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(21) International Application Number: PCT/US91/00924 (22) International Filing Date: 12 February 1991 (12.02.91) (30) Priority data: 479,156 13 February 1990 (13.02.90) US (71)(72) Applicant and Inventor: CHAMINGS, Anthony, W. [US/US]; 7334 Middle Point, Dearborn, MI 48126 (US). (74) Agents: WEINTRAUB, Arnold, S. et al.; 3001 W. Big Beaver Road, Suite 504, Troy, MI 48084 (US). (81) Designated States: AT (European patent), AU, BE (Euro- pean patent), CA, CH (European patent), DE (European patent), DK (European patent), ES (European patent), FR (European patent), GB (European patent), GR (Eu- ropean patent), IT (European patent), JP, KR, LU (Euro- pean patent), NL (European patent), SE (European pa- tent).		Published <i>With international search report. Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.</i>
(54) Title: FLEXIBLE FASTENER HAVING TWO PINS AND FINGER GRIPS 		
(57) Abstract A flexible retainer (10) which may be used to attach papers and the like to a wall, bulletin board, etc. includes a body (12) formed from flexible material with a spacer section (14) and at least two finger grips (16, 18) extending outwardly away from the spacer section (14), and at least two pins (20, 22) extending from the body away from the grips (16, 18), the pins (20, 22) normally disposed in a non-parallel configuration so as to define an angle therebetween. The body (12) is deformable to temporarily align the pins (20, 22) in a substantially parallel configuration for insertion thereof into a wall or other surface.		

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FLEXIBLE FASTENER HAVING TWO PINS AND FINGER GRIPS**BACKGROUND OF THE INVENTION****Field of the Invention:**

The present invention relates to a fastener or the like for use in affixing papers to a bulletin board or wall. More particularly, the present invention relates to a flexible fastener or pin which is not easily dislodged.

Prior Art:

Many types of fasteners or retainers are known and in common use today for mounting papers or the like to a surface. For example, thumb tacks and the like have long been known. One variation of the thumb tack which has become popular in recent years is the "push pin". This type of retainer has a pin extending outwardly from a handle or "push" portion which is graspable by the fingers of the user. Unfortunately, push pins have one inherent drawback, in that, when used in a surface other than cork, they easily fall out of the surface in which they are pressed. For example, if these push pins are used to attach papers or the like to drywall, the push pins may fall out with the subsequent loss of attachment of the paper to the drywall material.

Another common application in which these push pins are less than optimal is in attaching material to divider walls in "modular" offices, which are in common use today. These push pins cannot consistently retain themselves in attachment to the dividing walls that define the modular office.

While the art has devised many fasteners, it is to be appreciated that there has not been, heretofore, a universal fastener of the type under consideration which is applicable to many types of surfaces.

For example, Grove, U.S. Patent 677,509 discloses a device for holding two portions of a cloth skirt fastened

together. The device of Grove includes a thin flat plate having hooks secured thereto, the hooks being bent in the general shape of fishhooks.

Clark, U.S. Patent 1,252,237 discloses a metal device having four prongs for attaching a price ticket or the like to an article or garment, but which is not applicable to the attachment of papers or the like to a wall or other vertical surface.

Potts, U.S. Patent 2,352,407 discloses a bendable fastener formed from a length of metal wire, and is analogous to a staple.

Tinnerman, U.S. Patent 2,390,751 discloses a modified staple adapted to secure a layer to a support. The staple of Tinnerman has a body, the ends of which are provided with integral return bends with downwardly extending legs, the legs being substantially parallel to one another. The device of Tinnerman appears particularly suited for assembling furniture or the like.

Schwartz, U.S. Patent 2,580,849 discloses a fastener for drapery headings and the like. The fastener of Schwartz includes a spring metal strap having prongs or points on opposed ends thereof, paired with a relatively rigid rod or wire having a hook formed therein by bending.

Goodman, U.S. Patent 3,634,178 discloses decorative appliques mountable on articles such as hair brushes, rings, etc. Each applique of Goodman has a pair of projections extending from the back thereof, the projections being substantially parallel to one another. These parallel projections are forced into passages in the article to be decorated, the passages diverging outwardly from a parallel configuration. The divergence of the passages from parallel bends the projections on the applique and creates tension in deforming the projections to retain the applique on the article.

While the prior art discloses various types of

fasteners and methods of attaching articles together, a need still exists in the art for a retainer which is usable in mounting papers or the like to a vertical wall, which is insertable into such a wall without passages being previously formed therein, and which is capable of gripping the wall in order to retain itself in an engagement therewith.

SUMMARY OF THE INVENTION

The present invention provides a improved retainer for fastening articles such as paper or the like to walls, bulletin boards, or other surfaces.

A flexible retainer or fastener in accordance with the present invention, generally, comprises:

- (a) a body formed from a flexible material, the body having a spacer section;
- (b) means for bending the body in response to finger pressure, and
- (c) at least a pair of spaced apart outwardly extending pins, the pins being normally disposed in a non-parallel, converging configuration so as to define an angle therebetween; and

wherein the body is deformable to temporarily align the pins in a substantially parallel configuration.

In use the body section is flexed to render the pins substantially parallel, whereupon they are projected into a mounting surface. Upon release of the fastener, the normal bias of the pins towards each other "locks" the fastener in position.

In one embodiment, the body may be formed of nylon.

For a more complete understanding of the present invention, reference is made to the following detailed description section, which should be read in conjunction with the accompanying drawings. Throughout the following description and in the drawings, identical reference

numbers refer to the same part shown in multiple figures of the drawings, in which:

BRIEF DESCRIPTION OF THE DRAWINGS

Figure 1 is a perspective view of a first embodiment of a fastener in accordance with the present invention;

Figure 2 is a cross sectional view of the embodiment of Figure 1; and

Figure 3 is a perspective view of a second embodiment hereof.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

Referring to Figure 1, a flexible fastener or retainer in accordance with the present invention is shown generally at 10. The retainer 10 includes a body 12 which is formed from a flexible material, such as nylon, another suitable plastic, a rigid elastomer, or the like. Of course, other materials of construction which afford the necessary "springiness" to allow the pins to be rendered parallel may be used.

As shown in Figures 1-2, the body 12 includes a substantially horizontal spacer section 14 for spacing a pair of pins 20, 22 longitudinally apart from one another. The spacer section 14 may, optionally, have a flat piece of spring steel 30 embedded therein for importing structural rigidity to the retainer. Two finger grips 16, 18 extend upwardly away from the opposite ends of the spacer section 14, and may be formed integrally as part of the body 12, as shown in the drawing. The finger grips, 16, 18 are for grasping by a user of the retainer 10, as shown in Figure 2. The finger grips 16, 18 may have notches 19 thereon, or may be otherwise textured, to facilitate grasping thereof. The finger grips 16, 18 provide a means for bending the body 12 in response to finger pressure.

The pins 20, 22 are fixedly mounted in hollow cavities 24, 26 provided in opposite ends of the body 12

for that purpose, and may be cast in place in the body 12. The cavities 24, 26 may be cylindrical, square, triangular, or other appropriate shapes to accommodate the pins 20, 22. The pins 20, 22 may be formed of steel, stainless steel, or other material. The pins 20, 22 extend outwardly from the body in a direction substantially away from the finger grips 16, 18. The pins each end in a point 21', 23', respectively, for penetrating a surface (not shown) for mounting.

A particularly novel feature of the present invention is that the pins 20, 22 are normally disposed in the body 12 in a non-parallel, inwardly converging configuration, so as to define an acute angle "a" therebetween, as shown in Figure 1.

The body 10 is deformable, as shown in phantom in Figure 2, to temporarily align the pins 20, 22 in a substantially parallel configuration for insertion thereof into a wall, bulletin board or similar structure. The retainer 10 is pressed through a medium to be mounted and into a mounting surface with the pins 20, 22 held in a substantially parallel configuration. Once pressure of the fingers of the user on the finger grips 16, 18 is released with the pins 20, 22 inserted in a wall or the like, the spacer section 14 tends to flex back towards its original configuration, thus, placing an inward pressure on the pins 20, 22. This inward pressure acts to securely retain the fastener 10 of the present invention in engagement with the wall or other surface.

In other words, once the flexing pressure is released, the pins 20, 22 are urged back toward their normally angularly inclined relationship. This angular bias, therefore, locks the fastener or retainer in place. Thus, any papers or the like affixed therewith are placed into position on the mounting surface. The retainer 10 of the present invention may be used in stretching and

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mounting skins during drying and/or curing thereof. Another possible use for the retainer 10 of the present invention is to mount it sideways in a wall and use it as a picture hanging hook. In this case, the lower finger grip may, optionally, be cut down to a shorter length. An additional advantage of the present invention is that a piece of paper may be mounted squarely to a wall with a single fastener 10.

Referring now to Figure 3, there is depicted therein an alternate embodiment of the present fastener or retainer, generally, denoted at 110. In accordance herewith the retainer 110 comprises a unitary body 112 having a pair of upstanding finger grips or grasping members 114, 116 which are interconnected by a bight portion or section 118 to define a generally, U-shaped body.

A pair of spaced apart pins 120, 122, depend outwardly from the bight section 118, as shown. The pins 120, 122 are normally angularly inclined with respect to each other, as in the first embodiment hereof.

In forming the pins 120, 122, they may be punched out from the bight section via a punch press or the like. This is especially advantageous where forming the retainer from a suitable metal such as steel or the like.

As in the first embodiment, the retainer 110 is used by flexing the grips 114, 116 toward each other to align the pins 120, 122 in a substantially parallel manner. Thereafter, the pins are projected through an article to be mounted, and therefrom into a mounting surface. Release of the finger grips 114, 116 causes the pins 120, 122 to be urged toward each other, thereby securely mounting an article or articles onto the mounting surface.

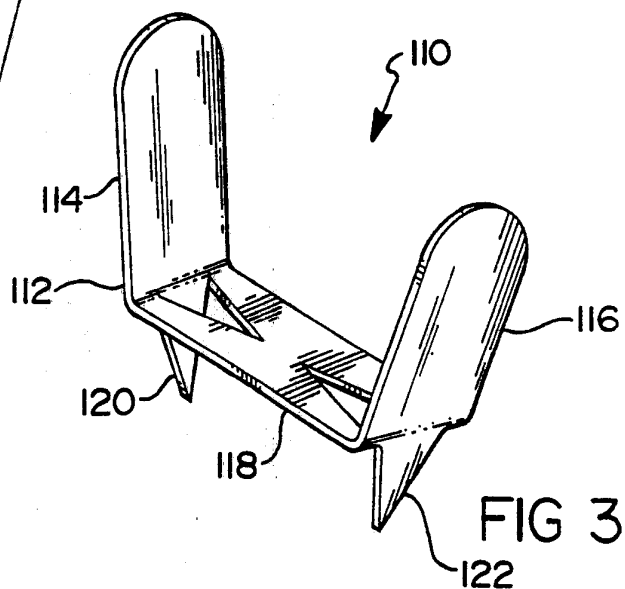
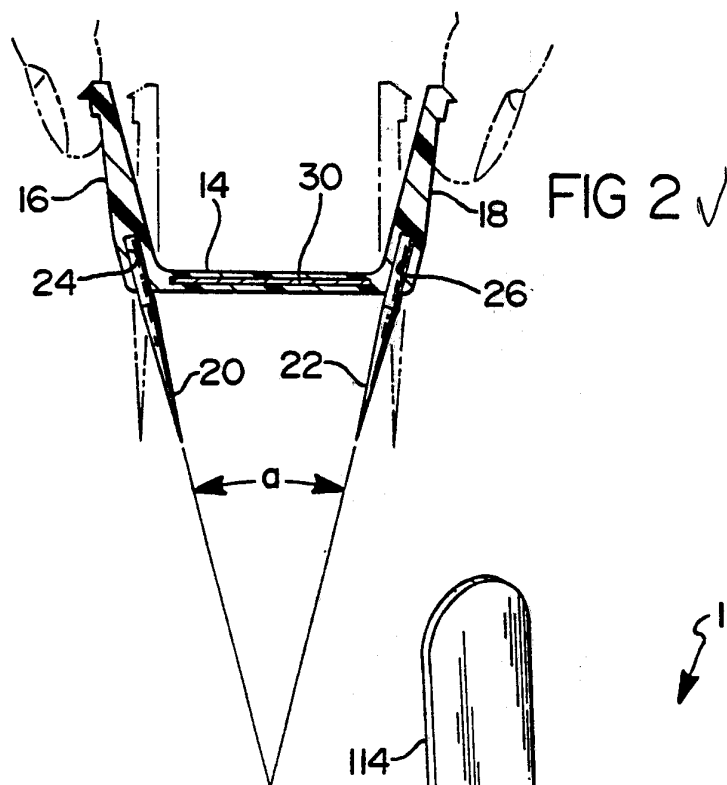
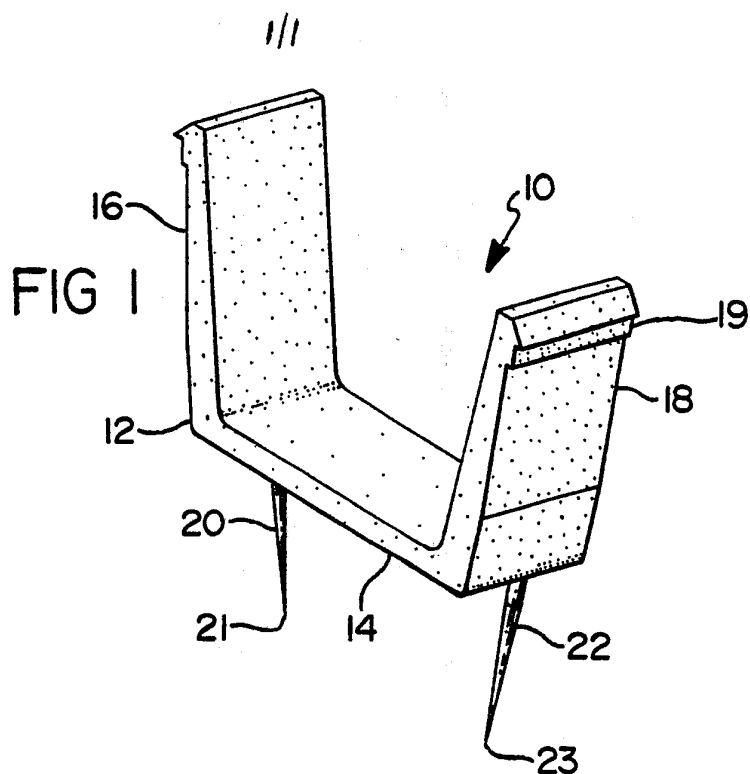
Although the present invention has been described herein with respect to a specific embodiment thereof, it

will be understood that the foregoing description is intended to be illustrative, and not restrictive. Many modifications of the present invention will occur to those skilled in the art. All such modifications which fall within the scope of the appended claims are intended to be within the scope and spirit of the present invention.

Having, thus, described the invention, what is claimed is:

CLAIMS

1. A flexible fastener, comprising:
 - (a) a body formed from a flexible material, the body having a spacer section;
 - (b) means for bending the body in response to finger pressure; and
 - (c) at least a pair of spaced apart outwardly extending pins, the pins being normally disposed in a non-parallel converging configuration so as to define an angle therebetween;wherein the body is deformable to temporarily align the pins in a substantially parallel configuration.
2. The retainer of Claim 1, wherein the body is formed of nylon.
3. The retainer of Claim 1, further comprising a piece of spring steel disposed in the body.
4. The retainer of Claims 1, wherein the means for bending comprises a pair of finger grips extending outwardly away from the spacer section for grasping by a user.
5. The retainer of Claim 4, wherein the finger grips are textured to facilitate grasping thereof.
6. The retainer of Claim 4, wherein the finger grips are integrally formed as part of the body.



INTERNATIONAL SEARCH REPORT

International Application No PCT/US91/00924

I. CLASSIFICATION OF SUBJECT MATTER

According to International Patent Classification (IPC) or to both National Classification and IPC

IPC (5): F16B 15/00

U.S. CL.: 411/447, 457, 903; 24/711

II. FIELDS SEARCHED

Minimum Documentation Searched *

Classification System

Classification Symbols

U.S. 411/446, 447, 457, 461, 466, 469, 903; 24/293, 295, 543, 563, 711

Documentation Searched other than Minimum Documentation
to the extent that such Documents are included in the Fields Searched *

III. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of Document, 1 ⁶ with indication, where appropriate, of the relevant passages 1 ⁷	Relevant to Claim No. 1 ⁸
A	US, A, 789,019 (ARENOT) 17 January 1905	1-6
A	US, A, 2,092,807 (CHAPELLE) 14 September 1937	1-6
A	US, A, 4,317,451 (CERWIN ET AL.) 02 March 1982	1-6
A	US, A, 4,719,917 (BARROWS ET AL.) 19 January 1988	1-6
A	FR, A, 1,008,863 (TASCHER) 22 March 1952	1-6
A	FR, A, 2,508,990 (MOREL) 07 January 1983	1-6
A	GB, A, 2,184,187 (HARRYMAN) 17 June 1987	1-6
A	JP, A, 108,166 (OKAMURA) 24 August 1979	1-6

* Special categories of cited documents: 1⁵

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IV. CERTIFICATION

Date of the Actual Completion of the International Search *

20 MAY 1991

Date of Mailing of this International Search Report *

21 JUN 1991

International Searching Authority *

ISA/US

Signature of Authorized Officer **

JERRY REDMAN NGUYEN NGOC-HO
INTERNATIONAL DIVISION