

(21) Application No: 0616805.8
(22) Date of Filing: 25.08.2006

(71) Applicant(s):
Leaderflush & Shapland Limited
(Incorporated in the United Kingdom)
Langley Mill, NOTTINGHAM, NG16 4AZ,
United Kingdom

(72) Inventor(s):
Kevin Michael Ross

(74) Agent and/or Address for Service:
Potter Clarkson LLP
Park View House, 58 The Ropewalk,
NOTTINGHAM, NG1 5DD, United Kingdom

(51) INT CL:
E06B 1/04 (2006.01)

(52) UK CL (Edition X):
E1J JGB

(56) Documents Cited:
GB 2394995 A **WO 1997/029267 A1**
WO 1988/004348 A1 **FR 002682150 A1**
US 5974745 A1 **US 20060048466 A1**

(58) Field of Search:
UK CL (Edition X) **E1J**
INT CL **E06B**
Other: **Online: EPODOC, WPI**

(54) Abstract Title: **Frame assembly comprising brackets which protrude from frame member**

(57) A frame assembly 10 for insertion in an aperture in a wall comprises a plurality of interconnected frame members 14 defining a frame. At least one frame member includes at least one primary fixing site 16 and at least one primary bracket 18 including first and second body portions 20, 22 having fixed positions relative to one another. The or each primary fixing site and the or each first body portion 20 include mutually co-operable formations 24 to prevent relative lateral movement between the first body portion and the corresponding frame member in at least one direction, and to align the or each first body portion and the corresponding primary fixing site, such that the or each second body portion 22 protrudes from the frame to enable it to be fixed to the wall. The mutually co-operable formations may be in the form of barbs 38, resilient latches (54, Fig. 5b) which co-operate with apertures (58, Fig. 3b) or a protrusion (70, Fig. 6) which co-operates with a recess (64, Fig. 6). A method of installing such a frame assembly is also disclosed.

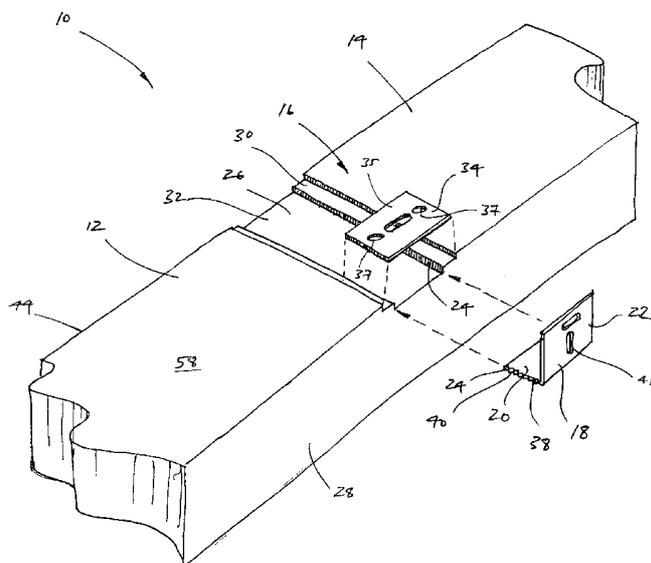


FIGURE 1

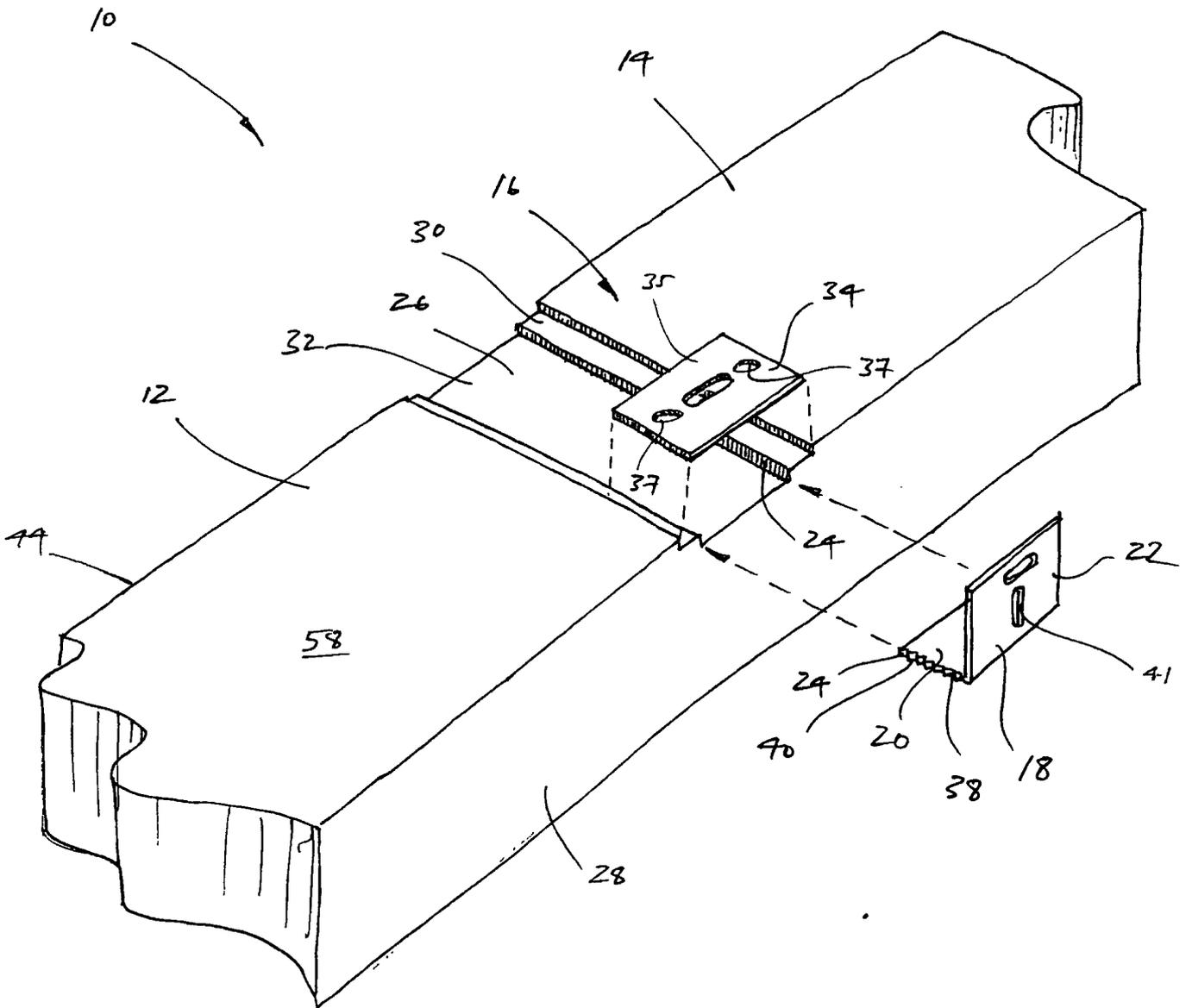
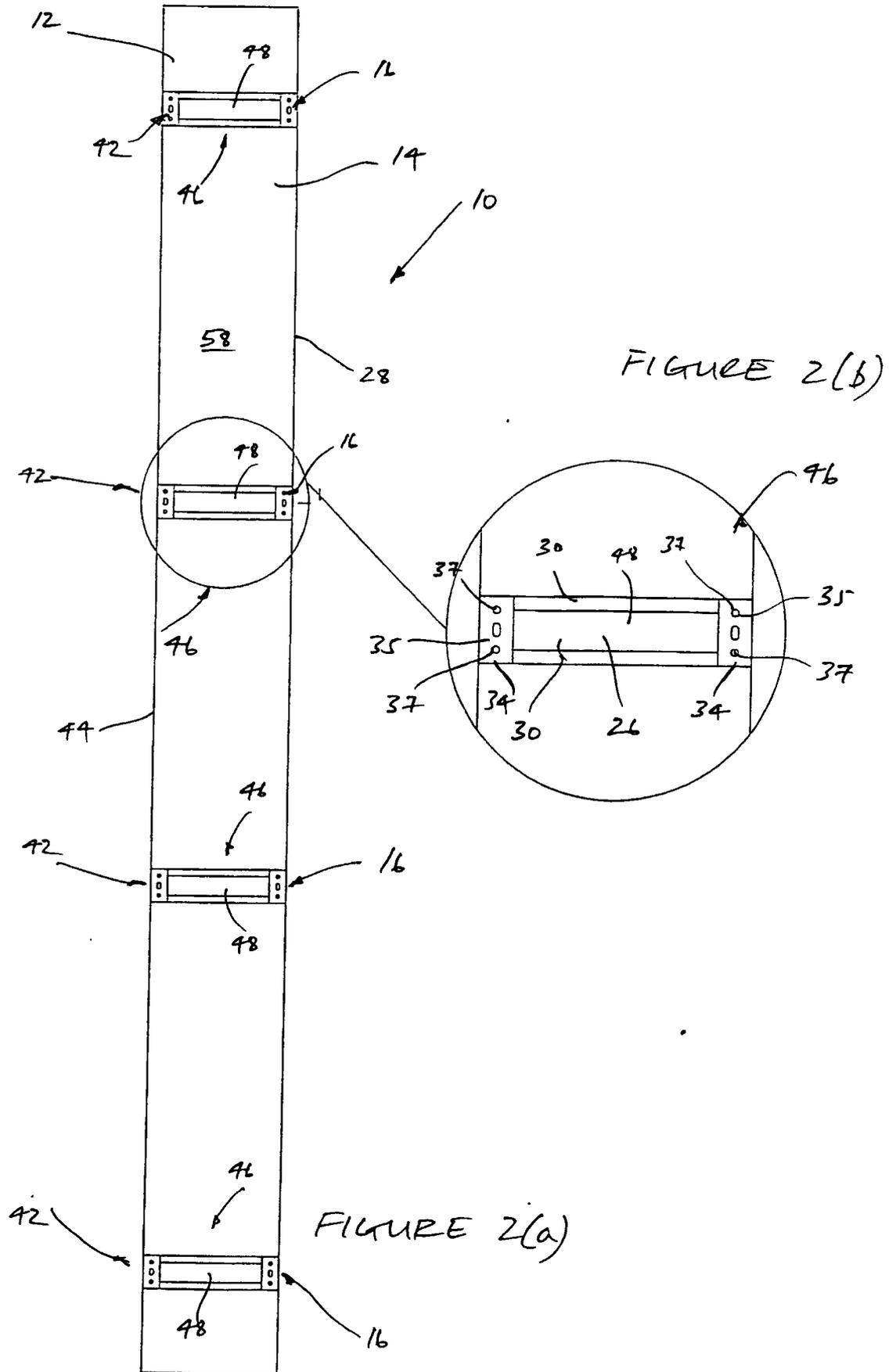


FIGURE 1



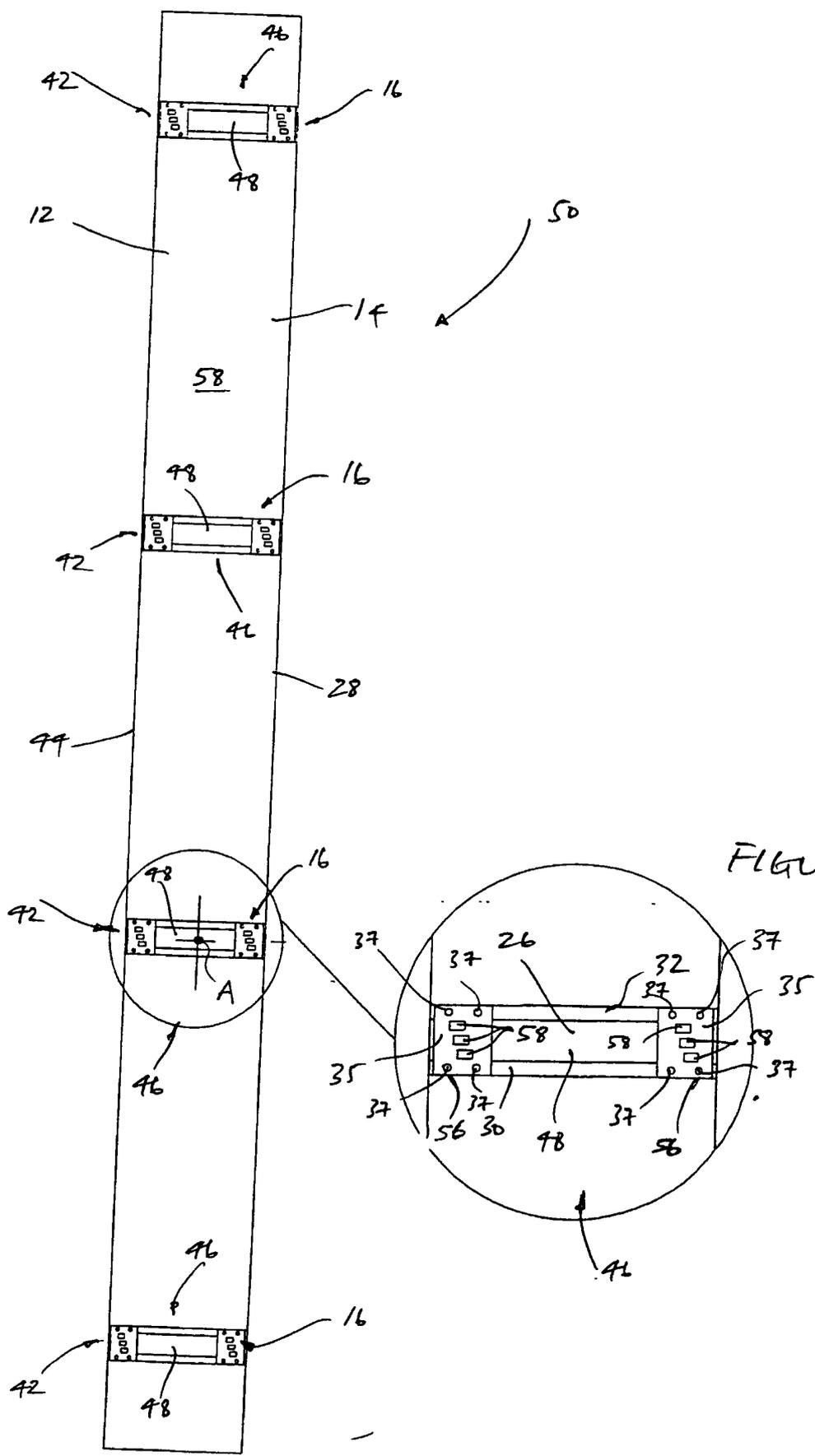


FIGURE 3(a)

FIGURE 3(b)

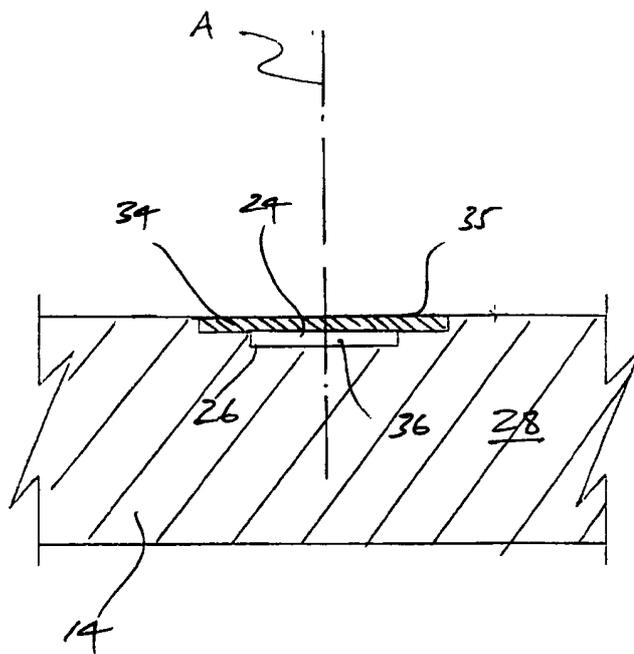


FIGURE 4

60

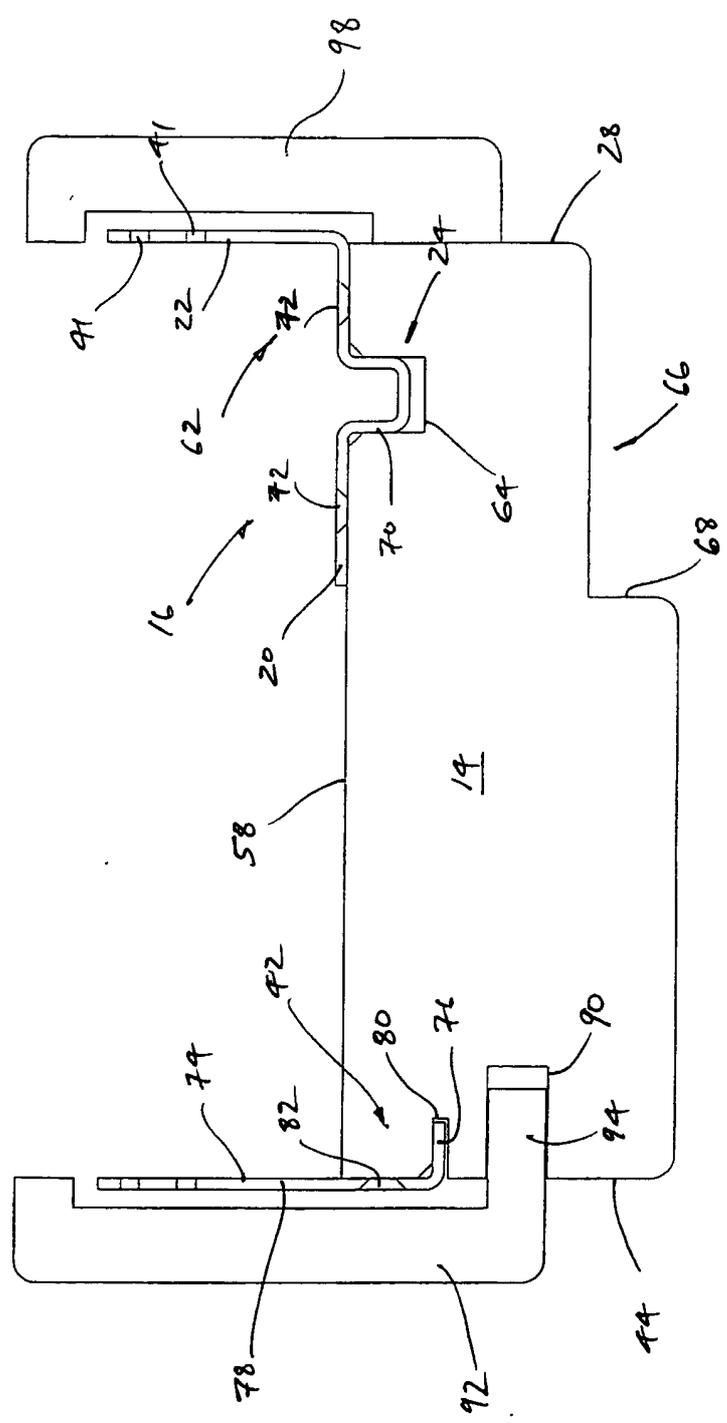


FIGURE 6

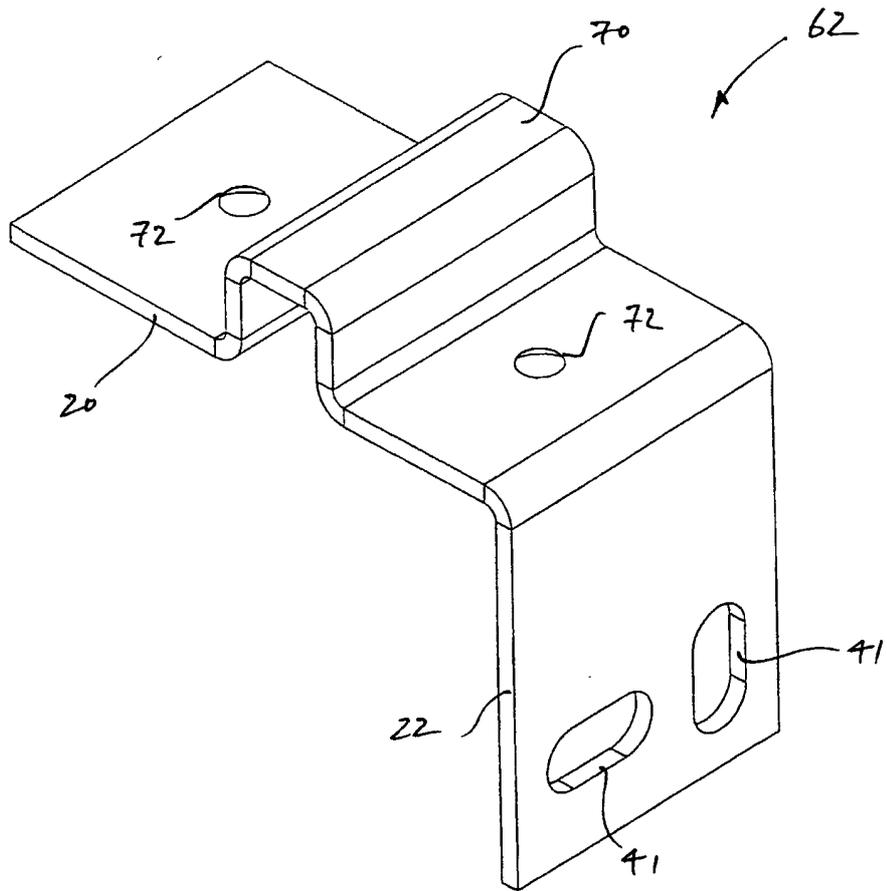


FIGURE 7

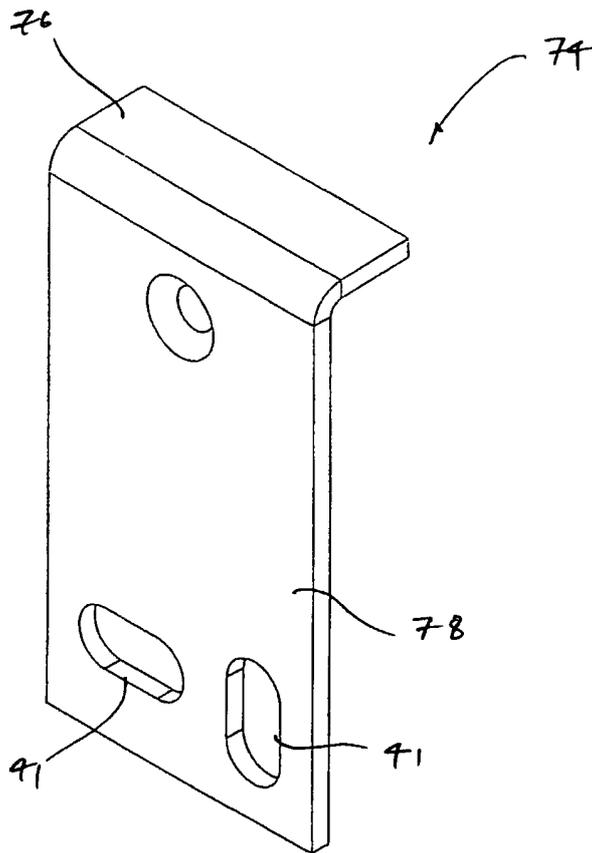
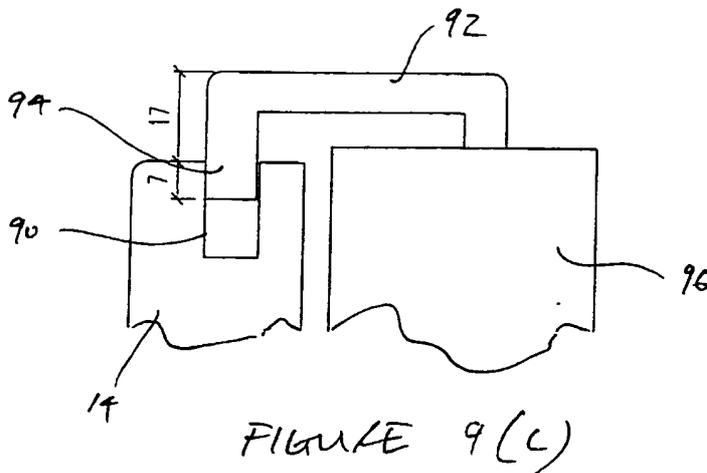
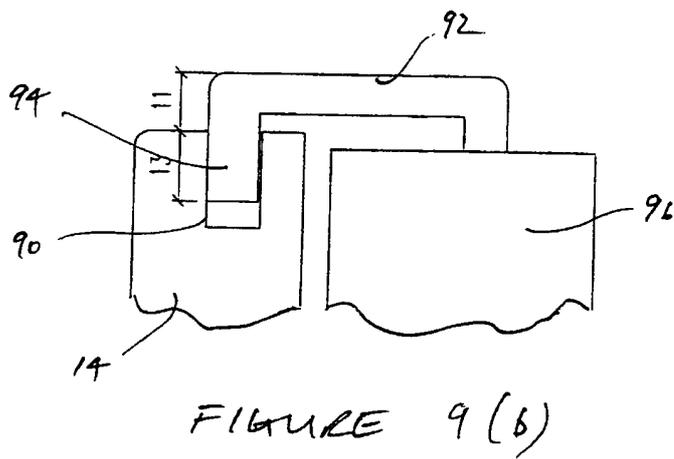
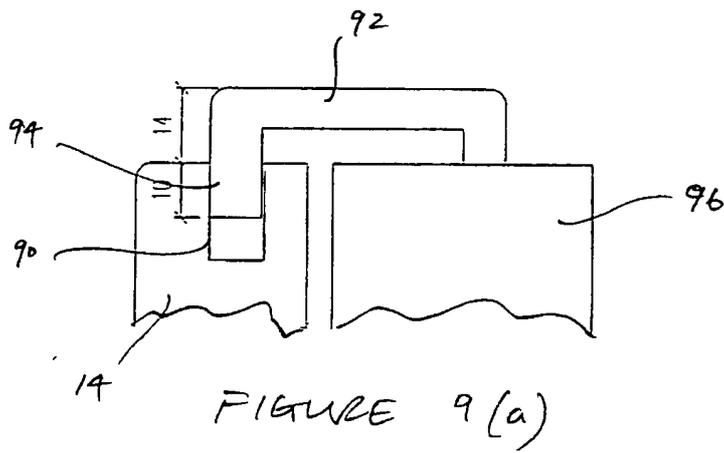


FIGURE 8



**A FRAME ASSEMBLY AND A
METHOD OF INSTALLING A FRAME ASSEMBLY**

This invention relates to a frame assembly and a method of installing a frame
5 assembly.

Installing a conventional frame in an aperture in a wall, such as a doorframe,
requires considerable skill to ensure that the frame remains plumb. Typically
fixings such as nails or screws are used to secure the frame within the aperture.
10 These fixings are usually inserted via an inner face of the frame and so remain
visible following installation. In some applications this can detract from the
aesthetic appearance of the frame. It is therefore sometimes necessary to carry out
additional finishing work to cover up or hide the fixings.

15 As a result, the process of installing a conventional doorframe, for example, can
take several hours.

GB 2 346 169 describes a rectangular frame assembly which includes four frame
members. The assembly also includes a plurality of hinged fasteners which
20 include two flanges separated by a hinge. One flange of each hinged fastener is
screwed to an outer face of a given frame member, such that the other flange can
be folded to adopt a storage position in which it lies flat against an adjacent face of
the frame member. The other flange can be temporarily secured in this position
by, e.g. a staple.

25
Once the frame assembly of GB 2 346 169 is in position within a desired aperture
in a wall, the staple is removed and the other flange moved through 180° so as to
lie against the adjacent surface of the wall. An operative is then able to secure the
other flange to the wall using a suitable fixing such as a screw. Such an
30 arrangement reduces the time and skill required to install a doorframe, for
example.

However one drawback with this arrangement is that, when in the storage position, the other flange often protrudes beyond the frame member thereby creating a snagging hazard, which could tear an operative's clothing during transportation, or cause injury.

5

In addition, because the other flange often protrudes beyond the frame member, it is vulnerable to damage during transit. This can impede subsequent installation of the frame assembly.

10 Furthermore, such an assembly is only suitable for lightweight applications and could not withstand the heavy duty cycle associated with, for example, a heavy main entrance door or a large fire door.

Therefore, there is a need for a frame assembly which an operative can readily and
15 quickly install but which obviates the disadvantages associated with conventional frame assemblies.

According to a first aspect of the invention there is provided a frame assembly, for insertion in an aperture in a wall, comprising:

20 a plurality of interconnected frame members defining a frame, at least one frame member including at least one primary fixing site; and

at least one primary bracket including first and second body portions having fixed positions relative to one another,

the or each primary fixing site and the or each first body portion including
25 mutually co-operable formations to prevent relative lateral movement between the first body portion and the corresponding frame member in at least one direction, and to align the or each first body portion and the corresponding primary fixing site, such that the or each second body portion protrudes from the frame to enable an operative to fix the frame to a wall.

30

The provision of mutually co-operable formations on the or each primary fixing site and the or each first body portion allows the or each primary bracket to remain separate from the frame until immediately prior to installation when an operative

is able to simply and quickly align a primary bracket with the or each primary fixing site to allow subsequent securing of the frame within an aperture.

5 The ability to keep the or each bracket separate from the frame allows these components to be stored and transported separately, thereby obviating the potential for snagging to occur, and reducing the likelihood of the or each bracket becoming damaged.

10 In addition, the co-operation of the respective formations to prevent relative lateral movement between the first body portion and the corresponding frame member in at least one direction, allows the frame assembly to withstand the loading imparted to it when a large, heavy door, for example, is slammed shut within it. Furthermore, such an arrangement helps to transfer the loading directly to the wall in which the frame is installed.

15

Preferably the or each primary fixing site lies in a first side of a given frame member. Such an arrangement keeps the front side of the frame member, i.e. the side which forms an inner face of the frame, free from any fixings which might otherwise detract from its appearance. It also means the, following installation, the or each primary fixing site is essentially hidden from view.

20

The or each primary fixing site may include a recess. Such a feature is readily manufacturable while providing the necessary mutually co-operable formation.

25 Optionally the or each recess includes first and second stepped portions, the second stepped portion lying within the first stepped portion, and the frame assembly further includes at least one fixing member, the or each fixing member being secured within a given first stepped portion so as to overlie the corresponding second stepped portion and define a slot.

30

The inclusion of one or more fixing members provides a degree of reinforcement to the or each primary fixing site, which further helps the frame deal with heavy duty cycles of operation.

The or each first body portion may include a plurality of barbs. The provision of a plurality of barbs allows an operative to readily secure the or each primary bracket to the corresponding primary fixing site without the need for any additional
5 fixings or specialist tools, and in a manner that inhibits subsequent removal.

In a preferred embodiment, one of the or each fixing member or the or each first body portion includes an aperture and the other of the or each fixing member and the or each first body portion includes a resiliently biased latch co-operable with
10 the aperture to inhibit removal of the first body portion from a given slot. This arrangement allows an operative to readily secure the or each primary bracket to the corresponding primary fixing site without the need for any additional fixings or specialist tools.

15 In another preferred embodiment, one of the or each fixing member or the or each first body portion includes a plurality of apertures or a plurality of resiliently biased latches, the apertures or the latches being laterally spaced from one another in a width-wise direction of the frame member. Providing a plurality of laterally spaced apertures or resiliently biased latches allows for a degree of adjustment in
20 the lateral position of the second body portion relative to the frame member in order to accommodate positioning of the frame at differing depths relative to the surface of the wall.

Preferably one of the or each fixing member and the or each first body portion
25 includes a plurality of apertures, and the other of the or each fixing member and the or each first body portion includes a plurality of latches. Such an arrangement provides an even greater degree of adjustment in the lateral position of the second body portion relative to the frame member.

30 Optionally the frame assembly further includes at least one secondary fixing site lying in a second side of a given frame member. This arrangement provides a convenient way of secure the frame to either side of a wall in which it is located.

The or each secondary fixing site may lie opposite a corresponding primary fixing site so as to define a pair of fixing sites. Such a configuration helps to minimise the regions of wall that are obstructed by a bracket.

5 In a further preferred embodiment, the primary and secondary fixing sites of each pair of fixing sites are rotationally symmetrical about an axis extending perpendicularly from a rear side of the corresponding frame member. This arrangement allows for the use of an identical primary bracket in each of the primary and second fixing sites. This simplifies the installation process and
10 obviates the need for an operative to correctly select a bracket according to whether he is fixing a primary or secondary fixing site.

Preferably the recess of the primary and secondary fixing sites of the or each pair of fixing sites extends laterally across the width of the corresponding frame
15 member so as to intersect with one another and define a single, combined recess, and the frame assembly includes at least one pair of fixing members, each fixing member being secured at a respective end of the or each combined recess. It is possible to form the combined recess in a single process step, thereby reducing the number of operations required to form a given frame member having at least one
20 pair of primary and secondary fixing sites.

Optionally the or each primary fixing site lies in a rear side of a given frame member. Such an arrangement keeps the front side of the frame member, i.e. the side which forms an inner face of the frame, free from any fixings which might
25 otherwise detract from its appearance. It also means the, following installation, the or each primary fixing site is hidden from view.

The or each primary fixing site may lie opposite a region of the given frame member which, in use, lies adjacent to a leaf pivotally connected in the frame.
30 Arranging the or each primary fixing site in this manner evenly distributes the loading applied to a given frame member when the leaf abuts thereagainst.

In another preferred embodiment, at least one frame member includes a first elongate recess extending lengthwise in the rear side thereof to define a plurality of primary fixing sites. Such a feature may be formed in a single operation when creating the cross-sectional profile of a given frame member during, for example, a machining operation. This eliminates the need for additional processing steps to form the plurality of primary fixing sites. In addition, the inclusion of a first elongate recess allows an operative to position the primary bracket relative to a given frame member as desired. This provides a degree of flexibility during installation which allows the position of the primary bracket to vary so as to avoid other services in a wall, for example.

Preferably the or each first body portion includes a protrusion having a cross-sectional shape corresponding to the cross-sectional shape of the first elongate recess such that the protrusion is securable in the first elongate recess. This arrangement prevents relative lateral movement between the first body portion and the corresponding primary fixing site without the need for additional fixtures.

The or each first body portion may further include at least one aperture. The or each aperture is able to receive a fixing such as a screw or nail to further secure the first body portion to the frame member.

Optionally the frame assembly further includes at least one secondary fixing site lying in a second side of a given frame member, and at least one secondary bracket including third and fourth body portions having fixed positions relative to one another, the or each secondary fixing site and the or each third body portion including mutually co-operable formations to align the or each third body portion and the corresponding secondary fixing site, such that the or each fourth body portion protrudes from the frame to enable an operative to fix the fourth body portion to the wall. This arrangement provides a convenient way of secure the frame to either side of a wall in which it is located.

Conveniently at least one frame member includes a second elongate recess extending lengthwise in the second side thereof to define a plurality of secondary

fixing sites. Such a feature may be formed in a single operation when creating the cross-sectional profile of a given frame member. This eliminates the need for additional processing steps to form the plurality of secondary fixing sites. In addition, the inclusion of a second elongate recess allows an operative to position
5 the secondary bracket relative to a given frame member as desired. This provides a degree of flexibility during installation which allows the position of the secondary bracket to vary so as to avoid other services in a wall, for example.

In a still further preferred embodiment, the or each third body portion includes a
10 plurality of barbs. The provision of a plurality of barbs allows an operative to readily secure the or each secondary bracket to the corresponding secondary fixing site without the need for any additional fixings or specialist tools, and in a manner that inhibits subsequent removal.

15 The or each third body portion may include at least one aperture. The or each aperture is able to receive a fixing such as a screw or nail to further secure the first body portion to the frame member.

Preferably each frame member includes an elongate slot extending lengthwise
20 along at least one side thereof, the frame assembly further including a plurality of architrave members, each architrave member including a tongue and each tongue, in use, being received in a given elongate slot such that the corresponding architrave member spans any gap between the frame member and the wall. The inclusion of corresponding elongate slots and architrave members permits the
25 covering of the interface between the frame and the wall so as to improve the aesthetic appearance of the installed frame.

According to a second aspect of the invention there is provided a method of installing a frame assembly including a plurality of interconnected frame members
30 in an aperture in a wall comprising the steps of:

(a) providing at least one frame member with at least one primary fixing site;

(b) providing at least one primary bracket including first and second body portions having fixed positions relative to one another;

(c) engaging mutually co-operable formations on the or each primary fixing site and a corresponding first body portion with one another so as to prevent relative lateral movement between the first body portion relative and the corresponding frame member in at least one direction, and to align the or each first body portion with the primary fixing site such that the or each second body portion protrudes from the frame;

(d) inserting the frame into the aperture; and

(e) fixing the or each second body portion to the wall.

The method of the invention shares the benefits of the frame assembly of the invention.

There now follows a brief description of preferred embodiments of the invention, by way of non-limiting examples, with reference being made to the accompanying drawings in which:

Figure 1 shows a perspective view of a portion of a frame assembly according to a first embodiment of the invention;

Figure 2(a) shows a rear elevational view of a frame member according to the first embodiment of the invention;

Figure 2(b) shows an enlarged view of a portion of Figure 2(a);

Figure 3(a) shows a rear elevational view of a frame member according to a second embodiment of the invention;

Figure 3(b) shows an enlarged view of a portion of Figure 3(a);

Figure 4 shows an elevational view from one side of a portion of the frame members shown in Figures 2(a), 2(b), 3(a) and 3(b);

Figures 5(a) and 5(b) show elevational views of a primary bracket according to the second embodiment of the invention;

Figure 6 shows a cross-sectional view of a frame assembly according to a third embodiment of the invention;

Figure 7 shows a primary bracket for use in the frame assembly shown in Figure 6;

Figure 8 shows a secondary bracket for use in the frame assembly shown in Figure 6; and

5 Figures 9(a) to 9(c) show an architrave member in various configurations.

A frame assembly according to a first embodiment of the invention is designated generally by the reference numeral 10. The frame assembly includes a preferably rectangular frame (not shown) which has four interconnected frame members 14
10 (only one shown).

In one arrangement a given frame member 14 includes four primary fixing sites 16.

15 The frame assembly 10 also includes primary brackets 18 which have first and second body portions 20, 22 that have fixed positions relative to one another. In the embodiments shown, the first and second body portions 20, 22 extend perpendicularly relative to one another. In other embodiments, other relative positions are also possible.

20

Each fixing site 16 and each first body portion 20 include mutually co-operable formations 24.

Each primary fixing site 16 includes a recess 26 which has a first stepped portion
25 30 and a second stepped portion 32 which lies within the first stepped portion 30.

The frame assembly 10 further includes a plurality of fixing members 34, each of which is secured within a given first stepped portion 30 so as to overlie the corresponding second stepped portion 32 and define a slot 36.

30

Respective slots 36 may also be formed directly in each frame member 14 by e.g. drilling or chiselling.

In the first frame assembly 10, each fixing member 34 includes a plate 35 which has a pair of apertures 37 for receiving a fixing, such as a screw, to secure the plate 35 to the frame member 14.

5 The first body portion 20 of each primary bracket 18 in the first embodiment frame assembly 10 includes a plurality of barbs 38 which lie along opposite sides 40 thereof.

The second body portion of each first bracket 18 includes a pair of elongate
10 apertures 42 which extend substantially perpendicularly relative to one another.

The first frame assembly 10 also includes four secondary fixing sites 42, each of which lies in a second side 44 of the given frame member 14. Each secondary fixing site 42 lies opposite a corresponding primary fixing site 16 so as to define a
15 pair of fixing sites 46.

In the embodiment shown, the primary and secondary fixing sites 16, 42 are identical. The recess 26 of the primary and secondary fixing sites 16, 42 of each pair of fixing sites 46 extends laterally across the width of the frame member 14
20 so as to intersect with one another, as shown in Figure 1. In this way, the pair of recesses 26 defines a single combined recess 48.

Identical fixing members 34 are secured at respective ends of the combined recess
25 48.

In use, fixing members 34 are secured to a rectangular frame during manufacture of the frame. The frame and separate primary brackets 18 are then transported to an installation site. An operative inserts the first body portion 20 of a first set of primary brackets 18 into the slot 36 defined by the recess 26 of each primary
30 fixing site 16, such that the second body portion 22 protrudes from the first side 28 of the frame member 14.

The barbs 38 on either side 40 of the first body portion 20 dig into the frame member 14 on either side of the recess 26, and the arrangement of the barbs 38 is such that removal of each first bracket 18 is inhibited.

5 Once an operative has secured the first set of primary brackets 18 to the primary fixing sites 16 on the first side 28 of the frame, he offers the frame into the aperture (not shown) in which it is desired to locate the frame. The operative inserts the frame into the aperture until the second body portion 22 of each primary bracket 18 lies adjacent to a surface of the wall in which the aperture lies.

10

The operative is then able to fix each second body portion 22 to the wall by securing fixings such as screws through one or more of the elongate apertures 41, and thereby fix the frame to the wall.

15 The operative may then insert the first body portion 20 of a second set of primary brackets 18 into the slot 36 of each secondary fixing site 42, such that the second body portion 22 protrudes from the second side 48 of the frame member 14 to lie adjacent to an opposite surface of the wall.

20 The operative is then able to fix the second body portion 22 of each primary bracket 18 in the second set to the wall.

A frame assembly according to a second embodiment of the invention is designated generally by the reference numeral 50. The second frame assembly 50
25 shares some features with the first frame assembly 10, and these features are designated using the same reference numerals.

The second frame assembly 50 includes a second primary bracket 52 and a second fixing member 56 which differ from those in the first frame assembly 10.

30

The first body portion 20 of each second primary bracket 52 includes three resiliently biased latches 54 which are laterally spaced from one another along the

length of the first body portion 20. Each latch 54 is stamped from the first body portion 20 and protrudes from one side thereof (not shown).

Each second fixing member 56 includes three apertures 58 which are spaced from one another in the width-wise direction of the frame member 14.

Other embodiments of the second frame assembly 50 may include different numbers and arrangements of latches and apertures.

In the embodiment shown, a given frame member 14 includes four primary fixing sites 16 and four secondary fixing sites 42 which are arranged in respective pairs. The recess 26 of each fixing site 16, 42 extends laterally across the width of the frame member 14 so as to intersect with the recess 26 of the other fixing site 16, 42 in a given pair of fixing sites 46 to define a single combined recess 48.

15

The primary and secondary fixing sites 16, 42 of each pair of fixing sites 46 are rotationally symmetrical about an axis A which extends perpendicularly from a rear side 58 of the frame member 14. This allows the use of an identical second primary bracket 52 with each of the primary and second fixing sites 16, 42, thereby simplifying the installation process and obviating the need for an operative to correctly select a bracket according to whether he is fixing a primary or secondary fixing site.

In use, the operative installs the second frame assembly 50 in the same way as the first frame assembly 10, i.e. securing a first set of second primary brackets 52 in the primary fixing sites 16, and fixing these to a wall before securing a second set of primary brackets 52 in the secondary fixing sites 42.

In each case, as an operative inserts the first body portion 20 of each second primary bracket 52 into the slot 36 defined by the recess 26 of a corresponding fixing site 16, 42 the resiliently biased latches 54 deflect to allow insertion. As a given latch 54 becomes aligned with a corresponding aperture 58 it moves away from the first body portion 20 to engage with the aperture 58 and prevent

subsequent removal. Further insertion causes this first latch 54 to deflect. In this way the operative is able to insert the first body portion 20 into the slot 36 by a desired amount and prevent subsequent withdrawal therefrom, and thereby secure a given second primary bracket 52 to the frame member 14.

5

A frame assembly according to a third embodiment of the invention is designated generally by the reference numeral 60. The third frame assembly 60 shares some features with the first and second frame assemblies 10, 50, and these features are designated using the same reference numerals.

10

The third frame assembly 60 includes a third primary bracket 62.

15

A given frame member 14 of the third frame assembly 60 includes a first elongate recess 64 extending lengthwise in the rear side 58 thereof. The first elongate recess 64 defines a plurality of primary fixing sites 16.

20

Each of the primary fixing sites 16 lies opposite a region 66 of the frame member 14 which, in-use, lies adjacent to a leaf (not shown), for example a door leaf, pivotally connected in the frame.

25

In the embodiment shown, the frame member 14 defines a single rebated frame member that includes a rebate portion 68 which, in use, receives a door leaf, and against which the door leaf abuts. Other embodiments of the invention (not shown) may include a frame member 14 which defines a split frame member being formed from two separable halves. The frame member 14 of still further embodiments of the invention may include a rebate member (not shown) which is moveable relative to the frame member 14 so as to define a moveable face against which a door leaf is able to, in use, abut.

30

The first body portion 20 of the third primary bracket 62 includes a protrusion 70 which has a cross-sectional shape that corresponds to the cross-sectional shape of the first elongate recess 64. The first body portion 20 also includes a pair of apertures 72.

The protrusion 70 may include a plurality of barbs (not shown) to assist in securing the first body portion 20 to the frame member 14.

- 5 The third frame assembly 60 also includes a secondary bracket 74 which includes third and fourth body portions 76, 78 that have fixed positions relative to one another.

10 The frame member 14 includes a second elongate recess 80 which extends lengthwise in the second side 44 thereof to define a plurality of secondary fixing sites 42.

15 Each secondary fixing site 42 and the third body portion 76 of each secondary bracket 74 include mutually co-operable formations 24 which align the third body portion 76 with the secondary fixing site 42, such that the fourth body portion 78 protrudes from the frame.

20 The third body portion 76 may also include a plurality of barbs (not shown) which assist in retaining the third body portion 76 in the second elongate recess 80 so as to secure the third body portion 76 to the frame member 14.

25 The fourth body portion 80 includes an aperture 82, in addition to a pair of elongate apertures 42 which extend substantially perpendicularly relative to one another.

In use, the first and second elongate recesses 64, 80 are formed during manufacture of the frame. The frame, separate third primary brackets 62, and separate secondary brackets 74 are then transported to an installation site.

30 An operative inserts the protrusion 70 of the first body portion 20 of a desired number of third primary brackets 62 into the first elongate recess 64, positioning each third primary bracket 62 along the first elongate recess 64, as desired. Each

protrusion 70 is inserted such that the second body portion 22 protrudes from the first side 28 of the frame member 14.

In one embodiment of the third frame assembly 60 the fit between the protrusion
5 70 and the first elongate recess 64 is such that no further securing of the third primary bracket 62 to the frame member 14 is necessary.

Alternatively, a fixing such as a screw may be secured through each aperture 72 to provide a desired degree of security.

10

Once an operative has secured the third primary brackets 62 to the primary fixing sites 16 within the first elongate recess 64, he offers the frame into the aperture (not shown) in which it is desired to locate the frame. The operative inserts the frame into the aperture until the second body portion 22 of each third primary
15 bracket 62 lies adjacent to a surface of the wall in which the aperture lies.

The operative is then able to fix each second body portion 22 to the wall by securing fixings such as screws through one or more of the elongate apertures 41, and thereby fix the frame to the wall.

20

The operative may then insert the third body portion 76 of a desired number of secondary brackets 74 into the second elongate recess 80, such that the fourth body portion 78 protrudes from the second side 48 of the frame member 14 to lie adjacent to an opposite surface of the wall.

25

Optionally a fixture such as a screw may be secured through the aperture 82 the fourth body portion 78 of each secondary bracket 74 in order to secure the secondary bracket 74 to the frame member 14.

30 The operative is then able to fix the fourth body portion 78 of each secondary bracket 74 to the wall by securing a fixing such as a screw through one or more of the elongate apertures 41, and thereby fix the frame to the wall.

Any of the frame assemblies 10, 50, 60 described above may include frame members 14 which include at least one elongate slot 90 extending lengthwise therealong, and a corresponding architrave member 92 which includes a tongue 94.

5

In use, the tongue 94 of each architrave member 92 is received in the elongate slot 90 of a corresponding frame member 14. In this way the architrave member 72 spans between the frame member 14 and a wall 76, as shown in Figure 6 and Figures 9(a) to 9(c), in order to cover any gap between the frame member 14 and the wall, and to hide any primary or secondary brackets 18, 52, 62, 74.

The length of the tongue 94 may be chosen so as to accommodate various arrangements of the frame member 14 relative to the wall 96, i.e. the frame member 14 and the wall 96 being co-planar, as shown in Figure 9(a); the frame member 14 protruding beyond the wall 96, as shown in Figure 9(b); and the frame member 14 being recessed from the wall 96, as shown in Figure 9(c).

The frame assemblies 10, 50, 60 may further include a second architrave member 98, as shown in Figure 6. The second architrave member 98 omits an elongate tongue since it is arranged to be secured directly to the first side 28 of a frame member 14, so as to overlie one or more primary brackets 18, 52, 62 and cover any gap between the frame member 14 and the wall. Typically an operative secures the second architrave member 98 to the first side 28 of the frame member 14 using fasteners such as screws or nails.

25

CLAIMS:

1. A frame assembly, for insertion in an aperture in a wall, comprising:
a plurality of interconnected frame members defining a frame, at least one
5 frame member including at least one primary fixing site; and
at least one primary bracket including first and second body portions
having fixed positions relative to one another,
the or each primary fixing site and the or each first body portion including
mutually co-operable formations to prevent relative lateral movement between the
10 first body portion and the corresponding frame member in at least one direction,
and to align the or each first body portion and the corresponding primary fixing
site, such that the or each second body portion protrudes from the frame to enable
an operative to fix the frame to a wall.
- 15 2. A frame assembly according to Claim 1 wherein the or each primary fixing
site lies in a first side of a given frame member.
3. A frame assembly according to Claim 2 wherein the or each primary fixing
site includes a recess.
- 20 4. A frame assembly according to Claim 3 wherein the or each recess
includes first and second stepped portions, the second stepped portion lying within
the first stepped portion, and the frame assembly further includes at least one
fixing member, the or each fixing member being secured within a given first
25 stepped portion so as to overlie the corresponding second stepped portion and
define a slot.
5. A frame assembly according to any preceding claim wherein the or each
first body portion includes a plurality of barbs.
- 30 6. A frame assembly according to Claim 4 wherein one of the or each fixing
member or the or each first body portion includes an aperture and the other of the
or each fixing member and the or each first body portion includes a resiliently

biased latch co-operable with the aperture to inhibit removal of the first body portion from a given slot.

7. A frame assembly according to Claim 6 wherein one of the or each fixing member or the or each first body portion includes a plurality of apertures or a plurality of resiliently biased latches, the apertures or the latches being laterally spaced from one another in a width-wise direction of the frame member.

8. A frame assembly according to Claim 7 wherein one of the or each fixing member and the or each first body portion includes a plurality of apertures, and the other of the or each fixing member and the or each first body portion includes a plurality of latches.

9. A frame assembly according to any preceding claim further including at least one secondary fixing site lying in a second side of a given frame member.

10. A frame assembly according to Claim 9 wherein the or each secondary fixing site lies opposite a corresponding primary fixing site so as to define a pair of fixing sites.

11. A frame assembly according to Claim 9 or Claim 10 wherein the primary and secondary fixing sites of each pair of fixing sites are rotationally symmetrical about an axis extending perpendicularly from a rear side of the corresponding frame member.

12. A frame assembly according to Claim 11 wherein the recess of the primary and secondary fixing sites of the or each pair of fixing sites extends laterally across the width of the corresponding frame member so as to intersect with one another and define a single, combined recess, and the frame assembly includes at least one pair of fixing members, each fixing member being secured at a respective end of the or each combined recess.

13. A frame assembly according to Claim 1 wherein the or each primary fixing site lies in a rear side of a given frame member.
14. A frame assembly according to Claim 13 wherein the or each primary fixing site lies opposite a region of the given frame member which, in use, lies adjacent to a leaf pivotally connected in the frame.
15. A frame assembly according to Claim 13 of Claim 14 wherein at least one frame member includes a first elongate recess extending lengthwise in the rear side thereof to define a plurality of primary fixing sites.
16. A frame assembly according to Claim 15 wherein the or each first body portion includes a protrusion having a cross-sectional shape corresponding to the cross-sectional shape of the first elongate recess such that the protrusion is securable in the first elongate recess.
17. A frame assembly according to Claim 16 wherein the or each first body portion further includes at least one aperture.
18. A frame assembly according to any of Claims 13 to 17 further including at least one secondary fixing site lying in a second side of a given frame member, and at least one secondary bracket including third and fourth body portions having fixed positions relative to one another, the or each secondary fixing site and the or each third body portion including mutually co-operable formations to align the or each third body portion and the corresponding secondary fixing site, such that the or each fourth body portion protrudes from the frame to enable an operative to fix the fourth body portion to the wall.
19. A frame assembly according to Claim 18 wherein at least one frame member includes a second elongate recess extending lengthwise in the second side thereof to define a plurality of secondary fixing sites.

20. A frame assembly according to Claim 18 or Claim 19 wherein the or each third body portion includes a plurality of barbs.

21. A frame assembly according to any of Claims 18 to 20 wherein the or each
5 third body portion includes at least one aperture.

22. A frame assembly according to any preceding claim wherein each frame member includes an elongate slot extending lengthwise along at least one side thereof, the frame assembly further including a plurality of architrave members,
10 each architrave member including a tongue and each tongue, in use, being received in a given elongate slot such that the corresponding architrave member spans any gap between the frame member and the wall.

23. A method of installing a frame assembly including a plurality of
15 interconnected frame members in an aperture in a wall comprising the steps of:

(a) providing at least one frame member with at least one primary fixing site;

(b) providing at least one primary bracket including first and second body portions having fixed positions relative to one another;

20 (c) engaging mutually co-operable formations on the or each primary fixing site and a corresponding first body portion with one another so as to prevent relative lateral movement between the first body portion relative and the corresponding frame member in at least one direction, and to align the or each first body portion with the primary fixing site such that the or each second body
25 portion protrudes from the frame;

(d) inserting the frame into the aperture; and

(e) fixing the or each second body portion to the wall.

24. A frame assembly generally as herein described with reference to and/or
30 illustrated in the accompanying figures.

25. A method of installing a frame assembly generally as herein described with reference to and/or illustrated in the accompanying figures.



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Application No: GB0616805.8

Examiner: Mr Nick Smith

Claims searched: 1-25

Date of search: 21 December 2006

Patents Act 1977: Search Report under Section 17

Documents considered to be relevant:

Category	Relevant to claims	Identity of document and passage or figure of particular relevance
X,Y	X: 1-4, 9-11, 13, 14, 23; Y: 6, 22	US 2006/0048466 A1 (DARNELL) See in particular Figs. 3 & 7 and cols. [0016], [0017] & [0021]
X,Y	X: 1-3, 5, 13-17, 23; Y: 22	GB 2394995 A (MDF) See in particular Figs. 5-8
X,Y	X: 1-3, 5, 13-17, 23; Y: 22	WO 88/04348 A1 (KANN) 16.06.88 (See Figs. and WPI Abstract Accession No. 1988-175490/25)
X,Y	X: 1-3, 13-26, 23; Y: 22	FR 2682150 A1 (MC) 09.04.93 (See Fig. 1 and WPI Abstract Accession No. 1993-215875/27)
X,Y	X: 1-3, 13, 14, 23; Y: 6, 22	WO 97/29267 A1 (HOWLETT) See in particular Figs. 1-4 and page 5, lines 3-17
Y	22	US 5974745 A1 (BARR) See in particular Fig. 2 and col. 2, lines 46-61

Categories:

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

Field of Search:

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

EIJ

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

E06B

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

EPODOC, WPI