



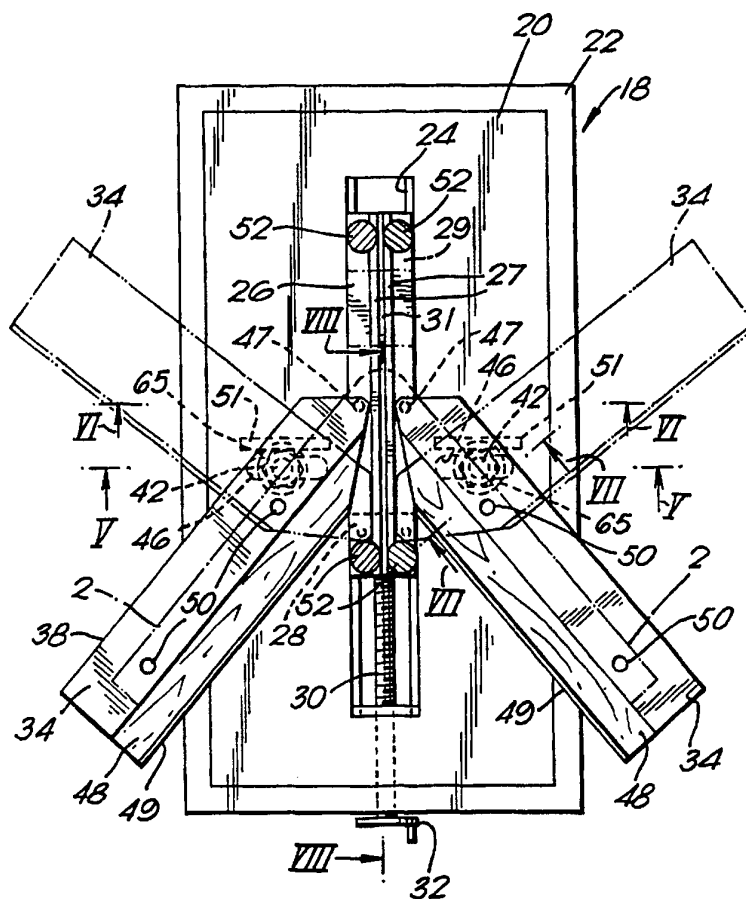
## INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

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<p>(21) International Application Number: PCT/GB93/00941</p> <p>(22) International Filing Date: 7 May 1993 (07.05.93)</p> <p>(71)(72) Applicants and Inventors: FREELAND, Brian, Ellison [GB/GB]; 113 Old Charlton Road, Shepperton, Middlesex TW17 8BT (GB). FREELAND, Neil [GB/GB]; 113 Old Charlton Road, Shepperton, Middlesex TW17 8BT (GB). FREELAND, Stuart [GB/GB]; 42 Acacia Avenue, Shepperton, Middlesex TW17 0AY (GB).</p> <p>(74) Agent: GREGORY, Timothy, Mark; Urquhart-Dykes &amp; Lord, Midsummer House, 411C Midsummer Boulevard, Central Milton Keynes MK9 3BN (GB).</p>	<p>(81) Designated States: AU, CA, US, European patent (AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE).</p> <p><b>Published</b> With international search report. With amended claims and statement.</p>	

(54) Title: METHOD AND MEANS FOR MAKING MITRE JOINTS

## (57) Abstract

The invention relates to a mitring arrangement (18) for use in cutting a mitre on e.g. coving, skirting boards, architraves. In the arrangement (18) described the line of saw cut (31) is fixed and workpiece guide boxes ((34) are simultaneously adjusted symmetrically about the sawing line (31). Various methods of sawing are described including hand saws, jig saws and circular saws. An adjustable template (2), settable against the angle of e.g. adjacent wall surfaces, can be used to set the angle of the workpiece guide boxes.



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METHOD AND MEANS FOR MAKING MITRE JOINTS

This invention relates to apparatus for cutting mitred joints.

It is particularly concerned with such an apparatus having means for adjustably setting guides for the mitre in order to accord to a template which is settable to conform to the angle required for the mitre.

In cutting a mitre joint it has often been the practice to employ a mitre box which has saw guides and fixed angles to produce a mitred joint of a correspondingly fixed angle. For example, mitred joints at the corners of a rectangular frame would be cut at an angle of  $45^{\circ}$ .

Mitred joints for other than rectangular frames would need either a separate mitre box for each angle or else a saw guide adjustable with respect to the mitre box. In the latter case the sawline, or line of cut requires re-setting for the angle of the co-operating adjacent frame part.

In some cases each mitre joint is different from a previously cut joint, e.g. in the case of cutting mitred joints in coving to fit around the wall/ceiling joint in a room the fact that the room may not be square either by accident or design, means that often each corner mitred joint is different from the others.

It is one object of this invention to provide an arrangement for cutting a mitre joint in a workpiece whereby the included angle of the joint is accurately bisected by the line of cutting.

It is a further object to provide a mitre cutting

device wherein the line of cut remains fixed and where workpiece guides are adjustable with respect thereto.

Yet a further object is to provide a mitring device wherein the workpiece guides are readily settable according to the article or articles to which the workpieces have to fit.

In accordance with the invention there is provided apparatus for use in cutting a mitre joint comprising a base, saw guiding means located to provide a saw line, workpiece locating means, and means whereby the workpiece locating means may be angularly adjusted with respect to the saw guiding means.

The apparatus may include two workpiece locating means adjustably mounted symmetrically about the saw line.

Each of the workpiece locating means may be mounted for pivoting about a fulcrum which is adjustable longitudinally parallel to the saw line.

Each of the workpiece locating means may be provided with a projection which is slidably located in a transverse slot formed in the base, such that longitudinal adjustment of the fulcrum causes transverse movement of the projection in the transverse slot, such adjustment co-operating to cause angular adjustment of the workpiece locating means.

Each fulcrum may be located in a slide member slidably mounted in the base and the slide member may be adjustable longitudinally by means of a lead screw co-operating with a lead nut forming part of the slide member and the lead screw may be rotatable by means of a handle located at the end of the lead screw.

Saw guiding means may be provided secured to the sliding member and movable therewith.

The saw guiding means may comprise rollers mounted in pairs towards each end of the slide member, one roller of each pair being positioned symmetrically about the saw line or may comprise a plate mounted in a horizontal plane above the base on columns which are secured to the slide member and the plate may be adapted to guide a jig saw. In the latter case the saw guiding means may be provided with one or more upstanding lips or tongues to define the path of the jig saw, and a longitudinal slot may be provided centrally on the plate through which the saw blade is adapted to pass.

Each workpiece locating means may comprise a box-like section having a lower horizontal wall, an upper horizontal wall, and a vertical wall and the lower horizontal wall may be provided with a fulcrum pin about which the workpiece locating means may pivot.

A workpiece restraining lip may be provided adjacent the lower horizontal wall opposite the vertical wall.

The base of the apparatus may constitute part of a work bench.

The apparatus may further include means whereby the angle or disposition of the workpiece locating means is adjustable symmetrically about the saw line to accord to a template which itself is settable to conform to the included angle of the required mitre.

The template may comprise a pair of arms hinged

together at one end and having means to lock the arms in the desired position and the template may be first set to include an angle at which the workpiece is required to be cut and then utilized to ensure the equivalent setting of the workpiece locating means.

In this arrangement the arms of the template are provided with downwardly depending pegs and the upper horizontal walls of the box-like sections of the workpiece guiding means are formed with holes of substantially the same diameter as the pegs, such that the pegs in the template locate within the holes in the upper walls of the box-like sections when the workpiece locating means are set to the same included angle as the template.

The workpiece guiding means may be adapted for use in fixing together the two components of the mitre which have been prepared using the apparatus of the invention.

The invention further includes a method of cutting a mitre joint on a workpiece wherein a pair of workpiece locating guides are adjusted symmetrically about a fixed sawing line to the included angle required for the mitre, a workpiece is located in one of the workpiece locating guides and a saw is passed along the sawing line, a second workpiece is then located in the second workpiece locating guide and the saw passed along the same sawing line, whereby the mitre joint may be accurately cut to conform to the required included angle.

The method according to the invention includes the use of a template which is adjusted and fixed to accord with the articles to which the workpieces are to conform.

The above and other features of the invention will become clear from the following description which is given

by way of example only with reference to the accompanying drawings in which :

Figure 1 is a perspective view of a template forming part of the invention,

Figure 2 is a plan view of the template in use to determine the angle of a joint between the two con-joined walls of part of a building,

Figure 3 is a perspective view of an adjustable mitre guide device according to the invention,

Figures 4, 4a and 4b are plan views of the device,

Figure 5 is a section on the line V-V of Figure 4,

Figure 6 is a section on the line VI-VI of Figure 4,

Figure 7 is a section view on the line VII-VII of Figure 4 with part of a coving in position for cutting,

Figure 8 is a section on the line VIII-VIII of Figure 4.

In Figures 1 and 2 there is shown a template 2 which comprises arms 4, 6 hinged about an axis 8 and adapted to be clamped together by a screw and wing nut 10. Each arm has secured thereto and depending downwardly therefrom a pair of pegs 12 each formed with a cylindrical shank 14 and a tapered lead portion 16.

In Figure 2 the template is shown set at an angle to coincide with the angle between a pair of conjoined

walls W. To arrive at such a setting, the screw and wing nut device is loosened and the template is offered up to the walls, opened until the arms are in continuous contact with both walls after which the wing nut is re-tightened and the template removed. A pair of conjoined walls  $W^1$  are also indicated by chain lines, and which form an obtuse angle. Thus the template may be adjusted to conform to internal and external angles.

As seen in Figures 3 to 7 a mitring device 18 comprises a base board 20 mounted within a frame 22. A Tee-slot 24 is formed in the base board 20 and an adjusting member 26 is slidable longitudinally within that Tee-slot. The member 26 is retained within the confines of the slot by capping pieces 28 & 29 secured to the underside of the forward and rearward ends of the member respectively. The forward capping piece 28 is threaded internally to act as a lead nut in co-operation with a lead screw 30 which passes through a plain hole in the frame 22 and is fixed to a handle 32. A horizontally split capping piece 25 seen clearly in Figure 8 prevents any longitudinal movement of the screw 30 with respect to the frame as the screw is rotated. Alternatively, a simple circlip arrangement may be used, locating in a groove formed on the periphery of the lead screw in known manner and acting on the inside surface of the frame 22 to locate the screw in the same manner. Rotation of the handle 32 clockwise or anti-clockwise will cause the member to move forwardly or rearwardly within the slot.

Workpiece locating means in the form of a pair of guide boxes 34 are each formed with an upper wall 36, an outer wall 38 and a lower wall 40 and a shank portion of a bolt 42 passes through a hole 44 formed in the lower wall 40. The bolts also pass through transverse slots 46 in the base board 20 and are slidable therein. Each bolt 42 is



formed with a hexagon head 43 and a hexagon nut 45 is threaded on to the lower end of the bolt. One flat of the nut is restrained from twisting about the axis of the bolt by a rib 51 formed on the underside of the base board 20. Each guide box 34 is mounted for pivoting about the axis of a pivot pin 47 which is fixed e.g. by welding to the forward end portion of the lower wall 40 and is freely pivotable in a hole formed in the member 26 as seen clearly in Figure 6. The upper wall 36 of each guide box 34 is formed with two holes 50 and the lower walls 40 terminate at their inner edges with an upstanding lip 49 extending for some distance as seen clearly in Figures 4 and 7. The channel formed by the lip 49, lower wall 40 and outer wall 38 is provided with a liner 48, the upper surface of which lies in the same horizontal plane as the upper surface of longitudinal ribs 27 which depend upwardly from the sliding member 26 to define a saw clearance slot 31. The liners are each provided with clearance holes 65 to provide access to the hexagon heads 43 by a suitable ring-spanner or socket spanner.

It will clearly be seen that rotation of the lead screw 30 by means of the handle 32 causes the capping piece 28 and the member 26 attached thereto to move forwardly or rearwardly along its Tee-slot according to the direction of rotation. In so doing, the pins 47 move also forwardly or rearwardly causing the guide boxes to rotate about the shanks of the bolts 42. Due to the restraint of the pins 47 in longitudinal direction of motion, the bolts 42 are caused to slide laterally within the confines of the slots 46, resulting in a change of angle of the guideboxes with respect to the median line of the baseboard, i.e. the line along which the saw cut is made. Thus the line of cutting remains constant while the angle of the guide boxes is simultaneously and symmetrically adjustable with respect to that line.

Two pairs of conventional roller type saw guides 52 are rotatably mounted on the member 26 in known manner, as seen clearly in Figures 3, 4 and 5, although an alternative form of saw guide, described later, may be used instead.

In use, after the template has been adjusted and set to the angle between the walls W or  $W^1$  as described earlier with respect to Figure 2 it is then taken from the walls and laid on the top surface of the upper walls 36 of the guide boxes 34, the pegs 12 of one arm of the template being gently inserted into the two holes 50 in the top wall of one of the guide boxes. If the pegs in the other arm do not automatically align with the holes in the other guide box, then the handle 32 is rotated to turn the lead screw which causes the member 26 to move longitudinally as described earlier. The pivot pins 47 move with the member 26 and will, if the member 26 is moved towards the front face of the base board, cause the bolts 42 to move outwardly thus spreading the guide boxes 34 and widening the angle therebetween. If the member 26 is moved towards the rear of the base board, then the bolts 42 will move inwardly along the slots 46 and cause the guide boxes to close towards the cutting line symmetrically, thus reducing the included angle between the boxes.

Movement of the member 26 towards the front of the base board causes the bolts 42 to move outwardly along the slots 46 only until the locating boxes are linearly aligned, i.e. at  $90^\circ$  to the saw line or median line. Further movement of the pins 47 with the slide 26 in the same direction causes the bolts 42 to reverse their direction of movement and move inwardly along the slots 46 to rotate the guide boxes about the axes of their pins 47 in order to provide an obtuse angular setting, i.e. for use where an external angle of the workpiece is to be provided.

Adjustment of the guide boxes in this manner is continued until the pegs 12 align with and penetrate the holes 50, being assisted in this by the lead taper 16 at the lower end of those pegs.

Having thus set the angles of the guide boxes, the bolts 42 are tightened by a suitable ring-spanner or socket spanner on the hexagon heads 43 in order to rigidly lock them in operative position.

As seen clearly from Figure 4 the guide boxes are thus set at the same angle as the wall W and the template is then removed. A section of coving C is inserted into one of the guide boxes as indicated in Figure 7 and is extended therefrom at its foremost end over the median line of the base board. A saw is then guided between the rollers 52 to mitre one end of the coving. The operation is repeated with a further section of coving using the other guide box and the two jointing sections are thus provided with mating surfaces which are appropriate for the angle of con-jointed walls.

When smaller sections of coving than that shown in Figure 7 are being treated, a filler strip of wood is inserted adjacent the upstanding lip 49 in order to ensure that the workpiece maintains its correct angle within the guide box.

In a further arrangement, not shown, the upstanding lip 49 may be extended upwardly beyond that shown in the drawings and a threaded screw passed therethrough to form part of a screw clamp to hold the workpiece firmly against the vertical wall 38 of the guide box.

It is possible to locate the coving in the guide boxes manually during sawing without the need for

mechanical clamping means or even the use of the upstanding lip 49 or filler strip, although those arrangements are preferable.

The specific embodiment of the invention has been described with respect to cutting mitres for a coving. It may of course be used for cutting mitre joints for any purpose and in any material, e.g. skirting boards, picture rails, architraves, and picture frames having non-rectangular frames.

In an alternative arrangement, a power operated jig-saw may be used instead of a conventional hand saw or tenon saw. In such an arrangement shown in Figure 4a, the roller type saw guides 52 are removed and replaced by vertical columns 53 which support a horizontal guide plate 55 extending above the member 26. The guide plate has upstanding lips 57 extending longitudinally along the edges of the plate to provide means for guiding the sole plate of the saw and the vertically reciprocating blade passes through a central slot 59 formed in the guide plate. The guide plate 55 is further stabilized by means of two upstanding pins 61 [see Figure 3] which locate in suitable holes 63 formed in the guide plate. If so desired, the upper surface of the plate 55 may be provided with one or more longitudinally extending ribs 69 indicated in chain line in Figures 4a, 5 and 6. The sole plate of the jig saw is provided with suitable matching grooves and the jig saw is then guided along the ribs 69 during cutting of the mitre.

In yet another alternative arrangement shown in Figure 4b the plate 55 is replaced by a pair of half-plates 55a and 55b each of which is mounted on the top of spindles on which the saw guide rollers 52 are rotated. The inwardly facing edges of the half-plates define a longitudinal slot

59a through which the saw is passed in operation and the pins 61 project upwardly from the upper surface of the walls 36 of the guide boxes through holes 63a in the half-plates. The half-plates have upstanding lips 57a at their outer edges.

Although the above non-limiting example shows and describes saw guiding means attached to the member 26, such guide means may, without departing from the invention, be attached to the base board instead.

In the above arrangement the saw used may be a hand saw or a jig saw guided between the lips 57a. Alternatively a circular saw may be used in a similar manner to a jig saw, its sole plate being guided by the lips 57a.

Figure 4 illustrates the setting of the guide boxes in full lines for cutting a mitre for an internal angle. It is obvious that by simply adjusting the guide boxes by means of the lead screw 30 the same apparatus can be used for external mitres. The position of the guide boxes when adjusted for cutting a mitre for an external angle is indicated in chain lines.

The guide boxes, having been set symmetrically to the required angle of the mitre, may be used for the purpose of gluing or otherwise fixing together the two components of the mitre.

The base board 20 is illustrated in the drawings as being mounted within a frame 22. However, the base board and frame could be combined as a one-piece moulding of metal, e.g. aluminium, or of a rigid plastics material.

If desired the upper face of the base board may be provided with markings or graduations in the form of a

protractor to allow manual setting of the guide boxes without resorting to the use of a template.

In an alternative arrangement, not shown, the base board may be part of, or may constitute the working surface of a work bench. It is found to be particularly useful when it is part of a portable work bench of the type readily available and marketed under the trade mark "Workmate" by Messrs. Black & Decker Limited.

CLAIMS

1. Apparatus for use in cutting a mitre joint, comprising a base, saw guiding means located to provide a saw line, two workpiece locating means mounted symmetrically about the saw line and adjustable simultaneously, wherein each workpiece locating means is mounted for pivoting about a fulcrum which is adjustable longitudinally parallel to the saw line.
2. Apparatus according to Claim 1 wherein each workpiece locating means is further provided with a projection slideably located in a transverse slot formed in the base, such that longitudinal adjustment of the fulcrum causes transverse movement of the projection in the transverse slot, such adjustment co-operating to cause angular adjustment of the workpiece locating means.
3. Apparatus according to Claim 1 wherein the base is formed with projections, each slideably located in a slot formed in each of the workpiece locating means such that longitudinal adjustment of the fulcrum causes transverse movement of the slots relative to the projections, such adjustment co-operating to cause angular adjustment of the workpiece locating means.
4. Apparatus according to Claim 1 wherein each fulcrum is located in a slide member slideably mounted in the base.

5. Apparatus according to Claim 4 wherein the slide member is adjustable longitudinally by means of a lead screw co-operating with a lead nut secured to the slide member and the lead screw is rotatable by means of a handle located at the end of the lead screw.

6. Apparatus according to any of the above Claims wherein the workpiece locating means are adjustable to conform to acute and obtuse angles with respect to the saw line and to locate a workpiece on either side of a line normal to the saw line and passing through the fulcrum about which the workpiece locating means are pivotable.

7. Apparatus according to Claim 1 wherein saw guiding means are provided secured to the slide member and movable therewith.

8. Apparatus according to Claim 7 wherein the saw guiding means comprises rollers mounted in pairs towards each end of the slide member, one roller of each pair being positioned symmetrically about the saw line.

9. Apparatus according to Claim 7 wherein the saw guiding means comprises a plate mounted in a horizontal plane above the base on a pair of columns which are secured to the slide member and which plate is adapted to guide a jig saw.



10. Apparatus according to Claim 8 wherein the saw guiding means is provided with one or more upstanding lips or tongues to define the path of the jig saw and a longitudinal slot is provided centrally on the plate through which a saw blade is adapted to pass.

11. Apparatus according to any of the above Claims wherein each workpiece locating means comprises a box-like section having a lower horizontal wall, an upper horizontal wall, a vertical wall and where the lower horizontal wall is provided with a fulcrum pin about which the workpiece locating means may pivot.

12. Apparatus according to Claim 11 wherein a workpiece restraining lip is provided adjacent the lower horizontal wall opposite the vertical wall.

13. Apparatus according to any of the above Claims wherein the base constitutes part of a work bench.

14. Apparatus according to any of the above Claims whereby the angle or disposition of the workpiece locating means is adjustable symmetrically about the saw line to accord to a template which is settable to conform to the included angle of the required mitre.

15. Apparatus according to Claim 14 wherein the template comprises a pair of arms hinged together at one end and having means to lock the arms in a desired position.

16. Apparatus according to Claims 14 or 15 wherein the template may be first set to include an angle at which the workpiece is required to be cut, and then utilized to ensure the equivalent setting of the workpiece guiding means.

17. Apparatus according to Claim 15 wherein the arms of the template are provided with downwardly depending pegs and the upper walls of the box-like sections of the workpiece locating means are formed with holes such that the pegs in the template locate within the holes in the upper walls of the box-like sections when the workpiece locating means are set to the same included angle as the template.

18. Apparatus according to all or any of the above Claims wherein the workpiece locating means are adapted for use in fixing together two components of a mitre which have been prepared using the above claimed apparatus.

19. A method of cutting a mitre joint on a workpiece wherein a pair of workpiece locating means are adjusted symmetrically about a fixed sawing line to the included angle required for the mitre, a workpiece is located in one of the workpiece locating means and a saw is passed along the sawing line, a second workpiece is located in the second workpiece locating means and the saw passed along the same sawing line, whereby the mitre joint is accurately cut to conform to the required included angle.

20. A method according to Claim 19 wherein the angle of the workpiece locating means is set in accordance with a template which is adjusted and fixed to accord with the articles to which the workpieces are to conform.

**AMENDED CLAIMS**

[received by the International Bureau on 13 September 1994 (13.09.94);  
original claims 1-20 replaced by amended claims 1-18 (5 pages)]

**C L A I M S**

1. Apparatus for use to enable cutting of a mitre joint comprising:-
- a) a base (20);
  - b) saw guiding means (52) located to provide a saw line (52A);
  - 5 c) workpiece locating means (34) adapted to be angularly adjusted with respect to said saw guiding means;
  - d) said workpiece locating means (34) comprising a pair of such locating means pivotally connected at their inner ends to an adjusting member (26)
  - 10 which is slidably position-adjustable with respect to said base (20) in the lengthwise direction of said saw line, and each workpiece locating means also being connected to said base by projection and slot connection means (42, 46), the arrangement being such as to provide a stepless
  - 15 simultaneous symmetrical angular adjustment of both said locating means (34) with respect to said saw line;
- characterised by:-
- e) said workpiece locating means (34) each comprising at least a lateral wall (40) and an upstanding
  - 20 wall (38), said lateral wall providing said pivotal connection (47) to said adjusting member (26) so that workpieces can pass thereover;
  - f) said pivotal connections (47) of said workpiece locating means (34) to said adjusting member
  - 25 (26) and the structure and arrangement thereof in relation to said base (20) being such that said workpiece locating means can be adjusted for cutting both internal and external mitre angles; and

g) said upstanding walls (38) each having an inner edge (49A) spaced from the saw line (52A) defined by said saw guiding means (52) and from said pivotal connections (47) so that a gap (49B) is defined between  
5 said edge (49A) of each of said upstanding walls and said saw line (52A) so that said gaps (49B) permit said upstanding walls (38) to pivot with said workpiece locating means (34) between positions for cutting said internal and external mitre angles without said upstanding  
10 wall inner edges (49A) crossing said saw line (52A), and said gaps also permitting a workpiece positioned on one workpiece location means (34) to extend over said saw line and through said gap of the other workpiece locating means (34) without being blocked by the upstanding wall (38) of  
15 the other workpiece locating means (34) whilst adjusted for cutting internal mitre angles.

2. Apparatus according to claim 1 characterised by said lateral walls (40) each having a tapered plan view profile at the inner end thereof, and said pivotal  
20 connections (47) being located in the region of the apex of each of said tapered profiles.

3. Apparatus according to any one of the preceding claims characterised by said workpiece locating means (34) comprising a second lateral wall (36) spaced upwardly from  
25 said first lateral wall (40) such that said workpiece locating means is of generally channel-shaped cross-sectional shape.

4. Apparatus according to claim 3 characterised by structure (55) positioned adjacent said second lateral  
30 wall (36) and interconnecting the inner ends of said second lateral walls, and said structure having said second lateral walls pivotally connected (61) thereto.

5. Apparatus according to claim 4 characterised by said structure (55) positioned adjacent said second lateral wall (36) being disposed generally horizontally in use and connected to said adjusting member (26) by generally  
5 vertical structure (53).

6. Apparatus according to claim 5 characterised by said structures interconnecting the inner ends of said second lateral walls (36) having said saw guiding means (52) associated therewith.

10 7. Apparatus according to claim 6 characterised by said structure (55) positioned adjacent said second lateral wall (36) comprising a plate (55) and said structure connecting said plate to said adjusting member (26) comprising generally upstanding columns (53).

15 8. Apparatus according to claim 7 characterised by lengthwise-extending guide means (57) on said plate (55) to assist in guiding power saw means lengthwise of said saw line.

9. Apparatus according to any preceding claim  
20 characterised by said workpiece locating means (34) being of generally box-like section and including a second upstanding wall (49) at the opposite side of said lateral wall (40) from said first mentioned upstanding wall (38), whereby a workpiece can be lodged therebetween.

25 10. Apparatus according to claim 9 characterised by adjustment means associated with said second upstanding wall (49) to enable clamping of a workpiece against said first upstanding wall (38).

11. Apparatus according to any one of the preceding claims in combination with a template (2) therefor, said apparatus and said template comprising interfitting location elements (12, 36) providing a defined angular relationship between said template and said workpiece locating means (34).  
5

12. The combination of claim 11 characterised by pivot means (10) of said template (2) having a pivot axis (8) located, whilst using the template to define the angular setting of the workpiece locating means, on the cutting line (52A) defined by said saw guiding means (52).  
10

13. Apparatus according to claim 11 or claim 12, characterised by said template (2) comprising clamping means (10) to enable a measured angular relationship between arms (4, 6) of the template to be preserved.  
15

14. Apparatus according to claim 1, characterised by said saw guiding means (52) comprising rollers mounted in pairs towards each end of said adjusting member (26), one roller of each pair being positioned symmetrically about the saw line (52A).  
20

15. Apparatus according to claim 1, characterised by said saw guiding means comprising a half plate (55a, 55b) adapted to guide a jigsaw.

16. Apparatus according to any one of the preceding claims, characterised by said saw guiding means being mounted on said adjusting member (26) for slidable movement lengthwise of said saw line (52A).  
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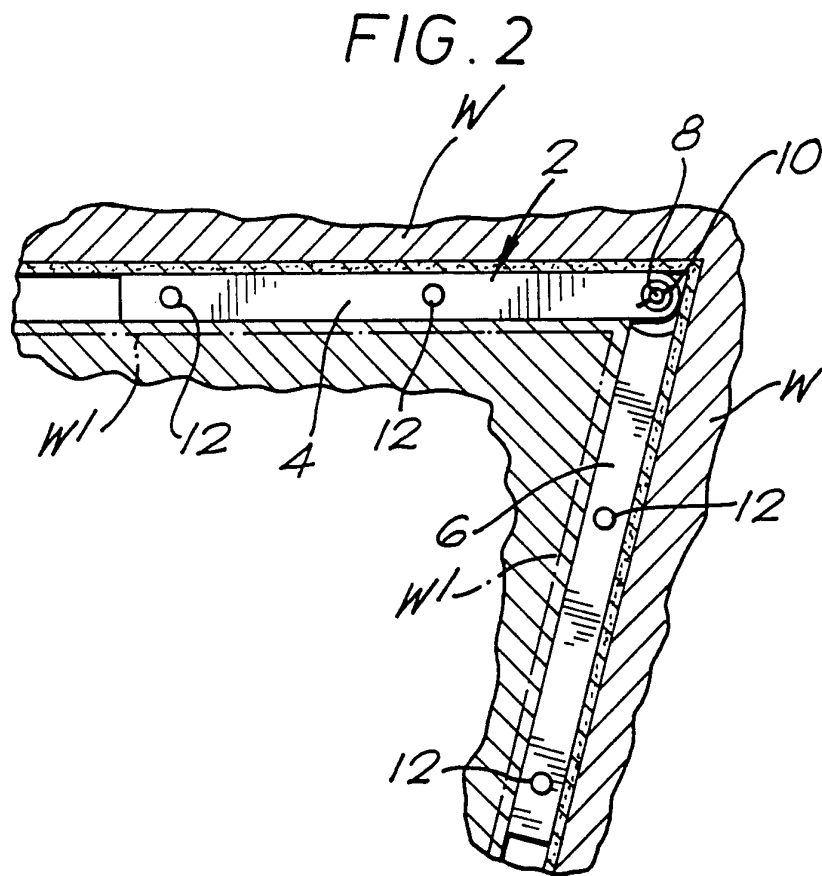
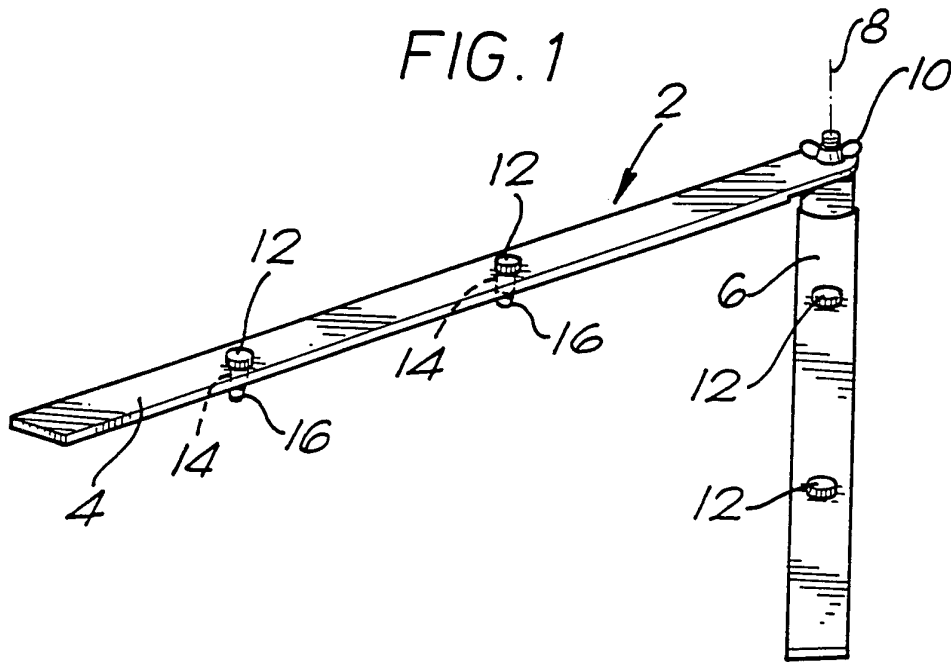
17. Apparatus according to any one of the preceding claims wherein said base (20) constitutes part of a work bench.  
30

18. Apparatus according to any one of the preceding claims, wherein said workpiece locating means (34) are adapted for use in fixing together two components of a mitre which have been prepared using the apparatus according to any of the preceding claims.



**STATEMENT UNDER ARTICLE 19**

The specification will be amended to provide a statement concerning the disclosure in the cited US specification to Sexton. There will also be filed some amendments in the description consequential upon the claim amendments and providing specific antecedents for features of the claims including the gaps between the inner edges of the upstanding walls of the workpiece locating means (34).



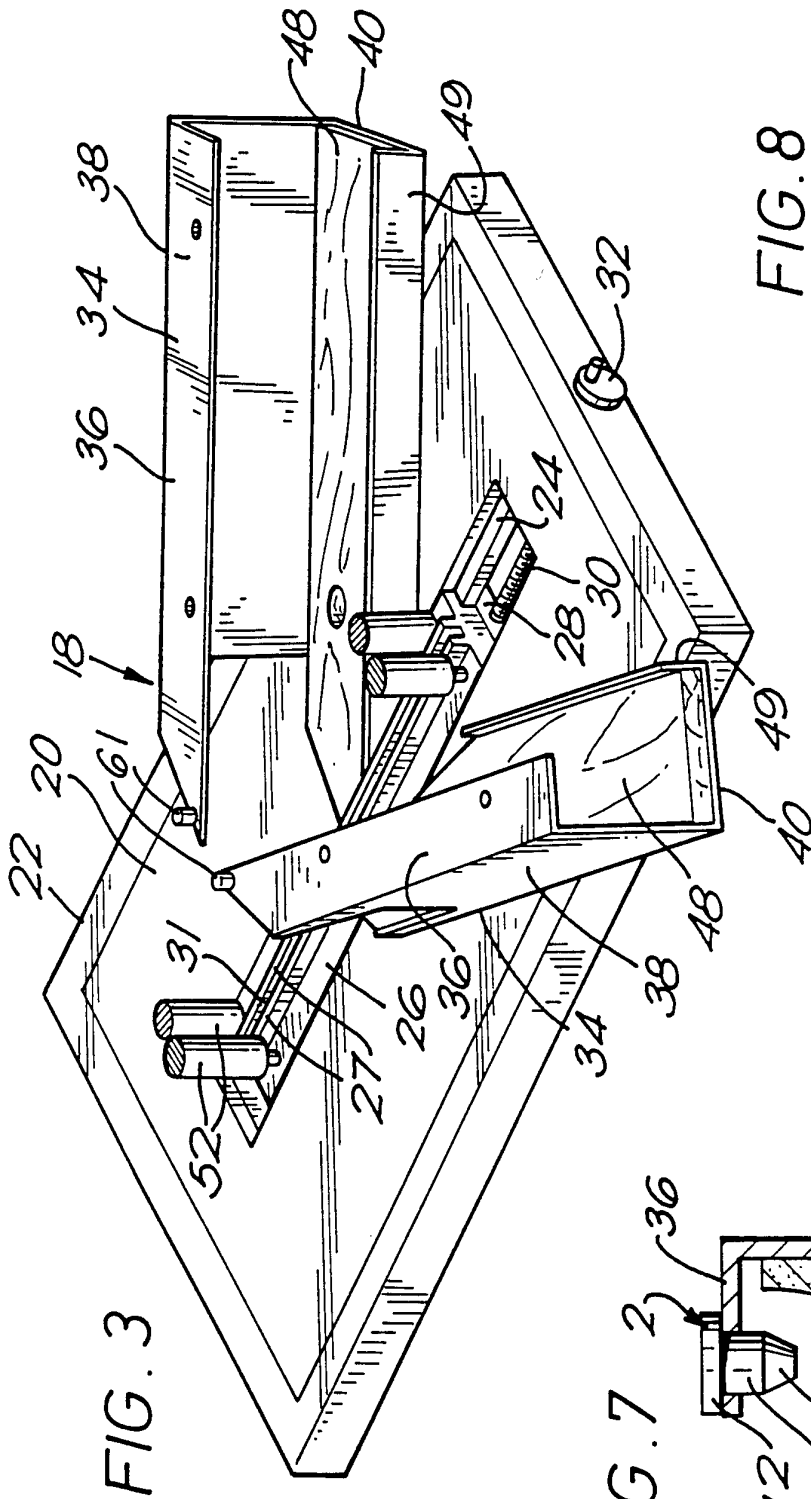


FIG. 3

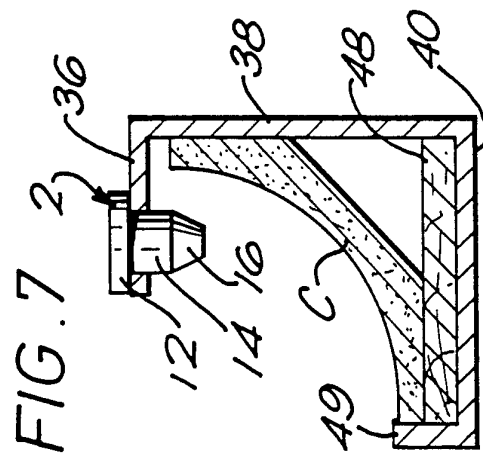


FIG. 7

FIG. 8

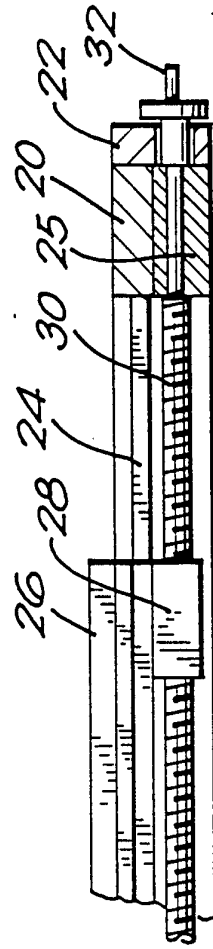




FIG. 4a

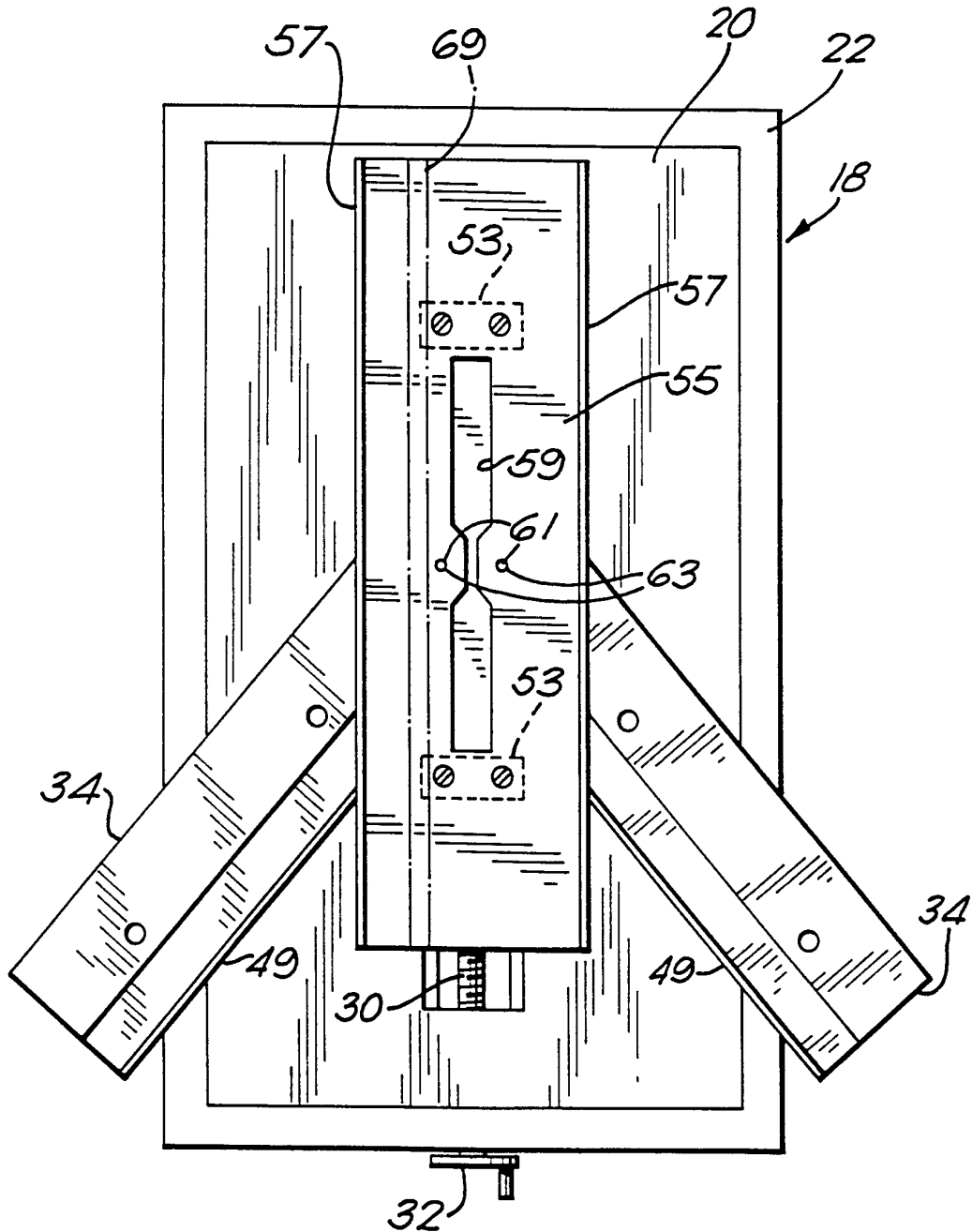
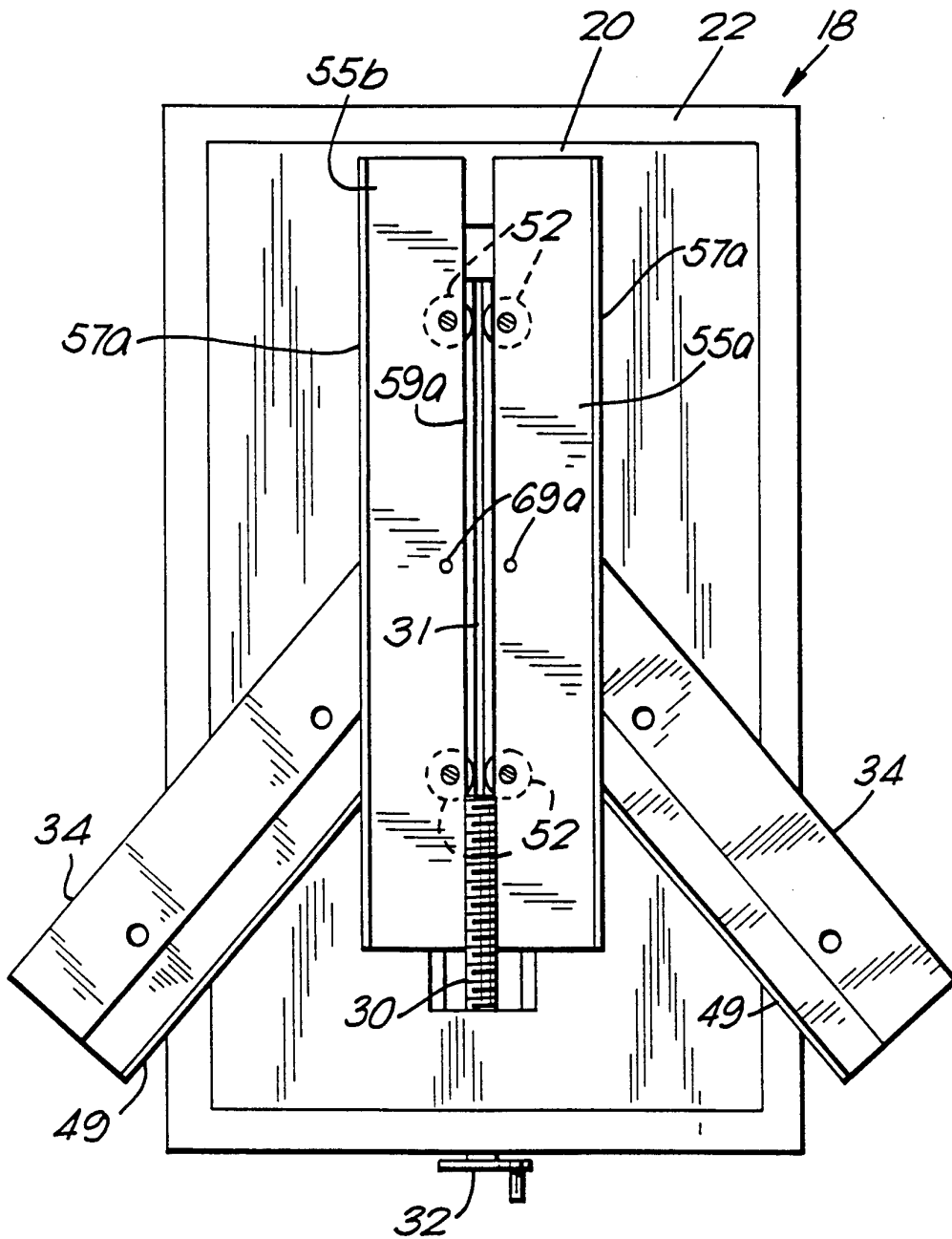


FIG. 4b





**INTERNATIONAL SEARCH REPORT**

International Application No  
PCT/GB 93/00941

<b>A. CLASSIFICATION OF SUBJECT MATTER</b> IPC 5 B27G5/02		
According to International Patent Classification (IPC) or to both national classification and IPC		
<b>B. FIELDS SEARCHED</b>		
Minimum documentation searched (classification system followed by classification symbols) IPC 5 B27G B23Q		
Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched		
Electronic data base consulted during the international search (name of data base and, where practical, search terms used)		
<b>C. DOCUMENTS CONSIDERED TO BE RELEVANT</b>		
Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
E	GB,A,2 261 189 (FREELAND) 12 May 1993 see the whole document ---	1-20
X	US,A,3 498 345 (SEXTON) 3 March 1970  see column 1, line 59 - column 4, line 4; figures 1-6	1,2,4,5, 7,13-16, 19,20
Y	---	3,6,8,9, 18
Y	CA,A,1 245 535 (MACKSOUD) 29 November 1988 see figures 1,2 ---	3
Y	DE,U,91 03 189 (PANHANS) 13 June 1991 see figures 1,2 ---	6
	-/--	
<input checked="" type="checkbox"/> Further documents are listed in the continuation of box C. <span style="margin-left: 200px;"><input checked="" type="checkbox"/> Patent family members are listed in annex.</span>		
° Special categories of cited documents :		
*A* document defining the general state of the art which is not considered to be of particular relevance *E* earlier document but published on or after the international filing date *L* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified) *O* document referring to an oral disclosure, use, exhibition or other means *P* document published prior to the international filing date but later than the priority date claimed		*T* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention *X* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone *Y* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art. *&* document member of the same patent family
Date of the actual completion of the international search  <p align="center">20 December 1993</p>		Date of mailing of the international search report  <p align="right">14. 01. 94</p>
Name and mailing address of the ISA European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+ 31-70) 340-2040, Tx. 31 651 epo nl, Fax (+ 31-70) 340-3016		Authorized officer  <p align="center">Matzdorf, U</p>



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International Application No  
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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US,A,4 455 908 (KEDDIE) 26 June 1984 see figures 1-4 ---	8,9
Y	GB,A,2 208 624 (CUNNICK) 12 April 1989 see figure 1	18
A	-----	10

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Information on patent family members

International Application No

PCT/GB 93/00941

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US-A-3498345	03-03-70	NONE	
CA-A-1245535	29-11-88	US-A- 4881437	21-11-89
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GB-A-2208624	12-04-89	NONE	