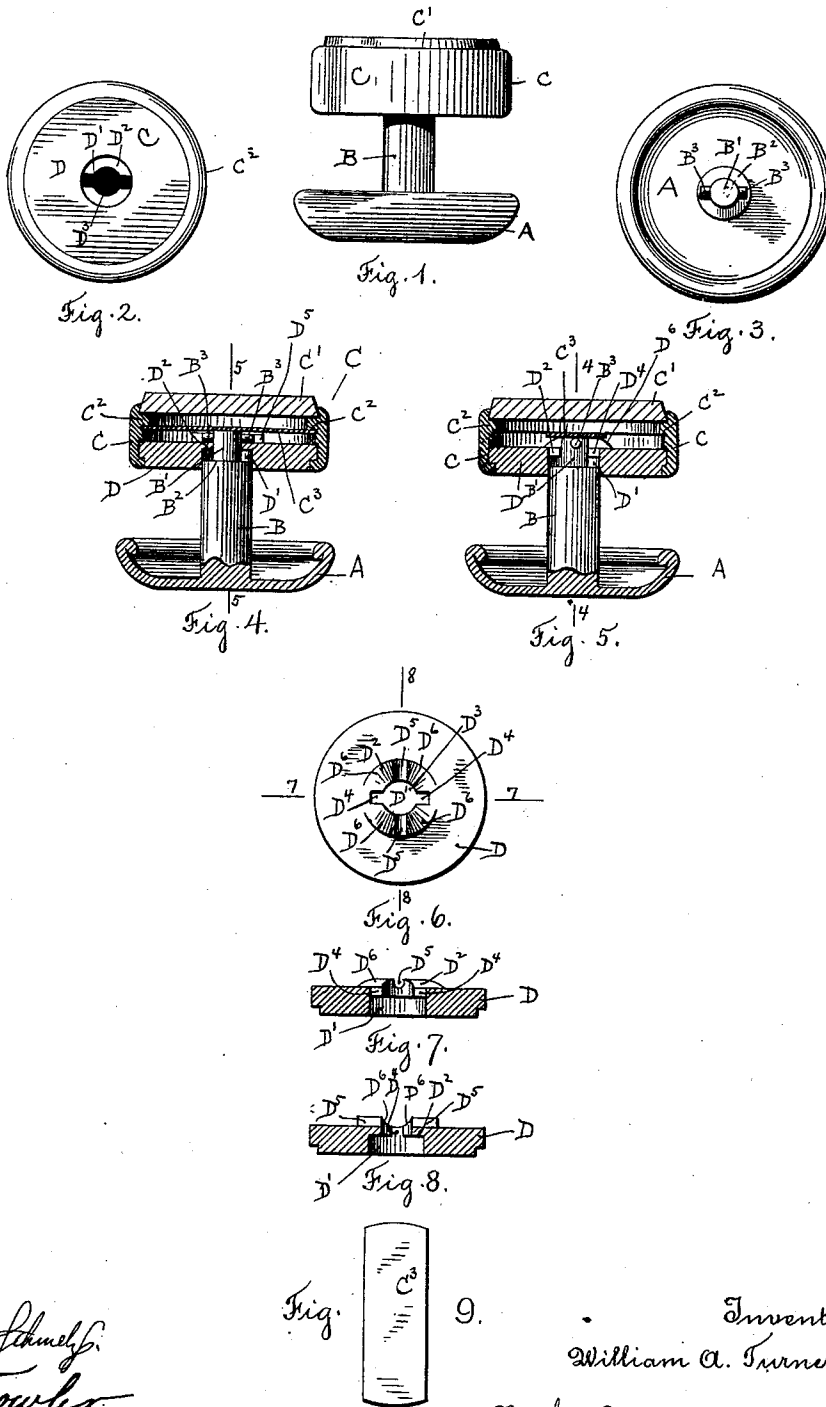


(No Model.)

W. A. TURNER.
SEPARABLE BUTTON.

No. 480,352.

Patented Aug. 9, 1892.



Witnesses
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UNITED STATES PATENT OFFICE.

WILLIAM A. TURNER, OF WORCESTER, MASSACHUSETTS.

SEPARABLE BUTTON.

SPECIFICATION forming part of Letters Patent No. 480,352, dated August 9, 1892.

-Application filed December 17, 1891. Serial No. 415,381. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM A. TURNER, a citizen of the United States, residing at Worcester, in the county of Worcester and State of Massachusetts, have invented a new and useful Improvement in Separable Buttons, of which the following is a specification, reference being had to the accompanying drawings, in which—

10 Figure 1 represents a side elevation, on an enlarged scale, of a separable button embodying my invention. Fig. 2 is a bottom view of the crown. Fig. 3 is a top view of the shoe. Fig. 4 is a central vertical sectional view of 15 the crown and shoe, the post being shown in full. Fig. 5 is a central vertical sectional view of the crown and shoe on a plane at right angles with that shown in Fig. 4. Fig. 6 is a detached view of the disk or plate containing 20 the socket for the post and showing the inner side of the plate. Fig. 7 is a central sectional view of the plate shown in Fig. 6, the section being taken on line 7 7. Fig. 8 is a sectional view of the same on line 8 8, Fig. 6. Fig. 9 is 25 a detached view of the blade-spring held within the crown.

Similar letters refer to similar parts in the different figures.

Referring to the accompanying drawings, 30 A denotes the shoe, B the post attached to the shoe. The free end of the post is reduced in size, forming a shank B' and a shoulder B² at the end of the shank B', and upon opposite sides project the pins B³ B³. The distance 35 between the free ends of the pins B³ equals the diameter of the post B. The crown is formed of an annular band or hoop C, the upper edge of which can form a setting for a stone C', or the band may be closed at the top 40 by a metal plate formed, if desired, integrally with the band itself. The inner wall of the band C is provided with a bead or rib forming a shoulder C² for a blade-spring C³ (shown in detached view in Fig. 9) and which is sup- 45 ported by its ends upon the shoulder C². The lower end of the band C is closed by a circular plate D, (shown in detached view in Fig. 6, having a concentric circular recess D' the diameter of the post B and preferably ex- 50 tending through the plate D. Upon the inner and upper side of the plate D are the two lips D² D², and inclosed between the lips is a

concentric circular opening D³ the diameter of the shank B' and two radial side openings D⁴ D⁴ to allow the pins B³ to pass through, 55 and upon the upper side of the lips D² are the notches D⁵ D⁵ to receive the pins B³. The space between the blade-spring C³ and the upper side of the plate D is equal to the thickest portion of the lips D², so the central section of the blade-spring will rest against the 60 lips D² and close the opening between them to the admission of dirt into the chamber between the plate D and stone C'. The lips D² are reduced in thickness at each end, so as to 65 form the oppositely-inclined surfaces D⁶ upon each side of the notches D⁵. In putting in the button the shank B' of the post B is inserted in the center hole D', which serves as a countersink to receive the end of the post B 70 and hold it from lateral movement while it is being rotated in order to bring the pins B³ B³ into alignment with the radial openings D⁴ D⁴. The post and crown are turned upon each other until the pins B³ find the openings D⁴, 75 allowing the shank B' to enter the center opening D³ between the lips D², with the body of the post B in the center hole D' and with the end of the post resting against the blade-spring C³. The rotation of the post or crown 80 a quarter-revolution in either direction will cause the pins B³ to slide up the inclined surfaces D⁶, drawing the post into the crown and bending the blade-spring C³ until the pins B³ reach the notches D⁵, when the tension of the 85 blade-spring C³ will force the post out of the crown, carrying the pins B³ into the notches D⁵, and thereby lock the two parts of the button securely together. In order to unlock the 90 button, the post B is pushed into the crown, bending the blade-spring C³ until the shoulder B² strikes the lips D², which limits the inward motion of the post against the spring C³. This action of the post releases the pins B³ from the notches D⁵, when the rotation of a 95 quarter-revolution will carry the pins back to the openings D⁴, releasing the crown from the post.

By the above-described construction I seek to secure several advantages not hitherto 100 embodied in separable buttons of this class. By supporting the blade-spring upon the shoulder C², projecting from the inner wall of the annular band C, I cause the entire strain

exerted by the spring C³ to be received by the band C, thereby relieving the central stone C' from pressure, and by providing the post B with the shoulder B², by which its motion is limited as it is being pushed into the crown I prevent the undue bending of the blade-spring, which would carry it against the stone C'. The outer face of the crown-plate D is left free from all projections, and the recess D' enables the crown to be readily "centered" upon the end of the post in putting the button together and held from any lateral movement while the crown and post are being turned upon each other for the purpose of bringing the pins projecting from the side of the post into alignment with the radial openings D⁴ D⁴.

I am aware that a shoe and post provided with pins passing through openings in the crown-plate and engaging notches upon the inner side of the crown-plate is not new; neither is it new to place a spring with the crown acting against the post to carry the pins into their notches; nor is it new to provide the inner side of the crown-plate with inclined surfaces in the manner I have herein described, and I do not herein claim these several features specifically as of my present invention.

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

1. In a separable button, the combination of the shoe A, post B, extending from said shoe, said post being provided with a shoulder B², by which the entrance of the post into the crown of the button is limited and having its end reduced in diameter, forming a shank B', pins B³ B³, extending radially from said shank the width of said shoulder, so the

distance between the ends of said pins will equal the diameter of the post B, plate D, forming a portion of the crown of the button and provided with a central hole D³, and openings D⁴ D⁴, extending radially from said central hole and said plate having upon its outer face an annular countersunk recess D', concentric with said central hole and having its diameter equal to the diameter of said post to receive the end of the shank B' and radial pins B³ B³ and hold the post concentrically with the central hole D³ while the post and crown are being rotated upon each other in order to bring the pins B³ B³ into alignment with the notches D⁴ D⁴, and a spring held in the crown of the button and acting against the end of said post to resist its entrance into the hole D³, substantially as described.

2. In a separable button, the combination, with a crown comprising an annular band C, provided with an internal shoulder C², and a plate D, held in said band and provided with a central hole D³ to receive the post, of a shoe A, having a post B extending from said shoe with its free end entering said hole D³, and a blade-spring C³ with its ends resting upon the shoulder C² and extending diametrically across the hole D³, so as to act against the end of the post B as it is pushed into the crown, whereby the strain exerted by said spring will be received upon the shoulder C², substantially as described.

Dated the 10th day of December, 1891.

WILLIAM A. TURNER.

Witnesses:

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RUFUS B. FOWLER.