(No Model.)

G. J. CAPEWELL.

BUTTON.

No. 487,344. Patented Dec. 6, 1892.

Fig. 1

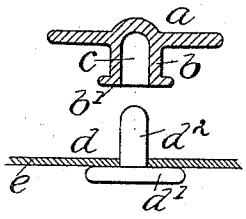


Fig. 2

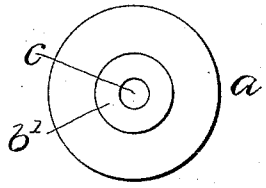


Fig. 3

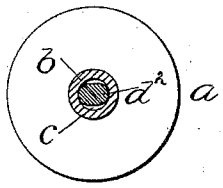
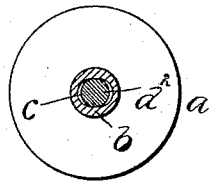


Fig. 4



Witnesses
C. B. Chandler
A. B. Jenkins.

Inventor
George J. Capewell,
By Chas. L. Burdett,
Attorney

UNITED STATES PATENT OFFICE.

GEORGE JOSEPH CAPEWELL, OF CHESHIRE, CONNECTICUT.

BUTTON.

SPECIFICATION forming part of Letters Patent No. 487,344, dated December 6, 1892.

Application filed June 17, 1889. Serial No. 314,594. (No model.)

To all whom it may concern:

Be it known that I, GEORGE JOSEPH CAPEWELL, of Cheshire, in the county of New Haven and State of Connecticut, have invented certain new and useful Improvements in Buttons, of which the following is a full, clear, and exact description, whereby any one skilled in the art can make and use the same.

The object of my invention is to provide a button so constructed as to be readily and securely fastened to any article of wearing-apparel by means of interengaging parts on the body of the button and the stem; and my invention consists in a separable button comprising a body part and a shank portion adapted to be secured together by the interengaging parts; and it further consists in details of the several parts making up the button as a whole, as more particularly hereinafter described, and pointed out in the claims.

Referring to the drawings, Figure 1 is a detail view, in central section, of a button embodying my invention and made on an enlarged scale. Fig. 2 is a detail plan view of the body part of the button. Fig. 3 is a detail view, in cross-section, through the button midway of its depth. Fig. 4 is a detail view, in central section, of a modified form of the button.

In the accompanying drawings the letter *a* denotes the body or main portion of the button, and *b* the shank, which may be either integral with the body part or a separate portion secured thereto in any convenient manner. Such a button may be made of any desired material, either plain as to surface or covered with any material, either different in kind or quality from the body part of the button. The body part has a socket *c* arranged centrally thereof and extending through the shank. The stem *d* comprises a disk-like head *d'* and a pin d^2, the latter being adapted to enter and fit snugly within the socket *c* in the body part of the button. The lower end of the shank has a flange or broadened part forming a shoulder *b'*, and the cloth *e* or other fabric to which the button is adapted to be secured is clamped between the shoulder *b'* and the head *d'* when the parts of the button are secured together, as by forcing the pin into the socket.

I find it of advantage to first make the pin or stud of such diameter that it will fit somewhat freely into the socket in the shank and then to flatten the said pin in any convenient manner until the larger diameter of the pin is such that when it is driven into the socket in the shank it will hold tightly therein, the idea being to allow for a slight expansion of the socket-piece or shank *b* within the elastic limits of the metal, so that the latter will not be so far changed in form as to become set, but will retain sufficient elasticity upon being strained to hold the pin in the socket with extreme tightness. Instead of flattening the pin or stud for this purpose the shank may be flattened, so as to change the circular form of the socket.

In case the socket is made oval in form the pin may be either round or oblong in shape in cross-section, the feature of my invention being embodied in the structure when the irregular form, either of the pin or of the socket in the shank, is such that upon driving the pin into the socket there is room left, either due to the peculiar form of the socket or of the pin in cross-section, to allow for the displacement of the metal either by expanding of the socket-piece or by the compression of the pin. In such a button thus constructed when the two parts comprising the body part and the stem are secured together by driving the pin in the socket the two parts will hold together with great tenacity, even when the pin is comparatively very small in diameter.

My within-described improvement is not limited to any particular material, nor to any form of construction of the parts other than that already described, the interengaging socket-piece and pin being preferably of metal, the one part being of tempered steel by preference, so as to insure the greatest possible strength and durability.

It is preferred that the socket shall have smooth walls and the pin have a smooth surface, so that no interengaging projections are formed, as the two parts will hold together by the compression of the metal of one part upon the other, and that there shall not be any roughness or irregularity of the surfaces in contact between the interengaging parts other than that already described in reference to the irregular form of cross-section.

I am aware that it is not new to make a but-

ton or like article in separable parts, and such I do not broadly claim. The peculiar feature of my invention resides in the combination, in a separable button, of one part containing a socket for a shank, borne on the other part, the said shank being adapted to fit snugly within the socket, such interengaging parts being made of a shape and size in cross-section that prevents the parts from normally fitting together, the shank and the socket-piece depending upon the natural elasticity of the material and not upon any spring action gained by the employment of a specific spring or by making the parts resilient by cutting through or slitting either of them. It is only when considerable pressure is applied that these solid interengaging parts can be engaged; but when once engaged the shank is held in the socket in the solid walled tube with a binding force determined by the resiliency of the metal of which the interengaging parts are made. One of said parts is forced out of its normal shape in cross-section when the parts are forced together. The relative irregularity in cross-section of the parts has been described by calling the one "cylindrical" and the other "oval," and such terms as used in the following claims are meant to describe and include such irregularities in the shape of the cross-section of the socket or of the shank as will result in the secure hold of the one part upon the other when the two parts are fitted together, as described—that is, it is not essential to my invention that the respective engaging parts, the shank of the one or the socket of the other, shall be exactly cylindrical or exactly oval, for such a form in cross-section as will secure the expansion of the one part or the compression of the other transversely when the parts are forced together will lie within the scope of my invention. It is essential to my invention, however, that the holding force shall depend upon the distortion from its normal shape of either the solid walls of the socket-piece or the solid plug that is adapted to be forced into said socket.

I claim as my invention—

1. A separable button in the body part of which is located a socket, a stem having a broadened head, a pin that is adapted to enter said socket, the pin having an oblong or oval form in cross-section, with its greatest diameter slightly greater than the diameter of the socket in the body part of the button, and the interengagimg surfaces otherwise smooth and regular in form, all substantially as described.

2. A separable button comprising two parts, a shank and shoe, and a cap or button front having a tubular socket part projecting from its under side, the socket being adapted to receive the shank, one of said interengaging parts being formed cylindrical in cross-section and the other oval, all substantially as described.

GEORGE JOSEPH CAPEWELL.

Witnesses:
H. E. BACHARACH,
W. B. JENKINS.