No. 770,955. PATENTED SEPT. 27, 1904.

A. J. BRADLEY.

BALL SNAP FASTENER.

APPLICATION FILED NOV. 18, 1903.

NO MODEL. 2 SHEETS—SHEET 1.

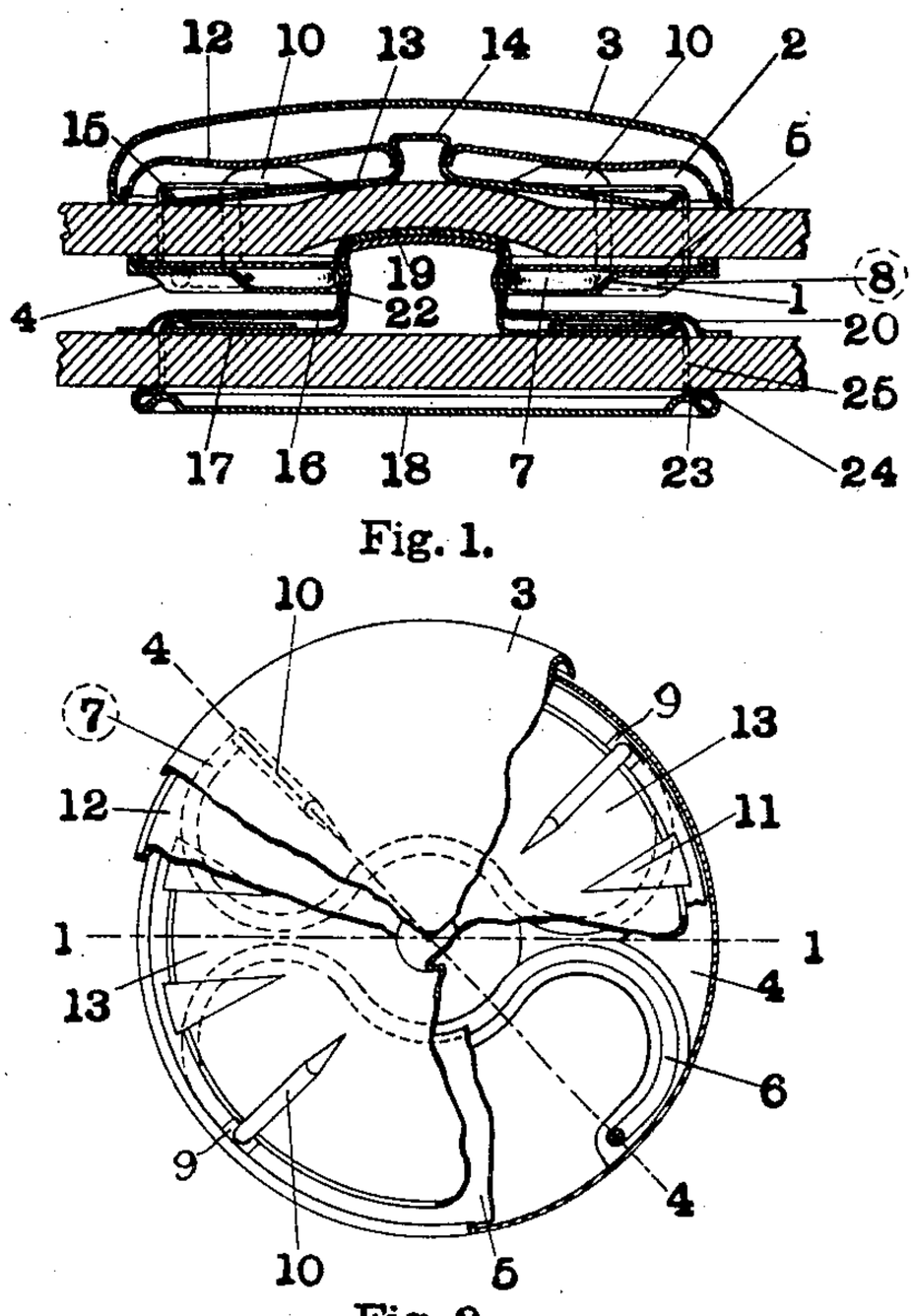


Fig. 1.

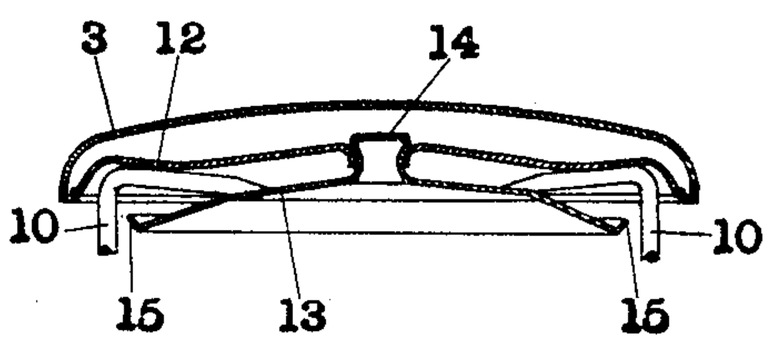
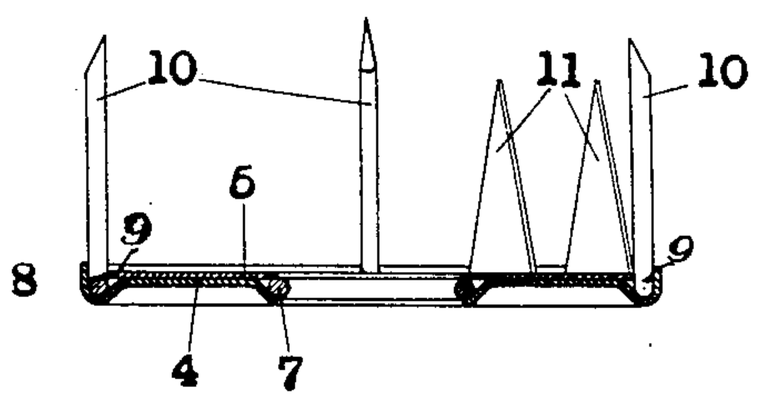


Fig. 4.

Fig. 2.



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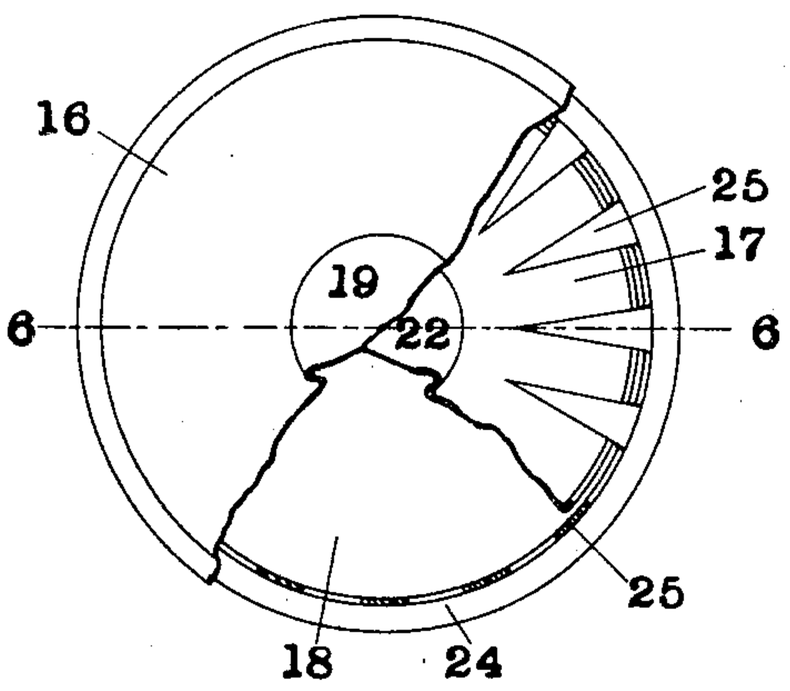

Fig. 3.

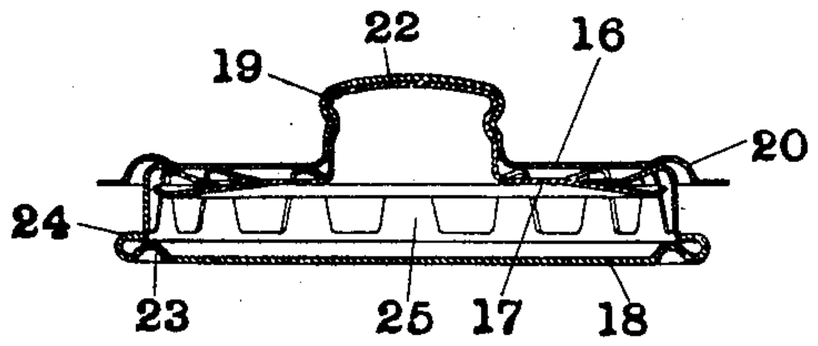

Fig. 6.

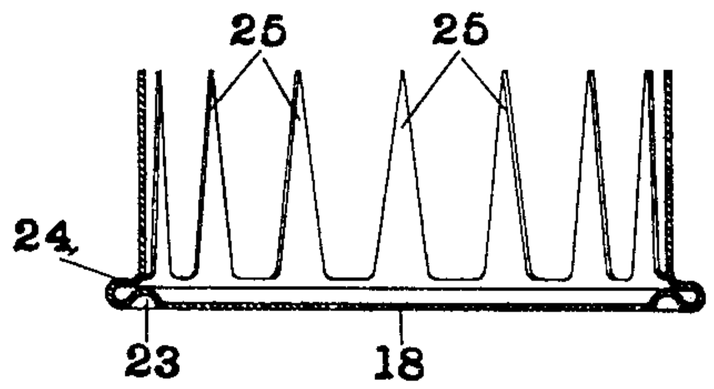

Fig. 7.

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NO MODEL. 2 SHEETS—SHEET 2.

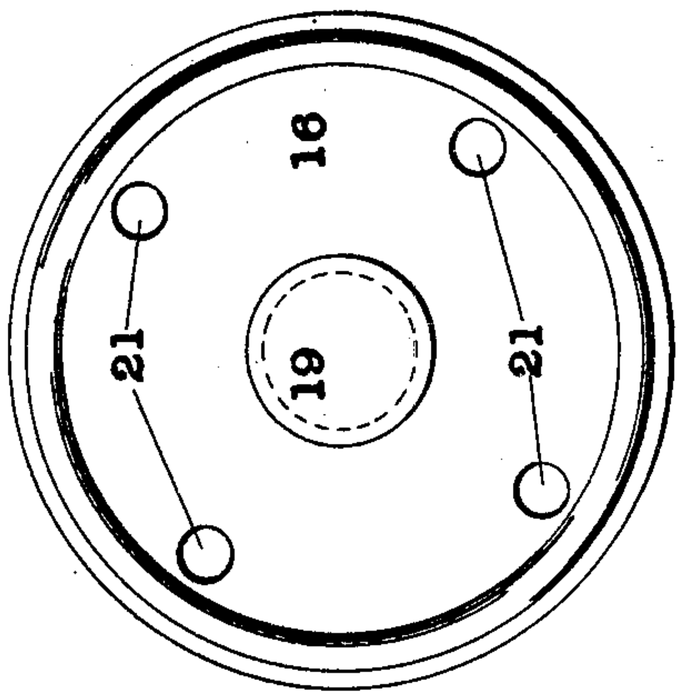

Fig. 10.

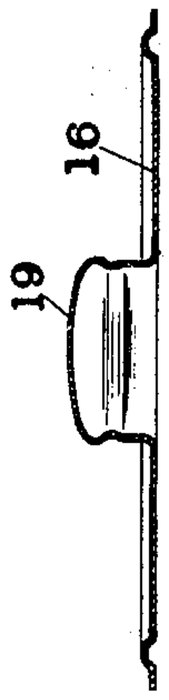

Fig. 11.

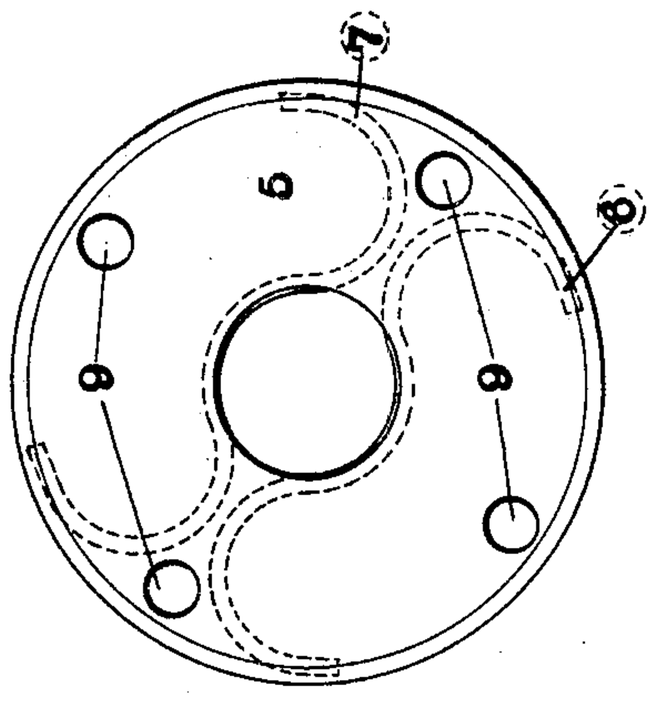

Fig. 8.

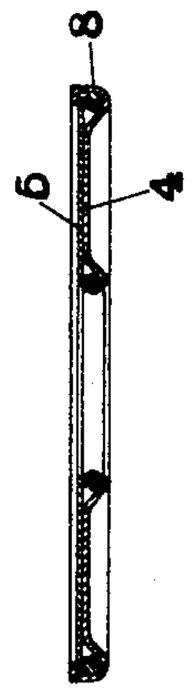

Fig. 9.

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No. 770,955. Patented September 27, 1904.

UNITED STATES PATENT OFFICE.

ANDREW J. BRADLEY, OF NEW YORK, N. Y.

BALL SNAP-FASTENER.

SPECIFICATION forming part of Letters Patent No. 770,955, dated September 27, 1904.

Application filed November 18, 1903. Serial No. 181,612. (No model.)

To all whom it may concern:

Be it known that I, ANDREW J. BRADLEY, a citizen of the United States, and a resident of the city, county, and State of New York, have invented a new and useful Improvement in Ball Snap-Fasteners, of which the following is a specification.

My invention relates to fasteners for gloves, wearing-apparel, &c.; and its principal objects are to secure the fastener to the material without cutting or punching a hole therethrough, to improve the securing means, to simplify the construction of ball snap-fasteners, and other objects hereinafter more fully appearing.

My invention consists in the parts and in the arrangements and combinations of parts hereinafter described and claimed.

In the accompanying drawings, forming a part of this specification, and wherein like symbols refer to like parts wherever they occur, Figure 1 is a sectional view of the complete fastener attached to the parts to be fastened together. Fig. 2 is a plan view of the socket member, the successive plates being broken away. Fig. 3 is a plan view of the stud member. Fig. 4 is a section on the line corresponding to the line 4 4 of Fig. 2 of the anchor member as it appears before being pressed in being attached to the goods, showing the fastening-prongs in the act of entering. Fig. 5 is a section on a line corresponding to the line 4 4 of Fig. 2 of the snap member. Fig. 6 is a diametral section of the stud member as it appears before being pressed in being attached to the goods. Fig. 7 is a diametral section of the fastening-plate of the stud member in its original condition. Fig. 8 is a plan view, and Fig. 9 a sectional view, of the snap member arranged for a "sew-on" fastener. Fig. 10 is a sectional view, and Fig. 11 is a plan view, of the stud-plate arranged for a sew-on fastener.

The fastener consists of a socket member, which is attached to one of the parts to be secured together, and a stud member, which is secured to the other part. Two specific forms of the invention are illustrated, one including in its construction the means for securing it to the goods to which it is to be attached and the other intended to be sewed on the goods. The former, however, includes the parts of the latter and differs only in including additional elements.

The socket member consists of three parts—a snap member 1, an anchor member 2, and a cover 3. The snap member consists of a face-plate 4, a back-plate 5, and springs 6 7. The face-plate 4 is a disk having an upwardly-extending peripheral flange 8 and a central hole large enough to permit the head of the stud member to pass through easily. The back-plate 5 is also a disk and is provided with a central hole of the same size as that in the face-plate. The two plates are secured together by turning the peripheral flange 8 of the face-plate over the edge of the back-plate. Between the two plates the two springs 6 7 are secured. They are substantially **3**-shaped and together form a substantially complete circle concentric with the holes in the plates and having a diameter about that of the neck of the stud member. Hence they must be spread apart to permit the head of the stud member to pass. The ends of the springs engage the peripheral flange. The face-plate is struck up into contact with the back-plate at the parts not occupied by the springs, as illustrated in Figs. 1 and 5, thus forming a sort of channel for said springs. The face-plate, shaped as described, supports the springs against excessive distortion.

The snap member 1, just described, is in itself a complete socket member for the sew-on type of ball snap-fastener. Four holes 9 are made through the plate, as shown in Fig. 8, through which the securing-thread may be passed. For gloves and the like, however, it is desirable to use an anchor member 2 and ornamental cover 3. For such use the ends of the springs 6 7 are turned upwardly through holes 9 9 in the back-plate 5 and constitute prongs 10, by means of which the snap-plate may be secured to the anchor-plate. Preferably the back-plate is provided with additional prongs 11 integral therewith.

The anchor member 2 consists of a clenching-plate 12 and a clamping-plate 13. The former is a dished disk having a stud 14 raised from its center and provided with a

peripheral flange 15, making an obtuse angle with the body of the plate. The clenching-plate is secured to the clamping-plate by means of the stud 14 on the latter, which projects through a hole at the center of the former. Near its periphery the clenching-plate is curved downwardly, so as to provide a surface which will turn the prongs. It projects beyond the edge of the clamping-plate, so as to engage the prongs of the snap member. By dishing the clamping-plate a larger space between the two plates is provided, they being divergent radially from their centers. Hence it is not necessary for the prongs to turn so sharply. The final pressure of the attaching press, however, flattens the clamping-plate, so that the prongs are strongly clasped between the two plates, as illustrated in Fig. 1.

An ornamental cover 3 is secured to the anchor member by turning the flange of the former over the periphery of the clenching-plate 12. This cover has no functional utility, the socket member being complete without it.

The stud member consists of three parts, a stud-plate 16, a clamping-plate 17, and a fastening-plate 18. The stud-plate 16 is a disk, from the center of which is raised a stud 19, having an enlarged head and restricted neck. An annular rib 20 is raised near the periphery of the disk. For the sew-on snap-fastener this stud-plate alone constitutes the stud member. Four holes 21 are provided in the disk, as shown in Fig. 11, through which the securing-thread may be passed. For gloves and the like, however, it is desirable to use a different fastening means. A clamping-plate 17, consisting of a disk of smaller diameter than the stud-plate, is secured to the latter by the reinforcing-stud 22, raised from its center and closely fitting inside the stud 19. This clamping-plate, like that of the anchor member of the socket member, is dished, so as to increase the space between it and the stud-plate. The stud-plate 16 serves as a clenching-plate, and its annular rib 20 serves to turn the prongs of the fastening-plate over the edge of the clamping-plate. The final pressure of the attaching press flattens the clamping-plate, so as to strongly clamp the prongs, as shown in Fig. 1. The stud-plate 16 and clamping-plate 17 thus together constitute an anchor member with which the stud is integral. The fastening-plate 18 is a disk having an annular rib 23 raised near its periphery. Its edge 24 is turned over, so as to contact the annular rib, and from this edge a plurality of prongs 25 project upwardly.

In operation the stud-head forces the spring members apart and passes through between them. The spring members then spring back, the shank being smaller than the head, and the fastener is thus held closed until the socket member and stud member are forced apart.

In my construction the anchor member for the stud is made integral therewith. The prongs for securing the snap member are integral with the spring member, and thus a separate pronged member is unnecessary.

Obviously the fastener admits of considerable modification within the scope of my invention, and I do not wish to be restricted to the specific construction shown and described.

What I claim is—

1. In a member for a ball snap-fastener, radially-divergent clenching and clamping plates connected to each other at their centers and adapted to be pressed into substantial radial parallelism in being attached to an article, said clenching-plate being larger in diameter than said clamping-plate.

2. A socket member for a ball snap-fastener comprising a face-plate having a peripheral flange, a back-plate provided with holes for the passage of fastening means and secured to said face-plate, said plates having concentric central openings and springs between said plates having central portions shaped to form a substantially complete circle concentric with and smaller than said openings in said plates, said face-plate being struck up into contact with said back-plate so as to form channels for said springs.

3. A socket member for a ball snap-fastener comprising a snap member having a central opening therethrough, springs having portions substantially concentric with said opening and upturned ends forming prongs, and an anchor member adapted to coöperate with said prongs.

4. A socket member for a ball snap-fastener comprising a face-plate, a back-plate secured thereto, said plates having alined central openings therethrough, and springs having portions substantially concentric with said opening and upturned ends forming prongs to secure the member in place.

5. A socket member for a ball snap-fastener comprising a face-plate having a peripheral flange, a back-plate secured thereto, said peripheral flange being turned over the edge thereof, said plates having concentric central openings therethrough, and springs having portions substantially concentric with said openings and upturned ends forming prongs to secure the member in place.

6. In a ball snap-fastener, a member having radially-divergent clenching and clamping plates connected to each other at their centers, said clenching-plate being larger in diameter than said clamping-plate, and a member provided with prongs to enter between said clenching and clamping plates, said plates being arranged to be pressed into substantial radial parallelism in being attached to an article.

7. A ball snap-fastener comprising a socket member and a stud member, said socket member having stud-engaging springs and fastening-prongs integral therewith and an anchor

member adapted to coöperate with said prongs, and said stud member comprising a stud-plate having a stud-head and shank raised from the center thereof, a clamping-plate secured to said anchor-plate by a raised central portion extending within said stud-head and a fastening-plate having prongs adapted to enter the space between said stud-plate and clamping-plate.

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

ANDREW J. BRADLEY.

Witnesses:
MARSHALL LEFFERTS,
LE ROY C. HORTON.