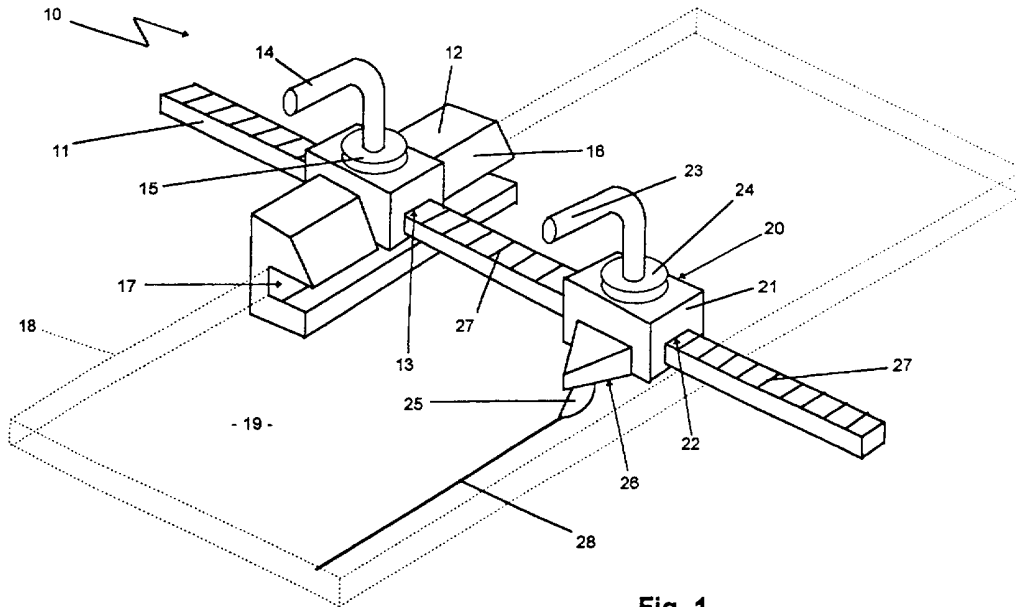


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(54) Abstract Title
Board cutting apparatus.

(57) Apparatus (10) for cutting large boards (19) as used in the construction industry, particularly plasterboard panels, which can conveniently be used by one person comprises an attachment member (12) and a cutting device (20) are mounted on an elongate graduated spacer bar (11, 27). The elongate attachment member (12) forms a T-shape with the spacer bar (11) and has a groove (17) in which the edge (18) of the board (19) is received. At least one of the attachment member (12) and the cutting device (20) is slidable on the spacer bar (11) to vary the distance between a cutting blade (25) protruding downwardly from the cutting device (20) and the edge (18) of the board (19), and can be located in the desired position using locating screws (15, 24). The attachment member (12) and the cutting device (20) are provided with handles (13, 23) to draw the apparatus (10) across the board (19) to make the cut (28). For circular cuts (38) a pivot member (30) having a pivot spike (35) depending therefrom replaces the attachment member (12) on the spacer bar (11).



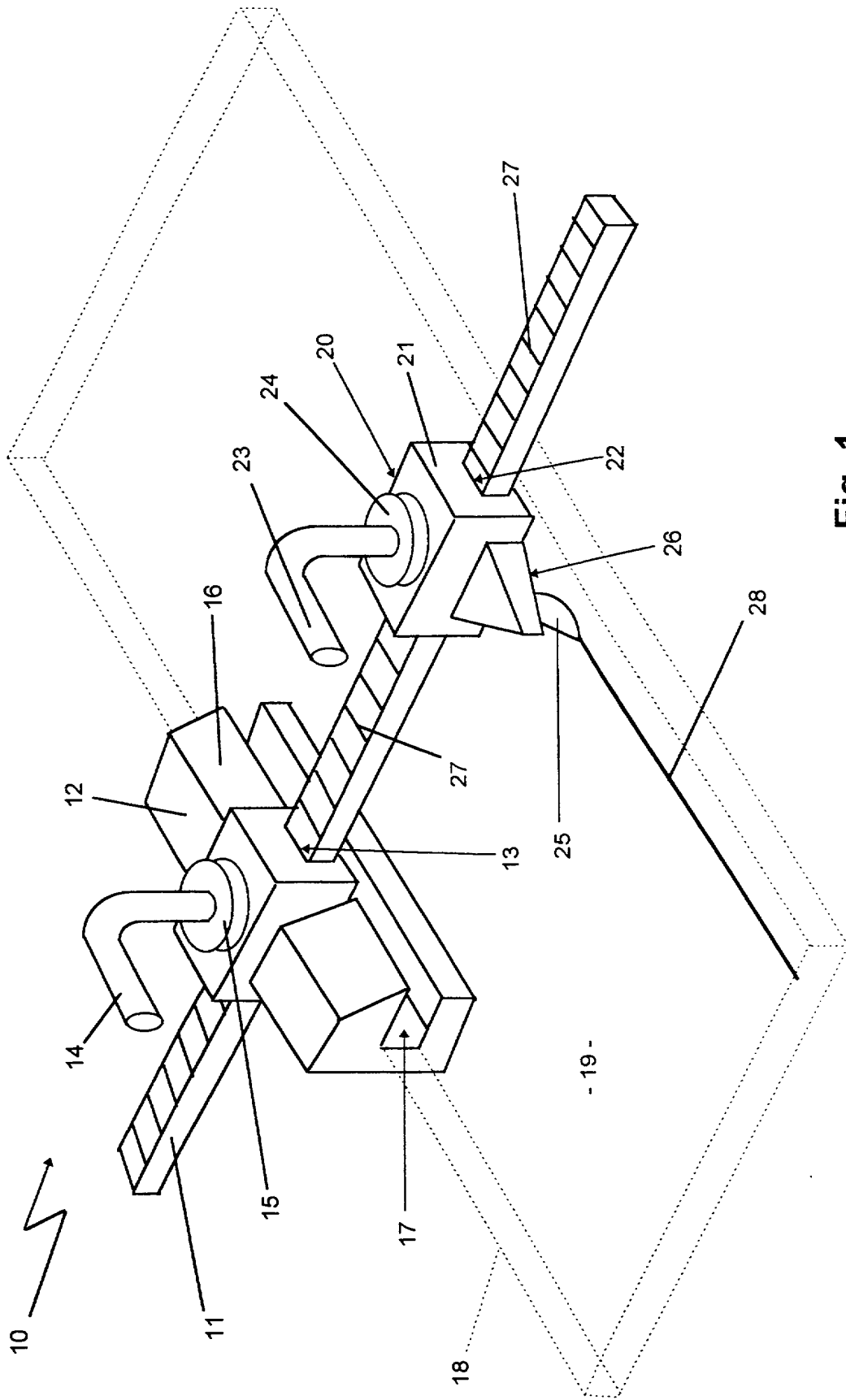


Fig. 1

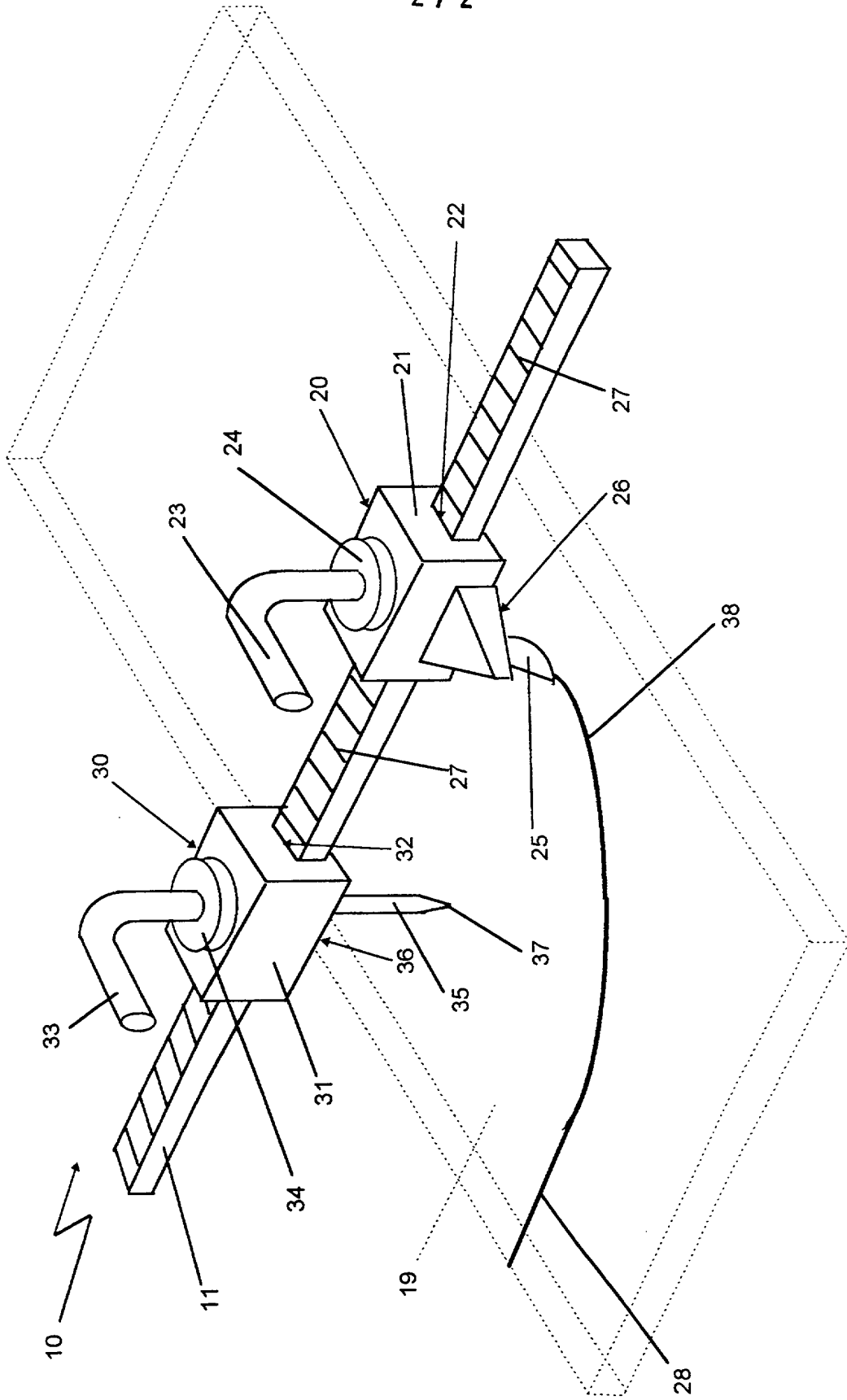


Fig. 2

BOARD CUTTING APPARATUS

This invention relates to board cutting apparatus, and in particular to apparatus for the cutting of boards such as are used in the construction industry.

Builders regularly are required to cut boards such as plasterboard during the construction or refurbishment of properties. These boards tend to be supplied in large panels of a size such that, to cut a panel to a smaller width or length, for example, two people are required to hold a long straight edge at its ends in order that a cutting device can be drawn along the straight edge. This is inconvenient and time consuming. In addition, the making of curved cuts requires a completely different technique and different equipment.

It is an object of the invention to provide board cutting apparatus that can be readily used by one person. It is a supplementary object to provide board cutting apparatus that can be easily modified for the making of curved cuts.

The invention provides board cutting apparatus comprising an elongate spacer bar, an elongate attachment member attached to the spacer bar and extending laterally thereof, the attachment member being adapted to receive the edge of a board, and a cutting device mounted on the spacer bar, at least one of the attachment member and the cutting device being movable along the spacer bar so as to vary the spacing between the cutting device and the attachment member.

The attachment member may have a board edge receiving groove extending longitudinally thereof along a face extending transversely of the spacer bar. The spacer bar may be disposed to extend laterally of the attachment member substantially centrally thereof. Preferably the spacer bar and the attachment member extend substantially at right angles to each other. The spacer bar may have measurement markings thereon. Preferably the cutting device is movable along the spacer bar, in which case the spacer bar may pass through an aperture in the cutting device. The aperture in the cutting device may have a cross-section corresponding with that of the spacer bar. The cutting device may be provided with locating means operable to locate it in position on the spacer bar. Alternatively or additionally, the attachment member may be movable along the spacer bar, and the spacer bar may pass through an aperture in the attachment member. The aperture in the attachment member may have a cross-section corresponding with that of the spacer bar. The attachment member may be provided with locating means operable to locate it in position on the spacer bar.

The spacer bar may be rectangular, and preferably square, in cross-section. The spacer bar may be substantially 25 mm square. The or each locating means may comprise a screw mounted in the respective cutting device or attachment member and extending into the respective aperture therein.

The cutting device may comprise a cutter housing and a cutting blade mounted thereon to protrude beneath an underside thereof. The cutting blade may be detachably secured to the cutter housing, and may protrude between 1.5 mm and 5 mm.

The cutting device may have a handle thereon, and the attachment member may have a handle thereon. The or each handle may be formed on the respective locating means.

The board cutting apparatus may comprise a pivot member adapted to be mounted on the spacer bar. The pivot member may comprise a pivot housing having a pivot spike depending from an underside thereof. The pivot member may have an aperture therein having a cross-section corresponding with that of the spacer bar. The pivot member may be provided with locating means operable to secure it in position on the spacer bar, and the pivot member locating means may comprise a screw mounted in the pivot member and protruding into the aperture therein. The pivot member may have a handle thereon, and the pivot member handle may be formed on the pivot member locating means.

The invention will now be further described with reference to the accompanying drawings in which:

Fig. 1 is a perspective view of a board cutting apparatus in use in cutting a parallel straight edged board, and

Fig. 2 is a perspective view of the apparatus of Fig. 1 adapted for making a circular cut.

Referring now to Fig. 1, there is shown a board cutting apparatus 10 having a spacer bar 11 having a square cross-section, for example 25 mm square. Mounted on the spacer bar 11, near one end thereof, is an elongate attachment member 12. The attachment member 12 has a square section aperture 13 in which the spacer bar 11 is a sliding fit. A handle 14 is fitted to the attachment member 12 and serves to turn a locating screw 15 which extends through the attachment member 12 into the aperture 13 to securely locate the attachment member in any desired position along the spacer bar 11. The aperture 13 is transverse to the longitudinal direction of the attachment member 12 so that the attachment member 12 and spacer bar 11

extend substantially at right angles to each other. Also the aperture 13 is substantially centrally disposed longitudinally of the attachment member 12 so that the attachment member 12 and the spacer bar 11 are formed in a T-shape. In one of the faces 16 which extends longitudinally of the attachment member 12 and transversely of the spacer bar 11 is a groove 17 into which an edge 18 of a board 19 (shown in broken lines) is received. This serves to locate the board cutting apparatus 10 relative to the edge 18 and allow sliding movement of the cutting apparatus 10 parallel to that edge 18.

Mounted on the spacer bar 11, spaced from the attachment member 12, is a cutting device 20. The cutting device 20 comprises a housing 21 which has an aperture 22 of corresponding shape and dimensions to aperture 13 so that the housing 21 is a sliding fit on the spacer bar 11. A handle 23 and locating screw 24, corresponding with handle 14 and locating screw 15 on the attachment member 12, are fitted to the housing 21 to locate the cutting device 20 on the spacer bar 11. Detachably secured to the housing 21 is a cutting blade 25 which extends below the undersurface 26 of the housing 21 by between 1.5 mm and 5mm. On the spacer bar 11 are measurement markings 27 to facilitate determination of the spacing of the cutting blade 25 from the edge 18 of the board 19.

In use, one or both of the cutting device 20 and the attachment member 12 are moved along the spacer bar 11 to positions giving the required spacing of the cutting blade 25 from the base of the groove 17. The board cutting apparatus 10 is then placed on the board 19 with the edge 18 received in the groove 17, and the blade 25 resting on the board 19. By gripping the handles 14, 23, the board cutting apparatus 10 may be moved in a direction parallel with the edge 18 to effect a cut 28. In the case of plasterboard, the cut 28 will penetrate the outer covering on the upper surface so that the board 19 can be 'snapped' along the line of the cut 28 and a simple cutting of the outer covering on the bottom surface with a knife will complete the cutting of the board 19. Alternatively, the board 19 could be turned over and a second cut 28 made in the opposite surface before 'snapping' the board 19.

Referring now to Fig. 2, there is shown the board cutting apparatus 10 adapted to make circular cuts. In this configuration, the attachment member 12 has been removed from the spacer bar 11 and replaced by a pivot member 30. The pivot member 30 comprises a housing 31 which has an aperture 32 of corresponding shape and dimensions to aperture 13 so that the housing 31 is a sliding fit on the spacer bar 11. A handle 33 and locating screw 34, corresponding with handle 14 and locating screw 15 on the attachment member 12, are fitted to the housing 31 to locate the pivot member 30 on the spacer bar 11. Secured to the housing 31 is a pivot spike 35 which extends below the undersurface 36 of the housing 31.

In use, one or both of the cutting device 20 and the pivot member 30 are moved along the spacer bar 11 to positions giving the required spacing of the cutting blade 25 from the pivot spike 35. The board cutting apparatus 10 is then placed on the board 19 with the pivot spike 35 inserted into the board 19 at the desired pivot point 37, and the blade 25 resting on the board 19. By gripping the handles 33, 23, the board cutting apparatus 10 may be rotated about the pivot point 37 to effect a circular cut 38. To produce an arch, two straight cuts 28, performed as described with respect to Fig. 1 are combined with a semi-circular cut 38 as described with respect to Fig. 2.

Alternative embodiments of board cutting apparatus will be readily apparent to persons skilled in the art. For example, the spacer bar 11 may be of other cross-sections such as triangular or T-shaped, or may be circular with a flat, groove or rib extending along the spacer bar 11, with the apertures 13, 22 being of corresponding cross-section. Instead of the apertures 13, 22, T-shaped or dovetail slots may be provided in the attachment member 12, the cutter housing 21 and the pivot housing 31. If either the attachment member 12 or the cutting device 20 is not movable along the spacer bar 11, it may be formed integrally therewith. Particularly if either the attachment member 12 or the cutting device 20 is not movable along the spacer bar 11, the markings 27 on the spacer bar 11 may include numerals to indicate the distance of the cutter blade 25 from the edge 18 of the board 19 or the pivot point 37. Instead of the straight blade 25 illustrated fixedly secured to the cutter housing 21, a circular blade may be rotatably mounted on the cutter housing 21 so as to rotate as the board cutting apparatus 20 is moved over the surface of the board 19. The handles 14, 23 may be separate from the locating screws 15, 24 which would then have their own handling portions, e.g. knurled or winged heads. Instead of the locating screws 15, 24, the attachment member 12 and housing 21 may be provided with protrusions into the apertures 13, 22 which engage recesses in the spacer bar 11 to locate the attachment member 12 and housing 21 on the spacer bar 11, the recesses having predetermined spacings to determine the spacing of the cutter 25 and the edge 18 or pivot point 37. Such protrusions may be resiliently biased into the apertures 13, 22. By means of the invention, the cutting of boards as used in the construction industry, such as plaster board, is easily and conveniently performed by one person. The cutting can be performed accurately and repeatably. Strips from 18 mm to 600 mm in width can be readily cut from full-size boards of 0.5 mm to 25 mm in thickness. In addition, circles from 37 mm to 1500 mm diameter can also be cut easily and quickly, as well as arches of similar widths.

WHAT I CLAIM IS

1. A board cutting apparatus comprising an elongate spacer bar, an elongate attachment member attached to the spacer bar and extending laterally thereof, the attachment member being adapted to receive the edge of a board, and a cutting device mounted on the spacer bar, at least one of the attachment member and the cutting device being movable along the spacer bar so as to vary the spacing between the cutting device and the attachment member.
2. A board cutting apparatus according to claim 1, wherein the attachment member has a board edge receiving groove extending longitudinally thereof along a face extending transversely of the spacer bar.
3. A board cutting apparatus according to claim 1 or claim 2, wherein the spacer bar is disposed to extend laterally of the attachment member substantially centrally thereof.
4. A board cutting apparatus according to any one of claims 1 to 3, wherein the spacer bar and the attachment member extend substantially at right angles to each other.
5. A board cutting apparatus according to any one of claims 1 to 4, wherein the spacer bar has measurement markings thereon.
6. A board cutting apparatus according to any one of claims 1 to 5, wherein the cutting device is movable along the spacer bar.
7. A board cutting apparatus according to claim 6, wherein the spacer bar passes through an aperture in the cutting device.
8. A board cutting apparatus according to claim 7, wherein the aperture in the cutting device has a cross-section corresponding with that of the spacer bar.
9. A board cutting apparatus according to any one of claims 6 to 8, wherein, the cutting device is provided with locating means operable to locate it in position on the spacer bar.
10. A board cutting apparatus according to any one of claims 1 to 9, wherein the attachment member is movable along the spacer bar.

11. A board cutting apparatus according to claim 10, wherein the spacer bar passes through an aperture in the attachment member.
12. A board cutting apparatus according to claim 11, wherein the aperture in the attachment member has a cross-section corresponding with that of the spacer bar.
13. A board cutting apparatus according to any one of claims 10 to 12, wherein the attachment member is provided with locating means operable to locate it in position on the spacer bar.
14. A board cutting apparatus according to any one of claims 1 to 13, wherein the spacer bar is rectangular in cross-section.
15. A board cutting apparatus according to claim 14, wherein the spacer bar is square in cross-section.
16. A board cutting apparatus according to claim 15, wherein the spacer bar is substantially 25 mm square.
17. A board cutting apparatus according to claim 9 or claim 13, wherein the locating means comprises a screw mounted in the respective cutting device or attachment member and extending into the respective aperture therein.
18. A board cutting apparatus according to any one of claims 1 to 17, wherein the cutting device comprises a cutter housing and a cutting blade mounted thereon to protrude beneath an underside thereof.
19. A board cutting apparatus according to claim 18, wherein the cutting blade is detachably secured to the cutter housing.
20. A board cutting apparatus according to claim 18 or claim 19, wherein the cutting blade protrudes between 1.5 mm and 3 mm.
21. A board cutting apparatus according to any one of claims 1 to 20, wherein the cutting device has a handle thereon

22. A board cutting apparatus according to any one of claims 1 to 21, wherein the attachment member has a handle thereon.

23. A board cutting apparatus according to claim 21 or claim 22 when dependent on claim 17, wherein the handle is formed on the respective locating means.

24. A board cutting apparatus according to any one of claims 1 to 23, also comprising a pivot member adapted to be mounted on the spacer bar.

25. A board cutting apparatus according to claim 24, wherein the pivot member comprises a pivot housing having a pivot spike depending from an underside thereof.

26. A board cutting apparatus according to claim 24 or claim 25, wherein the pivot member has an aperture therein having a cross-section corresponding with that of the spacer bar.

27. A board cutting apparatus according to claim 26, wherein the pivot member is provided with locating means operable to secure it in position on the spacer bar.

28. A board cutting apparatus according to claim 27, wherein the pivot member locating means comprises a screw mounted in the pivot member and protruding into the aperture therein.

29. A board cutting apparatus according to claim 27 or claim 28, wherein the pivot member has a handle thereon.

30. A board cutting apparatus according to claim 29, wherein the pivot member handle is formed on the pivot member locating means.

31. A board cutting apparatus substantially as hereinbefore described with reference to and as illustrated in Fig. 1 or Figs. 1 and 2 of the accompanying drawings.



Application No: GB 9911725.1
Claims searched: 1-31

Examiner: R.B. Luck
Date of search: 4 June 1999

**Patents Act 1977
Search Report under Section 17**

Databases searched:

UK Patent Office collections, including GB, EP, WO & US patent specifications, in:
UK Cl (Ed.Q): B5L LAA,LCP,LCX,LF,LGX,LTF,LTX,LTX2,L33A,L37A.
Int Cl (Ed.6): B27B 5/18,5/20
Other:

Documents considered to be relevant:

Category	Identity of document and relevant passage	Relevant to claims
X	GB2321420 G.Lupton	1 at least
X	GB2148181 Alberti Vittoria SpA	1 at least
X	GB2037655 W.H.Rogers	1 at least
X	GB1598403 F.W.Elhaus	1 at least
X	GB1071787 L.Striebig	1 at least
X	GB0932417 E.Schwabedissen	1 at least

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&	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.