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(54) **DISPLAY PACK HAVING A ROTATABLE SECURITY MEMBER**

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Related U.S. Patent Documents

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(52) **U.S. Cl.** **206/349**; 206/376; 206/346; 206/371; 206/493

(58) **Field of Search** 206/349, 376, 206/377, 461, 471, 493, 495; 211/70.6; 248/309.1

(56) **References Cited**

U.S. PATENT DOCUMENTS

3,516,585	*	6/1970	Inwood	206/349
4,056,190	*	11/1977	Dix	206/471
4,407,413		10/1983	Jansson .	
4,872,551	*	10/1989	Theros	206/349
4,997,085	*	3/1991	Brennam	206/376
5,595,295	*	1/1997	Lin	206/349
5,713,467	*	2/1998	Kao	206/349

FOREIGN PATENT DOCUMENTS

4117705	12/1992	(DE) .	
2652064	* 3/1991	(FR)	206/349
2187714	* 9/1987	(GB)	206/349

* cited by examiner

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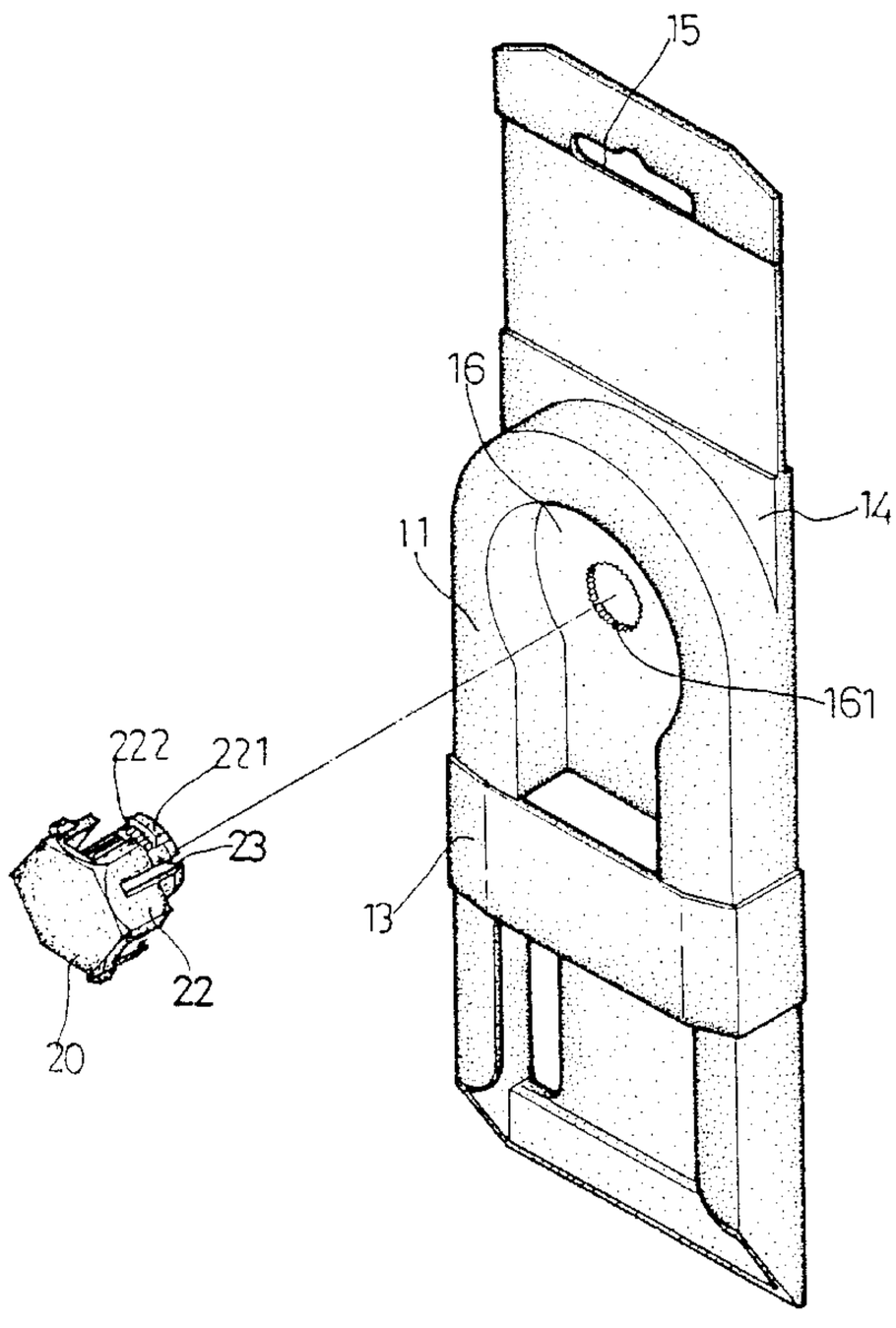
(57) **ABSTRACT**

A display pack having a rotatable security member includes a board and the rotatable security member wherein the board has a first hole and a second hole respectively defined therein and an inverted U-shaped frame extends perpendicularly from a front surface of the board with the second hole being located between two extending portions of the inverted U-shaped frame. The second hole has a toothed inner periphery and the rotatable security member includes a polygonal head and a shank which has a flange extending from a free end thereof and a toothed periphery defined in an outer periphery near the flange so that the rotatable security member is rotatably inserted into the second hole with the toothed inner periphery engaged with the toothed inner periphery. A ratchet tool is engaged with the rotatable security member and can be operated within a limited angle between the two extending portions of the frame.

18 Claims, 6 Drawing Sheets



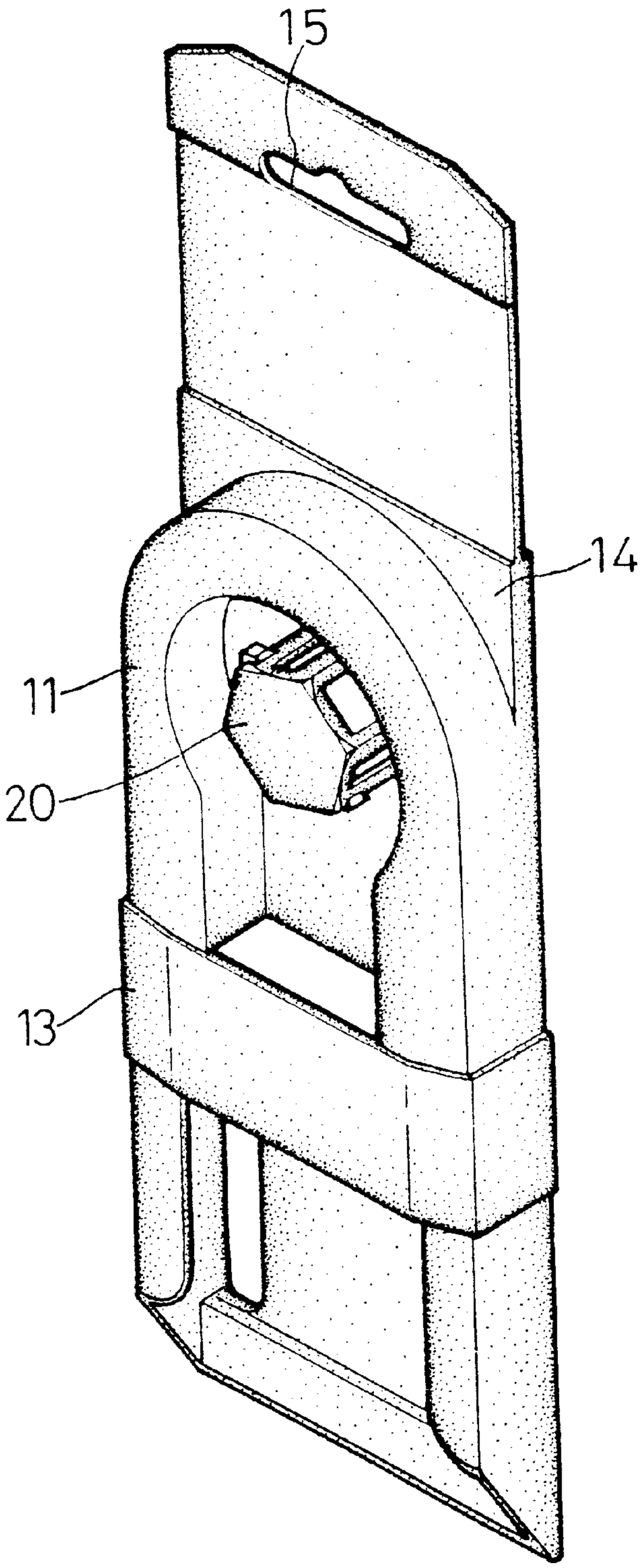


Fig 1

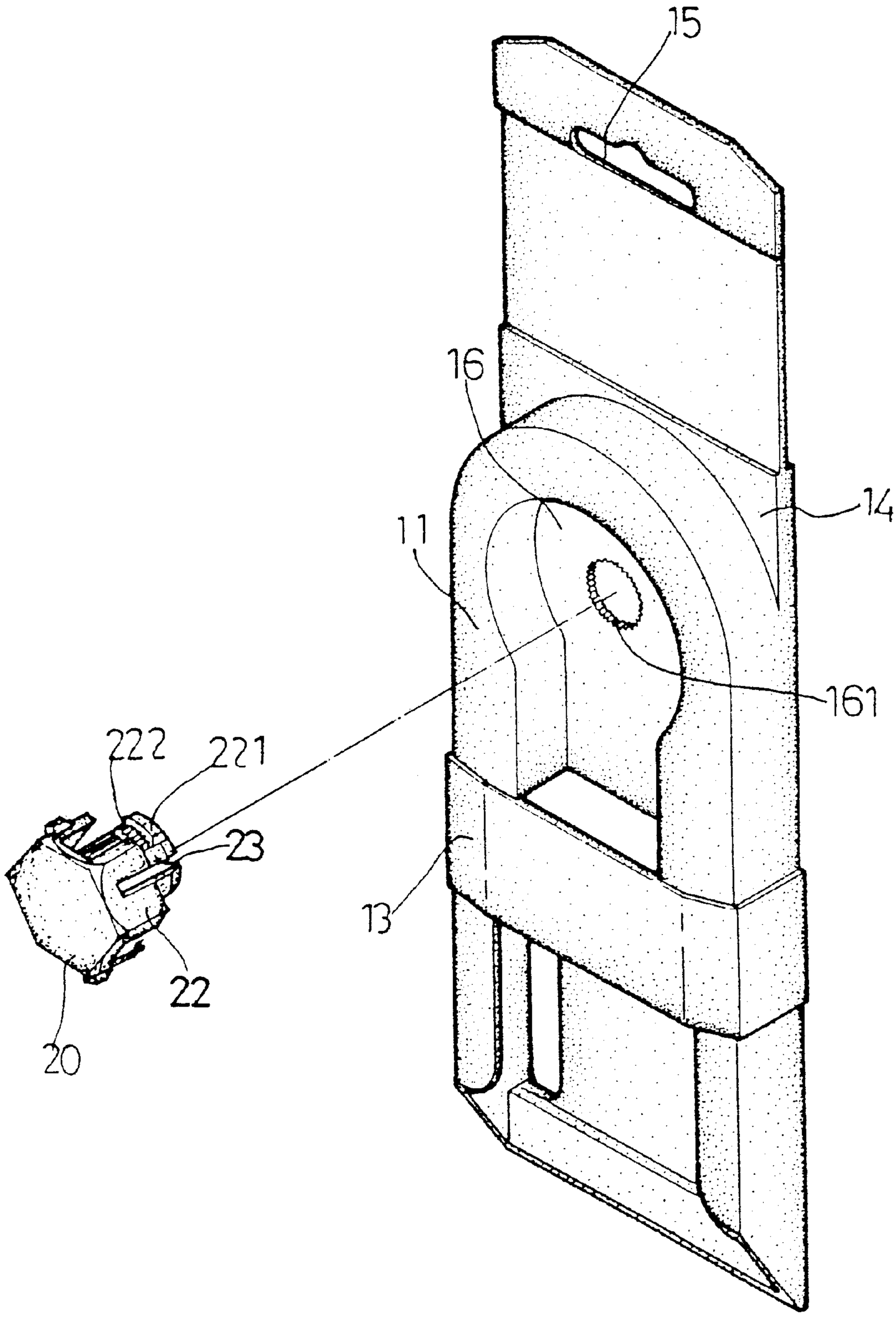


Fig 2

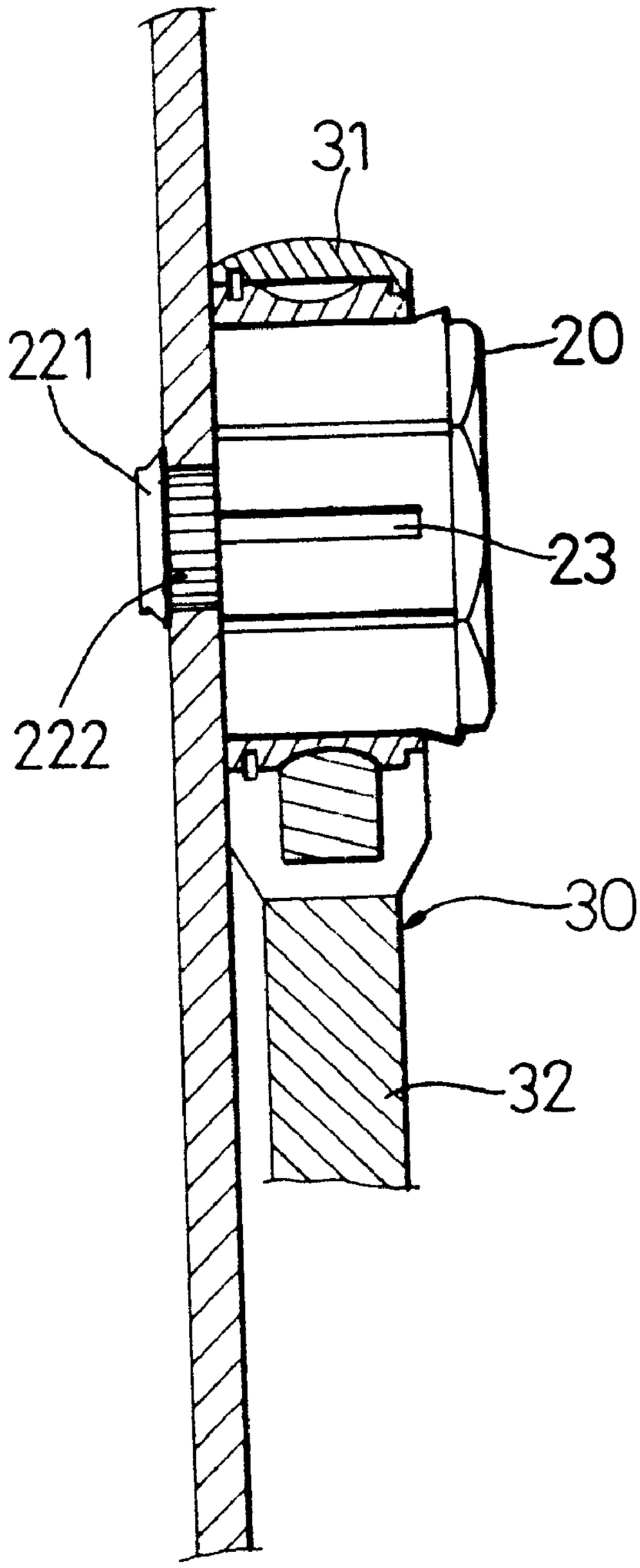


Fig 3

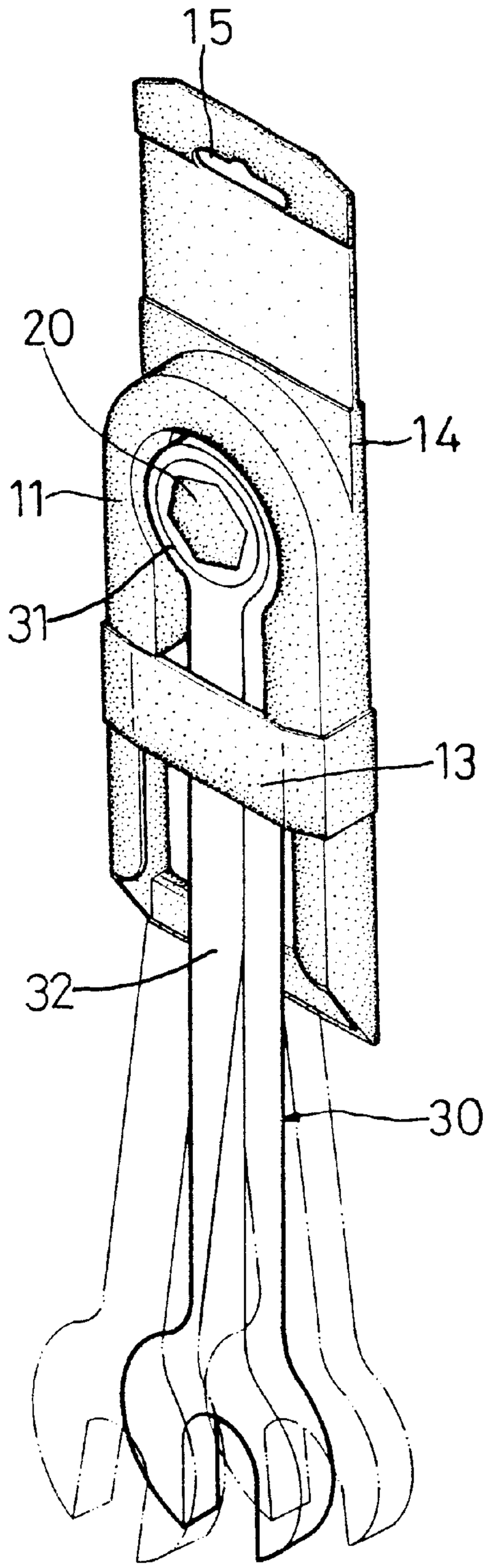


Fig 4

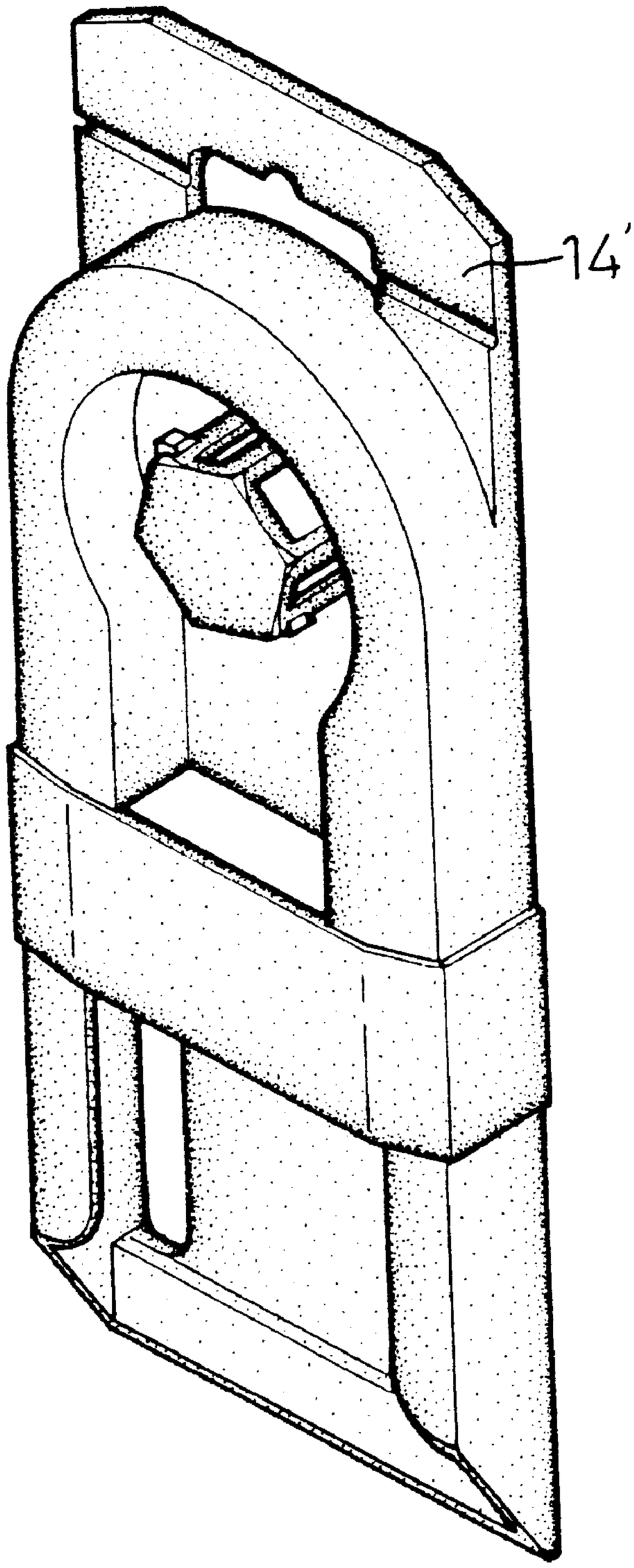


Fig 5

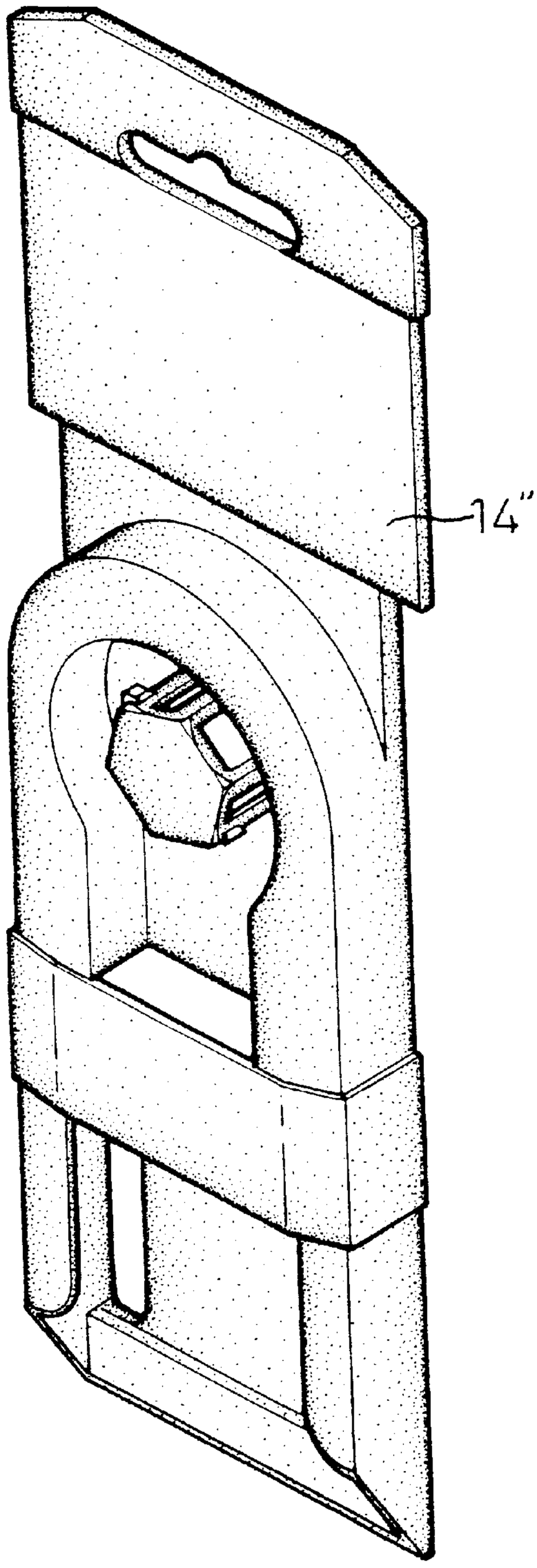


Fig 6

DISPLAY PACK HAVING A ROTATABLE SECURITY MEMBER

Matter enclosed in heavy brackets [ ] appears in the original patent but forms no part of this reissue specification; matter printed in italics indicates the additions made by reissue.

BACKGROUND OF THE INVENTION

1. Field of the Invention

The present invention relates to a display pack and, more particularly, to an improved display pack having a rotatable security member disposed thereto so that a ratchet tool is operatably engaged to the security member.

2. Brief Description of the Prior Art

Hardware stores use display packs to display tools on walls, and these tool display packs each have a simple structure and can be hung on the hook so that the tool is fixedly connected to the display pack by way of mounting a transparent cover to the display pack with the tool received between the cover and the display pack. Generally, the conventional display pack provides **[**an**]** *a* main advantage **[**is**]** that customers can see the whole configuration of the tool. An inherent shortcoming of the tool display pack is that the tool, such as a ratchet tool, cannot be operated by customers. Furthermore, **[**each of the**]** each of the tools **[**have**]** *has* to be transported to a packing plant to be packed in display packs, and this requires a high cost.

Another type of display **[**packs include**]** *pack includes* a board portion and a ring member disposed to the board so that a tool is simply supported and wrapped by the ring member. However, this type of display **[**packs are**]** *pack is* easily broken simply by pulling the tool to break the ring member. Therefore, a thief can remove the tool and conceal it about his person.

The present invention intends to provide an improved display pack to mitigate and/or obviate the above-mentioned problems.

SUMMARY OF THE INVENTION

The present invention provides a display pack and comprises a board and a rotatable security member. The board has a first hole and a second hole respectively defined therethrough, wherein the second hole has a toothed inner periphery. An inverted U-shaped frame extends perpendicularly from a front surface thereof, with the second hole being located between two extending portions of the frame. The rotatable security member includes a polygonal head and a shank extending from the head. The shank has a least one flange extending radially from a free end thereof and a toothed periphery defined in an outer periphery thereof near the flange such that the rotatable security member is rotatably inserted into the second hole with the toothed periphery being engaged with the toothed inner periphery.

It is an object of the present invention to provide a display pack which has a rotatable security member disposed thereto which is cooperated with a ratchet tool such that the ratchet tool can be operated within a **[**limit**]** *limited* angle.

It is another object of the present invention to provide *a* display pack having a rotatable security member disposed thereto so as to prevent the tool engaged with the rotatable security member from being taken away from the display pack without permission.

Other objects, advantages, and novel features of the invention will become more apparent from the following

detailed description when taken in conjunction with the accompanying drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. **1** is a perspective view of a display pack having a rotatable security member in accordance with the present invention;

FIG. **2** is an exploded view of the display pack and the rotatable security member in accordance with the present invention;

FIG. **3** is a side elevational view, partly in section, of the display pack with a ratchet tool being engaged with the rotatable security member;

FIG. **4** is an illustrative view to show the ratchet tool engaged with the rotatable security member **[**is**]** *and* operated **[**with**]** *within* a limited angle;

FIG. **5** is a perspective view of another embodiment of the display pack having a rotatable security member in accordance with the present invention, and

FIG. **6** is a perspective view of yet another embodiment of the display pack having a rotatable security member in accordance with the present invention.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

Referring to the drawings and initially to FIGS. **1** through **3**, a display pack in accordance with the present invention generally includes a board **14** and a rotatable security member **20** wherein the board **14** has a first hole **15** defined in a position near a top area thereof so as to be hung on a rack (not shown) for example and a second hole **16** defined in a position near a middle portion thereof. The second hole **16** has a toothed inner periphery **161**. The board **14** has an inverted U-shaped frame **11** extending perpendicularly from a front surface thereof with the second hole **16** being located between two extending portions of the frame **11** and a limit plate **13** is connected between the two extending portions of the inverted U-shaped frame **11**.

The rotatable security member **20** includes a polygonal head **[21]** *22*, a hexagonal head in this embodiment, and a shank **[22]** extending from one of two sides of the head **[21]** *22*. The shank **[22]** has at least one flange **221** extending radially from a free end thereof and at least two slits **23** defined longitudinally therein which open to the free end. The flange **221** has a diameter slightly larger than that of the second hole **16** so that the flange **221** is engaged with a rear surface of the board **14** when the shank **[22]** of the rotatable security member **20** is inserted into the second hole **16** by force. A toothed periphery **222** is defined in an outer periphery of the shank **[22]** and is located near the flange **221** such that the rotatable security member **20** is rotatably inserted into the second hole **16** with the toothed periphery **222** being engaged with the toothed inner periphery **161**. It is noted that the toothed periphery **222** and the toothed inner periphery **161** are made by plastic and have small teeth so that the rotatable security member **20** is rotatable in the second hole **16** with the toothed periphery **222** shifting on the toothed inner periphery **161**.

Further referring to FIG. **4**, a ratchet tool **30** has its operation head portion **31** mounted to the rotatable security member **20** and its shank portion **32** extending between the two extending portions of the inverted U-shaped frame **11** such that a customer (not shown) can operate the ratchet tool **30** by swinging the shank portion **32** of the ratchet tool **30**. The relationship mentioned above between the toothed

periphery **222** and the toothed inner periphery **161** will cause the ratchet tool **30** to be operated as if it is fastening or unfastening an object.

Accordingly, the present invention allows customers to operate the ratchet tool **30** attached to the display pack in accordance with the present invention and the ratchet tool **30** is easily **[**to be**]** attached to the display pack.

FIGS. **5** and **6** respectively show different embodiments of the display pack in accordance with the present invention with a shorter board **14'** and a longer board **14"**.

Although the invention has been explained in relation to its preferred embodiment, it is to be understood that many other possible modifications and variations can be made without departing from the spirit and scope of the invention as hereinafter claimed.

What is claimed is:

1. A display pack comprising:

a board having a first hole and a second hole respectively defined therethrough, said second hole having a toothed inner periphery, said board having an inverted U-shaped frame extending perpendicularly from a front surface thereof with said second hole being located between two extending portions of said frame, and

a rotatable security member including a polygonal head and a shank extending from one of two sides of said head, said shank having at least one flange extending radially from a free end thereof and a toothed periphery defined therein near said flange such that said rotatable security member is rotatably inserted into said second hole with said toothed periphery being engaged with said toothed inner periphery.

2. The display pack as claimed in claim **1** wherein said flange has a diameter slightly larger than that of said second hole so that said shank is force-fitted into said second hole with said flange being engaged with a rear surface of said board.

3. The display pack as claimed in claim **1** wherein a limit plate is connected between said two extending portions of said inverted U-shaped frame.

4. The display pack as claimed in claim **1** wherein at least two slits are defined longitudinally in said shank and open to said free end of said shank.

5. A display pack comprising:

a board having a hole defined therethrough, said hole having a toothed inner periphery, and

a rotatable security means including a polygonal head and a shank extending from one of two sides of said head, said shank having at least one flange extending radially from a free end thereof and a toothed periphery defined therein near said flange such that said rotatable security member is rotatably inserted into said hole with said toothed periphery being engaged with said toothed inner periphery.

6. The display pack as claimed in claim 5, wherein said board has a frame formed on a front surface thereof, and said hole is enclosed by said frame.

7. The display pack as claimed in claim 6, wherein the frame is of a inverted U-shape and extends perpendicularly from a front surface of the board, the inverted U-shaped frame including two extending portions between which the hole is located.

8. The display pack as claimed in claim 7, further comprising a limit plate connected between the extending portions of the inverted U-shaped frame.

9. The display pack as claimed in claim 5, wherein the board further comprises a second hole.

10. The display pack as claimed in claim 5, wherein said flange has a diameter slightly larger than that of the hole so that said shank is force-fitted into said hole with said flange engaged with a rear surface of said board.

11. The display pack as claimed in claim 5, wherein at least two slits are defined longitudinally in said shank and open to said free end of said shank.

12. A display pack for a tool comprising:

a board, and

means for operably engaging with a portion of the tool, with the operably engaging means being rotatably mounted to the board, whereby the tool is rotatable together with the operably engaging means relative to the board;

wherein the rotatably engaging means includes a hole defined in the board, said hole having a toothed inner periphery, and

a rotatable security means including a polygonal head and a shank extending from one of two sides of said head, said shank having at least one flange extending radially from a free end thereof and a toothed periphery defined therein near said flange such that said rotatable security means is rotatably inserted into said hole with said toothed periphery being engaged with said toothed inner periphery of the hole.

13. The display pack as claimed in claim 12, wherein said board has a frame formed on a front surface thereof, and said hole is enclosed by said frame.

14. The display pack as claimed in claim 13, wherein the frame is of an inverted U-shape and extends perpendicularly from a front surface of the board, the inverted U-shaped frame including two extending portions between which the hole is located.

15. The display pack as claimed in claim 14, further comprising a limit plate connected between the extending portions of the inverted U-shaped frame.

16. The display pack as claimed in claim 12, wherein the board further comprises a second hole.

17. The display pack as claimed in claim 12, wherein said flange has a diameter slightly larger than that of the hole so that said shank is force-fitted into said hole with said flange engaged with a rear surface of said board.

18. The display pack as claimed in claim 12, wherein at least two slits are defined longitudinally in said shank and open to said free end of said shank.

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