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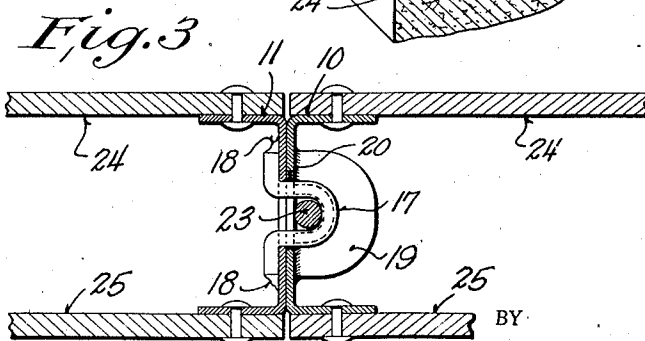
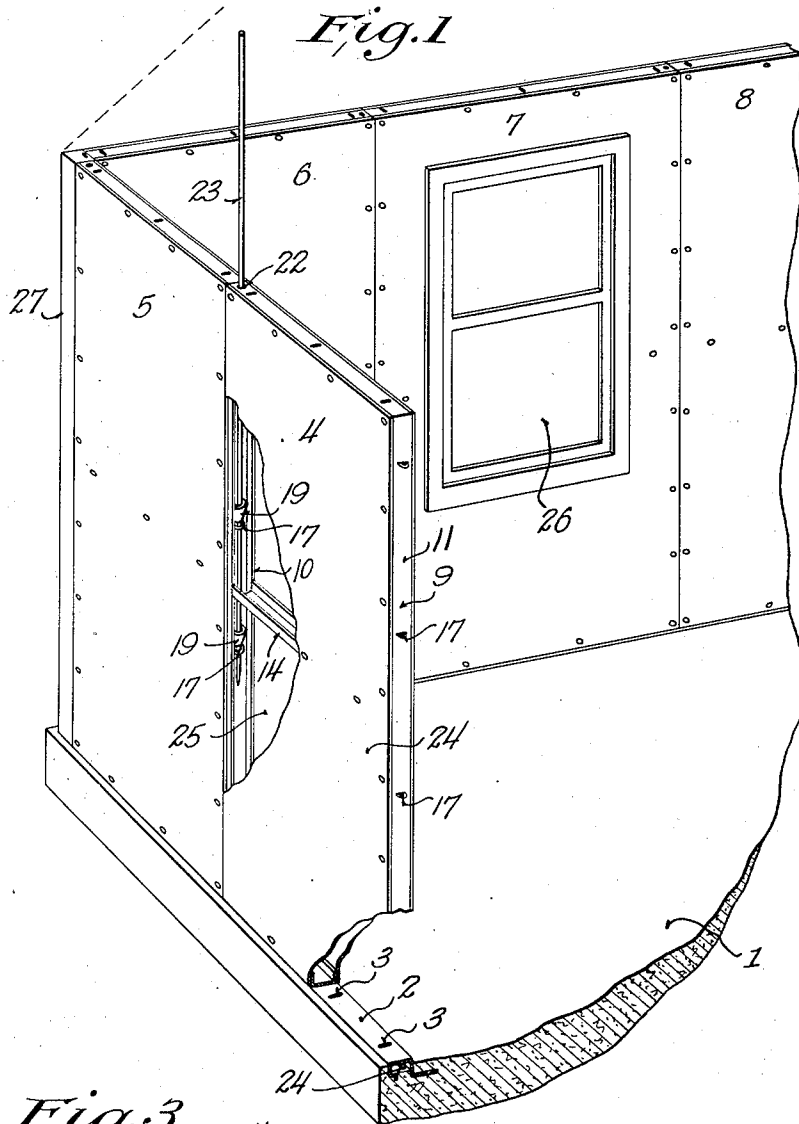
J. H. BATES

2,104,550

PANEL FASTENER

Filed April 12, 1937

2 Sheets-Sheet 1



INVENTOR.

Jesse H. Bates
John H. Bates
ATTORNEY.

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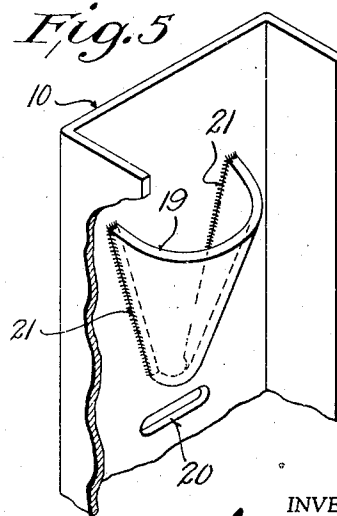
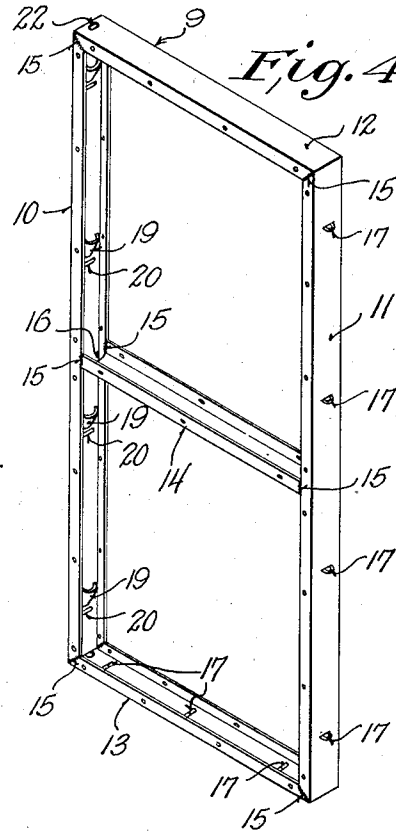
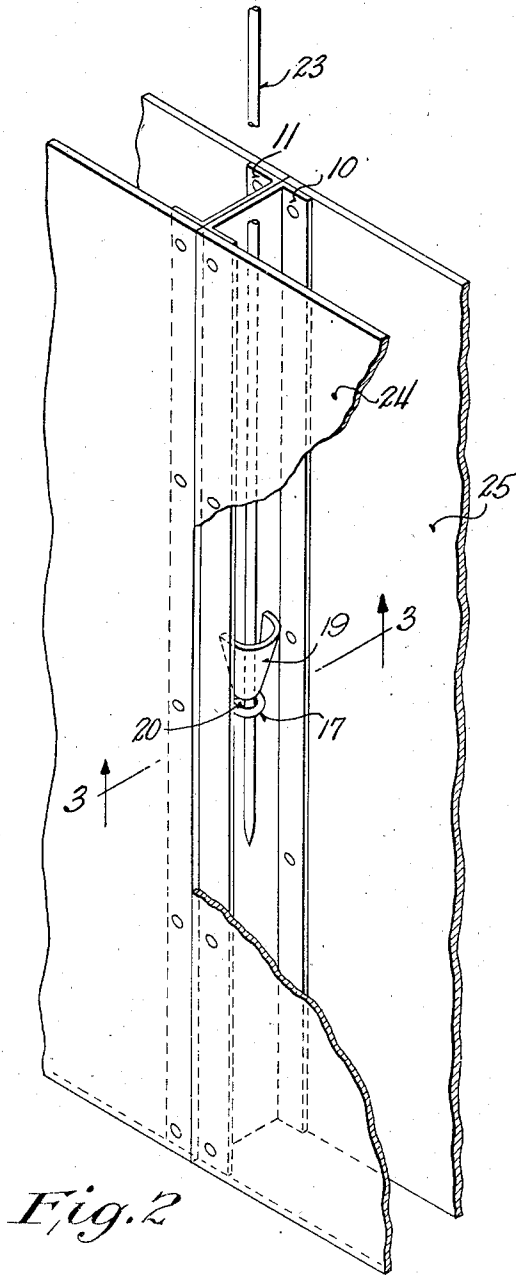
J. H. BATES

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PANEL FASTENER

Filed April 12, 1937

2 Sheets-Sheet 2



BY

INVENTOR.

Jose H. Bates
Louis J. Luard
ATTORNEY.

UNITED STATES PATENT OFFICE

2,104,550

PANEL FASTENER

Jesse H. Bates, Wauwatosa, Wis., assignor to
Harnischfeger Corporation, Milwaukee, Wis., a
corporation of Wisconsin

Application April 12, 1937, Serial No. 136,428

5 Claims. (Cl. 189—34)

This invention has to do with means for fasten-
ing panels suitable for use as the walls of dwell-
ings or other enclosures. Invention resides spe-
cifically in a form or panel structure and lock-
ing means in which the panel is formed of two
face-to-face sheets of building material with an
air space, or insulating space, therebetween. A
skeleton framework for holding said sheet mat-
erial in spaced relation forms an outer margin
extending around the periphery of said panel.
The locking means for joining similar panels
edge-to-edge consists of members which project
from the margin of one panel through register-
ing apertures in the margin of the skeleton frame
of an adjacent panel and a rod inserted through
an appropriate opening in the skeleton frame-
work of the panel through which said members
project, the rod being positively and securely
guided through said projecting members by fun-
nel guides secured to the interior surfaces of
the skeleton frame of the panel into which said
rod is inserted. In this way the panels are se-
curely locked together by a means which is
enclosed, protected from the weather, and ob-
scured from sight.

Many forms of sectional or prefabricated types
of dwellings and enclosures have been proposed
and used. In all of these the main purpose to
be accomplished is that of fabricating wall sec-
tions in as large units as may be conveniently
handled and erected. This requirement imme-
diately gives rise to problems of joining the wall
faces to one another and to other parts of the
building in as effective, expeditious, and well
appearing manner possible. In none of the meth-
ods proposed or in use, however, have all the
requirements been met. In many of the easily
assembled forms the joining of one wall sec-
tion to another is accomplished by sliding means
which hold the edges of the section close to one
another effectively, but which do not effectively
lock the panels against edgewise movement. In
other methods of assembly employed, although
an effective locking together of the panels is
secured, it is necessary to have access to the
interior of the panels to effect the joining of the
members. Such an operation has been ineffec-
tive and expensive and frequently gives rise to
a construction which is not acceptable from the
standpoint of appearance. In contrast to this,
the construction of the present invention per-
mits the assembling of one portion of the en-
closure with another in such a way that the
parts are securely locked against movement both
lengthwise and endwise and at the same time

the assembly is accomplished without access to
the interior of the panel. This and other ad-
vantages of the construction of this invention
will appear as the description proceeds.

The invention is best described by reference
to the accompanying drawings in which—

Fig. 1 shows an enclosure in process of erec-
tion, employing panels constructed in accordance
with this invention, the panels being shown in
perspective with portions broken away;

Fig. 2 is a detail view in perspective, showing
a portion of two adjacent panels being locked
together, portions being broken away;

Fig. 3 is a sectional view taken at the plane
3—3 of Fig. 2;

Fig. 4 is a perspective view of a skeleton frame
of a panel of this invention; and

Fig. 5 is a perspective view, in detail, of the
guiding funnel.

Referring to Fig. 1, the numeral 1 designates
a simple pad foundation formed of poured con-
crete, or the like. If desired, around the entire
periphery of this foundation there may be cast
in place in the concrete a channel member 2,
of the shape shown, having apertures 3 along
its upper surface. Beneath the channel 2 and
secured thereto and adjacent to the apertures
3 are funnel guides, not shown but which will
be described in detail in connection with other
parts of the structure.

Rising vertically from the channel 2 are panels
4, 5, 6, 7, and 8. These panels, of the flat box
type, are similar in general structure and are
formed upon a skeleton framework 9, such as
is shown in detail in Fig. 4 where the frame-
work is shown free of the sheet-covering mat-
erial. Referring now to Fig. 4, the skeleton frame-
work 9 is seen to be composed of a pair of up-
right channels 10 and 11, joined at their upper
ends by the top channel 12 and at their lower
ends by the lower channel 13. Additional brac-
ing 14 may be employed, as shown. The chan-
nels 10, 11, 12, 13, and 14 may be formed from
bent plates and welded at the corners as indi-
cated by the welds 15. The bracing 14 is pro-
vided with an opening at its left-hand end 16
for purposes which will be described later.

Projecting from the surface of the channel
11 are a series of staples 17 located in predeter-
mined location. The staples 17 are firmly joined
to the channel 11 by passing the same through
a slot, as shown clearly in Fig. 3, and additionally
by welding the ends of the staple to the inside
of channel 11, as shown by the weld 18. Re-
turning now to Fig. 4, it will be noted that a

plurality of funnel-shaped guiding members 19 are secured to the inner face of the channel 10. Positioned directly below these funnel guides 19 are apertures 20. The aperture 20 is in the form of a slot of sufficient size to admit the end of a staple 17, as shown more clearly in Fig. 3. Shown in detail in Fig. 5 is the manner in which the funnel guide 19 is held in place against the inside face of the channel 10 by means of welds 21, as well as the relationship of the slot 20 to the funnel guide 19. Again referring to Fig. 4, it will be noted that directly above the funnel guide 19 and in the top channel 12 an aperture 22 is provided. Furthermore, projecting downwardly from the lower channel 13, are staples 17, similar in all respects to staples 17 described in connection with the side channel 11.

Returning now to Fig. 1, the panel 4 is shown being locked in position. It has been placed upon the channel 2 with the staples 17 protruding downwardly into apertures 3 thereof. At the same time staples 17, rigidly secured to the right-hand side channel of panel 5, protrude through channel 10. A rod 23 is shown being driven into place, passing through the aperture 22 and extending downwardly until its point appears in the broken portion in panel 4, at which point it is shown just having passed through funnel guides 19 and staples 17. It will be noted that each side of the skeleton frame 9 is faced with sheet material 24 and 25. The sheet material 24 may be durable, weatherproof, outside wall-board and the sheet material 25 may be a wall-board appropriate for interior uses. Although the sheet material fastened firmly in place upon the skeleton frame 9 precludes access to the interior for the purpose of fastening one panel to the other, a complete and satisfactory locking of the panels is secured. If desired, the space between the outside and the inside wall-board may be packed with suitable heat-insulating material.

The manner in which the rod 23 passes through the funnel guides 19 and engages staples 17 to secure the panels together is shown in greater detail in Figs. 2 and 3. In Fig. 2 the rod 23 is shown having passed through a funnel guide 19 and a staple 17. The staple 17 is shown protruding through slot 20 from an adjacent panel. In Fig. 3 the left-hand upright channel 10 and the right-hand upright channel 11 of an adjacent panel are shown face-to-face with the staple 17 protruding through the opening 20 in the channel 10. The rod 23 is shown engaging the staple 17 and it is to be noted that the diameter of the rod 23 and the dimensions of the staple 17 are so proportioned that the rod 23 in passing through staple 17 presses against the same to insure a positive pulling together of the panels 10 and 11.

Returning now to Fig. 1, it will be noted that a series of panels, as pointed out previously, are in place. The lower ends of the panels may be held securely to the channel 2 by a rod 24 passed endwise horizontally through the channel 2 engaging staples 17 projecting downwardly from the upright channel. Although not shown, funnel guides 19 may be secured to the interior of the channel 2 in the same manner as shown in Fig. 2. At the corner of the dwelling may be placed a corner post 27, which may be provided with appropriate channels, slots, and staples, together with appropriate guide funnels so that panels may be joined thereto to form a secure and satisfactory juncture at the corner. If desired, the corner post 27 may be provided with staples only, the same facing in both directions, in which case

panels 5 and 6 adjacent thereto may be appropriately constructed to be joined thereto. As shown, provision of an opening 26 may be made, as in panel 7, or a panel adapted for any special purpose desired may be provided. A suitable roof, or covering, as indicated by the dotted lines in Fig. 1, may be put in place in any manner desired.

The structure as above described provides a method of erecting and fastening building units in which the locking or fastening means are entirely enclosed and in which it is unnecessary to gain access to the interior of the unit to obtain desired locking or fastening. The fastening is accomplished by passing a rod into the interior of the unit, said rod engaging members which project through openings from adjacent units. In addition, the engagement of the rod with the projecting element is insured by guiding members.

While a specific form of the structure of this invention has been shown and described, it is intended that the protection to be granted hereon be not unnecessarily restricted thereby, but shall extend to the full scope of the invention as represented by the scope of the claims appended hereto.

That which I claim as my invention and wish to secure by Letters Patent is as follows:

1. In a building unit, the combination comprising a skeleton frame, sheet material covering the faces of said frame to form a flat box panel, staples projecting from a portion of the margin of said skeleton frame at predetermined locations, apertures in a portion of the margin of said skeleton frame spaced at predetermined locations for the purpose of admitting staples of an adjacent building unit, an opening for admitting a locking rod in alignment with said apertures, funnel guides secured to the interior of said skeleton frame adjacent said apertures and disposed on the side thereof nearest said opening for admission of said locking rod for the purpose of insuring the entrance of said locking rod into the loop of the staples of an adjacent building unit.

2. A joint for joining adjacent flat box panel units comprising a panel having projecting members along the margin thereof, a second panel having apertures registerable with said projecting members and accommodating the same therein, guiding means within said second panel in alignment with said apertures, an opening in the margin of said second panel for admission of a locking rod, and a locking rod introducible through said opening and passing through said guiding means and engaging said protruding members in the interior of said second panel.

3. A joint for joining adjacent building units comprising a unit having projecting members along the margin thereof, a second hollow unit having apertures registerable with said projecting members and accommodating the same therein, guiding means within said second hollow unit in alignment with said apertures, an opening in the margin of said second hollow unit for admission of a locking rod, and a locking rod introducible through said opening and passing through said guiding means and engaging said protruding members in the interior of said second hollow member.

4. A joint for joining adjacent building units comprising a unit having projecting staples along the margin thereof, a second hollow unit having slots registerable with said projecting staples and accommodating the same therein, funnel guides secured to the interior of said second hollow

unit in alignment with said slots, an opening in the margin of said second hollow member for admission of a locking rod, and a locking rod introdu-
5 cible through said opening and passing through said funnel guides and engaging said staple in the interior of said hollow member.

5. A joint for joining adjacent flat box panel units comprising a panel having projecting staples along the margin thereof, a second panel having
10 slots registerable with said staples and accom-

modating the same therein, funnel guides secured within said second panel in alignment with said slots, an opening in the margin of said second panel for admission of a locking rod, and a
locking rod introducible through said opening
5 and passing through said funnel guides and engaging said staples in the interior of said second panel.

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