

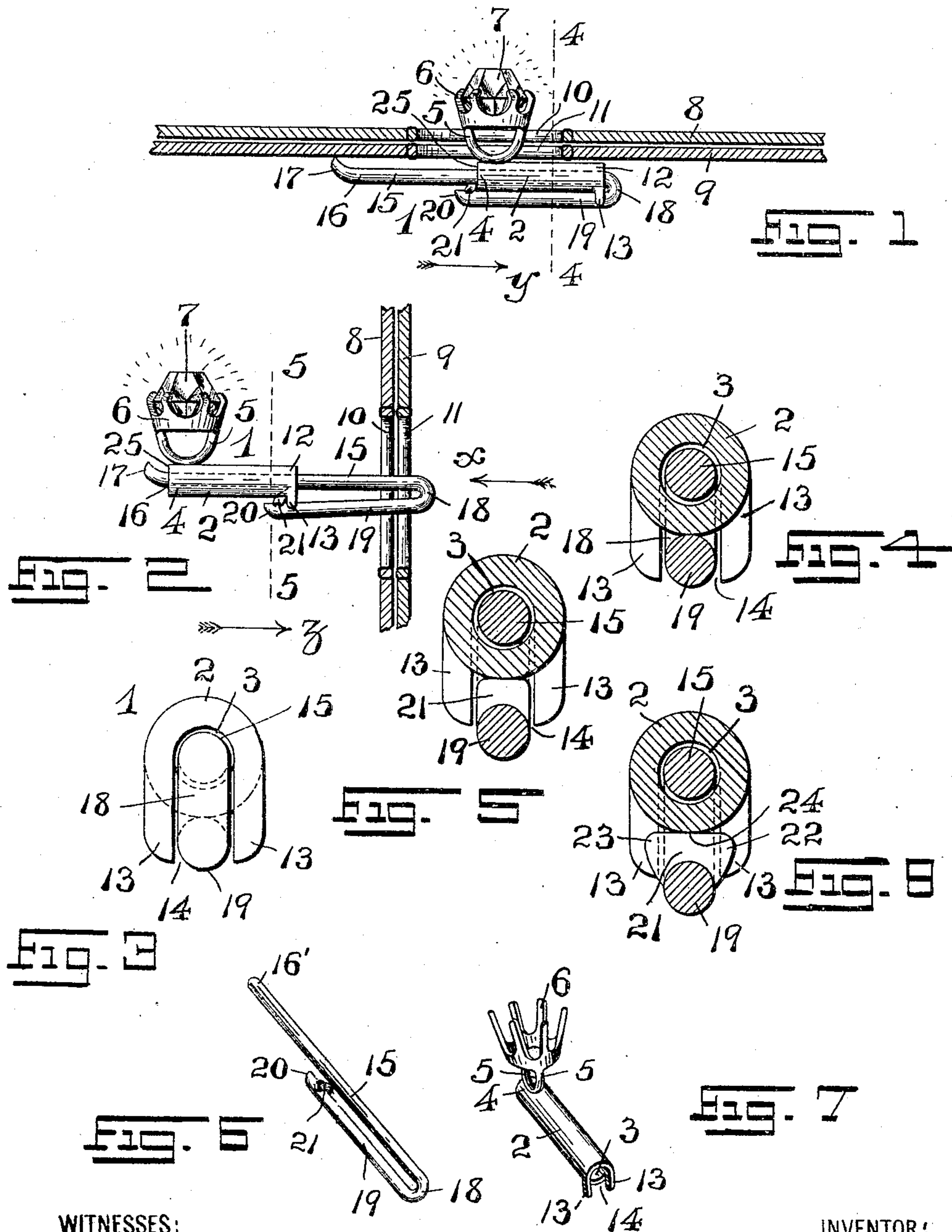
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O. L. HENERLAU.

SHIRT STUD.

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WITNESSES:

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SHIRT-STUD.

No. 814,042.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, OTTO L. HENERLAU, a citizen of the United States, residing at Newark, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Shirt-Studs; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to figures of reference marked thereon, which form a part of this specification.

My present invention has reference generally to improvements in that class of studs which are worn in the front of a man's shirt or lady's shirt-waist; and the invention has for its principal objects to provide a simply and neatly constructed stud comprising a pair of slidably-connected parts for manipulation when it is desired to insert the stud in the buttonholes of a shirt or waist and to act as a safety-lock to prevent any possible accidental displacement of the stud and also to prevent it being forcibly removed from the shirt by a thief, but the parts being easily manipulated to insert or remove the stud from its wearing position upon the shirt-front or lady's waist.

A further object of this invention is to provide a safety-stud comprising a tubular main body carrying an ornamental head, button, or jewel and a sliding shank or bar, the parts being operatively connected and retained in their relative positions to each other without the use of independent springs, such as the usual spiral springs at present arranged in the tubular main body of that class of shirt-studs which consists of a main tubular body and sliding shank or bar adapted to be arranged across the buttonhole and against the back of the shirt-bosom.

Other objects of this invention not at this time more particularly specified will be clearly evident from the following detail description of my present invention.

The invention consists, therefore, in the novel shirt-stud hereinafter set forth; and the invention consists, furthermore, in the novel construction of safety locking device for shirt-studs comprising a tubular main body and slidably-arranged shank or bar, the locking device retaining the said shank or bar in a fixed position after having been operated.

The invention consists, furthermore, in the several arrangements and combinations of

devices and parts, as well as in the details of the construction of the same, all arranged and constructed with a view of dispensing with the use of the usual coiled springs, all of which will be hereinafter more fully set forth and then finally embodied in the clauses of the claim which are appended to and form an essential part of this specification.

The invention is clearly illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation of a shirt-stud embodying the principles of my invention, showing the same in its inserted and locked position in the stud-holes of a pair of overlapping portions of a shirt-front, the said portions being represented in vertical section; and Fig. 2 is a similar view of the same parts showing the shank or bar and the tubular main body of the stud in their relative positions when about to be inserted or withdrawn from the buttonhole of the garment. Fig. 3 is an enlarged end view looking in the opposite direction from that indicated by the arrow *y* in Fig. 1 of the tubular body and shank of the stud, the ornamental head, button, or jewel being omitted from this view. Fig. 4 is an enlarged transverse vertical section taken on line 4 4 in Fig. 1 of the drawings looking in the direction of said arrow *y*, and Fig. 5 is a similar section taken on line 5 5 of Fig. 2 looking in the direction of arrow *z*. Figs. 6 and 7 are perspective views of the shank or bar and the main tubular body of the stud, the parts being represented in their separated or non-assembled relation; and Fig. 8 is a transverse section of a slightly-modified form of stud.

Similar characters of reference are employed in the above-described views to indicate corresponding parts.

Referring now to the said drawings, the reference character 1 indicates a complete shirt-stud made according to the principles of my present invention, the same comprising a main body 2, which has a duct 3 extending throughout its entire length, so as to form a tubular body which is open at both of its ends. At or near one of its ends, as at 4, the said tubular body is provided with a shank or post 5 of any desirable shape, which carries a head or button or, as in the present case, a setting 6, in which is secured a jewel 7, as clearly shown. The reference characters 8 and 9 indicate a pair of overlapping portions of a shirt front or bosom, the same being provided with the usual button or stud

holes or openings 10 and 11, respectively. At or near its opposite end portion, as 12, the said main body 2 is provided with a pair of downwardly-extending lugs or projections 13 for the purpose to be presently described and having an open space forming a guide 14 between them.

Slidably arranged within the duct 3 of the said main body 2 is a shank or bar 15, having its one end 16 extending from the open end portion 4 of said body and preferably provided with an upwardly-extending bend, as 17, extending in a direction toward the head, button, or jewel on said body, so as to provide a rounded surface extending away from the undergarment of the wearer to avoid catching in said undergarment and prevent discomfort to the wearer of the stud. The said shank or bar 15 is made from spring-wire having great resiliency, and connected with the opposite end portion of the said shank or bar by means of a suitably-bent or U-shaped end 18 is a spring-like arm or finger 19. The said spring-like arm or finger 19 extends forwardly beneath the said shank or bar 15, being slidably arranged in the guide 14, formed between the lugs or projections 13, as clearly illustrated in Figs. 1, 2, 3, and 4 of the drawings. The opposite and free end of the said arm or finger 19 is made with a rounded or curved portion, as 20, which serves the same purpose as the upwardly-extending bend 17 of the shank or bar 15. Directly back of the said rounded or curved portion 20 of the said arm or finger 19 the latter is made with an upwardly-extending projection 21, as indicated in Fig. 5 of the drawings, which is adapted to bear against and slide upon the under outer surface of the said main body 2, as indicated in Figs. 2 and 5 of the drawings. When the said shank or bar 15 has been inserted in the tubular portion or duct 3 of the main body 2, with the spring arm or finger 19 arranged between the two projections or lugs 13 to prevent any rotative movement of the parts, then the previously-straight end portion 16' of the shank or bar 15 is bent upwardly to provide the above-mentioned bend 17, (clearly illustrated in Figs. 1 and 2 of the drawings,) which bend 17 also prevents the withdrawal of the shank or bar 15 from the body 2 when the device is operated, as will be clearly evident.

As shown in the slight modification represented in Fig. 8 of the drawings, the upwardly-extending projection 21 of the spring arm or finger 19 may also be provided with outwardly-extending portions 22 and 23, which are adapted to be brought against the lugs or projections 13, extending downwardly from and at or near the end of the main body 2 to prevent the withdrawal of the shank or bar 15 from within the duct 3 of said body 2, as will be clearly understood. When the parts of the stud are in these posi-

tions, the spring-like action of the said arm or finger 19 is in an upward direction, whereby the marginal edge 24 of the lug or projection is brought in firm frictional contact with the under and outer surface of the said main body 2, the parts being sufficiently held or retained in the positions indicated to permit the insertion of the said shank or bar 15 and its arm or finger 19, with the main body 2, into and through the stud openings or holes 10 and 11 of the overlapping shirt portions 8 and 9. The inserted portions of the stud are then turned at right angles to their previous positions, so as to lie against the back of the shirt portion 9, with the shank or post 5 in the said holes and the larger head, button, or jewel-setting portions of the stud directly over the hole 10 and upon the outer face of the shirt portion 8. Pressure is then exerted by the manipulator upon the connecting rounded or U-shaped end 18 between the shank or bar 15 and the spring arm or finger 19, forcing the parts in the direction of the arrow *x* in Fig. 2 of the drawings, and thereby sliding the lug or projection 21 of said spring arm or finger 19 along the under and outer surface of the main body 2 until it reaches the end portion 4 of said body 2 and immediately springs back of the edge 25 of said body toward and against the under surface of the said shank or bar 15, as clearly illustrated in Fig. 1 of the drawings. When thus arranged, the parts are held or locked against accidental or forcible displacement unless properly manipulated in the manner to be presently described, with the stud safely held in position upon the garment with which it is used.

To remove the stud from the garment after the latter has been removed from the body of the wearer, the thumb-nail is placed over the end portion 20 of the spring arm or finger 19, and by exerting a downward pressure upon said end the lug or projection 21 is moved downwardly and clear of the edge 25 of the main body 2. As soon as said lug or projection 21 has thus been forced from its holding engagement with said edge 25 the parts are forced in the direction of the arrow *y* in said Fig. 1 to the positions indicated in Fig. 2, and the stud can then be easily and quickly detached from the shirt or other piece of wearing-apparel, as will be clearly understood.

From the foregoing description of my invention it will be clearly seen that I have devised a simple, neat, and cheap as well as an operative construction of shirt-stud which is easily manipulated and is safely locked against displacement while being worn.

Having thus described my invention, what I claim is—

1. A shirt-stud, comprising a tubular body, a shank or bar slidably arranged in said body, and a rearwardly-extending spring arm or

finger connected with said shank or bar, said arm or finger having a portion in slidable engagement with an outer portion of said body, substantially as and for the purposes set forth.

5 2. A shirt-stud, comprising a tubular body, a shank or bar slidably arranged in said body, and a rearwardly-extending spring arm or finger connected with said shank or bar; said arm or finger having a portion in slidable engagement with an outer portion of said body, and a stop on said body to limit the sliding movement of said shank and finger and prevent the withdrawal of said shank from within said body, substantially as and for the purposes set forth.

15 3. A shirt-stud, comprising a tubular body, a shank or bar slidably arranged in said body, and a rearwardly-extending spring arm or finger connected with said shank or bar, said arm or finger having a portion in slidable engagement with an outer portion of said body, a pair of projections or lugs on said body formed with a guide between them in which said arm or finger is slidably arranged, substantially as and for the purposes set forth.

25 4. A shirt-stud, comprising a tubular body, a shank or bar slidably arranged in said body, and a rearwardly-extending spring arm or finger connected with said shank or bar, said arm or finger having a portion in slidable engagement with an outer portion of said body, a pair of projections or lugs on said body formed with a guide between them in which said arm or finger is slidably arranged, and

means on said spring arm or finger adapted to be brought in holding engagement with said lugs or projections to limit the sliding movement of said shank and finger and prevent the withdrawal of said shank from within said body, substantially as and for the purposes set forth. 35 40

5. A shirt-stud, comprising a tubular body, a shank or bar slidably arranged in said body, a rearwardly-extending spring arm or finger connected with said shank or bar, and a projection on said spring arm or finger, said projection being in slidable engagement with an outer portion of said body and being adapted to be brought in holding engagement with an end portion of said tubular body, a pair of projections or lugs at the opposite end portion of said body formed with a guide between them in which said spring arm or finger is slidably arranged and with which said projection on said spring arm or finger is also adapted to be brought in engagement to limit the sliding movement of said shank and finger and prevent the withdrawal of said shank from within said body, substantially as and for the purposes set forth. 45 50 55 60

In testimony that I claim the invention set forth above I have hereunto set my hand this 21st day of June, 1905.

OTTO L. HENERLAU.

Witnesses:

FREDK. C. FRAENTZEL,
F. H. W. FRAENTZEL.