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(56) Documents Cited:
GB 2302058 A **GB 2302057 A**
WO 2000/051772 A1 **US 5404779 A**

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UK CL (Edition X) **B5L**
INT CL⁷ **B23D, B27B**
Other: **Online: WPI, EPODOC**

(54) Abstract Title: **Saw mounting jig**

(57) A saw mounting jig 1 comprises a carrier 4 for a saw and a presenter 3 for adjustment relative to a base 2. The base 2 has a lateral slot 5 engaged by a stub 9 of the presenter 3 whereby the presenter 3 can pivot about the stub 9. The presenter 3 has a first presenter slot 7 and a second presenter slot 8 the first presenter slot 7 including an arcuate or angular section 19 and the second presenter slot 8 including at least a pivot section. Spaced mountings 12,14 between the carrier 4 and the presenter 3 may slide respectively in the first presenter slot 7 and the second presenter slot 8 to variably present the carrier 4 relative to the base 2.

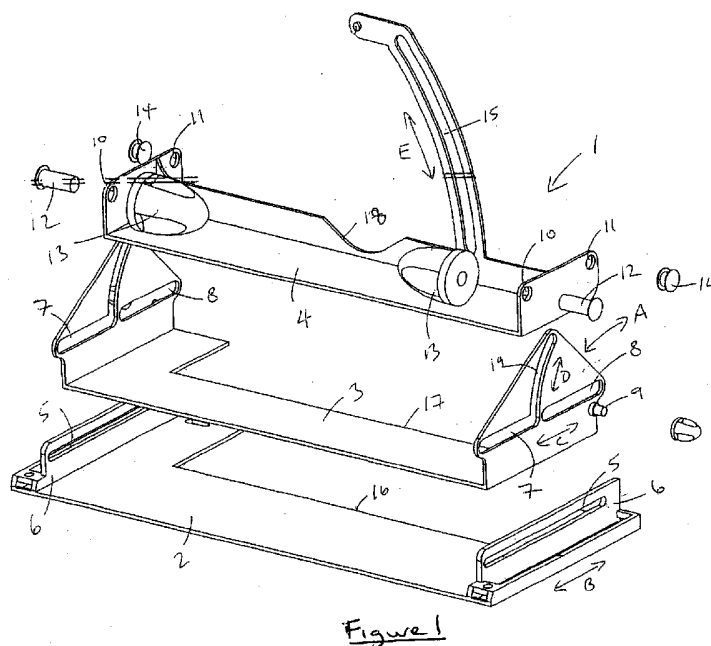


Figure 1

At least one drawing originally filed was informal and the print reproduced here is taken from a later filed formal copy.

The claims were filed later than the filing date but within the period prescribed by Rule 25(1) of the Patents Rules 1995.

Original Printed on Recycled Paper

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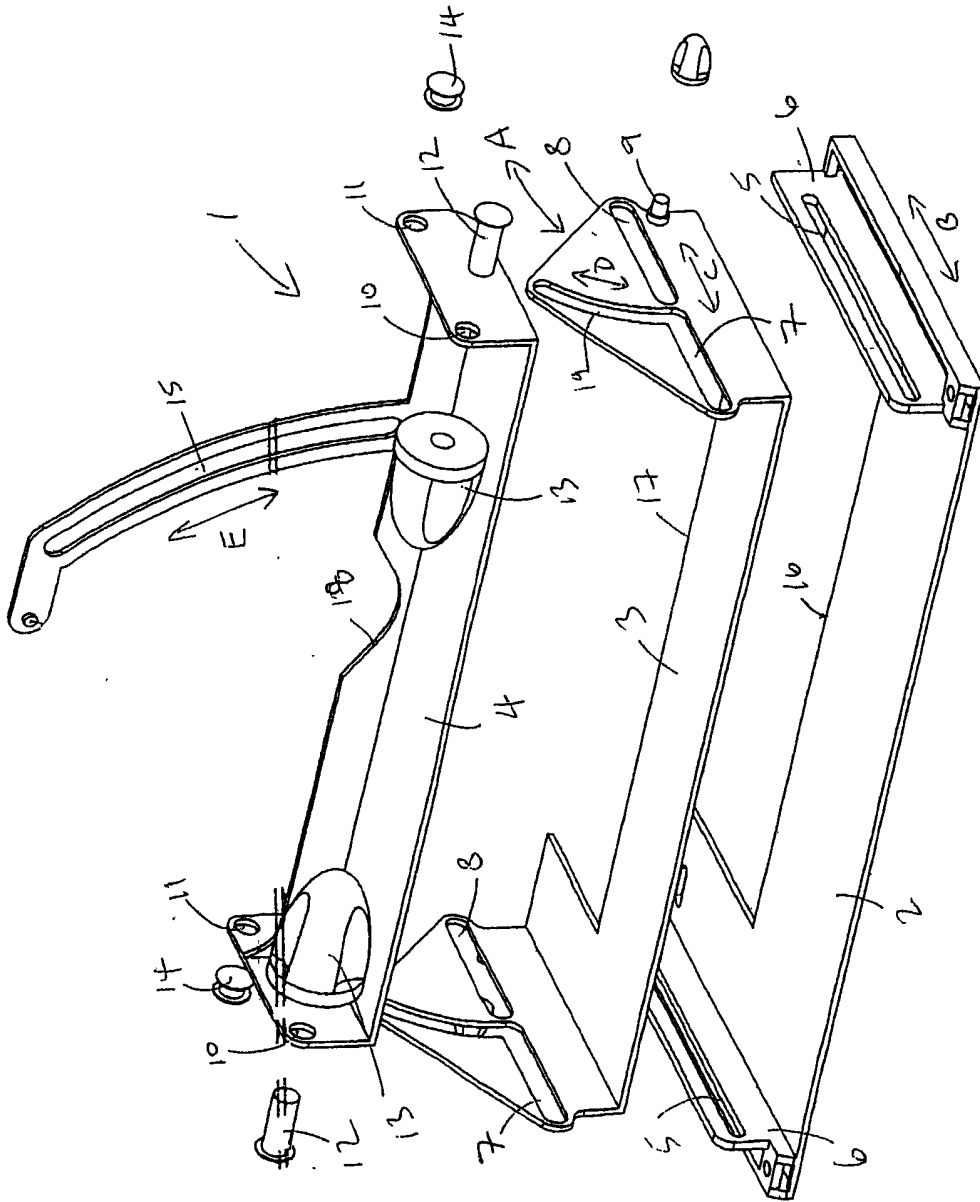


Figure 1

10 15 25

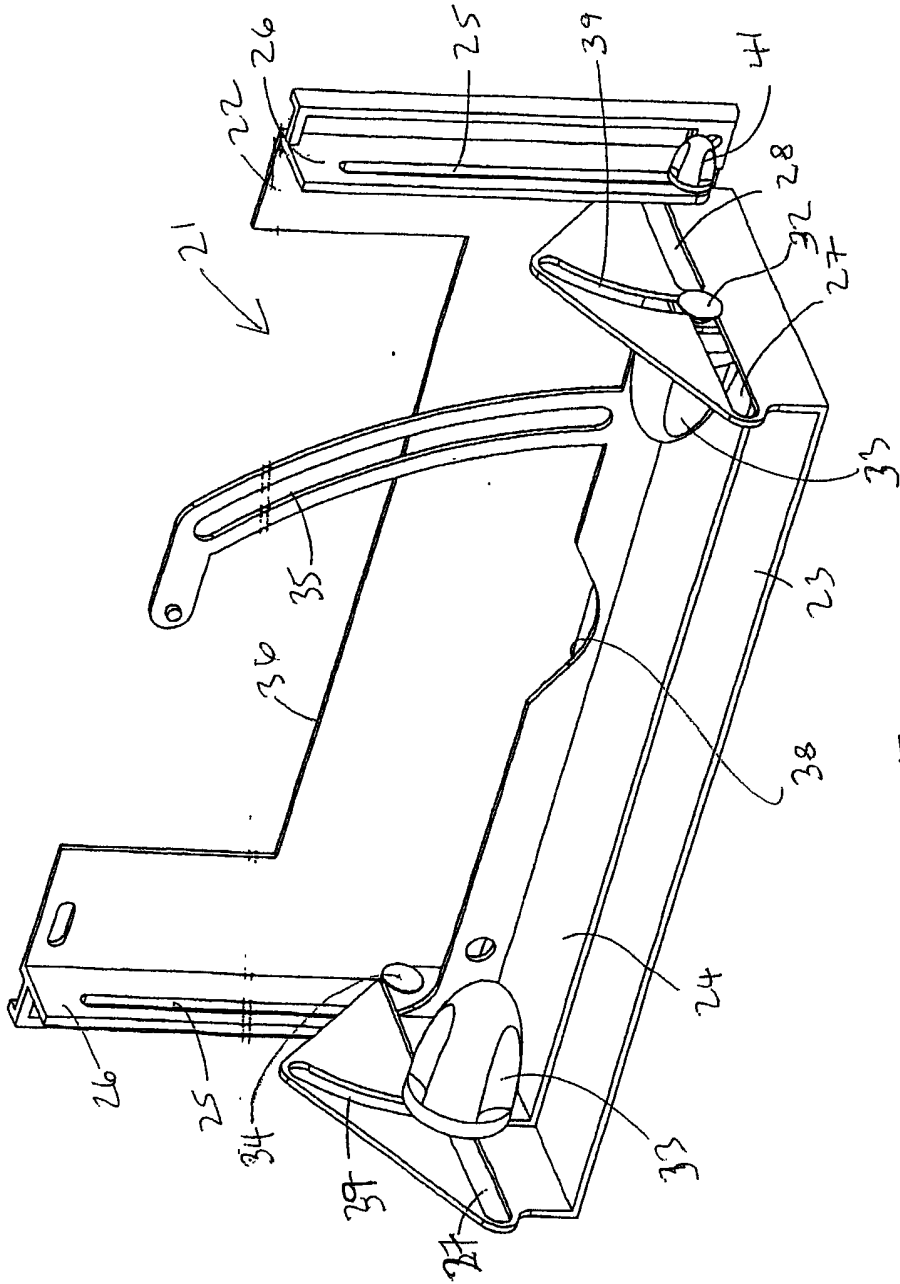


Figure 2

10 45 05

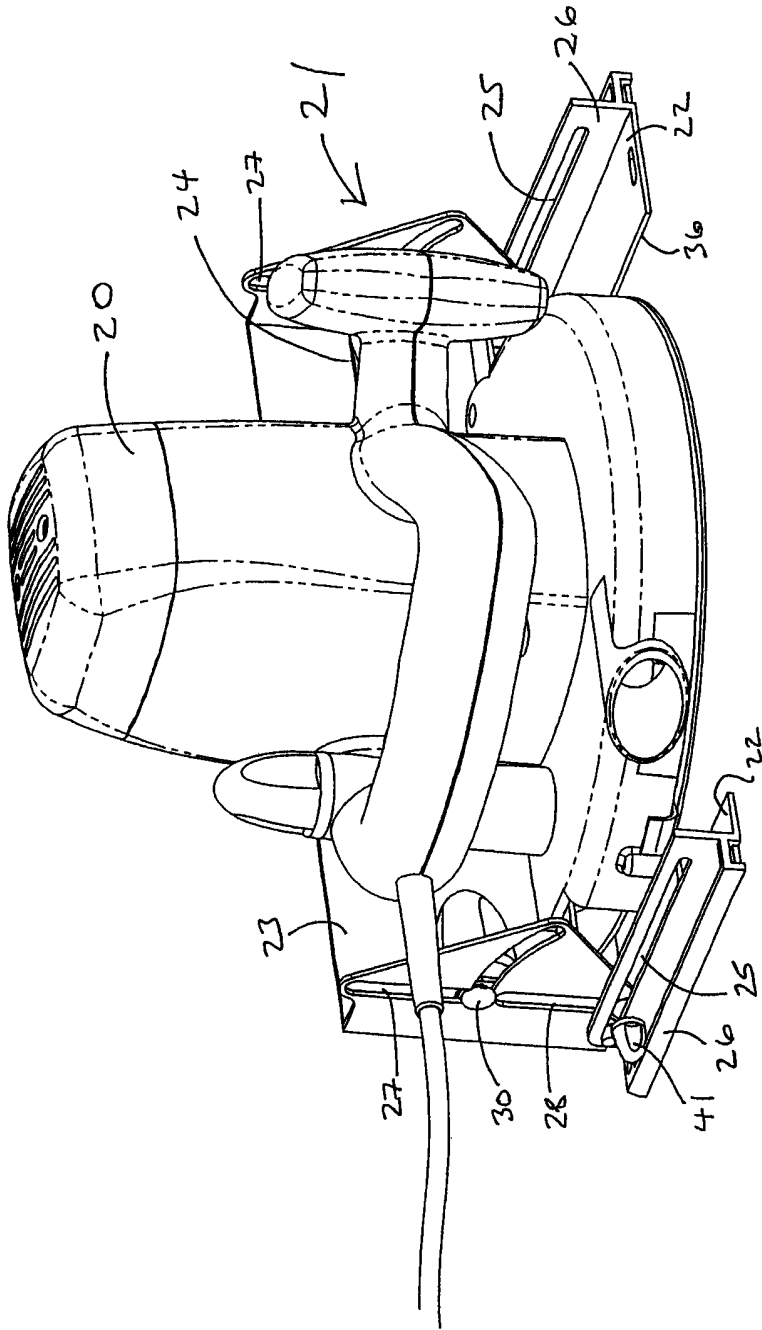


Figure 3

10 43 05

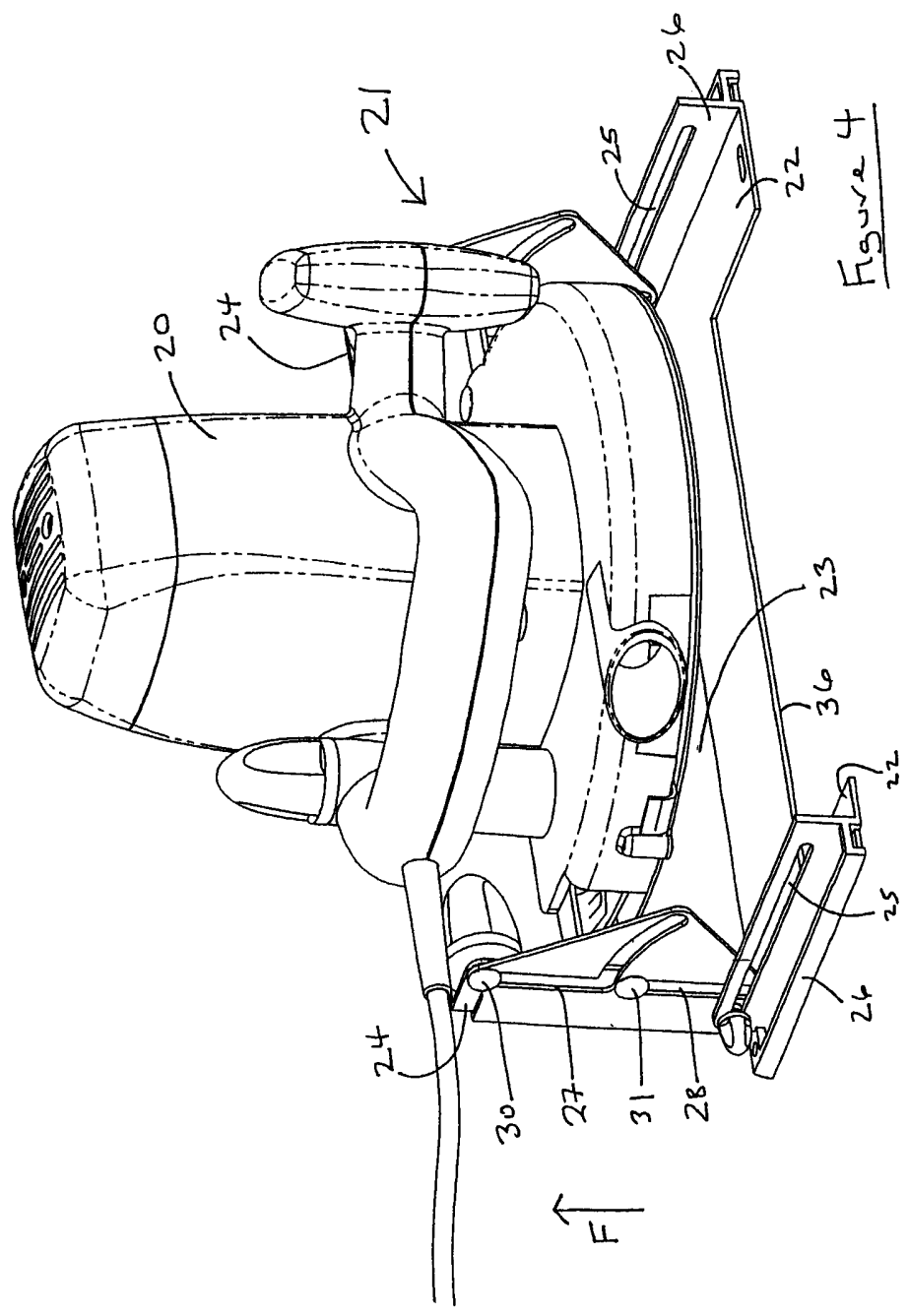


Figure 4

10 45 05

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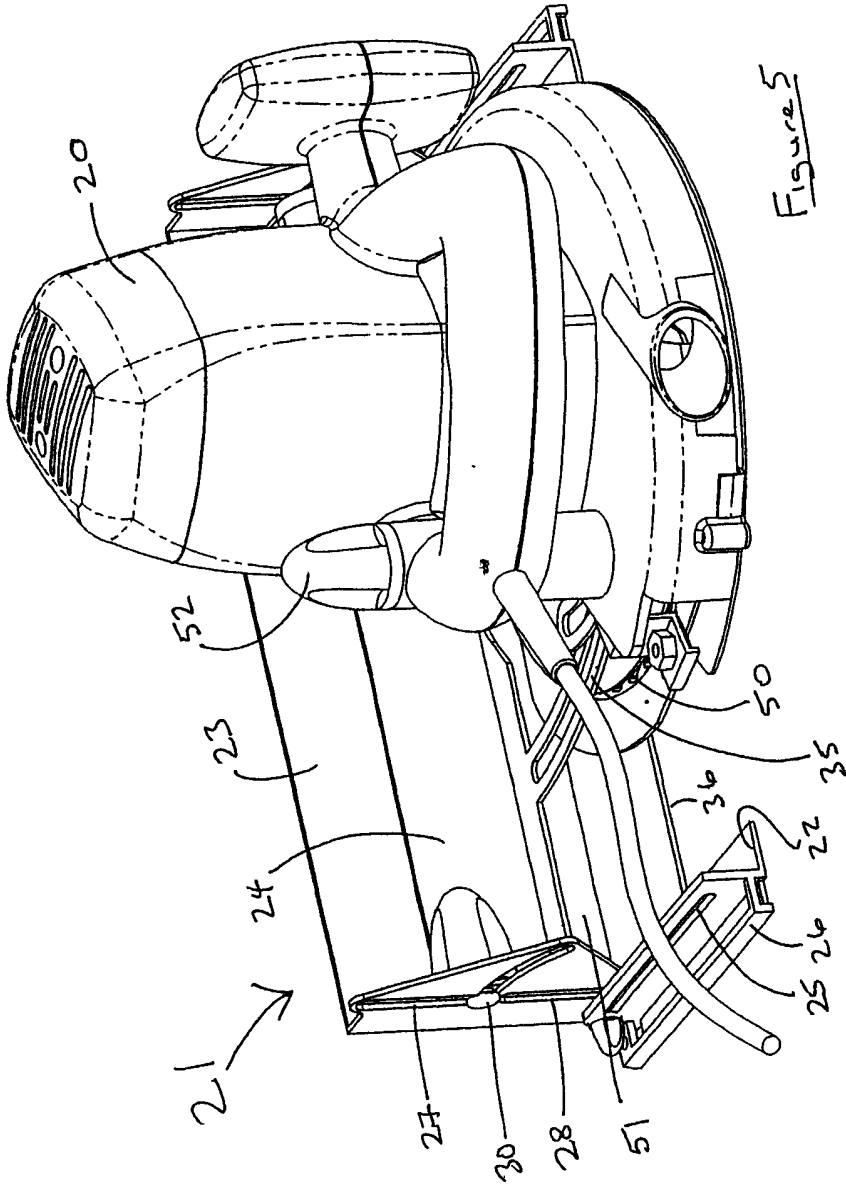


Figure 5

10 45 05

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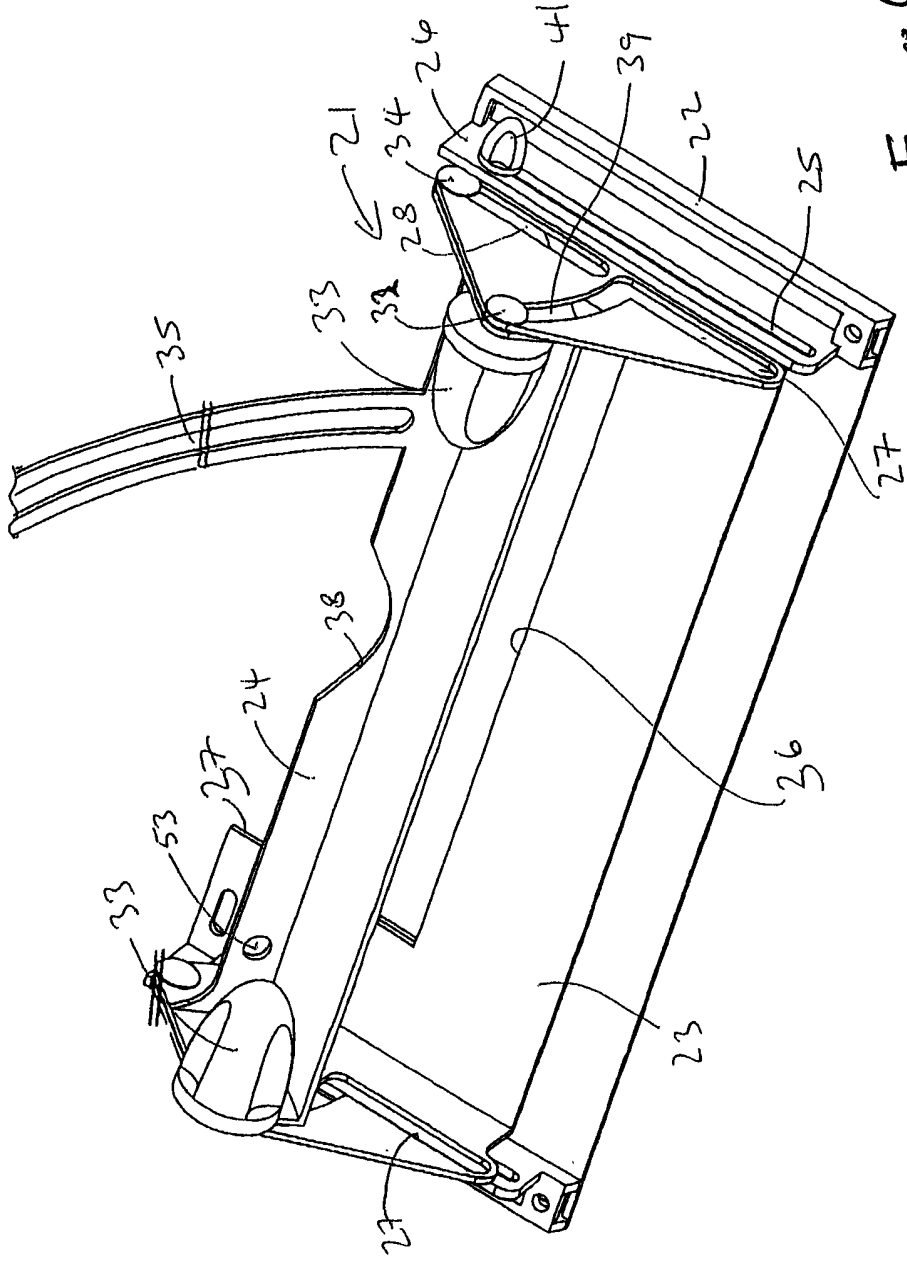


Figure 6

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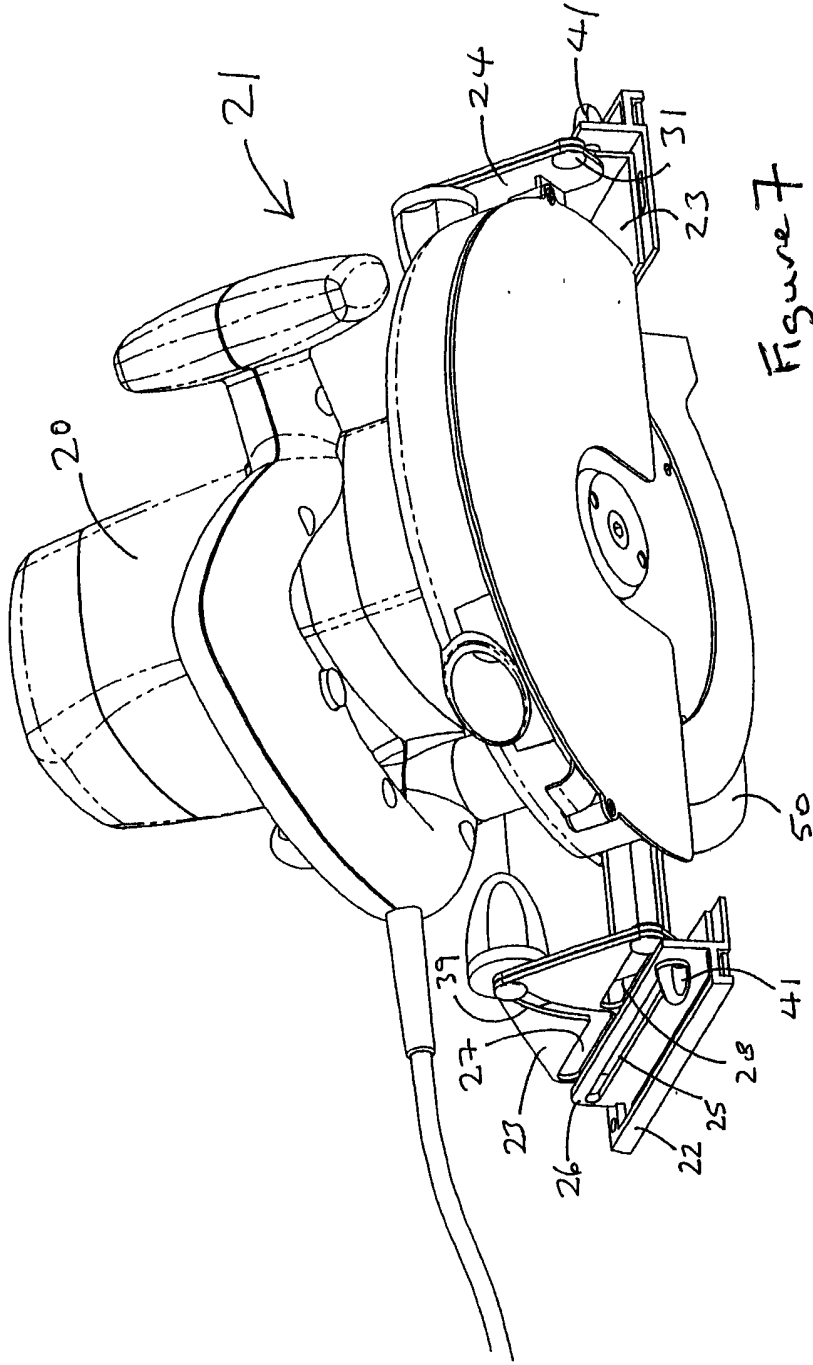


Figure 7

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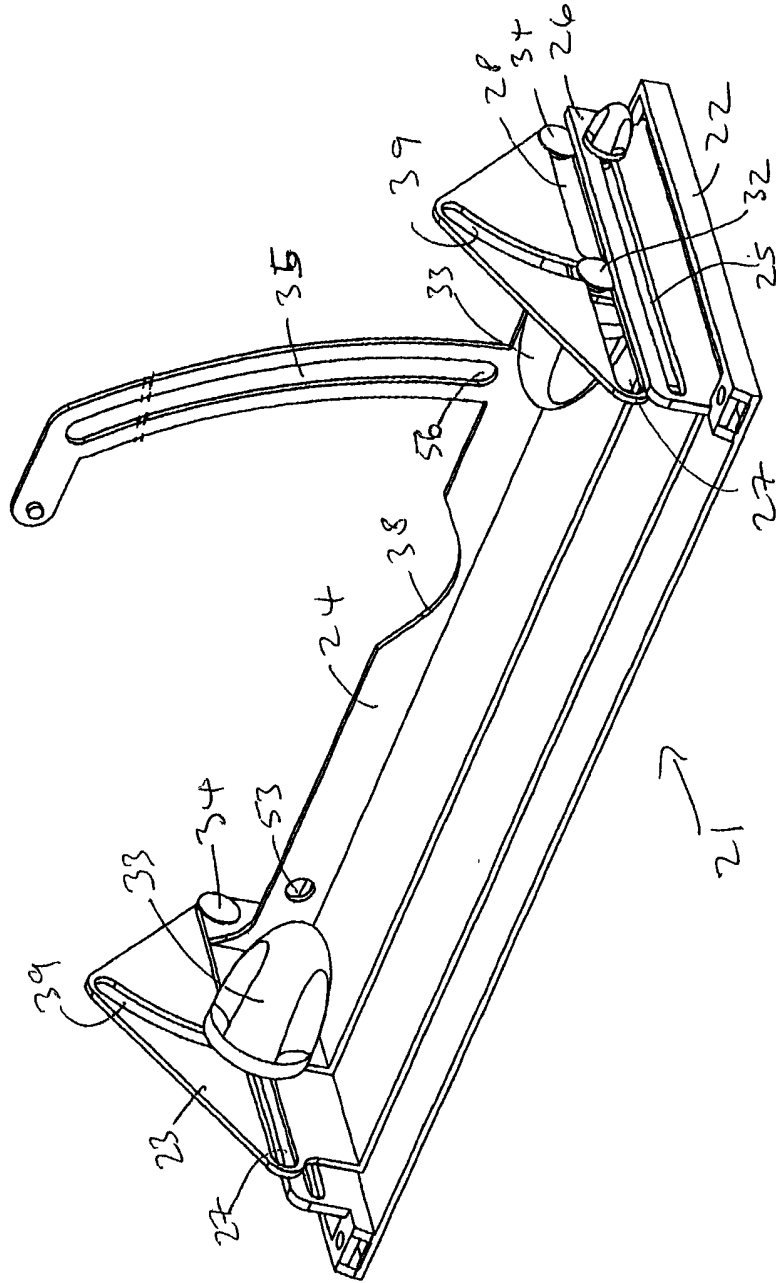
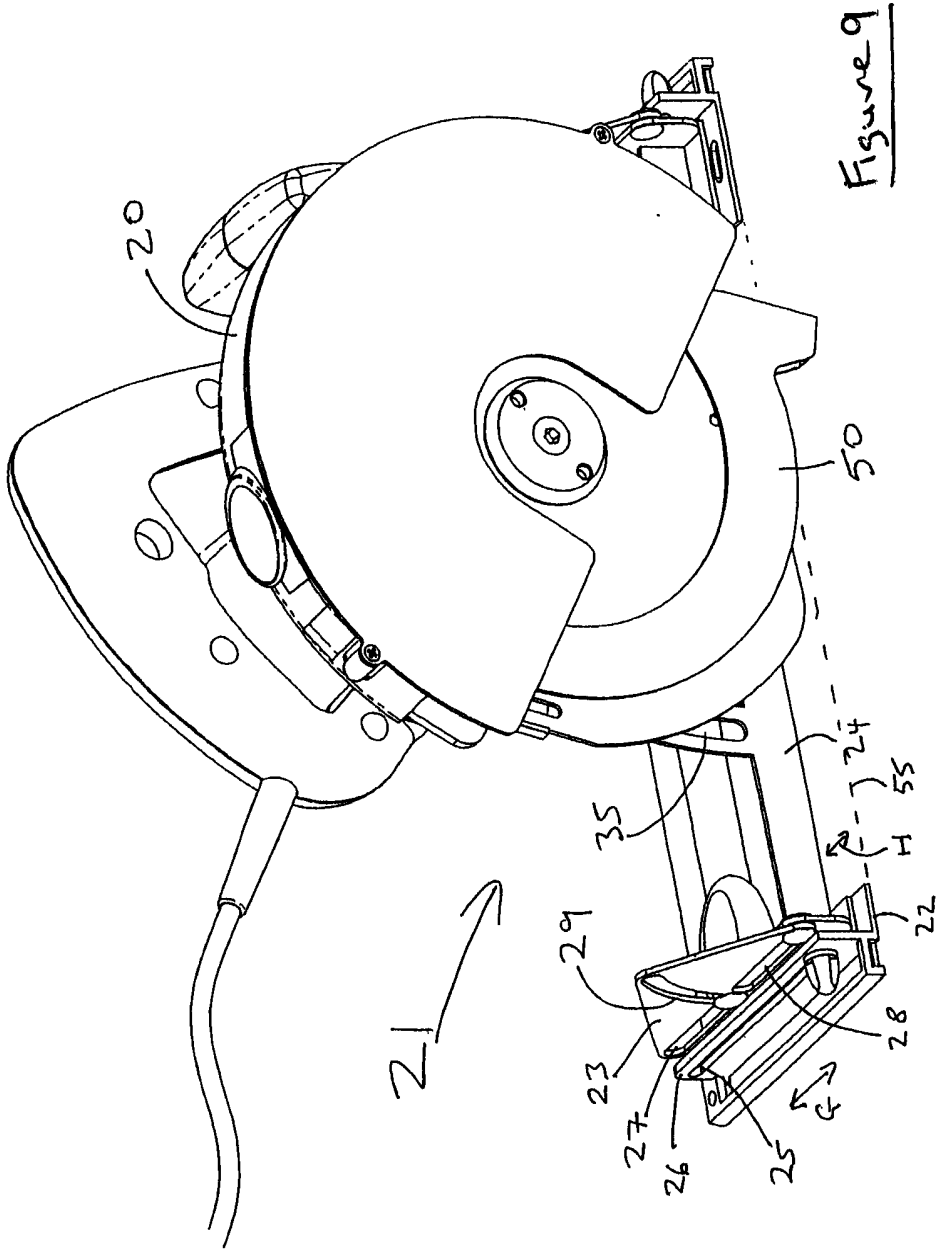


Figure 8

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10 45 05

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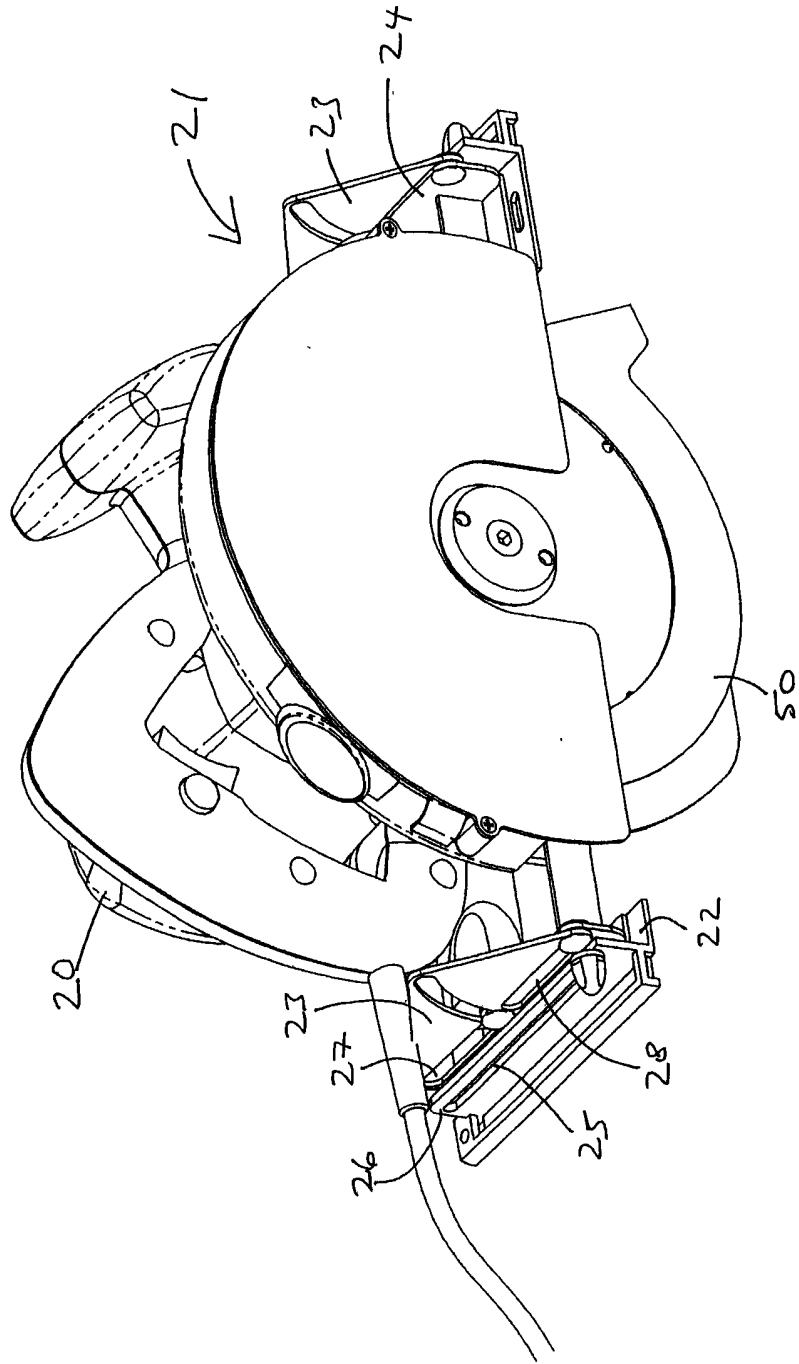


Figure 10

A Saw Mounting Jig

The present invention relates to saw mounting jigs and more particularly to a saw mounting jig for use with a circular saw.

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Use and operation of rotary circular saws is relatively well known. Such circular saws generally comprise a motor from which extends a shaft upon which a circular saw blade is rotated in order to cut material. In such circumstances, particularly where the motor is an electric motor, rotational speed can be easily controlled and there is no necessity for complicated drive mechanisms between the motor and the blade. Nevertheless, it will be appreciated that the electric motor is relatively heavy and cumbersome such that operation of rotary saws is difficult, particularly if accurate presentation is required. Furthermore, it will be appreciated that being relatively powerful apparatus, care must be taken that accidents do not occur with operators.

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In view of the above, traditionally rotary saws have been robustly presented in a substantially vertical orientation with any adjustment dependent upon operator skill and occasionally risk taking.

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According to the present invention there is provided a saw mounting jig comprising a carrier for a saw, and a presenter for adjustment relative to a base, the base having a lateral slot engaged by a stub of the presenter whereby the presenter can pivot about the stub, the presenter having a first presenter slot and a second presenter slot, the first presenter slot including an arcuate or angular section and the second presenter slot including at least a pivot section whereby spaced mountings between the carrier and the presenter may slide respectively in the first presenter slot and the second presenter slot to variably present the carrier relative to the base.

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30

Normally, the pivot section of the second presenter slot is aligned with a part of the first presenter slot.

Typically, the carrier also includes an upstanding slot for mounting a saw. Normally, that upstanding slot is arcuate or angular.

5 Generally, the spaced mountings comprise apertures in the carrier and a bolt extending through the first presenter slot or second presenter slot and a respective aperture in order to allow slide movement. Normally, the bolt is secured by a nut or other retainer. Possibly, one spaced mounting is relatively permanent to allow pivot movement thereabout.

10 Normally, the carrier, presenter and base comprise two sets of overlapping plates respectively incorporating the lateral slot, the stub, the first presenter slot and the second presenter slot.

Normally, the stub is secured with a nut.

15 Generally, the carrier, presenter and base are shaped to accommodate a saw despite variable presentation in use and/or for structural strength of the mounting jig.

20 Also, in accordance with the present invention, there is provided a saw arrangement comprising a saw mounting jig as described above and a circular saw with a saw blade.

25 Generally variable presentation of the circular saw allows angular presentation of the saw blade about the arcuate or angular section of the first presenter slot of the presenter.

30 Additionally, variable presentation of the circular saw allows variable height or depth of cut by the saw blade by positioning of the presenter along the lateral slot of the base and/or along the arcuate or angular section.

Further additionally, variable presentation allows for a fixed depth cut by the saw blade by alignment of the base and presenter in a juxtaposed position.

5 An embodiment of the present invention will now be described by way of example and with reference to the accompanying drawings in which;

Fig. 1 is an exploded front perspective view of a saw mounting jig in accordance with the present invention;

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Fig. 2 is an assembled front perspective of the mounting jig depicted in Fig. 1 in a door cutter presentation;

Fig. 3 is a rear perspective view of the jig depicted in Fig. 2 with a circular saw attached;

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Fig. 4 is a rear perspective view of a mounting jig with circular saw in a door cut height adjustment presentation;

Fig. 5 is a rear perspective view of a mounting jig and circular saw in a door cut depth adjustment presentation;

20

Fig. 6 is a rear perspective view of an angular cut adjustment presentation in accordance with the present invention;

25

Fig. 7 is a front perspective view of the mounting jig depicted in Fig. 6 with a circular saw attached;

Fig. 8 is a rear perspective view of a mounting jig in a depth cut adjustment presentation in accordance with the present invention;

30

Fig. 9 is a front perspective view of the mounting jig depicted in Fig. 8 with a circular saw attached;

Fig. 10 is a front perspective view of the mounting jig and circular saw depicted in Fig. 9 presented for maximum cut depth.

As indicated above, it would be desirable to allow more robust and accurate presentation of particularly circular saws whilst maintaining the necessary level of safety. There is also recently an increase in the number of home or DIY enthusiasts using circular saws such that a saw mounting jig which can be readily used and adjusted by such enthusiasts will be beneficial.

Fig. 1 depicts an exploded view of a saw mounting jig 1 in accordance with the present invention. The jig 1 comprises a base 2, a presenter 3 and a carrier 4 which each include end plates which in use overlap with each other. The base 2 incorporates lateral slots 5 which extend in upstanding plates 6. The presenter 3 incorporates a first presenter slot 7 and a second presenter slot 8 along with a stub 9 in each of its upstanding end plates. The stub 9 engages with the lateral slot 5 of the base 2 upon assembly such that the stub 9 can slide along the slot 5 and allow pivot in the direction of arrowhead A about the stub 9 in the slot 5. The carrier 4 is specified to carry a saw such as a circular saw which can be variably presented by the carrier 4 in the jig 1. The carrier 4 presents apertures 10, 11 to allow spaced mounting of the carrier 4 within slots 7, 8 of the presenter 3. Typically, as depicted, these mountings are provided through bolts 12 and nuts 13 such that the mounting can be tightened within and across its respective slot/aperture combination, in the depicted jig 1, that is the first presenter slot 7. Alternatively, relatively permanent mountings can be provided for one of the spaced mountings in the form of rivets 14 which extend through the slot 8 of the presenter 3 and the aperture 11 of the carrier 4. Generally, in accordance with the present invention the carrier 4 will also include an upstanding slot 15 upon which the

saw will be mounted through an appropriate stub mounting in order to allow angular displacement along the slot 15 for presentation of the saw in use.

It will be understood that with a saw it is necessary to consider clearance of the saw blade and saw housing shape in the various presentations allowed by the jig 1. Thus, each of the components, that is to say, base 2, presenter 3 and carrier 4 will normally incorporate "cut-outs" or other features 16, 17, 18 to accommodate the saw and also provide clearance for the saw blade in use. It will also be understood that the base 2, presenter 3 and particularly carrier 4 must be sufficiently robust to accommodate the weight of the saw as well as operational loadings, and so will generally be formed from an appropriate thickness of metal sheet.

Once the jig 1 is assembled, the jig 1 allows variable adjustment of the carrier 4 and therefore a saw secured to that carrier 4 to allow displacements, in addition to pivoting in the direction of arrowhead A about the stub 9, also displacements in the direction of arrowhead B along the lateral slot 5, displacement along the aligned sections of the first presenter slot 7 and second presenter slot 8 in the direction of arrowhead C, pivot displacement about one mounting (rivet 14) in the second presenter slot 8 and slide in an arcuate section 19 of the first presenter slot 7 for presentational adjustment in the direction of arrowhead D and adjustment of the saw directly upon the upstanding slot 15 of the carrier 4 in the direction of arrowhead E. In such circumstances, robust positioning of a saw secured to the carrier 4 can be achieved. More specifically, such variable presentation of the carrier 4 and therefore the saw secured to that carrier allow the saw to be used safely in a number of different operational configurations described below.

As depicted the section 19 and upstanding slot 15 are arcuate but it will be understood in some situations a simple straight angularly orientated slot may be used.

Figs. 2 and 3 respectively illustrate an assembled saw mounting jig 21 in Fig. 2 and with that jig secured to a circular saw 20 in Fig. 3. Similar nomenclature to that utilised in Fig. 1 is also used in Figs. 2 and 3 but with an increment of 20.

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Figs. 2 and 3 illustrate a door cut presentation of the jig 21 in accordance with the present invention. Thus, as can be seen the base 22 is substantially perpendicular to the presenter 23 with a stub (not shown) extending through the lateral slot 25 and secured by a locking retainer 41. The circular saw 20 is secured to the upstanding slot 35 at its lowest position in order that the carriage 24 is presented generally at the junction between an aligned section of the first presenter slot 27 with the second presenter slot 28 and the arcuate section 39. The carriage 24 is locked in this position through bolts 32 and retaining nuts 33. Generally, the spacing of the mountings between the carrier 24 and the presenter 23 are such that with the first mounting comprising bolt 32 and nut 33 at the junction between sections of the first presenter slot 27, the other spaced mounting is at the extreme position in the second presenter slot 28 such that its bolt 34 retains that position. As indicated previously, typically the bolt or rivet 34 will be a substantially permanent pivot mounting between the carriage or carrier 24 and presenter 23 whilst the bolt 32 and nut 33 will allow through tightening and slackening adjustment of the carrier 24 position relative to the presenter 23. Clearly, the combination of the carrier 24 and presenter 23 is also then presented relative to its position in the slot 25 upon the base 22. In such circumstances a saw blade of the circular saw 20 is substantially presented at its lower most position such that the blade extends through the cut-outs depicted in Fig. 1 as features 16, 17. This a so called door cut presentation.

Fig. 4 illustrates a varied presentation of the jig 21 and saw 20 in a cut height adjustable presentation. Thus, the carrier 24 has been displaced in the direction of arrowhead F in order to allow height adjustment over the range principally dictated by the length of the second presenter slot 28 which in turn

is usually aligned with a section of the first presenter slot 27. In such circumstances a saw blade of the circular saw 20 can also be presented at different positions within that range. It will be understood that apertures 30, 31 align with respective parts of the slots 27, 28 with appropriate mounting means (not shown) typically in the form of rivets or bolt and nut retainers in order to maintain position and/or pivot as required.

Fig. 5 provides a rear perspective view of a door cutter depth adjustment presentation in accordance with the present invention. Thus, the circular saw 20 and in particular a blade 50 extends through the aperture 51 formed between the base 22 and the presenter 23 dependent upon the angular position of the saw 20 upon the upstanding slot 35. The position on the slot 35 is dependent upon a locking mechanism which includes a retainer nut 52 associated with a bolt through the slot 35. It will be understood that the saw 20 essentially pivots about a mounting point (not shown) in order to achieve the varying cut depth for the blade 50.

It will be understood that variation in the cut depth provided by the blade 50 can be achieved at any height position of the carrier 24 in accordance with that height positioning and adjustment of presentation described with respect to Fig. 4.

Fig. 6 and 7 illustrate angular presentation of the saw 20 in accordance with the present invention. Fig. 6 depicts the saw mounting jig 21 with saw removed from a rear perspective whilst Fig. 7 depicts the jig 21 and saw 20 combined. In the angular cut presentation depicted in Figs. 6 and 7, it will be appreciated that the saw extends over the nominal front edge of the jig 21 into the jaw created by cut-out features 36, 37 when the base 22 and presenter 23 are in a juxtaposed and aligned position. This position is achieved through the stub (9 in Fig. 1) engaged by the retaining nut 41. It will be appreciated that the angular presentation of the upstanding slot 35 and therefore the circular saw 20 secured to that slot 35 through an appropriate stub and

retaining nut as well as through a mounting aperture 53 about which the saw pivots is dependent upon positioning of the spaced mountings including bolts 32 or rivets 34 in their respective presenter slots 27, 28. As indicated previously the spacing of the mountings including the bolt 32 or rivet 34 is such that with one mounting, in this case rivet 34 at one end of its respective slot 28 then the carrier 24 can pivot about this rivet 34 with the bolt 32 in the arcuate section 39 of the slot 27. As indicated previously, the bolt is normally selectively locked by the retaining nut 33 tightened upon a screw thread of the bolt 32. The angular position along the arcuate section 39 can be varied as required within the angular range of that section 39. Thus, the bolt 32 has a range which extends from the junction between the arcuate section 39 and the remainder of the slot 27 to the other end of the arcuate section 39. It would be appreciated, as depicted, normally the remaining part of the first presenter slot 27 is substantially aligned with the second presenter slot 28 in order to allow the height displacements described previously or lateral displacements described subsequently.

Figs. 9 and 10 illustrate regular circular saw operation to allow presentational variation in the depth of cut of the saw 20 and in particular saw blade 50. Thus, the jig 21 is configured with the base 22 in a juxtaposed and aligned position with the presenter 23, and this position retained through the stub (19 in Fig. 1) and retaining nut 41 in a similar fashion to the angular presentation depicted with respect to Figs. 6 and 7. The spaced mountings including bolt 32 with retaining nut 33 and rivet 34 are located within their respective slots 27, 28. As can be seen in the embodiment depicted in Figs. 7 and 8, these mountings 32, 34 are at a position whereby one mounting is at the junction between the arcuate section 39 and the remainder of the slot 27, whilst the other mounting 34 is located at the extremity of displacement within its slot 28. Nevertheless, as described previously and below, these mountings 32, 34 may be slid within the respectively aligned sections of the slots 27, 28 in order to provide lateral displacement of the carrier 24 and

therefore the saw 20 secured upon that carrier 24. Position of the carrier 24 relative to the presenter 23 is secured through the retaining nut 33.

5 The saw 20 is secured pivotally about a mounting aperture 53 such that through a slide movement of a stub in the upstanding slot 35 a saw blade 50 can be positioned for varying depth below the plane of the base 22. Again, position of the saw through the stub mounting passing through the upstanding slot 35 is generally retained through a tightened retaining nut (not shown). In such circumstances the blade 50 will only cut to the depth allowed by the angular position in the upstanding slot 35.

Normally, as depicted, the spaced mountings 32, 33 will be located in order to ensure that a blade is substantially aligned with a front edge generally marked by broken line 55 in Fig. 9. This allows for more convenient cut control and regulation by a user. Furthermore, it may be advantageous to provide some means to stop movement in this presentational geometry in the direction of arrowhead G and so prevent movement of the blade 50 in the direction of arrowhead H.

20 Fig. 10 illustrates a maximum cut depth presentation for the saw 20 in the jig 21 in accordance with the present invention. Thus, the saw 20 and in particular the blade 50 are presented such that pivot about the mounting 53 and along the slot 35 (Fig. 8) is such that the mounting stub (not shown) is at an end 56 of the upstanding slot 35. In such circumstances the blade 51 extends to its maximum extent below the cut line 55 nominally designated by the bottom of the base 22.

30 As described above, the present jig 21 provides for robust and accurate presentation of the saw 20 in a number of orientations to allow more convenient use of the saw 20. Generally the base 22 through its exposed surface will provide a slide plate upon which the combination of jig 21 and saw 20 will be operated to perform the desired saw cut. Nevertheless, it will be

appreciated that the base 22 may incorporate apertures or other fixings to secure the base upon a work table, etc.

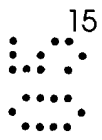
5 It will be understood that the base used in the present jig acts as a universal foot plate for all presentational geometries of the jig. Thus, by appropriate slide movements and pivot rotation, the saw can be presented without detachment of the base and/or the presenter or carrier in all the desired geometries for operation. Once the jig components, that is to say the base, presenter and carrier, are assembled together they stay together
10 without any necessity to disassemble for alteration of the presentational geometry. The bolts/retainer nuts and/or nuts may be tightened or slackened to facilitate movement between geometries or to ensure retention of position but they do not become detached so eliminating the possibility of loss or manipulative difficulties.

15 Whilst endeavouring in the foregoing specification to draw attention to those features of the invention believed to be of particular importance it should be understood that the Applicant claims protection in respect of any patentable feature or combination of features hereinbefore referred to and/or
20 shown in the drawings whether or not particular emphasis has been placed thereon.

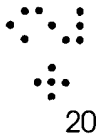
CLAIMS

1. A saw mounting jig comprising a carrier for a saw, and a presenter for
 5 adjustment relative to a base, the base having a lateral slot engaged by a stub
 of the presenter whereby the presenter can pivot about the stub, the presenter
 having a first presenter slot and a second presenter slot, the first presenter
 slot including an arcuate or angular section and the second presenter slot
 10 including at least a pivot section whereby spaced mountings between the
 carrier and the presenter may slide respectively in the first presenter slot and
 the second presenter slot to variably present the carrier relative to the base.

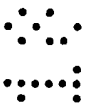
2. A jig according to claim 1, in which the pivot section of the second
 presenter slot is aligned with a part of the first presenter slot.



3. A jig according to claims 1 or 2, in which the carrier also includes an
 upstanding slot for mounting a saw.



4. A jig according to claim 3, in which the upstanding slot is arcuate or
 angular.



5. A jig according to any of the preceding claims, in which the spaced
 mountings comprise apertures in the carrier and a bolt extending through the
 first presenter slot or second presenter slot and a respective aperture in order
 25 to allow slide movement.

6. A jig according to claim 5, in which the bolt is secured by a nut or other
 retainer.

7. A jig according to claims 5 or 6, in which one spaced mounting is
 30 relatively permanent to allow pivot movement thereabout.

8. A jig according to any of the preceding claims, in which the carrier,
 presenter and base comprise two sets of overlapping plates respectively

incorporating the lateral slot, the stub, the first presenter slot and the second presenter slot.

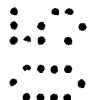
9. A jig according to any of the preceding claims, in which the stub is
5 secured with a nut.

10. A jig according to any of the preceding claims, in which the carrier,
presenter and base are shaped to accommodate a saw despite variable
presentation in use and/or for structural strength of the mounting jig.

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11. A saw arrangement comprising a saw mounting jig according to any of
claims 1 to 10, and a circular saw with a saw blade.

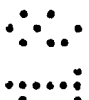
12. A saw arrangement according to claim 11, in which variable
15 presentation of the circular saw allows angular presentation of the saw blade
about the arcuate or angular section of the first presenter slot of the presenter.



13. A saw arrangement according to claims 11 or 12, in which variable
presentation of the circular saw allows variable height or depth of cut by the
20 saw blade by positioning of the presenter along the lateral slot of the base
and/or along the arcuate or angular section.



20



14. A saw arrangement according to any of claims 11 to 13, in which
variable presentation allows for a fixed depth cut by the saw blade by
25 alignment of the base and presenter in a juxtaposed position.

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15. A saw mounting jig substantially as hereinbefore described and with
reference to Figs. 1 – 10 of the accompanying drawings.

30 16. A saw arrangement substantially as hereinbefore described and with
reference to Figs. 1 – 10 of the accompanying drawings.

30

17. Any novel subject matter or combination including novel subject matter disclosed herein, whether or not within the scope of or relating to the same invention as any of the preceding claims.





INVESTOR IN PEOPLE

Application No: GB0403670.3

Examiner: Dr Steven Chadwell

Claims searched: 1-16

Date of search: 12 May 2005

Patents Act 1977: Search Report under Section 17

Documents considered to be relevant:

Category	Relevant to claims	Identity of document and passage or figure of particular relevance
A	-	WO 00/51772 A1 (HILLS)
A	-	GB 2302058 A (BLACK & DECKER)
A	-	GB 2302057 A (BLACK & DECKER)
A	-	US 5404779 A (TAPCO)

Categories:

X Document indicating lack of novelty or inventive step	A Document indicating technological background and/or state of the art.
Y Document indicating lack of inventive step if combined with one or more other documents of same category.	P Document published on or after the declared priority date but before the filing date of this invention.
& Member of the same patent family	E Patent document published on or after, but with priority date earlier than, the filing date of this application.

Field of Search:

Search of GB, EP, WO & US patent documents classified in the following areas of the UKC^x :

B5L

Worldwide search of patent documents classified in the following areas of the IPC⁰⁷

B23D; B27B

The following online and other databases have been used in the preparation of this search report

WPI, EPODOC