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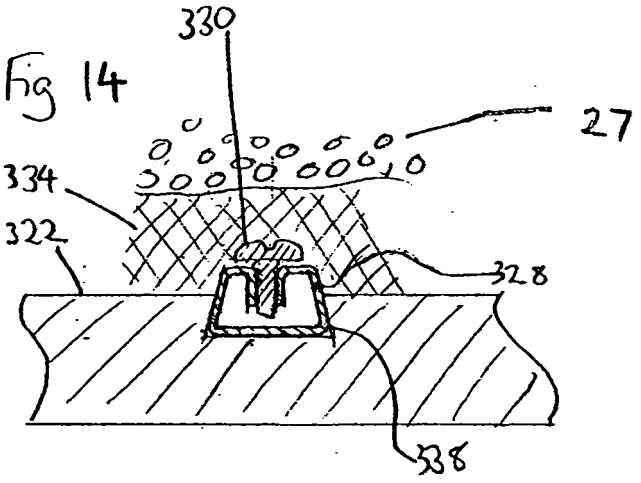
(54) Installing architectural finishing components in a building

(57) A method of installing an architectural finishing component, such as a door, in a locating component, such as a door frame.

A method of installing the locating component.

A frame, such as a door frame, comprising two frame uprights (12) and a frame lintel (14), the frame uprights (12) and frame lintel (14)being of a standardised length and requiring no cutting to length prior to or during installation, wherein locating means (70, 76) are provided at both ends of the lintel (14) and/or at one end of each of the uprights (12) such that the lintel (14) and the uprights (12) fit and locate together correctly to form a frame of a standardised height and width that is suitable for an architectural finishing component of a standardised height and width.

A bracket (358) may be used to attach the frame to the wall (27). Architectural finishing components, such as an architrave (32), may be attached to the wall (27) using the brackets (358) and double ended fasteners.



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Description

[0001] The present invention relates to methods of installing architectural finishing components in a building, in particular components such as doors, door frames, trims and architrave. The present invention also provides a bracket for an architectural finishing component for use in such a method of building, a door frame assembly, a skirting board assembly, double ended pins, a tie plate and a kit of components all of which can be used in such methods.

[0002] This invention is related to the disclosures of, and may be used in conjunction with the components and systems disclosed in GB0203179.7, GB0221814.7, GB0221816.2 and GB0224895, the entire contents of which are incorporated herein by way of reference.

[0003] There is a constant drive in house building to reduce costs. A large part of the cost of building a house is labour. Further, the more skilled the labourer, the more expensive his or her time on site will be. Therefore, any way of reducing the time that is spent onsite by skilled labourers or craftsmen is of interest to a site or project manager.

[0004] Systemising house construction so that standard building components, i.e. components of a standardised size (for example length, width, height and/or thickness), can be factory built, delivered to the site and quickly installed by labourers with relatively low skills, can make big savings to the overall cost of building, modifying, converting or decorating a house or building. Traditional methods of building, however, do not lend themselves to using such systems because tolerances cannot be kept close enough for the doors, etc., to be fitted as received. Therefore, even doors and architrave etc. of a standard size need to be adjusted or cut in order to be fitted in a building using traditional building methods.

[0005] Traditional building methods involve three essential steps. The first two are performed by relatively unskilled labourers. The first step is the construction of a structural skeleton for the building, formed of various structural elements such as walls, floors and ceilings. These structural elements are constructed of general-purpose building materials such as bricks or concrete blocks in the case of walls or concrete that is cast in situ in the case of floors. These building materials are general-purpose in the sense that they are not designed for the construction of buildings of set dimensions; they can be and are used to construct buildings to any design. The second step is the application of general-purpose finishing materials to the structural elements, for example to finish off the walls, the floors or the ceilings. Such general-purpose building or finishing materials include plaster (for the walls and ceilings) and flooring materials such as floor screed, floorboards or tiles, although these latter could also be regarded as structural building materials, since they are designed to be load-bearing in use. Finally, there is the third step: onto these "finished" walls, floors or ceilings, standard building components are installed to give the room a "designed" look. This currently has to be done by skilled craftsmen such as joiners or carpenters.

[0006] These standard building components include architectural finishing components such as architectural mouldings. Architectural finishing components are those items of a building that are position-critical, i.e. need to be installed in a building in exactly the correct position, or to within very small tolerances, in order to achieve their function or to look right. Such items include, but are not limited to, doors, door frames, trims, skirting boards, architrave, and cornices. Masonry items, such as stone fireplaces, can also be architectural finishing components for use with the present invention.

[0007] A typical example of an architectural finishing component is a door and its surround, e.g. the door frame and architrave. A typical door must be upright and positioned correctly within the door frame, otherwise it will not open and close properly. Unfortunately, however, as suggested above, it is often the case that such architectural finishing components need to be cut or resized in order to fit correctly to the walls, floors or ceilings when constructed using traditional building methods. Therefore, specialised building techniques involving skilled craftsmen such as joiners or carpenters will be required.

[0008] It would therefore be desirable to provide a means for assisting in the correct installation of standard building components, such as prefabricated architectural finishing components, so that they can be fitted as received on site by unskilled labourers where the principal methods of the construction employed are traditional. It would also be desirable to provide a new method for installing architectural finishing components that would allow an unskilled labourer to fit the architectural finishing components easily.

[0009] According to the first aspect of the present invention, there is provided a method of installing an architectural finishing component in a building comprising: a) installing or providing a locating component (of a standard length) that is adapted to receive the architectural finishing component for attachment at a predetermined relative position; b) constructing or finishing a structural element of the building using the locating component as a locating reference for (the application of) general-purpose building or finishing materials; and then c) attaching the architectural finishing component to the locating component at the said predetermined relative position. With this method, the locating component can be installed in the building without cutting it to length, i.e. without changing the length that it was manufactured to. Therefore the locating component does not need to be cut before installation.

[0010] Preferably, an architectural finishing component is attached to the locating component using a press-fit connection, e.g. using double-ended pins. Although the press-fit connection is preferably achieved using separate components such as double-ended pins that are installed into holes or slots in the building components,

other forms of press-fit engagement may be used.

[0011] According to another aspect of the present invention, there is provided a method of installing an architectural finishing component in a building comprising: a) installing a locating component that is adapted to receive the architectural finishing component for attachment at a predetermined relative position; b) constructing or finishing a structural element of the building using the locating component as a locating reference for the application of general-purpose building or finishing materials; and then c) attaching the architectural finishing component to the locating component at the said predetermined relative position using a double-ended fastener, one end of the fastener extending into or through the locating component and the other end of the fastener extending into or through the architectural finishing component.

[0012] These methods may comprise: i) installing the locating component; ii) constructing the structural element of the building using the locating component as a locating reference for general-purpose building materials; and then iii) attaching the architectural finishing component to the locating component at the said predetermined relative position.

[0013] Alternatively, the methods may comprise: i) constructing the structural element of the building; ii) installing the locating component on or in the structural element; iii) finishing the structural element using the locating component as a locating reference for the finishing materials; and then iv) attaching the architectural finishing component to the locating component at the said predetermined relative position.

[0014] According to another aspect of the present invention, there is provided a method of installing an architectural finishing component in a building comprising: a) installing a locating component that is adapted to receive the architectural finishing component for attachment at a predetermined relative position; b) constructing a low portion of a structural element of the building using the locating component as a locating reference for the application of general-purpose building or finishing materials; c) installing a tie component for the locating component in or on the top of the low portion of the structural element; d) constructing a further portion of the structural element on the lower portion, over the tie component, with further general purpose building or finishing materials to tie the locating component to the structural element of the building; and then e) attaching the architectural finishing component to the locating component at the said predetermined relative position.

[0015] Building up the wall, floor and/or ceiling adjacent to or around the locating component, perhaps with the tie component being sandwiched in mortar between, for example, building blocks or bricks in the finished structural element of the building, secures the locating component into or onto the wall, the floor or the ceiling.

[0016] The method may comprise: i) installing the locating component; ii) constructing the structural element of the building using the locating component as a locating reference for general-purpose building materials and the tie component for tying the locating component to the structural element; and then iii) attaching the architectural finishing component to the locating component at the said predetermined relative position.

[0017] Alternatively, the method may comprise: i) constructing the low level portion of the structural element of the building; ii) installing the locating component with the tie component on or in the top of the lower level portion of the structural element; iii) finishing the structural element using the locating component as a locating reference for the general-purpose building or finishing materials, the tie component thereby tying the locating component to the structural element; and then iv) attaching the architectural finishing component to the locating component at the said predetermined relative position.

[0018] The locating component may have a generally C shaped section, the general-purpose building components being built into the C-shaped section so that the inside of the arms of the C shaped section provide the reference for the general-purpose building components. However, this can be awkward for a builder. The C shaped section can therefore be made shallower, e.g. such that the ratio of the arm lengths to the base length is approximately 1:4, rather than approximately 1:2. The general-purpose building materials, in particular the mortar fillet, can then be built up to the ends of the arms instead of being between the arms. The shallower section for the C shaped section allows the finished assembly to have a comparable rigidity to an assembly made with the less shallow section.

[0019] Preferably the locating component defines a door sub-frame. The architectural finishing component may then comprise three standard door liners and the method may comprise attaching them to three inwardly facing surfaces of the door sub-frame to form a doorframe. It is then possible to hang a standard door to one of the standard door liners.

[0020] The locating component may, however, be a door frame. The architectural finishing component may then be a door, and the method may comprise attaching the door to an inwardly facing surface of the door frame.

[0021] According to another aspect of the present invention, there is provided a frame comprising two frame uprights and a frame lintel, the frame uprights and frame lintel being of a standardised length and requiring no cutting to length prior to or during installation, wherein locating means are provided at both ends of the lintel and at one end of each of the uprights such that the lintel and the uprights fit and locate together correctly in horizontal, vertical and lateral directions to form a frame of a standardised height and width that is suitable for an architectural finishing component, such as a door, of a standardised height and width.

[0022] Perferably the lintel is joined to the uprights. Preferably this is by screwing the lintel and uprights together. Screw holes may be predrilled in either or both of the lintel and/or the uprights.

[0023] Preferably the locating means is a groove in a door facing surface of either or both of the lintel and/or the uprights that is adapted to locate a door stop or door slammer of the other of the lintel and the uprights. This allows the lintel and the uprights to be correctly aligned in the plane of the door frame, thereby providing a flat or smooth surface finish at the joint between the lintel and the uprights. The groove or grooves preferably extend parallel to the sides of the lintel or the uprights, more preferably along the full length of the lintel or the uprights.

[0024] Door stops or door slammers may be provided to fit into the groove or grooves. Adhesive tape may be provided in the groove or grooves for fixing the door stops or door slammers in the groove or grooves.

[0025] Preferably, the locating means comprises a groove at the ends of said lintel or at the said one end of each upright for locating the end of the other of the lintel and the uprights therein. This allows the lintel to be correctly aligned with the ends of the uprights, thereby fixing the width and height of the door frame. The groove or grooves preferably extend perpendicular to the sides of the lintel or the uprights, more preferably acros the full width of the lintel or the uprights.

[0026] Both the grooves that are perpendicular to the sides of the lintel and/or the uprights and the grooves that are parallel to the sides of the lintel and/or the uprights may be provided.

[0027] Dovetail slots may be machined into the edges of wall facing surfaces of either or both of the lintel and/or the uprights for receiving brackets for attaching the door frame to a wall.

[0028] Preferably the uprights and/or the lintel are provided with door spacers on the door facing surfaces thereof for assisting in the fitment of a door into the door frame. The door spacers are preferably tapered such that they are thinner at the edges of the door frame. The spacers may be made of a foam material. The spacers are preferably removeably attached to the uprights and/or the lintel.

[0029] Preferably a groove runs down each side of the uprights and the lintel for receiving a foot of an architrave therein.

[0030] Preferably the frame is supplied as a flat-pack product, i.e. for self assembly. Indeed all the products of the present invention may be supplied in flat-pack form.

[0031] The present invention further provides a method of fitting a door frame into an opening in a wall, the method comprising the steps of providing an assembled door frame, attaching a first set of brackets along one edge of the door frame, fitting the door frame in the opening such that the brackets engage a first side of the wall, and attaching a second set of brackets along the second edge of the door frame, thereby sandwiching the wall between the two sets of brackets.

[0032] By use of the term sandwiching, the present invention requires the sets of brackets to engage the wall on both sides of the wall. This fixes the door frame in the opening in the wall.

[0033] Preferably the door frame is as described above.

[0034] Preferably eight brackets are provided for each edge of each upright.

[0035] Brackets, for example three or four, may also be provided for the lintel.

[0036] Preferably the brackets are attached to the door frame using dovetail connections.

[0037] Preferably the method comprises step of fitting a door into the door frame. This is simplified using the spacers described above. Once the door frame is in the opening, secured in plane with the wall by the brackets, a door is positioned in the door frame such that the edges of the door abut some or all of the door spacers and the door stop or door slammer. Then, using wedges between the door frame and the sides of the opening, the present invention comprises the steps of adjusting the door frame to cause all the door spacers to hug the door around the door, and then attaching the brackets to the wall to hold the door frame in that position.

[0038] Preferably the brackets are attached to the wall using nails or screws.

[0039] The door can then be pushed out of the doorframe and the spacers can be removed. The doorframe will then be correctly sized to receive that door - the spacers will have provided a uniform gap around the door between the door and the door frame.

[0040] The brackets are only attached to the wall once a door has been fitted in the door frame; the attaching of the brackets to the wall completes the installation of the door frame since that step secures the door frame relative to the wall.

[0041] Such methods of building allow architectural finishing components to be fitted in or on a wall, a floor or a ceiling without adjustment of the architectural finishing components, the locating components or the building or finishing materials.

[0042] The architectural finishing components will usually be joinery building components or masonry building components.

[0043] Standard architrave may be fitted to sides of the door frame (or sub-frame), preferably using double-ended fasteners. The brackets may be provided with slots for this purpose.

[0044] The locating component may alternatively define a skirting board sub-frame. The architectural finishing component then comprises a standard skirting board; and the method comprises the step of attaching the standard skirting board to the skirting board sub-frame.

[0045] Preferably, a cable channel extends along the length of the locating component or the architectural finishing component between the locating component and the architectural finishing component.

[0046] The present invention further provides a kit of building components comprising a door frame as described above and a plurality of brackets for attaching the door frame to a vent in a wall.

[0047] Instead of a door frame, the uprights and the

lintel may form three components of a window frame.

[0048] According to another aspect of the present invention there is provided a double-ended fastener comprising first and second ends extending from a medial flange. The ends may be co-axial pins. The fastener is generally for use in or with any of the above methods.

[0049] In practice, it is almost impossible to get two rows of holes or slots in the locating component, the brackets or the architectural finishing component (which may be made of MDF), to line up exactly with each other. Therefore, in accordance with another aspect of the present invention there is provided a double-ended fastener comprising first and second ends extending from a medial flange wherein the axes of the two ends are offset from one another. The axes are, however, substantially parallel. Preferably the axes are offset by about 2mm. However, they may be offset by between 1mm and 5mm.

[0050] Preferably the flange is in the form of a cup that may contain an adhesive. The flange may alternatively be a bar.

[0051] By medial, it is meant that the two ends extend away from the flange in opposite directions, i.e. the flange is between the two ends.

[0052] The cup preferably comprises a planar rim for sealing against a flat surface. This enables the fastener, when the cup is filled with adhesive, to provide a self-adjusting joint between the fastener and a flat planar surface; evaporation of the adhesive within the cup causes a suction to be generated within the cup since it is sealed against the flat planar surface. The suction will cause the cup to be pulled towards the flat planar surface. If the cup has a flexible or collapsible sidewall, the cup base will be drawn towards the flat planar surface. A building component provided on the fastener extending away from the cup will therefore be pulled towards the flat planar surface. This feature can be used to draw a standard building component, such as an architectural finishing component, into which the end of the pin facing away from the cup bottom is pushed, to be drawn against the flat planar surface over time, i.e. as the solvent of the adhesive evaporates. The flat planar surface can be a portion of a locating component fitted to a wall, a floor or a ceiling.

[0053] It should be noted that the cup can be arranged to face the standard building component, if necessary, especially if this will provide a better seal.

[0054] The cup is not essential, however, for achieving the suction effect. Evaporation of glue on the flange may have a sufficient drawing-in effect.

[0055] The ends of the double-ended fastener are preferably proportioned to give a tight fit in both the locating component or the bracket and the architectural finishing component so that the architectural finishing component can be fastened to the locating component or the bracket by the double-ended fastener potentially without adhesive. However, this can make them difficult to orientate in the holes or the slots. Due to the offset of the ends, it will generally be necessary to orientate the fastener correctly in order to fit it into the slots or holes of both the locating component and the architectural finishing component. Therefore, in order to assist in the turning of the double-ended fastener once in a hole or a slot of the architectural finishing component or the locating component, a web is provided for gripping with fingers, the web running across the middle of the cup.

[0056] A problem with the cup shape for the flange has, however, been noted. When filled with adhesive and assembled onto, for example, a metal locating component, the arrangement acts like an airtight container; the adhesive in the cup therefore takes a very long time to cure. One or more slots, holes, vents or apertures may therefore be provided through the base (or side) of the cup so that the solvent (e.g. water or spirit) in the adhesive can evaporate or be absorbed by the architectural finishing component, which will generally be made of wood or MDF or some other such fibrous or absorbent material, thereby greatly to speed up the cure time for the adhesive.

[0057] Preferably the double-ended fastener is made of metal for strength, or a plastics material for frangibility, i.e. for allowing removal of an architectural finishing component from a locating component without causing damage to either the architectural finishing component or the locating component; the plastic double-ended fastener will snap. The double ended fastener may also be made of wood, for example a moulding material made from wood fibres.

[0058] Preferably the double-ended fastener extends from a hole in a first building component and is engageable in slots in a second building component. Slots advantageously provide a slight adjustability for the first building component relative to the second building component to allow for, for example, movement or settlement of a floor or wall.

[0059] If the rim of the cup is to be engaged with the architectural finishing component, a circular depression or cut-out, or other such corresponding shape for the rim of the cup, can be provided in the back surface of the architectural finishing component. This depression accommodates the rim of the cup to hold the double-ended fastener more securely to the architectural finishing component. Further, instead of putting the adhesive in the cup, the adhesive could be put into the depression or cut-out by the installer prior to attaching the architectural finishing component to the locating component.

[0060] As a variant for the double-ended fastener, the cup could be replaced with a bar. The architectural finishing component could again be provided with a suitably shaped depression or cut-out for receiving the bar therein with adhesive in the depression securing the bar and inserted end of the fastener in the architectural finishing component. The depression could be shaped to receive the bar in whichever orientation it is fitted. for example, it could be round or it may have an elliptical shape to account for the offset.

[0061] One or both ends of the double-ended fastener

could be provided with a roughened peripheral surface. This roughened surface could provide an improved grip for the fastener in either or both of the slots or the holes of the locating component or architectural finishing component. Further, the slots could be inwardly flanged and ramped steps could be provided on one or both ends of the doubled-ended fastener. The ramped steps could then grip or latch like a ratchet with the flange or flanges of the slots in the locating component. Such ramped steps thereby provide gripping serrations that grip tight upon trying to withdraw the fastener from the slot but allow easy insertion of the fastener into the slots. This could be used to replace the glue as a secure fastening means.

[0062] According to another aspect of the present invention there is provided a kit of building components comprising: 1) a locating component for locating an architectural finishing component in a building, the locating component being a) adapted to receive the architectural finishing component for attachment at a predetermined relative position, and b) so shaped as to provide a locating reference for general-purpose building or finishing materials used in the construction or finishing of a structural element of the building, such that subsequent attachment of the architectural finishing component to the locating component at the said predetermined position determines its position relative to the structure or fabric of the said structural element of the building; and 2) double-ended fasteners for joining architectural finishing components to the locating component.

[0063] According to another aspect of the present invention there is provided a tie component for a locating component used in the construction of a part of a building, comprising a plate and an attachment means for slidably attaching the tie component to the locating component.

[0064] Preferably the attachment means can lock the tie component to the locating component.

[0065] Preferably the attachment means comprises a pair of straight flanges in plane with the plate. More preferably the attachment means further includes a pair of bent flanges in opposed sides of the plate, each bent flange being bent out of plane from the plate and opposing one of the straight flanges.

[0066] Preferably a gap is formed in each of the opposed sides of the plate. Preferably this gap is inwardly extending. More preferably the gap extends between the straight flange and the bent flange for receiving opposed flanges of the locating component that are preferably inwardly extending.

[0067] This aspect of the present invention allows the tie component to be slidably attached to the locating component, the tie component and the locating component thereby co-operating like a runner on a slide.

[0068] Preferably the tie component is made of metal.

[0069] Preferably the plate and the attachment means are unitarily formed from a single sheet.

[0070] Preferably the bent flange is cut and stamped into the opposed sides of the plate.

[0071] According to yet another aspect of the present invention there is provided a kit of building components comprising: 1) at least one tie component and 2) a locating component for locating an architectural finishing component in a building, the tie component being adapted to attach slidably to the locating component at positions along the locating component's length, the locating component being a) adapted to receive an architectural finishing component for attachment at a predetermined relative position, and b) so shaped as to provide a locating reference for the application of general-purpose building or finishing materials used in the construction or finishing of a structural element of the building, such that subsequent attachment of the architectural finishing component to the locating component at the said predetermined position determines its position relative to the structure or fabric of the said structural element of the building; the tie component, in use, tying the locating component to the structural element of the building.

[0072] The tie component is in preferably as previously described.

[0073] The kit or tie component can be used in conjunction with the other aspects of the present invention.

[0074] According to another aspect of the present invention there is provided a locating component for locating an architectural finishing component in a building, the locating component being a) adapted to receive the architectural finishing component for attachment at a predetermined relative position, and b) so shaped as to provide a locating reference for (the application of) general-purpose building or finishing materials used in the construction or finishing of a structural element of the building, such that subsequent attachment of the architectural finishing component at the said predetermined position determines its position relative to the structure or fabric of the said structural element of the building.

[0075] Preferably, the locating component is adapted to form an integral part of the structure or fabric of the structural element of the building.

[0076] Preferably the locating component has a substantially constant cross section along its whole length.

[0077] According to another aspect of the present invention there is provided a kit of building components comprising: 1) an architectural finishing component and 2) a locating component for locating the architectural finishing component in a building, the locating component being a) adapted to receive the architectural finishing component for attachment at a predetermined relative position, and b) so shaped as to provide a locating reference for general-purpose building or finishing materials used in the construction or finishing of a structural element of the building, such that subsequent attachment of the architectural finishing component to the locating component at the said predetermined position determines its position relative to the structure or fabric of the said structural element of the building.

[0078] The present invention also provides a method of installing at least one architectural finishing component in a building comprising: a) installing a first locating com-

ponent having a telescopically adjustable depth in an opening of a wall to form a locating reference for an architectural finishing component, the first locating component having had its depth adjusted to match substantially the thickness of the wall.

[0079] The method preferably comprises the step of: b) installing to the first locating component a second locating component. Preferably, the first or the second locating component is adapted to receive the at least one architectural finishing component. Preferably the method finally comprises the step of c) attaching the at least one architectural finishing component to the said first or second locating component.

[0080] Preferably, both the first and the second locating components are adapted to receive at least one architectural finishing component. These may all be fitted in a final step.

[0081] The method may comprise: i) installing the first locating component; and then ii) attaching the second locating component to the first locating component.

[0082] Alternatively, the method may comprise: i) installing the second locating component onto the first locating component and then ii) installing the first locating component to the wall.

[0083] Preferably the first locating component defines at least part of a door frame. Preferably the door frame has a standard upright height and a standard lintel width. The depth of all three elements is preferably adjustable. Such a door frame can then be adjusted for depth to match the thickness of the wall to fit neatly within an existing wall opening, for example one from which an undesired door frame has been removed.

[0084] The architectural finishing component may be an architrave or a door or both. The method may then comprise installing the standard size but adjustable depth door frame in the wall opening, hanging a standard door having a height and width suitable for fitting in the door frame to one of the upright sections of the standard door frame and possibly then fitting architrave around the door frame.

[0085] Preferably, the at least one architectural finishing component is attached to the first or second locating component using a press-fit connection, e.g. using double-ended pins such as those defined herein. Although the press-fit connection is preferably achieved using separate components such as double-ended pins that are installed into holes or slots in the building components, other forms of press-fit engagement may be used.

[0086] The present invention also provides a bracket for an architectural finishing component, the architectural finishing component having a part of a press-fit connection thereon, the bracket comprising a first portion suitable for securing the bracket to a wall or a door frameand a second portion that in use extends parallel to the wall, the second portion having another part of the press-fit connection thereon.

[0087] Preferably the first portion has an engagement means for engaging the bracket with a bracket receiving means of a locating component for the architectural finishing component, such as a door frame for a door.

[0088] Preferably the press-fit connection is a double-ended pin connection, the locating component having a slot therein for receiving a first end of the double-ended pin, the second end extending, in use, into the architectural finishing component. Preferably, in use, the slot extends vertically.

[0089] Preferably, the bracket comprises a first arm and a second arm extending perpendicular to the first arm, the slot being provided in the first arm. Preferably the second arm has a trapezium shaped section along its length. Preferably, the second arm is adapted to be driven into a wall or a door frame. The wall or door frame may have a receiving means for the second arm, such as a trapezium or dovetail sectioned vent or groove. Preferably the receiving means is in a back surface of a door frame that is to be fitted onto or into the wall.

[0090] The first arm may also comprise a second hole for receiving a nail or screw therethrough. The screw or nail will be to attach the bracket to a wall in fixed relation thereto. With the second portion driven into a slot provided in the back of a locating component, i.e. a door frame, the locating component will then be secured to the wall.

[0091] Preferably the bracket is L shaped.

[0092] Preferably the bracket is made of metal. However, it may also be made of a stiff plastic material.

[0093] The slot may be provided with an associated resilient flange and possibly also grip components for gripping the double ended pin, such as ribs or a rib.

[0094] The present invention also provides a door frame component comprising a first frame portion and a second frame portion that are telescopically adjustable relative to each other and a doorstop portion, the doorstop portion being fixable, in use, to first, substantially co-planar faces of the two door frame portions to bridge any gap therebetween.

[0095] The second, opposed faces of the door frame portions preferably each have means for receiving a telescoping means between the two door frame portions so that the depth of the door frame component can be adjusted telescopically. Preferably, the means comprises a partially closed groove. Preferably, the groove generally has a trapezium shaped section suitable for receiving a trapezium shaped section of a bracket in accordance with the preferred embodiment of the second aspect of the present invention with a friction fit. Preferably, the telescoping means comprises a slide bar. The slide bar may have a generally trapezium shaped section for fitting in the generally trapezium shaped groove in a sliding fit.

[0096] Securing means are provided on the slide bar for securing the slide bar within the means for receiving the telescoping means. Preferably, the means for securing comprises a screw adjustment for changing the profile, e.g. sectional shape, of the slide bar such that it can be blocked from sliding in the groove. This may be achieved by having a taper adjustment, for example comprising a screw for adjusting the width of a slot in a side

of the trapezium shaped slide bar. The screw may double as a fixation pin for locking the component against a wall upon adhering the component to a wall with a foam adhesive.

[0097] The present invention also provides a door frame assembly comprising two telescopically adjustable door frame portions and a doorstop portion, each door frame portion comprising two uprights and a lintel attached therebetween, the doorstop portion being adapted to bridge any gap between the door frame portions. The lintel may also be telescopically adjustable and may have a doorstop portion.

[0098] The depth of the doorframe assembly is telescopically adjustable.

[0099] Using the door frame assembly of the present invention, when refurbishing a part of a building where an existing door was located, the old door and frame, if not all removed, can be removed to leave an opening or vent in the wall. Into this opening the door frame assembly of the present invention can be positioned and its depth adjusted to match the thickness of the wall by adjusting the door frame portions telescopically. Then, for example using an adhesive polyurethane foam or perhaps mortar, any gaps between the door frame assembly and the wall surrounding the opening can be back-filled to provide a generally-finished door vent of a standardised size for receiving a standard size of door.

[0100] The door frame assembly may also comprise a foot plate to ensure that the base dimension is correct as well.

[0101] Architraves may be used to cover the ends of the door frame portions to hide the adhesive foam or mortar between the components of the door frame assembly and the wall.

[0102] The present invention also provides a kit of building components for forming an architecturally finished building component comprising: 1) a first locating component for attaching to a wall, 2) a second locating component attachable to the first location component, the two locating components together being adapted to receive at least one architectural finishing component for attachment of the at least one architectural finishing component to the wall, wherein once all the necessary architectural finishing components have been attached to the first or second locating component, the first locating component and the at least one architectural finishing component form at least partially visible parts of the architecturally finished building component and the second locating component forms an invisible part of the architecturally finished building component.

[0103] The architecturally finished building component is preferably a doorway with architrave and a door.

[0104] Preferably, the architectural finishing component is at least one joinery item such as a door or an architrave. Preferably, the first locating component is made at least partially of a finished wood, medium density fibreboard (MDF), glass reinforced plastic or a ceramic material, e.g. a plaster based material or a mortar based material, or another commonly used building material so that the appearance of the component is conventional in the finished building. The remaining parts, for example the telescoping member, may be made of metal or a strong, stiff, plastics material, for example.

[0105] Preferably the first locating component has a surface finish on its finally visible parts, thereby requiring no further decoration upon completing the installation.

[0106] These various aspects of the present invention enable the fitment and refitment of standard building components, such as a standardised door, i.e. a door of a standard height and width, or a standardised skirting board, i.e. a skirting board of a standard length and height by an ordinarily skilled builder, rather than requiring a craftsman.

[0107] A skilled person will appreciate that certain standard components for fitting to the surface of walls, for example skirting boards, may require mitre cuts on one or both ends thereof, e.g. for providing neat corners wherever they meet. Butt joints may alternatively be used, if preferred.

[0108] A further advantage of the present invention is that a house purchaser can easily change the architectural finishing components to match his or her tastes or as and when the architectural finishing components become shabby. To remove the architectural finishing components, the pins can be pulled out of the slots, or they can be snapped off. If snapped off, the ends left in the slots will easily push into the space behind the locating component, to fall away from the slots under gravity.

[0109] The architectural finishing component in these various aspects of the invention preferably is a joinery item such as a door, a door liner, a window, a window liner, a trim, a skirting board, a cornice, a dado rail or an architrave. Preferably, the architectural finishing component is made of wood, medium density fibreboard (MDF), glass reinforced plastic or a ceramic material, e.g. a plaster based material or a mortar based material, or another commonly used building material so that the appearance of the component is conventional in the finished building.

[0110] Preferably the architectural finishing component has a surface finish, thereby requiring no decoration upon installation.

[0111] The locating component of the present invention can be fitted using or in conjunction with traditional construction methods, e.g. using nails. Use of these locating components allows a large part of the architectural finishing components to be prepared off site. They can therefore match one another. They can also be supplied as a set, complete with matching handles, locks and hinges. They can also be installed or fitted right at the end of the building process. This will not only save construction time by skilled labourers and reduce the risk of damage to the architectural finishing components but will also allow, for example, painters to spray finish walls and ceilings. Spray finishing walls is faster than painting with a brush or a roller and usually gives a better finish.

[0112] Further, sophisticated finishes, such as exotic

wood grain effects, can also be provided to the architectural finishing components without the risk of damage being caused to them due to the need to adjust them in order to make them fit.

[0113] The various methods of building defined above allow architectural finishing components to be fitted for example in or on a wall without adjustment of the architectural finishing components, the building or finishing materials, for example when redecorating.

[0114] The components of the present invention can be fitted using or in conjunction with traditional construction methods, e.g. using nails, mortar and adhesive. However, preferably the first locating component is fixed to the wall using a foam adhesive since this fills any gaps between the first locating component and the wall and gives a strong result.

[0115] Preferred embodiments of the various aspects of the present invention will now be described, by way of example only, with reference to the accompanying drawings in which:

Figure 1 shows a front plan view of a locating component in the form of a skeletal building component in accordance with the present invention for use as part of a door sub-frame;

Figure 2 is a section II - II through the skeletal building component of Figure 1;

Figure 3 shows an assembled door sub-frame;

Figure 4 shows a section through the skeletal building component of Figure 1 fitted to a blockwall;

Figure 5 shows the skeletal building component of Figure 4 having a door liner and architrave fitted thereto;

Figure 6 is a partial section of the architrave of Figure 5 fixed to the skeletal building component;

Figure 7 shows details of a double-ended pin for use in the present invention;

Figure 8 is a section through an alternative application of the present invention: a skirting board subframe;

Figure 9 shows a partial section of architrave fitted to the skeletal building component of Figure 1 with a double-ended pin of the present invention;

Figure 10, 11 and 12 show a third angle projection of double-ended fasteners of the present invention;

Figure 13 shows a variant of the double-ended fastener of Figure 12.

Figure 14 shows a sectional view of a door liner assembly in accordance with the present invention;

Figure 15 is a partial, cut away section II - II through the door liner assembly of Figure 1;

Figure 16 is a sectional view of a slide bar and an adjustment screw;

Figure 17 shows the detailing of a slide bar adjustment means;

Figure 18 is an exploded perspective of a door liner and second locating component in accordance with the present invention;

Figure 19 is a plan view of the second locating component of Figure 18;

Figure 20 is an elevational view of the second locating component of Figure 18;

Figure 21 is plan view of a tie component fitted to a locating component in accordance with the present invention;

Figure 22 is a side view of the tie component and locating component of Figure 21 in a sliding state; and

Figure 23 is a partial sectional view of the tie component fitted in the structural element of a building;

Figure 24 shows a cutaway elevational view of a doorway fitted with a door subframe in accordance with the present invention;

Figure 25 shows an exploded view of the details of a corner of the door subframe of Figure 24;

Figure 26 shows a section I-I through the door subframe of Figure 27;

Figure 27 shows a plan view of the corner of the door subframe; and

Figures 28 to 28E show a bracket in accordance with the present invention.

[0116] Referring to Figures 1, 2 and 21, the locating components 1 (skeletal building components) are metal sections 10 that are built into the fabric of the building at an early stage of construction. The term "skeletal" is used to imply that an outer skin, such as architectural finishing components can be supported by it. Thus, they form frameworks for the assembly.

[0117] The metal sections 10 shown in Figures 1, 2 and 21 are for making a door sub-frame 100 - see Figure

3. Referring to Figure 3, the door sub-frame 100 is formed from two upright sections 12, and two horizontal sections 14, 16. These sections are of a predetermined size so that they fit together to form a fixed size, rectangular frame, the door sub-frame 100. The first horizontal section 14 may be designed to be capable of supporting a load as a lintel. Alternatively, a load-bearing lintel may need to be fitted for the doorway. The second horizontal section 16 is a floor section and may be a floorplate or it may be adapted to receive a floorplate thereon.

[0118] To fit the door sub-frame, standard building techniques are used, all steps of which can be done by unskilled labourers. First of all the door sub-frame 100 is braced in an upright position on a floor. Then a blockwall structural element is built-up around the sub-frame 100 to form a wall. As can be seen in Figure 21, a tie component can also be incorporated into the structural element. Alternatively the wall may be a stud wall or a partition wall, being structural in the sense that it defines the shape of the room. Finally, general-purpose finishing materials are applied to the wall up to the sub-frame 100 to finish the walls. If deemed necessary, nails 25 (see Figure 6) can be used to fix the sub-frame 100 to the wall more securely. Once fitted, the door sub-frame gives a precisely sized and shaped opening to accept a factory built door set comprising a door and door liners. These components simply press fit to the sub-frame, thereby being installable by unskilled labourers.

[0119] The metal sections 10 of Figures 1, 2 and 21 comprise lengths of galvanised steel, preferably formed from a flat sheet of steel folded into the generally c-shaped section shown in Figure 2. The steel is galvanised for longevity, i.e. to prevent corrosion. The metal section 10 of Figure 1 has a number of slots 20, 24 provided along its length. The sheet may instead be made of rigid plastics materials or may be thicker and then may be made of wood or MDF.

[0120] Two end sets of slots 20, 24 are shown in Figure 1. More slots are provided, equally spaced along the length of the metal section 10. Each slot is approximately 3mm wide and 12mm long. The slots at the ends of metal section 10 are provided with their centres about 25mm from the ends of the metal section 10. In total, 14 slots are provided along the length of the metal section 10. The length of the metal section 10, and the numbers of slots provided therealong, will, however, depend upon the application to which the metal section 10 is to be used. For the door sub-frame of Figure 3, the lengths may be about 2m for the uprights 12, and 1m for the horizontals 14, 16. The thickness of the metal section 10 is approximately 1 mm.

[0121] The metal section 10 is provided with three inward channels 18. The channels 18 are for receiving cables that may run along the length of the metal section 10 in the finished building. Each channel 18 has an approximate depth of 8mm. One channel 18 is provided in each side 28 of the c-shape and one channel 18 is provided at the middle of the back 29 of the c-shape. The channels 18 are not only for receiving cables, but also, once installed in a wall, provide spacing means to provide gaps 19 behind the metal sections 100, between the metal section 10 and the wall.

[0122] The slots 20, 24 include a first set of slots 24 provided at intervals along the length of the section 10 at the midpoints of the channels 18. This first set of slots 24 is for allowing the metal section 10 to be fitted to a blockwall 27 in a traditional way, i.e. using cut nails 25. The slots may instead be holes. Glue may alternatively be used to fix the metal section 10 to the wall. A further alternative would be to use a tie to fix the metal section 10 to the wall, such as a butterfly tie similar to those used to tie an inner leave to an outer leave of a brickwork wall. Attachment means for the ties may be stamped into the section 10, for ecample. However, it is preferable for the door sub-frame 100 to be secured to the wall using cut nails 25 since this method has proved effective in prior art doorframes.

[0123] A second set of slots 20 are also provided intermittently along the length of the metal section 10. The two sets of slots 20, 24 are located co-intermittently along the metal section 10. The second set of slots 20, however, are mounting points for attaching standard building components, i.e. the architectural finishing components (a door liner 22 and architrave 32), to the metal section 10 using pins 38, as shown in Figures 5, 6 and 9. The pins 38 extend through the slots 20 in the metal section 10 into the gaps 19 behind the metal section 10. If the pins 38 are ever snapped off, the ends of the pins 38 can fall down the gaps 19 under gravity so that they do not obscure the slots 20 in the event that replacement pins 38 are to be used in their place.

[0124] Referring to Figure 6, the two sides 18 of the metal section 10 are arranged to be parallel to each other for providing a finished wall having parallel sides.

[0125] The metal section 10 has edges 26. These edges 26 are co-planar with sides 28 of the metal section 10. These edges 26 provide a means for ensuring the skeletal building component can be built into the wall correctly, i.e. with plaster 30 applied to the walls to a level that is level with the edge 26. By doing this, a wall surface defined by the plaster 30, the edge 26, and the sidewalls 28 of the section 10 is flat. By making the wall surface flat, architrave 32 can be attached to the metal section 10 such that the back 34 of the architrave 32 lies against the plaster 30. Onto the back 29 of the metal section 10, a door liner 22 is attached. The door liner 22 has a width such that the architrave 32 has its back 34 resting also against edges 36 of the door liner 22, as shown in Figure 6.

[0126] A double-ended pin 38 is used to join the door liner 22 and the architrave 32 to the metal section 10. One end of the pin 38 is driven or pushed into a predrilled or moulded hole (not shown) in the standard building component 22, 32. The other end locates into one of the slots 20 in the metal section 10. This ensures accurate assembly of standard building component 22, 32 to the

skeletal building component, even when fitted by an unskilled labourer.

[0127] The double-ended pin 38 is shown in detail in Figure 7. The pin 38 comprises a first end 40, a second end 42 and a flange 44. Both ends 40, 42 are cylindrical fingers having points thereon for assisting in the insertion of the pin 38 into holes or slots in the building components. The two ends 40, 42 have different thicknesses to ensure that the pin is used in the correct orientation. The flange 44 is provided to ensure that the pin locates to a correct depth in both the slot 24 in the metal section 10 and the hole in the architectural finishing component. The flange 44 could, however, be omitted.

[0128] Referring now to Figures 9 and 10, an alternative double-ended pin 138 is shown. The pin 138 comprises a first end 140, a second end 142 and a flange 144. The flange 144 is in the form of a cup 146 having an adhesive mixture 148 provided therein. The mixture 148 is preferably water or solvent based so that as the mixture dries, the volume thereof in the cup reduces. If the mouth of the cup 146 is sealed against a surface, the reduction in volume would suck the cup towards the surface. This will result in a building component attached to the other end of the pin (the architrave 32 in Figure 9) being drawn closer to the surface (the metal section 10 in Figure 9) over time. This will prevent cracks from forming between the architrave 32 and the plaster 30, or prevent the architrave 32 from loosening from the metal section 10.

[0129] Preferably the pin 38 is made of a plastics material or metal. Plastics materials have the advantage of being easier to sheer away from the metal section 10 by levering the architectural finishing component 22, 32 away from the metal section 10. This can therefore be done without damaging the metal section 10 or the architectural finishing component, thereby allowing the metal section 10 to be used for repetitive redecoration without the need for replacement or repair of the metal section 10. The architectural finishing component can also be reused if undamaged.

[0130] As can be seen from Figure 10, the flange 144 comprises a base section 150 and an outer wall 152 defining a perimeter of an inverted cup. The shape of this cup 146 is oval to correspond with an elongated second pin 142. The outer wall is collapsible. By the provision of a flat second pin 142, a more resilient grip can be achieved in the slot 24 of the section 10 by the pin 142. It will also help form a seal with the slot. The adhesive can also help to form the seal with the slot. A round first pin 140, however, is provided.

[0131] In accordance with the embodiment of the present invention as shown in Figures 21 to 23, a metal section 10 is fixed to the wall using one or more tie components 109. These can be similar to those used to tie an inner leave to an outer leave of a brickwork wall, i.e. butterfly ties. Attachment means (not shown) for such ties may, for example, be stamped into the section 10. Preferably, however, the tie component 110 is slidably mountable to the locating component 1, as shown in Figures 21 to 23.

[0132] Referring to Figure 21, the tie component 109 comprises a generally trapezium shaped sheet of metal (the plate 111) having apertures 112 extending therethrough. The apertures 112 allow mortar 113, in use, to lock the tie component 109 into the structural element 11 of the building (see Figure 23). There are two generally parallel sides 114 in the plate, squaring off the corners of the trapezium shaped plate. These two sides 114 oppose each other.

[0133] In each side 114, a bent flange 116 is provided (see Figure 22). To make each bent flange 116, an L shaped cut is made in each side 114 of the plate. The feet 118 of each L shaped cut are made perpendicular to the sides 114. The legs 120 of each L shaped cut, perpendicular to the feet 118, are also cut into the plate. They extend parallel to the sides 114. These cuts complete the L shaped cuts of the tie component and form flanges. These flanges are then bent out of the plane of the plate along bend lines 122 that are also perpendicular to the sides 114 of the tie component 109. By bending the flanges out of plane, gaps 124 are formed in the sides of the tie component.

[0134] Still referring to Figure 8, two sides 28 of the metal section 10 of the locating component 1 are arranged to be parallel to each other for providing a finished wall having parallel sides. The sides 18, however, have inwardly facing opposed flanges 110. These inwardly facing opposed flanges 110 have a width suitable to fit snugly within the gaps 124 in the tie component, as can be seen in Figure 23, when the tie component is perpendicular to the locating component. However, when the tie component is angled non-perpendicularly to the locating component 10 (upwardly in Figure 22), the gaps allow the tie component to slide 126 relative to the locating component 1. In this manner, the tie component 109 can be positioned at any point along the length of the locating component and, when re-oriented perpendicularly to the locating component 1, as shown in Figure 23, the bent flanges 116 engage against the flanges 110 of the locating component 1 to lock the tie component 109 in position relative to the locating component 1. This allows the tie component 109 to be positioned on top of a first building block 115, irrespective of the height of the block 115, or more specifically in the mortar between two building blocks 115.

[0135] Referring now to Figure 8, another embodiment of locating component 1 in accordance with the present invention is shown for use in a second application. In this second embodiment, a metal section 200 is for use in mounting skirting boards 202 to a wall. The metal section 200 is therefore a skirting board sub-fiame and it has a sectional shape essentially of a "one-and-a-bit square wave". It has a first planar side defined by two planar portions 204 suitable for resting against a brick wall, soft wall, i.e. stud wall, or blockwall 27 and a second planar surface defined by a third planar wall 206 against which

the skirting board 202 can be attached.

[0136] The metal section 200 further comprises a fourth planar wall 212 that is coplanar with the third planar wall 206. The lip 210 of this fourth wall 212 defines a height to which a floor screed 218 is applied so that the floor will end up flush with this lip 210. The planar walls 204, 206, 212 extend perpendicular to the floor screed 218.

[0137] To fit this skirting board sub-frame, the metal section 200 is first of all fixed to a pre-built blockwall 216 using, for example, nails or glue. Alternatively, or in addition, tie components 109 similar to those described in Figures 21 to 23 may be built into the wall, attached to the metal section 200 by stamping attached means into them (not shown).

[0138] The metal section 200 is fixed either on or just above the floor. Then the wall 216 is plastered and painted down to the top of the third planar wall 206 and floor screed 218 is applied to the floor up to the lip 210 to provide a finished wall and a finished floor. A standardised skirting board 202 can then be attached to the metal section 200 with double-ended pins by an unskilled labourer. It will automatically be at the correct height relative to the floor, and level relative to the floor.

[0139] The metal section 200 may be wide enough to rest directly on concrete floor slabs underneath the floor screed if required. Alternatively it may be positioned higher on the wall using a level.

[0140] The wave shape of the metal section 200 defines a channel 222 for running cables (not shown) along the length of the metal section 200 between the metal section 200 and the skirting board 202. The skirting board 202 is provided with a recess 214 to increase the size of the channel 222. The wave shape also provides a gap 224, similar to that described above in relation to the door sub-frame 100, between the wall 216 and the metal section 200. The shape of the metal section 200 also allows plaster to be applied to the blockwall 216 with a flush finish against, or up to, the third planar wall 206. This allows the skirting board 202 to be attached to the metal section 200 such that its back wall 208 is flush with the plaster 30. This means that there will be no visible crack.

[0141] A paired set of slots 20 are provided in the first two planar portions 204 for fixing the metal section 200 against the blockwall with nails (not shown). A third set of slots 24 is provided in the third planar wall 206 to allow the skirting board 202 to be fixed to the metal section 200 with double-ended pins, as previously described in relation to the first embodiment. The slots 20, 24 are intermittently spaced along the length of the metal section 200.

[0142] If installed using laser levelling techniques (which are standard practice when installing suspended ceilings and which could equally be used to get the skeletal building component level) a very accurate guide for the floor screed 218 is provided by the skirting board sub-frame, thereby ensuring that the floor is at the correct height for the door sets, and to ensure that the floor, skirting boards and other items are flat and level.

[0143] Of course other embodiments of locating components will be readily apparent to a skilled person, for example for affixing dado rails or picture rails to walls, perhaps using tie components attached to the locating components with clips and the like.

[0144] Referring now to Figure 11, a variant 244 of the double-ended fastener is shown. Again, a cup shaped flange is provided. However, two arcuate slots 245 are provided in the base of the cup to allow adhesive deposited in the cup to be absorbed by the architectural finishing component, which is preferably made of wood, MDF or some other absorbent building material. Round holes, vents or apertures, perhaps four equispaced holes, may alternatively be provided. These holes, vents, apertures or slots allow the adhesive to cure more quickly than would occur in a sealed cup. Additionally, the double-ended fastener 244 has an offset 246 for the axes of the two ends 248, 249. This is so that the doubled-ended fastener 244 can be used in situations where the slots 24 in the locating component I and the slots in the architectural finishing component are not precisely parallel to each other or aligned; by rotating the double-ended fastener 244 in one of the slots, an orientation for the fastener 244 can be found that enables the ends 248, 249 to align with the holes or the slots in both the locating component I and the architectural finishing component 22, 32, 202. For this to be effective, however, at least one of the components will need to have slots 24 for receiving the fasteners 244.

[0145] To assist in rotating the fastener 244 a web 250 is provided extending diametrically across the centre of the cup 252. The web therefore extends effectively through both ends 248, 249 of the fastener. The web 250 can be used as a grip for the thumb and forefinger of the installer to enable the fastener 244 to be rotated more easily.

[0146] The ends 248, 249 of the fastener have chamfered or rounded points 254 to assist further with the insertion of the ends into the slots. These chamfered or rounded points 254 could be used on the other fastener designs as well. If the ends can rotate in the slots, the fasteners could self orientate, the chamfering allowing the ends initially to enter the slots despite potential lack of alignment. The act of pushing the ends home by pushing the architectural finishing component against the locating component will cause the fastener to self orientate.

[0147] Referring to Figure 12, a further variant of the fastener 256 is shown. In place of the cup, a bar 258 is provided. This is easy to rotate and cheaper to manufacture.

[0148] A further variant is shown in Figure 13 wherein ramped steps 260 are provided on one of the ends of a double-ended fastener 256. Such ramped steps 260 could be provided on both of the ends. The ramped steps 260 form gripping serrations for the double-ended fastener 256 for engaging against the sides of the slots 24 in the locating component 1. As shown in Figure 13, the

slots 24 are additionally provided with inwardly bent flanges 234 with points at the ends thereof for gripping the ramped steps to prevent removal of the end of the double-ended fastener from the slots once inserted into the slots. However, because of the ramps on the end and the slots, the end can easily be inserted into the slot 24. The ramped step might not be needed, however. The flanges may have knife edges that grip even smooth surfaced ends.

[0149] Referring now to Figure 14, a cutaway sectional view of another architecturally finished building component in the form of a door frame 310 is shown. The section is through either one of the uprights of a door frame or a lintel of a door frame 310.

[0150] The door frame 310 comprises two uprights 312 (one shown in Figure 18) and a lintel (not shown) perpendicular to and connecting the two uprights 312 towards the tops thereof. The bottoms 314 of the uprights 312 rest against the floor 218 (see Figure 18).

[0151] The arrangement comprises a door 318, a doorstop or door slammer 320, two door liners 322, 324, two architraves 32, a slide bar 328 and two adjustment screws 330.

[0152] The two door liners 322,324, are adhered to a wall 27 by a polyurethane foam adhesive 334. The wall 27 has plastered surfaces 30 on either side thereof against which the architraves 32 rest.

[0153] Referring now to Figure 15, a section through line II-II is shown. The door liner 322 has a groove 338 cut in a wall facing side of it for receiving the slide bar 328. Part of the slide bar 328 is contained in the groove 338, with the remaining part of the slide bar 328 being located within the polyurethane foam adhesive 334. The screw 330 is also partially in the polyurethane foam adhesive 334. The remaining part of the screw 330 is screwed into the slide bar 328.

[0154] The two door liners 322, 324 are generally long lengths. Generally they will have a length of approximately two metres. Along that length, a plurality of slide bars 328 may be provided. By way of example, it will be assumed that there are three slide bars 328.

[0155] Referring to Figure 16, each slide bar 328 is a length of tubular steel. The length of the steel will typically be 10 cm. The slide bar has a generally regular, substantially trapezium shaped section. The section has a long base 340, two asymmetrical sides 342 and a slotted top 334. The slot 346 has inwardly depending flanges 348. The two flanges 348 generally oppose each other and are substantially parallel to each other.

[0156] The asymmetrical sides 342 are able to flex resiliently to enable the slot 346 to widen upon screwing the screw 330 into the slot 346. The screw engages against the flanges 348. As shown in Figure 19, the screw is tapered to facilitate the expansion of the slot. Alternatively, the flanges may be tapered relative to each other, i.e. non parallel, such that the slot is narrower at its deepest point.

[0157] Preferably, as shown in Figure 17, screw receiving ports 350 are provided in the slot 346 for defining a position for the screw 330 to be inserted into the slot 346. Figure 17 only shows one such screw receiving port 350 since it only shows one end of the slide bar 328. A similar screw receiving port 350 would be provided at the other end of the slide bar 328 since two screws 330 are provided in the slide bar 328 as can clearly be seen in Figure 14. More screws can be used, however, if desired.

[0158] The slide bar 328 is adapted to fit into the grooves 338 provided in each of the door liners 322, 324. Before the screws 330 are tightened into the slot 346 in the screw receiving ports 350, the slide bar 328 will freely slide within the groove 338. The fit can be a friction fit to prevent the door liners 322, 324 and the slide bars 328 (there are three of them, as described above) from falling apart too easily. However, they can be loosely fitting. Once the screws have been tightened in the slots 346, the asymmetric side walls 342 of the slide bar 328 will have been flexed outwardly to open the slot 346. This will cause the sides 342 to bear against the sides of the groove 338, which are tapered inwards to correspond substantially with the shape of the unexpanded slide bar 328, thereby causing the slide bar 328 to grip firmly in the groove 338. Once gripped, the slide bar 328 will no longer slide within the grooves 338 of the door liners 322, 324.

[0159] By having two screws 330, one end of the slide bar 328 can be locked in position on one of the door liners 322, 324 before locking it in the groove 338 of the other door liner 322, 324. Then, once the depth of the two door liners 322, 324 has been adjusted to the required depth, i.e. the depth of the wall, the second screw 330 can be tightened to the lock the depth of the door liner.

[0160] In order to fit the door liner to a opening in a wall 27, first of all, if the old door or door frame are still present in the wall 27, these are removed. This leaves a blank wall 27 with plaster 30 already applied. Into this opening, the door liner of the present invention is fitted. To do this, first of all the depth of the door liner is adjusted to correspond to the thickness of the wall 27 by using the slide bar adjustment mechanism. Once both uprights, and if required, the lintel, have been adjusted to the required depth, they are locked at that depth by using the telescopic locking mechanism. They can then be offered to the opening for fitment thereto. Polyurethane foam adhesive 323 is used to pack and fill any gap between the door liners 322, 324 and the wall 27. This polyurethane foam adhesive 323 will expand to engage with the backside of the door liners 322, 324, the slide bars 328 and the screws 330 to lock the door liner in place. Preferably, a spacer bar is placed at the bottoms of the uprights to ensure that the width of the resultant door frame is correct not just at the top, which size is governed by the length of the lintel, but also at the bottom. Further guide bars can be used in the middle of the door frame during the setting process to ensure that the uprights do not flex inwardly. Similarly, a ceiling brace may be required to prevent the lintel from flexing downwardly.

[0161] Once the polyurethane foam adhesive is set, a door frame has been successfully fitted to the opening in the wall 27. It will have a standard size, in terms of height and width, to fit a standard sized door thereto.

[0162] In Figure 14, architraves 32 are fitted to the walls. These have been fitted by gluing them to the sides of the walls. Alternatively they could be nailed to the walls.

[0163] Figure 14 also shows a door slammer 320. This has been glued to the door frame, in particular to the two door liners, to bridge the gap 352 between the two door liners. It may alternatively be screwed or nailed to the door frame.

[0164] Once the architraves 32 and the door slammer 320 have been fitted to the door frame, the door frame is architecturally finished.

[0165] As can be seen in Figure 14, the first door liner 322 has a first depth. The second door liner has a wider depth. These two depths can be important. If a door 318 is to be fitted to the door frame, the thickness of the door should govern where the door slammer 320 is fitted to the door frame. Therefore, the first door liner 322 should be of such a depth that the door slammer can be fitted thereto such that the door 318 will have a flush front face 354 with the visible side of the first door liner 322. The back face 356 of the door 318 should rest against the door slammer 320. The depth of the second door liner 324 is then chosen to ensure that for a given wall thickness, the thickness of the wall will be covered by the door liner and yet the door slammer 320 will still be able to bridge the gap 352.

[0166] The door slammer 320 may be prefixed to the first door liner 322. This is particularly advantageous when doors 318 of a standard thickness are to be fitted to the door frame. However, when doors of different thicknesses are likely to be fitted, the door slammer should not be preattached to the first door liner 322.

[0167] Referring now to Figures 18, 19 and 20, an alternative means for fixing architrave to the door frame is described. This involves a bracket 358. The bracket 358 comprises a first arm 360 and a second arm 362. The two arms 360, 362 are arranged perpendicular to each other to form an L-shape.

[0168] A slot 24 is provided at a distal end of the first arm 360. The length dimension of the slot is perpendicular to both of the axes of the arms.

[0169] The second arm 362 has a trapezium shaped section of a size suitable to fit within the groove 338 of the door liner 322. The groove 338 could, however, have been cut into the uprights of a standard door frame.

[0170] The section of the second arm 362 of the bracket 358 is sized to be a drive fit into the groove 338 so that it will not easily be removable therefrom. The joint resembles a dovetail joint.

[0171] The slot 24 is for fixing architrave 32 to the wall 27 using, for example, double ended pin connections as described above.

[0172] The first arm of the bracket 358 is also generally trapezium shaped. However, this is in plan, rather than in section. This is to provide a large distal end for receiving the slot 24. The other end is smaller to correspond with the size of the second arm section. This reduces the amount of material required to manufacture the brackets.

[0173] The slot 24 is arranged substantially parallel to the top and bottom of the trapezium shaped second arm 362 and also the top and bottom of the trapezium shape of the first arm 60.

[0174] A cut out 366 may be provided in the wall 27 for receiving the first arm 60 of the bracket 358. This cut out 364 need not be cut into the wall 27 accurately since it will eventually be covered by the architrave 32. However, it will generally correspond in depth to the thickness of the plaster 30. The cut out 364 will facilitate, however, the mounting of the architrave 32 flat against the wall 27. Alternatively, a suitable cut out could be provided in the architrave 32.

[0175] Referring now to Figures 24 to 28, there is shown a further embodiment of the present invention. A door frame comprising two uprights 12 and a lintel 14 are shown fitted within a vent in a wall 27. The wall 27 has plaster 30 already applied thereto.

[0176] The uprights 14 are attached to the wall by brackets 358, similar to those described previously. However, the brackets 358 in this embodiment have additional features. These features may, however, also be beneficial in the other embodiments.

[0177] As before, the brackets 358 have two arms 360, 362. See Figure 25. The second arm forms a dovetail for fitting in a dovetail groove (not shown) provided in the backs of the uprights 12. Similar grooves may also be provided in the lintel 14 for receiving further brackets (not shown).

[0178] The two arms also form an L-shape.

[0179] The bracket is made from a stiff material, preferably a plastics material and may be moulded. The two arms are substantially C-shaped in section to reduce the amount of material required in the moulding. As can be seen in Figure 25, the first arm 360 has a hollow back 48, a resilient flange 50 therein, and a solid nose 52. The solid nose has a bore 54 therein for receiving a nail 56. Alternatively, a screw may be used.

[0180] In use, the first arm 360 of the bracket 358 fits in a cutout 366 in the plaster 30 of the wall 27. This cut out will usually reveal the wooden surround 68 of a vent 58 for a door. A nail 56 can firmly attach the bracket 358 to this wooden surround 68. The wooden surround 68 in modem buildings is usually made from a 2-by-4 plank (dimensions of approximately 5cm by 10 cm or 2 inches by 4 inches). The nail 56 (or screw) can simply be driven through the bore 54 into the wooden surround 68 to secure the bracket 358 to the wall 27.

[0181] Between the flange 50 and the nose 52 there is provided a gap. This gap defines a slot 24 for a double ended fastener, as previously described, for attaching architrave 32 to the door frame. Because the flange extends resiliently from the base of the hollow back 48 of the bracket 358, the double ended pins can be securely

retained in the slot 24, but yet removed relatively easily. To assist in gripping the double ended fastener, the two opposed walls of the flange 50 and the nose 52 may be provided with gripping means (not shown) such as a rib or ribs.

[0182] Referring now to Figure 28A, the flange 50 can be seen to have a radiused base 66. This prevents the flange 50 from snapping off the bracket as it is flexed by the insertion of the double ended fastener into the slot 24.

[0183] Referring now to Figure 28B, the section of the dovetail of the second arm 362 can be seen also to be hollow 62 to give it its C-shaped section. This further reduces the amount of material required to make the brackets 358. It also allows the sides of the dovetail to flex, thereby easing the insertion of the dovetail into the grooves in the back of the uprights (and possibly also the lintel) of the door frame.

[0184] The sides 64 of the dovetail may be provided with gripping means, such as ribs or serrations (not shown), to secure the dovetails in the grooves (not shown) provided in the backs of the uprights 12 (and lintel) more securely. Preferably, however, the brackets will be glued into the grooves.

[0185] Referring again to Figure 25, the upright 12 is screwed (not shown) to the lintel at a right angle. The two pieces are provided with ends that have locating means to ensure that they are joined together correctly, and accurately.

[0186] At the top of the uprights 12 (one shown in detail), a groove 70 is provided. The groove is on the door facing surface 72 of each upright 12. The groove is perpendicular to the sides 74 of the upright and has a width corresponding to the thickness T_L of the lintel 14 (see Figure 27). The groove 70 ensures that the lintel and the uprights fit together accurately with respect to the x and y axes as marked on Figure 27.

[0187] More grooves 76, are provided in both the lintel 14 and the uprights 12, parallel to the sides of the lintel 14 and the uprights 12. These grooves 76 match each other, i.e. they are of the same size as each other and are spaced equally from the sides of the respective lintel 14 or uprights 12. They are for receiving door stops 320, which are also known as door slammers. In the base of these grooves 76 two strips of double sided adhesive tape 80 are provided, which may be foam backed, or substituted with some other adhesive. The tapes 80 are for gluing the door stops 320 into the grooves 76. Alternatively the door stops 320 may be nailed or screwed into the grooves 76. However, then the finish of the door frame would need to be redone - the nails or screws would be visible. The door stops, the lintel and the uprights are preferably supplied in their finished condition, i.e. with all visible parts thereof, in the assembled door frame, painted or otherwise decorated.

[0188] The groove 76 in the upright (or in the lintel 14 if the assembly was reversed) also serves another purpose. As highlighted by the arrow 78 in Figure 27, and as depicted in Figure 25, the door stop 320 in the groove 76 of the lintel extends for the full length of the lintel 14 into the groove 76 of the upright 12. Therefore, the combination of the groove 76 in the upright 12 and the door stop 320 in the groove 76 of the lintel 14 provides a locating means in the z axis of Figure 26, i.e. in and out of the page of Figure 27.

[0189] It will therefore be appreciated that the two grooves provide x, y and z axis locating means.

[0190] Screw holes (not shown) may also be predrilled into the lintel 14 and the uprights 12, and the parts supplied separately, for assisting in the assembly of the three components by the user.

[0191] The door stops 320, lintel 14 and uprights are preferably made of a fibrous material, such as wood or MDF.

[0192] Depending on the width of the wall, different widths of upright 12 and lintel 14 can be provided. However, to provide some adjustability, grooves 82 are provided down the sides of the lintel and the uprights (see Figure 26). These grooves 82 receive the feet 84 of the architrave 32. The architrave, when fitted against the plaster 30 of the wall 27, will provide finished sides to the door frame. However, because of the side grooves 82, this can be achieved for a variety of widths of wall 27. The grooves 82 will provide a useful adjustment A of about 6mm for each side of the door frame, thereby giving a total variance capability of up to 12mm for the width of the door frame.

[0193] Figure 26 also shows double ended fasteners 256 attaching the architraves 32 to the brackets 358. This is as previously described.

[0194] To fit the door frame into a vent 58 in a wall 27, the method comprises the steps of providing an assembled door frame, i.e. two uprights 12 and a lintel 14, attaching a first set of brackets 358 along one edge of the door frame in the dovetail grooves provided in the back thereof, fitting the door frame in the vent 58 such that the brackets 358 engage a first side of the wall, and attaching a second set of brackets along the second edge of the door frame, thereby sandwiching the wall 27 between the two sets of brackets 358.

[0195] The brackets 358, as described above, fit in cutouts 366 in the plaster 30.

[0196] The brackets engage the wall 27 on both sides of the wall 27. This fixes the door frame in the vent 58 in the wall 27 sufficiently to prevent it from falling out of the vent 58. However, the door frame, by virtue of the brackets being merely resting against the wooden surround 68 of the vent, rather than being attached thereto, at this time can freely move in the plane of the wall 27.

[0197] As shown in Figure 24, eight brackets 358 are provided for each edge of each upright 12. This gives a total of thirty-two brackets for the uprights. Although not shown, three or four brackets 358 may also be provided for each side of the lintel 14.

[0198] A temporary bottom member (not shown) may also be provided for the door frame, or it may be permanent to act as a floor plate. It would assist in the fitting of

the frame since it would prevent the bottoms of the uprights from flexing towards or away from each other.

[0199] As shown in Figures 24, 25 and 26, a plurality of spacers are provided around the part of the door frame that will be retaining a door. These spacers are for assisting in the final adjustment of the door frame. This is necessary for correctly fitting a door of a standard size to the frame prior to securing the frame to the wall 27 to prevent further movement of the frame in plane with the wall 27.

[0200] The spacers 46 are made of a sticky backed, high density (i.e. low compressibility) foam pad. The adhesive is sufficiently untacky to be peelable from the door frame without leaving permanent marks on the surface finish of the door frame.

[0201] The spacers may be tapered (not shown) such that they are thinner near the sides of the uprights and thicker nearer the door stop 320. This enables them effectively wedge against the door when making the final adjustments and simplifies the removal of the door thereafter. Preferably they are approximately 2mm thick at their thickest point.

[0202] To make the final adjustments, i.e. once the door frame is in the vent 58, secured in plane with the wall 27 by the brackets 358, a door is positioned in the door frame such that the edges of the door abut some or all of the spacers 46, and also the door stop 320. Then, using wedges (not shown) in the gaps G (see Figure 27) between the door frame and the sides of the vent 58, the precise position of the door frame around the vent can be altered to cause all the spacers to hug the door. This achieved will mean that the door is correctly positioned in the door frame, with a gap (not shown) of approximately 2mm all the way around the door between the door and the door frame. At this point, the brackets 358 are attached to the wooden surround 68 of the vent 58 in the wall 27 with nails 56 to hold the door frame precisely in the correct place.

[0203] The door can then be pushed out of the doorframe, and the spacers can be removed. The doorframe will then be correctly sized to receive that door - with nails 56 attaching the brackets 358 to the wooden surround 68, the door frame will no longer move.

[0204] The present invention, therefore, provides methods and components for facilitating in the fitment of architecturally finished building components in existing buildings or in new builds.

[0205] The present invention has been described above purely by way of example. Modifications in detail may be made to the invention as defined in the claims appended hereto.

Claims

1. A method of installing at least one architectural finishing component in a building comprising: a) installing a first locating component having a telescopically adjustable depth in an opening of a wall to form a locating reference for an architectural finishing component, the first locating component having had its depth adjusted to match substantially the thickness of the wall.

2. A door frame component comprising a first frame portion and a second frame portion that are telescopically adjustable relative to each other and a doorstop portion, the doorstop portion being fixable, in use, to first, substantially co-planar faces of the two door frame portions to bridge any gap therebetween.

3. A door frame assembly comprising two telescopically adjustable door frame portions and a doorstop portion, each door frame portion comprising two uprights and a lintel attached therebetween, the doorstop portion being adapted to bridge any gap between the door frame portions.

4. The door frame assembly of claim 3, wherein the lintel is telescopically adjustable.

5. The door frame assembly of claim 4, wherein the lintel has a doorstop portion.

6. A frame comprising two frame uprights and a frame lintel, the frame uprights and frame lintel being of a standardised length and requiring no cutting to length prior to or during installation, wherein locating means are provided at both ends of the lintel and at one end of each of the uprights such that the lintel and the uprights fit and locate together correctly in horizontal, vertical and lateral directions to form a frame of a standardised height and width that is suitable for an architectural finishing component of a standardised height and width.

7. The frame of any one of the preceding claims, wherein dovetail slots are machined into the edges of wall facing surfaces of either or both of the lintel and/or the uprights.

8. The frame of claim 6 or 7, wherein screw holes are predrilled in either or both of the lintel and/or the uprights.

9. The frame of claim 6, claim 7 or claim 8, wherein architectural finishing component is a door.

10. The frame of claim 9, wherein the locating means is a groove in a door facing surface of either or both of the lintel and/or the uprights that extends parallel to the sides of the lintel or the uprights.

11. The frame of claim 10, wherein the groove is adapted to locate a door stop or door slammer of the other of the lintel and/or uprights.

12. The frame of any one of claims 6 to 11, wherein the locating means comprises a groove at the ends of said lintel or at the one end of each upright that extends perpendicular to the sides of the lintel or the uprights.

13. The frame of any one of claims 6 to 12, wherein the uprights and/or the lintel are provided with spacers on the inward facing surfaces thereof that are removeably attached to the uprights and/or the lintel.

14. The frame of claim 13, wherein the spacers are tapered.

15. The frame of any one of claims 6 to 14, wherein a groove runs down each side of the uprights and the lintel for receiving a foot of an architrave therein.

16. A method of fitting a frame into an opening in a wall, the method comprising the steps of providing an assembled frame, attaching a first set of brackets along one edge of the frame, fitting the frame in the opening such that the brackets engage a first side of the wall, and attaching a second set of brackets along the second edge of the frame, thereby sandwiching the wall between the two sets of brackets.

17. The method of claim 16, wherein the frame is a frame as defined in any one of claims 6 to 15.

18. The method of claim 16 or claim 17, wherein the brackets are attached to the frame using dovetail connections.

19. The method of claim 18, wherein the brackets are attached to the wall using nails or screws.

20. A method of fitting an architectural finishing component into a frame fitted in accordance with any one of claims 16 to 18, the frame having spacers in accordance with claim 8, comprising the steps of, once the frame is in the opening, secured in plane with the wall by the brackets, positioning the architectural finishing component in the frame such that the edges of the architectural finishing component abut some or all of the spacers and then, using wedges between the frame and the sides of the opening, adjusting the frame relative to the wall and the architectural finishing component to cause all the spacers to hug the architectural finishing component around the architectural finishing component, and then attaching the brackets to the wall to hold the frame in that position.

21. A kit of building components comprising a frame as defined in any one of claims 6 to 15 and a plurality of brackets for attaching the frame to a vent in a wall.

22. A bracket for an architectural finishing component, the architectural finishing component having a part of a press-fit connection thereon, the bracket comprising a first portion suitable for securing the bracket to a wall and a second portion that in use extends parallel to the wall, the second portion having another part of the press-fit connection thereon.

23. The bracket of claim 22, wherein the second portion is a slot for a double ended fastener.

24. The bracket of claim 23 comprising a first arm and a second arm extending perpendicular to the first arm, the slot being provided in the first arm.

25. The bracket of claim 22, 23 or 24, wherein the second portion has a dovetail section adapted to be driven into a dovetail groove of a second component.

26. The bracket of any one of claims 22 to 25, wherein the first arm also comprises a hole for receiving a nail or screw therethrough for attaching the arm to a wall.

27. A method of installing an architectural finishing component in a building comprising: a) installing or providing a locating component of a standard length that is adapted to receive the architectural finishing component for attachment at a predetermined relative position; b) constructing or finishing a structural element of the building using the locating component as a locating reference for the application of general-purpose building or finishing materials; and then c) attaching the architectural finishing component to the locating component at the said predetermined relative position.

28. A method of installing an architectural finishing component in a building comprising: a) installing a locating component that is adapted to receive the architectural finishing component for attachment at a predetermined relative position; b) constructing or finishing a structural element of the building using the locating component as a locating reference for the application of general-purpose building or finishing materials; and then c) attaching the architectural finishing component to the locating component at the said predetermined relative position using a double-ended fastener, one end of the fastener extending into or through the locating component and the other end of the fastener extending into or through the architectural finishing component.

29. A double-ended fastener comprising first and second ends extending from a medial flange.

30. The double ended fastener of claim 29, wherein the flange comprises a cup.

31. The double ended fastener of claim 29 or claim 30, wherein the axes of the two ends are substantially parallel and offset from one another.

32. A kit of building components comprising: 1) a locating component for locating an architectural finishing component in a building, the locating component being a) adapted to receive the architectural finishing component for attachment at a predetermined relative position, and b) so shaped as to provide a locating reference for general-purpose building or finishing materials used in the construction or finishing of a structural element of the building, such that subsequent attachment of the architectural finishing component to the locating component at the said predetermined position determines its position relative to the structure or fabric of the said structural element of the building; and 2) double-ended fasteners for joining architectural finishing components to the locating component.

33. A kit of building components comprising: 1) an architectural finishing component and 2) a locating component for locating the architectural finishing component in a building, the locating component being a) adapted to receive the architectural finishing component for attachment at a predetermined relative position, and b) so shaped as to provide a locating reference for general-purpose building or finishing materials used in the construction or finishing of a structural element of the building, such that subsequent attachment of the architectural finishing component to the locating component at the said predetermined position determines its position relative to the structure or fabric of the said structural element of the building.

34. A kit of building components for forming an architecturally finished building component comprising: 1) a first locating component for attaching to a wall, 2) a second locating component attachable to the first location component, the two locating components together being adapted to receive at least one architectural finishing component for attachment of the at least one architectural finishing component to the wall, wherein once all the necessary architectural finishing components have been attached to the first or second locating component, the first locating component and the at least one architectural finishing component form at least partially visible parts of the architecturally finished building component and the second locating component forms an invisible part of the architecturally finished building component.

35. A locating component for locating an architectural finishing component in a building, the locating component being a) adapted to receive the architectural finishing component for attachment at a predetermined relative position, and b) so shaped as to provide a locating reference for (the application of) general-purpose building or finishing materials used in the construction or finishing of a structural element of the building, such that subsequent attachment of the architectural finishing component at the said predetermined position determines its position relative to the structure or fabric of the said structural element of the building.

36. A method of installing an architectural finishing component in a building comprising: a) installing a locating component that is adapted to receive the architectural finishing component for attachment at a predetermined relative position; b) constructing a low portion of a structural element of the building using the locating component as a locating reference for the application of general-purpose building or finishing materials; c) installing a tie component for the locating component in or on the top of the low portion of the structural element; d) constructing a further portion of the structural element on the lower portion, over the tie component, with further general purpose building or finishing materials to tie the locating component to the structural element of the building; and then e) attaching the architectural finishing component to the locating component at the said predetermined relative position.

37. A kit of building components comprising: 1) at least one tie component and 2) a locating component for locating an architectural finishing component in a building, the tie component being adapted to attach slidably to the locating component at positions along the locating component's length, the locating component being a) adapted to receive an architectural finishing component for attachment at a predetermined relative position, and b) so shaped as to provide a locating reference for the application of general-purpose building or finishing materials used in the construction or finishing of a structural element of the building, such that subsequent attachment of the architectural finishing component to the locating component at the said predetermined position determines its position relative to the structure or fabric of the said structural element of the building; the tie component, in use, tying the locating component to the structural element of the building.

38. A tie component for a locating component used in the construction of a part of a building, comprising a plate and an attachment means for slidably attaching the tie component to the locating component, wherein the attachment means can lock the tie component to the locating component, the attachment means comprising a pair of straight flanges in plane with the plate, the attachment means further including a pair of bent flanges in opposed sides of the plate, each

bent flange being bent out of plane from the plate and opposing one of the straight flanges.

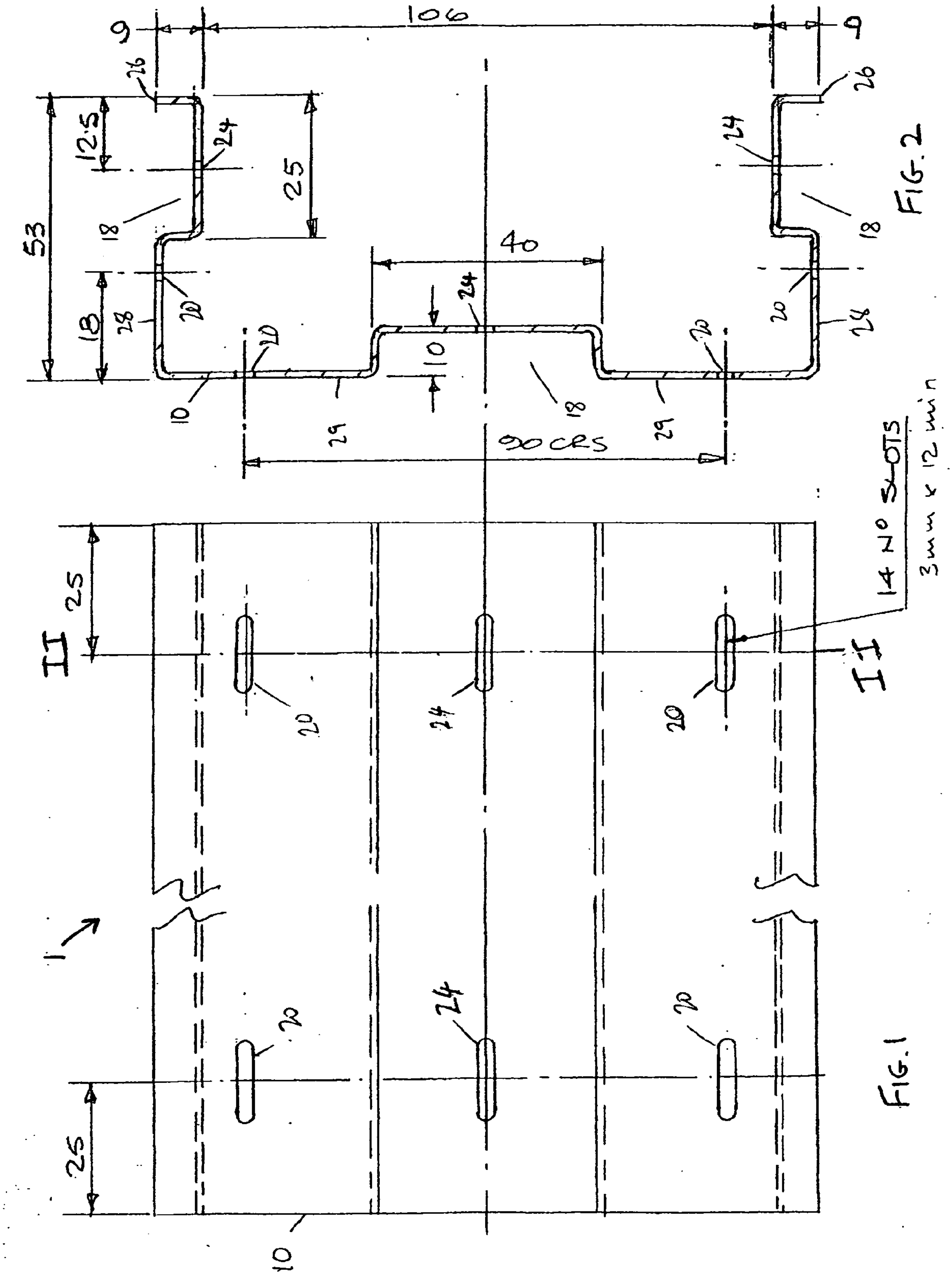


FIG. 2

FIG. 1

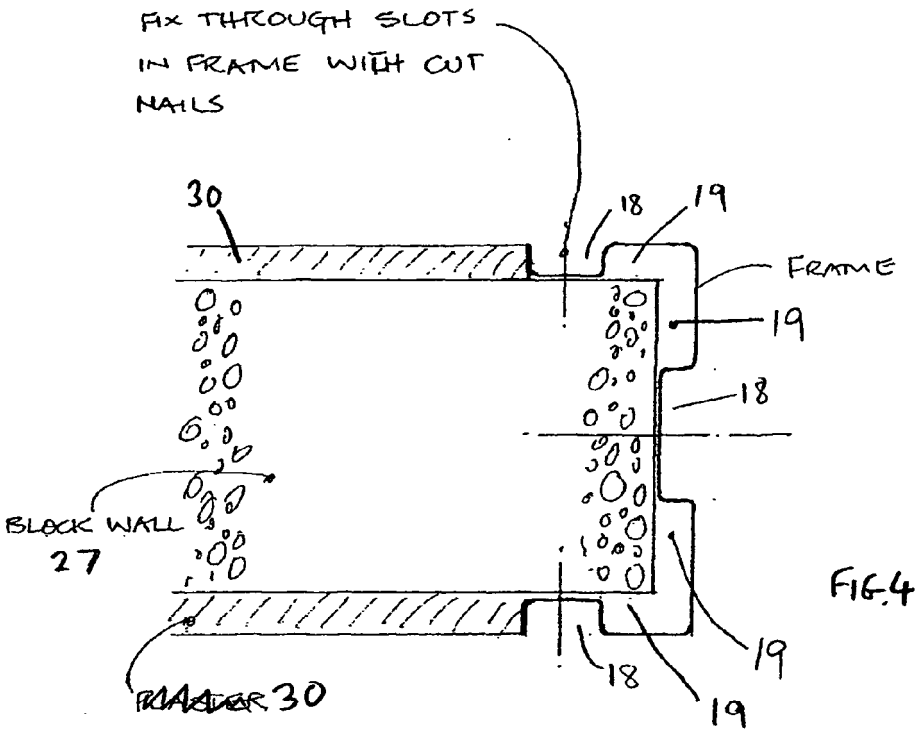
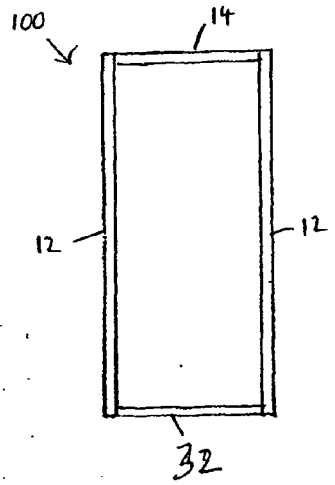


FIG. 4

FIG. 3



STEP 1. ASSEMBLE DOOR FRAME AND POSITION IN BUILDING WHERE DOOR IS REQUIRED

STEP 2. BUILD BLOCK OR STUD WALL USING FRAME AS A TEMPLATE

STEP 3. FIX FRAME TO WALL WITH CUT NAILS IN USUAL WAY

STEP 4. PLASTER WALLS AND SCREED FLOOR.

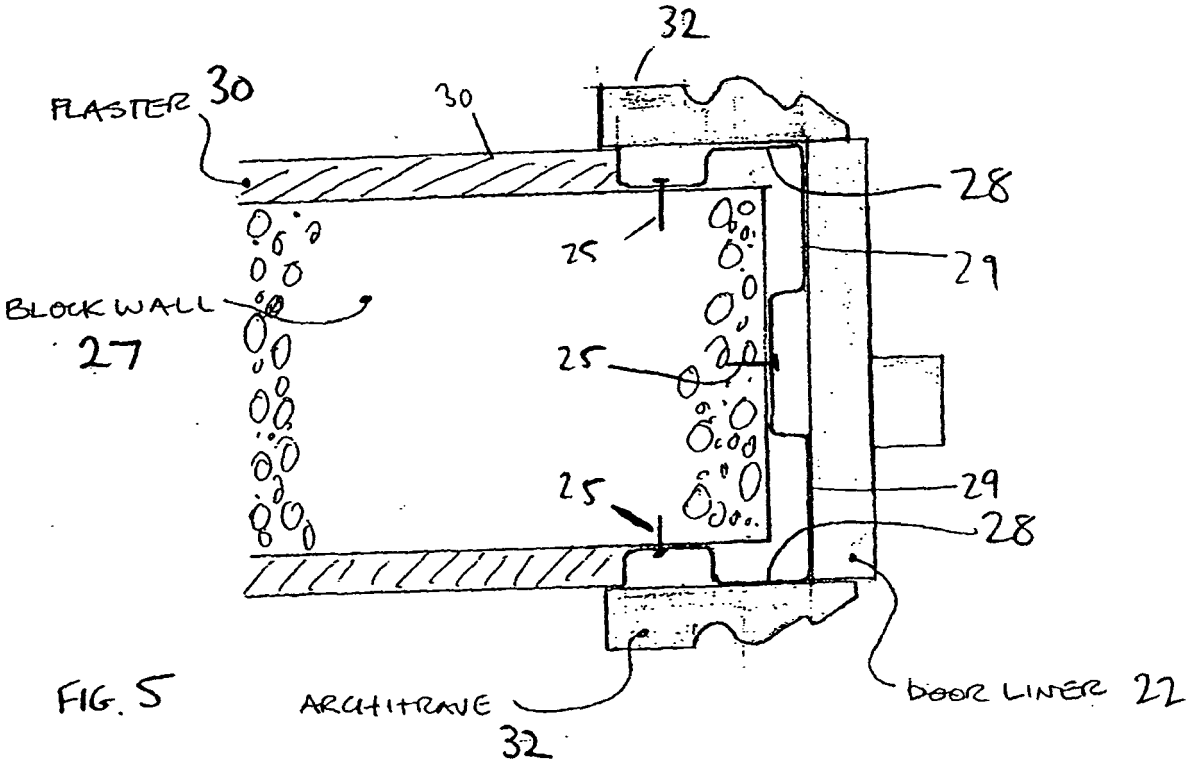


FIG. 5

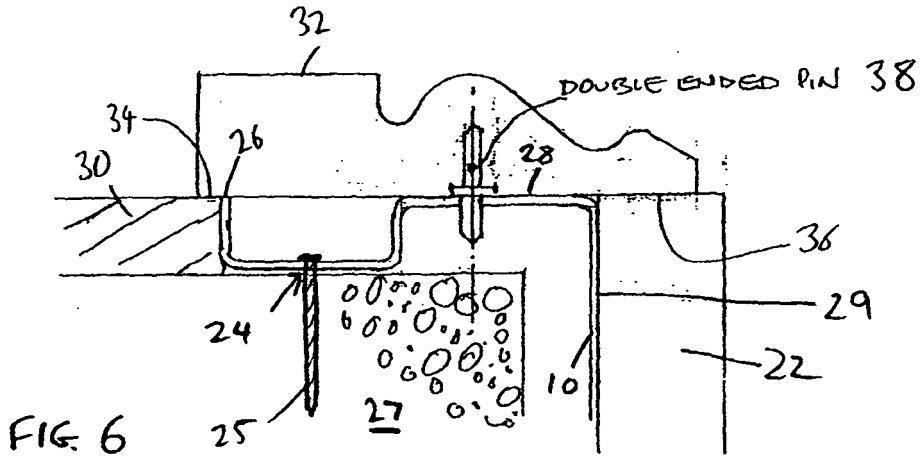


FIG. 6

FIX MOULDINGS (ARCHITRAVE, DOOR LINER ETC) TO METAL FRAME WITH DOUBLE ENDED PIN.

SKIRTING BOARDS - 1ST FIX

STEP 1. FIX METAL CHANNEL TO WALL.

STEP 2. PLASTER WALLS AND FINISH SCREED FLOOR.

SKIRTING BOARDS - 2ND FIX

FIX SKIRTING BOARD TO METAL FRAME WITH DOUBLE ENDED PIN.

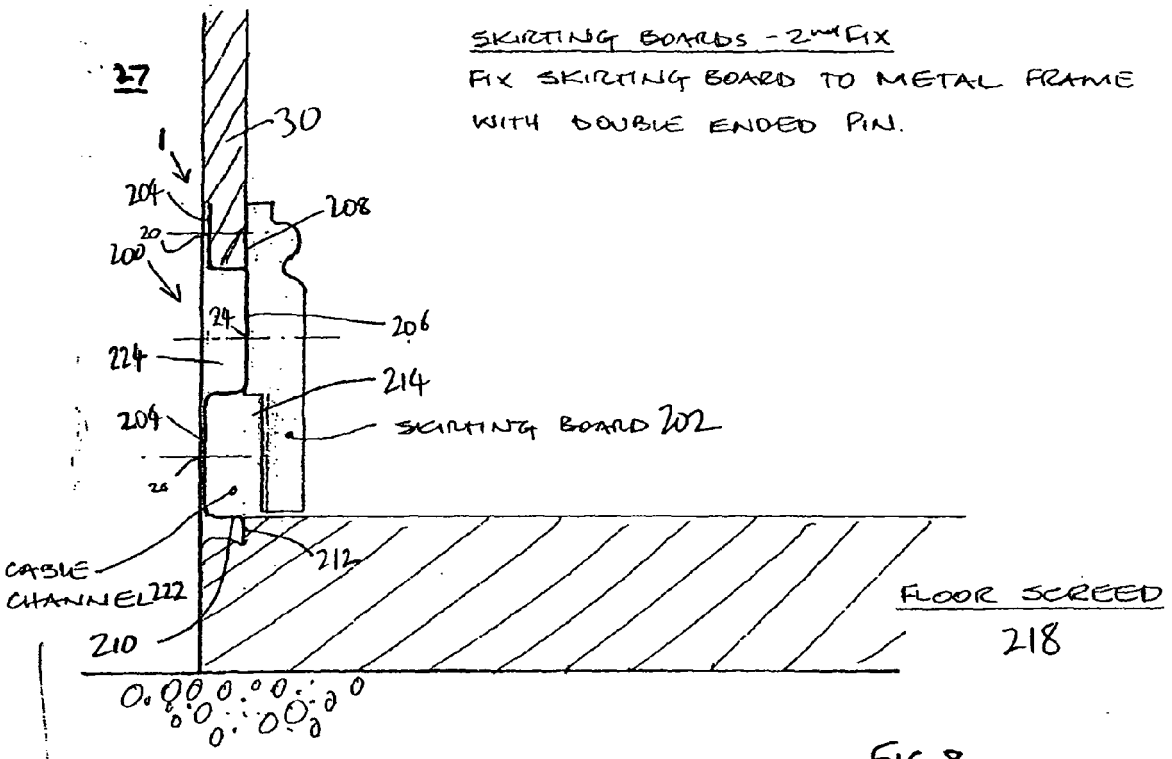


FIG. 8

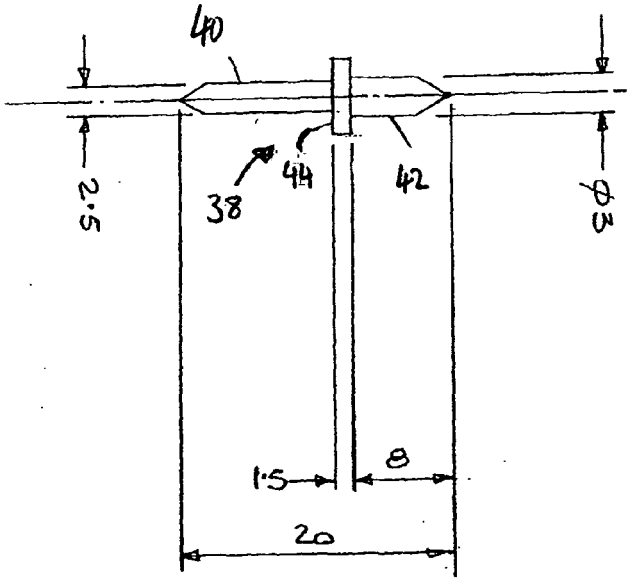


FIG. 7

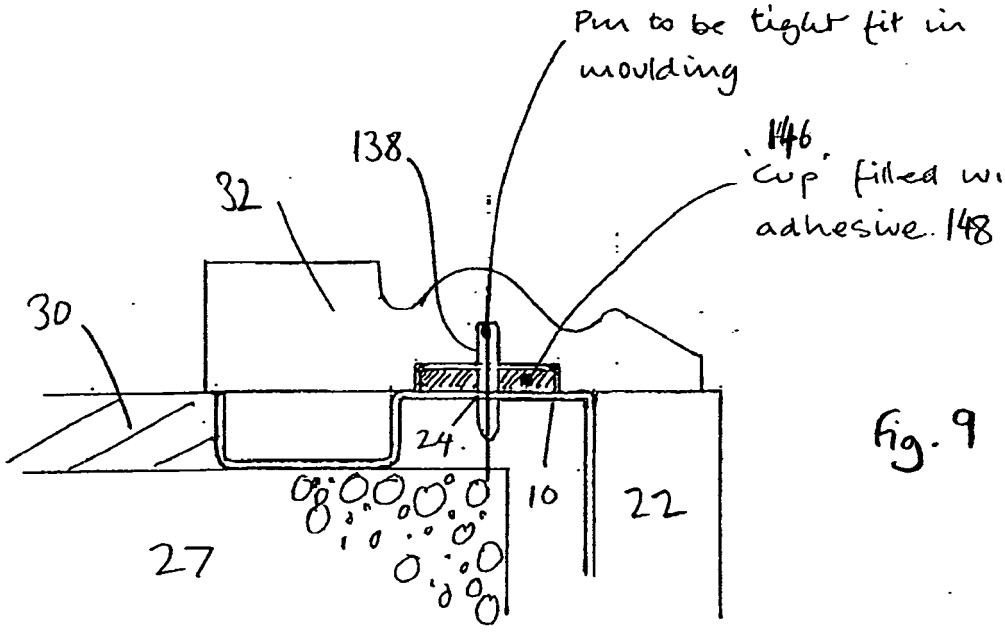

Pin to be tight fit in moulding
138
146
Cup filled with adhesive 148
32
30
24
10
22
27

Fig. 9

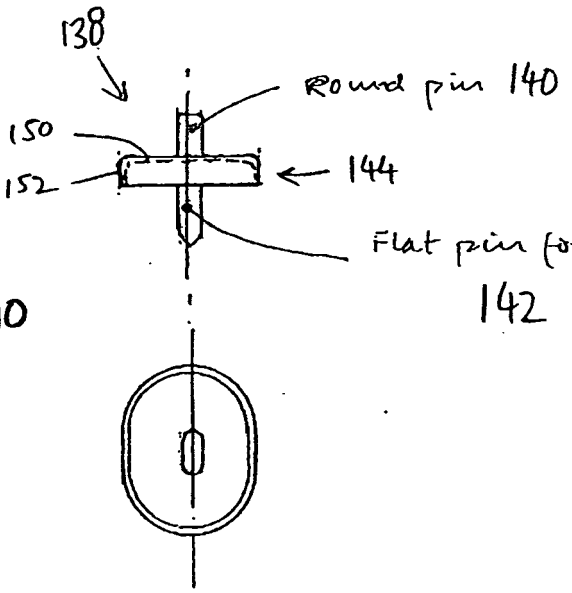

138
Round pin 140
150
152
144
Flat pin for better grip in slot.
142

Fig 10

Fig. 11

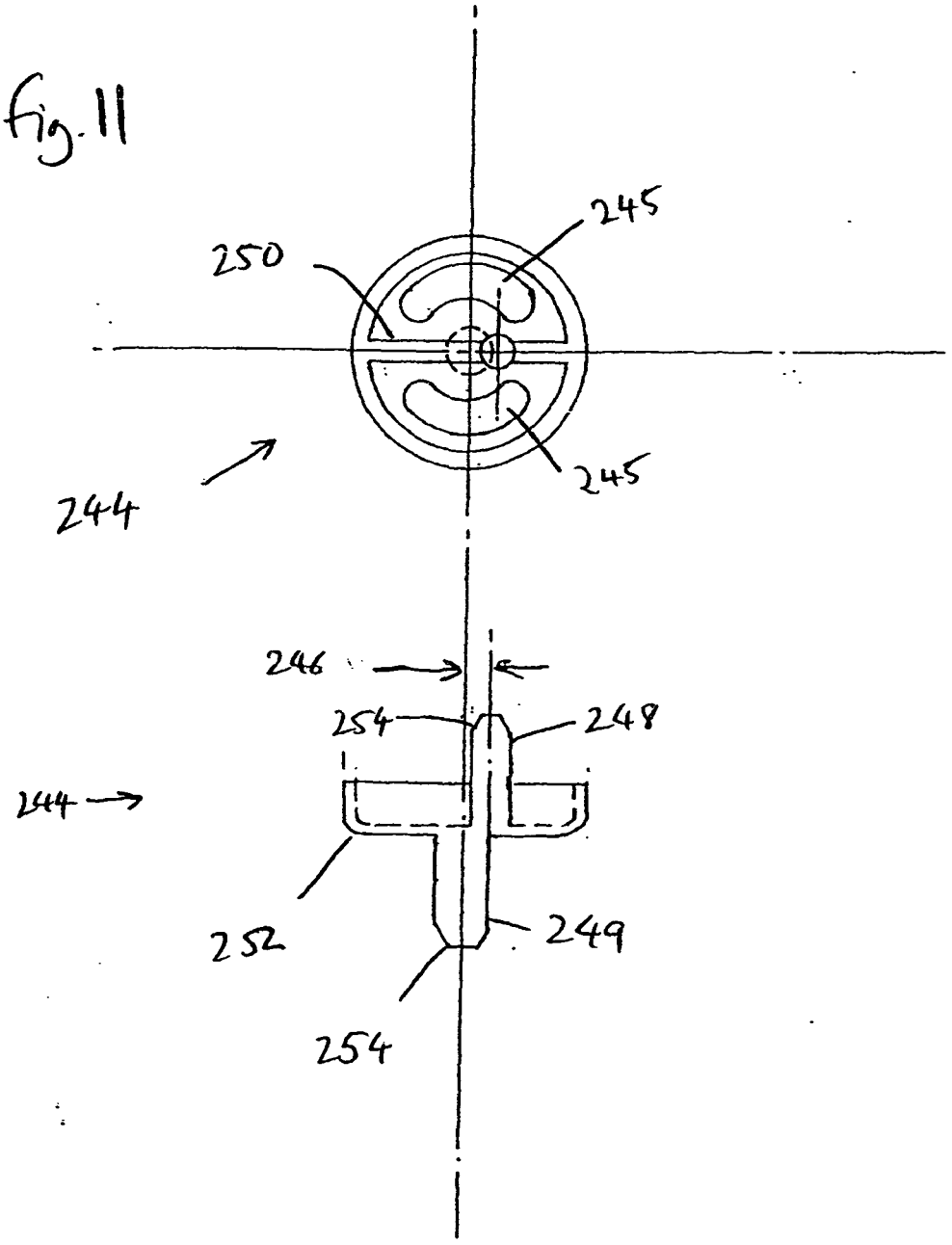
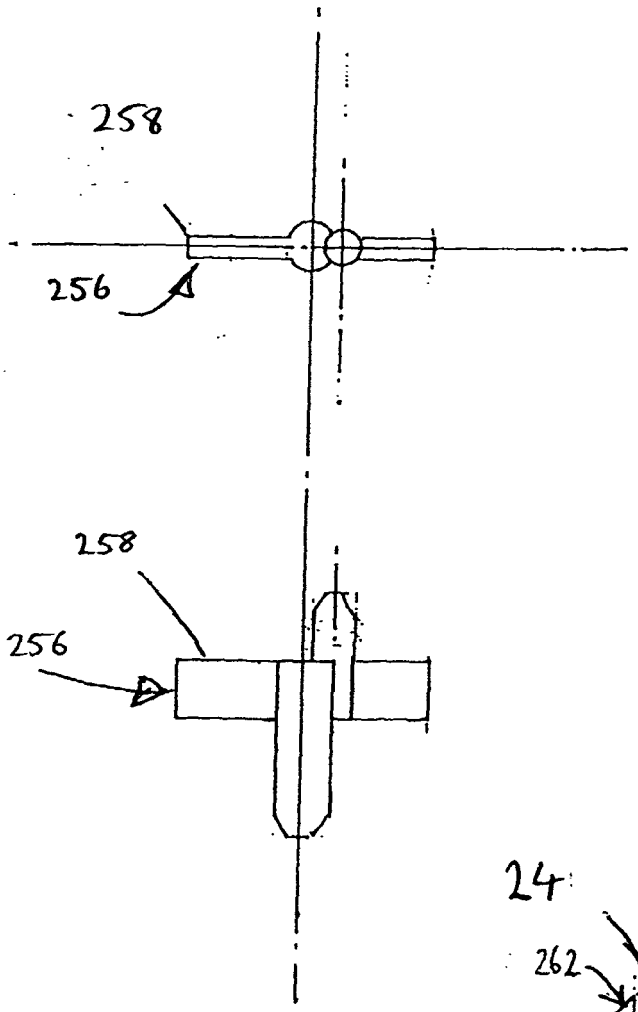
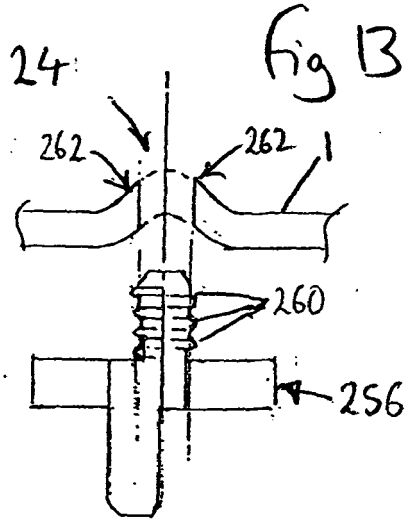


Fig 12



Edges of slots to be formed up to provide 'grippers' for pin. This design of the pin allows the gripping serrations to be moulded in.

Fig 13



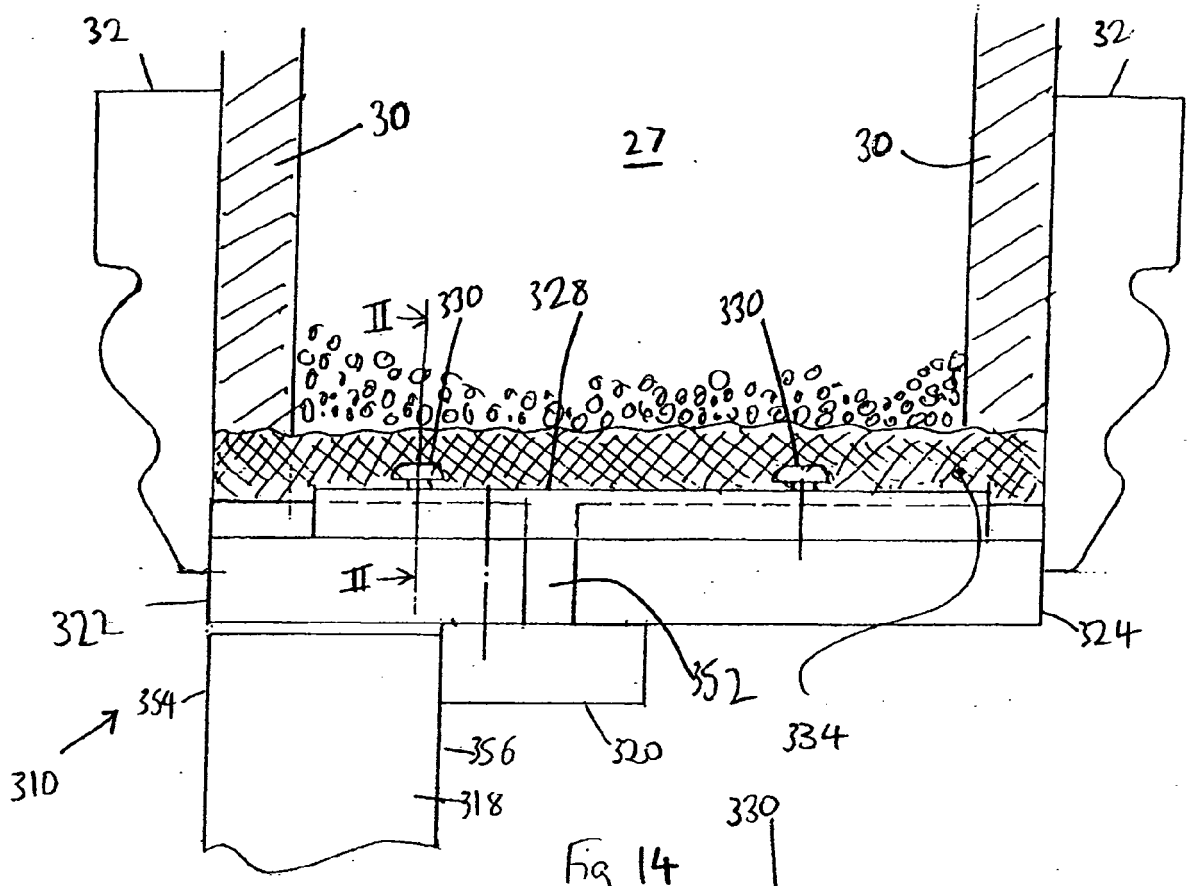
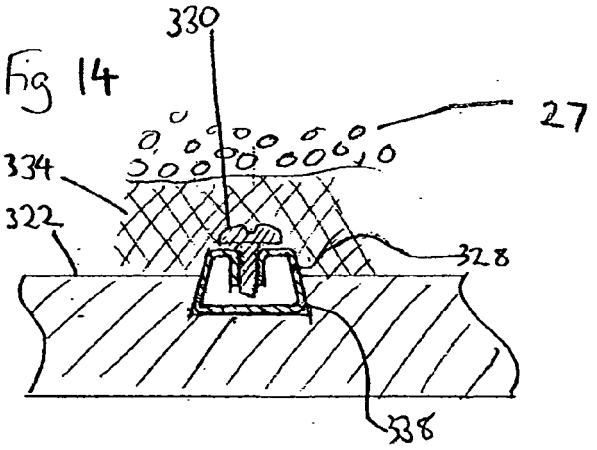


Fig 14



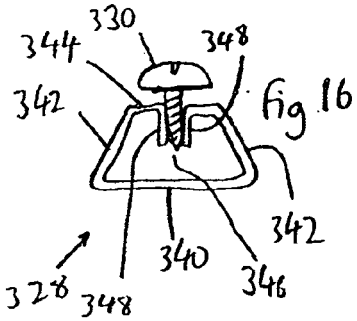


Fig 16

Fig 15

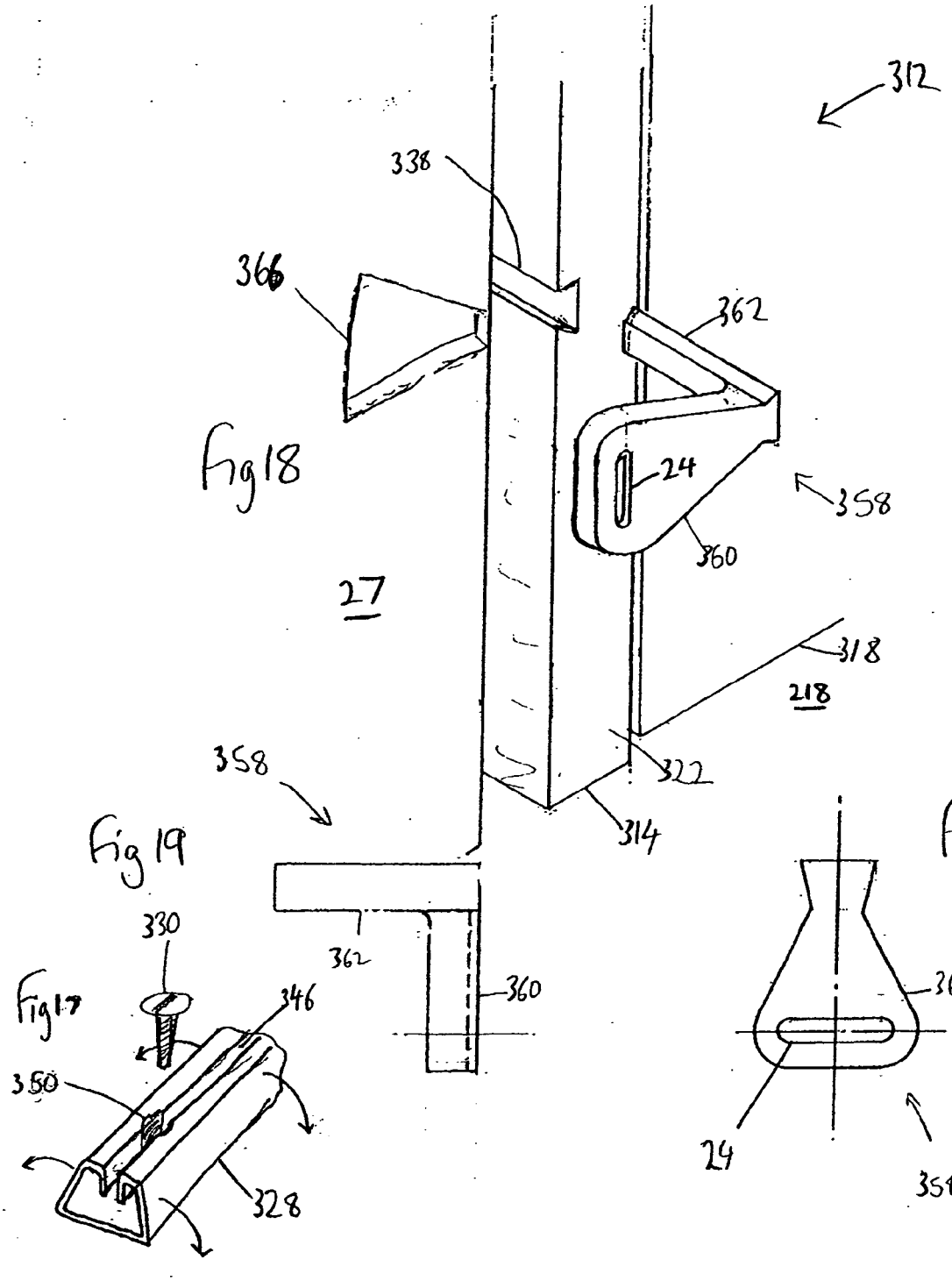
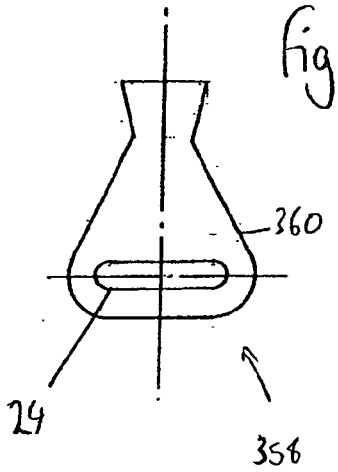


Fig 18

Fig 19

Fig 17

Fig 20



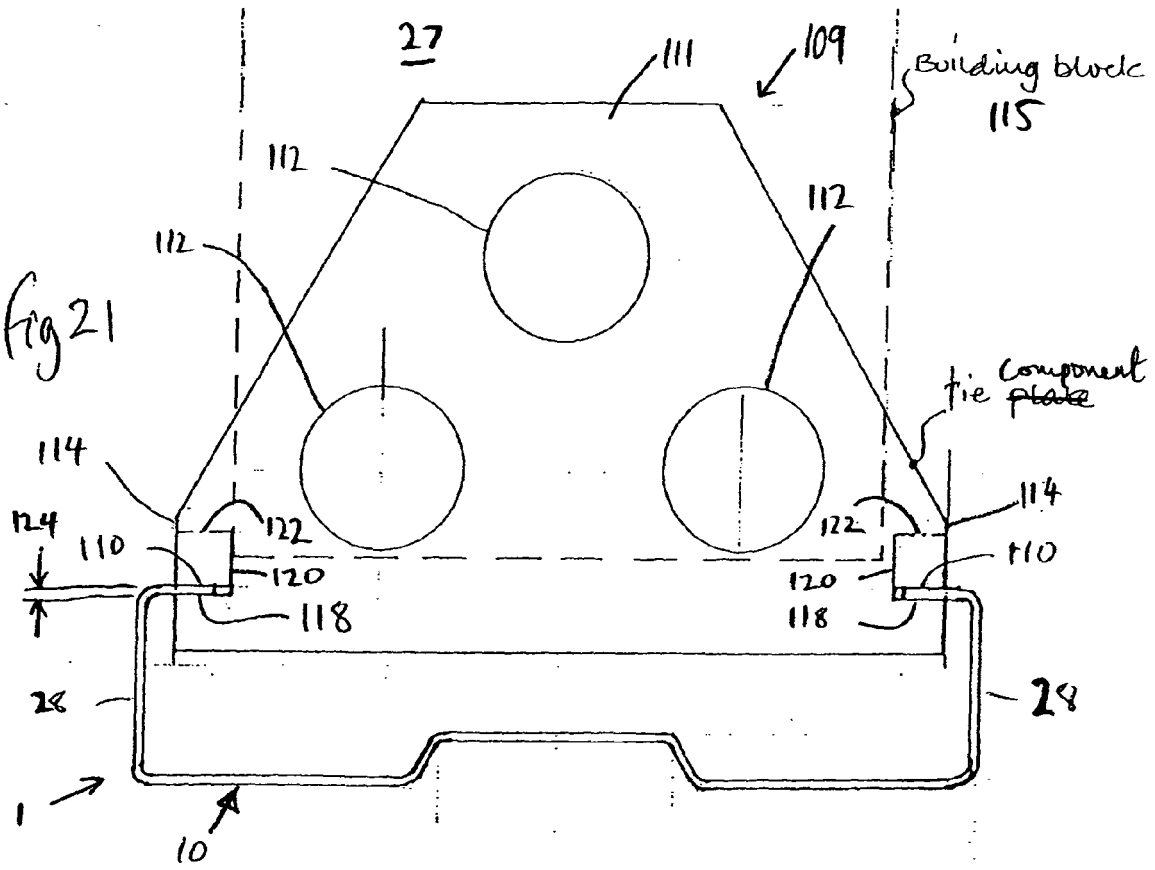
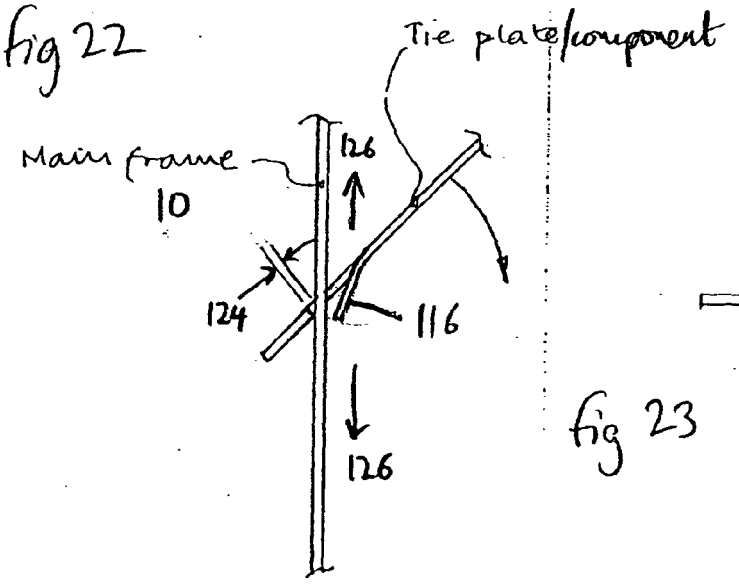


Fig 21



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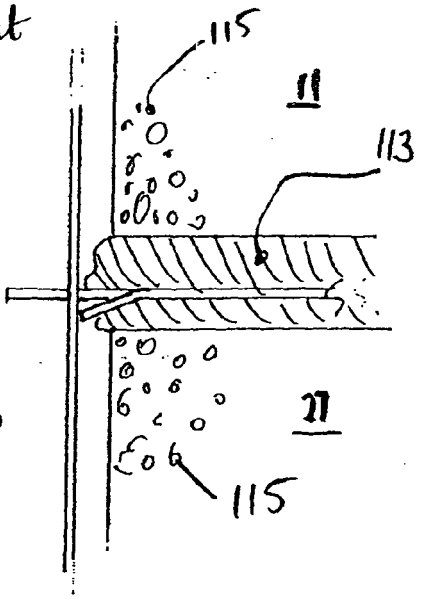

fig 23

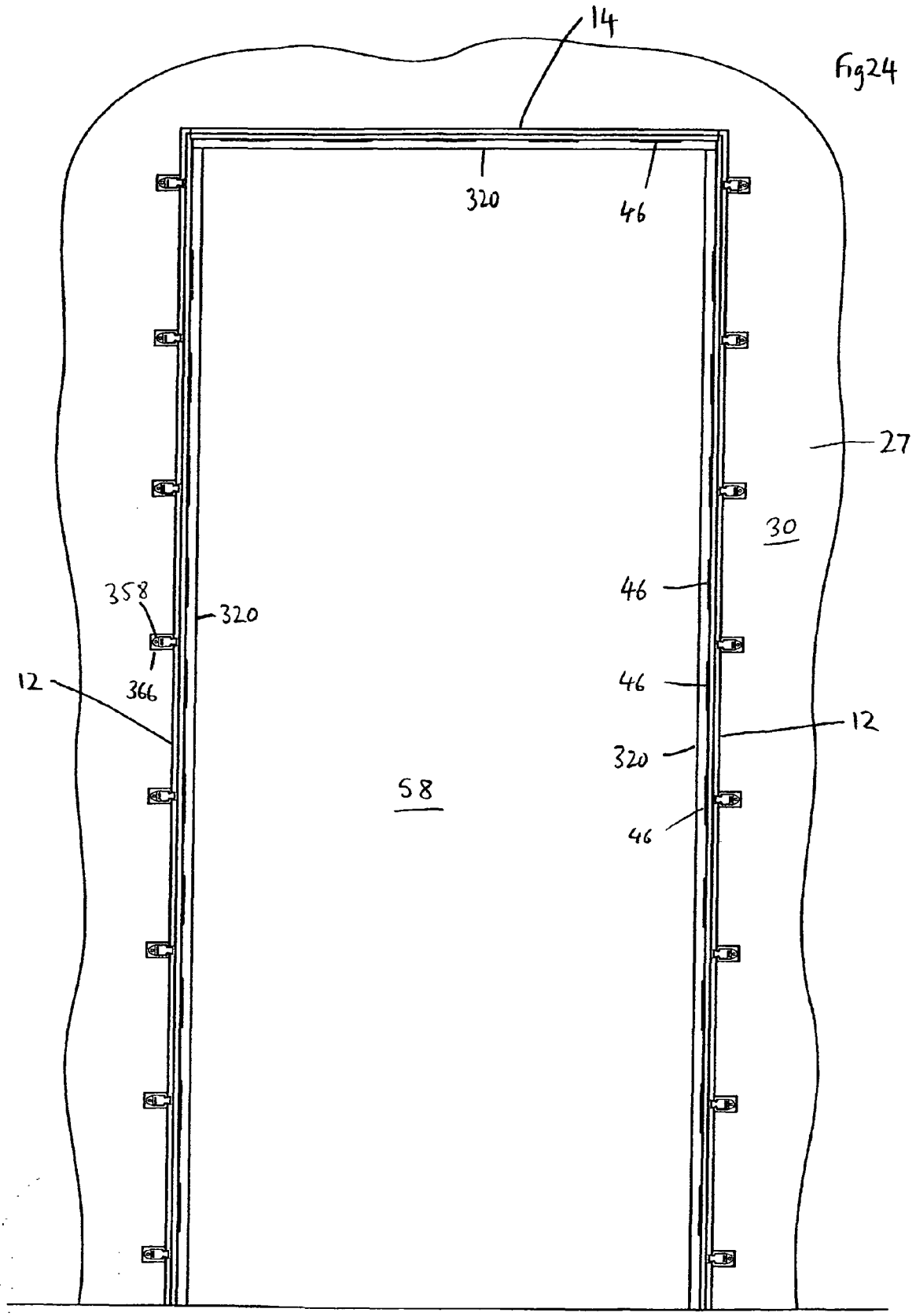

Fig24

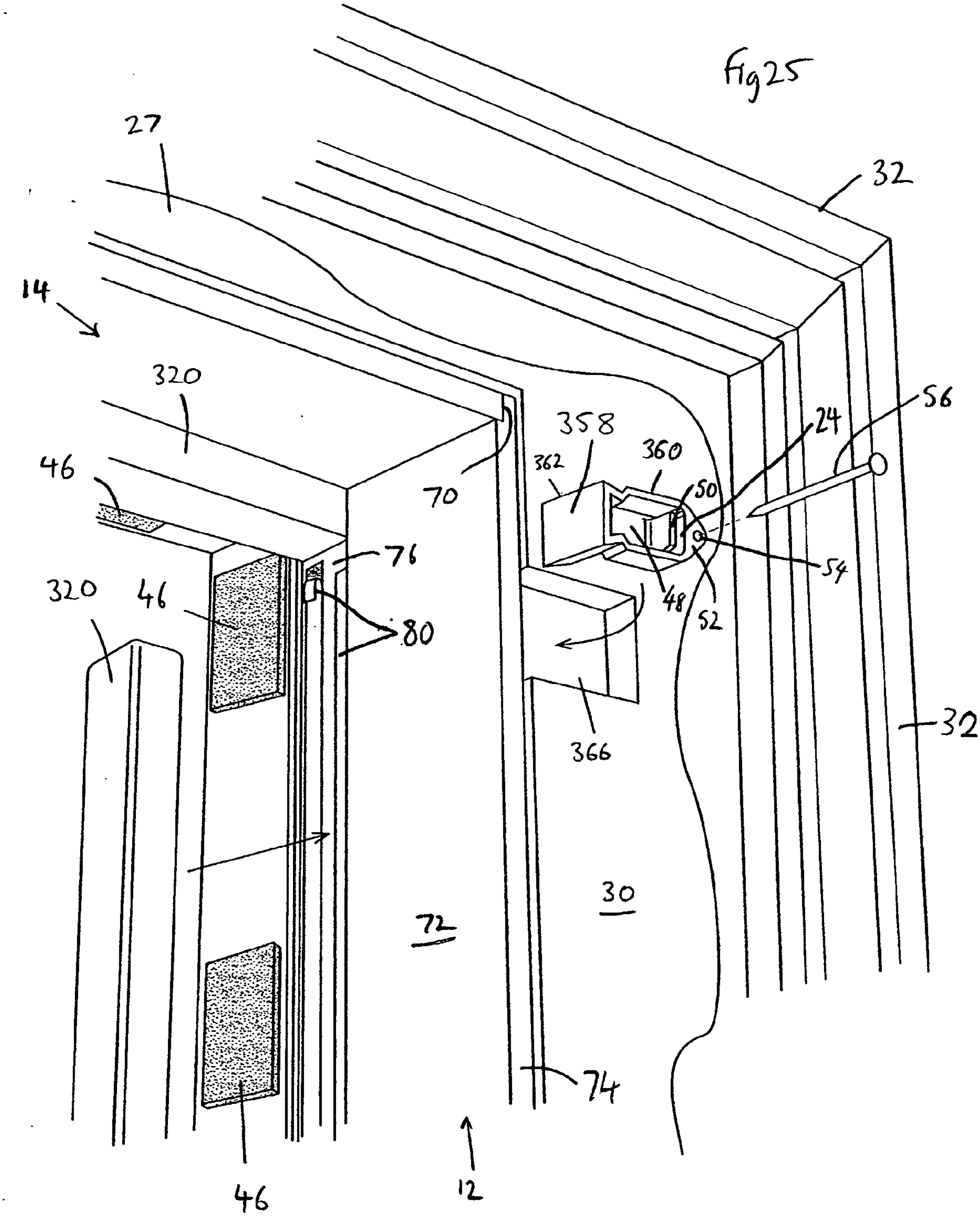
Fig25
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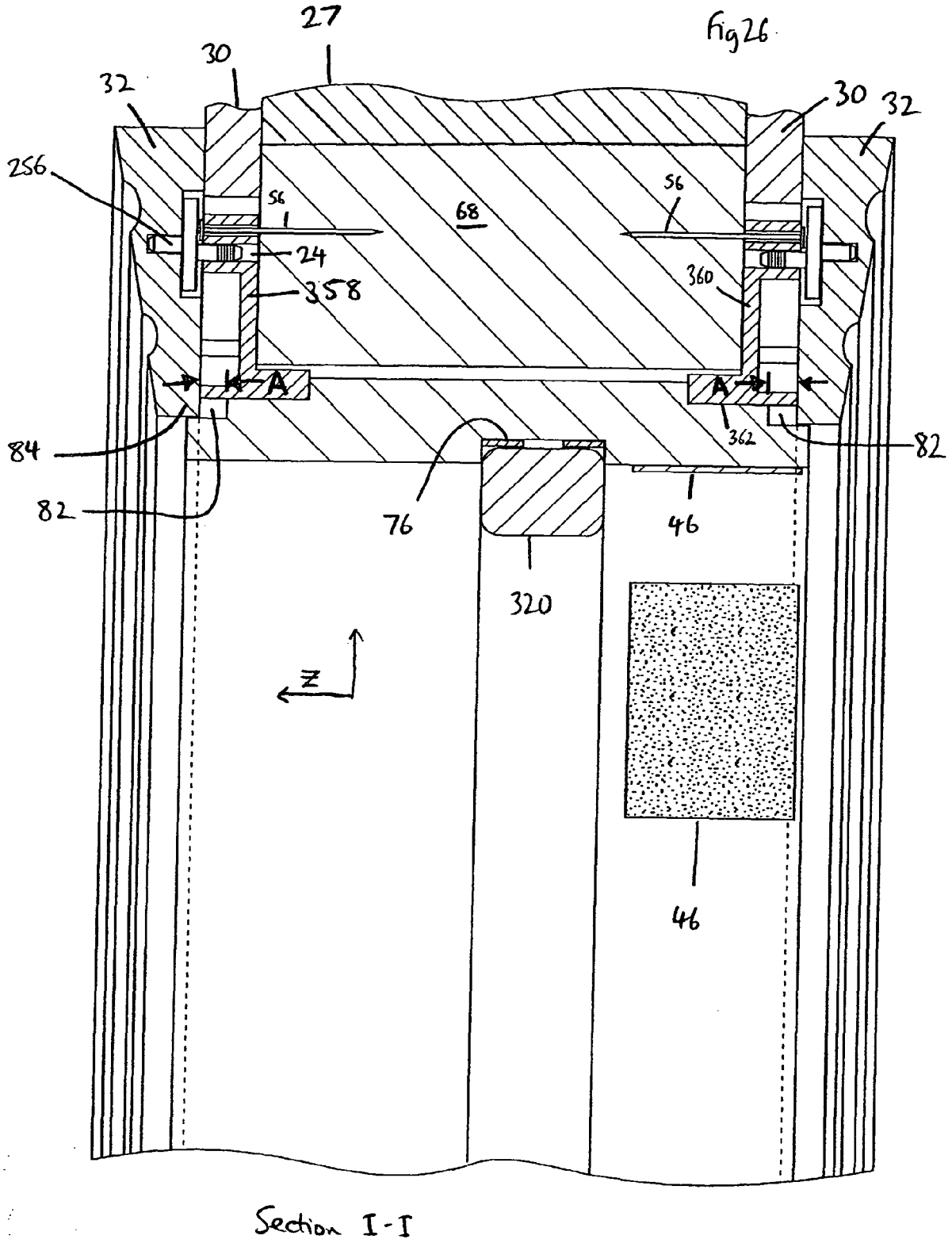
Fig26



Section I-I

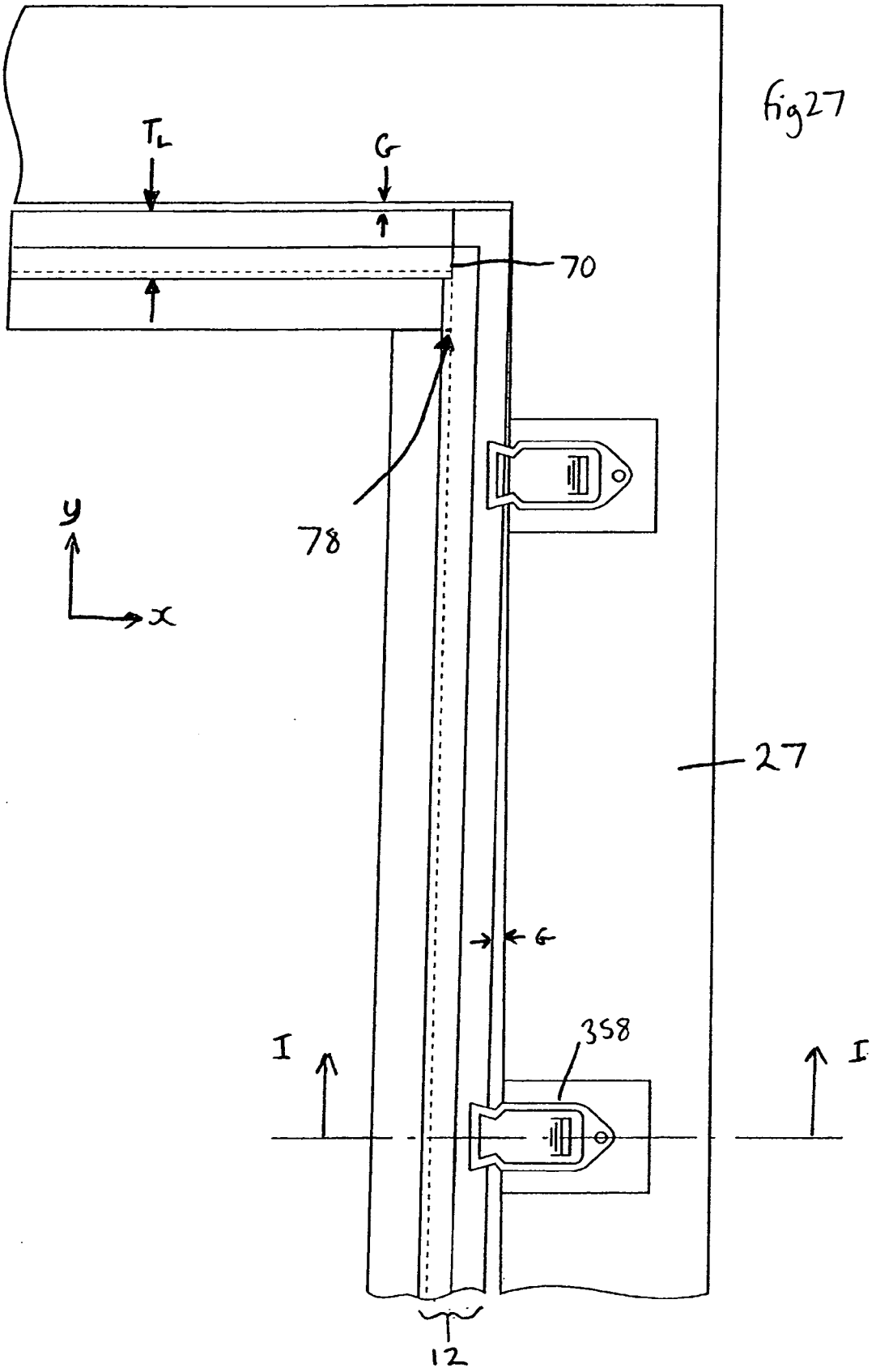


fig27

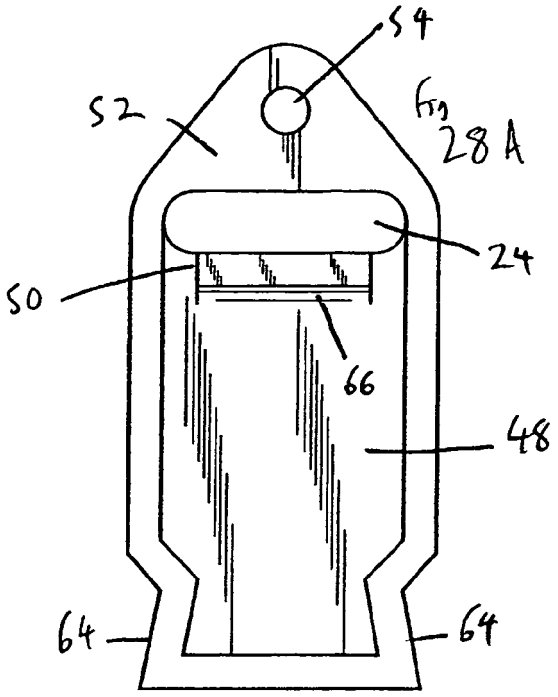


Fig 28 A

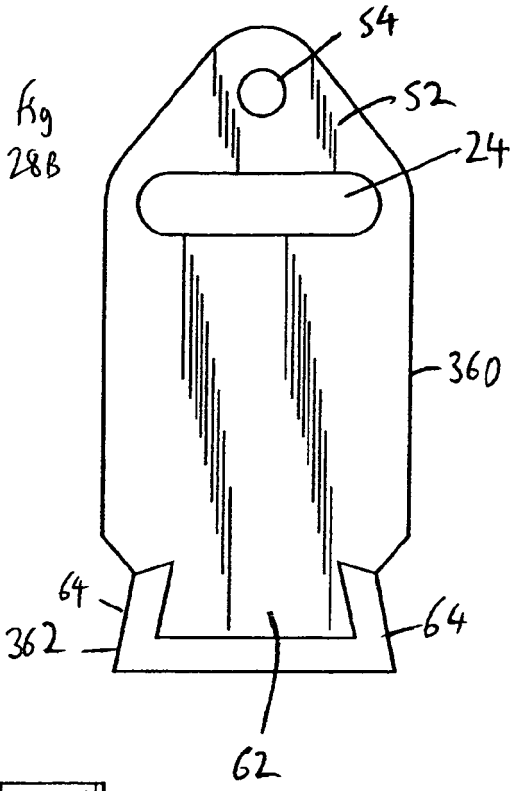


Fig 28B

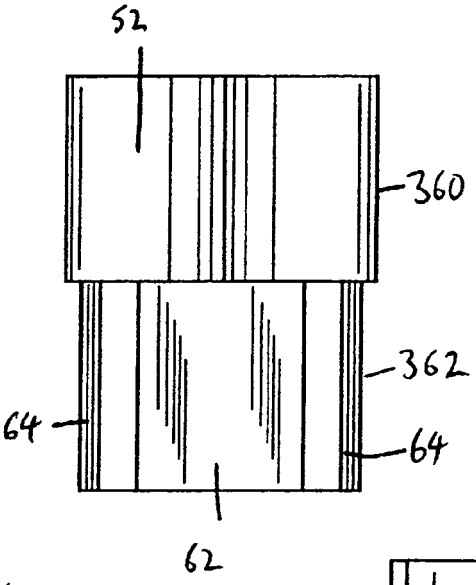


Fig28C

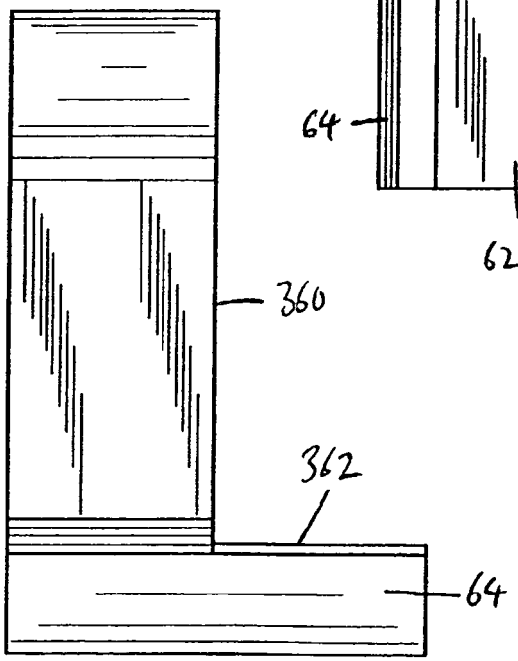


Fig28D

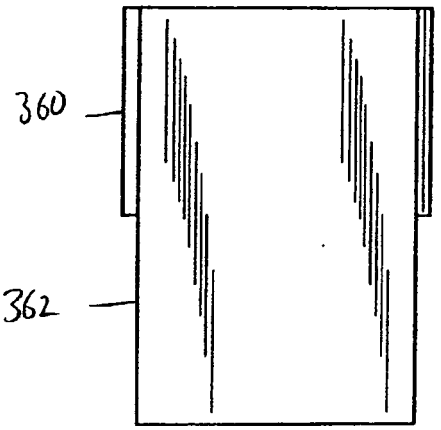


Fig28E

REFERENCES CITED IN THE DESCRIPTION

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Patent documents cited in the description

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- GB 0224895 A **[0002]**