United States Patent [19]

Jones

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[54] **SAFETY BOOT**

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[52] **U.S. Cl.** ..... **36/4,** 36/72 R

[51] **Int. Cl.** **A43b 1/10**

[58] **Field of Search** ..... 36/4, 1.5, 72 R, 7.3

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[57] **ABSTRACT**

A safety boot for the protection of the wearer from fire and the like. The boot includes a foot portion and a leg cover portion extending upwardly therefrom. The boot has an inner lining surface and an outer exposed surface. A safety shield is on the leg cover portion of the boot and is positioned so as to provide additional fire protection to a specific predetermined portion of the leg of the wearer.

9 Claims, 6 Drawing Figures

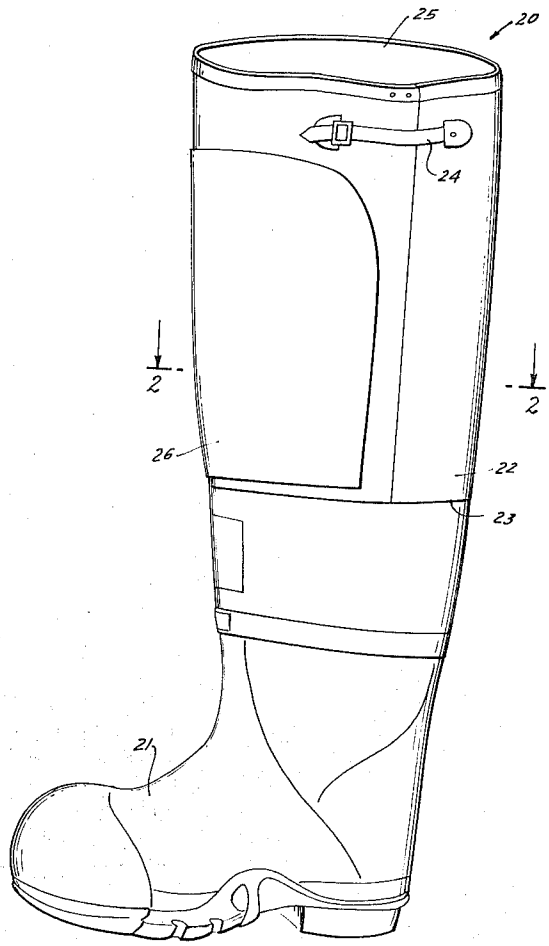
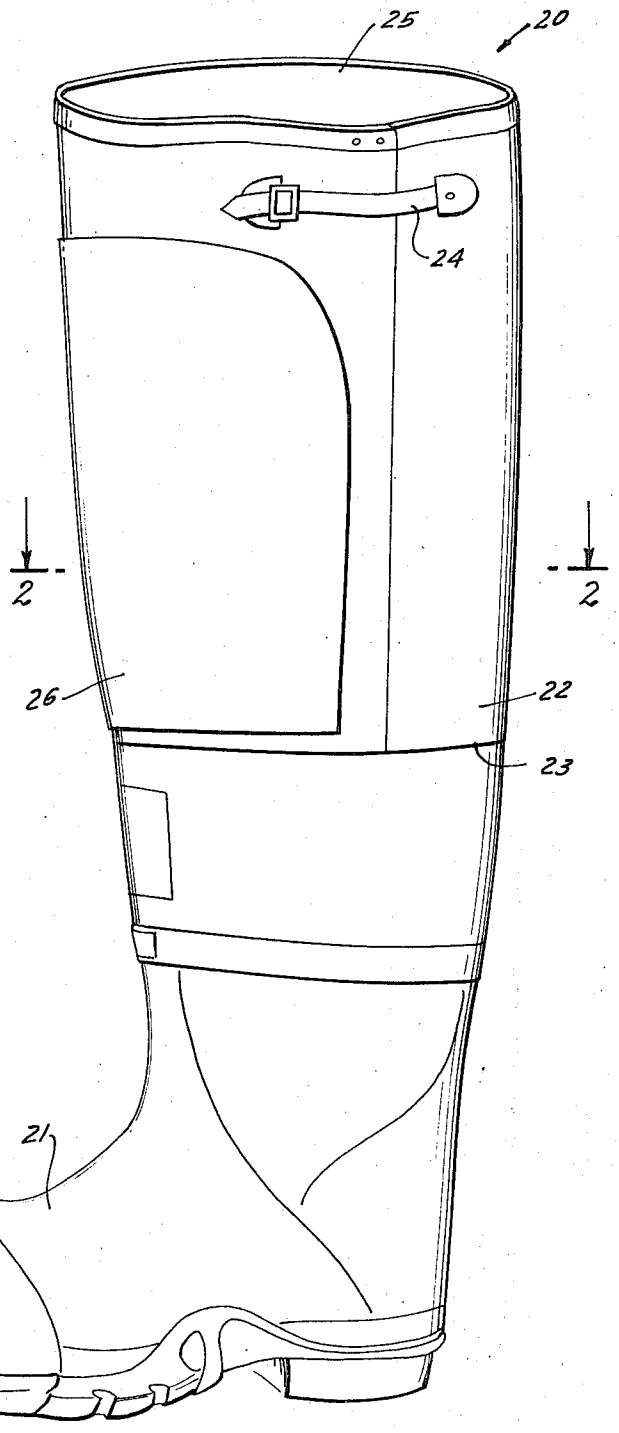


FIG. 1



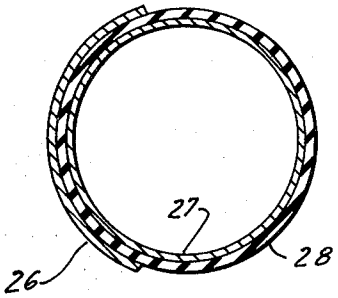
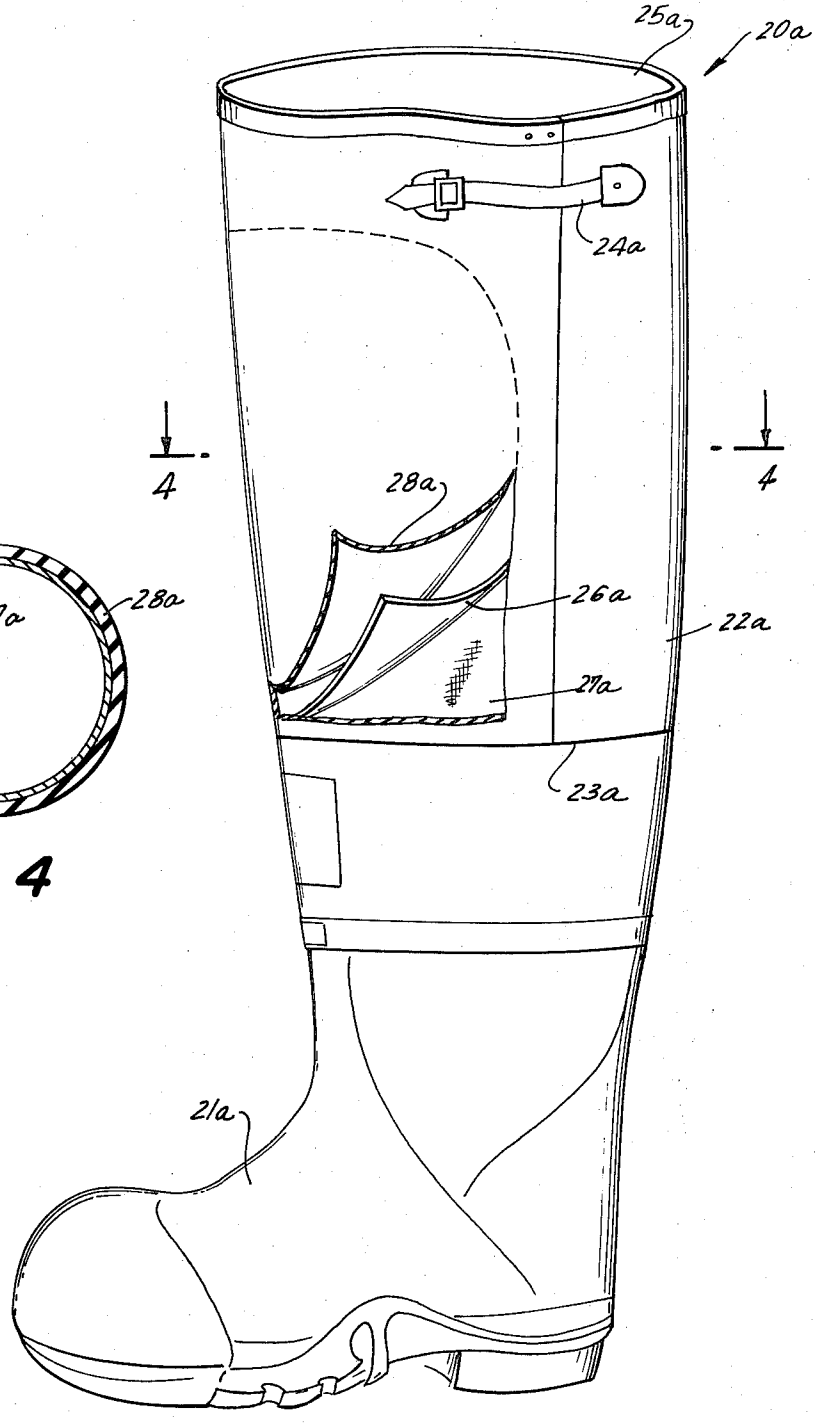


FIG. 2

FIG. 3



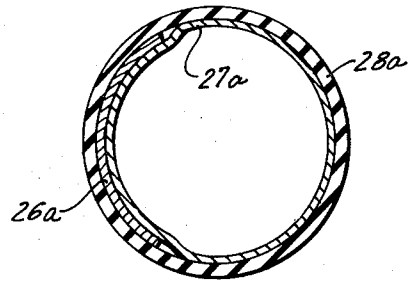
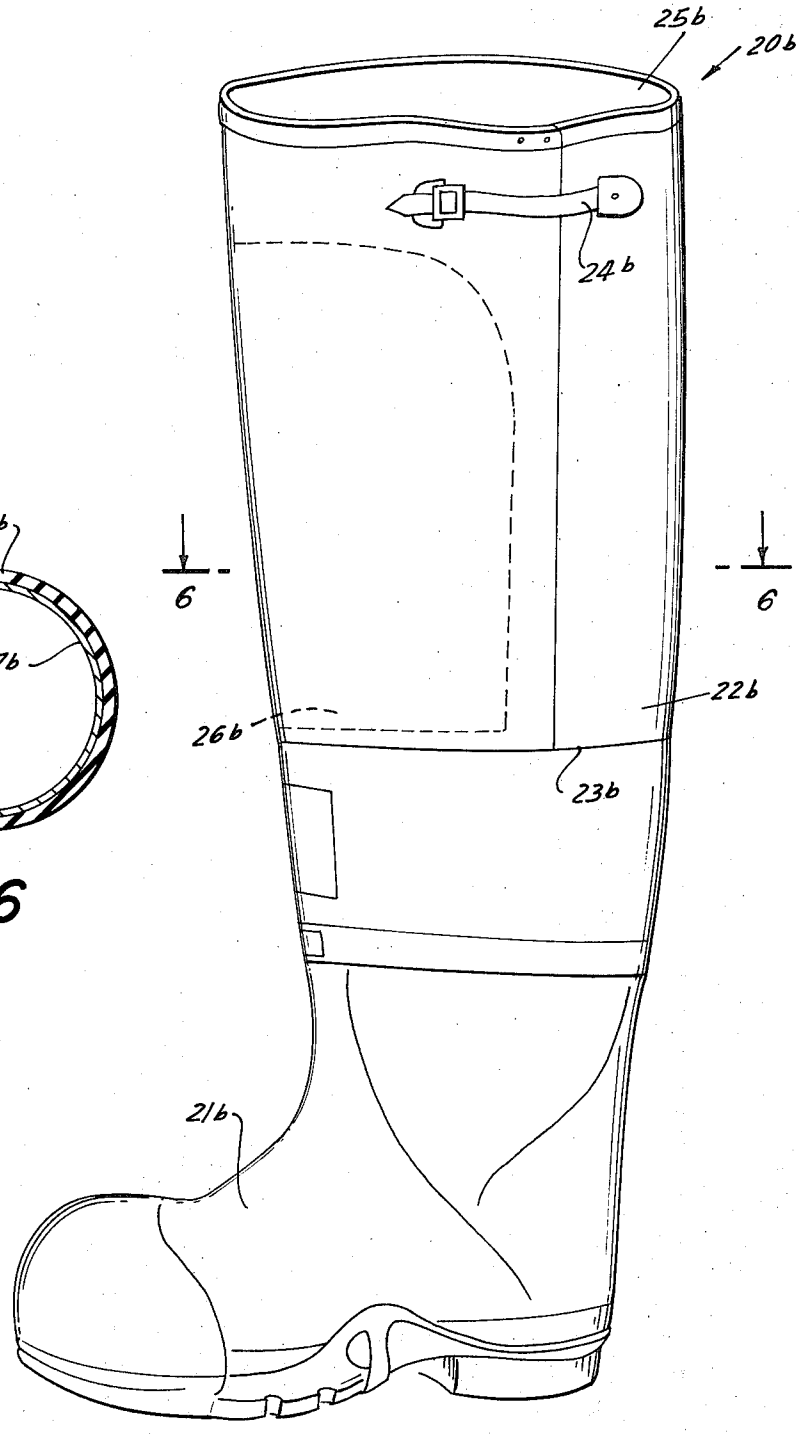


FIG. 4

FIG. 5



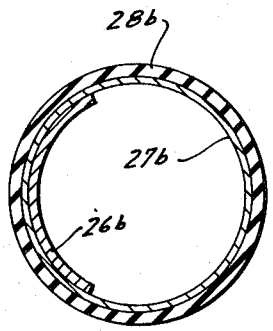


FIG. 6

SAFETY BOOT

BACKGROUND OF THE INVENTION

In hazardous occupations, a safety boot is quite common in order to protect the legs of the wearer from various dangerous substances including fire. This is particularly true in firefighting operations where a fireman is often required to search burning buildings for people by crawling on the floor to take advantage of low heat and less smoky conditions. In doing so, the fireman encounters hot or burning timbers which will burn through the top of a conventional fire boot. This subjects the fireman to burns and often renders the boot useless.

Consequently, it would be extremely advantageous to have extra protection in that portion of the boot which comes in direct contact with the damage producing source.

Prior art boots are known which include additional protection in various areas to alleviate damage to the wearer under hazardous conditions. However, these are merely to protect the wearer from injury primarily produced by hard blows such as would be rendered by falling heavy objects. In the case of a fireman's boot, the extra protective pads which are available are used to absorb blows from falling objects or from severe contact between the fireman's foot or leg with an object such as a ladder.

SUMMARY OF THE INVENTION

With the above background in mind, it is among the primary objectives of the present invention to provide a safety boot which is particularly adaptable for use in areas where exposure to fire is frequent which includes a safety pad of highly fire-resistant material to reduce the danger of burns to a specific area of the wearer's leg. It is particularly useful in connection with fireman's boots where the protective shield or pad is located in the knee area of the boot so that when the fireman is crawling over burning areas the danger of fire injury to his knees is minimized.

The safety boot which is for the protection of the wearer from fire and the like includes a foot portion and a leg cover portion extending upwardly therefrom. The boot has an inner lining surface and an outer exposed surface with a safety shield on the leg cover portion thereof positioned so as to provide additional fire protection to a specific predetermined portion of the leg of the wearer.

With the above objectives, among others, in mind, reference is had to the attached drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

In the drawings:

FIG. 1 is a side elevation view of a safety boot of the invention;

FIG. 2 is a top sectional view thereof taken along the plane of line 2—2 of FIG. 1;

FIG. 3 is a side elevation view of an alternative embodiment of the safety boot of the invention;

FIG. 4 is a top sectional view thereof taken along the plane of line 4—4 of FIG. 3;

FIG. 5 is a side elevation view of a further alternative embodiment of the safety boot of the invention; and

FIG. 6 is a top sectional view thereof taken along the plane of line 6—6 of FIG. 5.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

FIGS. 1 and 2 depict one embodiment of boot 20. The boot is of the type with a foot portion 21 and an upward extending leg covering portion 22 which are joined at a seam 23. The boot may extend up to the hips of the wearer. A strap assembly 24 is adjacent to the top of the boot for convenience of the wearer. With strap 24 open the foot can be extended through opening 25 at the top of the boot until it is properly positioned in foot portion 21 at which time strap 24 would be closed thereby snugly affixing the boot to the wearer. The boot shown is of the type which a fireman would normally wear.

A safety shield 26 is mounted on the exterior surface of the leg covering portion 22 at a location where the knee of the wearer would approximately be. The shield is designed to provide additional protection against fire. This is particularly advantageous when the wearer is on his knees on a burning surface and the knee area would be in direct contact with the burning substance.

As shown in FIG. 2, the boot includes an inner layer 27 of well-known material such as cotton fabric or a combination of rubber and fabric material. The inner layer is covered by an outer layer 28. The outer layer may be of conventional material such as rubber. Both the inner and outer layers extend the entire length of the boot including both the leg covering and foot portions. This is a matter of preference.

Mounted on the exterior surface of the leg covering portion 22 is the safety shield of pad 26. The location for the pad is between the ankle area of the boot and the top area and is approximately where the knee of the wearer would be. Shield or pad 26 is of a highly fire resistive material such as asbestos. It is mounted to the rubber outer layer 28 in any convenient fashion such as by an adhesive bond or by any other well known method. Naturally the rubber layer and the inner layer are bonded in any convenient fashion such as by adhesive or by mere frictional contact. Safety shield 26 is of sufficient surface area to protect the knee no matter what position the wearer is in but is not too large so as to add substantially to the cost of the boot. Additionally, the size of the pad is held to a minimum to avoid detraction from the desirable features of the remainder of the boot which is constructed of the rubber outer layer and the desirable inner lining. Naturally, the foot portion 21 may include many other lining materials in addition to the two shown for the leg portion of FIG. 2 depending upon the desires of the manufacturer and the ultimate user.

It has been found that for a common sized boot approximately 30 inches in height, a leg covering portion 16 inches high and wedge sized in configuration is acceptable. Such a portion 22 when connected to front portion 21 would be provided with a 19 inch circumference at the bottom which extends just below seam 23 and a 25 inch circumference at the top. The shield 26 applied thereto would be approximately 9⅝ inches wide and 10¼ inches high and located on portion 22 adjacent to seam 23 in the front of the boot so as to accommodate the knee of a variety of different size users.

Portion 22 is formed by coating both sides of an inner layer 27 of cotton cloth with a thin film of vulcanizable

cement or adhesive and then applying an outer layer **28** of rubber thereto. The exposed surface of layer **28** is coated with the adhesive at the location where the asbestos shield **26** is positioned. The combination is then vulcanized to bond the materials together. Portion **22** is then affixed to front portion **21** by applying adhesive to the adjoining parts at seam **23** and vulcanizing the combination. Front part **21** can be formed in a similar manner as described for the leg portion **22.**

FIGS. **3** and **4** show an alternative embodiment designated as boot **20***a*. All of the similar components of boot **20***a* to that of boot **20** are similarly numbered with the addition of a subscript *a*. Boot **20***a* is substantially identical with boot **20** with the major exception of the positioning of safety pad **26***a*. Instead of being positioned on the exterior surface of outer layer **28***a*, safety shield **26***a* is mounted between outer layer **28***a* and inner layer **27***a*. There need be no alteration in any of the materials of boot **20***a* from the design of boot **20** and the elements of the boot can be interconnected in the similar fashion.

FIGS. **5** and **6** show a further alternative embodiment of the boot designed as boot **20***b*. Similar components to that of boots **20** and **20***a* are similarly numbered with the addition of the subscript *b*. Once again, the boot is substantially identical to boot **20** with the major change being that the safety shield **26** is mounted to the inner exposed surface of inner layer **27***b*. All materials are the same as in boot **20** and they are interconnected in a similar manner.

In all of the above discussed embodiments it is a primary objective to provide a safety shield for the knee area which does not detract from the features of the remainder of the boot and does not add materially to the cost of the boot. The shield is designed to give positive protection to the wearer in the knee area when he is in a position such as crawling when the knee is in contact with extremely hot or burning surfaces.

Thus, the above discussed objectives of the invention, among others, are effectively attained.

I claim:

1. A safety boot for the protection of the wearer from fire and the like comprising: a foot portion and a leg cover portion extending upwardly therefrom, the boot having an inner lining surface and an outer exposed surface, a safety shield on the leg cover portion thereof positioned so as to provide additional fire protection to a specific predetermined portion of the leg of the wearer, and the safety shield being an asbestos pad affixed to the leg cover portion of the boot in the approximate area of the knee of the wearer so as to protect that portion of the wearer's person from burns incurred due to fire exposure.

2. A safety boot for the protection of the wearer from fire and the like comprising: a foot portion and a leg cover portion extending upwardly therefrom, the boot having an inner lining surface and an outer exposed surface, a safety shield on the leg cover portion thereof positioned so as to provide additional fire protection to a specific predetermined portion of the leg of the wearer, the boot being approximately 30 inches in height and the leg cover portion being approximately 16 inches in height and the safety shield being between 9 and 10 inches wide and between 10 and 11 inches high.

3. A safety boot for the protection of the wearer from fire and the like comprising: a foot portion and a leg cover portion extending upwardly therefrom, the boot having an inner lining surface and an outer exposed surface, a safety shield on the leg cover portion thereof positioned so as to provide additional fire protection to a specific predetermined portion of the leg of the wearer, the safety shield being a pad of highly fire resistive material affixed to the leg cover portion of the boot in the approximate area of the knee of the wearer so as to protect that portion of the wearer's person from burns incurred due to fire exposure.

4. The invention in accordance with claim **3** wherein the boot is a fireman's boot having at least an outer exposed layer of rubber material.

5. The invention in accordance with claim **3** wherein the boot is a fireman's boot having an inner lining layer of cloth.

6. The invention in accordance with claim **3** wherein the safety shield is positioned between an inner lining layer and an outer exposed layer of the boot.

7. The invention in accordance with claim **3** wherein the safety shield is positioned on the exterior surface of the outer exposed surface of the boot.

8. The invention in accordance with claim **3** wherein the safety shield is positioned on the inner exposed surface of the inner lining surface of the boot.

9. The invention in accordance with claim **3** wherein the safety shield is mounted on the leg cover by means of an adhesive bond.

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