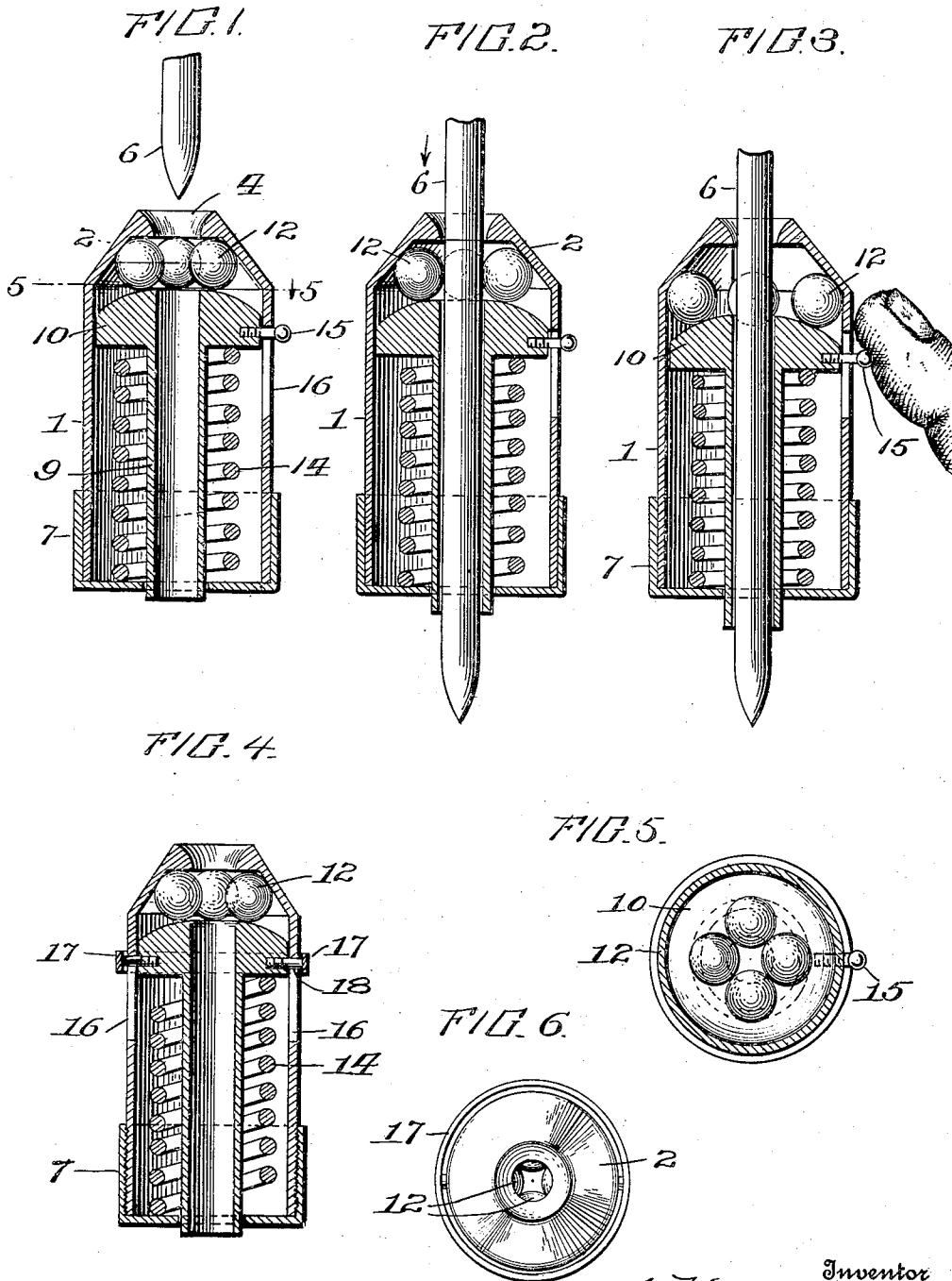


E. R. SHEPPARD.
SCARF PIN RETAINER.
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1,053,883.

Patented Feb. 18, 1913.



Witnesses
R. S. Troegner.
Andrew Smith.

Inventor
Erle R. Shepard

By

Eugene C. Brown

Attorney

UNITED STATES PATENT OFFICE.

ERLE R. SHEPPARD, OF NEW YORK, N. Y.

SCARF-PIN RETAINER.

1,053,883.

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To all whom it may concern:

Be it known that I, ERLE R. SHEPPARD, a citizen of the United States, residing at New York city, in the county of New York and State of New York, have invented certain new and useful Improvements in Scarf-Pin Retainers, of which the following is a specification.

My invention relates to scarf-pin retainers in which means are provided to automatically grip and retain a scarf pin and prevent the pin from becoming loose or from being surreptitiously removed from a scarf, and has for its main object to provide means for readily releasing the gripping devices of the retainer, from the scarf pin.

One of the objects of my invention is to provide a clutch in which the gripping device is entirely free and separate from the spring-pressed plunger. In prior devices of this character with which I am familiar, the ball gripping devices are retained in sockets in a carrier and are moved longitudinally of the clutch casing with said carrier. My present invention greatly simplifies the construction of such clutches, inasmuch as the gripping balls are entirely free and are merely held in operative position against the tapering wall of conical end or nose of the casing by a spring-pressed plunger having a tapering or conical head.

In the accompanying drawings, which illustrate the preferred embodiments of my invention, Figures 1, 2 and 3 are longitudinal sections of one form thereof; Fig. 4 is a longitudinal section of a modified form; Fig. 5 is a cross-section on the line 5—5 of Fig. 1; and Fig. 6 is a top plan view of Fig. 4.

The tubular casing 1, is reduced at one end 2, made conical in outline and provided with an insertion opening 4, to receive a scarf pin 6. The opposite end of the casing is closed by means of a cap 7, secured thereto in any suitable manner and provided with a central opening for the hollow stem 9 of the plunger 10.

The steel or other balls 12, which constitute the gripping elements, are independently mounted within the conical clutch chamber adjacent the insertion opening and are normally maintained in operative position by the conical face of the plunger 10, which is yieldingly held by the spring 14. The plunger may be retracted by means of a pin or button 15, projecting through the

casing and slidable in a slot 16, therein. Instead of a pin, a ring or band 17, encircling the casing and connected by means of opposite screws or rivets 18, may be employed as the operating member, as illustrated in Figs. 4 and 6.

In operation, when the scarf pin is inserted through the opening 4, the balls are forced apart and press downwardly upon the end of the plunger which yields downwardly as indicated in Fig. 2, the pin being permitted to pass freely through the bore of the hollow stem 9. The angle or slant of the end of the plunger 10 is made less than that of the tapering end wall of the casing 2, so that the pressure exerted through the clutch balls upon the pin is the resultant of the pressure from the plunger and the casing, as will be evident from Fig. 2. If now the pin is pulled in the opposite direction, the balls will be wedged tightly between the tapering inner walls of the conical end 2 and will grip the pin in a manner to prevent any relative movement between the clutch and the pin. When it is desired to release the pin, the balls may be instantly withdrawn by pressing the finger upon the pin 15, in the manner indicated in Fig. 3, thereby depressing the plunger and permitting the balls to roll down the inclined face of the plunger and away from the pin.

The advantages of my construction will now be appreciated by those familiar with clutch mechanism. By forming the plunger head with a tapering or conical operating face, the balls are caused to fall or roll away from the pin as soon as the clutch is released and they remain entirely out of contact with the pin while it is being removed. Furthermore, the balls will have no tendency to roll toward or into the central aperture or bore of the plunger after the pin is removed, but will be brought into symmetrical relation around the center by the positive action of the plunger when it is released by the finger of the operator. This feature is also of great importance in the practical operation of the clutch.

While I have particularly described my clutch as a scarf pin retainer, it is obvious that it may be employed as a hat pin guard and may also be used in other relations as a clutch device. I have described in detail the particular construction illustrated in the accompanying drawings for the purpose of disclosing embodiments of my invention, but

I am aware that various changes may be made therein without departing from the spirit of my invention as defined by the appended claims.

5 Having now set forth the several features of my invention which are new in this art and the functions which they perform in a clutch, I claim:—

10 1. A clutch or pin-retainer having a casing provided with a slot extending longitudinally thereof, an inclined tapering inner wall and an insertion aperture adjacent thereto, a spring-pressed plunger having an operating device projecting through said slot, said plunger having a conical end face and provided with a central aperture, a plurality of gripping devices loosely disposed in the chamber between said inclined inner wall and said conical end face, said conical end face being inclined at a less angle than said tapering inner wall so that the pressure upon the pin is a resultant of that exerted from the plunger-head and from the casing-wall, and a cap on the end of the casing opposite the tapering wall and having an aperture in alinement with said insertion aperture.

20 2. A clutch or pin-retainer having a casing provided with a longitudinally extending slot and having a conical end provided with an insertion aperture, and a cap closing the opposite end of said casing and having an opening therein, a plunger having a ta-

pering end face and a hollow stem projecting through said opening, an operating device carried by said plunger and projecting through said slot, and a plurality of spherical clutch members freely disposed between said conical end and said tapering end face, said tapering end face being inclined at a less angle than said conical end of the casing so that the pressure exerted through the clutch members upon the pin is a resultant of that exerted from the plunger head and from the casing.

3. A clutch or pin retainer having a casing provided with a conical end having an insertion aperture, and a cap closing the opposite end of said casing and having a tapering end face and a hollow stem projecting through said opening, and a plurality of spherical clutch members freely disposed between said conical end and said tapering end face, said conical end of the casing being inclined at a greater angle than the tapering end face of said plunger, so that the pressure exerted through the clutch members upon the pin is a resultant of that exerted from the plunger head and from the casing.

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

ERLE R. SHEPPARD.

Witnesses:

MILDRED WAHLBERG,
OTTO V. BALLEMBERGER.