



Ottawa, Canada
K1A 0C9

(11)	(C)	2,002,674
(22)		1989/11/08
(43)		1991/05/08
(45)		1993/03/02
(52)		20-24

5,078,5/63

(51) INTL.CL.⁵ E04B-2/00

(19) (CA) **CANADIAN PATENT** (12)

(54) Sandwich Panel Unit for Use in a Partition Wall

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(57) 22 Claims

Canada

CCA 3254 (10-89) 41

1 "SANDWICH PANEL UNIT FOR USE IN A PARTITION WALL"

2 ABSTRACT OF THE DISCLOSURE

3 A sandwich panel unit is provided comprising gypsum
4 board panels suspended from cross-members of a rectangular
5 frame. The panels are latched to the frame by suitable
6 brackets. The sandwich panel unit can be de-mounted and re-
7 located as a cohesive unitary assembly. It can also be
8 disassembled and re-located in pieces.

FIELD OF THE INVENTION

1
2 This invention relates to a sandwich panel unit for
3 use in a partition wall and to a wall assembly incorporating
4 a plurality of such sandwich panel units.

BACKGROUND OF THE INVENTION

5
6 In modern office buildings, the space is commonly
7 sub-divided by removable partition walls.

8 As stated, these walls are not permanent in nature.
9 From time to time, the wall assembly may be removed totally
10 or disassembled and re-located in a new position.

11 So the ease or simplicity with which a removable
12 partition wall may be erected or disassembled is an important
13 feature of the wall. If the wall is easy to install and re-
14 locate, then the degree of skill required of the installation
15 workers becomes less and the man-hours required to install
16 the wall diminishes.

17 In disassembling the wall, some of the components
18 making up the wall may be damaged, with the result that they
19 must be replaced if the wall is to be re-assembled. These
20 walls commonly have gypsum board panels as a major component.
21 Gypsum board is a relatively delicate material that can be
22 easily damaged when being separated from other components.

23 As stated, the wall typically incorporates side-by-
24 side, vertically extending gypsum board panels. These panels
25 have "joints" where the side edge of a panel comes close to
26 or abuts the next element in the wall. These joints in some
27 known wall systems are unsightly because of gaps left between
28 the elements and/or jointing hardware and it is common to



1 mask them with protruding battens. In recent years, wall
2 systems have been developed which are adapted to permit of
3 the wall elements being drawn close together to create a
4 "pencil-line joint", thereby eliminating the need for a
5 protruding batten. The resulting appearance of the segmented
6 wall is described in the trade as being "monolithic".

7 In summary then, it would be desirable to provide a
8 removable partition wall system which has the following
9 characteristics:

- 10 - That it can quickly be assembled and
11 disassembled;
- 12 - That it lends itself to assembly and
13 disassembly by relatively unskilled workers;
- 14 - That the gypsum board panels can be
15 disassembled with little damage; and
- 16 - That it has pencil-line joints and a
17 monolithic appearance.

18 These desirable characteristics of a partition wall
19 system will be better appreciated by shortly describing some
20 of the prior art commercial systems currently being used and
21 identifying their shortcomings in these respects.

22 One prior art system involves providing a frame of
23 laterally spaced, vertical channel studs extending between
24 ceiling and floor channels or "tracks". Gypsum board panels
25 are secured to the two sides of the studs by screws or
26 adhesive. This involves fitting and levelling difficulties
27 which, in turn, requires the use of skilled workers. In
28 addition, there are usually vertical gaps left between the
29 side edges of adjacent gypsum board panels. As a result,

1 protruding battens must be used with the system. If the gypsum
2 board panels are removed, they commonly must be discarded, due
3 to damage incurred when detaching them from the studs.

4 Another prior art wall system incorporates what are
5 referred to in the trade as sandwich panels. Each such sandwich
6 panel comprises a pair of steel or gypsum board facing panels
7 secured by adhesive to a central lightweight core of material
8 such as paper honeycomb or foam plastic. When the components are
9 so secured, the assembly provides a discrete integral and rigid
10 unit. The sandwich panels are normally assembled in a factory
11 and shipped to the work site. Here they are inserted between
12 floor and ceiling channels. They are secured together and
13 maintained in alignment by suitable clamping brackets. Some
14 undesirable features of this system are:

- 15 - That the sandwich panels have to be assembled in
16 a factory and shipped in the assembled state.
17 They are heavy and unwieldy and consequently easy
18 to damage. The entire unit must be discarded if
19 it is damaged;
- 20 - The unit, being heavy, typically requires the
21 services of at least two workers when being
22 handled;
- 23 - Due to the use of adhesive to unite the core and
24 panels, the components cannot be disassembled in
25 order to accommodate future changes to wiring or
26 other services normally buried in the wall cavity;
27 and

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