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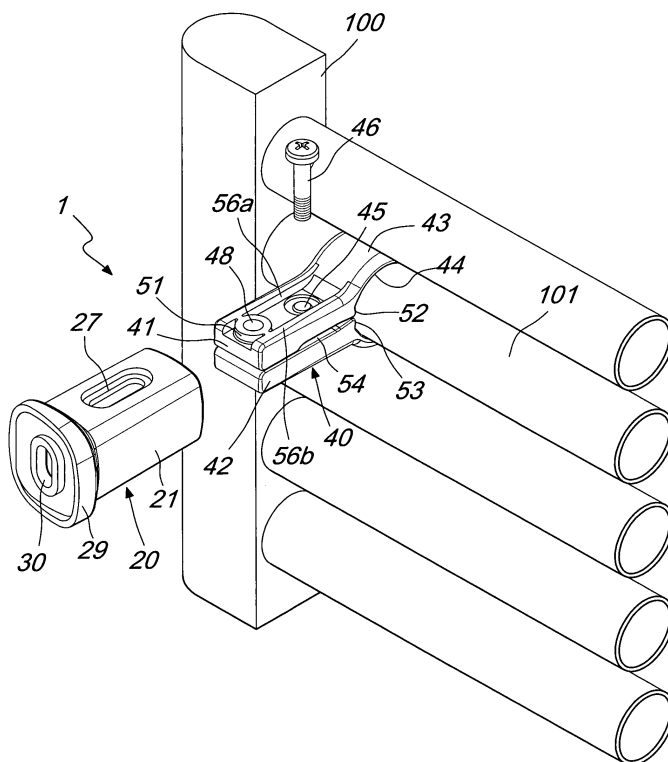
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(54) **Improved wall mount, particularly for radiators**

(57) An improved wall mount, particularly for radiators, has a bracket to be fastened to a wall and is provided with a receptacle in which a locking member is inserted and associated with a radiator portion. The locking member is constituted by two mutually opposite flexible por-

tions that are inserted within the receptacle and are joined at one end to form a seat that accommodates the radiator portion. The wall mount comprises an enhanced retention means that couples the locking member to the radiator portion.



*Fig. 1*

## Description

[0001] The present invention relates to an improved wall mount, particularly for radiators.

[0002] As is known, tubular radiators are anchored to walls with various types of braces or supports that are more or less technologically refined.

[0003] In addition to traditional devices, that support radiators simply by resting contact, there are devices constituted by clamps or vices that can be applied to the radiators and associated with brackets previously fastened to the walls.

[0004] Italian patent application No. PD2004U000006 discloses a wall mount for radiators that is substantially constituted by a bracket to be fastened to the wall and to which a locking member is joined which can be associated with a portion of the radiator.

[0005] The locking member is monolithic and surrounds the radiator portion. It is in fact constituted by two mutually opposite flexible portions, which are joined at one end so as to delimit a seat for the radiator portion.

[0006] The conventional fastening systems are not free from drawbacks.

[0007] Both ordinary braces and fastening devices constituted by supporting brackets and clamps are in fact generally unable to combine simplicity in use with total and safe locking of the radiators.

[0008] In particular, the constructive characteristics of conventional devices sometimes allow inappropriate horizontal sliding movements of the radiators.

[0009] The aim of the invention is to solve the problems described above by providing an improved wall mount, particularly for radiators, that ensures a complete and safe locking of the radiator.

[0010] Within the scope of this aim, a particular object of the invention is to provide an improved wall mount that is easy to apply both to radiators and to walls.

[0011] A further object of the invention is to provide an improved wall mount that remains concealed from sight when in use.

[0012] A further object of the invention is to provide an improved wall mount that is advantageous from a purely economic standpoint.

[0013] This aim, these objects and others that will become better apparent hereinafter are achieved by an improved wall mount, particularly for radiators, comprising a bracket to be fastened to a wall and provided with a receptacle in which a locking member is inserted and which can be associated with a radiator portion, said locking member being constituted by two mutually opposite flexible portions that are inserted within said receptacle and are joined at one end to form a seat that accommodates said radiator portion, said device being **characterized in that** it comprises an enhanced retention means that couples said locking member to said radiator portion.

[0014] Further characteristics and advantages will become better apparent from the description of a preferred but not exclusive embodiment of an improved wall mount

according to the invention, illustrated by way of non-limiting example in the accompanying drawings, wherein:

Figure 1 is a perspective view of an improved wall mount according to the invention during application to a radiator;

Figure 2 is another perspective view of the wall mount according to the invention during application to a radiator;

Figure 3 is a perspective view of the wall mount according to the invention, applied to a radiator;

Figure 4 is a view of a component of the wall mount according to the invention;

Figure 5 is a view of another component of the wall mount according to the invention;

Figure 6 is a side view of the wall mount according to the invention, applied to a radiator;

Figure 7 is a side view of the wall mount according to the invention;

Figure 8 is a perspective view of the wall mount according to the invention;

Figure 9 is a partially sectional top view of the wall mount according to the invention;

Figure 10 is a top view of two improved wall mounts according to the invention, applied to a radiator.

[0015] With reference to the cited figures, an improved wall mount particularly for radiators is generally designated by the reference numeral 1.

[0016] The improved wall mount 1 is preferably made of molded synthetic material and comprises a bracket 20, which can be fastened to a wall 200. The bracket 20 is joined to a locking member 40, which can be associated with a tubular portion 101 of a radiator 100.

[0017] The bracket 20 is constituted by a tubular body 21, which forms a base 22 for resting against the wall 200, and a receptacle 23, which has a substantially rectangular cross-section. A portion of the locking member 40 is inserted in the receptacle 23.

[0018] A slotted hole 24 is provided centrally with respect to the base 22 in order to fasten the wall mount 1 to the wall 200 with an anchoring screw 201, while in the receptacle 23 there is a guide 25 and a guiding bevel 26 to facilitate the insertion of the locking member 40.

[0019] The locking member 40 is constituted by two mutually opposite flexible portions 41 and 42, which are joined at one end by a strap 43 that is substantially tubular.

[0020] The strap 43 forms a seat 44 that accommodates the tubular portion 101. The free ends of the flexible portions 41 and 42, by resting, constitute a sort of shank that has a substantially rectangular transverse cross-section. The shank is inserted and locked in the receptacle 23 with an adjustable position through a reinforced fastening means.

[0021] The flexible portions 41 and 42 are mutually locked through a transverse locking means constituted for example by a first through hole 45, which is formed

transversely, and by a first threaded member 46, which is inserted inside the through hole 45. The first threaded member 46, constituted for example by a screw, engages a female thread 47 that is formed on the flexible portion 42.

[0022] The reinforced fastening means comprises a slotted hole 27, which is formed above the tubular body 21, a second through hole 48, which is formed transversely to the flexible portions 41 and 42, and a second threaded member 49, which is inserted inside the flexible portions. The second threaded member 49, constituted for example by a screw, engages a female thread 50 that is formed on the flexible portion 42.

[0023] The reinforced fastening means also comprises an annular reinforcement 51, which is formed at the second through hole 48 and prevents piercing the tubular body 21 during the tightening of the second threaded member 49.

[0024] According to the invention, the improved wall mount 1 comprises a retention means that firmly couples the locking member 40 to the portion 101.

[0025] The retention means is constituted by a pair of protrusions 52 and 53, which are substantially rectilinear and parallel and extend respectively from the flexible portions 41 and 42 within the seat 44.

[0026] The retention means also comprises a hollow 54, which is formed on the flexible portion 41, at the surface for resting contact with the flexible portion 42, at the height of the first through hole 45.

[0027] The deformation of the locking member 40, caused by the presence of the hollow 54 and by the tightening of the first threaded member 46, is substantially limited only to the flexible portion 42.

[0028] In fact two ribs 56a and 56b, above the flexible portion 41, give its transverse cross-section a substantially U-shaped profile, increasing its rigidity.

[0029] The lower surface of the flexible portion 42 is not parallel to the surface that is in resting contact with the flexible portion 41. By virtue of this refinement, upon tightening of the first threaded member 46, the lower surface of the flexible portion 42 moves toward the upper surface of the flexible portion 41, being substantially parallel thereto.

[0030] Preferably, the retention means comprises a semirigid insert 55, which is arranged in the seat 44. The insert 55 is preferably constituted by a metallic ring that is embedded in the strap 43.

[0031] The wall mount 1 is also provided with a facilitated resting contact means constituted by a protruding edge 28 that surrounds the base 22 and by an adapter plate 29 that is detachably connected to the base.

[0032] The adapter plate 29 is provided with a central slot 30 and with a pair of positioning pins 31 a and 31 b, which engage respectively a pair of openings 32a and 32b formed thereat on the base 22.

[0033] The surface of the adapter plate 29, that is associated with the base 22, is oblique with respect to the surface that is associated with the wall 200. This feature

produces an inclination of the wall mount 1 during the tightening of the anchoring screw 201, allowing correct installation even of curved radiators.

[0034] The use of the wall mount is as follows.

[0035] After inserting the tubular portion 101 in the seat 44, the first threaded member 46 is inserted in the first through hole 45 and engages the female thread 47.

[0036] When tightening the first threaded member 46, the second flexible portion 42 is pushed towards the first flexible portion 41 until it is deformed by virtue of the hollow 54. This deformation compresses the entire strap 43 on the tubular portion 101 and causes the projection of the protrusions 52 and 53 inside the seat 44, making them interfere mechanically with greater force with the tubular portion 101.

[0037] In practice it has been found that the improved wall mount according to the invention fully achieves the intended aim, and allows to mount radiators totally and safely being at the same time easy to apply.

[0038] Also, the improved wall mount according to the invention remains concealed from sight when in use and is therefore advantageous from an aesthetic standpoint.

[0039] This application claims the priority of Italian Patent Application No. VI2008A000103, filed on May 6, 2008, the subject matter of which is incorporated herein by reference.

## Claims

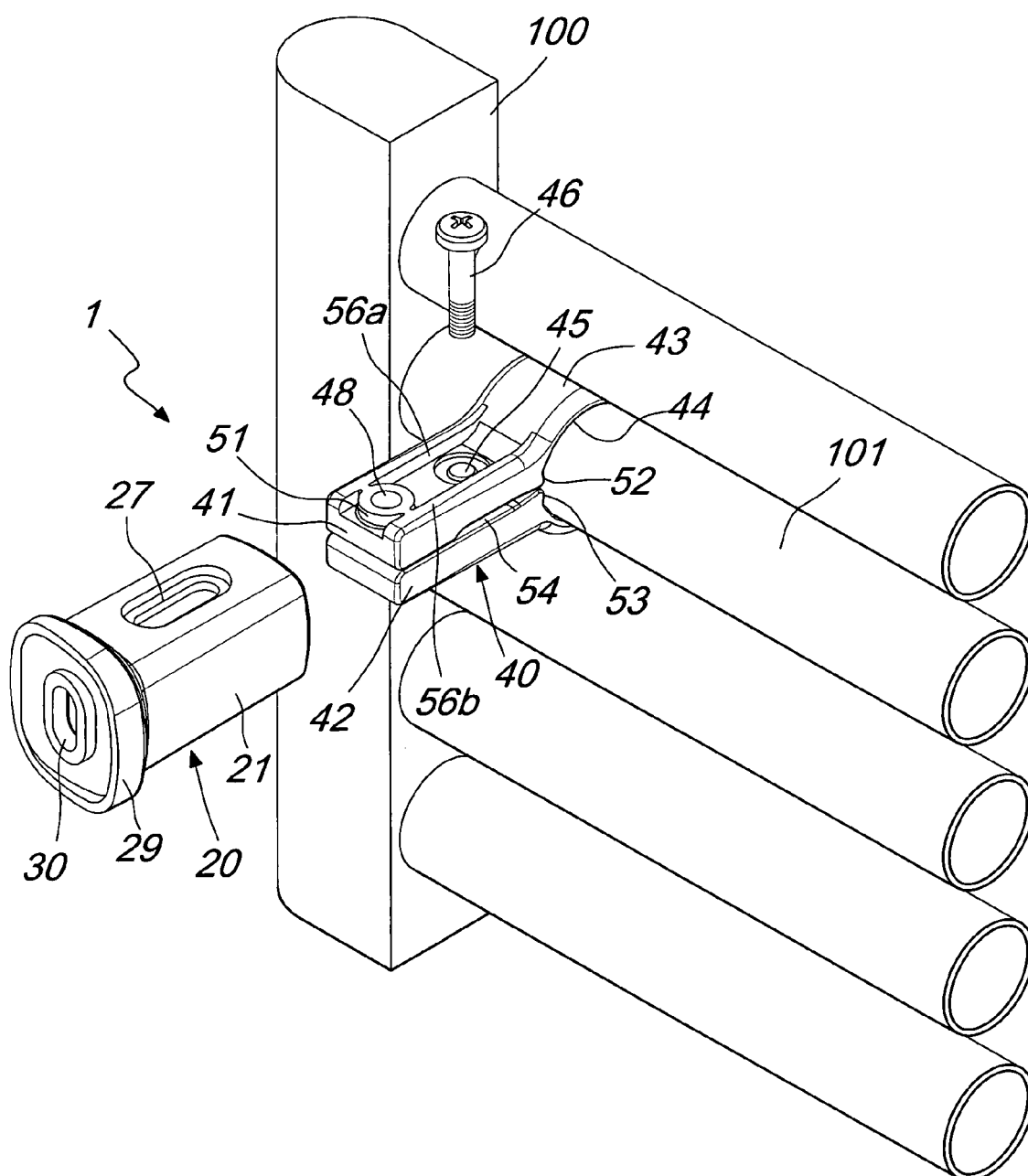
1. A wall mount, particularly for radiators, comprising a bracket to be fastened to a wall and provided with a receptacle in which a locking member is inserted and which can be associated with a radiator portion, said locking member being constituted by two mutually opposite flexible portions that are inserted within said receptacle and are joined at one end to form a seat that accommodates said radiator portion, said device being **characterized in that** it comprises an enhanced retention means that couples said locking member to said radiator portion.
2. The wall mount according to claim 1, **characterized in that** said enhanced retention means comprises two substantially rectilinear and parallel protrusions that are formed inside said seat, said protrusions projecting from said flexible portions.
3. The wall mount according to claim 1 or 2, **characterized in that** said enhanced retention means comprises a hollow that is formed substantially at the mutual contact surface of said flexible portions, said hollow being formed on at least one of said flexible portions.
4. The wall mount according to one or more of the preceding claims, **characterized in that** said enhanced retention means comprises at least one substantially

annular insert that is inserted within said seat.

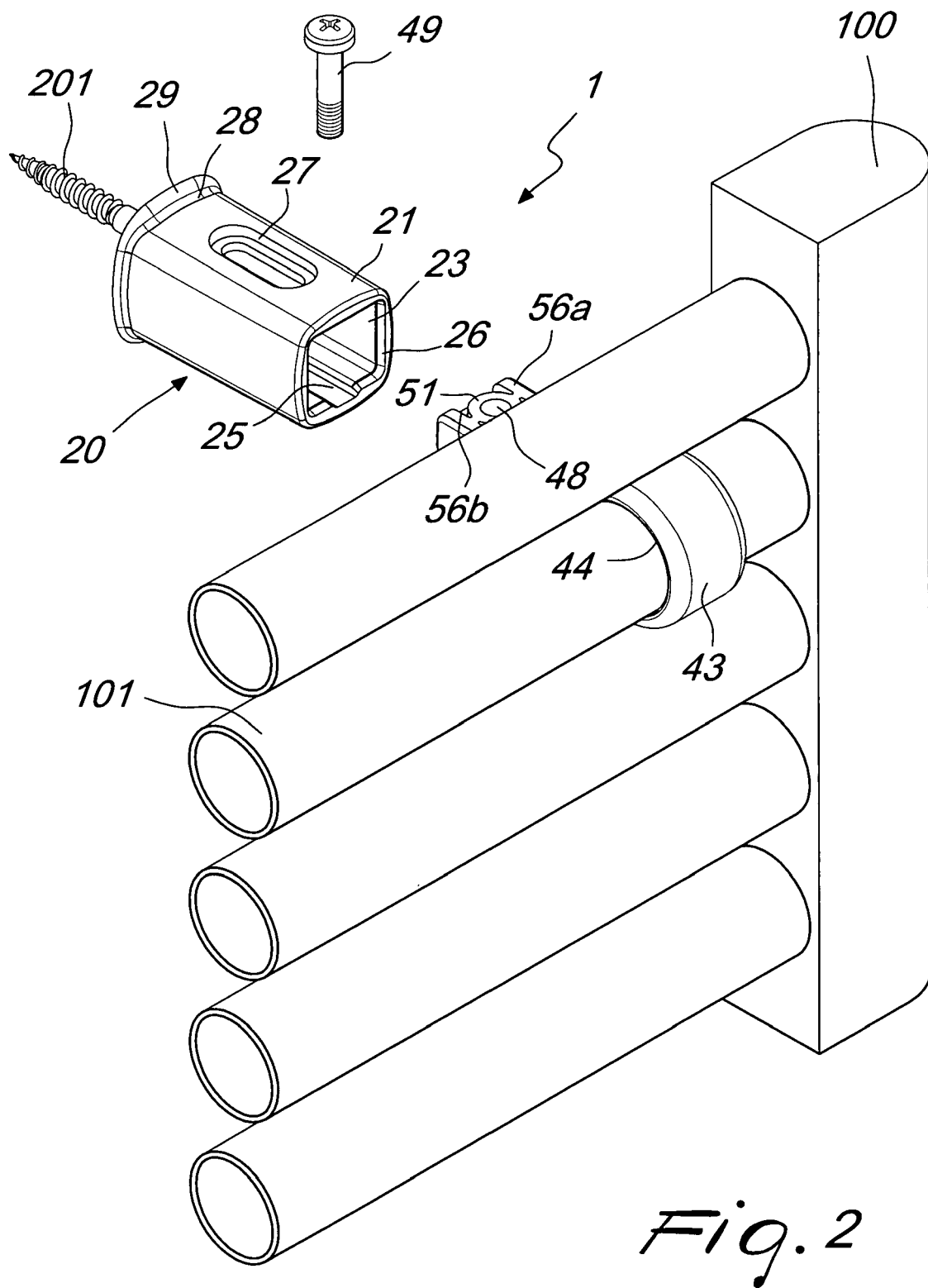
5. The wall mount according to one or more of the preceding claims, **characterized in that** said locking member comprises two ribs formed on the flexible portion provided with said hollow, said flexible portion having a substantially U-shaped profile of the transverse cross-section. 5
  
6. The wall mount according to one or more of the preceding claims, **characterized in that** said locking member comprises a transverse locking means constituted by at least one first through hole that is formed transversely to said flexible portions and by a first threaded member that is inserted therein, said first threaded member engaging a corresponding first female thread. 10 15
  
7. The wall mount according to one or more of the preceding claims, **characterized in that** it comprises a reinforced fastening means constituted by a slotted hole formed in said bracket, by a second through hole formed transversely to said flexible portions, and by a second threaded member inserted inside them, said second threaded member engaging a corresponding second female thread formed on said locking member. 20 25
  
8. The wall mount according to one or more of the preceding claims, **characterized in that** said reinforced fastening means comprises an annular reinforcement that is formed at said second through hole. 30
  
9. The wall mount according to one or more of the preceding claims, **characterized in that** it comprises a facilitated supporting means constituted by a protruding edge that is formed substantially at the base of said bracket that can be fastened to said wall. 35
  
10. The wall mount according to one or more of the preceding claims, **characterized in that** said facilitated supporting means comprises an adapter plate can be associated detachably with said base, the face of said adapter plate that rests against said base and the face of said adapter plate that rests against set wall being non-parallel. 40 45

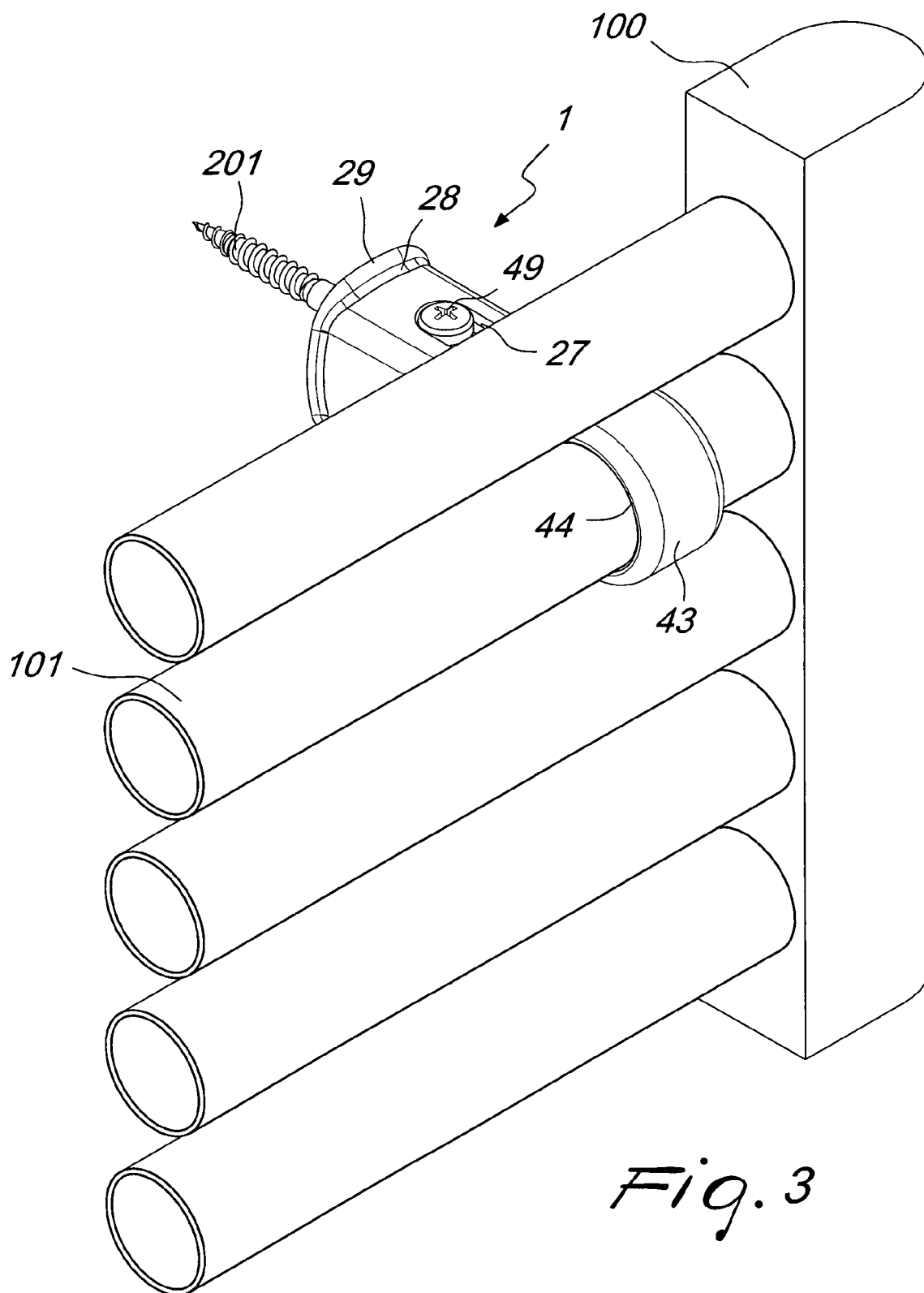
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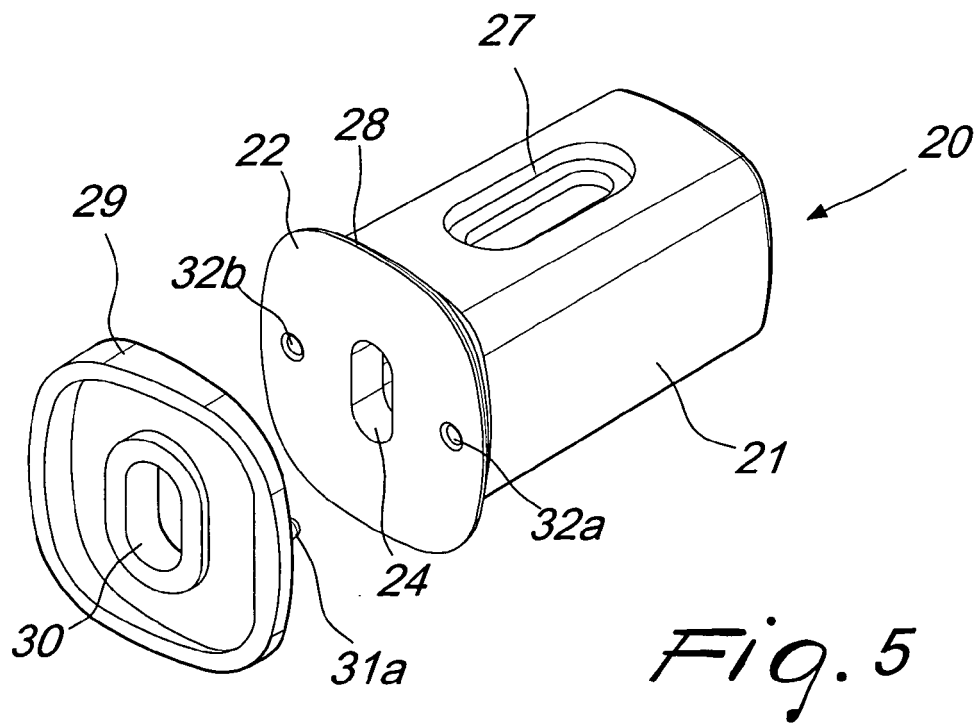
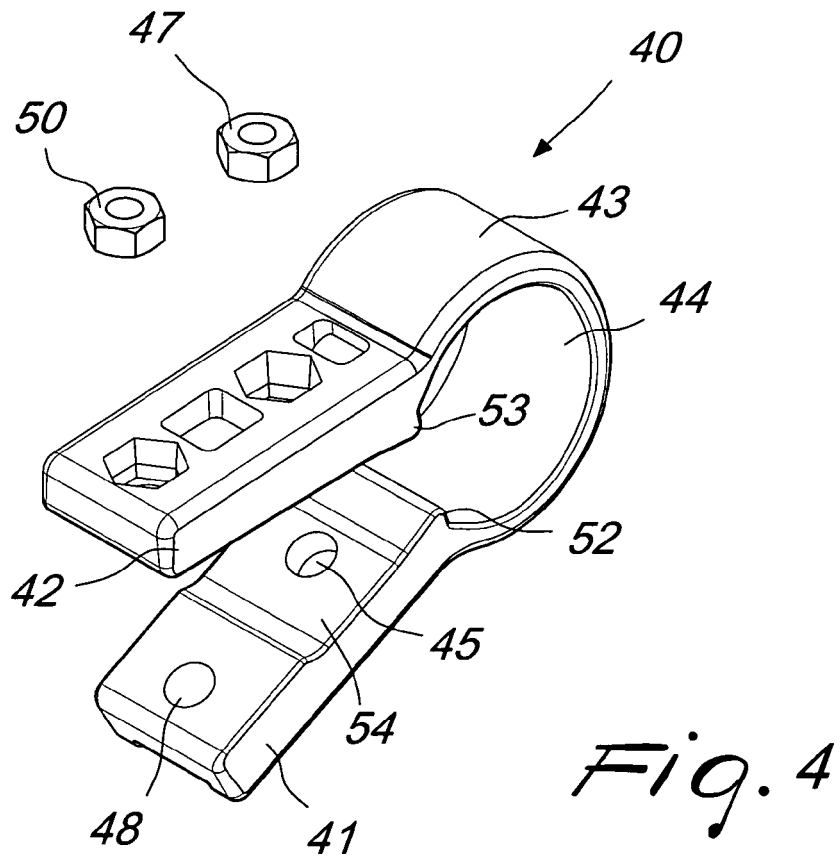


*Fig. 1*

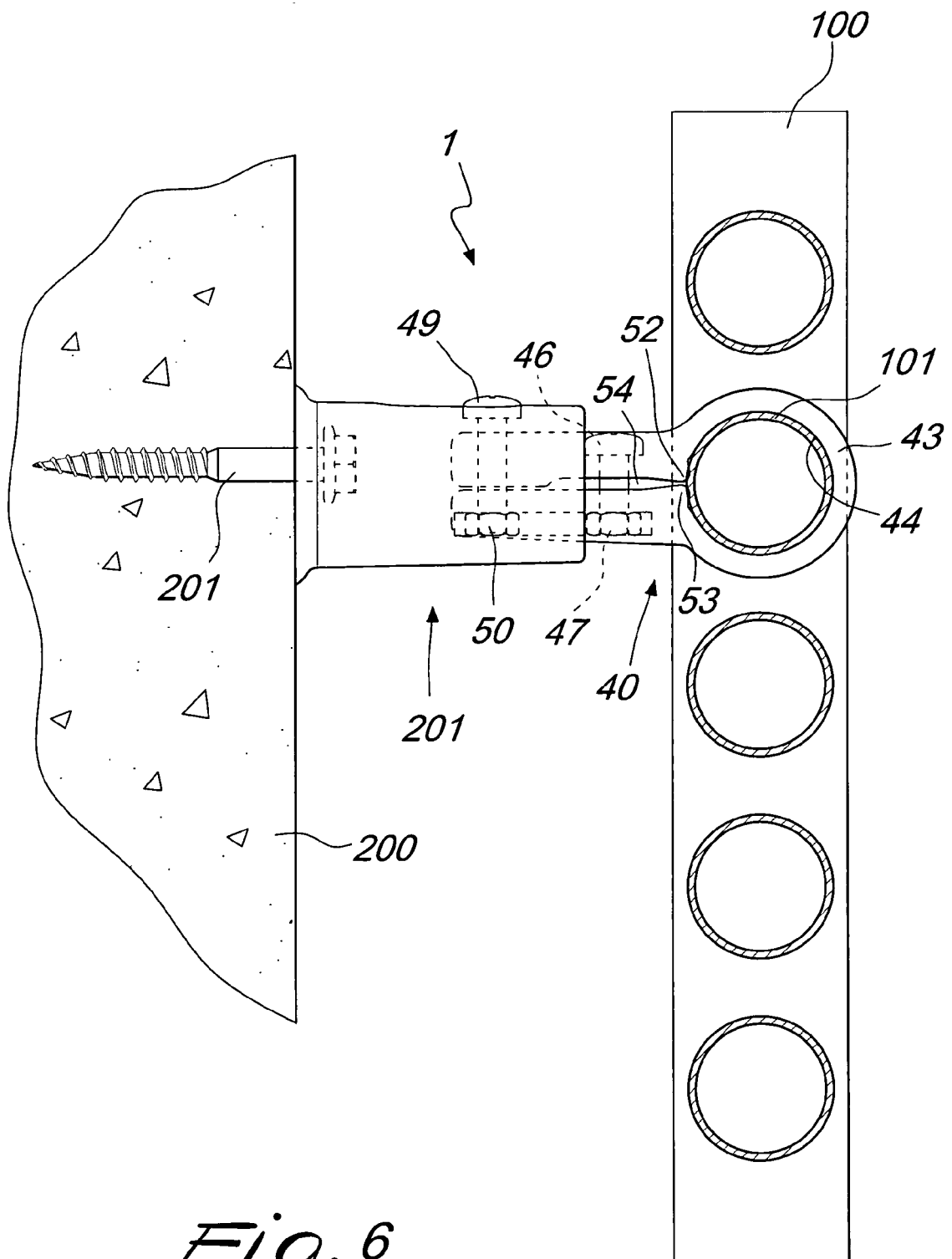




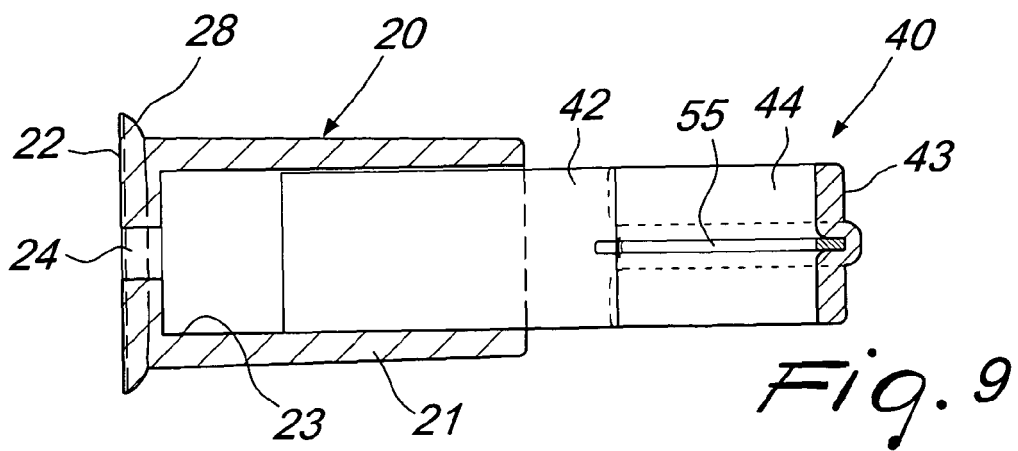
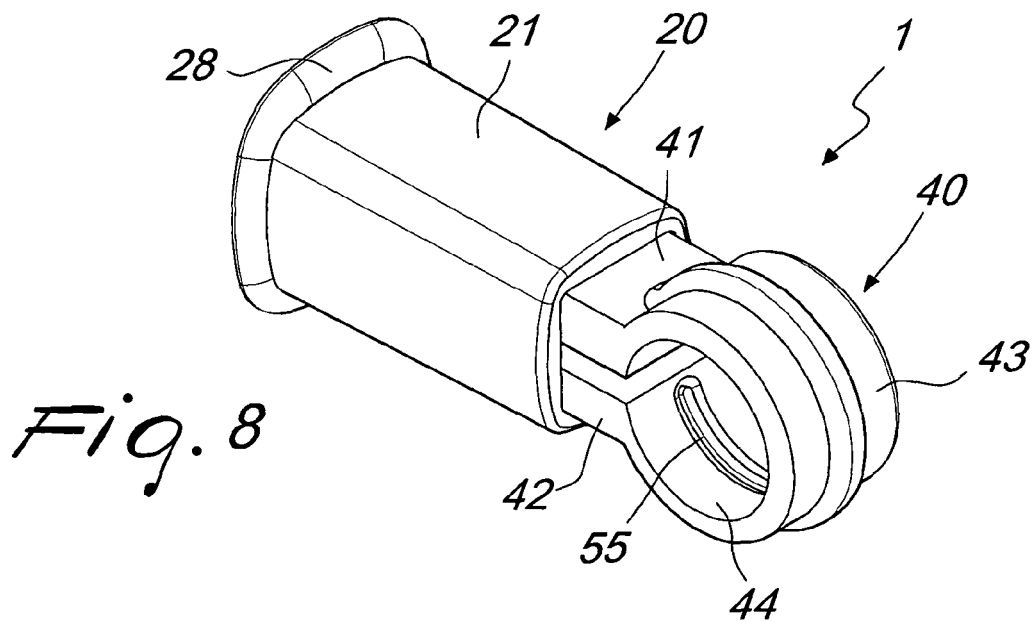
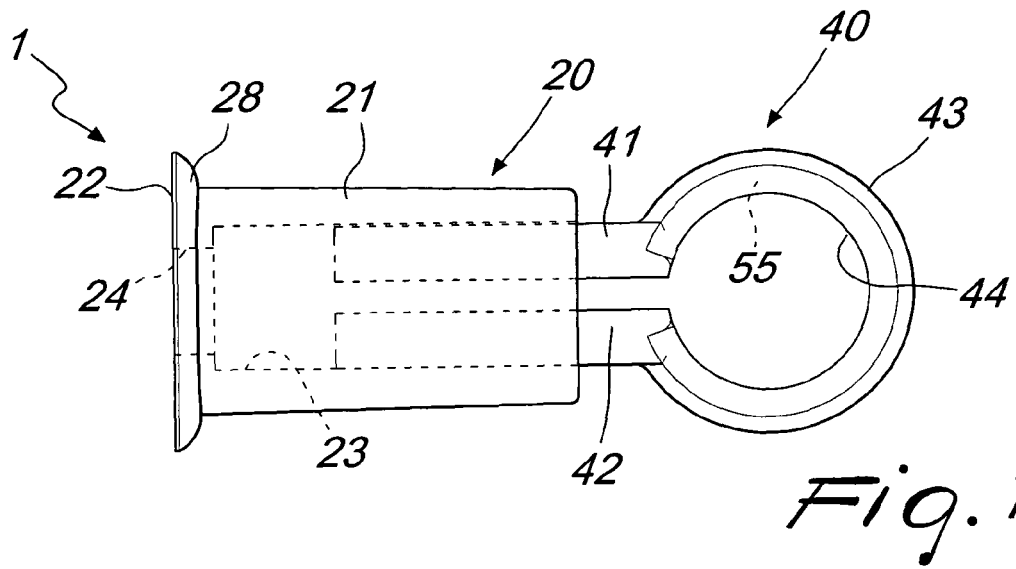
*Fig. 3*







*Fig. 6*



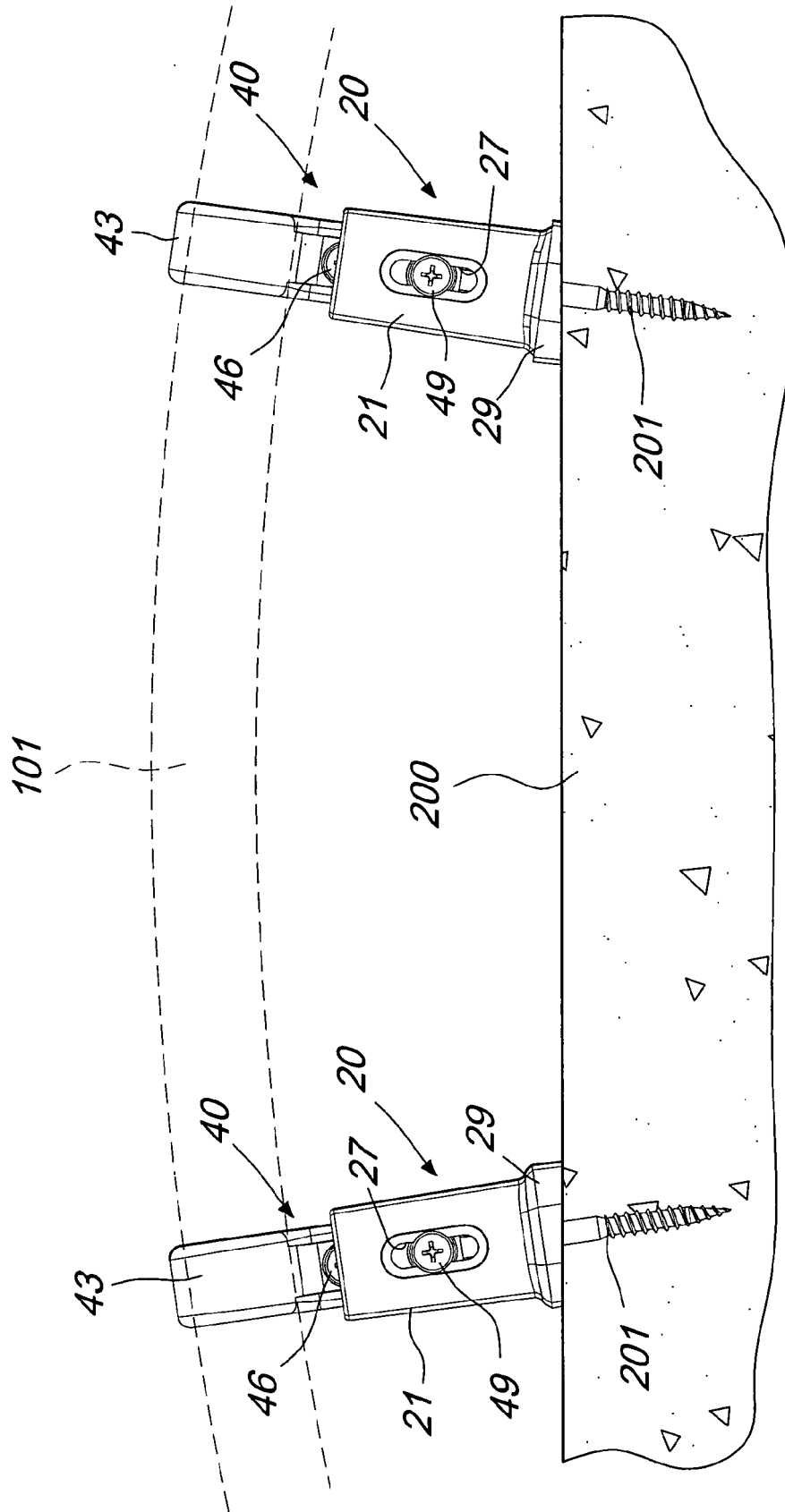


Fig. 10



## EUROPEAN SEARCH REPORT

Application Number  
EP 09 00 4644

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	EP 1 482 250 A (ROFIX N V [BE]) 1 December 2004 (2004-12-01) * paragraph [0018] - paragraph [0031]; figures 1-4 *	1-4, 6, 7, 9, 10	INV. F24D19/02
A	DE 297 04 808 U1 (KERMI GMBH [DE]) 22 May 1997 (1997-05-22) * the whole document *	1	
			TECHNICAL FIELDS SEARCHED (IPC)
			F24D
The present search report has been drawn up for all claims			
Place of search Munich		Date of completion of the search 16 June 2009	Examiner Arndt, Markus
<p>CATEGORY OF CITED DOCUMENTS</p> <p>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</p> <p>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 &amp; : member of the same patent family, corresponding document</p>			

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EPO FORM 1503 03.82 (P04C01)

**ANNEX TO THE EUROPEAN SEARCH REPORT  
ON EUROPEAN PATENT APPLICATION NO.**

EP 09 00 4644

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16-06-2009

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**REFERENCES CITED IN THE DESCRIPTION**

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