M. RANSOM.

Buttons and Studs.

No. 206,687. Patented Aug. 6, 1878.

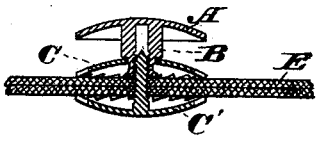

Fig. 1

Fig. 3

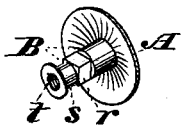

Fig. 2

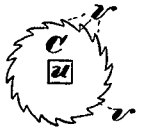

Fig. 4

Attest:

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UNITED STATES PATENT OFFICE.

MARTIN RANSOM, OF CHICAGO, ILLINOIS.

IMPROVEMENT IN BUTTONS AND STUDS.

Specification forming part of Letters Patent No. **206,687**, dated August 6, 1878; application filed May 13, 1878.

To all whom it may concern:

Be it known that I, MARTIN RANSOM, of the city of Chicago, county of Cook, and State of Illinois, have invented a new and Improved Button and Stud Fastening; and I hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawings, of which—

Figure 1 is an enlarged vertical central section of my device as applied in fastening a button to cloth; and Figs. 2, 3, and 4, enlarged detail views.

My invention relates to an improvement in that class of button-fastenings in which two concavo-convex disks, provided with saw-like teeth about their peripheries, one fixed to the extremity of the shank and the other serving as the head of a screw which passes through the cloth and enters the shank as a nut, clutch in the opposite sides of the cloth, thus resisting the turning back of the screw.

The defect which has always hitherto existed in this class of fastenings has been the lack of means for permitting the ready removal of the button, in consequence of which such removal could be effected only by the exertion of sufficient force to tear the teeth loose from the fabric, or else by cutting the fabric away.

The object of my invention is to overcome this defect by combining with the fastening device above referred to means adapted to permit the ready unscrewing of the button when desired, notwithstanding the catching of the teeth in the cloth, and this without causing any undue strain either upon the fabric or any part of the fastening device.

To this end my invention consists in having the disk upon the shank provided with an angular aperture in its center, which aperture exactly fits an angular shoulder at the end of the shank contiguous to the button, but turns freely on the remaining portion of the shank, which is of smaller dimensions than the shoulder and cylindrical, the disk being prevented from slipping off the cylindrical part or neck by a flange at the end, whereby this disk acts conjointly with the other disk in securing the button, and also admits of the ready removal of the latter, all as hereinafter more fully set forth.

Referring to the drawings, A is the head of the button, which may be of any kind or configuration; and B, the hollow stem, provided with the square shoulder *r*, neck *s*, and flange *t*, in the order shown, and threaded on the inside.

C is the upper concavo-convex disk, having the angular aperture *u* in its center, of such dimensions as to turn easily on the neck *s*, on which it is retained by the flange *t*, and exactly to fit the square shoulder *r*. This disk C is also provided at its periphery with teeth *v*, pointing to the left, or in the direction of the reverse turning of the screw.

C′ is the under disk, having teeth *v*′, similar to those of the upper disk, and serving, also, as the head of the screw D.

To fasten the button or stud the screw D is passed through the cloth from the inside and the button screwed upon it, as represented in Fig. 1, E being the cloth. As the button is screwed into place the disk C is gradually forced up the stem B until it passes upon the square shoulder *r*, after which it is obliged to turn with the head A. As the screw tightens the teeth *v*′ on the under disk are forced into the cloth.

It is obvious that it is now impossible to unscrew the button, for any attempt to turn the head A backward is resisted by the catching in the cloth of the teeth *v*′ while any attempt to turn the disk C′ backward is similarly resisted by the catching of the teeth *v*′. It is therefore plain that the button cannot be removed until the disk C has been forced off the shoulder *r*. This is done by pressing it inward with the thumb-nail, or with any other hard agent, when the cloth will always yield sufficiently to allow it to be freed from the shoulder, which may be made very short. This done, the button may be readily unscrewed.

When the fastening is designed for shirt-studs and cuff-buttons, or for any other application wherein the material or fabric is of a thin or unyielding nature, the upper disk may be formed so thin as to be itself yielding, and thus easily pressed off the shoulder, and of a

substance sufficiently elastic to resume its proper shape when the pressure is removed. It may in some cases be advantageous to form both disks in this manner.

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

In a button, the combination of the stem B, provided, as shown, with the shoulder *r*, neck *s*, and flange *t*, the loose toothed disk C, screw D, and fixed toothed disk C′, substantially as described.

MARTIN RANSOM.

In presence of—
H. E. WODKEY,
E. F. MERRILL.