

J. S. CAPEN.
RUBBER.

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Fig. 1.

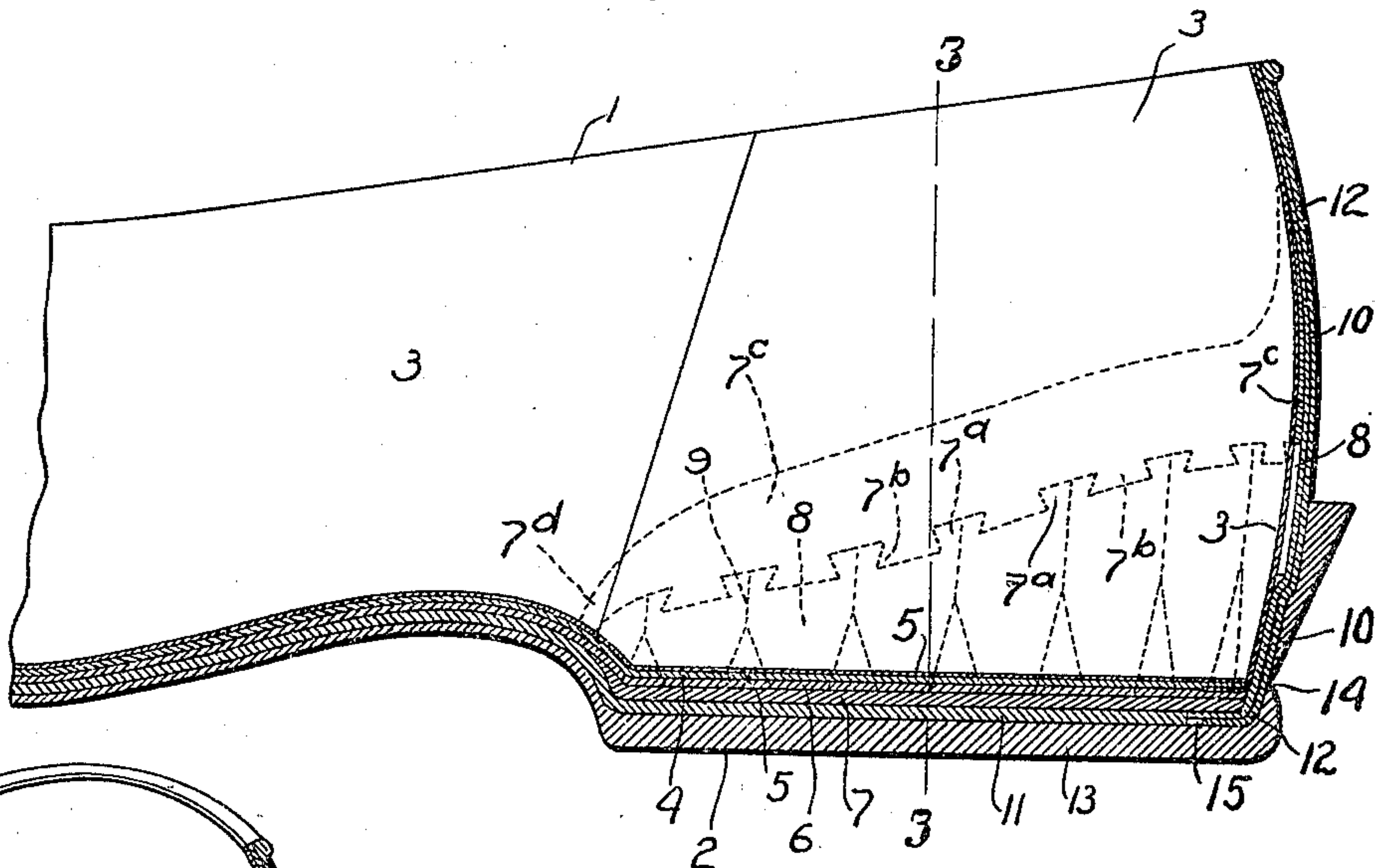


Fig. 3.

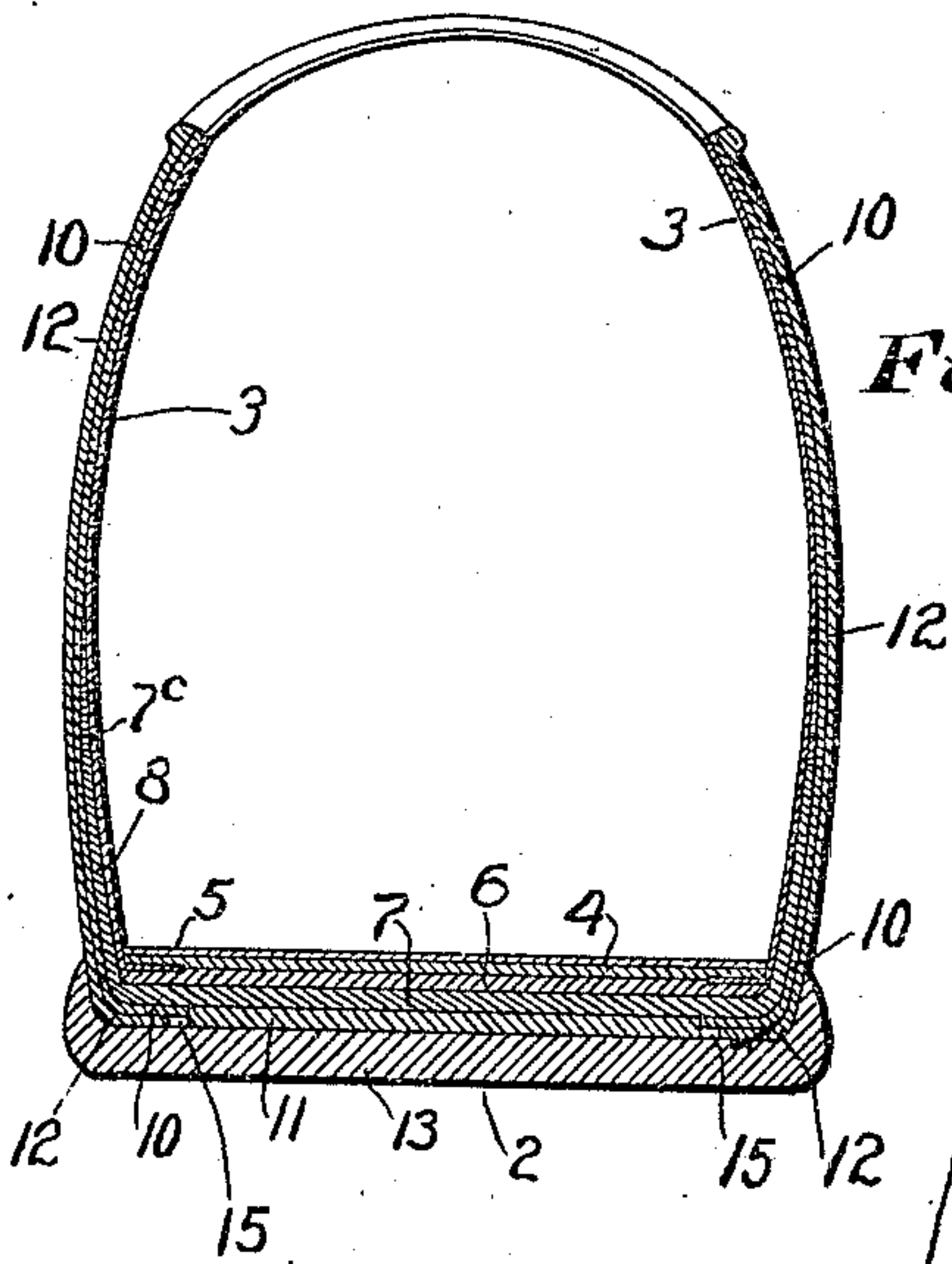
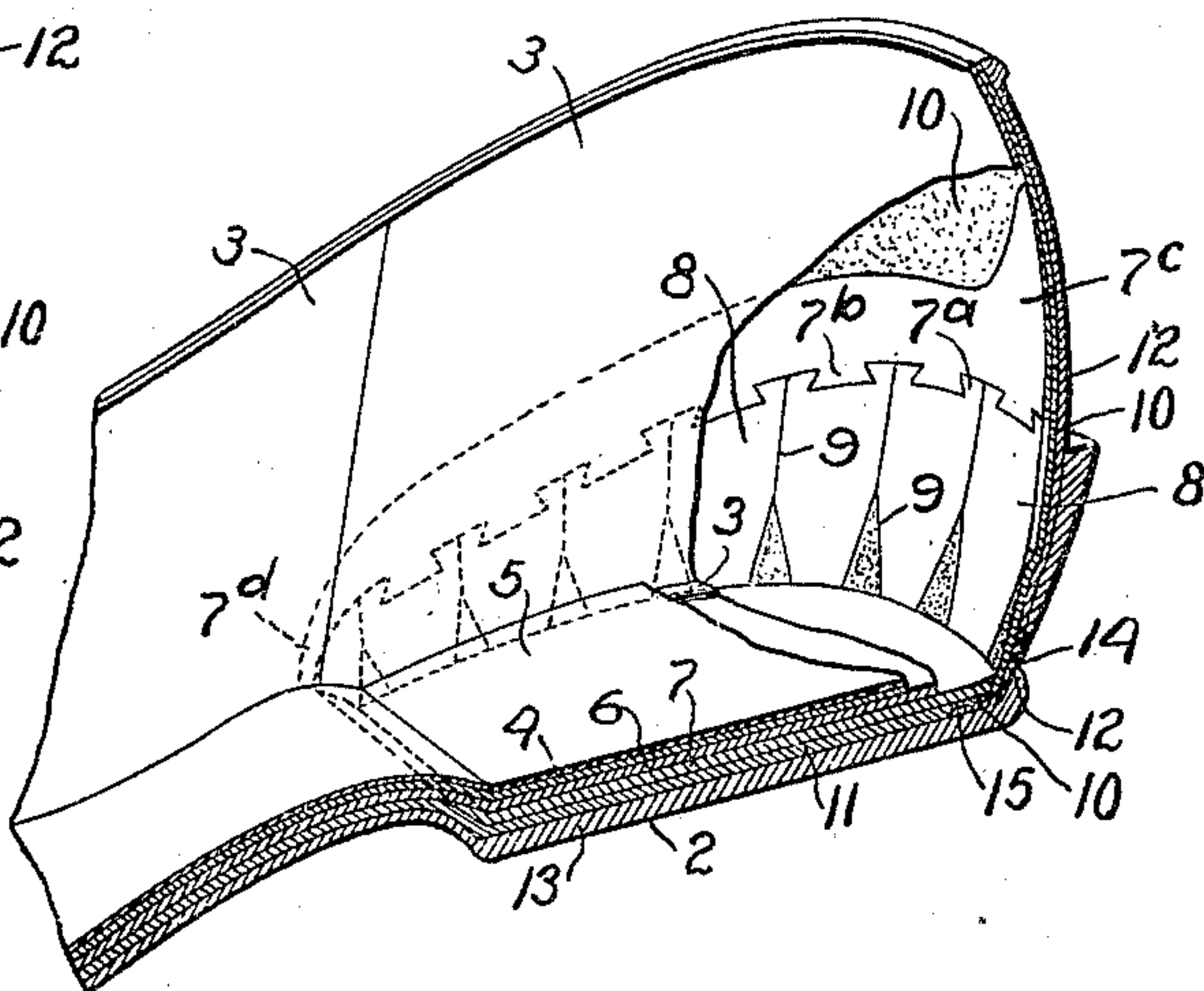


Fig. 2.



Witnesses:

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UNITED STATES PATENT OFFICE.

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RUBBER.

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To all whom it may concern:

Be it known that I, JOSEPH S. CAPEN, a citizen of the United States, residing in Stoughton, in the county of Norfolk and State of Massachusetts, have invented an Improvement in Rubbers, of which the following description, in connection with the accompanying drawings, is a specification, like numerals on the drawings representing like parts.

My invention relates to foot wear and has reference particularly to rubbers, sandals and the like usually made of rubber, adapted to be worn over the ordinary boot or shoe.

The object of my invention is to so construct such foot wear that it will not be cut or weakened by contact with the sharp edge of, or the nails in, the heel of the shoe over which it is worn, and also to so distribute the strain now imposed upon the heel seat of a rubber by the heel of the shoe, as to diminish the tendency of such seat and tread to break away from the upper.

In the embodiment of my invention selected for illustration herein Figure 1 is a vertical, longitudinal, sectional view of a portion of a rubber of the usual form made in accordance with my invention; Fig. 2 is a perspective, sectional detail of a portion of the heel of the same rubber, and Fig. 3 is a vertical cross section of the heel on the line 3—3, Fig. 1.

Referring to Fig. 1, the rubber 1 illustrated therein is of the usual form and is provided with a heel 2, also of the usual type.

The rubber is provided with the usual lining 3, which is applied to the vamp portion in the customary manner, while the heel may be constructed as shown in Figs. 1 and 2, wherein it comprises a usual innersole 4, and its lining 5, said vamp lining 3, of the rubber, being carried down and folded over upon and firmly secured to the edge of the innersole 4, as by cementing.

The rag sole 6, as it is commonly termed, is applied and secured to the innersole 4, in any desired manner, preferably by cementing.

The construction thus far referred to, is that commonly followed in making the usual rubber.

According to my invention as illustrated herein, a member 7, which I term a load carrying member is applied to the tread of the heel. Although said load carrying mem-

ber may be applied at any suitable time, during the building up of the heel, I prefer to apply it after the rag sole has been laid in position. This load carrying member 7, may be made of any suitable material, for example, leather, and, as clearly shown in Figs. 1 and 2, covers the lower surface of the heel and is provided with an upturned beveled edge 8 to fit properly the inner walls of the rubber. This upturned beveled edge 8 is shown provided at intervals with slits 9, preferably triangular or dovetailed, to permit of flexing of the heel and to permit said member to be smoothly and firmly secured, as hereinafter described, to the upper. Said member 7 may also, if desired, be provided along its upper edge with dovetailed or other suitably formed members 7^a, adapted to cooperate and interlock with suitable members 7^b, formed for example, upon the lower edge of a member 7^c to be applied, preferably, to the lining 3 in any suitable manner, the ends 7^a thereof being carried down and folded over upon and secured as by cementing, to the edge of the rag sole 6. This load carrying member 7 may be molded into the desired shape before being applied to the heel or not, as may be most convenient and desirable. In the drawing that portion of the edge of the member 7 opposite the shank of the rubber is not shown as provided with the slits 9, but it may be so provided, if desired. A heel member 10, of any suitable material, preferably of frictioned cloth, well known to those skilled in the art, and of any desired weight and strength, is next applied to the heel upper, the lower edge of said frictioned heel member 10 being carried down, and folded over upon and secured as by cementing, to the load carrying member 7. The frictioned heel member 10 may be of any desired height, and is shown herein as carried to the top of the upper to permit it to be properly secured, as by cementing to the lining 3. After said member 10 is applied, any suitable tool, such for instance as the roller commonly used in this art for depressing the edge of a rubber member, may be used to depress portions of the member 10 into the slits 9, and the members 7^a between the cooperating members 7^b. The filling sole 11 is next suitably secured to the lower face of the load carrying member 7, the edge of said filling sole overlapping slightly the edge of the member 10, but ex-

tending not quite to the edge of the heel. The upper 12 is then secured over and to, preferably by cement, the member 10, the lower edge of this member also being carried down and folded over upon and secured to the intumed edge of the member 10. The edge of the upper 12 is abutted approximately against the edge of the filling sole 11.

The member 12 above referred to is stretched tight when it is applied to the heel to cause it to present a smooth surface when the rubber is finished.

After the upper 12 has been applied, the outer layer or tread 13 of the heel is secured in position, commonly by the use of suitable cement, the edge 14 of the tread being carried over and firmly pressed down upon the edge of the upper, by an instrument known as the stitcher. The rubber is now vulcanized in the usual manner and such vulcanizing has the effect of hardening and amalgamating more or less the interlocking portions of the frictioned heel member 10 in the slits 9, and the members 7^a and 7^b, referred to, to furnish a secure lock for and to support the beveled edge 8; by this means a portion of the weight of the body heretofore carried by the heel seat alone, is transferred to and suspended from the walls of the upper or side of the rubber.

During the time which has elapsed after the member 12 has been applied, and before the shoe is vulcanized, the member 12, which was, as stated, stretched smoothly over the heel, may have contracted more or less so that the edge of the said member 12, which formerly was abutted against the edge of the filling sole 11, frequently will be found to have been drawn away from the same leaving a space 15 between said edges, Fig. 3.

It is evident that makers of rubbers cannot make the heel of the rubber to conform in shape, nor in size, except approximately, to the heel of the shoe upon which it is to be worn. Because of this the heel of the rubber is usually made large enough to fit approximately any shape or size of heel for a shoe of a given size, and since the tread or top lift of the shoe heel averages to be smaller than the angle seat provided therefor in the heel of the rubber, the sharp edge of the shoe heel usually bears upon the heel seat of the rubber at some distance within its peripheral outline and over the space 15 referred to.

The inner sole and rag sole being made usually of cheaper material than the upper and outer sole of the rubber, they soon give way under the unsupported weight of the sharp edge of the shoe heel referred to, and the heel usually becomes cracked and weakened long before the rubber is elsewhere badly worn.

Owing to the fact that the various members comprising the upper of the rubber and those comprising the heel of the rubber are joined at or near the lower edge of the heel this point is always weak. Where one side of the heel tread of the shoe becomes worn so that the shoe heel bears unevenly upon the seat of the rubber heel there is a constant tendency of the side wall of the rubber, directly under the worn off edge of the shoe heel, to buckle and break at the edge, where the heel upper and the tread are joined. This constant buckling or bending soon weakens the heel at this point and is an additional cause for its early giving way at this point. By my invention the foregoing difficulties are all overcome.

While I have described a preferred form of construction, obviously the details thereof may be varied without departing from the spirit and scope of the invention.

Having thus described my invention, what I claim is:

1. As an article of manufacture a rubber overshoe, the heel whereof is flexible and provided with a flexible load-carrying member having its margin upturned, slitted for flexibility and secured to the heel part of the overshoe to receive support therefrom and at the same time permit desired flexibility of said heel and load-carrying member.

2. As an article of manufacture a rubber overshoe, the heel whereof is flexible and provided with a flexible load-carrying member having its margin upturned slitted and anchored thereby to the heel part of the overshoe to receive support therefrom and at the same time permit desired flexibility of said heel and load carrying member.

In testimony whereof, I have signed my name to this specification, in the presence of two subscribing witnesses.

JOSEPH S. CAPEN.

Witnesses:

EVERETT S. EMERY,
ROBERT H. KAMMLER.