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A. D. PATCHEN

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TIE FOR MATTRESSES, CUSHIONS, ETC

Filed Nov. 17, 1931

Fig. 1.

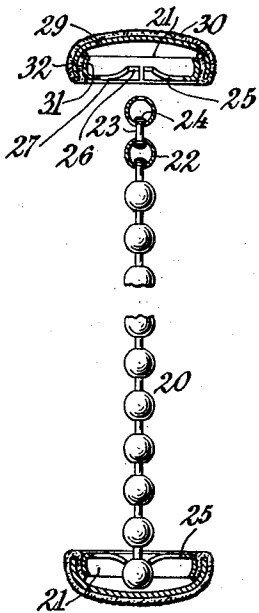


Fig. 3.

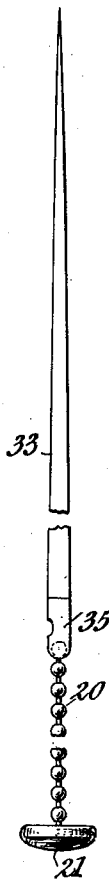


Fig. 4. Fig. 5.

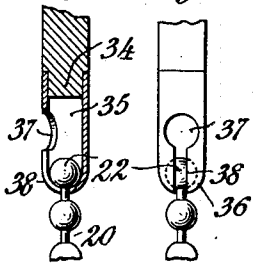


Fig. 8.

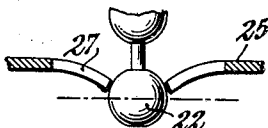


Fig. 9.

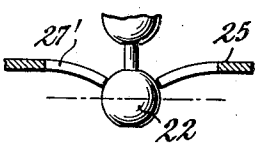


Fig. 7.

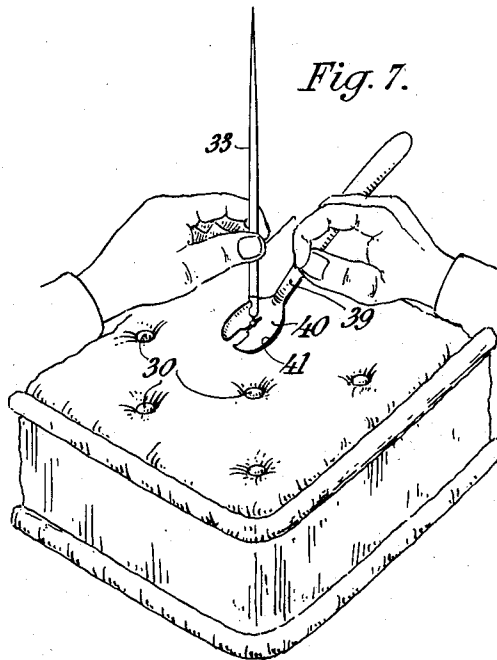


Fig. 2.

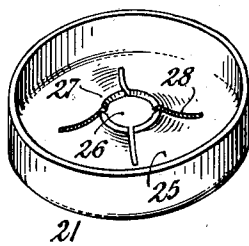
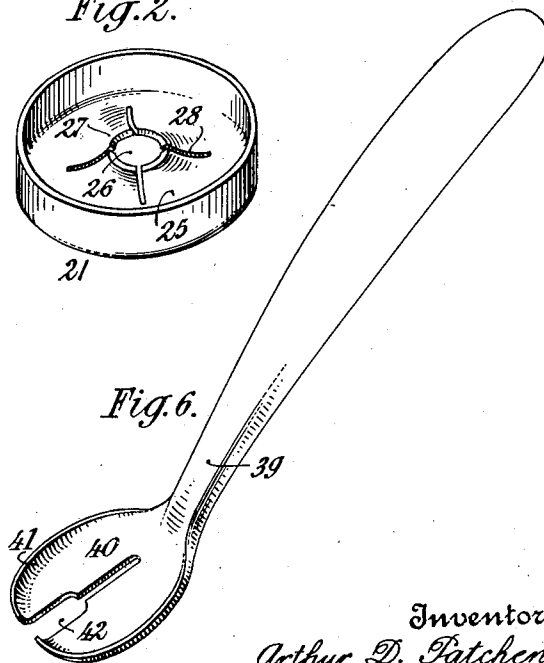


Fig. 6.



Inventor
Arthur D. Patchen,

By his Attorneys,
Fraser, Myers & Manley.

UNITED STATES PATENT OFFICE

ARTHUR D. PATCHEN, OF WATERBURY, CONNECTICUT, ASSIGNOR TO SCOVILL MANUFACTURING COMPANY, OF WATERBURY, CONNECTICUT, A CORPORATION OF CONNECTICUT

TIE FOR MATTRESSES, CUSHIONS, ETC.

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This invention relates to a mattress or cushion tie comprising a flexible connector and means for attaching a button to each of its opposite ends, the means of attachment being such that at least one of said buttons may be readily snapped over and into a secure holding engagement with one end of said connector after it has been drawn through the mattress or cushion. The attaching means may be either of the permanent type, which can not be separated after the parts have once been assembled without destroying the fastener, or it may be of the separable type, comprising a stud and a socket which are capable of being detached without destroying the fastener elements by the application of force greater than that which it is designed to withstand without separating.

In the accompanying drawing illustrating preferred forms of the invention:—

Figure 1 is an illustration of a mattress tie embodying the invention, parts being shown in section, the button at one end of the connecting element being attached and the other being detached.

Fig. 2 is a perspective view of the back element of one of the buttons.

Fig. 3 illustrates a needle adapted to draw the connecting element through a fabric structure, with a connecting element and button attached thereto.

Fig. 4 is a cross-sectional view of the rear or trailing end of the needle drawn to an enlarged scale, the attaching element of the needle being connected with the end ball of a chain.

Fig. 5 is a similarly enlarged side view of the trailing end of the needle and an attached portion of connecting chain.

Fig. 6 is a perspective representation of a tool adapted for use in applying a fastener embodying the invention to a mattress.

Fig. 7 is a perspective view illustrating the manner in which the connecting element of a fastener may be drawn through a mattress and held in place until a button may be attached.

Fig. 8 is an enlarged sectional diagram illustrating the end ball of a chain and the jaws

of a socket so proportioned as to serve as parts of a separable fastener.

Fig. 9 is a similar diagram, the parts being so proportioned as to serve as a permanent fastener.

Referring first to Fig. 1, the invention is illustrated as comprising a flexible connecting element 20 of relatively long and slender proportions, having buttons 21 to serve as protuberances or enlargements at its opposite ends. The connector may be in the form of a metal chain, and in the preferred form illustrated comprises a series of hollow balls 22 united by means of intervening links in the form of bars 23 extending through openings in the opposite sides of the balls and upset at their ends as at 24. Chains of this character are well known in the art and, except as used in combination with other elements, constitute no part of the invention herein claimed.

Either or both of the buttons at the ends of the connector may be constructed in accordance with the invention hereinafter to be claimed, so as to be readily attachable by anyone making use of the article as a mattress tie or for any other analogous purpose. The attaching means comprises a pair of snap fastener elements consisting of a male member or stud and a female member or socket, of which one element of the pair is a part of the button and the other element a part of the connector, and these snap fastener elements should be readily flexible in order that one may be easily snapped into an engaging relation with the other. In the preferred form herein disclosed, the back element of the button comprises, as best illustrated in Fig. 2, a flanged disk 25 having an opening 26 at the center surrounded by resilient jaws 27, which may be gradually flared inwardly from the portion of the disk surrounding the opening to its inner margin, the desired degree of resiliency being obtained by slitting the material radially as at 28 from the margin of the opening towards the flange of the disk.

The button may be completed in any appropriate manner, as, for example, by the application of a cap 29 (Fig. 1) and a

covering of suitable upholstering material 30, the edges of which may be clamped, as indicated, between flanges 31 of the back element of the button and flanges 32 of the cap.

When, as herein disclosed, a chain of the ball type is used, the size of the opening 26 of the back element of the button and the strength and curvature of the jaws 27 may be such that it will function as a snap fastener socket for the end ball of the chain which may serve as a snap fastener stud. When so used, the socket will be the resilient element and the ball will be the relatively rigid element of the fastener.

By properly apportioning the strength, form and dimensions of the socket element with respect to the ball or stud element, the fastener may be designed for use either as a permanent fastener or as a detachable fastener. In Fig. 8, for example, the jaws 27 of the fastener are illustrated as of the approximate size and form as compared with the size of the ball 22 to permit the ball to be withdrawn by the application of a sufficient degree of force. In Fig. 9 the jaws 27' are illustrated as of the approximate size and form as compared with the size of the ball to be brought into a clamping relationship with the ball when pulled outwardly and thus prevent its detachment from the button without destroying the parts of the fastener.

If the detachable type of fastener is used, the parts should be of such relative strength and form as to resist separation except by the application of a force materially greater than that which the tie or connector is intended to withstand in use.

To apply a mattress tie embodying the invention, one of the buttons may be attached to one end of the connector, the other end of which may be secured to a needle 33 (Fig. 3) by means of which it may be drawn through the mattress. One means of securing the end of the attaching element to the needle is illustrated in Figs. 4 and 5. Instead of the usual eye, the needle may be provided at its trailing end with an extending portion 34 of reduced diameter, to which may be soldered or otherwise secured the open end of a tubular attaching element 35, the other or free end being closed and of semi-spherical form as indicated at 36. The end ball 22 of the chain 20 may be inserted in an opening 37 and moved into the semi-spherical cavity at the end of the attaching element, a slot 38 being provided therein to permit the shank which connects the two end balls of the chain to be moved into its position of alignment with the longitudinal axis of the needle.

After the chain 20 has been drawn through the mattress by the needle, the upper surface of the mattress in the vicinity of the chain may be pressed downwardly by means of a

tool 39 having a spoon-shaped end portion 40 with upwardly-rolled edges 41 adapted to make firm contact with the surface of the mattress without cutting or tearing the material. This tool may be so placed, while pressing the mattress downwardly to the desired degree of compression to expose the end of the chain, as to cause the end balls of the chain to pass freely through a relatively wide portion of a notch 42 in the forked end of the spoon. After two balls of the chain have been pulled above the upper surface of the tool 39, the tool may be moved forwardly so as to cause the shank between the second and third balls of the chain to be embraced by the portions of the tool at opposite sides of the narrow portion of the slot 42, as indicated in Fig. 7. With the end of the chain thus firmly held by the tool, the needle may be removed from the end ball of the chain and one of the buttons 21 snapped into engaging relationship therewith, after which the tool may be withdrawn.

If the snap fastener is of the detachable type, its parts should be so proportioned and of such strength that the degree of force necessary to separate one of the buttons from the end of the chain will be materially greater than that which must be sustained by the tie during the normal use of the mattress.

The invention is not intended to be limited to the specific forms herein disclosed for purposes of illustration, but should be regarded as covering modifications and variations thereof within the scope of the appended claims.

What is claimed is:—

1. A mattress or cushion tie comprising a pair of buttons and an intervening substantially in extensible metal chain of a length conforming with the thickness of the mattress or cushion to be tied, one of said buttons being connected at one end of said tie by means of a pair of snap fastener elements comprising a socket and stud of which the former is a part of the button and the latter a part of the link at one end of the chain, the socket being sufficiently flexible to permit the button to be snapped over and into an engaging relation with an element of the chain at one end of the tie after the tie has been drawn through the mattress or cushion, but of such form and strength as to prevent separation when subjected to the stresses incident to normal service.

2. A mattress or cushion tie comprising a chain of connected metal balls of a length conforming with the thickness of the mattress or cushion to be tied and a pair of buttons each having a flexible socket therein of a size and degree of flexibility such that one of said buttons may be secured at each end of the tie by snapping the end balls of the chain into the sockets of the respective buttons, the sockets being of a form and strength such as to

prevent them from being separated from the ends of the chain by the stresses incident to normal service.

3. An upholstered button of the snap fastener type comprising a flanged disc having a centrally disposed perforation adapted to receive a snap fastener stud element, the material surrounding the perforation being separated into a plurality of resilient stud-retaining fingers by a plurality of radially disposed slits and the fingers being curved inwardly to facilitate the entrance of the stud and oppose its withdrawal, a cap having an inturned periphery of an internal diameter slightly greater than the outer diameter of the flange of the disc, a cover of upholstering material overlying the cap and having edges turned in and clamped between the flange of the disc and the surrounding peripheral portion of the cap.

In witness whereof, I have hereunto signed my name.

ARTHUR D. PATCHEN.

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