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

(11) EP 1 048 794 A1

(12) EUROPEAN PATENT APPLICATION

(43) Date of publication:
02.11.2000 Bulletin 2000/44

(51) Int Cl.[7]: **E03C 1/042**

(21) Application number: **99108161.3**

(22) Date of filing: **26.04.1999**

(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

(71) Applicant: **Krausz Metal Industries Ltd.**
66559 Tel Aviv (IL)

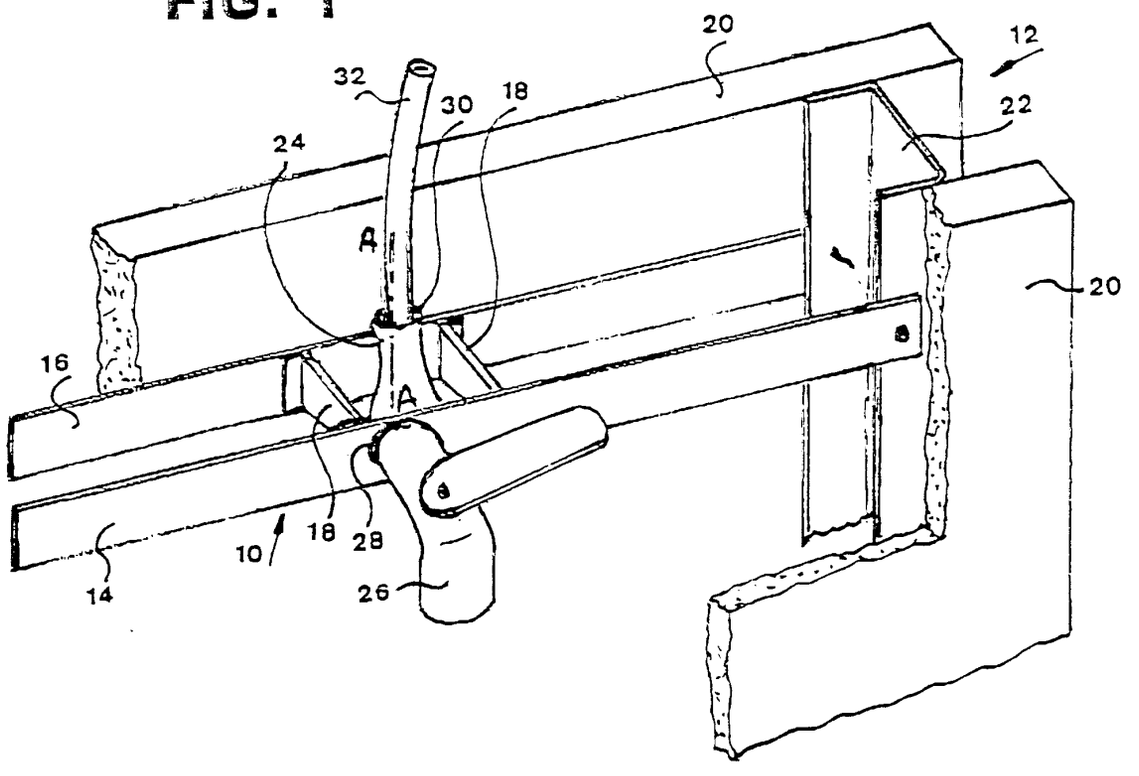
(72) Inventors:
- **Krausz, Eliezer**
  64684 Tel Aviv (IL)
- **Chiproot, Avi**
  Kfar Saba (IL)

(74) Representative: **Modiano, Guido, Dr.-Ing. et al**
Modiano, Josif, Pisanty & Staub,
Baaderstrasse 3
80469 München (DE)

(54) Faucet support structure

(57) A faucet support structure (10) for use in combination with a plasterboard wall (12) is provided. The structure (10) comprises a pair of spaced-apart metal strips (14,16) attachable to a plasterboard wall (12), and at least one hollow substantially L-shaped housing (24) mounted between the metal strips (14,16) for mounting a faucet (26) therein. The housing (24) has a first opening (28) projecting through one of the strips (14) for insertion therein of the faucet (26), and a second opening (30) having an axis extending between the strips (14,16) for insertion therethrough of a water supply pipe (32).

FIG. 1



EP 1 048 794 A1

Description

FIELD OF THE INVENTION

[0001] The present invention relates to a plasterboard wall structure. More particularly, the invention provides means for securely supporting one or more water faucets in such a wall structure.

BACKGROUND OF THE INVENTION

[0002] Plasterboard, sometimes referred to as gypsum board, provides a convenient, labor-saving way of erecting internal building partitions which are ready for painting after merely applying putty-glue to the joints and over screw heads.

[0003] Traditional plastering is completely eliminated, as is the work involved in using pre-cast cinder blocks for construction. Plasterboards are available in large sheets and so make possible the fast construction of non-load carrying walls and ceilings. Galvanized steel rolled or press-produced channels or angles are used as a support structure, the plasterboard being attached to one or both sides of such structure by self-tapping screws. Service conduits such as electric cables, communication cables and water and drainage pipes are easily routed to any required location between parallel sheets of plasterboard. The material is easily saw-cut to form apertures for the installation of electric sockets and light switches. In view of these advantages, it is easy to understand why plasterboard partitions have come into such widespread use.

[0004] Prior-art methods of attaching water faucets to plasterboard walls have however not been entirely satisfactory. As faucets are used, the plasterboard supporting the faucet gradually releases its grip on the fitting assembled through the single or double aperture carrying the faucet. When faucets are replaced, quite high local forces are exerted on the board, causing local crumbling. Aggravating the problem is the presence of moisture which further locally weakens support for the faucet. Where steel piping is used, such piping provides fair support for the faucet fitting, particularly for a hot-cold mixer fitting connected to two water pipes. However plastic water piping has come into extensive use in recent years, and such piping does not, nor is it intended to, provide adequate mechanical support for the faucet fitting.

SUMMARY OF THE INVENTION

[0005] Bearing in mind this state of the art, it is now one of the objects of the present invention to obviate the disadvantages of prior art assembly means of faucets to plasterboard, and to provide a support structure which holds such faucets securely for as long as required.

[0006] It is a further object of the present invention to provide clamping means to secure the water pipe attached to the faucet and to prevent its inadvertent disengagement.

[0007] The present invention achieves the above objects by providing a faucet support structure for use in combination with a plasterboard wall. The structure comprises a pair of spaced-apart metal strips attachable to the wall, and at least one hollow substantially L-shaped housing mounted between the strips for mounting a faucet therein. The housing has a first opening projecting through one of the strips for insertion therein of the faucet, and a second opening having an axis extending between the strips for insertion therethrough of a water supply pipe.

[0008] In a preferred embodiment of the present invention there is provided a structure further provided with a pipe gripper arm attached adjacent to each L-shaped housing. The arm is provided with a clamping device substantially alineable to the axis of the second opening between the strips for engagement of a water supply pipe to be connected to the faucet.

[0009] In a most preferred embodiment of the present invention there is provided a structure wherein the metal strips are sufficiently long when horizontally disposed for interconnection to two adjacent vertical metal posts supporting plasterboard panels.

[0010] Yet further embodiments of the invention will be described hereinafter.

[0011] It will thus be realized that the structure of the present invention serves to secure the faucet even under conditions of moisture which can obviously be expected due to splashing and leakage. The faucet is supported in a plastic housing which in turn is supported between metal strips, these being adequately large enough to resist any forces, in use or during replacement, to which the faucet may be subjected. The faucets themselves can optionally be factory pre-assembled to the structure and thus effect a further saving of on-site labor. The structure of the present invention can be screwed directly to the plasterboard, but even better structural integrity is achieved by its attachment to the light metal structure supporting the plasterboard. The structure is particularly suitable for use in conjunction with plastic water supply piping.

[0012] The invention will now be described further with reference to the accompanying drawings, which represent by example preferred embodiments of the invention. Structural details are shown only as far as necessary for a fundamental understanding thereof. The described examples, together with the drawings, will make apparent to those skilled in the art how further forms of the invention may be realized.

BRIEF DESCRIPTION OF THE DRAWINGS

[0013]

FIG. 1 is a perspective view of a preferred embodiment of the support structure according to the in-

vention;

FIG. 2 is a perspective view of an embodiment holding two faucets;

FIG. 3 is an end elevation of an embodiment further provided with a gripper arm; and

FIG. 4 is a detail-fragmented view of a split housing for holding a faucet.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

[0014] There is seen in FIG. 1 a faucet support structure 10 for use in combination with a plasterboard wall 12.

[0015] The structure 10 is based on front and rear spaced-apart metal strips 14, 16, in this embodiment spaced apart by a pair of sheet metal U brackets 18.

[0016] The strips 14, 16 are attachable to the wall 12. The strips 14, 16, suitably made of galvanized steel sheet, can be screwed directly to the plasterboard 20. However advantageously they are sufficiently long when horizontally disposed for interconnection to two adjacent vertical metal posts 22, only one of which is seen, supporting the plasterboard 20, thus providing improved anchoring.

[0017] A hollow substantially L-shaped housing 24, suitably made of a plastic, is mounted between strips 14, 16 for assembling a part of a faucet 26 therein.

[0018] The housing 24 has a first opening 28 projecting through the front strip 14 and is sufficiently large for insertion therein of part of the faucet body 26.

[0019] A second opening 30 has an axis AA extending between the strips 14, 16 for insertion therethrough of a water supply pipe 32, which is attached to the faucet body 26. Typically the pipe 32 is made of a plastic, such as crosslinked polyethylene, and provides negligible mechanical support to the faucet body 26.

[0020] With reference to the rest of the figures, similar reference numerals have been used to identify similar parts.

[0021] Referring now to FIG. 2, there is seen a similar structure, 34 wherein two housings 24 are mounted therein and are spaced apart along strips 33, 35 to accept hot and cold-water faucets 36, 38.

[0022] FIG. 3 illustrates a structure 40 similar to that seen in FIG. 2. There is further provided a pipe gripper arm 42 attached adjacent to the L-shaped housing 24.

[0023] The arm 42 is provided with a clamping device 44, such as a screw tightened conduit clip, substantially alineable to the axis AA of the housing second opening 46, between strips 48, 50.

[0024] The clamping device 44 is used for engagement of the water supply pipe 32 to be connected to the faucet body 36.

[0025] Alternatively the clamping device 44 may be made a little larger for engagement of a conduit 48 covering the water supply pipe 32. In either case, the clamping device prevents inadvertent disconnection of the pipe 32 from the faucet body 36.

[0026] For convenience the arm 42 is held by the same screw 52 serving to hold the housing 24 to the rear strip 50.

[0027] Seen in FIG. 4 is a detail of a housing 54 for use in the structure. Housing 54 comprises a pair of matching hollow halves 56, 58 which are configured to be interlocked after insertion therebetween an adapter mounted therein to which the faucet body 26 seen in FIG. 1, is connected. Said adapter is secured within housing 54 by nut 62.

[0028] First opening 60 is configured with whatever is necessary, in this embodiment containing a pair of captive nuts 62, for securing the particular type and size of faucet to be used, or an adapter.

[0029] The scope of the described invention is intended to include all embodiments coming within the meaning of the following claims. The foregoing examples illustrate useful forms of the invention, but are not to be considered as limiting its scope, as those skilled in the art will readily be aware that additional variants and modifications of the invention can be formulated without departing from the meaning of the following claims.

[0030] 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 faucet support structure for use in combination with a plasterboard wall, said structure comprising a pair of spaced-apart metal strips attachable to said wall, and at least one hollow substantially L-shaped housing mounted between said strips for mounting a faucet therein, said housing having a first opening projecting through one of said strips for insertion therein of said faucet, and a second opening having an axis extending between said strips for insertion therethrough of a water supply pipe.

2. The structure as claimed in claim 1, wherein two of said housings are mounted in the structure and are spaced apart to accept hot and cold water faucets.

3. The structure as claimed in claim 1, further provided with a pipe gripper arm attached adjacent to each L-shaped housing, the arm being provided with a clamping device substantially alineable to the axis of said second opening between said strips for engagement of a water supply pipe to be connected to said faucet.

4. The structure as claimed in claim 1, further provided with a pipe gripper arm attached adjacent to each L-shaped housing, the arm being provided with a clamping device substantially alineable to the axis of said second opening between said strips for engagement of a conduit covering a water supply pipe to be connected to said faucet.

5. The structure as claimed in claim 1 wherein within said housing there is mounted an adapter to which said faucet is connected.

6. The structure as claimed in claim 1, wherein said metal strips are sufficiently long when horizontally disposed for interconnection to two adjacent vertical metal posts supporting plasterboard panels.

7. The structure as claimed in claim 1, wherein said housing comprises a pair of matching hollow halves which are configured to be interlocked after insertion therebetween of a faucet body.

FIG. 1

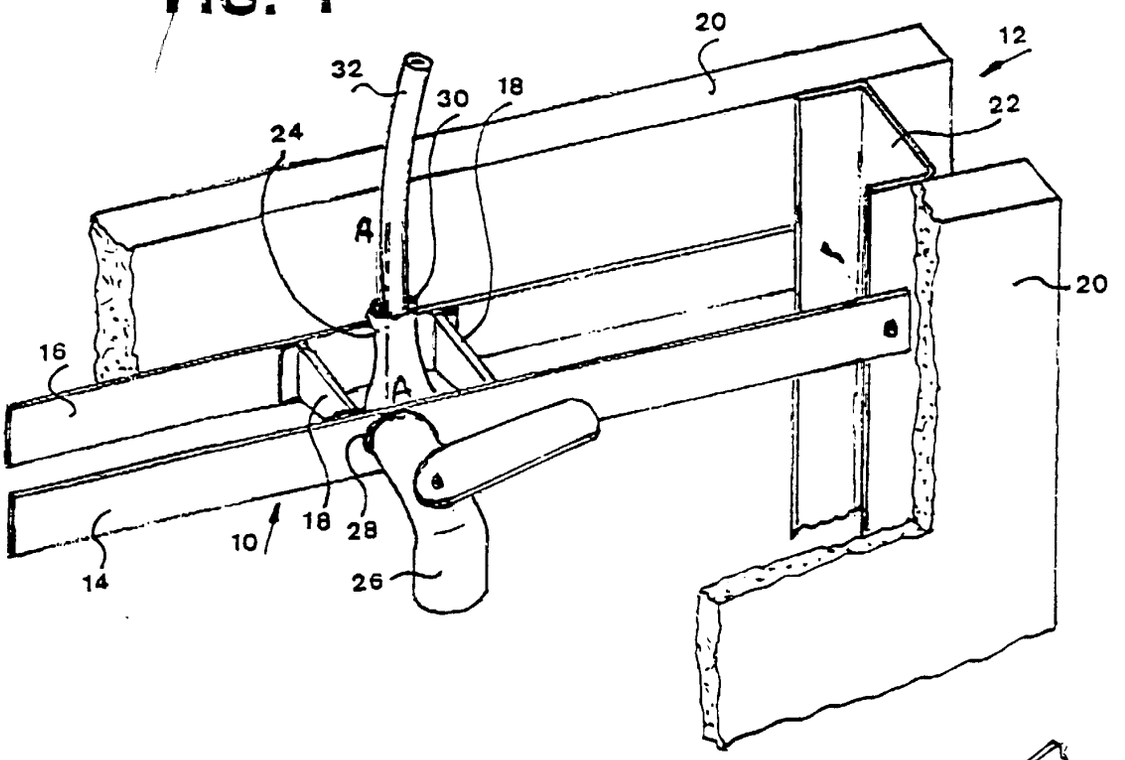
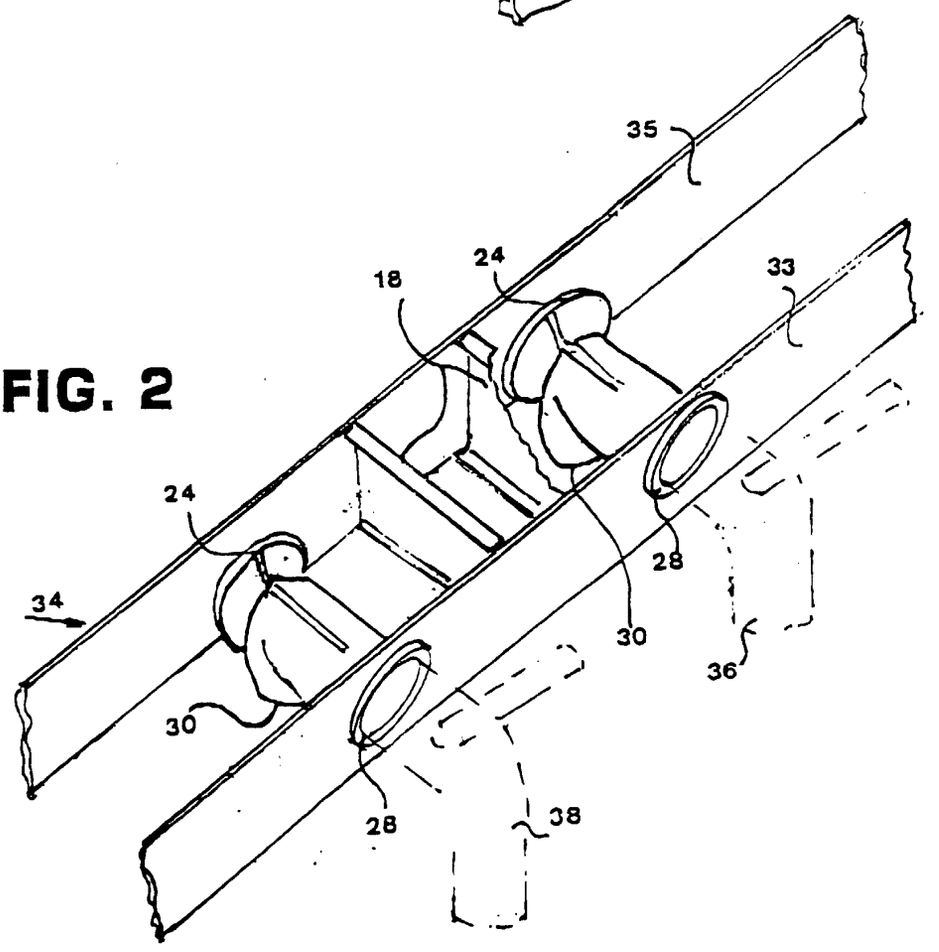

20
12
32
30
18
22
24
A
20
16
A
18
28
10
14
26

FIG. 2


35
18
24
33
24
28
34
30
30
36
28
38

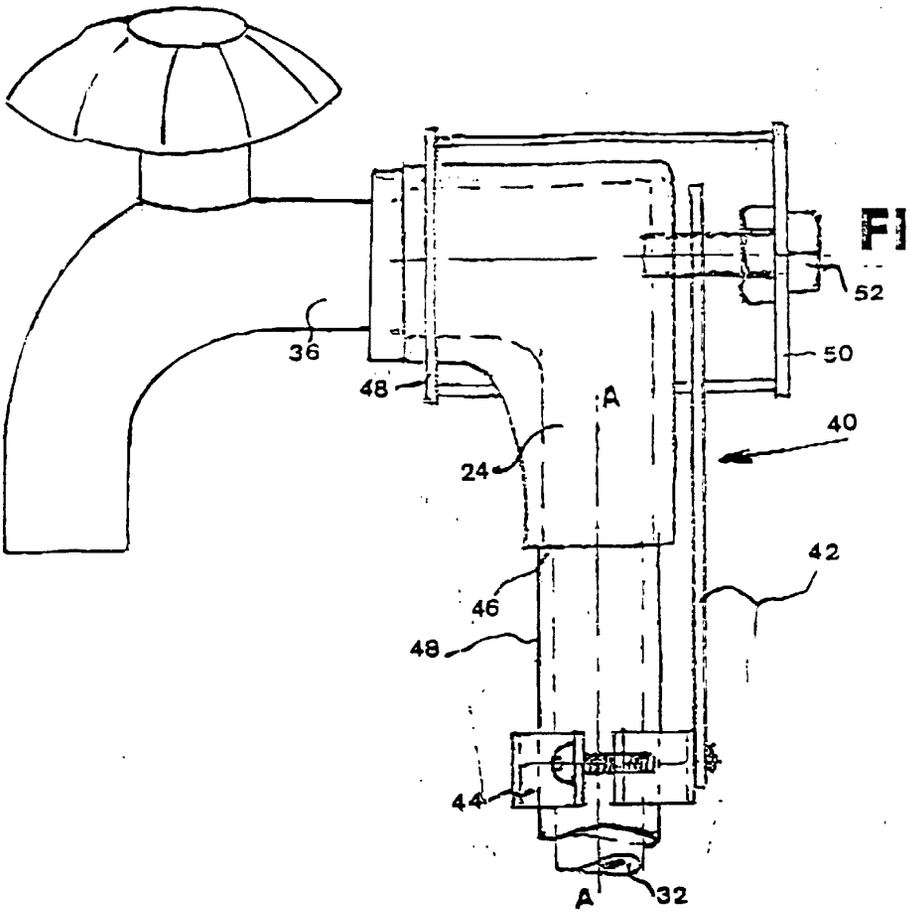


FIG. 3

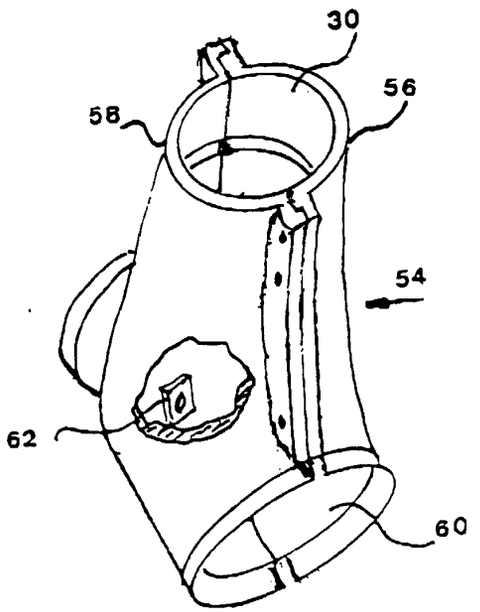


FIG. 4

European Patent Office

EUROPEAN SEARCH REPORT

Application Number
EP 99 10 8161

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.7)
A	DE 197 26 483 A (KOENEKE RALF) 24 December 1998 (1998-12-24) * column 4, line 37 - column 5, line 17 * * column 8, line 11 - line 17 * * figures 10,11 *	1-6	E03C1/042
A	US 2 537 437 A (AABY OSCAR L.) 9 January 1951 (1951-01-09) * column 1, line 36 - column 2, line 35 * * figure 1 *	1-4,6	
A	DE 93 12 742 U (JAEGER REINHARD) 4 November 1993 (1993-11-04) * page 3, line 25 - line 36 * * page 4, line 15 - line 24 * * figures 7,8 *	1-4	
A	US 5 031 940 A (STEFANOS KILIMIS) 16 July 1991 (1991-07-16) * column 5, line 7 - line 34 * * figures 1-6 *	7	
			TECHNICAL FIELDS SEARCHED (Int.Cl.7) E03C

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
THE HAGUE	26 October 1999	Urbahn, S

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

EPO FORM 1503 03.82 (P04C01)

ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO. EP 99 10 8161

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

26-10-1999

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
DE 19726483 A	24-12-1998	NONE	
US 2537437 A	09-01-1951	NONE	
DE 9312742 U	04-11-1993	AT 397991 B AT 210592 A	25-08-1994 15-12-1993
US 5031940 A	16-07-1991	GR 88100200 A	19-01-1990

EPO FORM P0459

For more details about this annex : see Official Journal of the European Patent Office, No. 12/82