No. 844,280. PATENTED FEB. 12, 1907.

A. J. GROVE.

SNAP FASTENER.

APPLICATION FILED DEC. 13, 1905.

Fig. 1.

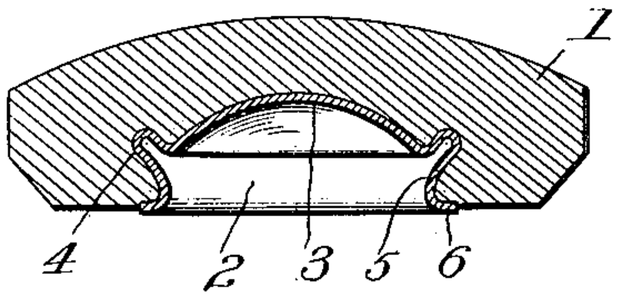


Fig. 3.

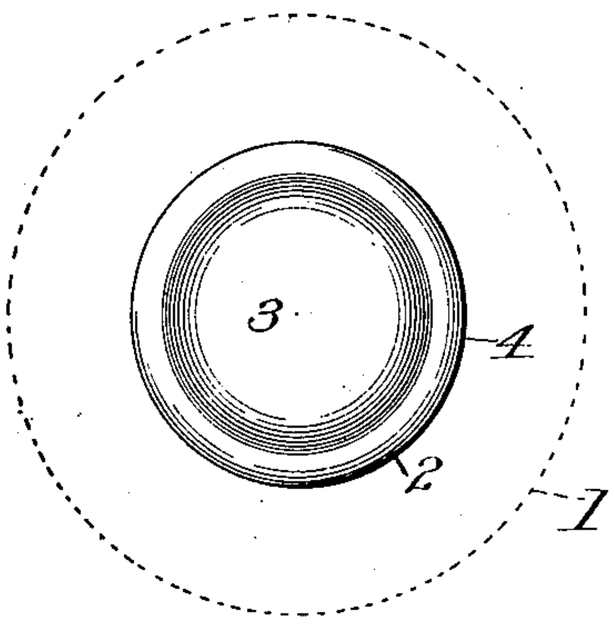


Fig. 2.

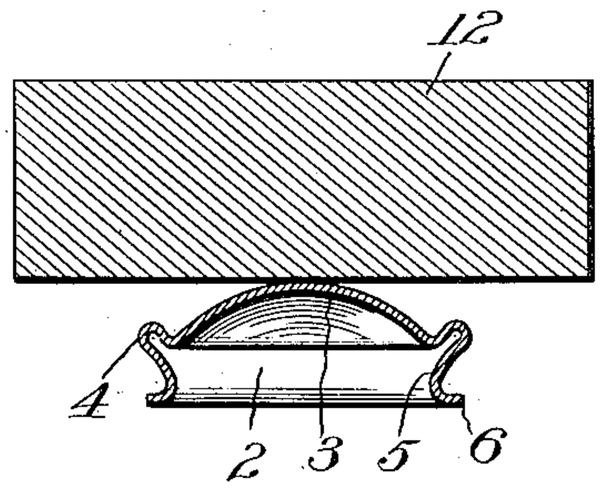


Fig. 4.

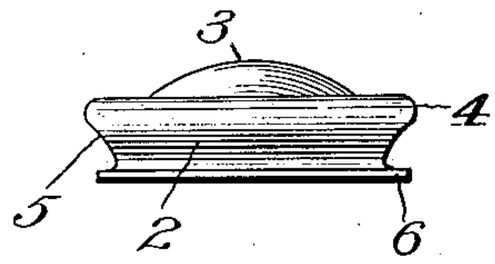


Fig. 5.

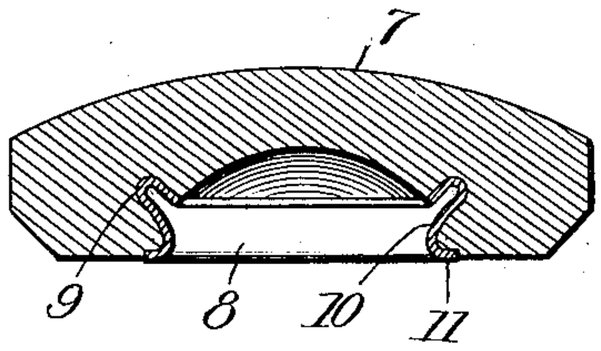


Fig. 7.

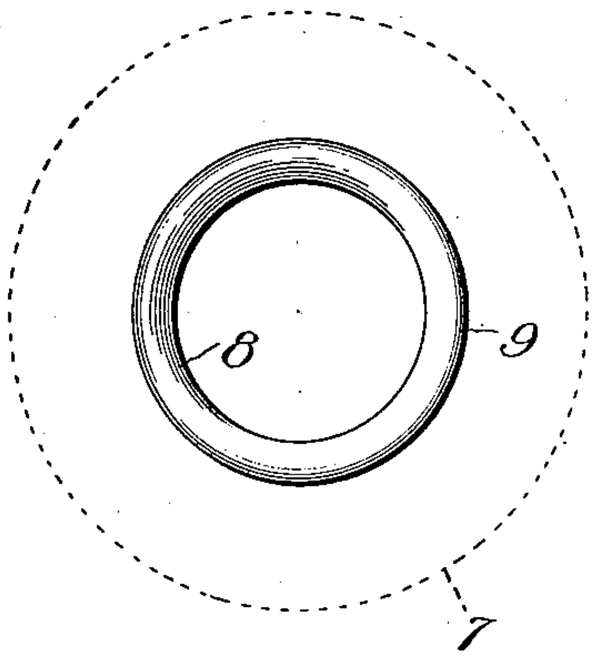


Fig. 8.

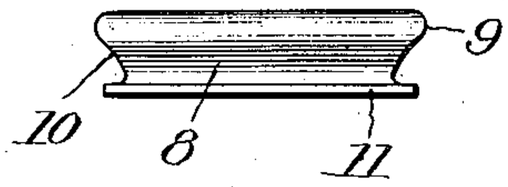
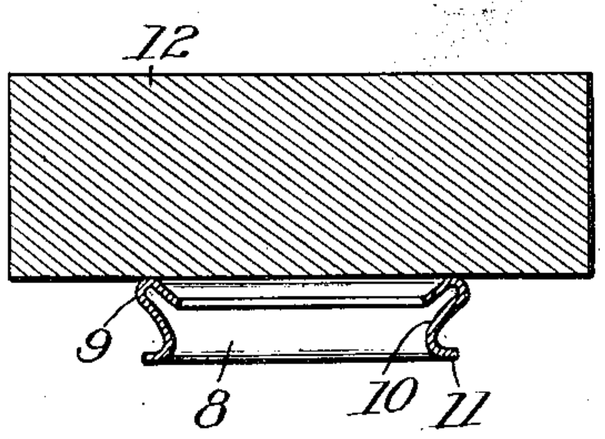


Fig. 6.



Witnesses

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UNITED STATES PATENT OFFICE.

ARTHUR JAMES GROVE, OF HALESOWEN, ENGLAND, ASSIGNOR TO JAMES GROVE & SONS, OF HALESOWEN, ENGLAND, A COPARTNERSHIP.

SNAP-FASTENER.

No. 844,280. Specification of Letters Patent. Patented Feb. 12, 1907.

Application filed December 13, 1905. Serial No. 291,609.

To all whom it may concern:

Be it known that I, ARTHUR JAMES GROVE, a subject of the King of Great Britain, residing at Halesowen, in the county of Worcester, England, have invented a certain new and useful Improvement in Snap-Fasteners, of which the following is a full, clear, and exact description.

This invention relates to the socket member of so-called "snap-fasteners."

In United States Letters Patent No. 803,754, granted November 7, 1905, and in British Patent No. 13,046, dated June 9, 1904, George Frederick Grove and I, as joint inventors, have described certain difficulties encountered in the use of horn, hoof, and like materials for the heads of those garment-fasteners known variously as "snap-fasteners" and also "push-buttons" and also "glove-fasteners" and have shown and described means whereby these difficulties have been overcome, or at least reduced to a negligible quantity.

In the present invention, which is in one of its aspects in the nature of an improvement upon the patented invention above referred to, the metal ring is replaced by a socket-like lining, herein shown in two of the forms which it may be given—namely, as a continuous lining and as a perforated lining. In each instance the lining is provided with a flaring circular groove which receives and spreads the barrel or tube of the fastening-eyelet in the setting of the device on a garment, and said lining also has a curved side wall and a back flange. This eyelet, in addition to attaching the socket to the garment, also serves as a stud-engaging member, and the lining reinforces the material of the head against the strains to which it may be subjected in shaping it and in its use as a fastener upon a garment, all as I will now proceed more particularly to set forth and finally claim.

In the accompanying drawings, illustrating the invention, in the several figures of which like parts are similarly designated, Figure 1 is a cross-section of the finished device. Fig. 2 illustrates in cross-section the head-blank and the lining before application. Fig. 3 is a plan view of the lining detached, the horn or other head being indicated by dotted lines. Fig. 4 is an elevation of the lining of the preceding figures detached. Fig. 5 is a cross-section of the finished device having a perforated lining. Fig. 6 illustrates in cross-section the head-blank and the perforated lining before application. Fig. 7 is a plan view of the lining of Figs. 5 and 6, the head being indicated by dotted lines. Fig. 8 is an elevation of the lining of Figs. 5, 6, and 7 detached.

The head 1 of the device may be made of horn, hoof, or other natural material or of any composition of matter capable of being brought into a condition in which it may be shaped by pressure in dies and set in such shape. The lining 2, as shown in Figs. 1, 2, 3, and 4, comprises a dome-shaped portion 3, the flaring circular groove portion 4, the curved wall portion 5, and the external outwardly-projecting back flange 6. The apex of the dome rises a considerable distance above the groove 4.

As shown in Figs. 5 to 8, the head 7 is of any of the materials above mentioned, and the lining 8 is perforated at top, or, in other words, is without the dome shown in the preceding views; but it has the flaring circular groove portion 9, the curved wall 10, and the external outwardly-projecting back flange 11, substantially as in the other form just described.

In both cases the lining serves the two-fold purpose, first, of presenting a metallic groove not readily susceptible to variations in temperature or to climatic influences, and therefore always in condition and gage to receive the fastening-eyelet and clench it, and, second, of reinforcing the chamber in the head and into which the complemental stud of the snap-fastener enters. This stud being of conventional and well-known form is not herein illustrated; but it is to be said that, as shown, the socket member is a rigid device, and consequently the stud should be a spring device.

In practice the blank for the head 1 or for the head 7 may be, as represented at 12 in Figs. 2 and 6, a disk of horn, hoof, or other natural material or of some composition of matter that is capable of being pressed to shape and about the lining. In assembling the head and lining the lining is preformed complete and placed upon a die with a die projection in the dome portion or projecting through the upper open portion of the lining, (shown in Figs. 5 to 8,) and in either

case the dome or the projection is at an elevation above the highest point of the circular groove, so that the blank 12 will rest upon the dome portion or the projection aforesaid, which will thereupon receive the impact of pressure upon the dies, and thereafter upon the continuous exertion of pressure upon the dies the head will be pressed and shaped about the lining, inclosing it, as shown in Figs. 1 and 5, respectively, and thereby intimately, permanently, and securely uniting the two.

In case a stud-receiving chamber of considerable depth is required and it becomes necessary to make the head rather thin over the highest portions of the chamber, so that the total thickness of the head will not be excessive and rendered unsightly, then a continuous lining, as shown in Figs. 1 to 4, is particularly serviceable, and where no such precaution is necessary then the domeless or perforated lining of Figs. 5 to 8 is otherwise equally efficient.

The curved walls 5 and 10 permit the material of the head to be brought down close to the lining without a gap, and the back flanges serve not only as a reinforce, but also as a protection for the material of the head against the impact of and strains exerted by the stud in inserting and withdrawing it in service.

In any case the lining must be so shaped as not to be deformed in any wise by the application of the material of the head to it and also so that the device may be readily drawn or stripped off the dies or, in fact, shaken off the dies when completed. Also the groove must be so disposed that its mouth may be held open or, in other words, insured against collapsing when die-pressure is brought to bear to shape the material of the head about the lining.

The conditions attending the union of a metal lining with a horn, hoof, or like natural material head are essentially different from those attending the application of japan or other fluid coverings and celluloid or like plastic coverings which may be readily molded about surfaces of various contours without any considerable pressure. It requires, however, a very considerable pressure to unite a horn or hoof head to a metal lining.

The linings herein described are adapted to withstand not only the vertical pressure placed upon them in shaping the head material about them and uniting the two, but also the lateral pressure in closing down the material of the head around the curved walls and around the back flanges.

In the form of the device shown in Fig. 1 the dome of the lining delimits the depth of the stud-receiving chamber, while in that form of the device shown in Fig. 5 a projection on the die would be utilized for the same purpose.

What I claim is—

1. A snap-fastener socket member, comprising a head of solid material, capable of being shaped under pressure, and a lining therefor having a flaring circular groove adapted to receive and clench an independent attaching-eyelet, a curved wall and a back flange, about which lining the head is pressed and the head and lining thereby intimately, permanently and securely united.

2. A snap-fastener socket member, comprising a head of solid material, capable of being shaped under pressure, and a continuous metal lining therefor having a dome, a flaring circular groove adapted to receive and clench an independent attaching-eyelet, a curved wall and a back flange, about which lining the head is pressed to shape and the head and lining thereby intimately, permanently and securely united.

In testimony whereof I have hereunto set my hand this 12th day of December, A. D. 1905.

ARTHUR JAMES GROVE.

Witnesses:

ERNEST H. JUERGENS,

WM. RASQUIN, JR.