

C. DOWNS.  
Buttons and Studs.

No. 218,864.

Patented Aug. 26, 1879.

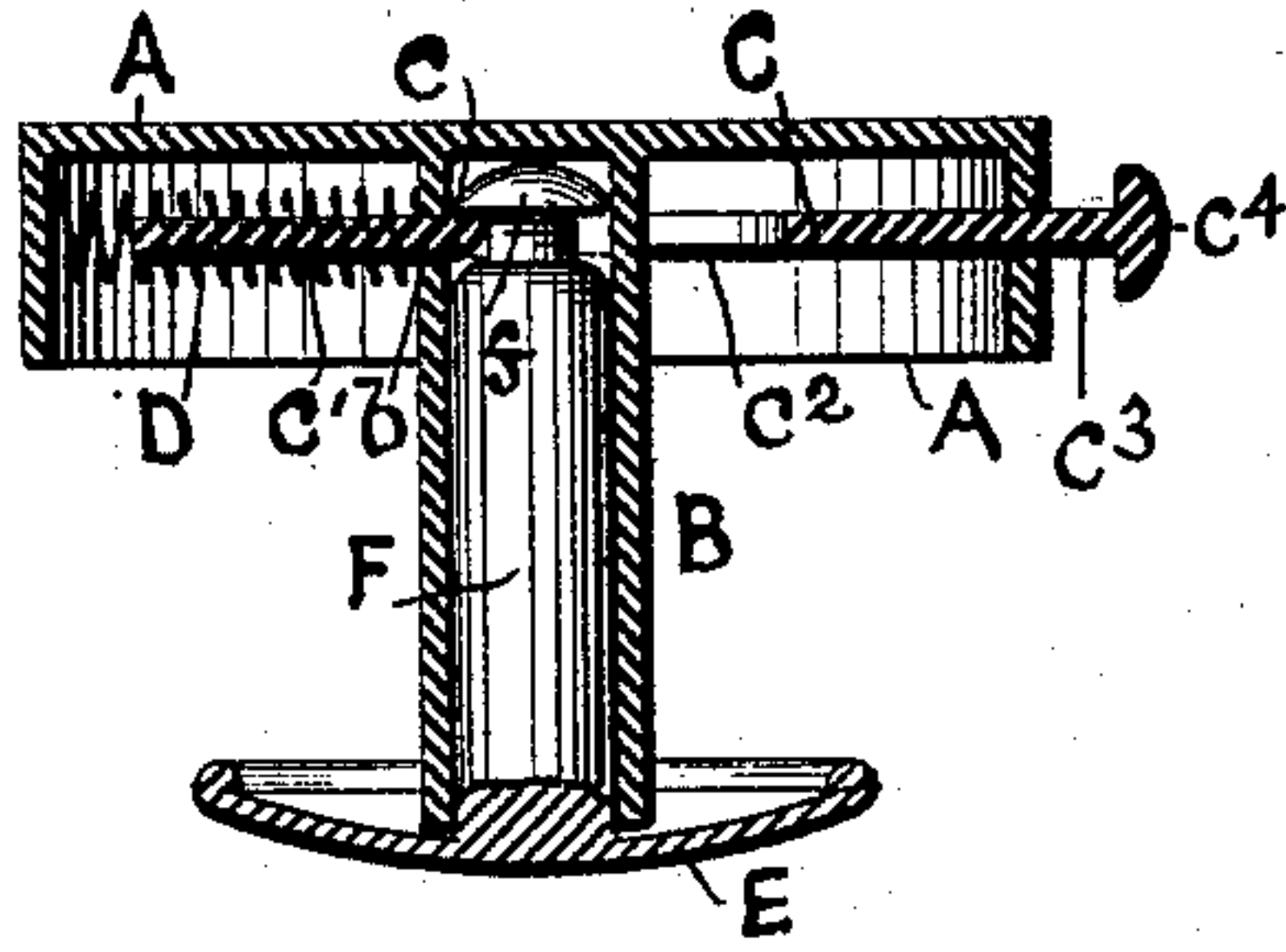


FIG. 1.

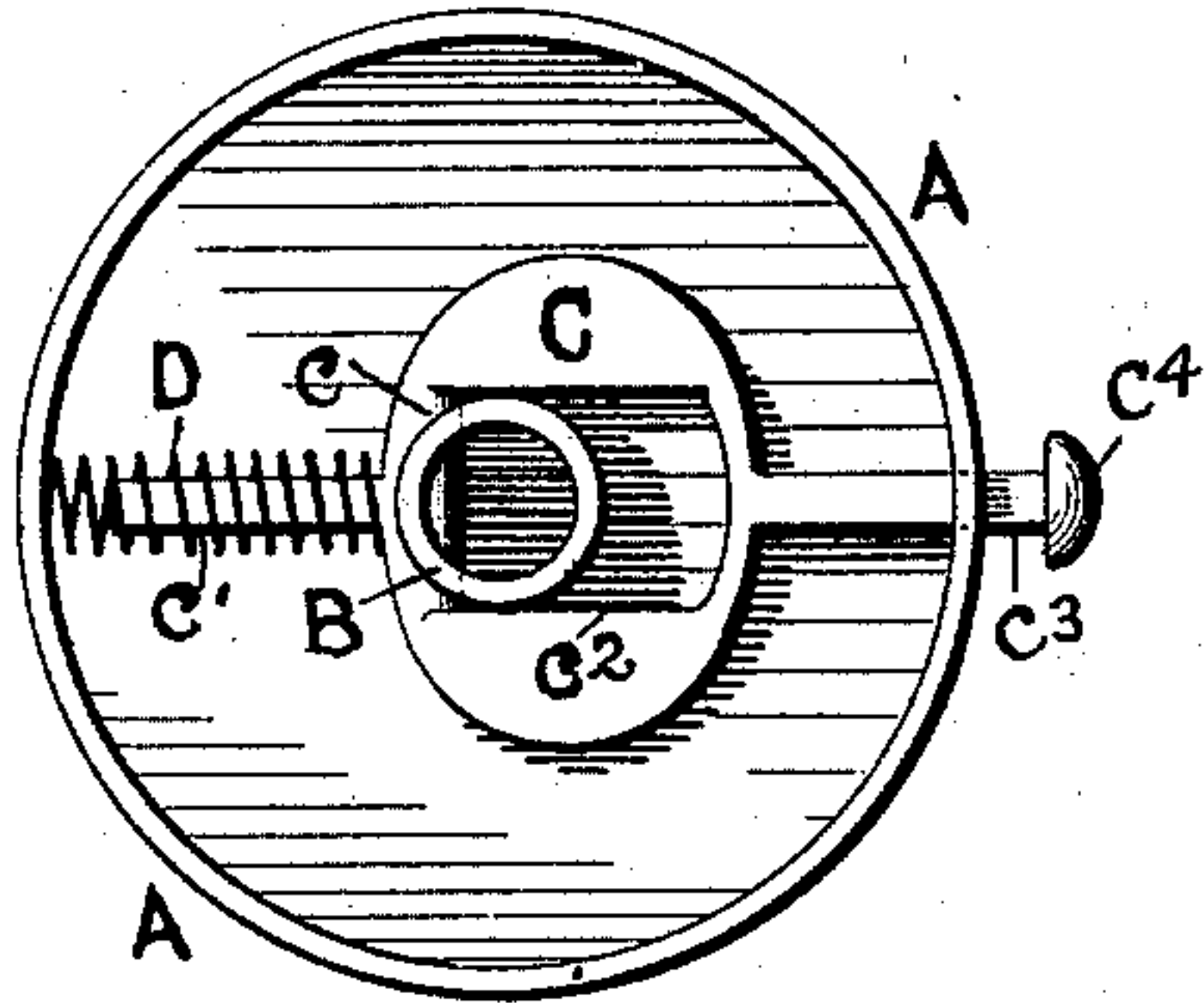


FIG. 2.

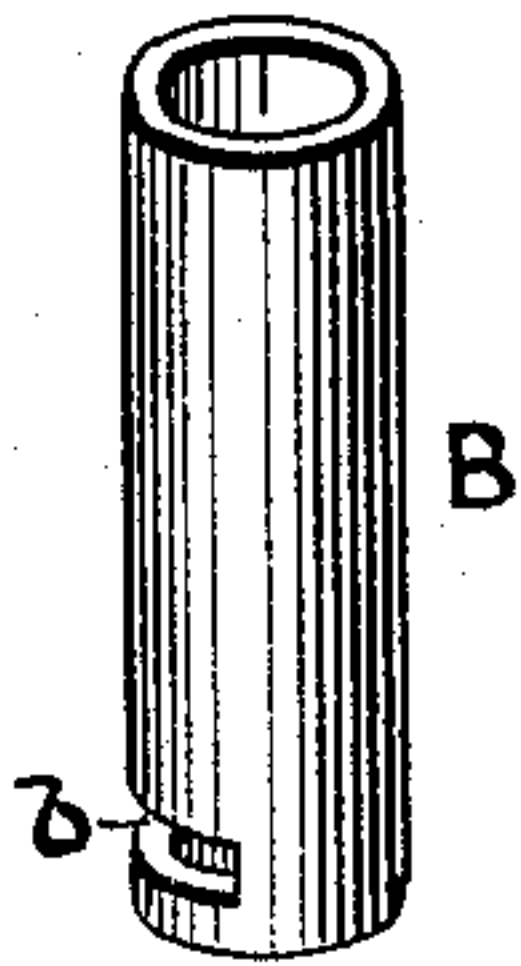


FIG. 3.

WITNESSES.

*Edson Salisbury Jones.*  
*Wm A Gady*

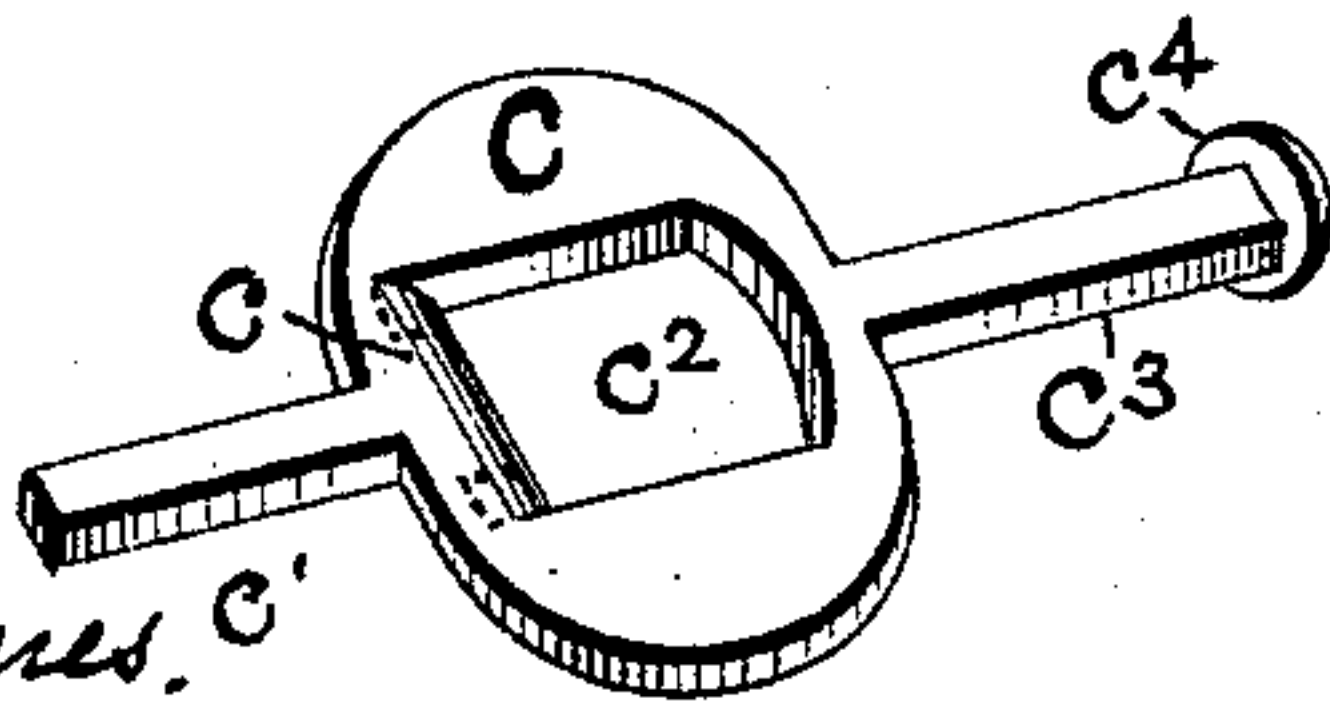


FIG. 4.

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# UNITED STATES PATENT OFFICE.

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## IMPROVEMENT IN BUTTONS AND STUDS.

Specification forming part of Letters Patent No. **218,864**, dated August 26, 1879; application filed July 28, 1879.

*To all whom it may concern:*

Be it known that I, CHARLES DOWNS, of the city and county of Providence, and State of Rhode Island, have invented a new and useful Improvement in Buttons and Studs; and I do hereby declare that the following specification, taken in connection with the accompanying drawings, forming a part of the same, is a full, clear, and exact description thereof.

My invention relates to that class of buttons and studs which are made in two separable parts, for convenience of application and removal, and to that variety in which the parts are fastened together by a spring-locking device or devices operated, when the parts of the button are to be separated, by a pusher or pushers extending radially beyond the head of the button.

My improvement consists in simplifying the construction of such a button by so shaping and mounting the locking device that it is guided and retained in position by the stem attached to the head of the button, or by the actuating-spring and the rim of the head, thereby dispensing with a guard or guide plate for the purpose.

My improvement is applicable to collar-buttons, sleeve-buttons, studs, &c.; but for the purpose of illustrating my invention I have chosen a sleeve-button, which is represented at Figure 1 of the drawings in partial vertical section. Fig. 2 shows a view of the under side of the button-head. Fig. 3 represents the stem in perspective, and Fig. 4 the locking-plate in perspective.

Referring to the drawings, A denotes the head of the button, and B the tubular stem attached thereto. As shown at Figs. 1 and 3, the stem B is provided, near its base, with a slot, *b*, into which a portion, *c*, of the sliding locking-plate C enters by the force of a spring, D, which surrounds a tail-piece, *c*<sup>1</sup>, on the plate C, and takes bearing against the rim of the button-head. This plate is provided with a slot, *c*<sup>2</sup>, of a width equal, or nearly equal, to the exterior diameter of the stem B, and is furnished with a member or pusher, *c*<sup>3</sup>, which projects radially through and beyond the rim of the button-head, so that the plate may be moved longitudinally by the fingers. The remaining parts of the button consist of a shoe,

E, and a post, F, attached to said shoe, and provided with a shouldered head, *f*, with which the portion *c* of the locking-plate can engage when the parts of the button are combined, and thereby prevent them from separating until the said plate is properly moved. The amount of longitudinal movement of this plate is limited in one direction by the contact of the end of the tail-piece *c*<sup>1</sup> with the interior of the button-rim, or by the contact of the head *c*<sup>4</sup> of the pusher with the exterior of the rim, (preferably the latter,) the amount of movement being insufficient to allow the portion *c* to pass entirely out of the slot *b* in the stem. In the other direction the movement is limited by the contact of the face of the portion *c* with the vertical walls of the slot *b*.

It will thus be seen that the locking-plate C is confined vertically in position by the engagement of the portion *c* with the slot *b*, aided by the bearing of the pusher in the rim of the button-head.

The plate C may be laterally guided in three ways without materially varying the construction: first, by making the width of the slot *c*<sup>2</sup> equal to the exterior diameter of the stem, as above specified, so that the stem shall guide the plate by the engagement of its periphery with the sides of the slot; second, by making the width of the portion *c* of the plate less than the interior diameter of the stem, as shown by dotted lines in Fig. 4, and making the vertical walls of the slot *b* parallel with and in engagement with the sides of the said portion; and, third, by securing the spring D to the rim of the button, and making the tail-piece *c*<sup>1</sup> nearly equal in length to the spring, as shown, the width of the slot *c*<sup>2</sup> being immaterial. By this latter method one end of the plate is guided by the bearing of the pusher *c*<sup>3</sup> in the rim of the button-head, and the other end by the coils of the spring D. Either of the above methods of laterally guiding the plate C is within the spirit of my invention.

Although in the drawings, and as thus far described, I have shown only one locking-plate, yet two may be employed, one overlying the other, it only being necessary to remove the tail-piece *c*<sup>1</sup> on each plate a little to either side of the diametrical line occupied by the pushers to prevent contact, and to bring the por-



tion *c* on each plate into the same plane, that both may engage the shouldered head *f* of the post *F*, the stem being supplied with a second slot, *b*.

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

1. In a separable button or stud, the combination, with the shoe *E* and post *F*, of the head *A*, slotted stem *B*, actuating-spring *D*, and sliding locking-plate *C*, adapted to receive the spring, as shown, provided with a pusher, *c*<sup>3</sup>, a portion, *c*, for engaging the post, and a slot, *c*<sup>2</sup>, whose width is equal to the exterior diameter of the stem *B*, whereby the said plate is laterally guided, substantially as described and shown.

2. In a separable button or stud, the combination, with the shoe *E* and post *F*, of the head *A*, slotted stem *B*, actuating-spring *D*, and slotted

locking-plate *C*, adapted to receive the spring, as shown, provided with a pusher, *c*<sup>3</sup>, and with a portion, *c*, which engages the vertical walls of the slot in the stem and laterally guides the plate, substantially as set forth.

3. In a separable button or stud, the combination, with the shoe *E* and post *F*, of the head *A*, slotted stem *B*, actuating-spring *D*, secured to the button-head, and slotted locking-plate *C*, provided with a pusher, *c*<sup>3</sup>, which takes bearing in the button-head, with a portion, *c*, for engaging the post, and with a tail-piece, *c*<sup>1</sup>, which enters the spring *D*, as described and shown, and assists in laterally guiding the plate, substantially as set forth.

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Witnesses:

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WM. A. CADY.