Feb. 2, 1932. G. BODEN 1,843,703

SELF LOCKING PIN FASTENER

Filed May 10, 1928

Fig. 1.

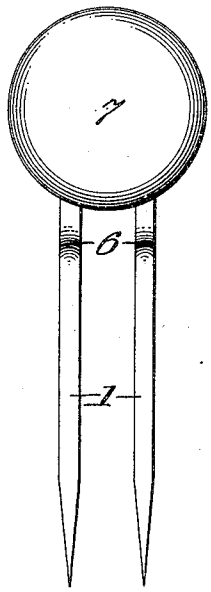


Fig. 2.

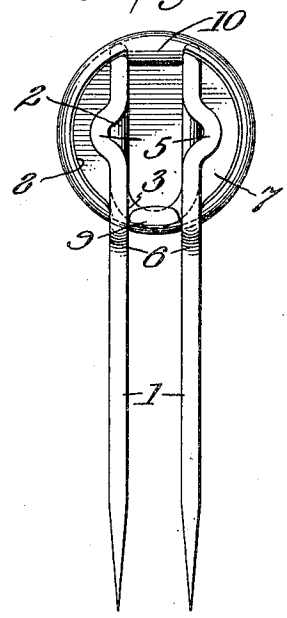


Fig. 3.

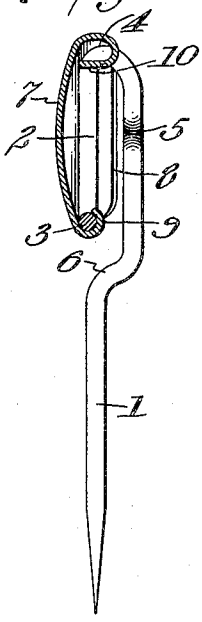
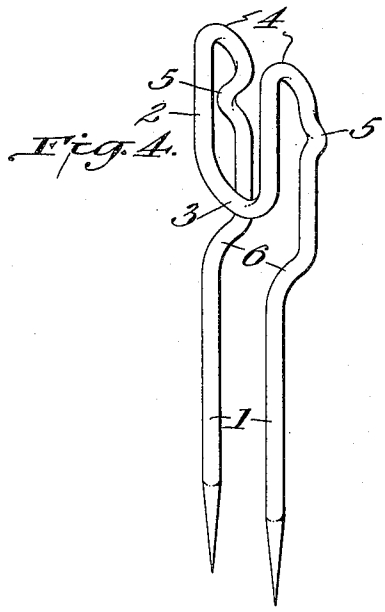


Fig. 4.



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Patented Feb. 2, 1932 1,843,703

UNITED STATES PATENT OFFICE

GEORGE BODEN, OF WATERBURY, CONNECTICUT, ASSIGNOR TO SCOVILL MANUFACTURING COMPANY, OF WATERBURY, CONNECTICUT, A CORPORATION OF CONNECTICUT

SELF-LOCKING PIN FASTENER

Application filed May 10, 1928. Serial No. 276,757.

This invention relates primarily to the type of pin fasteners used for securing covers to automobile seats and other parts, and also useful for other purposes, in which there is a pin element supplied with a cap or shell, the pin in the first instance being adapted to secure the cover or other article in place by a pinning action; or the pin may be constructed to serve as or in connection with either element of a snap fastener, as is well known.

The pin of this invention is a modified form of the pin forming the support of the cap or shell of the Boden, King & Chapman Patent, No. 1,604,801, dated October 26, 1926, and the cap or shell of the present invention may be secured to the head of the pin substantially as in the patent referred to.

The present invention consists in forming the upper portions of the legs of the pin with outwardly bent wave-like lateral projections which serve as obstructions, which make difficult the accidental escape of the pin, the legs of the pin below the obstructions being offset to increase resistance to the escape of the pin so that in using the pin, the material is stretched between the obstructions in order to pass them and then allowed to contract in the space between the legs above the obstructions, thus forming a locking feature at the points of least resiliency in the pin structure to retain the pin in set position and resist the accidental displacement of it and requiring some force to displace or withdraw the pin, as I will proceed now to explain more fully and finally claim.

In the accompanying drawings illustrating the invention, in the several figures of which like parts are similarly designated, Figure 1 is a front elevation; Fig. 2 is a rear elevation, and Fig. 3 is a longitudinal section of one form of pin embodying this invention. Fig. 4 is a front perspective view of the pin itself detached.

The pin itself comprises a length of wire bent upon itself so as to form the legs 1, which are pointed at their ends, and a head formed by the overlying looped member 2 having the bend 3 and the humped portions 4. Adjacent to the head the legs are bent laterally outward, to form the wave-like obstructions 5 which are located at a distance slightly below the humped portions 4; and the outside distance between these obstructions 5 is greater than the outside distance between the legs. The result of this construction is that when the pin is stuck in an article, the resilience of the legs of the pin will admit more or less of the goods between them, but in order to pass the pin through the goods and over the obstructions 5, the goods will be stretched, and then, after the obstructions are passed, the goods will contract into the narrower space below the humps in the head of the pin and thereby be locked against accidental escape; considerable force being required to withdraw the pin. To add further resistance to the escape of the pin, or, in other words, to increase the self-locking ability of the pin, the legs of the pin below the obstructions 5 may be offset forwardly as at 6, at substantially right angles to the obstructions 5.

The pin element of this fastener involves formed waves on the legs of the pin opposite the pin head, the theory of which is that a certain determined quantity of material is forced up over the pin and over the outwardly extending waves or obstructions, the quantity of material being determined by the distance between the pin legs at their points. It is to be noted that the distance between the obstructions is greater than the distance between the legs of the pin at their points, as already noted, and as the material is forced up over these obstructions, it is stretched, somewhat, and the pin legs tend to yield inwardly, and the material is locked over the tops of the obstructions. The formation of the pin legs with the offsets 6, near the out-

side of the cap or shell, also tends to create a resistance to the loss and withdrawal of the pin.

A cap or shell 7, shown as having a flange 8 on its back, is applied to the head of the pin by the engagement of the humped portions 4 of the pin with the upper portion of the flange and the bend 3 with a tongue 9 projecting from the cap or shell and overturned upon the bend. A lug 10 projecting from the flange enters between the humped portions so as to keep these portions properly spaced apart.

The cap or shell 7 may be used simply as a finish, or it may constitute wholly or in part one element of a snap fastener.

As will be seen, the principle involved in the construction and operation of this pin fastener resides in the introduction of a quantity of material determined by the distance between the pin points, and forcing this quantity of material up toward the top and over the obstructions toward the humps. As already observed, the wire of the pin is most resilient near the points of the pin and the resiliency decreases as the humps are approached. When the pin is being mounted or set the material has the benefit of more resiliency through the lateral expansion of the pin legs than when it comes off, for the reason that the obstructions or retaining part of the lock is nearer the top of the legs.

One purpose of bending the looped head over the legs is to provide sufficient space between the legs and the looped head and its attached cap or shell to permit the pin to be driven into the material clear up to its humped portions or humps.

Variations in the details of construction are permissible within the principle of the invention and the scope of the claims following.

What I claim is:—

1. A self-locking pin fastener, comprising a pin member having spaced apart legs and a head, the legs of the pin adjacent to the head having laterally and outwardly extending bends, and said legs below said bends being offset.

2. A self-locking pin fastener, comprising a pin member having spaced apart legs and a head, the legs of the pin adjacent to the head having laterally and outwardly extending bends, and said legs below said bends being offset toward the front.

3. A self-locking pin fastener, comprising a pin member having spaced apart legs and a head, the legs of the pin adjacent to the head having laterally and outwardly extending bends, and said legs below said bends being offset at substantially right angles to the bends.

4. A self-locking pin fastener, having spaced apart and pointed legs and a head, the legs next to the head being bent laterally away from one another to form obstructions, said legs being spaced apart a less distance than the distance between the bent out portions thereby to stretch the material on which the pin is set as it nears and passes the obstructions and then contracts between the legs above the obstructions so as to lock the pin in set position and thereby resist accidental detachment or escape, and offsets in said legs to aid in resisting the escape of the pin.

In testimony whereof I have hereunto set my hand this 8th day of May A. D. 1928.

GEORGE BODEN.