(19) Europäisches Patentamt
European Patent Office
Office européen des brevets

(11) Publication number: **0 180 691**
A1

(12) # EUROPEAN PATENT APPLICATION

(21) Application number: **84830295.6**

(22) Date of filing: **31.10.84**

(51) Int. Cl.⁴: **B 25 G 3/30**
B 25 G 3/22

(43) Date of publication of application:
14.05.86 Bulletin 86/20

(84) Designated Contracting States:
AT BE CH DE FR GB IT LI NL SE

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(54) **A device for the quick blocking and releasing of tubolar handles consisting in two or more sectional portions.**

(57) A device for the quick blocking and releasing of tubolar handles with sectional portions A and B, consisting in an insert 2 with a spiral-shaped extension, axially and rotatory bound to the end of rod A, in which a tapered portion 6 in the shape of a truncated cone and outwardly threaded 7 is provided, on which an expansible bush 10 is screwed, the outward surface thereof being able to adhere to the inner wall of rod B, so as to get rotatory engaged with the same and determine, with the rotation of the first rod and the screwing of the bush, the consequent expansion thereof due to the widening action performed by the conical portion of the insert against the inward part of the truncated-cone shaped bush and the consequent blocking of the rods.

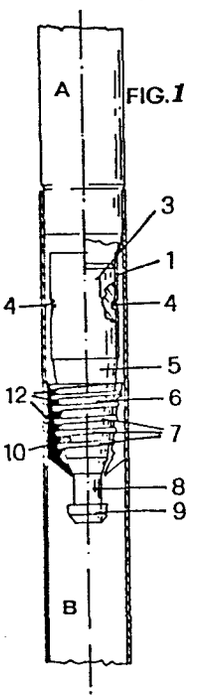

FIG. 1

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"A device for the quick blocking and releasing of tubolar handles consisting in two or more sectional portions"

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The present invention concerns a device for the quick blocking and release of tubolar handles consisting in at least two rods or sectional portions that can be engaged one with the other, particularly concerning broom handles, brush handles and generally handles for manual use equipment of any kind.

It is well knwon that the handles for brooms, brushes and similar cause, due to the length thereof, a considerable encumbrance for transport and storage.

Consequently, said handles are actually devided in a plurality of portions that can be assembled when the rod is to be used due to the engagement of one portion with the other.

Furthermore, said engagements, that are of the telescopic-friction, screw and joint kind, don't allow a safe and lasting blocking of the portions during the use, due to the considerable torsional stress said portions undergo.

It is therefore the aim of the present invention to realize a blocking and releasing device by means of which the disadvantages and imperfections of those according

to the prior art are eliminated.

Some of the already known devices provide that it is impossible to remove the rods once they have been engaged; and this means that the user has no longer the possibility of reducing the encumbrance of the handle. It is a further aim of the present invention to allow, besides the blocking, also the release of the various rods or portions.

In the field of the technical tasks it is the aim of the present invention to solve above mentioned problems realizing an easy structure, of a relatively easy realization, of safe use and efficient functioning, as well as not very expensive at all.

Said aims are reached by means of the device, according to the present invention, for quick blocking and releasing of tubolar handles realized in at least two engageable rods, the first rod having the engaging end of a diameter partially reduced for engagement in the second rod, characterized in that an insert is bound axially and rotatory to said end with reduced diameter, said insert showing an axial extension provided with a tapered truncated-cone shaped portion, outwardly threaded, onto which an expansible bush may be screwed, said bush having a truncated-cone shaped part engaged with said insert portion and the outer surface able to adhere to the

inner wall of the second rod so as to rotatory engage with the same for determining, with the rotation of the first rod and the screwing of the bush, the consequent expansion due to the widening action performed by the conical portion against the inner truncated-cone shaped part of the bush, and the consequent blocking of the rods.

Further details will become clearer and more evident refering to the detailed description of a prefered embodiment, which is not exclusive, of the device according to the present invention, shown for exemplifying but not limiting purposes in the attached drawing, in which:

figure 1 shows a partial lateral section view with a diameter plane of a device according to the present invention, assembled in two rods or portions;

figure 2 shows a lateral view of the same device.

Refering to said figures, the device according to the present invention for the quick blocking and releasing of tubolar handles out of at least two portions or rods A and B, preferably hollow and engageable, is generally shown.

Rod A shows the engaging end 1 having, for a part, a reduced diameter for the engagement with rod B.

The device comprises an insert 2 showing a cylindrical

portion 3 that can be forced into end 1 of rod 1 for being axially and rotatory bound therein by means of punchings 4; portion 3 widens with a set-back 5 that acts as a rest against the opening of end 1.

Portion 3 shown an axial outward extension to rod A, in which a portion 6, truncated-cone shaped and tapered, is defined, outwardly showing a threading 7; portion 6 further extends in a peg 8 structure A, ending in a tablet 12 of greater dimensions; insert 2 is advantageously realized out of one single piece by pressing of material of the kind of plastic.

On portion 6 a bush 10 is mounted, outwardly showing a cylindrical surface for rotatory engagement against the inner surface of rod B, ending in a short conical part 11 for facilitating the engagement in said rod B; the bush 10 inwardly shows a truncated-cone shaped and threaded part 12; the bush shows a fissure 13 that cuts all the length thereof, due to the material out of which the bush is realized and that is preferably of the plastic kind, the widening of said bush.

The working of the device according to the present invention is evident: when end 1 of rod 1 has been inserted into rod B, bush 10 being placed in correspondence to peg 8, it will be sufficient to rotate the rods one in respect to the other so as to determine - due to the

screwing of the truncated-cone shaped portion 12 of the bush on the truncated-cone shaped portion 6 of the in - sert - the widening of said bush that expands in rod B so as to reciprocally bind the rods; for releasing the rods it will be sufficient to make the same rotate in the opposite sense.

It should be noted that at the beginning of the screwing, the bush remains substantially adherent to rod B due to the friction of the materials and that keeping up the screwing said adherence increases together with the deformation of the bush; it should also be noted that the greater the effort for screwing the parts, the greater the torsional seal of the coupling - that means: if during the use of the handle the rods will be solicited one with respect to the other torsionally in the sense of release, it will be sufficient - for avoiding the release - to screw the rods stronger at the time of assembling.

It is evident that, according to the different needs, the handle may be realized in any number of parts and any diameter of the rods and of the device.

It has been shown how the object of the present invention meets the purposes set forth and, in particular, how the same allows the quick coupling and release of a plurality

of rods, with a device of a very low cost due to the simplicity, the realization material and the low number of operations to be performed in the realization stage (diameter reduction of rod 1 and fixing punching 4).

The object of the present invention may be varied and modified without therefore going out of the limits of the present invention. Furthermore, all details may be replaced by others which are technically equivalent.

CLAIMS

1. A device for the quick blocking and release of tubolar handles consisting in two or more sectional portions, wherein the first rod or portion (A) has the engaging end of a diameter partially reduced for engagement with the second rod or portion(B),characterized in that an insert (2) is bound axially and rotatory to said end (A) with reduced diameter, said insert showing an axial extension (3) provided with a tapered truncated-cone shaped portion (6), outwardly threaded (7), onto which an expansible bush (10) may be screwed, said bush having a truncated-cone shaped part (12) engaged with said insert portion (6) and the outer surface able to adhere to the inner wall of the second rod (B) so as to rotatory engage with the same for determining, with the rotation of the first rod (A) and the screwing of the bush (10), the consequent expansion due to the widening action performed by the conical portion (6) against the inner truncated-cone shaped part (12) of the bush, and the consequent blocking of rods (A) and (B).

2. A device according to claim 1, characterized in that the free end (6) of said insert (2) projexts with a peg (8) ending in a widened tablet for the support of said bush (10) in releasing.

3. A device according to claim 1, characterized in that

said bush (10) shows a longitudinal fissure (13) that allows the radial deformation thereof.

4. A device according to claim 1, characterized in that the binding of said insert (2) to said end with reduced diameter of rod (A) is obtained by means of punching (4) of the rod on the reduced diameter end of insert (2), inserted in said rod (A).

5. A device for the quick blocking and release of tubolar handles consisting in two or more sectional portions according to one or more of the precedent claims and according to what has been described and illustrated for the set-forth purposes.

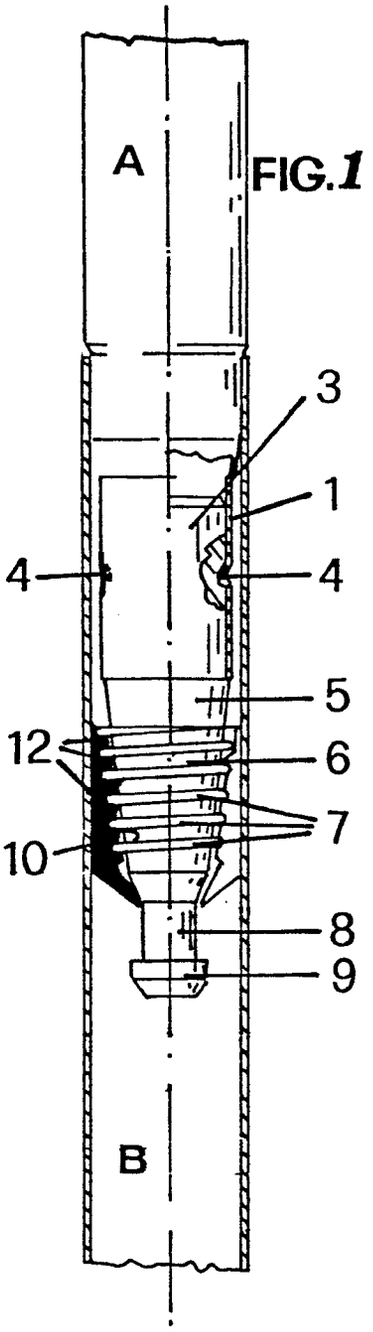

FIG.1

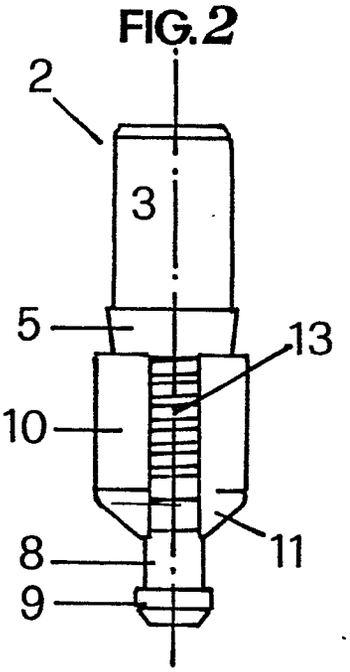

FIG.2

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EUROPEAN SEARCH REPORT

0180691
Application number

EP 84 83 0295

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int Cl 4)
X	FR-A-2 342 624 (P. CAPRINI) * Whole document *	1-3	B 25 G 3/30 B 25 G 3/22
X	FR-A-2 365 716 (WOLF-GERÄTE GmbH) * Figures 1,3,6; page 5, lines 23-26; page 6, lines 37-39 *	1-3	
X	FR-A-1 327 199 (M.C. OUDET) * Figures 1,3; claim 1 *	1,3	

TECHNICAL FIELDS SEARCHED (Int. Cl.4)

B 25 G 3/00

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
THE HAGUE	17-01-1986	MAJERUS H.M.P.

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
Y : particularly relevant if combined with another document of the same category
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E : earlier patent document, but published on, or after the filing date
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