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(11) **EP 1 064 876 B1**

(12) **EUROPEAN PATENT SPECIFICATION**

(45) Date of publication and mention
of the grant of the patent:
23.03.2005 Bulletin 2005/12

(51) Int Cl.7: **A47K 10/38**

(21) Application number: **00305457.4**

(22) Date of filing: **29.06.2000**

(54) **Toilet roll dispenser**

Toilettenpapierspender

Distributeur de papier toilette

(84) Designated Contracting States:
**AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU
MC NL PT SE**
Designated Extension States:
AL LT LV MK RO SI

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(30) Priority: **01.07.1999 GB 9915243**

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(43) Date of publication of application:
03.01.2001 Bulletin 2001/01

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US-A- 2 171 648 **US-A- 5 370 339**
US-A- 5 451 013

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Description

[0001] This invention relates to a toilet roll dispenser and more particularly to a toilet roll dispenser adapted to have two or more toilet rolls mounted therein on location means whereby the toilet rolls are moved to a position in the dispenser where toilet paper from the associated roll is dispensed therefrom.

[0002] One known type of toilet roll dispenser comprises a casing having a base plate with a carousel rotatably mounted thereon. The carousel has two or more cylindrical projections extending at right angles to the plane of the carousel on each of which a conventional toilet roll having a cylindrical core is mounted so as to be freely rotatable thereon.

[0003] The carousel is adapted to be rotated relatively to the base plate to bring one toilet roll into a dispensing position whereby a user can remove one or more sheets of toilet paper from said one toilet roll and once said one toilet roll is empty, the carousel is rotated to bring a further toilet roll into the dispensing position.

[0004] Such known types of toilet roll dispenser are exemplified in U.S. Patent No. 5,451,013 which relates to a single roll dispenser, with means for holding the toilet roll axially in position, which is also the subject matter of U.S. Patent No. 5,370,339 and U.S. Patent No. 2,171,648. U.S. Patent No. 5,310,129 and U.K. Patent No. 2,245,882 both relate to carousel types of toilet roll dispensers but are not concerned with any restriction on the rotation of the toilet rolls and all suffer from the disadvantage that the loading of a conventional toilet roll with a cylindrical cardboard core onto the associated cylindrical projection of the carousel is a difficult and time consuming operation unless there is adequate clearance between the core and the projection. A further disadvantage is that the necessary clearance between the toilet roll core and the projection results in a loose fit therebetween so that the toilet roll is easily displaced from its position on the carousel, particularly during the loading operation, which causes further difficulties in carrying out said operation. In addition, the loose fit between the core of the toilet roll and the associated projection on the carousel results in the toilet roll in the dispensing position being freely rotatable on the projection allowing inordinate lengths of toilet paper to be readily withdrawn by a user resulting in wastage of toilet paper.

[0005] The object of this invention is to provide a toilet roll dispenser in which at least one of the above disadvantages is alleviated.

[0006] According to the invention, a dispenser comprises toilet rolls, a casing having storage means therein for two or more toilet rolls, the storage means being adapted to bring each one of the toilet rolls in turn to a dispensing position, wherein the storage means and the associated toilet roll have interengaging male and female members characterised in that the inter-engaging male and female members restrict free rotation of the toilet roll in the dispensing position.

[0007] Preferably, one of said male and female members is provided at one storage station on the storage means and the other one of said male and female members is provided in or as the core of a toilet roll associated with said storage station.

[0008] Preferably, also, the said male and female members form guide means for facilitating mounting of the associated toilet roll onto the storage means at the associated storage station.

[0009] The external surface of male member, preferably, has a frusto-conical portion and the internal surface of the female member has a complementary frusto-conical portion forming the guide means.

[0010] Preferably, the male and female members have a positive inter-engaging connection therebetween to positively locate the associated toilet roll on the storage means at the associated storage station.

[0011] Preferably, also, the positive inter-engaging connection between the male and female members is a snap-fit connection.

[0012] The male member, preferably, has a recessed portion adjacent to the upper end thereof and the female member has a resilient deformable portion at the inner end thereof which is displaced during insertion of the male member and engages in the recessed portion of the male member to form the snap-fit connection therebetween.

[0013] A preferred embodiment of the invention will now be described, by way of example only, with reference to the accompanying drawings of which:-

Figure 1 is a diagrammatic perspective view of a carousel of a toilet roll dispenser;

Figure 2 is a diagrammatic perspective view of a toilet roll having an insert therein; and

Figure 3 is a diagrammatic sectional side elevation of a toilet roll mounted in position on the carousel of the dispenser.

[0014] Referring now to the drawings, a toilet roll dispenser comprises a carousel 10 which is mounted in an openable housing (not shown) having a base (not shown). The carousel 10 is rotatable in conventional manner about the centre thereof relative to the base and has four storage stations or pegs 12 on each of which a toilet roll 14 can be stored. The base of the housing (not shown) is provided with conventional detent means engageable in recesses 16 in the periphery of the carousel 10 to enable the carousel 10 to be rotated about its central axis relatively to the base of the housing so that a user can bring a new toilet roll 14 into a dispensing position at the bottom of the housing to replace an empty toilet roll 14. A blocking means in the form of a projection on the housing (not shown) is provided to prevent rotation of the carousel until the toilet roll 14 at the dispensing position is empty.

[0015] Each storage peg 12 which constitutes a male member is formed of a plastics material and comprises

a lower frusto-conical portion 18, a central cylindrical portion 20 and an upper frusto-conical portion 22 with a recess 24 between the upper portion 22 and the central portion 20.

[0016] Each of the toilet rolls 14 has an insert 26 mounted in the cylindrical core 28 thereof which constitutes a female member. The insert 26 is formed of plastics material and comprises a lower cylindrical portion 30 for engaging the core 28, and a central portion 32 having a frusto-conically shaped internal surface which is a complementary shape to the portion 18 and 22 of the peg 12 to form a guide for guiding the toilet roll 14 into position on the peg 12.

[0017] The insert 26 has an inner end portion 34 with an inwardly sloping upper end 36 which is adapted to be resiliently deformable so that on insertion of the peg 12, said end 36 is deformed outwardly and subsequently engages in the recess 24 of the peg 12. The deformability of said end 36 is enhanced by the provision of one or more diametrically orientated axially extending slots (not shown) therein. The deformability of said end 36 of the insert 26 and the engagement thereof in the recess 24 of the peg 12 provides a positive snap-fit connection therebetween. In addition, it also provides a restriction to the free rotation of the toilet roll 14 on the associated peg 12 which inhibits the withdrawal of inordinate lengths of toilet paper from the roll 14 and wastage of said toilet paper.

[0018] In a modification the peg 12 is formed as a female member and the insert 26 as a male member.

[0019] It will also be appreciated that although the invention is particularly suitable for use on a toilet roll dispenser having a carousel, it could also be used on other types of toilet roll dispenser and indeed on dispensers for other rolls of sheet materials without departing from the scope of the following claims.

Claims

1. A dispenser comprising toilet rolls and a casing having storage means (12) therein for two or more of said toilet rolls, the storage means (12) being adapted to bring each one of the toilet rolls in turn to a dispensing position, wherein the storage means (12) and the associated toilet roll have inter-engaging male (12) and female members (26) **characterised in that** the inter-engaging male and female members (12, 26) restrict free rotation of the toilet roll in the dispensing position.
2. A dispenser according to claim 1, wherein one of said male (12) and female members (26) is provided at one storage station on the storage means and the other one of said male (12) and female members (26) is provided in or as the core of a toilet roll associated with said storage station.
3. A dispenser according to claim 1 or claim 2, wherein the said male and female members (12,26) form guide means for facilitating mounting of the associated toilet roll onto the storage means (12) at the associated storage station.
4. A dispenser according to claim 3, wherein the external surface of the male member (12) comprises a frusto-conical portion (18, 22) and the internal surface of the female member (26) has a complementary frusto-conical portion (32) forming the guide means.
5. A dispenser according to any one of the preceding claims, wherein the male (12) and female members (26) have a positive inter-engaging connection therebetween to positively locate the associated toilet roll on the storage means (12) at the associated storage station.
6. A dispenser according to claim 5, wherein the positive inter-engaging connection between the male (12) and female members (26) is a snap-fit connection.
7. A dispenser according to claim 6, wherein the male member (12) has a recessed portion (24) adjacent to the upper end thereof and the female member (26) has a resilient deformable portion (36) at the inner end (34) thereof which is displaced during insertion of the male member (12) and engages in the recessed portion (24) of the male member (12) to form the snap-fit connection therebetween.

Patentansprüche

1. Spender mit Toilettenrollen und mit einem Gehäuse, das darin Speichermittel (12) für zwei oder mehr der Toilettenrollen enthält, wobei die Speichermittel (12) ausgelegt sind, um jede der Toilettenrollen der Reihe nach in eine Spendestellung zu bringen, wobei die Speichermittel (12) und die zugehörige Toilettenrolle ineinandergreifende eingreifende (12) und aufnehmende (26) Glieder aufweisen, **dadurch gekennzeichnet, daß** die ineinandergreifenden eingreifenden und aufnehmenden Glieder (12, 26) die freie Drehung der Toilettenrolle in der Spendestellung beschränken.
2. Spender nach Anspruch 1, bei dem ein Glied von dem eingreifenden (12) und aufnehmenden (26) Gliedern bei einer Speicherstation an den Speichermitteln vorgesehen ist, und das andere Glied von dem eingreifenden (12) und aufnehmenden (26) Gliedern in dem oder als der Kern einer Toilettenrolle bereitgestellt wird, die der Speicherstation zugeordnet ist.

3. Spender nach Anspruch 1 oder Anspruch 2, bei dem die eingreifenden und aufnehmenden Glieder (12, 26) Führungsmittel bilden, um das Montieren der zugehörigen Toilettenrolle auf die Speichermit-
tel (12) an der zugehörigen Speicherstation zu er-
leichtern. 5
4. Spender nach Anspruch 3, bei dem die Außenflä-
che des eingreifenden Glieds (12) einen kegel-
stumpfförmigen Abschnitt (18, 22) umfaßt, und die
Innenfläche des aufnehmenden Glieds (26) einen
entsprechenden kegelstumpfförmigen Abschnitt
(32) aufweist, der die Führungsmittel bildet. 10
5. Spender nach einem der vorherigen Ansprüche, bei
dem das eingreifende (12) und aufnehmende (26)
Glieder eine formschlüssig ineinandergreifende Ver-
bindung dazwischen haben, um die zugehörige Toi-
lettenrolle auf den Speichermitteln (12) an der zu-
gehörigen Speicherstation formschlüssig anzuord-
nen. 15
6. Spender nach Anspruch 5, bei dem die formschlüs-
sig ineinandergreifende Verbindung zwischen dem
eingreifenden (12) und aufnehmenden (26) Glied-
ern eine Schnapppassungsverbindung ist. 25
7. Spender nach Anspruch 6, bei dem das eingreifen-
de Glied (12) einen ausgesparten Abschnitt (24) be-
nachbart zu dem oberen Ende davon aufweist, und
das aufnehmende Glied (26) einen elastischen ver-
formbaren Abschnitt (26) an dem inneren Ende (34)
davon aufweist, der während des Einsetzens des
eingreifenden Glieds (12) verschoben wird und in
den ausgesparten Abschnitt (24) des eingreifenden
Glieds (12) eingreift, um die Schnapppassungsver-
bindung dazwischen zu bilden. 30

Revendications

1. Distributeur, comprenant des rouleaux de papier
hygiénique et un boîtier ayant des moyens de stoc-
kage (12) dans celui-ci pour deux ou plusieurs des-
dits rouleaux de papier hygiénique, les moyens de
stockage (12) étant adaptés pour conduire chacun
des rouleaux de papier hygiénique à son tour vers
une position de distribution, dans lequel les moyens
de stockage (12) et le rouleau de papier hygiénique
associé ont des éléments emboîtables mâle (12) et
femelle (26), **caractérisé en ce que** les éléments
emboîtables mâle et femelle (12, 26) limitent la ro-
tation libre du rouleau de papier hygiénique dans la
position de distribution. 40
2. Distributeur selon la revendication 1, dans lequel
l'un desdits éléments mâle (12) et femelle (26) est
disposé au niveau d'un poste de stockage sur les
moyens de stockage et l'autre desdits éléments mâ-
le (12) et femelle (26) est disposé dans ou en guise
de coeur d'un rouleau de papier hygiénique associé
au dit poste de stockage. 45
3. Distributeur selon la revendication 1 ou 2, dans le-
quel lesdits éléments mâle et femelle (12, 26) for-
ment des moyens de guidage destinés à faciliter le
montage du rouleau de papier hygiénique associé
sur les moyens de stockage (12) au niveau du poste
de stockage associé. 50
4. Distributeur selon la revendication 3, dans lequel la
surface externe de l'élément mâle (12) comprend
une partie tronconique (18, 22) et la surface interne
de l'élément femelle (26) présente une partie tron-
conique complémentaire (32) formant les moyens
de guidage. 55
5. Distributeur selon l'une quelconque des revendica-
tions précédentes, dans lequel les éléments mâle
(12) et femelle (26) présentent entre ceux-ci une
connexion positive emboîtable pour localiser posi-
tivement le rouleau de papier hygiénique associé
sur les moyens de stockage (12) au niveau du poste
de stockage associé. 60
6. Distributeur selon la revendication 5, dans lequel la
connexion positive emboîtable entre les éléments
mâle (12) et femelle (26) est une connexion par em-
boîtement-pression. 65
7. Distributeur selon la revendication 6, dans lequel
l'élément mâle (12) présente une partie renforcée
(24) adjacente à l'extrémité supérieure de celui-ci,
et l'élément femelle (26) présente une partie élasti-
que déformable (36) au niveau de l'extrémité inter-
ne (34) de celui-ci, qui est déplacée lors de l'insertion
de l'élément mâle (12) et se met en prise dans
la partie renforcée (24) de l'élément mâle (12) pour
former la connexion par emboîtement-pression en-
tre ceux-ci. 70

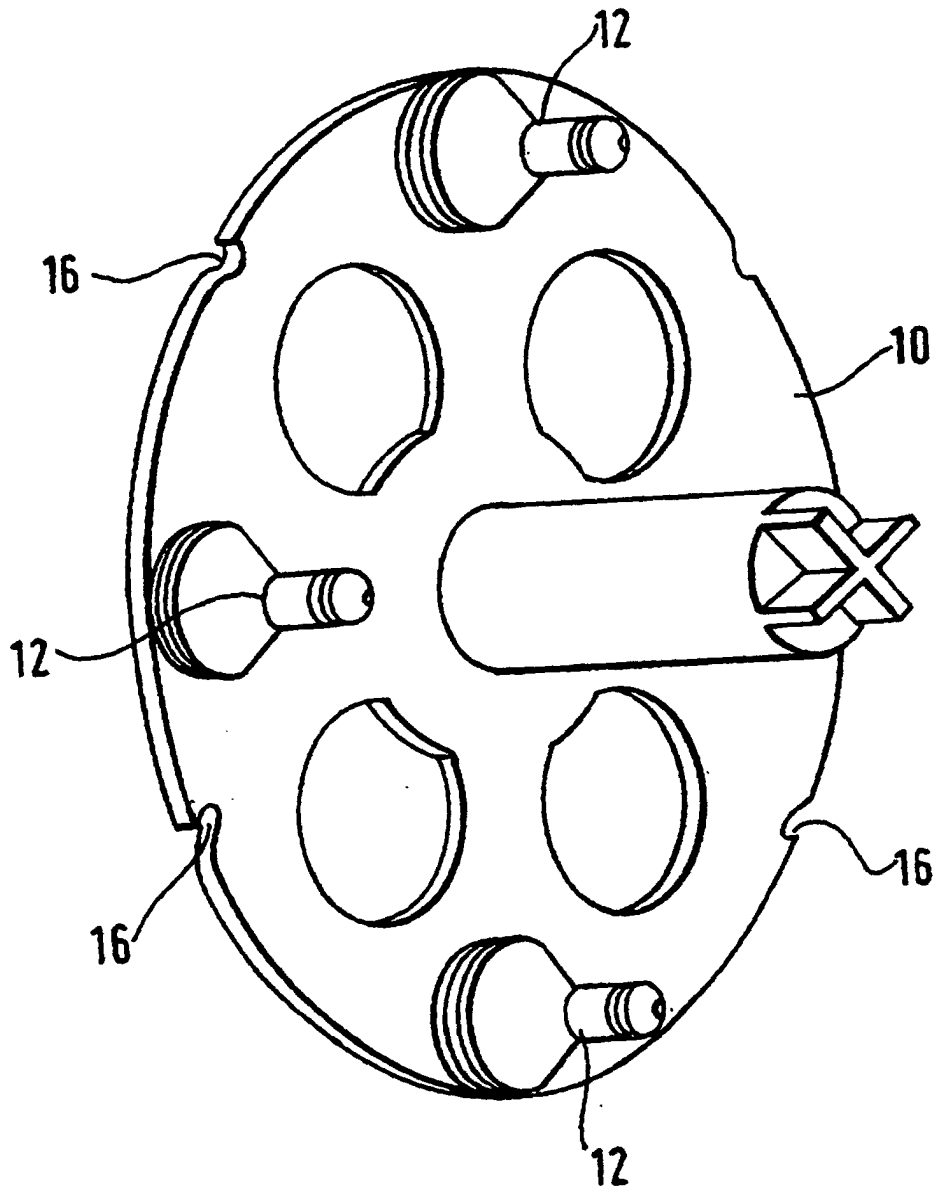


FIG.1.

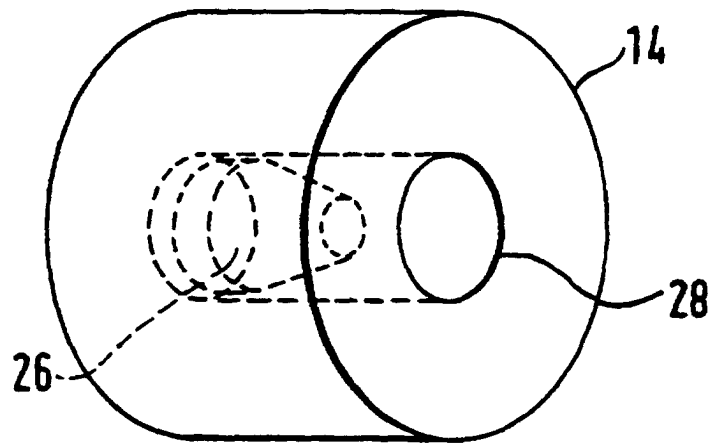


FIG. 2.

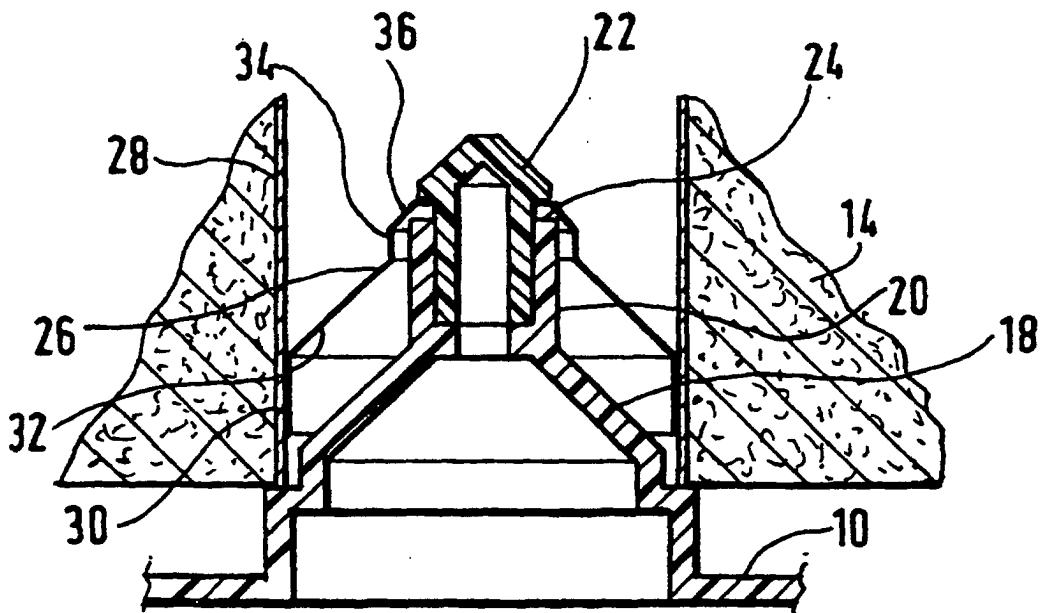


FIG. 3.