C. E. BATES.
Buttons.

No. 207,706. Patented Sept. 3, 1878.

Fig. 1.

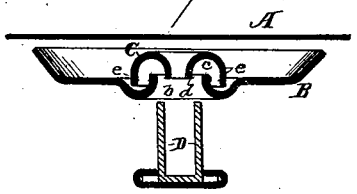


Fig. 2.

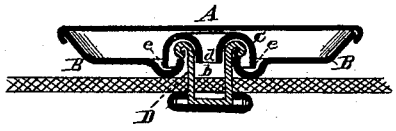


Fig. 3.

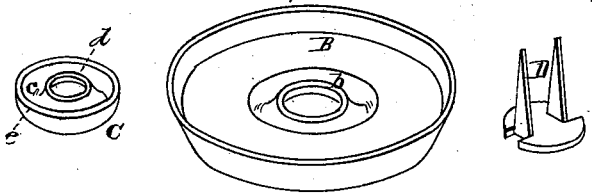


Fig. 4.

Fig. 5.

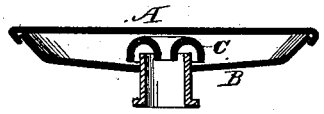
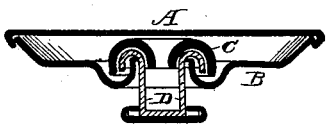


Fig. 6.



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IMPROVEMENT IN BUTTONS.

Specification forming part of Letters Patent No. **207,706**, dated September 3, 1878; application filed July 3, 1878.

To all whom it may concern:

Be it known that I, CHARLES E. BATES, of West Cheshire, in the county of New Haven and State of Connecticut, have invented certain new and useful Improvements in Buttons; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use it, reference being had to the accompanying drawings, which form part of this specification.

My invention relates to certain improvements in buttons and button-fastenings, and is designed to provide means whereby a button may be readily fastened to a fabric by mechanical devices, the same being done in such a manner that the fabric will not be weakened, while, at the same time, the button will be held firmly, but without rigidity, upon the fabric.

Heretofore certain forms of buttons have been made with a conical formation inclosed in the shell, or formed on the top shell, and having the apex of the cone projecting toward the opening in the button-back. A tubular eyelet or rivet, after passing through the fabric from the side opposite to the button, enters the shell-opening, and has its sides spread outward by pressure against the cone, thus engaging the button to the fastening. The objection to this form of fastening is, that it makes a very rigid, uncomfortable fastening, and the eyelet or rivet must have a large hole previously made in the fabric for its insertion, and as the cloth is thereby spread and weakened the button-fastening will pull through the cloth. I propose to obviate this objection by using for a fastening a device comprising a number of points, which are passed through the cloth without spreading or weakening it; but as such a form of fastening would have the points merely deflected laterally by a cone formation, and would withdraw under any considerable strain, I provide such a device that when the button-fastening strikes against the same, its inner body will be turned in a complete return-bend, and be formed with either coiled or hooked formations, which latter will firmly engage with the button-back and render it impossible to detach the button from its fastening. To this end I provide a plate or disk formed with an annular groove, the inner wall of which constitutes a central projecting flange, and the outer wall of which constitutes an outer edge flange, both said flanges projecting toward the button-back, which latter is provided with an opening for the fastening device. As a button-fastening, I prefer a device having two or more prongs, and made substantially as represented in Letters Patent granted to me under date of February 5, 1878. The annular grooved piece may be formed independently, so as to be separate from all other parts of the button, or it may be made in single piece with the top shell of the button. As the fastening-prongs come in contact with said grooved piece they first strike on respectively opposite sides of the inner wall of the annular groove, and are bent laterally outward in diagonal straight line. They next strike the bottom or transverse surface of the groove, and their extremities are then turned outwardly at right angles to their bodies. These right-angular extremities are next deflected and turned downward by contact with the outer wall of the groove, so as to make a complete return-bend of the prongs. If the grooved piece is placed closely to the button-back, the prong extremities will be directed down between the outer wall of the groove and the flange which surrounds the opening in said button-back, so as to fasten in hook engagement with said flange. If, however, the groove-piece is placed farther away from the button-back, room will be provided to allow the prong extremities to coil inwardly upon themselves, and thus provide coiled formations or beads, which latter engage directly against the flanged edge of the opening in the button-back.

Referring to the drawings, Figure 1 is a transverse section of a button embodying my invention. Fig. 2 is a similar view of the button as in use with its fastening. Fig. 3 shows the same with the several parts detached. Fig. 4 represents a modification form, wherein the grooved piece is made part of the top shell of the button. Fig. 5 represents the invention in connection with a button which is provided with an eyelet to raise the button from the cloth. Fig. 6 is a modification, showing the

fastening-prongs in hooked engagement with the button-back.

The button may be of any desired form or material. Preferably, however, I make it with a whole or imperforate top shell, A, which will admit of suitable ornamentation or of being covered with cloth.

The button-back B is provided with a central opening, formed with the flange *b* about the same, which is adapted to provide strong engaging support for the fastening device.

The grooved piece C may be of any suitable material or form, provided with the annular groove *c*, which latter is adapted to turn the extremities of the fastening-prongs in firm engagement with the button. Preferably it is made of struck-up metal, having a central opening, about which the flange *d* is formed, said inner flange being of less depth than the outer edge flange, *e;* but these details of construction may be entirely varied from, so that the piece will be of continuous surface without a central opening, and the flange which constitutes the inner wall of the groove may be of equal or greater depth than the flange which constitutes the outer wall of said groove. So, too, instead of being made of struck-up metal, this grooved piece may be otherwise formed—as, for instance, of any suitable rigid material—and the walls of said groove, instead of being flanges, may be made by forming the groove in any desired manner, so that they will be unyielding in character.

It is not necessary that the groove should be continuous, as it is sufficient if grooved portions are formed in the piece C adapted to cause the deflection and engagement of the fastening device, as described.

The fastening D is preferably of that construction which forms the subject-matter of United States Letters Patent No. 200,018, granted to me February 5, 1878; but instead thereof any other suitable form of fastening may be employed.

The several modification views illustrate some of the different forms of my invention and manners of applying the same in use.

The grooved piece may be made part of the top shell of the button, as shown in Fig. 4; and in substitution for the pronged fastening device a tubular rivet or eyelet may be used, as shown in Fig. 5, it being understood that, in instance of using my preferable fastening, I may have any number of prongs instead of two.

In Fig. 6 I illustrate the manner of securing the fastening-prongs in hook engagement with the button instead of bending them in coiled or bead formation, as shown in Fig. 2. This difference is caused by placing the grooved piece so close to the button-back that the prongs are not permitted to coil in against their sides, but are directed straight down, and caused to assume a hook form.

The foregoing construction provides a button which not only will admit of being firmly secured to its fastening, but which, in connection with the described pronged fastening, may be put on without making a hole through the fabric, or spreading or weakening the cloth, and which will hold securely on thin cloth without rigidity, so that when used on undergarments it may be passed through a wringer after washing.

These buttons may be put on by means of a foot-press, a pair of pliers, or other suitable means.

Having fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A button provided with a grooved piece adapted to cause the entering portion of a button-fastening to be coiled or hooked in engagement with the button-back, said grooved piece being formed either independent of or as part of the button-shell, substantially as set forth.

2. A button provided with a ring-plate or disk having an inner and an outer edge flange, both said flanges projecting toward the button back, and adapted to engage with the entering portion of a button-fastening, substantially as set forth.

3. The combination, with a button provided with an independent ring-plate or disk formed with a continuous annular groove, of a button-fastening whose entering-body is adapted to be bent into a coil or hook form by engagement with said groove, substantially as set forth.

4. The combination, with a button provided with a ring-piece having an inner edge flange of less depth than its outer edge flange, and both said flanges projecting toward the button-back, of a fastening provided with two or more prongs, which latter are adapted to engage with both said flanges in securing the button to the fabric, substantially as set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 17th day of June, 1878.

CHAS. E. BATES.

Witnesses:
EDWARD A. CORNWALL,
FRANKLIN P. BATES.