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

(11) EP 1 950 015 A1

(12) EUROPEAN PATENT APPLICATION

(43) Date of publication:
30.07.2008 Bulletin 2008/31

(51) Int Cl.:
B27B 17/02 *(2006.01)*

(21) Application number: **07101354.4**

(22) Date of filing: **29.01.2007**

(84) Designated Contracting States:
AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IS IT LI LT LU LV MC NL PL PT RO SE SI SK TR
Designated Extension States:
AL BA HR MK RS

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(54) GUIDE BAR FOR CHAIN SAWS

(57) A guide bar (1) for chain saws (50) includes a first guide plate (10), a second guide plate (30) and a spacer plate (20) which is sandwiched between the first (10) and second guide plates (30). Each of the first (10) and second guide plates (30) has a plurality of protrusions (11,31) extending from an outer side thereof and recesses (111,311) defined in an inner side thereof, A groove (21) is defined along an outer periphery of the spacer plate (20) and located between the first (10) and second guide plates (30) so as to receive the chain (40). The protrusions (11,31) and recesses (111,311) reinforce the structural strength of the guide bar (1) and reduce the friction between the guide bar (1) and the object to be cut.

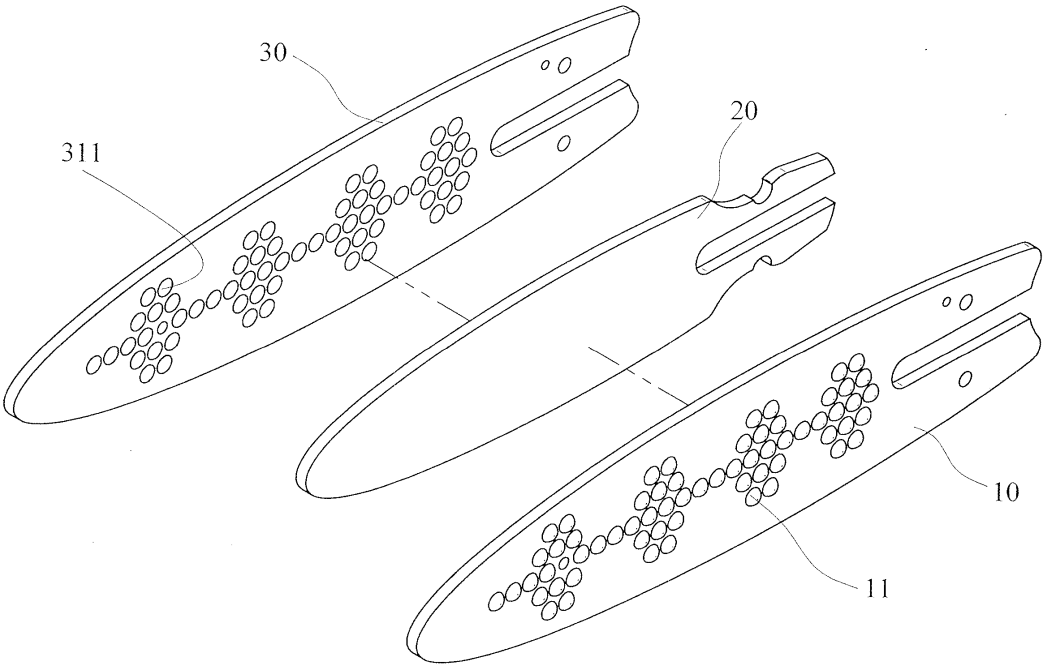

FIG.2

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Description

FIELD OF THE INVENTION

[0001] The present invention relates to a guide bar for a chain saw and the guide bar includes a plurality of protrusions and recesses on two guide plates so as to reinforce the structure of the guide bar.

BACKGROUND OF THE INVENTION

[0002] A chain saw includes a motor and a guide bar which includes two guide plates and a spacer plate which is sandwiched between the two guide plates. The guide bar usually is made by metal and a groove is defined along a periphery of the guide bar so as to receive the chain therein.

[0003] A conventional guide bar 60 of a chain saw is shown in Fig. 5 and generally includes two guide plates 62 and a spacer plate 61 which is sandwiched between the two guide plates 62. The spacer plate 61 is shorter than the guide plates 62 so as to form a groove 63 which is defined along the guide bar 60. The chain 70 is connected to the guide bar 60 and movable in the slot 63. When cutting objects, the chain 70 shakes and hits the guide plates 62 and the shocks are transferred to the whole chain saw. A huge noise generates due to the vibration of the chain 70 and the guide bar 60.

[0004] Another conventional guide bar 80 is disclosed in Fig. 6 and includes two guide plates 82 and a spacer plate 81 which is sandwiched between the two guide plates 82. The spacer plate 81 is shorter than the guide plates 82 so as to form a groove 83 which is defined along the guide bar 80 so as to receive the chain 90 therein. The spacer plate 81 has a first through hole 811 and each of the two guide plates 82 has a second through hole 821 which communicates with the first through hole 811. The vibration can be reduced when it is transferred to the first and second through holes 811, 821 so as to reduce the shaking. However, the first and second through holes 811, 821 reduce the strength of the guide bar 80. Besides, when the chain saw cuts a thick object, the object contacts the guide bar 80 and because the guide plates 82 have flat outer surfaces so that the friction between the object and the guide bar 80 increases and affects the cutting efficiency. Once the guide plates 82 are worn out, the whole guide bar has to be replaced.

[0005] The present invention intends to provide a guide bar for a chain saw and the guide plates of the guide bar includes multiple protrusions on outer side and recesses in inner side so as to reinforce structural strength of the guide bar and reduces the friction between the guide bar and the object to be cut.

SUMMARY OF THE INVENTION

[0006] The present invention relates to a guide bar for chain saws and the guide bar comprises a first guide plate having a plurality of first protrusions extending from an outer side thereof, a second guide plate having a plurality of second protrusions extending from an outer side thereof, and a spacer plate which is sandwiched between the first and second guide plates. A groove is defined along an outer periphery of the spacer plate and located between the first and second guide plates.

[0007] The primary object of the present invention is to provide a guide bar of a chain saw wherein the two guide plates each have protrusions on out side thereof to provide better structural strength of the guide bar and less friction between the guide bar and the object to be cut.

[0008] The present invention will become more obvious from the following description when taken in connection with the accompanying drawings which show, for purposes of illustration only, a preferred embodiment in accordance with the present invention.

BRIEF DESCRIPTION OF THE DRAWINGS

[0009]

Fig. 1 is a perspective view to show the guide bar of the present invention;
Fig. 2 is an exploded view to show the guide bar of the present invention;
Fig. 3 is a cross sectional view along line A-A in Fig. 4 to show the guide bar of the present invention;
Fig. 4 shows the guide bar of the present invention used with a chain saw;
Fig. 5 is a cross sectional view to show a conventional guide bar, and
Fig. 6 is a cross sectional view to show another conventional guide bar.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

[0010] Referring to Fig. 4, the guide bar 1 of the present invention is connected to a chain saw 50 and a chain 40 is engaged with the guide bar 1.

[0011] Referring to Figs. 1 to 3, the guide bar 1 of the present invention a first guide plate 10, a second guide plate 30 and a spacer plate 20. The first guide plate 10 has a plurality of first protrusions 11 extending from an outer side thereof and a plurality of first recesses 111 are defined in an inner side thereof. The first recesses 111 are located corresponding to the first protrusions 11. The second guide plate 30 has a plurality of second protrusions 31 extending from an outer side thereof and a plurality of second recesses 311 are defined in an inner side thereof. The second recesses 311 are located corresponding to the second protrusions 31. The first and second protrusions 11,31 are located symmetrically relative to the spacer plate 20. The spacer plate 20 is sandwiched between the first and second guide plates 10, 30. A groove 21 is defined along an outer periphery of the spac-

er plate 20 and located between the first and second guide plates 10, 30 so as to receive the chain 40. The first and second guide plates 10, 30 are connected with each other by welding, riveting or any known method.

[0012] The first protrusions 11 and the second protrusions 31 project from the outer surfaces of the first and second guide plates 10, 30 such that when the chain saw 50 is cutting a bulky object, only the first and second protrusions 11, 31 contact the object such that only limited friction is occurred between the guide bar 1 and the object. Besides, the first protrusions 11 and recesses 111 and the second protrusions 31 and recesses 311 reinforce the structural strength of the first and second guide plates 10, 30. The shocks or vibration can be shared by the protrusions 11, 31 and recesses 111, 311 by slightly deformation to reduce the shaking during using the chain saw 50.

[0013] The first and second protrusions 11,31 and the first and second protrusions 31 and recesses 311 can be arranged in any known pattern or shapes. In this embodiment, the first and second protrusions 11, 31 are curved protrusions. The first and second protrusions 11, 31 can also be elongated ridges or different sizes and shapes.

[0014] While we have shown and described the embodiment in accordance with the present invention, it should be clear to those skilled in the art that further embodiments may be made without departing from the scope of the present invention.

Claims

1. A guide bar for chain saws, comprising:

a first guide plate having a plurality of first protrusions extending from an outer side thereof;
a second guide plate having a plurality of second protrusions extending from an outer side thereof, and
a spacer plate sandwiched between the first and second guide plates, a groove defined along an outer periphery of the spacer plate and located between the first and second guide plates.

2. The guide bar as claimed in claim 1, wherein the first guide plate has a plurality of first recesses defined in an inner side thereof and the first recesses are located corresponding to the first protrusions, the second guide plate has a plurality of second recesses defined in an inner side thereof and the second recesses are located corresponding to the second protrusions,

3. The guide bar as claimed in claim 1, wherein the first and second protrusions are curved protrusions.

4. The guide bar as claimed in claim 1, wherein the first and second protrusions are located symmetrically.

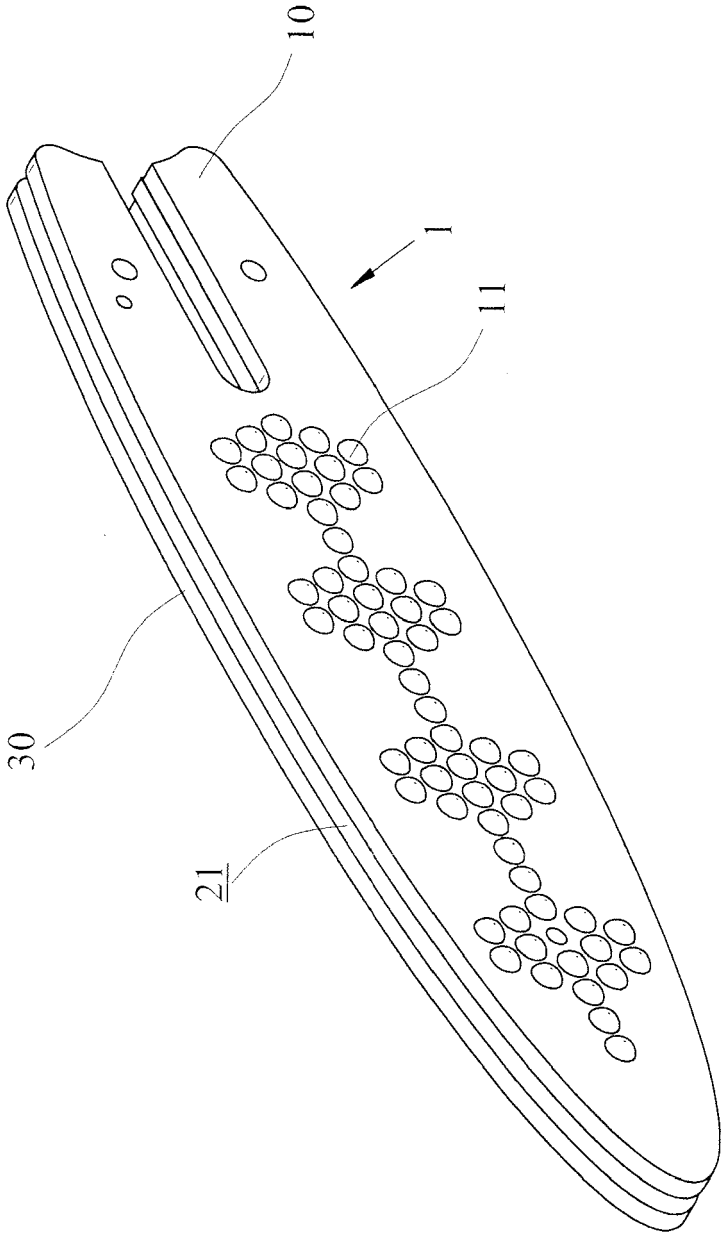

FIG.1

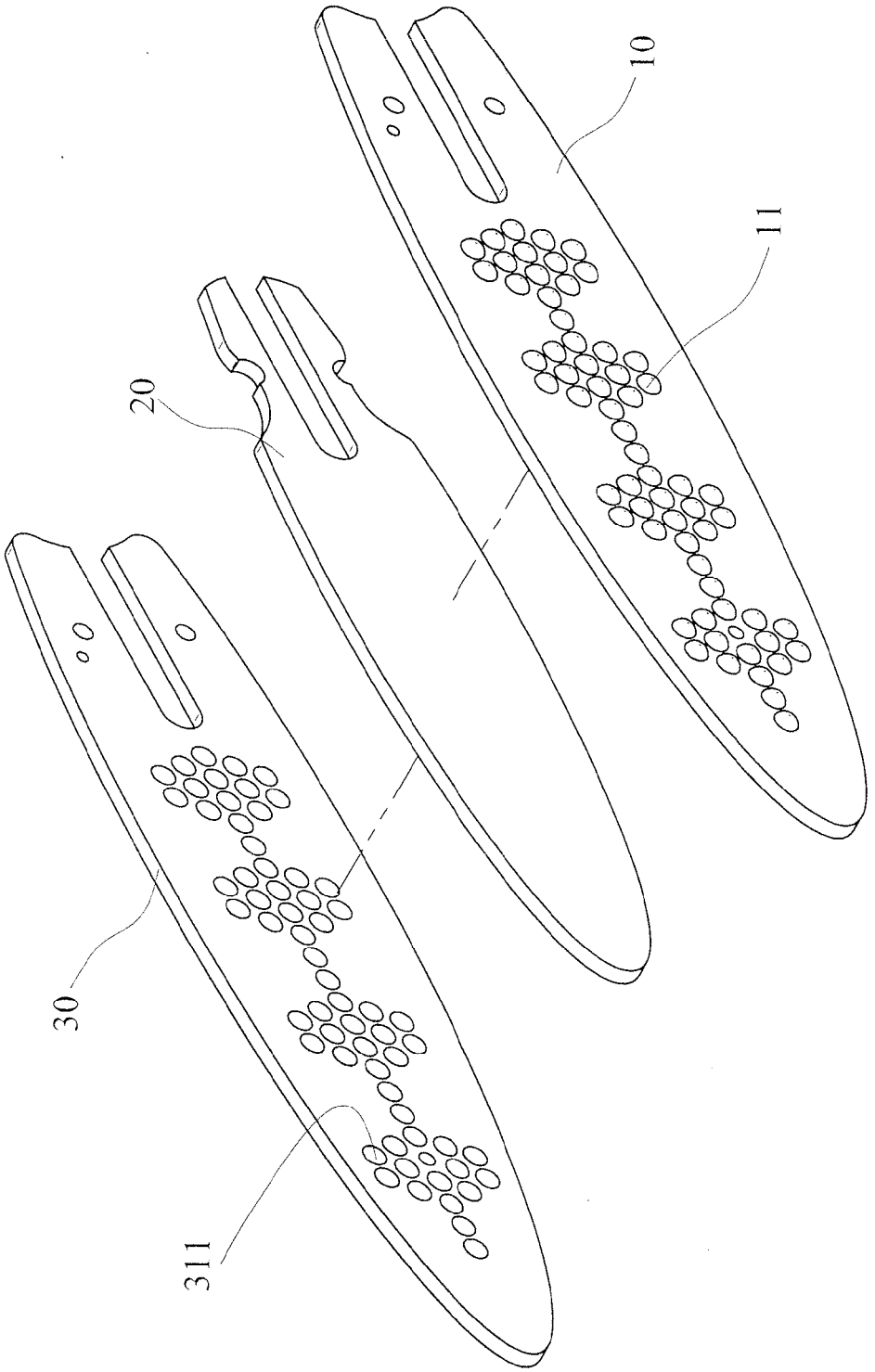

FIG.2

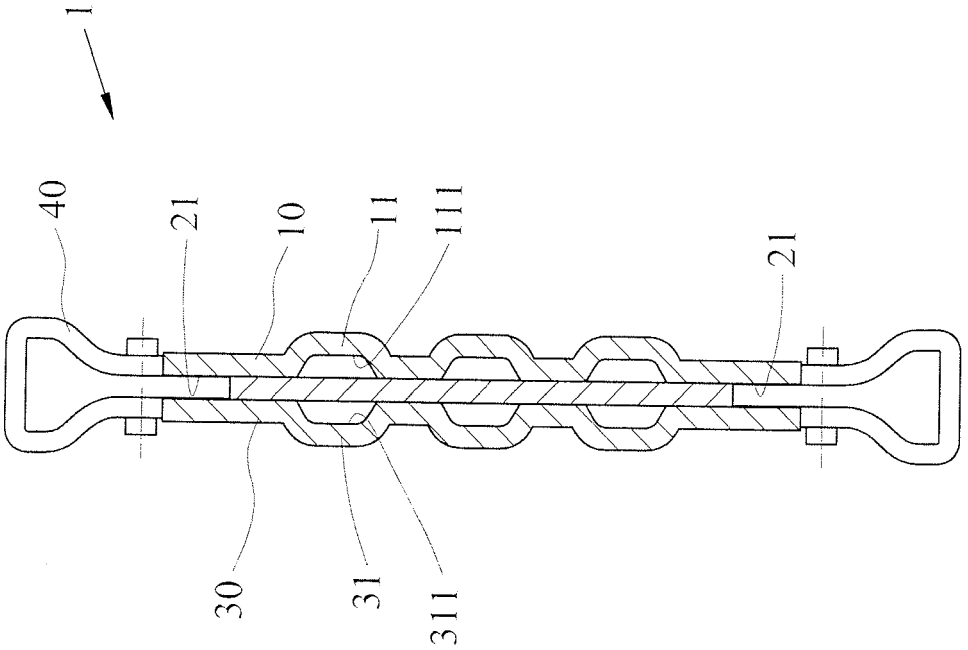

FIG.3

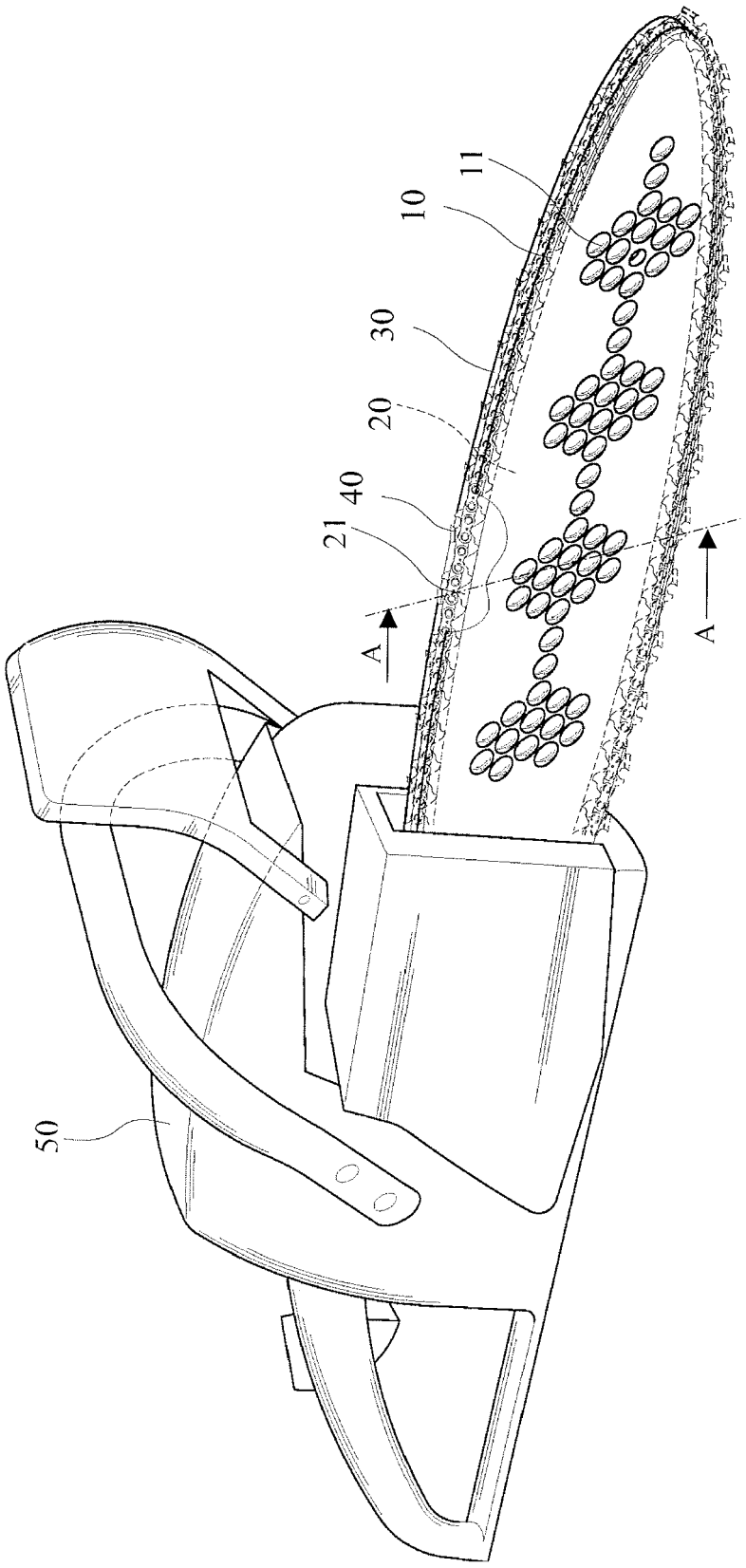

FIG.4

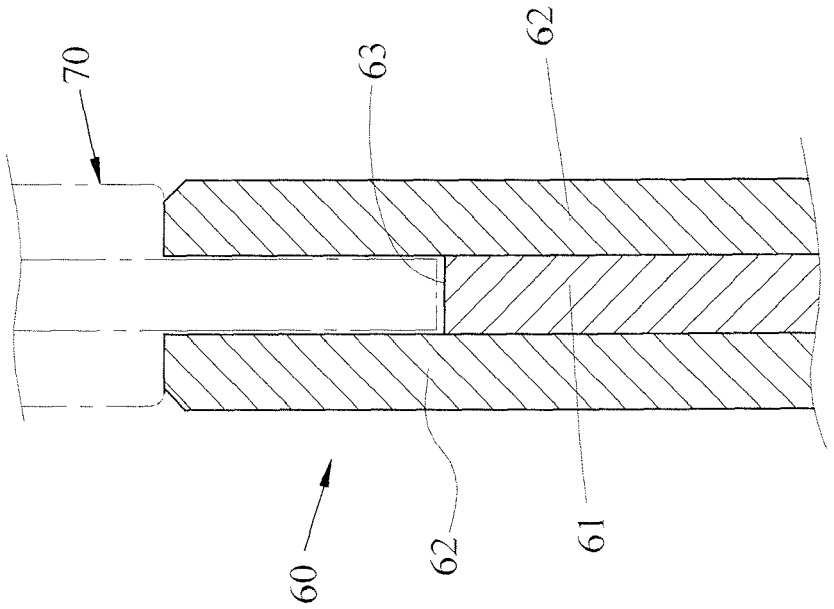

FIG.5
PRIOR ART

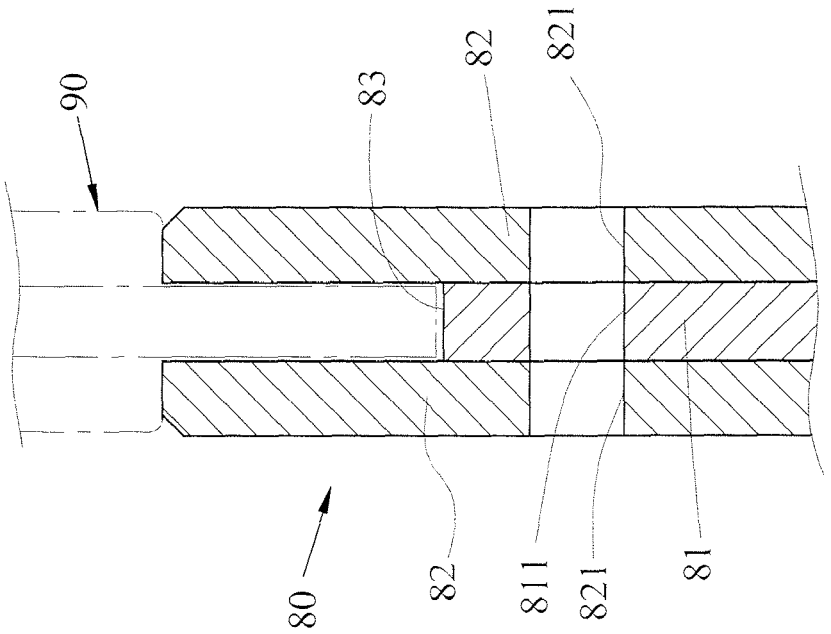

FIG.6
PRIOR ART

European Patent Office

EUROPEAN SEARCH REPORT

Application Number
EP 07 10 1354

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Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
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The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
The Hague	6 June 2007	Chariot, David

CATEGORY OF CITED DOCUMENTS

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EPO FORM 1503 03.82 (P04C01)

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ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO. EP 07 10 1354

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