D. WILCOX.

BUTTONS.

No. 186,392. Patented Jan. 16, 1877.

Fig. 1.

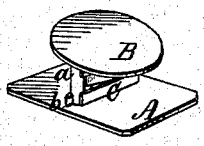


Fig. 2.

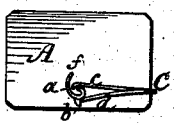
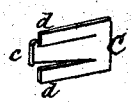


Fig. 3.

Fig. 4.



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UNITED STATES PATENT OFFICE.

DUTEE WILCOX, OF PROVIDENCE, RHODE ISLAND.

IMPROVEMENT IN BUTTONS.

Specification forming part of Letters Patent No. **186,392**, dated January 16, 1877; application filed November 20, 1876.

To all whom it may concern:

Be it known that I, DUTEE WILCOX, of the city and county of Providence, in the State of Rhode Island, have invented certain new and useful Improvements in Buttons; and I do hereby declare that the following specification, taken in connection with the drawings furnished and forming a part of the same, is a clear, true, and complete description thereof.

My said improvements relate particularly to buttons susceptible of use as cuff or collar buttons or bosom-studs, and are specially adapted for use with slitted button-holes in contradistinction to circular or eyelet holes.

My buttons have a front and a back, which are rigidly connected by a shank, which is located adjacent to the periphery of the back, and this location of the rigid shank constitutes an important element in my invention, because a shank so located admits of the free insertion and withdrawal of the back through a slitted button-hole. In connection with the rigid shank so located I also employ a lateral spring plate, which is hinged to the shank, and is capable of swinging thereon. This spring-plate performs, in part, the function of a shank, in that it is in fact a movable lateral extension thereof, which projects therefrom to a point near the periphery of the back of the button, so that when the button manipulated from the front is turned to the right, or it may be to the left hand, the spring-plate will be wholly adjacent to the periphery of the back, and thereby permit the free withdrawal of the button from the slitted button-hole. The shank having the lateral extension, which occupies the slit of the button-hole, prevents the button from turning in the hole, and this is a feature of value in that when some patterns or styles of fronts are employed they may always be maintained in the position which is most favorable for their display, as in the case of cameos, &c.

The particular mode of constructing the spring-plate and the shank which I have devised is of special value with reference to simplicity and economy, as well as to its effective operative capacity. The shank is preferably made of sheet metal, is hollow, and is in lateral section in the form of a somewhat irregular coil, so that one edge thereof forms a point of resistance for the spring of the plate, and the other edge forms an abutment, which prevents the plate from movement in that direction. The spring-plate in its simplest form is composed of hard-rolled metal, slitted laterally from one end, so as to form three straight flat springs. The central spring is curved slightly at its end, so as to engage directly with the inner edge of the shank before referred to, while the two outer springs engage flatly with the opposite outer surface of the shank. The two outer springs force the plate backward against the abutting edge of the shank, which limits the movement in that direction.

To more particularly describe my invention I will refer to the accompanying drawings, in which—

Figure 1 represents, in perspective, a button embodying my invention. Fig. 2 represents the same viewed from the rear, with the back removed and the button ready for insertion or withdrawal from a slitted button-hole. Fig. 3 represents the shank detached, in perspective. Fig. 4 represents the spring-plate detached, in perspective.

A denotes the front of the buttons, which may be of any desired form, and ornamented in any style, or provided with a receptacle for a setting. B denotes the back of the button. It may be of any form which will retain the button in its hole. It is usually made of plain metal, oval or circular, although sometimes ornamented in that class of goods known as reversible buttons, in which case they are inserted or withdrawn from the rear of the garment instead of the front. The front and back are rigidly united by the cylindrical shank *a*. This shank may be varied in its construction, but should be sufficiently large and strong to afford a rigid connection with the front and the back. The shank shown in the drawings is composed of sheet metal, which is coiled eccentrically, so as to afford a longitudinal open space between the two edges of the metal. On the outer surface of the shank near one end, as at *b*, is a projection or shoulder. This shoulder and both edges of the metal which forms the shank perform specific service, as will be hereafter described.

C denotes the spring-plate, which is hinged to the shank *a*, and forms, in effect, a swing-

ing lateral extension thereof. This plate extends across the button to the periphery of the back, and when in its normal position and in use maintains one-half of the area of the back on each side of the button-hole, thereby securing the button in place. Although this plate may be hinged to the shank in many ways, and be capable of movement in either direction, and yet embody the substantial features of my invention, I have devised a novel method of hinging which is simple and inexpensive, and which permits the movement of the plate in but one direction. It will be seen that the plate at its inner end is slitted from about three-quarters of its length in two places, thus dividing that end of the plate into three parallel sections. These sections perform the function of springs. The central one at *c* is slightly curved at its end, and is a little longer than the outer springs *d*. The curved end of spring *c* engages with the inner edge *e* of the shank, and the springs *d* engage flatly with the smooth, curved outer surface of the shank, as shown. The tendency of the springs is to force the plate backward until the rear side of the central spring is abutted against the outer edge *f* of the shank, which limits the backward movement and secures for the plate the requisite position with relation to the back of the button, which prevents the button from being removed from its hole except by special manipulation. When inserted in a slitted button-hole, it will be seen that if the button be turned in the right direction the button-hole will prevent the plate from turning until it and the periphery of one portion of the back are closely adjacent, when the button may be readily removed. It is of importance that the spring-plate be incapable of movement beyond the periphery of the back adjacent to the shank, and therefore the shoulder *b* is provided on the outer surface of the shank at one end, so that the adjacent spring *d* will abut its end against it when in the proper position for withdrawing the button. Although I prefer that the spring-plate be capable of movement in but one direction from its normal position, it is obvious that a button will be securely held except against special manipulation, even if the plate be movable in both directions, and I do not, therefore, limit my invention to the precise construction shown. It will readily be seen that if one of the springs *d* was arranged to bear on one side of a circular hollow shank, and the other to bear on the opposite side, that one would counterbalance the other and maintain the plate in its desired position, in which case the central section would not perform the function of a spring, but merely be the connecting medium between the plate and the shank, and this latter, instead of being eccentric in section, would be circular and slitted for the reception of the central section, which would obviously require an enlargement at its end for preventing it from disengagment from the shank. I am well aware, too, that various forms of springs may be applied for controlling the plate without departing from the true spirit of my invention.

My buttons are economically constructed, are easily manipulated, and are, as I believe, more secure against loss by accidental detachment from a button-hole than any others of which I am cognizant.

I claim as new and desire to secure by Letters Patent—

1. The combination, with a button front and a back, of a shank rigidly connected thereto, located near the periphery of the back, and a lateral spring-plate hinged to the shank, substantially as described.

2. The combination, with the eccentrically-coiled shank, of a spring-plate, substantially as described.

3. The combination, with the shank of a button, of a hinged plate slitted to form springs, substantially as described.

4. The combination, with a front and a back, of a cylindrical shank, which rigidly unites them, and is located at one side of the back plate, substantially as described.

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