To all whom it may concern:

Be it known that I, JOHN D. STIRCKLER, of Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Wire Ball-and-Socket Fasteners, of which the following is a specification.

This invention relates to snap-fasteners; and its object is to provide an article of this kind made of wire in such manner that it may be easily and cheaply manufactured and will be effective in its action and possess a high degree of durability.

The invention consists in the novel features of construction and arrangement which I shall now proceed to describe and claim.

Of the accompanying drawings, forming a part of this specification, Figure 1 represents a top plan view of the socket member of a snap-fastener constructed in accordance with my invention. Figure 2 represents a side elevation thereof. Figure 3 represents a section on the line 3 of Figure 1. Figure 4 represents an end elevation. Figure 5 represents a top plan view of the head member of the fastener. Figure 6 represents a side elevation thereof. Figure 7 represents an end elevation thereof. Figure 8 represents a plan view showing the two members in engagement. Figure 9 represents a longitudinal section of said members.

The same reference characters indicate the same parts in all the figures.

In Figures 1 to 4, inclusive, is shown a socket member 10, composed of a single piece of wire bent to form a resilient socket-wall 12, which is a substantially circular loop and includes the central portions of the piece, and arms 13, which are formed to bear on the garment part to which the socket member is to be attached and include the end portions of the piece. The socket-wall 12 is preferably offset from the plane of the arms 13 and the eyes thereof, said wall and arms standing in different planes, as shown in Figures 2 and 3, so that when the arms bear on the garment the socket-wall 12 will stand out from or be raised above the garment sufficiently to be easily distinguished by the sense of touch when the user is connecting the two members. The outer ends of the arms 13 are formed into eyes 14 to receive attaching-stitches. The necks 15, which connect the socket-wall or loop 12 with the arms 13, are preferably formed as stitch-receiving eyes. All four of the eyes 14 and 15 are in substantially a uniform plane. (See Figures 2 and 4.) The socket member thus formed is adapted to effectively grasp and hold a stud member and is, moreover, neat and symmetrical in appearance and adapted to be conveniently operated.

The head or stud member of the fastener is shown separately in Figures 5 to 7 and is composed of a single piece of wire bent to form at its ends two eyes 19 and in the middle of its length a loop or eye 20 for receiving the attaching threads or other fasteners. Between said eyes 19 20 is the resilient head or stud composed of two equal-sized bends or loops, preferably in the form of coils or convolutions 21, whose planes are located at right angles to that of the eyes 19 20. The bends 21 21 are formed to enter the socket-wall in the member 10, as represented in Figure 9, the entrance and withdrawal of the resilient head being permitted by the expansion of the socket-wall and the contraction or inward springing of the bends 21, the head being retained in the socket by the contraction of the socket-wall and the effort of the bends 21 to spring apart.

The described fastener is intended particularly as a substitute for ordinary garment hooks and eyes and has the advantage over the latter of permitting quick engagement and separation of the parts of the garment bearing the fastener members by a movement of the outer part in a direction substantially at right angles with the plane of the inner part instead of requiring a movement of the outer part in a direction parallel with the plane of the inner part, as is necessary in the use of ordinary hooks and eyes. When the members of my improved fastener are connected, they cannot be separated by a movement of the outer part in a direction parallel with the plane of the inner part. Hence there is no liability of disconnecting the members of any fastener by the movement involved in connecting the members of an adjacent fastener, this being a liability which exists when ordinary hooks and eyes are employed.

Inasmuch as the parts or members of my
improved fastener are made wholly of wire
and constitute in wire an effective substitute
for the usual ball-and-socket fasteners made
from sheet metal and solid metal, I deem it
proper to term my device a "wire" ball-and-
socket fastener.

I claim—

1. A snap-fastener comprising a member
formed of wire and having a head composed
of two bends or convolutions of the wire ar-
ranged side by side and adapted to yield rela-
tively to each other, and a complemental
socket member formed to embrace said head.

2. A snap-fastener comprising a member
made from a single piece of wire bent to form
two coils or convolutions composing the head,
a loop or eye projecting in one direction from
said coils in a plane at right angles to the
planes of the coils and formed of the middle
portion of the length of wire, and two eyes
projecting from said coils in the opposite di-
rection to said loop and in a similar plane
and formed of the end portions of the length
of wire.

3. A snap-fastener comprising a socket
member composed of a single piece of wire
having a resilient loop-shaped socket-wall
composed of the central portion of the piece,
and arms bent backwardly from the end por-
tions of the socket-wall and composed of the
end portions of the piece, said arms having
fastener-receiving eyes at their ends and at
their junction with the socket-wall, all of the
eyes being substantially in a uniform plane,
and the socket-wall being offset from the plane of the eyes.

4. A snap-fastener comprising solely two
wire members, each composed of a single
piece of wire, one having an expandible socket-
wall, while the other has a compressible head
composed of wire bends arranged side by side
and adapted to spring toward and from each
other and into the expandible socket-wall,
each member having also attaching eyes or
loops arranged to be seated on the garment
parts to be connected by said members.

In testimony whereof I have affixed my sig-
nature in presence of two witnesses.

JOHN D. STIRCKLER.

Witnesses:
C. F. BROWN,
J. W. MACKINTOSH.