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(12) # EUROPEAN PATENT APPLICATION

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(54) **Trestle.**

(57) Trestle comprising a horizontal beam and two pairs of legs which are connected at their top end to the beam, the legs of each pair extending on either side of the beam and diverging at their lower end, the trestle being provided with a saw attachment which is preferably removable.

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The invention relates to a trestle comprising a horizontal beam and two pairs of legs which are connected at their top end to the beam, the legs of each pair extending on either side of the beam and diverging at their lower end, and provided with a saw attachment. A trestle of this kind is disclosed in US-A-3.225.865. Said patent specification describes a trestle of the kind indicated, in which the saw attachment consists of a conventional mitre box screwed onto the beam.

Said construction has all the limitations of the conventional mitre box. Thus, the dimensions of the workpieces to be mitred using said mitre box are restricted by the internal dimensions of the mitre box used. In addition, the mitre box has to be screwed off every time the trestle is to be used per se.

The object of the invention is to provide a trestle which does not have these disadvantages, or has these disadvantages to a far lesser degree, and can readily be adjusted to the various uses.

This object is achieved according to the invention in that the saw attachment is formed by a transverse groove, one flank of which lies at right angles to the longitudinal axis of the beam, and by two transverse grooves which extend at an angle of 45° relative to the longitudinal axis of the beam and which mutually enclose an angle of 90°, one flank of each of the three grooves being at least partially extended to above the face of the beam by means of a common thickening.

The trestle according to the invention imposes substantially fewer restrictions on the workpieces to be mitred than the known trestle. An added advantage of the construction of the saw attachment is that the underside of the workpiece to be sawn does not rest on the bottom of the saw attachment, as a result of which damage to this bottom during sawing is prevented. In contrast, when using the conventional mitre box, the teeth of the saw inevitably come into contact with the bottom of the box and the guiding slots for the saw, so that these will become damaged even during normal use.

Preferably, the top side of the beam, viewed in the longitudinal direction, consists of two mutually parallel flat sections, divided by a central section which runs parallel to and protrudes above the parallel sections. The central section is preferably provided with edges running parallel to the longitudinal axis of the beam and protruding above the top face of the beam. Said edges serve as stop for elongated pieces to be processed, such as boards and slats. The width of the central section and thus the location of the edges is preferably chosen to be such that a workpiece, which is placed against the edge acting as a stop, also exactly rests against a side of the thickening of the saw attachment, so that the edges can likewise serve as stops when mitring pieces.

The central section preferably has one or more cavities, in which small objects, such as screws, nails, plugs and the like, can be accommodated. In addition, an elongated aperture extending in the longitudinal direction of the beam is preferably provided in the central section, which aperture serves as a handle for moving the trestle.

However, it is also possible to produce the trestle in two parts, one part consisting, for example, of the central section with the saw attachment, and the other part consisting of the remainder of the trestle provided with a suitable recess for accommodating the central section and the saw attachment.

This, for one thing, provides the possibility of producing various types of trestles which differ in the choice of attachments fitted in the central section.

In a preferred embodiment of the trestle according to the invention, said trestle consists of two separate parts, the first part being formed by a combination of the saw attachment and the central section, which combination will be referred to below as insert, and the second part by the remaining part of the trestle, which can accommodate the first part so that it fits. In this preferred embodiment, the beam is provided with (a) a recess comprising at least two grooves which mutually enclose an angle of 90° and run at an angle of 45° relative to the longitudinal axis of the beam and extend from a transverse side of the beam to one of the longitudinal sides of the beam; and a transverse groove extending across the width of the beam and running at right angles to the longitudinal axis of the beam, which transverse groove intersects the two grooves mentioned; the saw attachment is of essentially identical shape with the recess so that it can be accommodated therein so as to fit; and the saw attachment is provided with a thickening in the shape of a straight prism whose side faces are at right angles to the face defined by the transverse grooves, of which sides at least one runs at right angles to the longitudinal axis of the beam if the insert is accommodated in the trestle, and two other sides mutually enclose an angle of 90° and run at an angle of 45° to the longitudinal axis of the beam; and the thickening protrudes above the top face of the beam, and the beam is provided with

(b) a longitudinal groove which runs from the recess in the longitudinal direction of the beam, which longitudinal groove can accommodate the central section so that it fits and can be detached.

The external dimensions of the saw attachment in this case are essentially identical with the internal dimensions of the recess so that the saw attachment can be accommodated in the recess so

as to fit. The dimensions of the longitudinal groove correspond to those of the central section in an identical fashion, so that the insert can be accommodated so as to fit in the recess and longitudinal groove which join each other. The insert is preferably attached to the remaining part of the trestle by means of a manually releasable interlock. The advantage of this preferred embodiment is that the trestle can be transformed by means of one simple action into a trestle with a plane top side which can be used to support, for example, plate material which has larger dimensions than the surface area of the beam. In addition, the trestle can thus be used as a traditional trestle or scaffolding element.

Other characteristics and advantages of the invention will become clear from the description below, in which reference is made to the appended figures, in which:

Figure 1 shows a perspective view of a trestle according to the invention;

Figure 2 shows a plan view of a part of the beam with a fixed saw attachment on the trestle according to the invention;

Figure 3 shows a perspective view of a trestle according to the preferred embodiment of the invention, whose insert has been removed;

Figure 4 shows a plan view of a perspective view of an insert fitting inside the trestle of Figure 3;

Figure 5 shows a side view of a section along the line A-A of the same insert.

The trestle, as illustrated in the figures, comprises a horizontal beam 1 and two pairs of legs 2, 3 and 4, 5, respectively.

In the embodiment illustrated in Figure 1, the upper end of the pair of legs 2, 3 is connected to one end of the beam 1, and the upper end of the other pair of legs 4, 5 is connected to the other end of the beam 1. Each pair of legs 2, 3 and 4, 5, respectively, extends on either side of the beam and diverges towards the lower end in such a manner that a large supporting surface is created and the trestle has good stability. In the embodiment shown, each leg 2, 3, 4, and 5 has an essentially W-shaped cross section so that the unit is nestable. Obviously, differently shaped legs can be used without affecting nestability.

In the embodiment shown, the two legs of each pair 2, 3 and 4, 5 respectively, are not only connected to each other via the beam 1, but also via horizontal connections 6 and 7, respectively. Furthermore, the two legs of each pair 2, 4 and 3, 5 are connected to each other via connections 8 and 9, respectively. As illustrated by the figure, the connection 9 consists of two portions 30 and 31 which extend from approximately halfway up the legs 3 and 5, respectively, from there run at a slight angle towards the top and are connected at 32. The connecting plate 32 is situated approximately halfway along the length of the beam 1. At this point, a vertical connection 33 is formed which connects the connecting plate 32 with the beam. The connection 8 is essentially identical. In this way, a unit is provided which is sufficiently rigid and in which an additional support of the central section of the beam 1 is achieved via the connections 30, 31, 32 and 33. In addition, these connections can be used as foot rests, as a result of which the trestle is more stable and can be kept in place more readily during use.

However, it should be clear that the connections 6, 7 and 8, 9 can be completely or partly omitted if sufficient rigidity and stability can be achieved by different means, for example by the thickness of the beam 1 or the legs 2, 3, 4 and 5. In addition, it is possible to give the one or more connections between the legs themselves a shape which differs from the one illustrated. In particular, it is possible to fill the space between the pairs of legs 2, 3 and 4, 5, respectively, completely with a plate-shaped part, so that the pairs of legs 2, 3 and/or 4, 5, form one entity, as it were.

A groove 10 is formed near the pair of legs 2, 3 (cf. Figure 2), virtually perpendicular with respect to the longitudinal direction of the beam 1, which groove 10 has an essentially U-shaped cross section. Furthermore, two grooves 17 and 18 are formed, in each case at an angle of 45° relative to the longitudinal direction of the beam 1, which grooves 17 and 18 intersect groove 10 and cross each other at the halfway point, viewed in the transverse direction of the beam, near the end of the beam 1 which is near the pair of legs 2, 3. Thus, a common thickening 16 is formed by the grooves 10, 17 and 18, which protrudes vertically above the face of the central section 11. The parts 40, 41, 42 and 43 formed near the intersections of the grooves 10 and 17 and 10 and 18, respectively, and adjoining the angle of 45° which is formed thereby, have been completely or partially omitted, as indicated by the dotted line in Figure 2. The grooves 10, 17 and 18, respectively, form a mitre box for sawing a workpiece at a right angle or an angle of 45°, which workpiece rests against the stepped section 14 or 15. In this case, an option is provided for right-handed and left-handed users. The stop for the saw is in each case formed by the thickening 16.

An oval aperture 20 is formed in the centre of central section 11 which can be used as a handle for transporting the trestle. Next to the aperture 20, a cavity 21 is formed for accommodating small tools or other requisites, such as screws, nails, plugs and the like. In the embodiment shown, one cavity 21 has been provided, but it will be clear that several of these cavities can be provided and

that such cavities can even be provided on the side sections 12 and 13, without adversely affecting the functionality of the trestle.

Furthermore, a number of apertures 22 are formed in the beam 1 which are suitably dimensioned for accommodating tools, such as a hammer, screwdriver, pliers etc. Many variations are likewise possible in this connection.

A slot 25 which has a V-shaped cross section is provided in the beam 1, near the pair of legs 4, 5, which slot 25 extends in a direction at right angles to the longitudinal direction of the beam 1. The slot is suitable for receiving and clamping tubular workpieces, and optionally the edges of the slot 25 may be provided with longitudinal ribs in order to ensure improved grip.

An aperture 26 is formed in the slot 25, which aperture 26 is formed in such a manner that it can accommodate the drill head part of a conventional portable drilling machine. As a result, it is possible to transport the drilling machine together with the trestle. In addition, this aperture 26 can be used as a clearance aperture when drilling holes in workpieces.

The beam 1 comprises an elongated central section 11 with two elongated side sections 12 and 13 on either side. The central section 11 protrudes slightly above the side sections 12 and 13 in such a way that an elongated stepped section 14 and 15, respectively, is formed in each case, which can be used as a stop for elongated pieces to be processed, such as boards or slats.

The beam 1 of Figure 3 comprises a longitudinal groove 70 adjoining a recess 50. The recess is virtually of the same shape as the recess illustrated in Figure 2, apart from the fact that the thickening 16 has also been omitted so that a flat bottom 57 is obtained. An oval aperture 71 is formed in the centre of the central section which can be used as a handle for transporting the trestle. In Figure 4, the insert 90 is a combination of a saw attachment 51 and a central section 80, which insert fits in the recess 50 and longitudinal groove 70 adjoining one another.

The external dimensions of the saw attachment 51 are virtually identical to the internal dimensions of the recess 50, so that the saw attachment can be accommodated in the recess so that it fits tightly and is thus fixed. The saw attachment 51 has an essentially flat bottom 58, upright walls 52, 53, 54 and 55, and a thickening 56. Said thickening 56 is situated in the centre of the flat bottom 58 and is in the shape of a straight or, as in the embodiment shown in Figure 4, pentahedral prism, whose side faces 60-64 are at right angles to the bottom 58. The thickening 56 is of a length such that its top protrudes above the top side of the beam 1 if the saw attachment is fitted in the recess 50. The side wall 60 runs at right angles to the longitudinal axis of the beam and can serve as a stop for the saw when shortening pieces. The side walls 62 and 63 run at an angle of 45° relative to the longitudinal axis of the beam and mutually enclose an angle of 90°, so that they can serve as a saw stop when mitring pieces at an angle of 45°. The thickness of the bottom 58 of the saw attachment is less than the depth of the recess 50 so that the side of a workpiece to be sawn along one of the side faces of the thickening serving as a stop, which side of the workpiece faces the beam, is clear from the bottom of the recess 50. Thus, the saw is prevented from damaging the bottom of the saw attachment, which is virtually unavoidable in a mitre box according to the state of the art. In addition, it is possible to fit an additional protective platelet on the flat bottom 58, which platelet serves to intercept the saw during mitring, also in case the saw should accidentally come into contact with said bottom.

The central section 80 forms one entity with the saw attachment 51. A cavity 81 is provided in the central section 80 for accommodating small tools or other requisites such as screws, nails, plugs and the like. In the embodiment shown, one cavity 81 is provided, but it will be clear that several of these cavities can be provided.

The central section 80 is also provided with an oval aperture 82, the location of which coincides with the aperture 71 in the central section of the beam 1, so that the trestle has a handle for transportation thereof, even when the insert is fitted.

The central section 80 has edges 83 and 84 which extend beyond the longitudinal groove 70 if the insert is fitted, and in that case protrude above the beam 1. Said edges thus form a stepped section on the beam 1 and can serve as a stop when elongated pieces, such as boards or slats, are being processed. The exterior of the edges 83 and 84 lies in line with the side faces 61 and 64 of the thickening, so that the edges may also serve as a stop when mitring pieces.

The insert is provided with a snap device 28 which holds this part down on the underside of the beam 1, but which can easily be pushed away by hand in order to remove or replace the insert.

It is obvious that the possibilities which the trestle according to the invention offers are not limited to the possibilities described above, but that several more variations can be devised without departing from the inventive idea.

The trestle can be produced from plastic in one piece, for example by injection moulding, but is preferably produced in two pieces, as described above. This provides the possibility of producing various types of trestles which differ in the choice of attachments and facilities fitted in the insert 80.

Finally, the underside of the legs 2, 3, 4 and 5 may be provided with rubber studs in order to increase stability.

Claims

1. Trestle comprising a horizontal beam and two pairs of legs which are connected at their top end to the beam, the legs of each pair extending on either side of the beam and diverging at their lower end, and provided with a saw attachment, characterized in that the saw attachment is formed by a transverse groove, one flank of which lies at right angles to the longitudinal axis of the beam, and by two transverse grooves which extend at an angle of 45° relative to the longitudinal axis of the beam and which mutually enclose an angle of 90°, one flank of each of the three grooves being at least partially extended to above the face of the beam by means of a common thickening.

2. Trestle according to Claim 1, in which the top side of the beam, viewed in the longitudinal direction, consists of two mutually parallel flat sections, divided by a central section which runs parallel to and protrudes above the parallel sections.

3. Trestle according to Claim 2, in which the saw attachment and the central section form one separate entity that can be attached to the remaining part of the trestle by means of a releasable connection.

4. Trestle according to Claim 3, in which the beam is provided with (a) a recess comprising at least two grooves which mutually enclose an angle of 90° and run at an angle of 45° relative to the longitudinal axis of the beam and extend from a transverse side of the beam to one of the longitudinal sides of the beam; and a transverse groove extending across the width of the beam and running at right angles to the longitudinal axis of the beam, which transverse groove intersects the two grooves mentioned; and in which the external dimensions of the saw attachment are essentially identical with the internal dimensions of the recess (a) so that it can be accommodated therein so as to fit; and the saw attachment is provided with a thickening in the shape of a straight prism whose side faces are at right angles to the face defined by grooves, of which sides at least one runs at a right angle to the longitudinal axis of the beam and two other sides mutually enclose an angle of 90° and run at an angle of 45° to the longitudinal axis of the beam; and which thickening protrudes above the top face of the beam, and with (b) a longitudinal groove which runs in the longitudinal direction of the beam, which longitudinal groove can accommodate the central section so that it can be detached.

5. Trestle according to Claim 4, in which the central section is provided with edges running parallel to the longitudinal axis of the beam and protruding above the top face of the beam.

6. Trestle according to one of Claims 2-5, wherein the central section is formed, at least partly, in the shape of a cavity, in which small objects can be accommodated.

7. Trestle according to one of Claims 1-6, wherein the beam is provided with a V-shaped slot in its transverse direction.

8. Trestle according to one of Claims 1-7, wherein at least one of the legs is provided with a means for adjusting the length of the leg.

9. Trestle according to one of Claims 1-8, wherein at least one pair of legs is additionally connected to each other by means of a flange plate or one or more transverse connections.

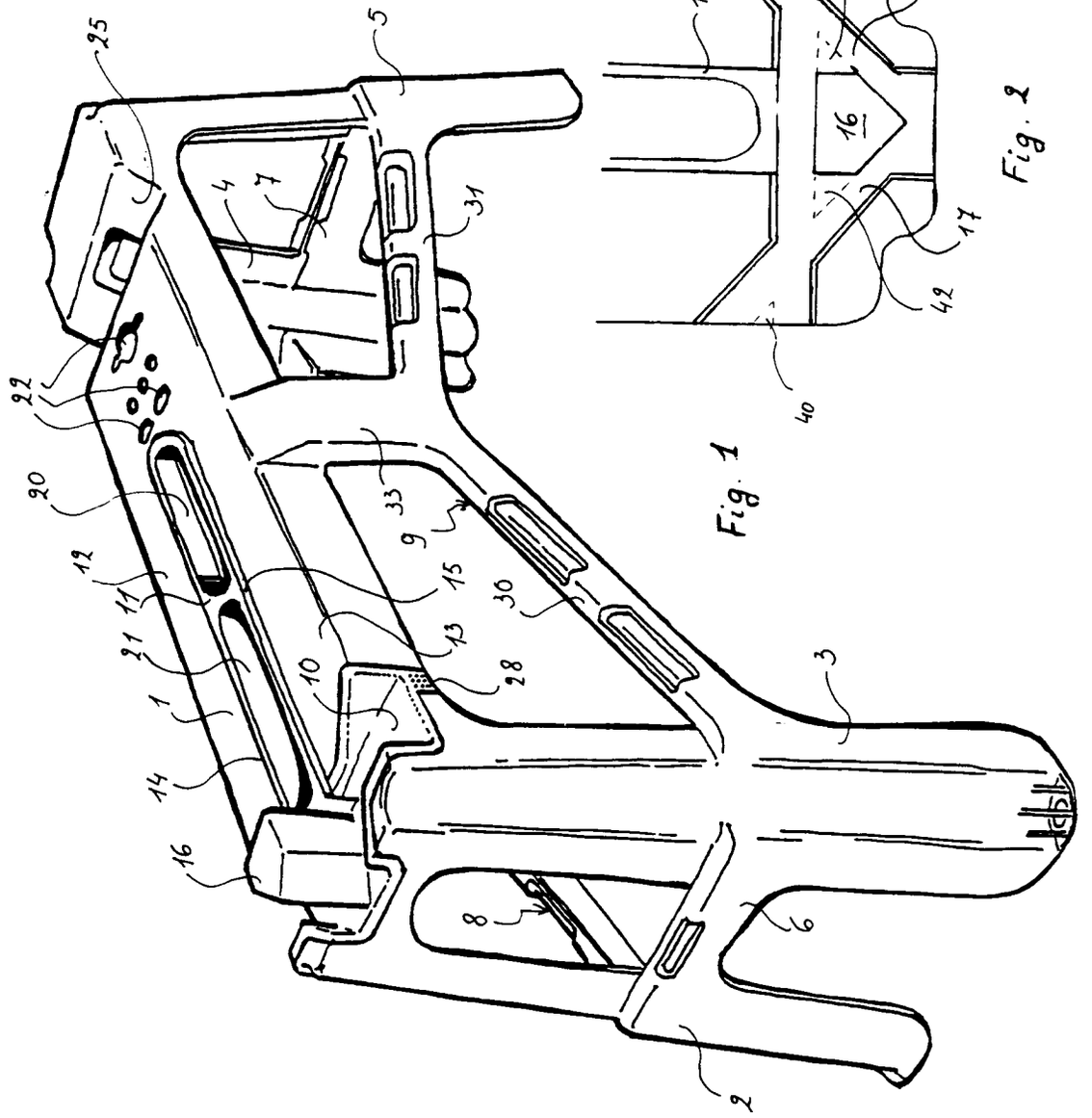
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Fig. 1

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Fig. 2

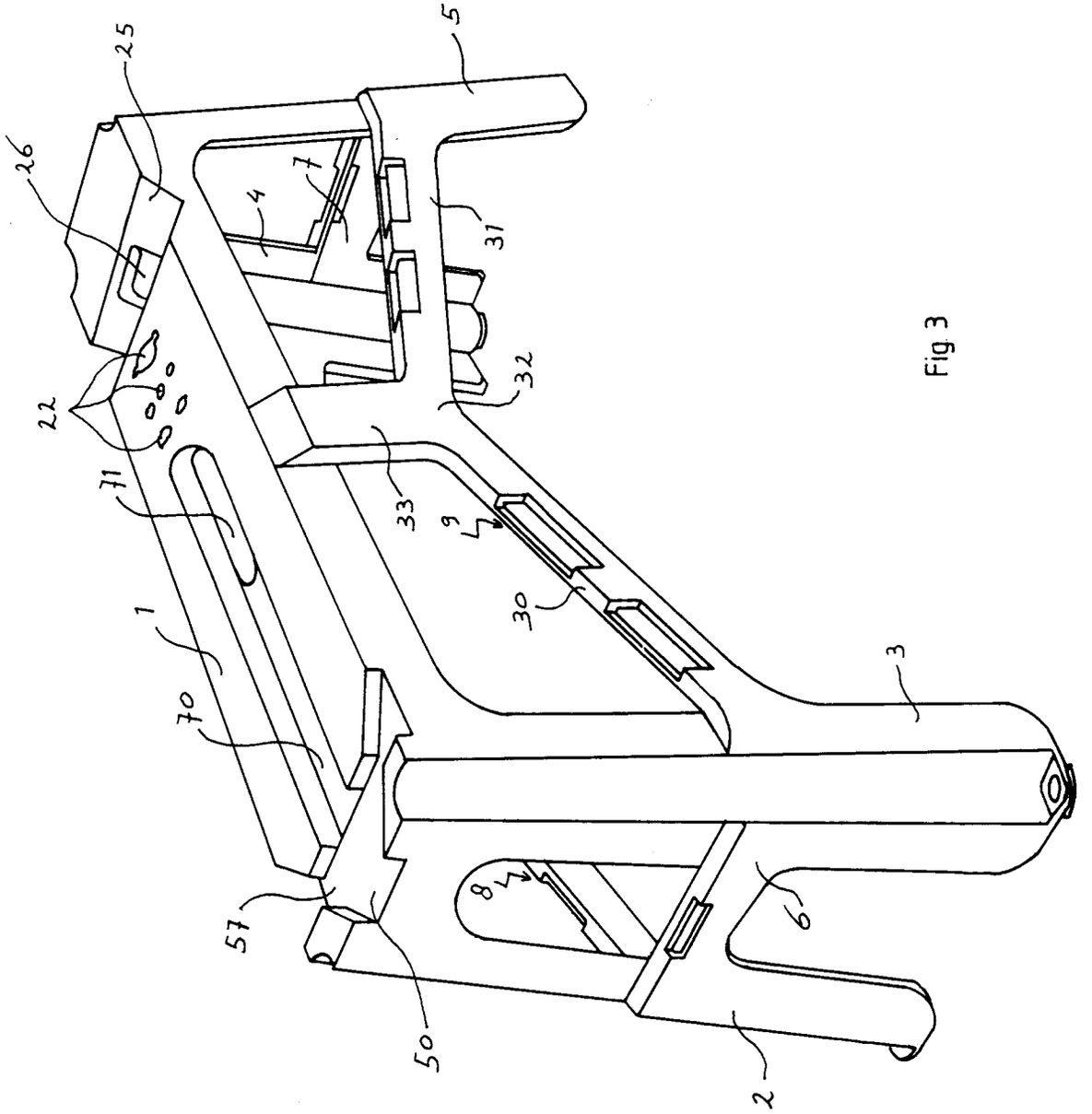

Fig 3

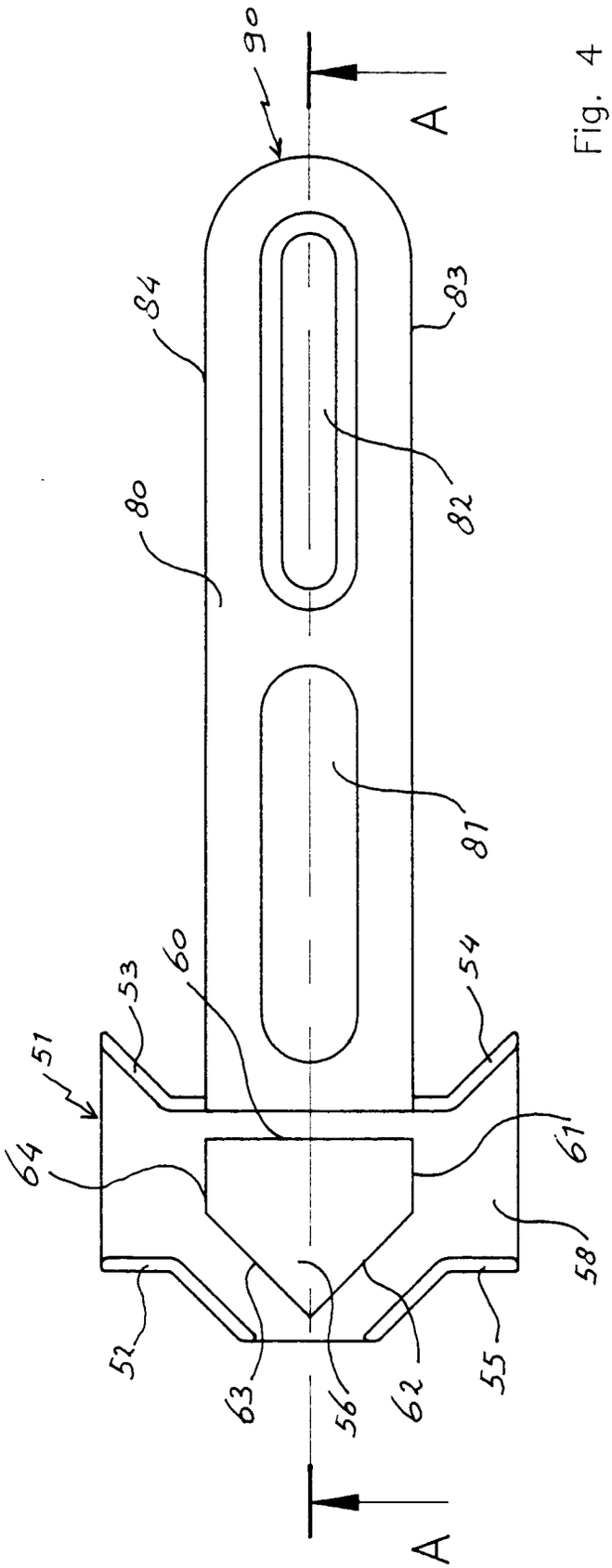
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Fig. 4

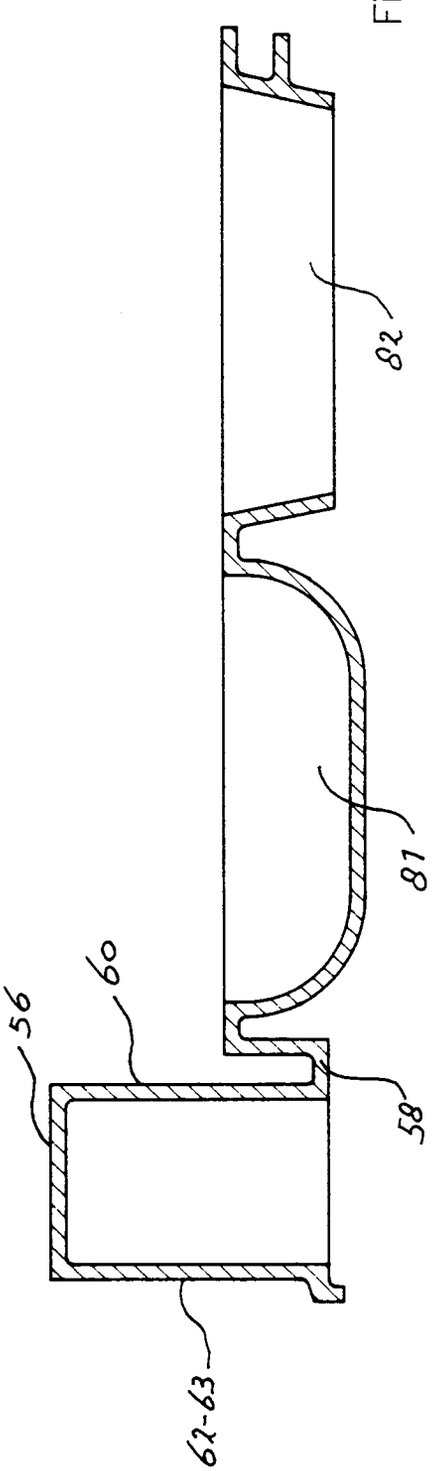
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Fig. 5

European Patent Office

EUROPEAN SEARCH REPORT

Application Number
EP 94 20 0338

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)
D,X D,Y D,A	US-A-3 225 865 (DOWNEY) * the whole document *	1 2,6-8 4,5	B25H1/06
Y A	US-A-1 044 816 (PHILLIPSON) * claims 1,2; figure *	2,6 3	
Y	US-A-4 124 093 (BREISCH) * abstract * * figures 6,7 *	7	
Y	DE-A-24 58 160 (BAUMANN) * figure 1 *	8	
A	US-A-4 638 885 (FREDERICK) * abstract * * figures 1,3-5 *	1-7	
A	US-A-3 177 974 (MARTIN ET AL) * the whole document *	1,4	
A	US-A-2 637 358 (LARSON) * figures 1,4 *	6	TECHNICAL FIELDS SEARCHED (Int.Cl.5) B25H
A	US-A-2 636 526 (MADDEN) * column 2, line 17-23; figure 1 *	9	

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
THE HAGUE	10 June 1994	Petersson, B

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
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