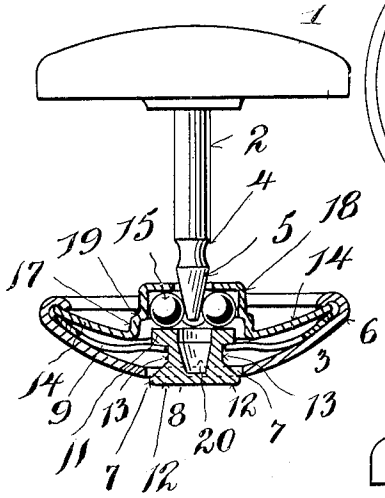
No. 818,530. PATENTED APR. 24, 1906.

R. FISCHER.

CLUTCH FOR STUDS.

APPLICATION FILED AUG. 26, 1905.

Fig. 1.



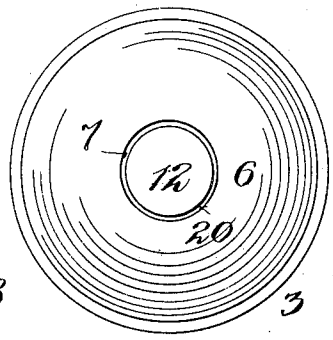


Fig. 8.

Fig. 6.

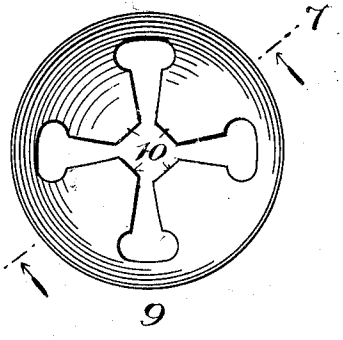


Fig. 3.

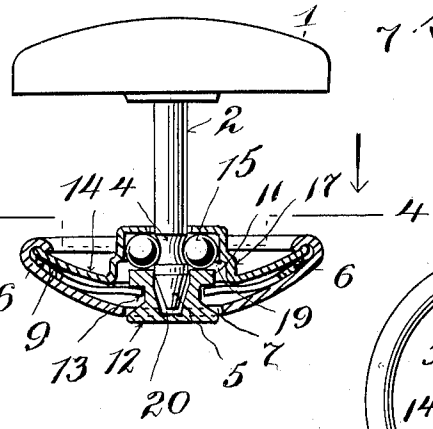


Fig. 4.

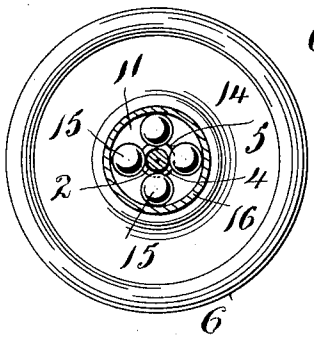


Fig. 5

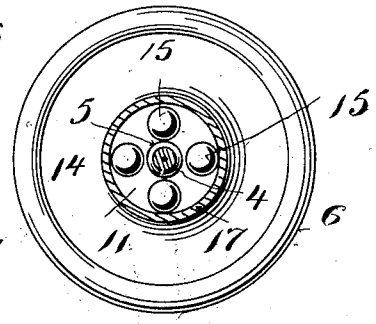


Fig. 2.

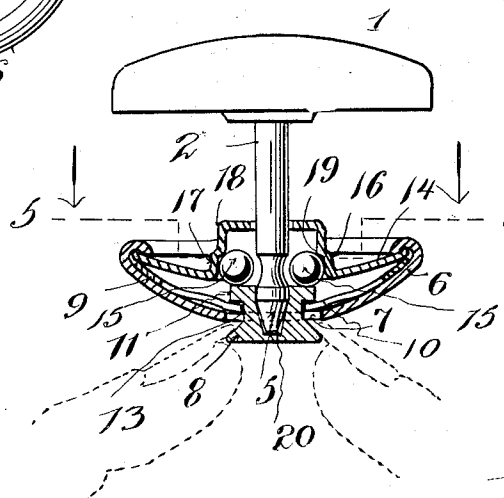
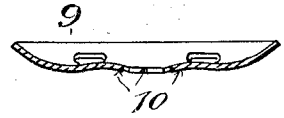


Fig. 7.



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UNITED STATES PATENT OFFICE.

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CLUTCH FOR STUDS.

No. 818,530. Specification of Letters Patent. Patented April 24, 1906.

Application filed August 26, 1905. Serial No. 275,966.

To all whom it may concern:

Be it known that I, ROBERT FISCHER, a citizen of the United States, and a resident of the city of New York, county of Kings, and State of New York, have invented certain new and useful Improvements in Clutches for Studs and Similar Articles, of which the following is a specification.

My object is to provide a simple and efficient device for attaching to the shank of shirt-studs for the purpose of providing a two-part stud. My improvements may also be used on hat-pins and the like, where it is desired to provide a detachable clutch for holding the same in place, although the device is particularly adapted for studs.

My object is to provide a clutch which will positively grip the button-shank so as to hold it firmly and so made that the parts are compact and can be contained in a small flat base, which need be no larger than the ordinary base now used.

In the drawings forming part of this application, Figure 1 is a side elevation, partly in section, of my invention as applied to a shirt-stud. Fig. 2 is a similar view showing the method of separating the stud. Fig. 3 is a similar view to Figs. 1 and 2 with the parts united. Fig. 4 is a sectional view taken on the line 4 4 of Fig. 3 looking in the direction of the arrows. Fig. 5 is a sectional view taken on the line 5 5 of Fig. 2. Fig. 6 is a plan view of the spring. Fig. 7 is a section taken on the line 7 7 of Fig. 6 looking in the direction of the arrows, and Fig. 8 is an inverted plan view of the stud.

While my improvements are adapted for various articles in which a shank is to be provided with a clutch, I have found the same to be particularly adapted for use on shirt-studs, where a flat and small base is necessary, and I will therefore describe my invention as forming part of a stud.

A stud usually comprises three parts—the head, which is here shown at 1, the shank 2, and a base 3. As is well understood, the base and head through their connection, the shank, serves to hold the parts of a garment together, as well as providing ornamentation. My improvements relate particularly to the base and to the shank, and wherever I employ the word "base" I desire it understood that I mean to include any device for holding a shank against being withdrawn from the clothing, &c.

The head of the stud may be of any desired form and ornamentation so far as my improvements are concerned, and the shank is provided with a recess, which herein consists of a groove 4, which surrounds the same. The end 5 of the shank is preferably made conical for reasons which will appear hereinafter.

The base consists of a shell 6, which may be altered in form, but which is herein made slightly cup shape to provide a space for the working parts. This shell is provided with an aperture 7, in which a finger-piece 8 is adapted to move. Within the shell rests a spring 9, which is inserted therein after the finger-piece 8 has been sprung into place. The spring may be stamped out of flat material and is provided with inward projections 10 and is bent so as to cause the projections to normally lie above the bottom of the shell. The finger-piece 8, which is adapted after being inserted in the central opening in the spring to be held thereby, consists of a top plate 11, a gripping end 12, and an intermediate reduced portion 13. As before stated, the spring which engages about the part 13 is adapted to retain the finger-piece in place. When the parts are to be assembled, a retaining-cup 14 is secured to the shell, in which is contained a gripping member, which herein consists of balls 15. The cup is provided with a central and vertical cylindrical portion 16, which is of one diameter 17 at the bottom and of a smaller diameter at the top 18, thus providing a shoulder 19, against which the balls are adapted to press when forced upwardly. The top of the cup is provided with an aperture to allow the button-shank to move therein. The cup and shell are secured together by turning over the edge of the latter.

The parts of the stud are joined by inserting the shank, as shown in Fig. 1, into the clutch until the end 5 enters an opening in the finger-piece, when the finger-piece is moved therewith against the action of the spring, when the balls are free to move into the larger part of the cup. The parts will then be in the position shown in Fig. 2, with the balls opposite the groove 4 of the shank. When the finger-piece is released, the upward

movement of the same caused by the spring causes the balls to be moved inwardly as they press on the shoulder 19 until they enter partly into the groove 4 and continue to the limit of the movement. The parts are then in the position shown in Fig. 3, when the shank is firmly gripped by the clutch. No pulling on the shank can loosen the same from the clutch. When it is desired to separate the parts, the finger-piece is pulled down and at the same time the shank is pulled upwardly, when it will be withdrawn from the clutch.

While I have specifically described one embodiment of my invention, I do not wish to be limited to the exact construction in the scope of the following claims except where such details are positively included therein, as various changes may be made without departing from the spirit of my invention.

Having described my invention, what I claim is—

1. An article of the class described, having a shank provided with a groove, a clutch therefor, comprising a retaining-chamber having a shoulder, balls in said chamber which engage on said shoulder and enter the groove of the shank, thereby gripping the latter, and a finger-piece adapted to move said balls in and out of engagement with said shank.

2. An article of the class described, having a shank provided with a groove, a clutch therefor, comprising a retaining-chamber, balls therein adapted to engage in the said groove to grip the said shank and a finger-piece adapted to move said balls in and out of engagement with said shank.

3. An article of the class described having a shank provided with a groove, a holder for the same comprising a curved base, a finger-piece therein adapted to be operated from the exterior to release the shank, a leaf-spring adapted to hold the said finger-piece, a cup secured to the base, and having a chamber, balls in said chamber and means whereby when the shank is inserted in the holder the finger-piece will cause the balls to enter into engagement in the groove of said shank.

4. An article of the class described having a shank provided with a groove and a conical end, a holder for the shank comprising retaining members having a chamber in which are provided balls, a finger-piece 8 having a top plate 11 adapted to retain said balls in the chamber, said balls being adapted to engage the shank.

5. An article of the class described comprising a shank having a groove, and a conical end, a holder therefor, comprising a base 6, a leaf-spring 9, in the base, a finger-piece 8, held by the said spring, a cup 14 secured to the base and having a chamber provided with a shoulder, balls in the said finger-piece whereby when the finger-piece is moved upwardly the balls will be caused to press on the said shoulder and enter the groove in the shank the said shank being adapted to be released upon the outward movement of the finger-piece.

Signed this 25th day of August, 1905.

ROBERT FISCHER.

Witnesses:

CHARLES G. HENSLEY,

GUSTAVE HUONOW,