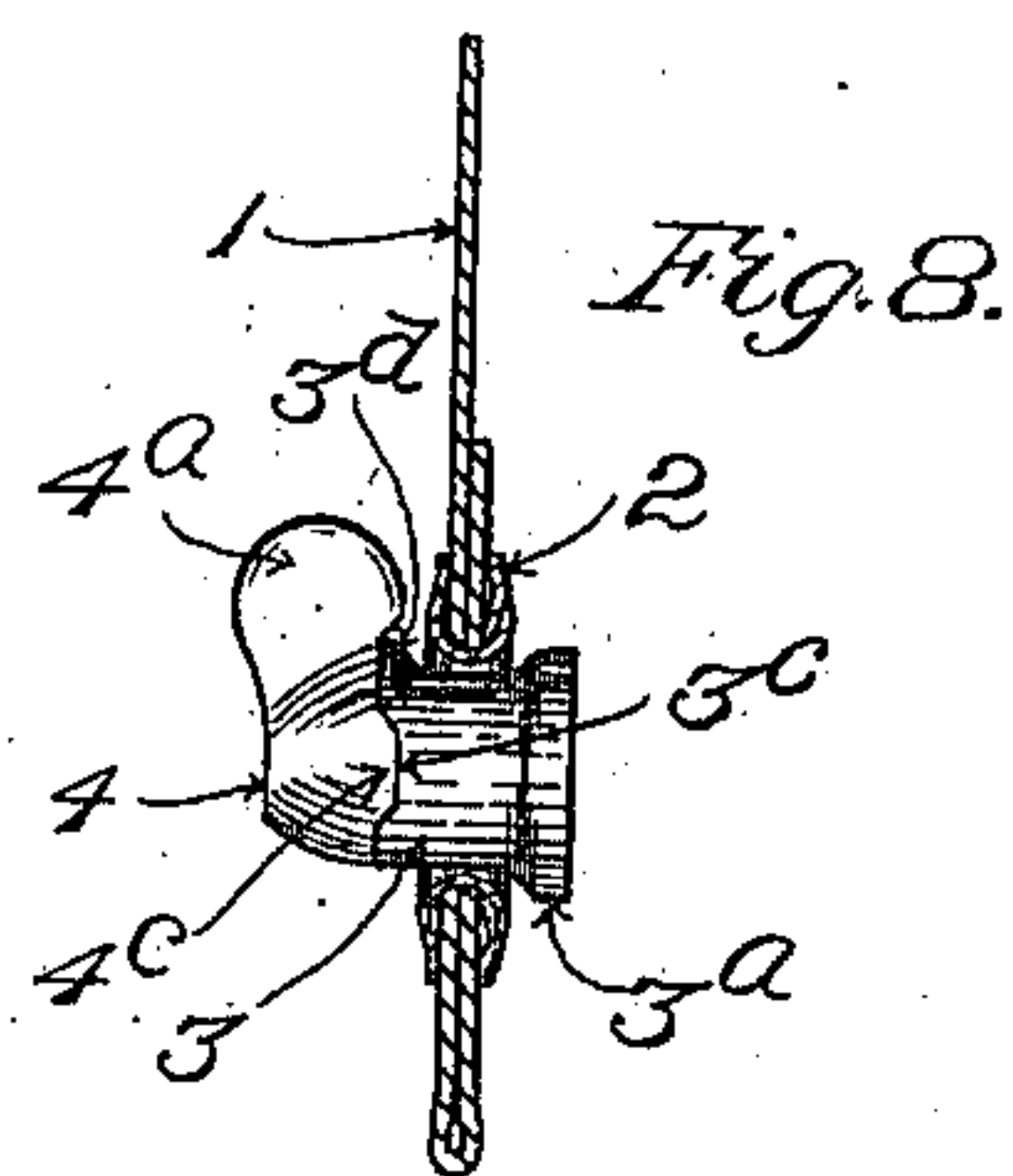
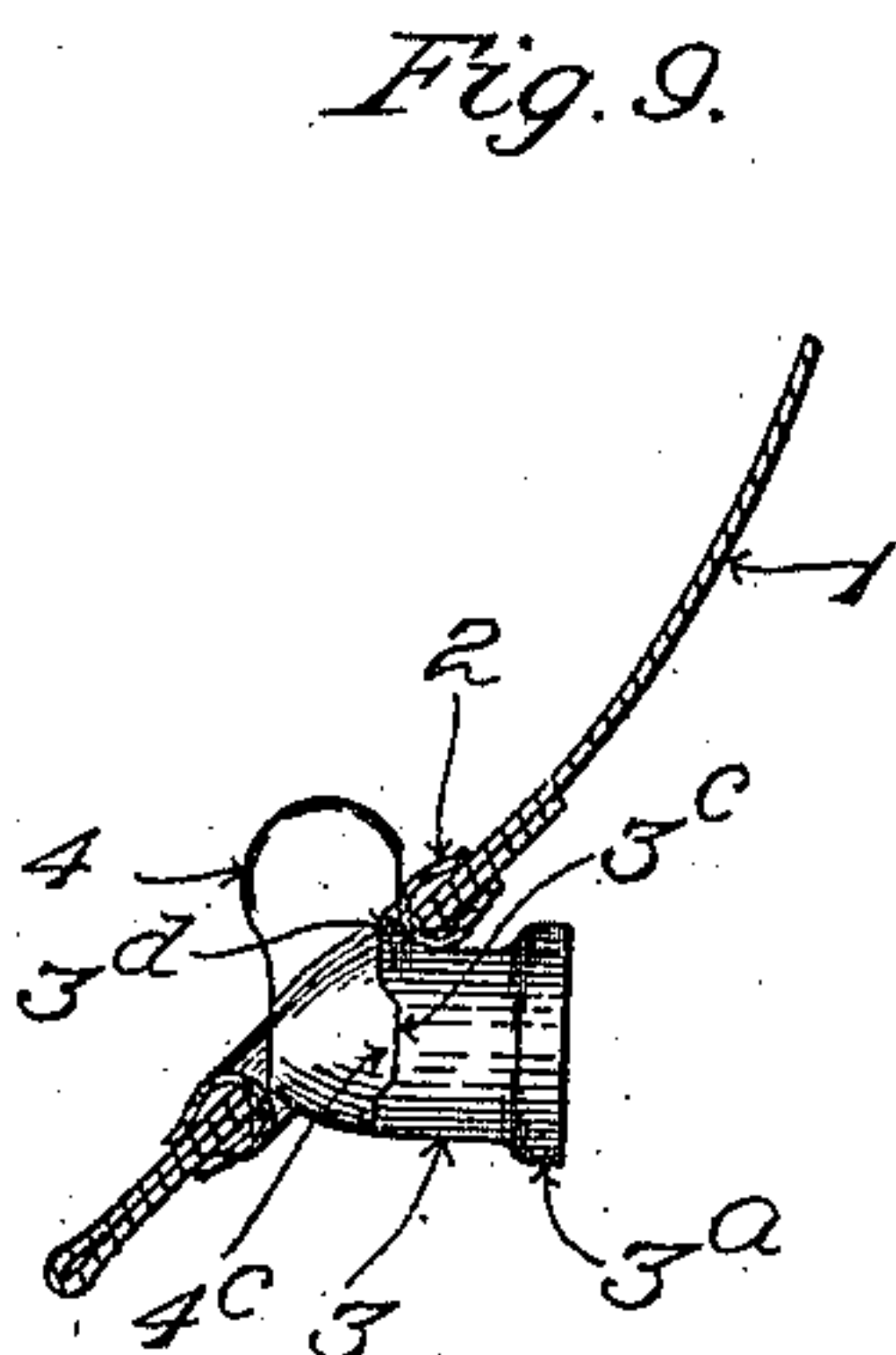
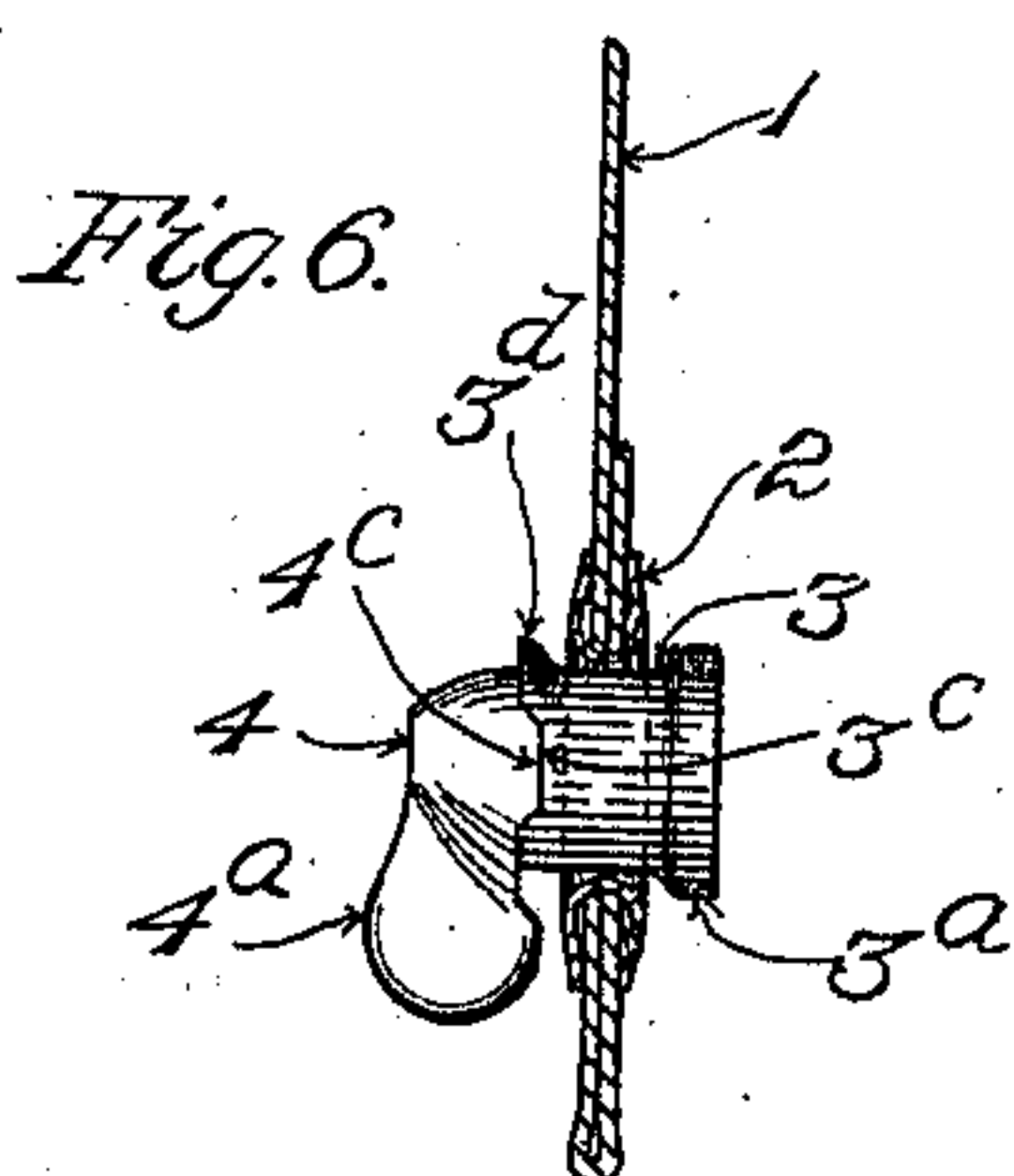
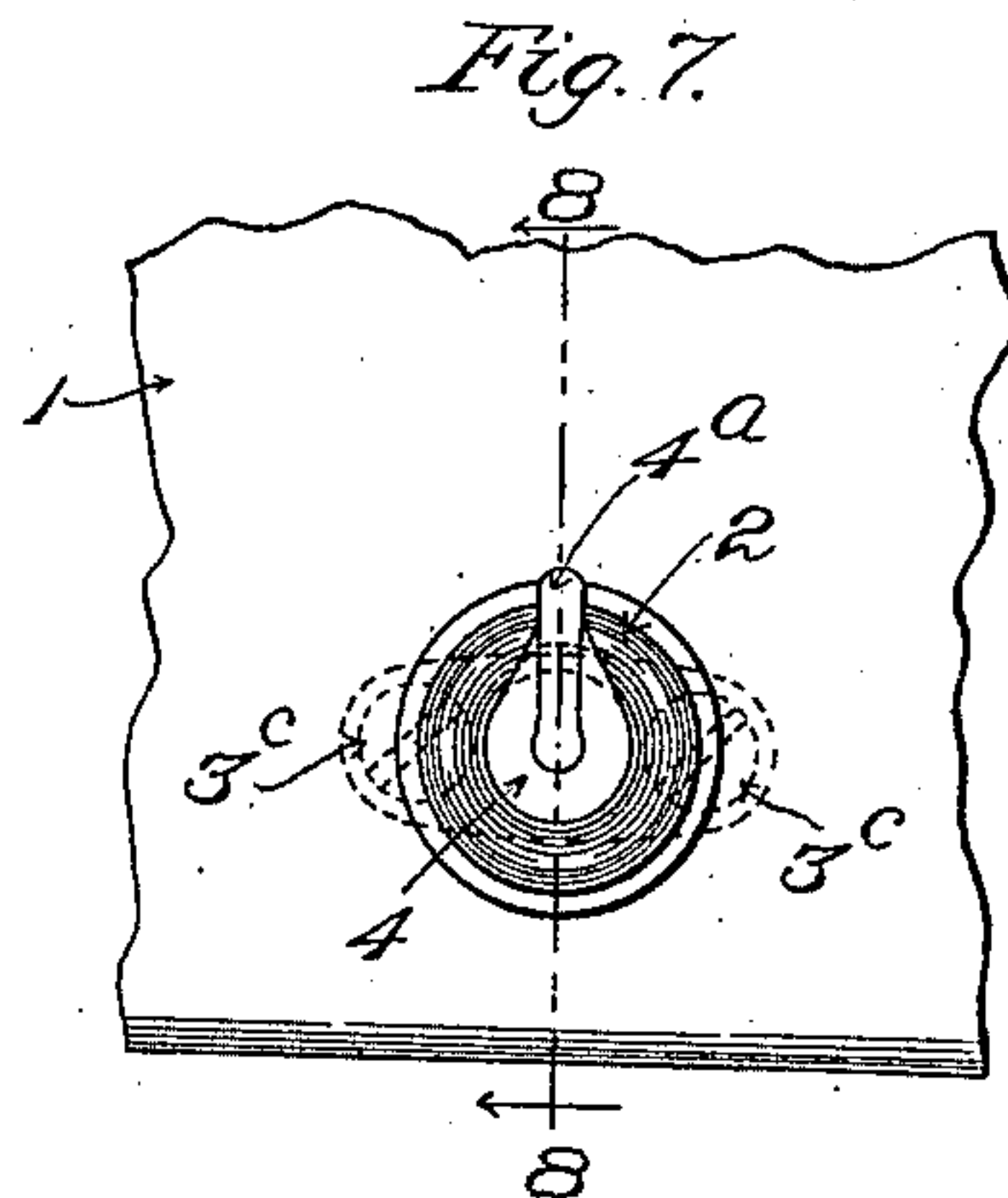
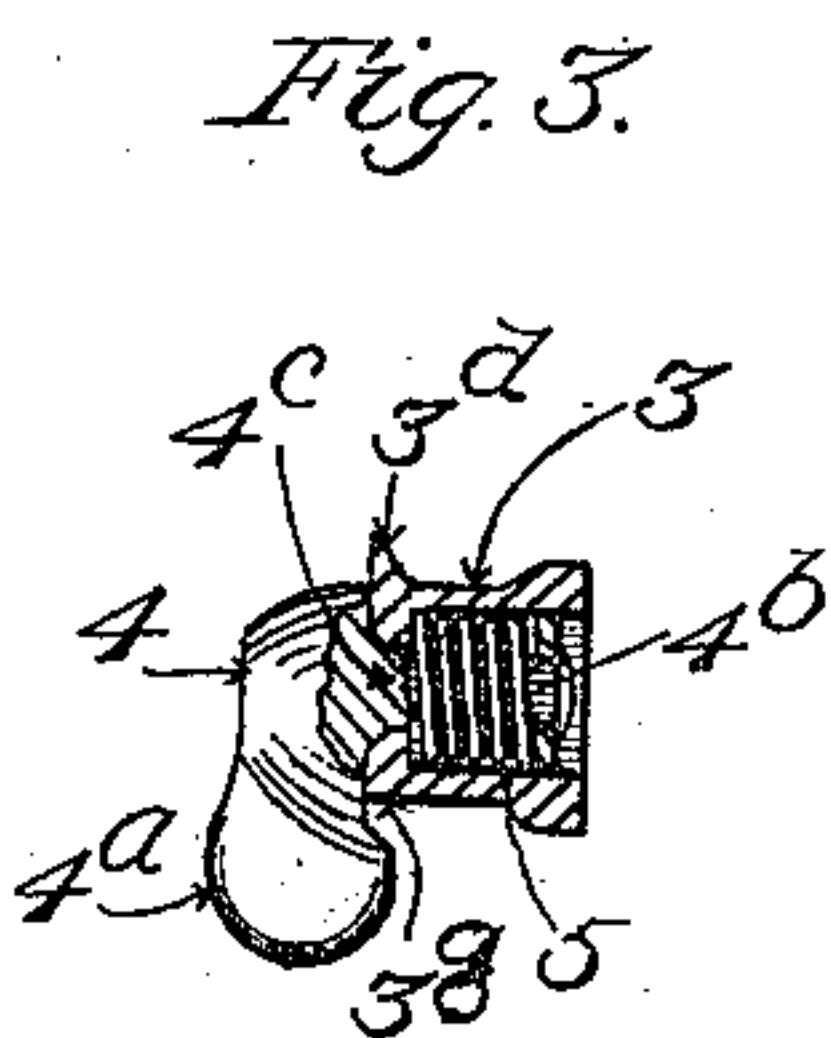
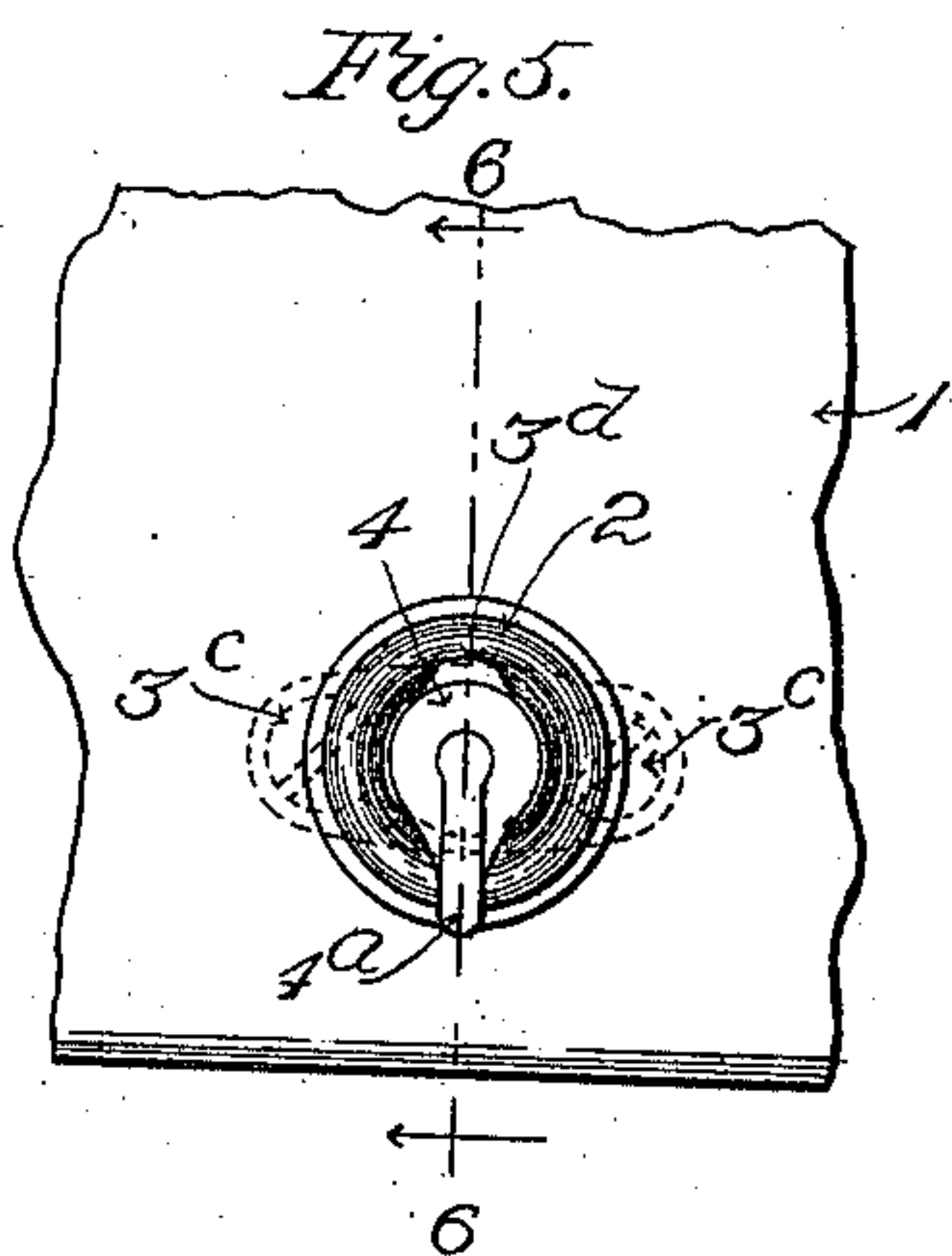
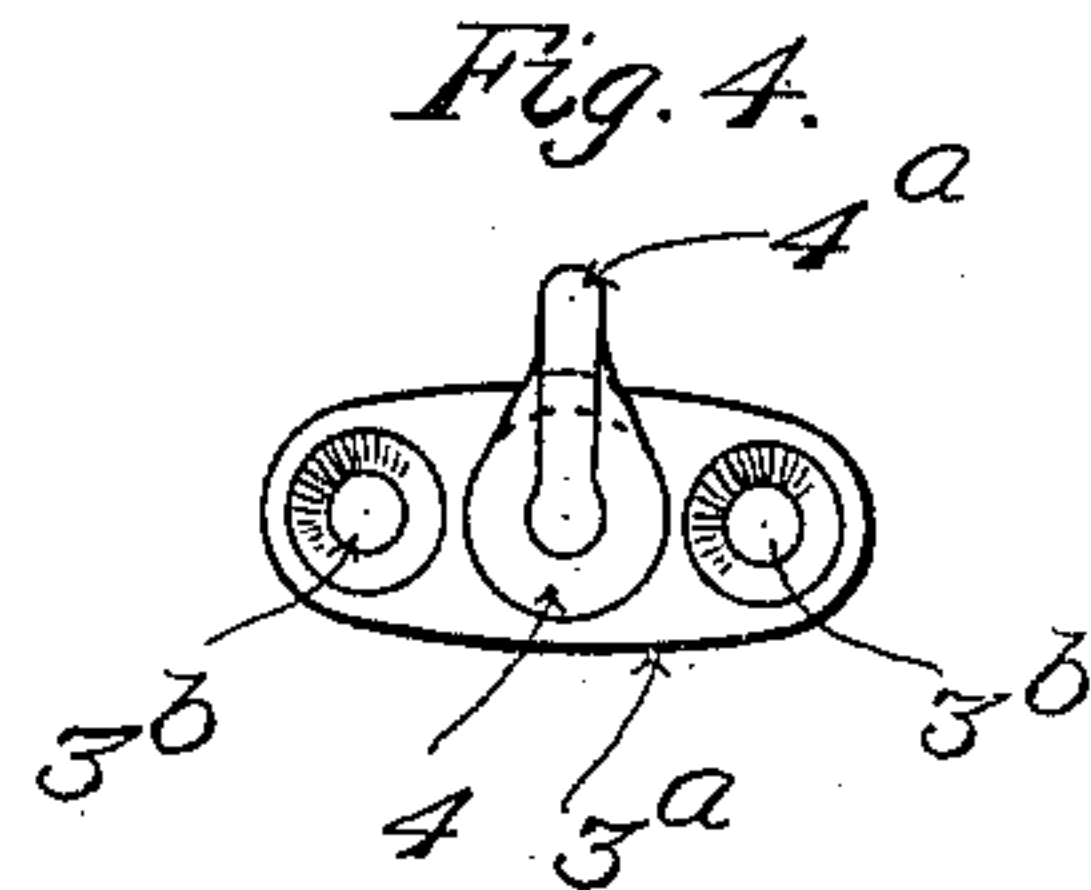
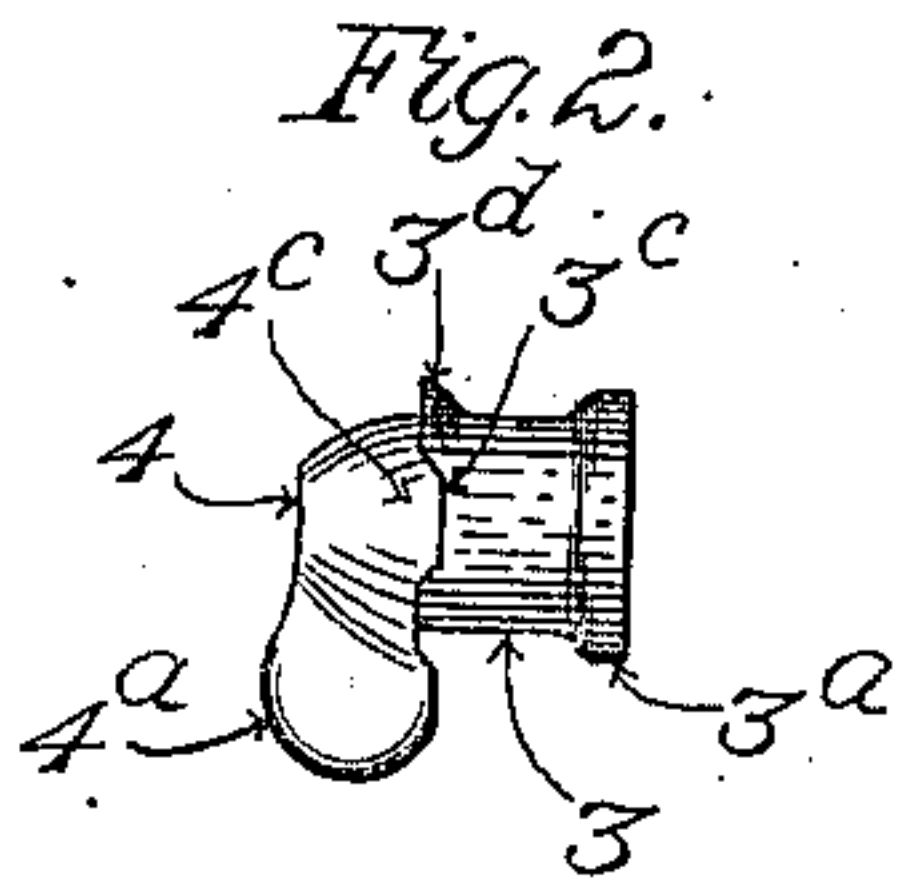
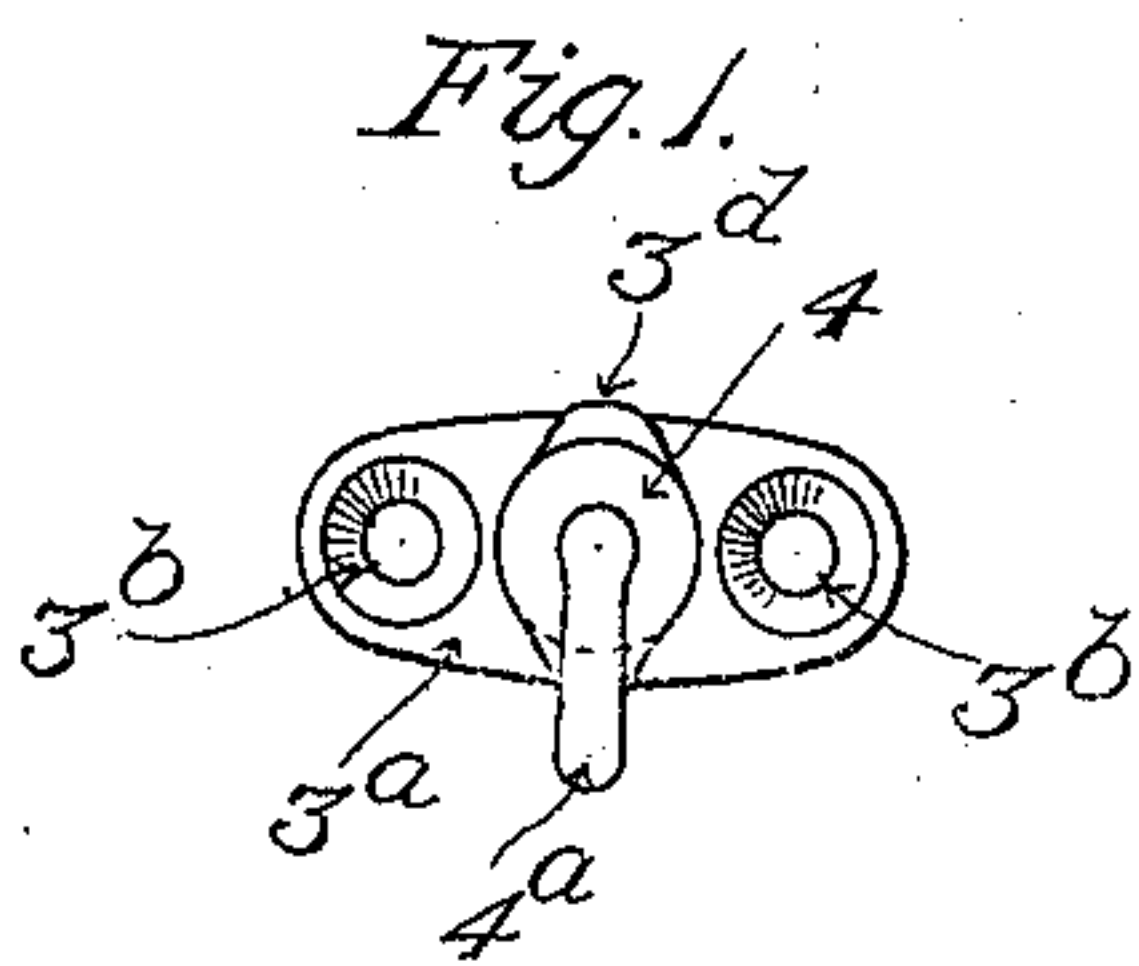


W. ESTY.  
CARRIAGE CURTAIN FASTENER.  
APPLICATION FILED JUNE 14, 1909.

976,057.

Patented Nov. 15, 1910.



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# UNITED STATES PATENT OFFICE.

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## CARRIAGE-CURTAIN FASTENER.

976,057.

Specification of Letters Patent. Patented Nov. 15, 1910.

Application filed June 14, 1909. Serial No. 501,943.

To all whom it may concern:

Be it known that I, WILLIAM ESTY, a citizen of the United States, residing at Laconia, in the county of Belknap, State of New Hampshire, have invented a certain new and useful Improvement in Carriage-Curtain Fasteners, of which the following is a specification, reference being had therein to the accompanying drawings.

The invention relates to carriage-curtain fasteners. The fasteners of this class at present found in the market are objectionable in various respects which it is the general aim of my invention to obviate. Certain of such fasteners are constructed with movable pins. It occurs frequently during the use of fasteners thus constructed that sand and grit find their way into the holes occupied by the pins, causing these to work very hard and making it almost impossible to remove a curtain from its fasteners. Sometimes, on the other hand, the pins work too easily, and the curtain will blow off the fasteners. Another of the known forms employs an oval gromet having securing spurs or prongs that pierce the fabric embodied in a curtain to which such gromet is applied. Such prongs tear the fabric and fray it out, admitting rain and moisture to rot the fabric. The fasteners thus far referred to are expensive to manufacture.

The invention consists in a novel and improved fastener which is simple in construction, inexpensive to manufacture, and free from the defects and disadvantages of fasteners at present in the market.

A fastener constructed in conformity with the invention is shown in the drawings, in which—

Figure 1 is a front elevation of such fastener, with its button in position to hold a curtain securely. Fig. 2 is a side elevation thereof. Fig. 3 is a partly-sectional view thereof. Fig. 4 is a front elevation of the fastener, with the button in position to permit the removal or application of a curtain. Fig. 5 shows in front elevation a fastener and a portion of a curtain furnished with a circular gromet, the gromet being in engagement with the fastener, and the button being in the same position as in Fig. 1, securing the curtain. Fig. 6 shows the curtain and gromet in section on line 6, 6, of Fig. 5, with the fastener in side elevation,

looking in the direction indicated by the arrows at the ends of such line. Fig. 7 is a view similar to Fig. 5, with the button in the same position as in Fig. 4. Fig. 8 shows the curtain and gromet in section on line 8, 8, Fig. 7, with the fastener in side elevation and the button in the same position as in Figs. 4 and 7. Fig. 9 is a sectional view showing the manner in which the curtain is removed from the fastener.

The portion of a curtain which is shown in Figs. 5 to 9 is designated 1, and the gromet is marked 2. The invention permits use to be made of a circular gromet, as shown.

The fastener comprises the barrel 3, the button 4, and the spring 5 (Fig. 3). The barrel 3 is of a proper diameter to occupy the central opening of the gromet. It is furnished with means for enabling it to be connected to its support, such means consisting in this instance of a base or flange 3<sup>a</sup> having in its opposite end-portions the holes 3<sup>b</sup>, 3<sup>b</sup>, for the reception of attaching screws 3<sup>c</sup>, 3<sup>c</sup>, which are shown by dotted lines in Figs. 5 and 7, the said holes being counter-sunk to accommodate the heads of the screws.

The button 4 is formed with a single laterally-projecting wing 4<sup>a</sup>, and with an integral spindle 4<sup>b</sup>, Fig. 3. The said wing is of a width suitable to enable it to pass through the central opening of the gromet when the latter is given an inclined position as in Fig. 9. The spindle occupies an axial hole which is made in the outer end of the barrel to accommodate the spindle and provide a bearing therefor. The barrel is counterbored from the rear end thereof, forming a spring-chamber into which the inner portion of the spindle enters, and also providing an internal shoulder at 3<sup>d</sup>. The said portion of the spindle is surrounded by the expanding spiral spring 5. The latter is confined between a washer 6 on the spindle and the internal shoulder 3<sup>d</sup>, such shoulder constituting a fixed bearing from which the spring re-acts so as to take effect against the said washer, the washer being held from coming off the end of the spindle by the said end being headed or spread, as shown in Fig. 3. The washer is of a diameter to fit snugly within the spring-chamber. By the tendency of the spring 5 to expand, the spindle is drawn lengthwise into the barrel,



and the back of the body of the button is kept pressed against the outer end of the barrel.

To lock the button against accidental undesired turning movement, the outer end of the barrel is notched, as at 3<sup>c</sup>, 3<sup>c</sup>, at diametrically opposite places, and the button is formed with corresponding projections 4<sup>c</sup>, 4<sup>c</sup>, which are adapted to enter the notches in each of the opposite positions of the button which are shown in the drawings. The projections are kept pressed into the notches normally by the action of the spring as above explained, thereby locking the button in the position which it has been caused to assume. The sides of the projections and side-walls of the notches are slightly beveled, as shown, to facilitate the riding of the projections up out of the notches when force is properly applied to the button to turn the same.

To cooperate with the wing 4<sup>a</sup> of the button in preventing undesired disengagement of the gromet from the fastener, the barrel 3 is formed at one side of its outer end with a lug 3<sup>a</sup>. The interengaging notches 3<sup>c</sup>, 3<sup>c</sup>, and projections 4<sup>c</sup>, 4<sup>c</sup>, are formed at such points upon the barrel and button that in each of the positions in which the button will be locked thereby its wings 4<sup>a</sup> will stand in the same line with the lug 3<sup>a</sup>. One of such positions is shown in Figs. 1, 2, 3, 5 and 6; the other in Figs. 4, 7, 8, and 9. In the first position, the said wing extends oppositely with relation to the lug. The gromet then cannot be removed from the barrel, because the size of the barrel limits the diametrical movement of the gromet and the wing 4<sup>a</sup> projects too far at one side of the barrel to permit the gromet to leave the barrel at such side; while the lug 3<sup>a</sup> projects too far at the other side of the barrel to permit the gromet to be slipped over the lug at that side. In the second position of the button, the wing 4<sup>a</sup> extends in the same direction as the lug 3<sup>a</sup>. The hub-portion of the button is so proportioned that when the button is in this position the distance from the back of lug 3<sup>a</sup> to the opposite side of the said hub-portion is slightly less than the diameter of the central opening of the gromet, and preferably is rounded to a curve concentric with the back of the lug 3<sup>a</sup>. Consequently, on moving the curtain outward with respect to the length of the barrel until the gromet, at one side of its center, brings up against the lug and wing, the opposite portion of the gromet may be swung out clear of the said hub-portion and around the latter, as in Fig. 9, permitting the curtain to be removed from

the fastener. With the button in the position relative to the lug which is occupied by it in Figs. 4, 7, 8 and 9, the curtain may be reengaged with the fastener by dropping the gromet over the wing and lug, causing it to assume a position similar to that shown in Fig. 9, and then swinging the gromet back past the hub-portion of the button and around the barrel. Then, upon turning the button half-way around, the gromet will be locked upon the fastener, and the curtain secured against accidental disengagement.

The described construction is exceedingly simple, and inexpensive to manufacture. As a result of making the spindle integral with the button, the latter cannot become loosened or detached in consequence of the strains to which it is subjected, or of blows or other hard usage. The curtain is easy to put on and easy to remove, and cannot come off until the button is turned 180° from the securing position.

The invention is not restricted to use in connection with carriage-curtains alone, but may be employed wherever useful.

The pitch of the spiral of the spring is so proportioned that the sum of the spaces between the successive turns thereof is just sufficient to permit the projections 4<sup>c</sup>, 4<sup>c</sup>, to ride out of the notches 3<sup>c</sup>, 3<sup>c</sup>, and pass upon the end of the barrel when the button is turned. Too great an extent of outward movement of the button is prevented by the turns of the spring making contact with one another.

What is claimed as the invention is:—

In a carriage curtain fastener, the combination with a hollow barrel provided with integral means at its inner end for rigidly connecting it to a support, and an integral lug projecting laterally from one side at its opposite end, of an eccentric button comprising a body having its sides tapered conically from its base toward its smaller outer end, and formed integrally with a single curved wing on one side, and an integral spindle projecting from its base into the barrel and adapted to rotate and move longitudinally for a limited distance therein, interengaging means between said barrel and button for locking the button in either of two oppositely disposed positions, and a spring within said hollow barrel and engaging said spindle for yieldingly retaining said button in locked position.

In testimony whereof I affix my signature in presence of two witnesses.

WILLIAM ESTY.

Witnesses:

F. A. PHELPS,  
GEO. W. SHERWELL.