Oct. 13, 1936. C. J. CACCAMISE 2,057,006

SAFETYPIN

Filed May 5, 1936

Fig. 1.

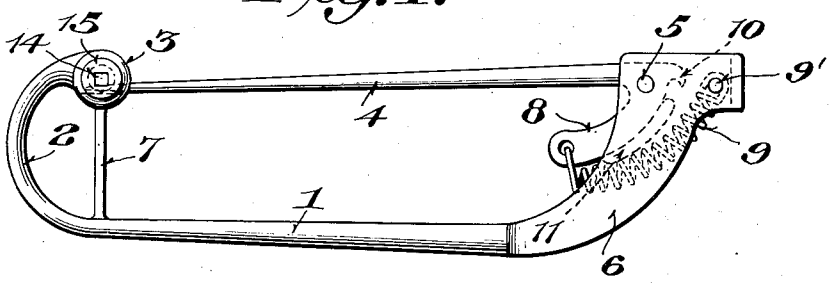


Fig. 2.

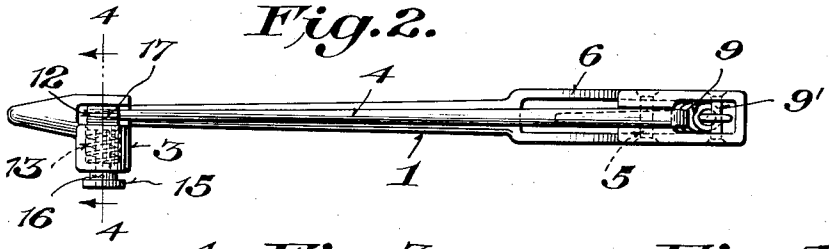


Fig. 3.

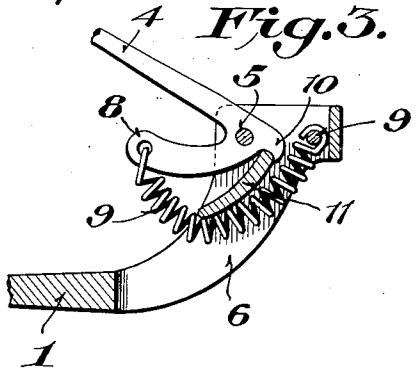
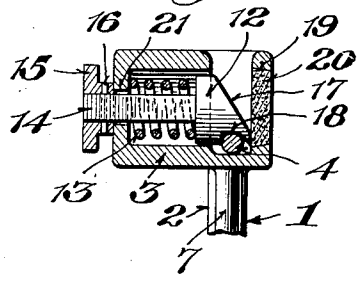


Fig. 4.



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SAFETYPIN

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Application May 5, 1936, Serial No. 77,987

7 Claims. (Cl. 24—160)

This invention relates to safety pins and the primary object thereof is to provide a pin of this character wherein the pin proper or tongue is automatically moved to and normally held, in closed position, following opening of the pin, with a maximum immunity against accidental injury to users, and in the instance of children to positively prevent the pin from being swallowed in open position thereof.

A further object of the invention is to provide automatic means for additionally latching the pin in closed position, which means is normally in operative position and upon engagement with the pin is moved to allow the pin to occupy closed position, and then returned to normal position so as to positively latch the pin in its closed position.

The invention has further and other objects which will later be set forth in the course of the following description.

In the drawing:

Fig. 1 is a side elevation of the invention in closed position of the pin;

Fig. 2 is a top plan view;

Fig. 3 is an enlarged fragmentary detail view partly in section showing the pin in open position; and

Fig. 4 is a section on line 4—4 of Fig. 2.

In proceeding in accordance with the present invention a body 1 is provided having a main portion which is curved at one end at 2, and is formed with a keeper 3 to receive the free end of a pointed bar or tongue 4, the latter constituting the pin proper. The tongue 4 is pivoted at 5 to and within a housing 6 which is formed on the opposite end of the body 1. The keeper 3 is preferably supported by a strut 7 secured thereto and to the body 1, as shown in Fig. 1. An arm 8 is connected to the pivoted end of the tongue 4 and projects toward the keeper 3 and lies in the space between the tongue 4 and the main portion of the body 1. A coil spring 9 lies within the housing 6 and is connected at one end at 9' to the latter and at its opposite end to the free end of the arm 8. A stop 10 is preferably formed on the pivoted end of the tongue 4, and is engageable with one end of a member 11 which is mounted within the housing, thereby to restrict the extent of opening movement of the tongue. As shown in Fig. 3, the member 11 has its opposite end engaged by an intermediate portion of the spring 11 so as to provide an abutment, which upon opening movement of the tongue effects increase in the length of the spring 11, thereby to increase the tension of the spring on the arm 4 so that when the arm 4 is released the latter will have its free end positively moved into the keeper.

The keeper has a slidable latch 12 mounted therein which is tensioned by a coil spring 13. The stem 14 of the latch has a head 15 secured thereto by a pin 16. Referring to Fig. 4 it will be seen that the nose 12 of the latch is bevelled as indicated at 17 and has a notch 18 on its lower side to receive the tongue 4 thereby to positively latch the latter in position. In order to assemble the latch within the keeper an opening 19 is provided at one end of the keeper into which the latch is slid, following which the finger piece 15 is applied and secured by its pin 16 and then the opening 19 may be closed by solder 20 or other means. The stem 14 of the latch is of non-circular formation, as is the opening 21 in the keeper in which the stem slides, thereby to prevent the stem from rotating although permitting free sliding movement thereof.

From the foregoing it will be seen that in order to use the pin it is first necessary to withdraw the latch, by means of its head 15, following which the pin must be manually moved out of the keeper against the tension of the spring 9. After the pin has been applied in position as a fastener, upon release of the tongue, the spring will act to positively move same into the keeper and will automatically displace the latch, permitting the free end of the tongue to pass the latter, whereupon the latch under the influence of its spring will be restored to its normal position closing the keeper. Thus it will be seen that a double security is afforded against accidental movement of the tongue to its open position. In this regard it will be observed that even though the latch be accidentally moved, the pin will still remain in the keeper unless force is exerted to move same against the tension of the holding spring 9. In this manner maximum security is had against opening of the tongue, which is a desideratum, especially in the instance of an infant swallowing the pin.

What is claimed is:

1. In a safety pin, a body having a keeper at one end, a tongue pivoted to the opposite end of the body and having an arm connected thereto which extends below the under side of the tongue and toward the keeper, a spring connected at one end to the body at a point outwardly beyond the pivotal point of the tongue and connected at its opposite end to the arm, a member carried by the body to engage the spring between its ends to accelerate the action of the spring to return the tongue to closed position with its free end

within the keeper, a spring pressed latch to hold the tongue in the keeper, said latch having a part which upon closing movement of the tongue automatically opens the latch to admit the tongue end into the keeper, and a stop adjacent the pivoted end of the tongue to engage said member to restrict the opening movement of the tongue.

2. In a safety pin, a body having a keeper, a pivoted tongue having a free end receivable in the keeper, an arm carried by the tongue and extending toward the body and keeper, a spring connected to the body and arm for holding the tongue engaged with the keeper, and a spring pressed latch for holding the tongue in the keeper.

3. In a safety pin, a body having a keeper, a pivoted tongue having a free end receivable in the keeper, an arm carried by the tongue and extending toward the body and keeper, a spring connected to the body and arm for holding the tongue engaged with the keeper, and a spring pressed latch for holding the tongue in the keeper, said latch having a part, which upon engagement with the tongue is moved to admit the tongue in the keeper and then snaps over the tongue to hold the latter against movement out of the keeper.

4. In a safety pin, a body having a keeper, a pivoted tongue having a free end receivable in the keeper, spring means to normally maintain the tongue in the keeper, means for latching the tongue in the keeper, and means for holding the latching means in closed position and for permitting the latching means to be moved to admit the tongue into the keeper by and upon engagement of the tongue with the latching means.

5. In a safety pin, a body having a keeper, a tongue having a free end receivable in the keeper, means to normally hold the tongue in the keeper, and automatic means normally closing the keeper to latch the tongue in the keeper and formed to be moved to automatically admit the tongue into the keeper by and upon engagement of the tongue with the latching means.

6. In a safety pin, a body having a keeper, a tongue pivoted to the body and having a free end received in the keeper, spring means to tension the tongue so as to cause the free end of the latter to be normally engaged in the keeper, and means to maintain an increase in the tension of the spring means throughout the whole range of opening movement of the tongue.

7. In a safety pin, a body having a keeper at one end, a tongue pivoted to the opposite end of the body and having an arm connected thereto which extends below the under side of the tongue and toward the keeper and a spring connected at one end to the body at a point outwardly beyond the pivotal point of the tongue and connected at its opposite end to the arm.

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