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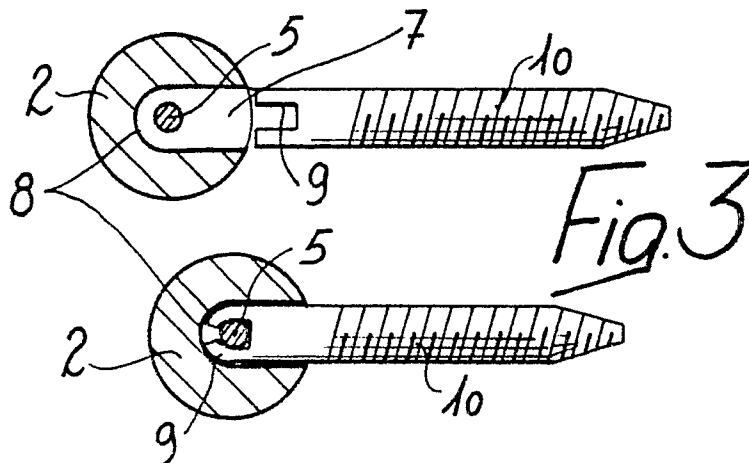
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54 Male element for hinges of door and window frames or the like.

57 The present invention relates to a male element for hinges of door and window frames or the like, composed of a cylindrical body (2) from which a rotation pivot (3) axially extends. The male element is axially provided with a first hole (4) in which a dowel (5) is inserted; the dowel has a substantially hemispherical end (6) which protrudes from the pivot. The body is axially provided with a second hole (7) in which the fork-like end (9) of a threaded fixing stem (10) is inserted so as to embrace the dowel. The bottom (8) of the second hole is shaped so as to provide the plastic deformation of the fork (9) when it is inserted, stably fixing it to the dowel and/or to the body.



MALE ELEMENT FOR HINGES OF DOOR AND WINDOW FRAMES OR THE LIKE

The present invention relates to a male element for hinges of door and window frames or the like.

Hinges are currently universally known which have a rotoidal coupling between a male element and a female element; the male element in practice comprises a cylindrical body from which a rotation pivot axially extends, and the female element comprises a cup-like body counter-shaped to the pivot of the male element.

A threaded stem is rigidly associated on the lateral surfaces of the bodies of the male and female elements in order to associate the hinge with the frames.

A method currently used in the manufacture of hinges made of brass, stainless steel or materials which cannot be welded with conventional processes in order to fix the threaded stem to the body of the male element consists in a screw coupling between one end of said stem and a complementarily threaded recess provided radially to the body.

Another method for coupling said hinges consists in interference fitting a smooth end of said stem in a complementarily shaped radial recess of the body and subsequently inserting a fixing dowel into a hole which traverses both said stem and said body.

Both of the above described fixing methods considerably complicate and prolong the manufacture of the hinge.

In fact, after an extremely rapid manufacture of the parts which compose the hinge, performed using automatic machines, the process for the production of the final product comprises a series of steps, for example to thread the radial hole and to screw the threaded stem therein.

All this naturally negatively affects production costs and ultimately the retail price.

The aim of the present invention is to provide a male element for said hinges which is less difficult to be manufactured and assembled from its various parts with respect to current ones.

A consequent primary object is to reduce production costs and times for hinges.

Not least object is to provide a male element for hinges which can be manufactured with conventional equipment.

The above described aim and objects and others which will become apparent hereinafter are achieved by a male element for hinges of door and window frames or the like, as defined in appended claim 1.

The characteristics and advantages will become apparent from the detailed description of two

embodiments of the invention, illustrated only by way of non-limitative example in the accompanying drawings, wherein:

figure 1 is a side view of a first embodiment of the male element according to the invention;

figure 2 is a longitudinal sectional view of the male element of figure 1;

figure 3 is a transverse sectional view of the male element of figure 1 in two coupling steps between the threaded stem and the body;

figure 4 is a transverse sectional view of a second embodiment of the male element in the two coupling steps between the threaded stem and the body.

With reference to the above described figures, the male element for hinges is generally indicated by the reference numeral 1 and essentially comprises a cylindrical body 2 from which an also cylindrical rotation pivot 3 axially extends, the entire assembly being manufactured by turning metallic material on an automatic lathe.

According to the invention, said male element 1 is axially traversed, from the top of said pivot 3 to a middle region of said body 2, by a first cylindrical hole 4, in which a corresponding cylindrical dowel 5 is stably inserted; an end 6 of said dowel protrudes from said pivot 3 and is mushroom-shaped, with a substantially hemispherical surface.

Said end constitutes the frictionless resting and rotation point of the female element of the hinge.

According to a first embodiment of the invention, illustrated in greater detail in figure 3, said body 2 is radially traversed by a second cylindrical hole 7; said hole 7 crosses said first hole 4, is larger in diameter than said first hole, and has a substantially spherical bottom centered on the longitudinal axis of said male element 1.

A fork-like end of a threaded stem 10, made of metallic material and obtained by molding on automatic machines, is inserted in said second cylindrical hole 7.

When said stem 10 is force inserted in the second cylindrical hole 7, its fork-like end 9 embraces said dowel 5, and each element of the fork undergoes a plastic deformation, following the contour of said bottom 8 and engaging said dowel 5.

A stable coupling between the cylindrical body 2 and the threaded stem 10 is thus provided.

In a second embodiment of the invention, shown in figure 4, the bottom of the second cylindrical hole 7, now indicated by the reference numeral 108, is conical, so that when the end 9 of the stem 10 is inserted the elements of the fork undergo a plastic spreading, directly engaging the cylindrical body 2.

From what has been described, it is evident that the male element according to the invention is constructively simple and that it can be easily and rapidly assembled; its assembly consists in practice in the successive insertion of the male dowel 5 and of the threaded stem 10 in the male element 1; said stem 10 spontaneously engages the rest of the assembly due to the plastic deformation of its fork-like end 9.

The aim and all the intended objects are therefore brilliantly achieved.

The present invention is susceptible to numerous modifications and variations, all of which are within the scope of the inventive concept.

All the details may furthermore be replaced with other technically equivalent elements.

In practice the materials employed, as well as the dimensions, may be any according to the requirements.

Where technical features mentioned in any claim are followed by reference signs, those reference signs have been included for the sole purpose of increasing the intelligibility of the claims and accordingly such reference signs do not have any limiting effect on the scope of each element identified by way of example by such reference signs.

Claims

1. A male element for hinges of door and window frames or the like, including a cylindrical body (2) from which a rotation pivot (3) axially extends, characterized in that said cylindrical body is axially provided with a first hole (4) in which a dowel (5) is inserted, said dowel having an enlarged end (6) which protrudes from said pivot, said body being radially provided with a second hole (7) in which the fork-like end (9) of a fixing element (10) is inserted so as to embrace said dowel, the bottom of said second hole having a shape adapted to cause a plastic deformation of said fork-like end when it is inserted, stably fixing it to said dowel and/or to said body.

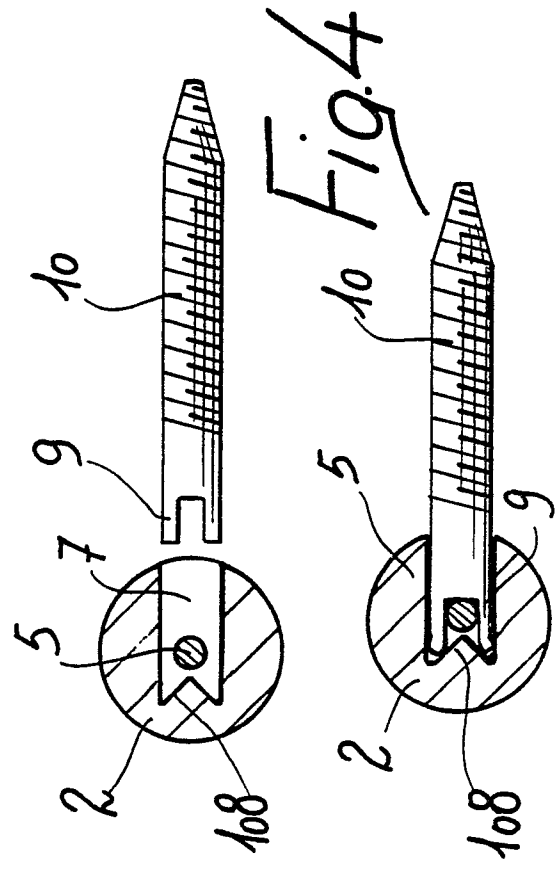
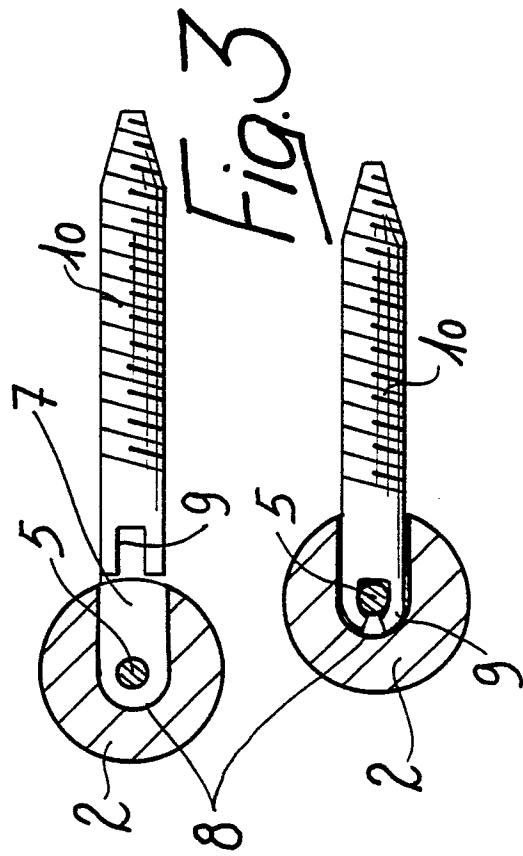
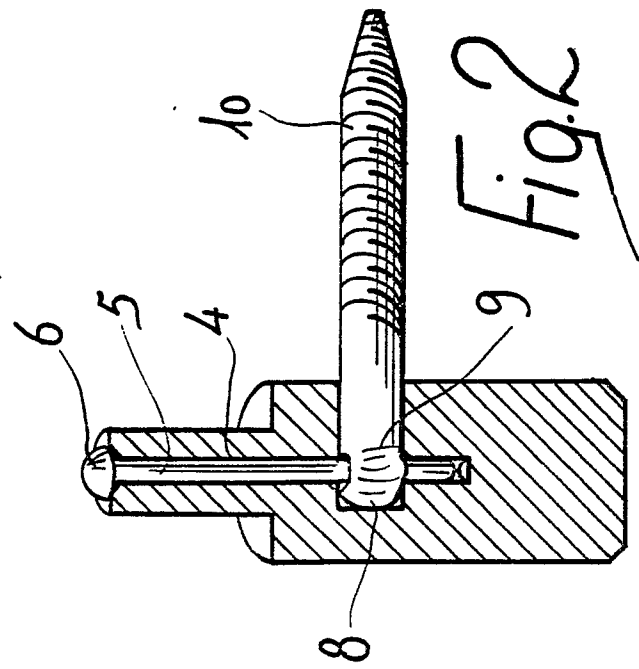
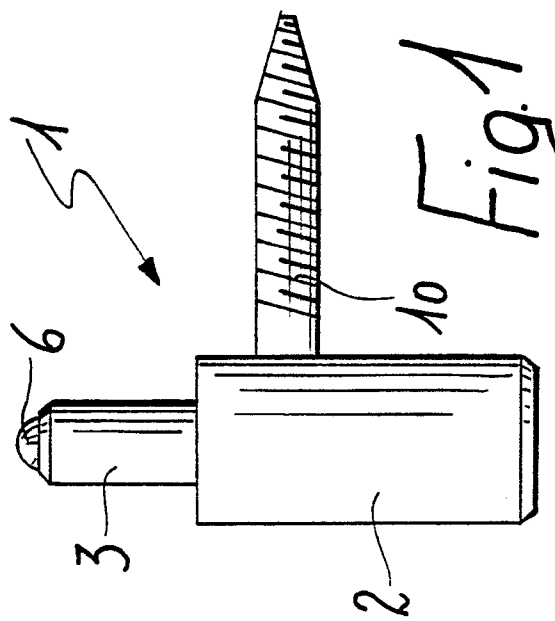
2. A male element according to claim 1, characterized in that said first hole (4) extends from the top of said rotation pivot (3) to a middle portion of said body (2), said dowel (5) being locked therein.

3. A male element according to claims 1 and 2, characterized in that said dowel (5) is cylindrical and said protruding end (6) is mushroom-shaped.

4. A male element according to claims 1, 2 and 3, characterized in that said second hole (7) is cylindrical, has a greater diameter than said first hole (4) and is arranged so as to cross said first hole, its bottom (8) being substantially concave with a conical or spherical shape.

5. A male element according to claims 1, 2 and 3, characterized in that said second hole (7) is cylindrical, has a greater diameter than said first hole (4) and is arranged so as to cross it, its bottom (108) being substantially convex with a cylindrical or conical shape.

6. A male element, according to any of the preceding claims, characterized in that it comprises metallic elements made of materials, such as brass, stainless steel or materials which cannot be welded by conventional processes.





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.5)
A	EP-A-0 259 618 (GEBR. BROTSCHI & CO. AG) * Figures 4-9; column 5, line 50 - column 8, line 48 *	1,2,4	E 05 D 5/02 E 05 D 5/10
A	FR-A-1 306 514 (SUBTIL) * Figures 1,2; page 1, column 2, lines 1-5 *	1,3	
A	FR-A-2 382 571 (BLANC) * Figure 2; page 3, lines 19-25 *	1	
			TECHNICAL FIELDS SEARCHED (Int. Cl.5)
			E 05 D
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 27-10-1989	Examiner KISING A.J.
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			