

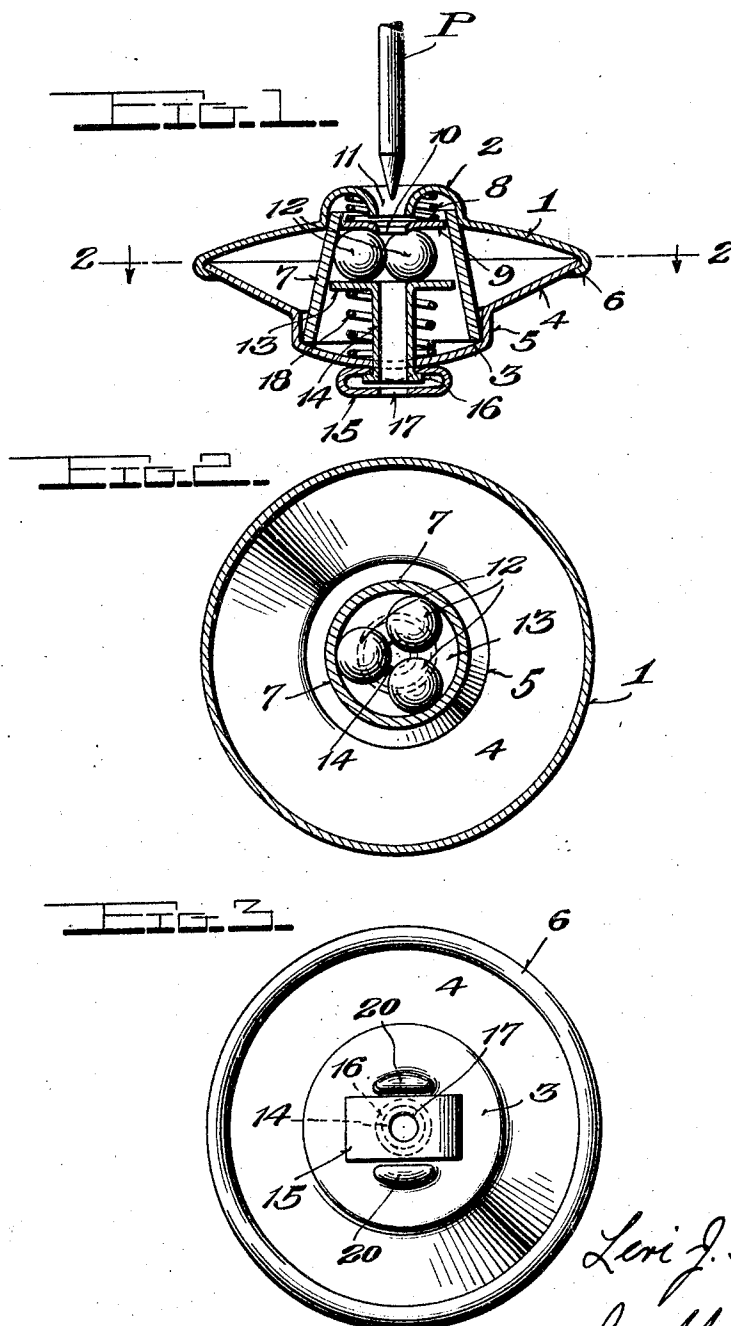
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PIN AND LIKE SECURING DEVICE

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PIN AND LIKE SECURING DEVICE.

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To all whom it may concern:

Be it known that I, LEVI J. ROY, a citizen of the United States, residing at Providence, in the county of Providence and State of Rhode Island, have invented new and useful Improvements in Pin and like Securing Devices, of which the following is a specification.

This invention relates to certain new and useful improvements in pin and like securing devices, and the primary object thereof is to provide a device of this kind which effectively grips the pin or the like and which at the same time can be easily and quickly released in order to be disengaged from the pin or other object gripped.

A further object of the invention is to provide a device of this kind which is of simple and economical construction and of compact assemblage, and still efficient in operation.

With the above and other objects in view, the invention resides in the construction and combination of parts now to be described and later claimed.

In the drawings:

Figure 1, is a vertical sectional view of the invention;

Figure 2, is a section on line 2—2 of Figure 1, and

Figure 3, is a bottom plan view of a modified form of the invention.

In proceeding in accordance with the present invention, an outer shell 1 is employed having a raised annular hollow dome 2, the latter of concavo-convex section.

The bottom of the shell is composed of a cup-like member 3 having an annular portion 4 extending outwardly from the upwardly extending wall 5, the free edges of the shell 1 being rolled at 6 over the portion 4 so as to rigidly connect the parts. A substantially cone-shaped sleeve 7 is disposed within the shell and has its lower end seating on the bottom 3 and against the wall 5, while its upper end engages within the dome 2. A coil spring 8 is arranged within the dome 2 and engages a disk 9, the disk 9 having a central opening 10 in register with a flared opening 11 formed at the center of the dome 2, the latter opening affording an inlet for the pin P. A series of balls 12 engage the disk or plate 9 and are held upon the flanged end or head 13 of a hollow stem 14; a finger piece 15 being engaged about the lower end of the stem 14, and the latter end

of the stem being flanged at 16 into engagement with the finger piece 15. The finger piece 15 has a central hole 17 to receive the pin, and as shown in Figure 1 projects below the bottom 3 of the shell so as to be freely accessible for operation. A coil spring 18 surrounds the stem 14 and seats on the bottom 3 and against the top flange or head 13 of the stem.

In Figure 3 of the drawings a modified form of the invention is shown, in which the bottom 3 of the shell is formed with raised portions or lobes 20 which are spaced and which receive the finger piece 15 therebetween.

In operation, it will be seen that due to the cone formation of the sleeve 7, the pin P upon insertion through the apertures 11 and 10, will force the balls 12 downwardly against the action of the spring 18, the pin then passing through the interior of the stem 14 and through the aperture 17 of the finger piece 15, and upon release, the spring 18 will expand and wedge the balls against the smaller end of the sleeve 7, which latter acts as a cam to force the balls against the pin P, whereupon the device will grip the pin and will be prevented from downward movement, or movement toward the point of the pin.

To release the device, it is merely necessary to hold the shell with one hand, and by grasping finger piece 15, pull the latter downwardly, thereby releasing the balls from their wedging engagement with the sleeve 7, whereupon the device can be removed from the pin.

In the modified form of the invention shown in Figure 3, when the finger piece 15 is pulled downwardly and turned at right angles and engaged over the lobes or raised portions 20, the balls will be held out of pin clutching or gripping position, thereby allowing the device to be easily removed from or applied to the pin.

While I have illustrated and described the device as used in connection with a pin, to prevent loss of the latter, still it will be observed that the invention has other uses as a clutch or grip, and therefore it is not to be considered as in any way limited to use merely for or with pins.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent is:—

1. In a device of the type set forth a

shell having a top formed with a centrally perforated dome of concavo-convex cross-section, a bottom having an upwardly extending wall formed with an annular portion secured to the top, a cone-shaped sleeve having its base end seated on the bottom and against said wall thereof and having its upper end engaged on the interior of the dome, a centrally perforated plate slidable in the sleeve, a coil spring in the dome engaging the plate, a hollow stem having a flanged head, a series of balls engaged with the sleeve and with said stem head and plate, the outer end of the stem extending through the bottom of the shell, a finger piece on said outer end of the stem for operating the latter and a coil spring surrounding the stem and seated on the shell bottom and engaged against the head of the stem.

2. In a device of the type set forth, a casing having a perforated dome and an annular wall in its bottom, a cone shaped sleeve having its base end seated on the bottom and engaged with said wall thereof and having its upper end engaging in the dome, a plate slidable in the sleeve, a spring in the dome tensioning the plate, a stem in the sleeve having a flanged upper end, a series of balls between the stem flange and the plate, a spring encircling the stem and engaged with the flange thereof and seated on the casing bottom, and the outer end of the stem extending through the casing bottom and means connected to the stem to operate same.

3. In a device of the type set forth, a casing having a cone-shaped sleeve on its interior, a spring pressed plate slidable in the sleeve, a series of balls in the sleeve engaged with the plate, and spring pressed means slidable in the sleeve for engaging the balls, said means extending through the casing so as to enable sliding thereof to release the balls.

4. In a device of the type set forth, a casing, spring pressed means perforated to receive a pin or the like arranged in the casing, balls engaged with said means, second spring pressed means in the casing perforated to receive the pin and engaged with the balls to hold same against the first named

means, and means in the casing engaged with the balls to normally move same toward the pin to grip the latter.

5. In a device of the type set forth, a casing having cam means on its interior, a series of balls engaged with the cam means, spring pressed means on opposite sides of the balls to tension the balls and to hold same against the cam means, and means to enable operation of one of said spring pressed means to release the balls from the cam means.

6. In a device of the type set forth, a casing having cam means on its interior, spring pressed balls in the casing engaged with the cam means, means to release the balls including a member disposed in part exteriorly of the casing, and a pair of spaced projections extending outwardly from the casing and in one position of said part of the member receiving same in the space between the projections and in a second position of said part of the member engaging the latter to hold the balls in inoperative position.

7. In a device of the type set forth, a casing, gripping means on the interior thereof, means movable inwardly of and operable from without the casing to render the gripping means inoperative, and means to hold said second means against movement inwardly of the casing so as to render the gripping means inoperative.

8. In a device of the type set forth, a casing, gripping means on the interior thereof, means projecting without the casing to render the gripping means inoperative, a part on said second means to operate same, and a pair of spaced members which in one position of said part receive the latter in the space therebetween, and in a second position of said part holds said second means inoperative.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

LEVI J. ROY.

Witnesses:

S. N. BARRY,
J. A. MILLER.