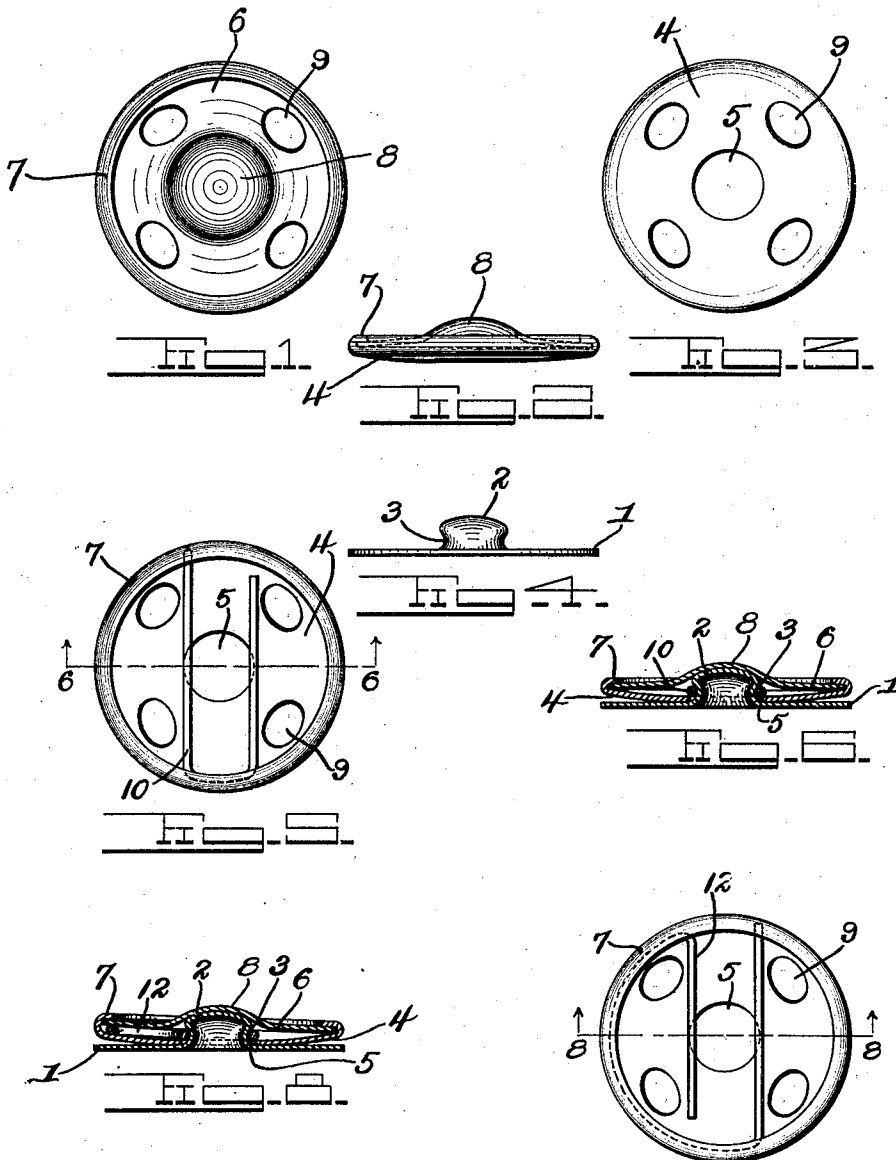


E. J. BOYLER.
SEPARABLE FASTENER.
APPLICATION FILED JAN. 24, 1916.

1,313,458.

Patented Aug. 19, 1919.

2 SHEETS—SHEET 1.



Inventor
E. J. BOYLER.

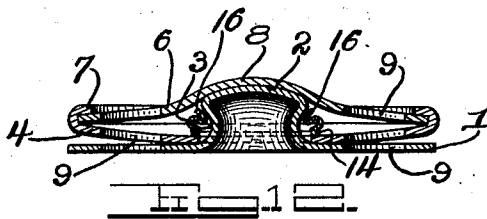
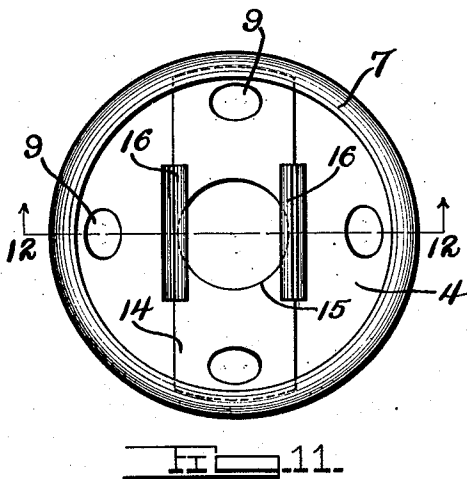
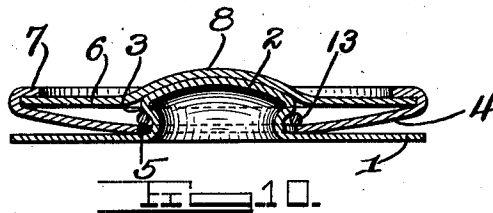
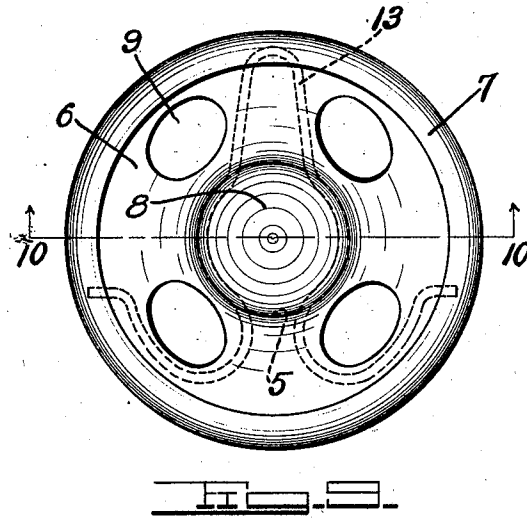
By *Ransom M. M.*
Attorney

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2 SHEETS—SHEET 2.



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UNITED STATES PATENT OFFICE.

EMANUEL J. BOYLER, OF NEW HAVEN, CONNECTICUT, ASSIGNOR TO DUPLEX SNAP FASTENER CO. INC., A CORPORATION OF NEW YORK.

SEPARABLE FASTENER.

1,313,458.

Specification of Letters Patent.

Patented Aug. 19, 1919.

Application filed January 24, 1916. Serial No. 73,960.

To all whom it may concern:

Be it known that I, EMANUEL J. BOYLER, a citizen of the United States, residing at New Haven, in the county of New Haven and State of Connecticut, have invented new and useful Improvements in Separable Fasteners, of which the following is a specification.

This invention relates to improvements in separable fasteners and more particularly to a fastener of the head and socket type.

It is the object of this invention to provide a separable fastener in which the head is engaged by a resilient wire in the socket, from which the head may be readily disengaged.

The advantages of this invention are the simplicity of construction and the small number of parts which cheapen the cost of assembling, and the thinness of the united parts of the fastener when engaged which is extremely desirable as these fasteners are used extensively on ladies' dresses.

While the preferred forms of this invention are illustrated upon the accompanying sheets of drawing yet it is to be understood that minor detail changes may be made without departing from the scope thereof.

Figure 1 is a top plan view of the socket member.

Fig. 2 is a view in side elevation of the socket member.

Fig. 3 is a bottom plan view of the socket member.

Fig. 4 is a view in side elevation of the head member.

Fig. 5 is a top plan view of one form of socket member, with the top plate removed.

Fig. 6 is a transverse sectional view, taken on the line 6—6, Fig. 5, of the complete fastener.

Fig. 7 is a top plan view of a modified form of socket member, with the top plate removed.

Fig. 8 is a transverse sectional view, taken on the line 8—8, Fig. 7, of the complete fastener.

Fig. 9 is an enlarged top plan view of a modified form of socket member, with the spring wire shown in dotted lines.

Fig. 10 is a transverse sectional view, taken on the line 10—10, Fig. 9, of the complete fastener.

Fig. 11 is an enlarged top plan view of a modified form of socket member, with the top plate removed.

Fig. 12 is a transverse sectional view, taken on the line 12—12, Fig. 11, of the complete fastener.

In carrying out this invention, the fastener includes a head member comprising a disk 1 of light metal having a head 2 struck up centrally thereon, with a restricted neck portion 3, and a socket member comprising a circular base plate 4 of light metal having a central opening 5 of sufficient size for the head 2 to pass therethrough, and a circular top plate 6 of light metal secured upon the base plate by spinning a flange 7 from the base plate thereon, with a centrally struck up circular protuberance 8 adapted to cover the head when in place. Both the head and socket members are provided with a plurality of apertures 9 for sewing or otherwise attaching the parts to the dress goods or material carrying the fastener.

Between the top and base plates of the socket member a spring head engaging means is mounted so that when the head is forced home it will expand the spring which will thereafter contract about the restricted neck of the head and hold the parts together against side strains but release the parts upon a direct pull away from each other.

While several forms or modifications have been shown, the general construction, appearance, and operation is the same in each case.

Figs. 5 and 6 illustrate one form in which the head securing means comprises a wire spring 10 bent in the form of the letter U with its base secured between the top and base plates under the base flange and the normal distance between the parallel arms substantially equal to the diameter of the restricted neck portion 3 of the head 2, with one arm longer than the other and secured at its end opposite its base between the top and base plates under the base flange and with its shorter arm free to move. Upon insertion of the head the longer arm being secured at each end, flexes slightly at the center, while the shorter arm being free at one end flexes at its base, allowing the head to enter and the shorter arm snaps back to normal against the restricted neck 3 of the head and holds the opposite sides of the neck against the other arm of the spring.

Figs. 8 and 9 illustrate another form in which the spring securing means comprise a

wire spring 11 bent in the form of a semi-circle with the ends bent straight in the same plane to lie parallel and on each side of the head receiving aperture 5. The curved portion is secured between the top and base plates under the base flange with the end of the outer straight portion likewise secured while the inner straight portion is shorter and free, the normal distance between the straight portions being substantially the diameter of the restricted neck 3 of the head 2. The action of the spring in this case is substantially the same as when the U-shaped spring is employed, the difference being larger anchorage therefor effected by the semi-circular portion being secured under the base flange.

Another form or modification is shown on Figs. 9 and 10, in which the head securing means comprise a wire spring 13 bent centrally upon itself with the bend secured between the top and base plates under the base flange. The portions of the spring extend therefrom at a slight angle to each other and are each curved about the head receiving aperture 5 upon the arc of a circle, the distance between the opposite points of the arc being normally equal to the diameter of the restricted neck of the head. The ends of the spring are similarly curved back upon their respective bodies free of the securing base flange 7 and their extremities curved outward substantially in line with each other and the edge of the head receiving member and are secured between the top and base plates under the base flange. In this form, when the head is forced home, the central bend being secured, the bodies on each side flex between the bend and the secured ends, and the curved portions between the arcs and bends impart greater resiliency to the spring.

Figs. 11 and 12 illustrate another form or modification in which the spring securing means comprises a rectangular plate 14 of light spring metal having a central aperture 15 registering with the head receiving aperture of the base plate and its ends secured between the top and base plates under the base flange. A section of the plate 16 on each side of the central aperture 15 is bent

upward and outward therefrom, then bent back and downward upon itself until the distance between the sections 16 equals substantially the diameter of the restricted neck 3 of the head 2. The sections may be terminated here, but it is preferable to bend each one upward and back upon itself, as illustrated on Fig. 12. When the head is forced home the spring sections 16 are forced apart but will contract and engage the restricted neck to hold the parts together.

In all forms the complete fastener is extremely flat being but little thicker than the height of the head member and this is made possible by the simple construction as above-described. With the exception of the spring all parts are struck from sheet metal and the assembling of the socket is very simple as there are only three parts to be put together and the spring is held between the top and base plates by spinning or crimping the flange from the base plate about the top plate. There are no parts to become disengaged in the socket and the spring, upon which the operation of fastener depends, is completely covered and protected.

What I claim is:—

A separable fastener including a head member comprising a base plate; a head thereon, provided with a restricted neck portion; a socket member including a base plate provided with an opening through which the head is insertible; a top plate secured at its outer edges to the base plate, and having a raised portion to cover the head when inserted; said top plate being in spaced relation to the base plate in the region of the opening, to constitute a housing; and a spring member having a body portion secured between the edges of the top and base plates, and having arms extending in approximate parallelism on either side of the opening, said arms having one end free, and adapted to engage the neck portion when the head is inserted through the opening.

EMANUEL J. BOYLER.

Witnesses:

GEORGE E. LAPHAM,
MINNIE C. LAPHAM.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."