No. 878,550. PATENTED FEB. 11, 1908.

A. G. MEAD.

FASTENER.

APPLICATION FILED JAN. 23, 1905.

2 SHEETS—SHEET 1.

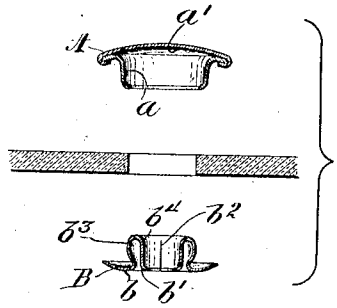

Fig. 1.

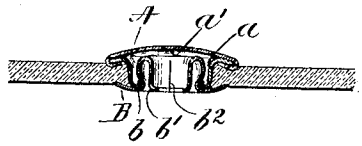

Fig. 2.

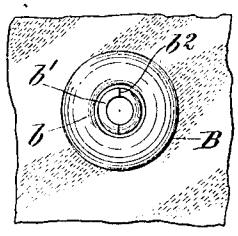

Fig. 3.

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INVENTOR:
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2 SHEETS—SHEET 2.

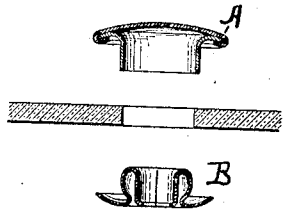


Fig. 4.

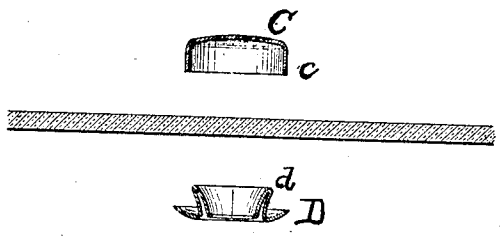


Fig. 6.

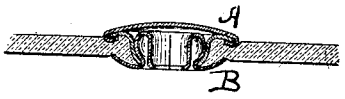


Fig. 5.

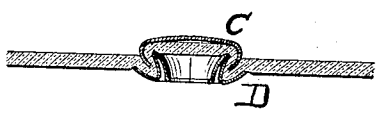


Fig. 7.

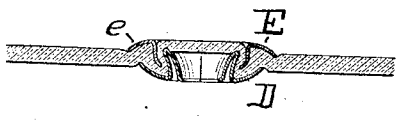


Fig. 8.

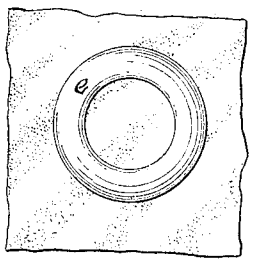


Fig. 9.

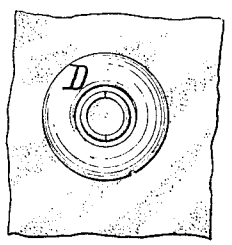


Fig. 10.

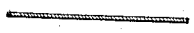
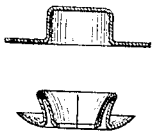


Fig. 11.



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UNITED STATES PATENT OFFICE.

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FASTENER.

No. 878,550. Specification of Letters Patent. Patented Feb. 11, 1908.

Application filed January 23, 1905. Serial No. 242,264.

To all whom it may concern:

Be it known that I, ALBERT G. MEAD, a United States citizen, resident of Somerville, in the county of Middlesex and State of Massachusetts, have invented a new and useful Improvement in Fasteners, of which the following, taken in connection with the accompanying drawings, is a specification.

My invention relates to separable fasteners, and more particularly to socket members for such fasteners.

The objects of my invention are to afford a construction which combines many advantages and at the same time dispenses with unnecessary parts permitting a very simple and efficient socket; also to provide a resilient socket in which the resilient parts are protected from distortion; also to provide a socket construction with which (although the fabric may be perforated) the necessity of perforating the fabric or other material to which it is to be applied, is dispensed with, and further when desirable to permit the fabric to show where ordinarily it is perforated.

Other objects will appear during the hereinafter following specification and claims.

I will first describe forms of fastener sockets embodying my invention and then point out novel features in claims.

In the accompanying drawings Figure 1 is a vertical, central section of a fastener socket embodying my invention, showing the parts thereof before the same have been secured or clenched upon the material to which the fastener is to be applied. Fig. 2 shows the same parts that are illustrated in Fig. 1 but after the same have been assembled or secured upon the material. Fig. 3 is a bottom plan view of the fastener socket shown in Figs. 1 and 2. Figs. 4 and 5 show, before and after assembling, a modification of the fastener shown in Figs. 1, 2 and 3. Figs. 6 and 7 show a further modification, in which the fabric or leather is not perforated or punctured. Fig. 8 shows a still further modification wherein the fabric is exposed to exterior view within the attaching part. Fig. 9 is a top view of the fastener of Fig. 8 when in place. Fig. 10 is a bottom view of the same. Fig. 11 shows the steps in the formation of my improved socket-piece.

Similar letters of reference are employed to designate the corresponding parts in the several figures of the drawings.

I will first describe the specific form of fastener socket illustrated in Figs. 1, 2 and 3 and afterwards take up the modifications shown in other figures.

Considered as a whole the socket may be said to comprise stud engaging parts integral with which is a flange or base, and cooperating with such a socket piece, suitable means for securing it to fabric. The stud engaging parts of the socket piece are surrounded by the flange or base, and as usual have a central opening through which the head of a stud may be passed in the act of engagement and disengagement.

The means for fastening the socket piece to the fabric may be of varied construction, but I prefer to employ for that purpose an eyelet that coöperates with the flange or base of the socket piece for fastening the latter to the fabric. A represents such a fastening eyelet, and as shown it comprises the eyelet proper a to which may be secured for the purpose of ornament, a cap a'. I also preferably bur or turn inwardly the lower edge of the eyelet shank to a slight extent as shown in Fig. 1 for purposes which will hereinafter appear.

B represents a socket piece embodying my invention and adapted to coöperate with the fastening eyelet A. In describing the parts comprised in the socket piece it should be borne in mind that the side of the fabric upon which the cap or top a' appears will be considered as the upper side. As the flange or base of the socket piece and the stud engaging edge are the active and visible parts of the socket piece when in use they will be referred to as being on the outer side, so that the metal which extends away from the flange toward the interior will be said to extend inwardly and vice versa. The socket piece B has a main portion or barrel b^3 which is slightly contracted in diameter towards its lower or outer end, and is there provided with a laterally extended flange or base b below the contracted portion. Stated another way the socket piece may be considered as comprising a base or flange b and an integral barrel extending upwardly or in-

wardly and flared from the base or flange. A third portion of the socket piece is the inner portion b^4 which may be considered as extending downwardly or outwardly with respect to the fabric, and which is the part that directly coöperates with the stud member on another flap or layer of fabric. It of course is turned towards the center or central hollow space before extending downwards. The downwardly extending portion is shown as concentric with the other portions. These three portions of the socket member are shown as integral, and this together with their peculiar form constitutes a valuable feature of my invention. In one sense the barrel portion may be considered as a metal connection between the stud engaging part and the base or flange, besides serving to coöperate in the process of attaching the socket to fabric. It should be stated that the barrel is hollow and the metal at the top of the barrel extends centrally or toward the interior central space before extending downwardly.

The metal extending upwardly from the base and then folded downwardly upon itself to a point where stud engaging lips are formed (substantially in the plane of the flange) may be considered as constituting a fold of metal. This fold when so considered consists of an upwardly or inwardly extending member termed the standing fold member, and an inturned downwardly or outwardly extending member which is slitted and is termed the free fold member.

The flange or base b is adapted to bear directly against the material to which the fastener is to be applied. It also serves in coöperation with the contracted portion of the barrel as an anvil to cause the edge of the eyelet a to be turned inwardly so as to occupy a portion of the contracted space, and thereby secure the parts firmly riveted together. This occurs by the simple application of pressure to force the eyelet and flange towards each other. It further serves the purpose, already referred to, of protecting from distortion the resilient parts because it forms a backing or reinforcement preventing undue expansion of the stud engaging tongues b' of the free fold member. The purpose of the burred portion of the eyelet a will now be apparent. It assists in the turning or riveting action just described.

It may here be said in regard to this operation that the contraction of the barrel (or the flaring of the standing fold member) serves to form a contracted space which may be termed a socket securing space because it allows for the reception of the socket securing means (namely, the eyelet A); the eyelet being in the act of attaching bent or buckled or crippled or curled into the contracted space or groove. This feature of flaring or contracting the barrel serves another important function which will appear more fully hereinafter.

Referring again to Figs. 1 to 3 the upper or inner end of the barrel portion of the socket B is seen to be inturned and extended downwardly and outwardly; the downwardly extended lower free portion being indicated by the letter b', its function as before stated being to constitute a stud clasping or engaging part. For this purpose the portion b^4 may be slit by one or more slits indicated at b^2 by reason of which the stud clasping part is separated into tongues b'. As illustrated these tongues are turned inwardly to a slight extent at their lower edge portion to form lips constituting a contracted mouth, and thereby to firmly secure within the interior of the fastener socket a suitable ball or stud of any well known type.

Figs. 4 and 5 show a modification of Figs. 1, 2 and 3 in which I have dispensed with the bur upon the attaching eyelet. With a properly shaped socket piece an eyelet with straight sides, not burred, will coöperate. This has the advantage that a smaller hole in the fabric is required.

Figs. 6 and 7 show a modification wherein the fabric is not punctured at all. Moreover a simple cap C has taken the place of the eyelet, and serves both as cap and attaching means. The socket piece D is of substantially the form of the socket pieces already described, but I prefer to vary the curvature of its upper parts, as shown at d. Obviously the rim c of the attaching cap C must be slightly larger in interior diameter than the exterior diameter of the socket piece at d. The clenching action is similar to that already described in the other figures, except that the metal above and below the fabric is always separated by the fabric. In other words the cap rim c will bend or crimp toward the center when the parts are, by suitable dies, pressed toward each other. The fabric however extends between the cap rim and the socket piece flange and becomes clasped around and in the recess of the socket, and pressed against the barrel. It does not need to be perforated. But, obviously, my invention contemplates both perforated and unperforated fabric as illustrated by these figures, 6 and 7 on the one hand and Fig. 1 on the other hand. The contracted part of the standing fold member at its lower portion, above the flange forms a securing space, for securing to the fabric or material by means of the cap C or an eyelet E.

Figs. 8, 9 and 10 show a modification in which the attaching cap D of Figs. 6 and 7 is replaced by flanged attaching eyelet E without a closed cap. This affords the desirable result shown in Fig. 9 by which the continuity of the visible fabric is broken only

by the narrow outwardly extending upper rim or flange *e* of the eyelet. In this way is afforded a display of the material over the socket resulting in an ornamental finish.

Fig. 11 shows the three stages of my preferred mode of manufacturing the socket piece.

An important feature of my invention is in providing the downwardly turned stud engaging portion which is integral with the barrel of the socket piece, and in providing an integral flange which through coöperation with a contracted portion of the socket piece is adapted to turn a fastening eyelet inwardly into attaching engagement with such contracted portion. I prefer to shape the flange *b* of the socket piece with a suitable curvature, the curve extending toward the flange of the fastening eyelet so as to give rounded or convex appearance to the exterior of the flange *b* of the socket piece. This shape of flange materially assists in the clenching or riveting action already described, serving as an anvil which crimps the eyelet shank, forcing it into the socket piece securing place, when suitable dies press the socket piece and the eyelet toward each other.

Another important feature is the form of the socket piece wherein its interior integral portion when made resilient (there may be one, two, or more vertical slits in it) is brought into very close proximity, almost if not quite in partial contact with the outer part. I not only attain the superior resilient qualities of the extended length of metal, but also secure the resilient part against derangement or distortion. This is due to the proximity of the outer integral part which serves as a support or backing to the resilient or spring tongues when there is tendency, as by excessive side strain, to deflect the latter out of their normal position. The proximity of the outer integral part and the inner edge of the flange or base to the resilient stud catching tongue is due to the form of the barrel or standing fold member, which owing to its flared character, or in other words, the contraction near the base, the metal thereof is brought inwardly into much closer relations to the resilient lips than could otherwise be the case.

My invention relates in part, as indicated in some of the claims, to the feature of contracting the socket barrel for the purpose of forming a socket securing space whereby the socket may be secured to fabric by securing means, as an eyelet, in the novel manner described; and in part to the feature of forming the barrel or standing fold member of a flared character or contracted near the base whereby a sufficient backing or reinforcement is afforded to prevent permanent distortion, which might otherwise occur in the resilient stud engaging tongue. Other features will appear in the combinations covered by the following claims.

I claim

1. A snap fastener socket-piece comprising a base or flange member, an upwardly projecting member and an inturned downwardly projecting member, the said upwardly projecting member being integral with and connecting the base or flange member and the downwardly projecting member; the base or flange member taking part in the attachment of the socket-piece to material; the downwardly projecting member being formed with a stud-engaging mouth substantially in the plane of said base or flange member and enlarged above said mouth to accommodate the head of a stud and slitted to afford resiliency to coöperate with a stud; and the upwardly projecting member flared or diverged from the base or flange whereby the resilient parts of the downwardly projecting member near its mouth and the base or flange are brought into proximity to each other so that the latter forms a reinforcement or backing to prevent undue expansion of the former.

2. In a fastener socket, an integral socket piece comprising a flange, a hollow upwardly extending portion upwardly flared, and a portion turned toward the central space and downwardly to form spring tongues, combined with an attaching device, all combined substantially as and for the purposes set forth.

3. In a fastener socket, an integral socket piece comprising a flange, a hollow upwardly extending portion upwardly flared, and a portion turned toward the central space and downwardly and slitted to form spring tongues, combined with an attaching eyelet, the socket piece flange having a convex outer surface, all combined substantially as and for the purposes set forth.

4. In a snap fastener, the fabric, a yielding socket provided with a flared barrel, inner stud engaging tongues, and a convex base flange, combined with an attaching eyelet confining the imperforate material pressed against the socket barrel when by pressure said eyelet is deflected toward the contracted space formed by said flared barrel.

5. In a snap fastener, imperforate material, a yielding socket piece attached at the under side of said imperforate material without puncture of the material, and an attaching eyelet located on the opposite side of the material and coöperating with said socket piece, said eyelet having an outwardly extending upper flange whereby the material is displayed over the socket for constituting an ornamental finish.

6. In a snap fastener socket, an integral socket piece comprising a flange having a convex outer surface, a hollow upwardly ex-

tending portion contracted near the flange, and a portion turned toward the central space and downwardly to the edge which engages the stud, combined with an attaching eyelet, having a flange and a shank, the shank coöperating with the said socket piece flange, being deflected by the latter into said contracted portion.

In testimony whereof, I have signed my name to this specification in the presence of two subscribing witnesses, on this twentieth day of January A. D. 1905.

ALBERT G. MEAD.

Witnesses:

FRED. H. BLISS,

LILLIAN M. MCKIE.