secured to the top of said bill and angled therefrom so that the cuff may be smoothly wrapped about the wearer's ankle when the bill overlies the forward portion of the wearer's foot, adjustable buckles carried by said cuff to secure the cuff in place, a shock resistant guard of a size substantially that of the forward portion of said bill and fastened to the underside thereof, said guard comprising a hard shield underlying said bill and a thick cushioning layer underlying said shield, a strap adapted to be secured to opposite sides of said bill and to extend across the open bottom of the arch formed thereby and to pass beneath the foot of the wearer, and means to detachably and adjustably secure said strap at one end to one side of said bill and to detachably secure the other end of said strap to the other side of said bill.


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