

UNITED STATES PATENT OFFICE.

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BUTTON.

SPECIFICATION forming part of Letters Patent No. 375,373, dated December 27, 1887.

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To all whom it may concern:

Be it known that I, E. HINSDALL MAY, a citizen of the United States, residing at Cincinnati, State of Ohio, have invented a certain new and useful Improvement in Buttons, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification.

My invention relates to an improvement in buttons, and especially to that class of buttons made of two disks of metal clamped or fastened together and attached to the cloth by a shank, the novel features of which will be more fully hereinafter set forth.

In the accompanying drawings, forming part of the specification, Figure 1 is a side view of the shank by which the button is attached, inserted in the instrument or needle used in applying it. Fig. 2 is a side view of the button and shank in position to be attached. Fig. 3 is a cross-section of the button with the shank partly inserted. Fig. 4 is a cross-section of the button attached to the cloth. Fig. 5 is a side or perspective view of the needle. Fig. 6 is a bottom plan view of the upper or outer portion of the button and the washer. Fig. 7 is a cross-section of the washer.

The object of the invention is to provide a button which can be readily attached to the cloth by passing the shank through the cloth and screwing it into the button and locking it so that it cannot be withdrawn.

In Figs. 3 and 4, A is the outer disk, of metal, forming the top of the button.

B is the under disk, of sheet metal, forming the back of the button. C is the shank, the stem of which is tapering or cone-shaped and provided with screw-threads. The disks A and B are usually fastened together by clamping the edges of A around the edges of B, as shown, leaving a space or chamber between them. The button may be of any desired shape or design, depending upon the shape of the two disks A and B. There is a small hole in the center of the disk or plate B to receive the stem of the shank, and opposite said hole I prefer to make a socket, *a*, to receive the end of the stem C and provide a firm bearing for it.

The shank may be attached to the button by simply screwing the shank into the hole in the center of the disk B until the end of it rests in the socket *a*; but when thus fastened it is not locked and is liable to come out or unscrewed. To prevent that I provide a locking device.

Between the two plates A and B is inserted a diaphragm or washer, F. This washer consists of a circular plate of sheet metal somewhat smaller in diameter than the plate B, preferably with a downward depression, *f*, in the middle. It may be made flat throughout, or may incline from the circumference toward the center, like a saucer. Its edges are clamped firmly between the edges of the upper and lower plates to prevent its turning. It is best, however, made to conform in shape to the plate B, and near the same size.

The hole or opening in the center of the washer F is made smaller than the hole in B, and in order to permit the stem of the shank to pass through it a slit is cut from the center to or toward the periphery, as shown in Fig. 6, so that the edges of the hole can bend down and follow the screw-thread, and thereby enlarge the opening. The stem of the shank B is provided with a square shoulder, *c*, below which is a narrow neck enlarging downward. The screw-threads on the stem stop abruptly at the shoulder. When the shank is screwed into the button, the screw-threads engage with the edges of the hole in the washer F and, pressing laterally, enlarge the opening as much as necessary to permit it to pass through, at the same time drawing the washer down snugly against the plate B until the plate F comes below the shoulder *c*. The lateral pressure being then removed, the plate F contracts again, the edges of the opening resuming their normal position, reducing the size of the opening and causing it to embrace the narrow neck of the shank below the shoulder *c*. It is then impossible to remove the shank. As the stem of the shank is larger toward the lower end, as shown at *k*, Fig. 2, it forms a bearing, and the farther it goes in the firmer it presses against the edges of the opening in the bottom plate, which gives it firmness and prevents wobbling. The stem of the shank may be made sufficiently sharp or tapering to be

passed easily through any ordinary material, and the button then screwed onto it, or a needle may be used like that shown in Figs. 1 and 5. This consists of a tapering needle, the large end being open to receive the shank, and provided with a spring or made elastic by means of a longitudinal cut, X, so as to hold the shank firmly. The needle is then passed through the cloth, carrying with it the stem of the shank, the needle then pulled off, and the button screwed on. The end of the shank bearing against the socket *a* or against the outer plate, A, the shoulder bearing downward against the elastic washer F, and the shoulder or enlargement *k*, bearing against the edges of the hole in the plate B, give strength and firmness to the button and its fastening.

By providing a stiff washer inside the button, locking the shank should the top plate, A, come off, the washer serves to stiffen and brace the bottom plate and prevent the button from falling entirely to pieces and holding it firmly until a new button can be applied.

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

1. In a button whose body portion is formed of an upper disk and a lower disk, as described, and provided interiorly with a perforated diaphragm, a shank having a screw-threaded cone-shaped stem, for the purpose stated.

2. In a button whose body portion is formed of an upper disk and a lower disk, as described, and provided interiorly with a perforated diaphragm, a shank having a screw-threaded cone-shaped stem and a tapering neck, for the purposes stated.

3. In a button whose body portion is formed of an upper disk and a lower disk, as described, and provided interiorly with a perforated and slitted diaphragm having a central downward depression, a screw-threaded cone-shaped stem and a tapering neck, for the purposes stated.

E. HINSDALL MAY.

Witnesses:

ARTHUR STEM,

ALFRED M. ALLEN.