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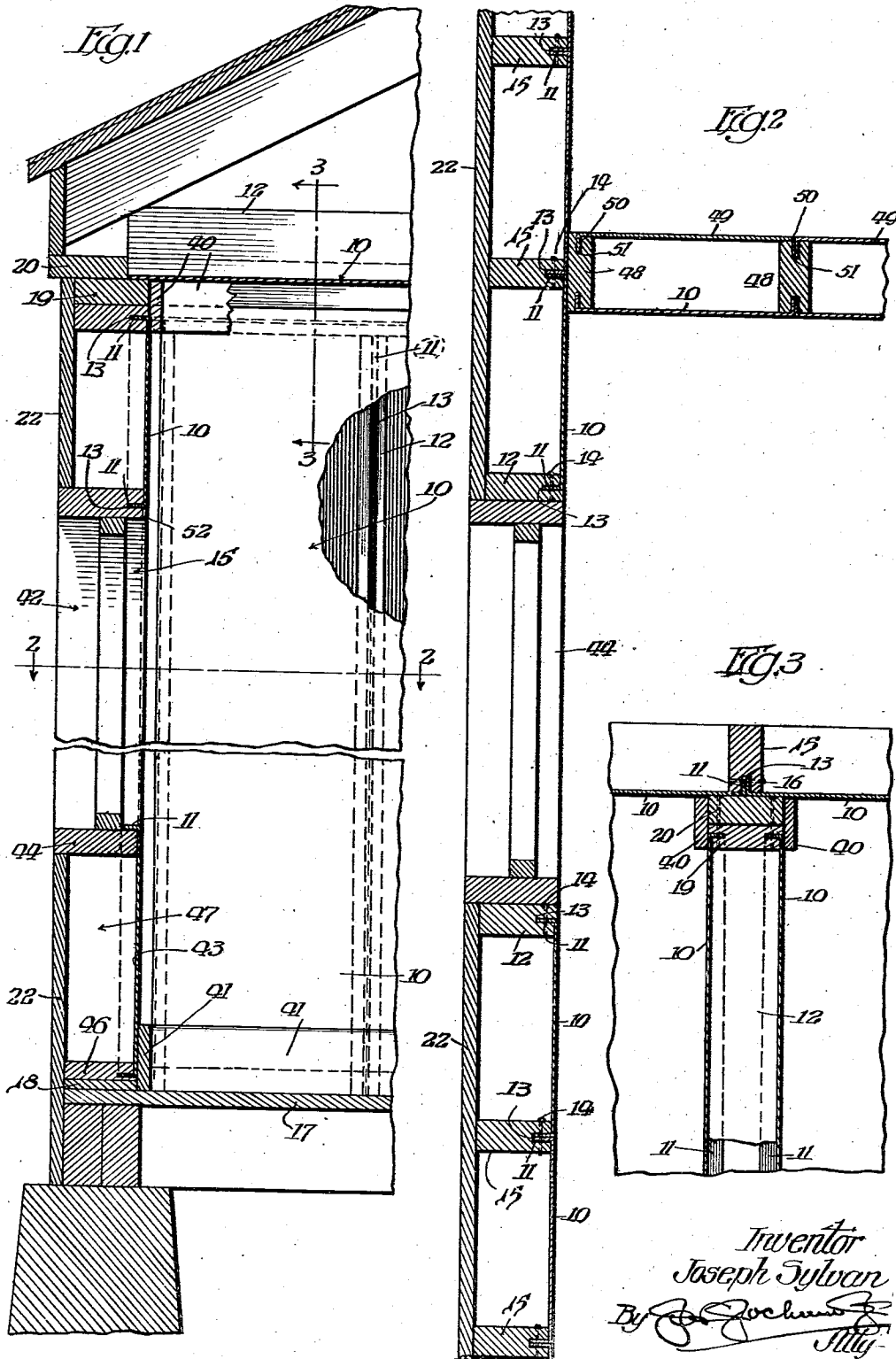
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PANEL CONSTRUCTION FOR BUILDINGS

Filed Jan. 14, 1939

2 Sheets-Sheet 1



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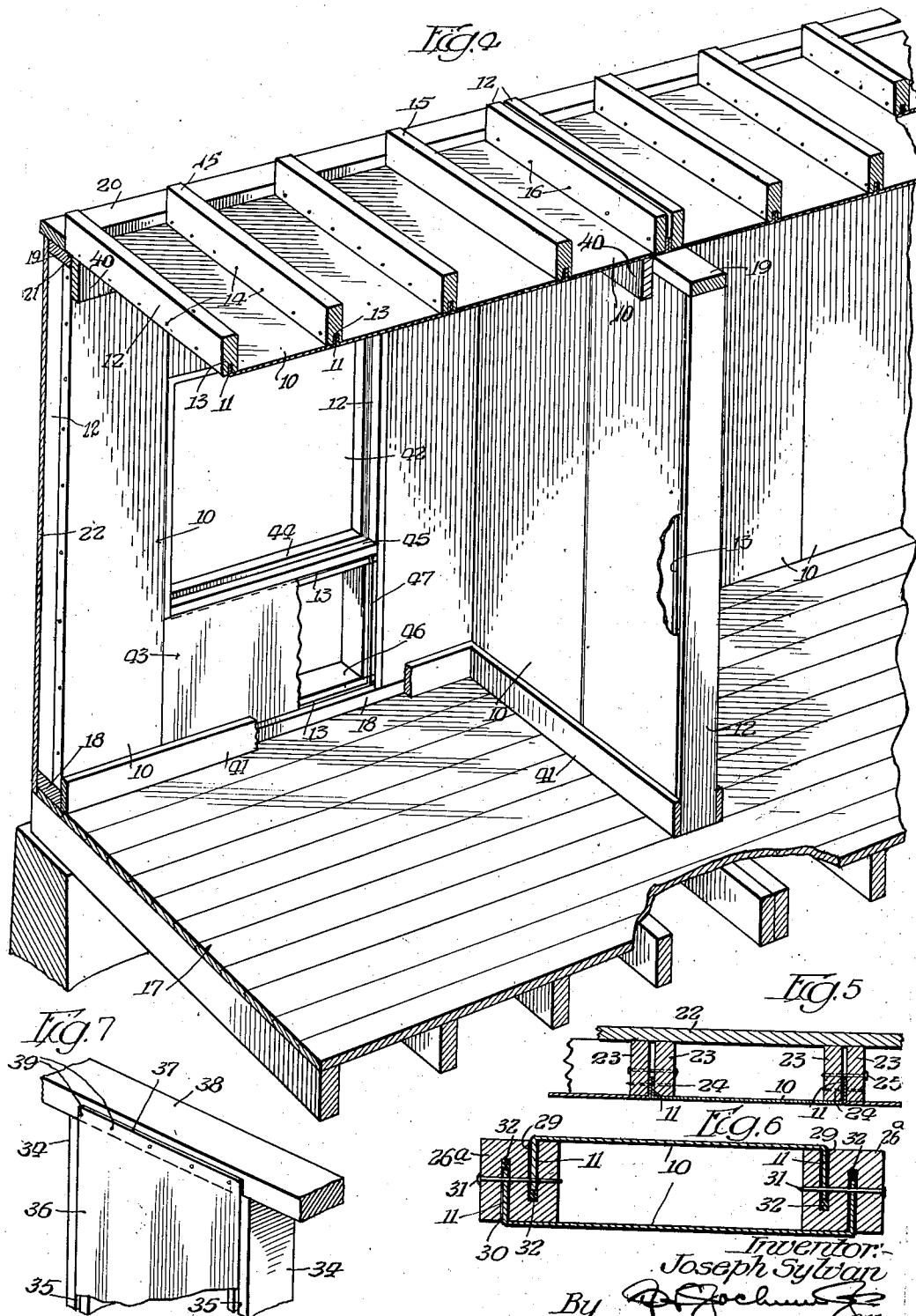
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UNITED STATES PATENT OFFICE

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PANEL CONSTRUCTION FOR BUILDINGS

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3 Claims. (Cl. 20—91)

This invention relates in general to building construction, but more specifically to a panel construction used in the formation of the walls, ceilings and partitions, and one of the objects of the invention is to provide an improved prefabricated panel or wall section which may be readily assembled and shipped as a completed unit to the place where it is to be employed, and then installed or incorporated in the building construction as a unit.

A further object is to provide improved means for securing the parts of the panel or unit together.

A further object is to provide improved means whereby the panels may be secured together in assembled relation with respect to each other to produce the wall, ceiling or partitions.

To the attainment of these ends and the accomplishment of other new and useful objects as will appear, the invention consists in the features of novelty in substantially the construction, combination and arrangement of the several parts hereinafter more fully described and claimed and shown in the accompanying drawings illustrating this invention, and in which

Figure 1 is a view partly in vertical section, partly in elevation, and partly broken away of a portion of a building construction having panels constructed in accordance with the principles of this invention incorporated therein.

Figure 2 is an enlarged detail horizontal sectional view taken on line 2—2 Figure 1.

Figure 3 is a detail vertical sectional view taken on line 3—3 Figure 1.

Figure 4 is a detail perspective view partly broken away and partly in section showing a portion of an assembled building in which this improved panel is employed.

Figure 5 is a detail cross-sectional view showing one manner of securing adjacent panels together.

Figure 6 is a detail sectional view showing a modified form of panel construction.

Figure 7 is a detail perspective view of a portion of a panel showing the manner in which it may be anchored at one end.

The panel consists essentially of a channel shaped member formed of sheet material, such as metal or the like, and may be of any desired width or length. To the side walls of the channel are secured wooden members which extend thereacross and which reinforce and strengthen the panel, and also render it possible to assemble the panel into a wall or ceiling construction by securing or nailing together the wooden strips

along the proximate edges of adjacent panels.

In the form of the invention shown in Figure 4 the panel consists of a member 10 here shown as being constructed of metal which may be of any desired length and width. The lateral edges of the material 10 are bent to form flanges 11 which may be of any desired size.

The panel between the flanges 11 may also be of any desired width. Secured to the lateral edges of the member 10 are joists or members 12 which may be constructed of any suitable material but preferably wood, and they are provided with grooves 13 opening through one of their edges.

The parts are assembled by inserting the flanges 11 into the grooves 13 of the members 12 and they may be secured together in any suitable manner such as by means of fastening devices 14 preferably in the form of nails which may be driven through the flanges 11.

If the panel 10 is of a considerable width, an intermediate member 15, or any desired number of intermediate members, may be secured to the panel so that the intermediate members will be parallel with the end members 12. These intermediate members may be secured or fastened in position in any suitable manner such as by means of fastening devices such as nails or the like being driven through the body of the panel 10 and into the intermediate member 15.

The panel thus constructed is prefabricated at the factory and is then shipped as a unit to the place where it is to be used.

With such a panel and in the construction of the walls, ceilings or the partitions, any number of these panels may be employed and are arranged with their flanged edges in abutting relation. This arrangement will cause the end members 12 of the panel to be disposed in close proximity to each other with the result that in order to secure the panels together it is only necessary to drive fastening devices 16 through the adjacent members 12.

In a wall construction the members 12 are arranged uprightly and extend from the ceiling to the floor 17, the uprights 12 preferably engaging and resting upon a sill member 18.

At the upper ends of the uprights and of the panels 10 there is provided a member 19 which extends across the ends of all of the panels constituting the wall and mounted upon the member 19 is another member or sill 20 which extends lengthwise of the member 19 and is secured thereto in any suitable manner. The members 20 are laterally offset with respect to the member

18 so as to form a ledge 21 upon which the members 12 and 15 as well as the ends of the panels 10 of the ceiling construction rest.

By the use of a panel of this construction and in the formation of the upright walls the panels 10 will be disposed toward the inside of the room and this will render it possible to secure the panels together by fastening the end members of the proximate panels together by fastening devices driven therethrough. After the panels have thus been assembled the outer wall 22 of the building may be secured in position in any suitable manner.

In Figure 5 there is shown a panel construction in which the flanges 11 instead of engaging in the grooves in the members 23, which correspond to the members 12 in the form shown in Figure 4, overlap the members 23 and engage the outer faces thereof, the parts being secured together in this instance by means of fastening devices 24 being driven through the flanges 11 and into the adjacent member 23.

When two of these panels are assembled the members 23 stand in close proximity to each other and are fastened together by means of nails or fastening devices 25 which are driven through the members 23 beyond the edges of the flanges 11. This will cause the flanges 11 to be gripped between the adjacent members 23.

In the form of the invention shown in Figure 6 the upright members 26^a are provided through one face with a groove 29 to receive the flanges 11 of adjacent panels. This groove 29 is of a depth somewhat greater than the width of the flanges so that plastic materials 32 may be inserted in the groove to hold the panels as a suction will be created and will positively prevent the panels from becoming detached from the studding or member 26^a.

The panels will also be held in assembled relation with respect to the studding by the inherent resiliency of the material from which the panel is formed.

In Figure 6 there is also shown another form of fastening of the panel members to the studding. In this instance the flanges of the members 10 enter the grooves 29—30 in the members 26^a, the grooves opening through opposite faces of the members, the grooves in the respective members overlapping so that the flanges 11 will also overlap. With this form of the invention when the nail or fastening device 31 is driven into the members 26^a they will also press through the flanges 11. If desired, plastic material 32 may be arranged in the grooves 29—30 and into which plastic material the extremities of the flanges 11 may project.

When the panels 10 are secured to the studding 26 they may, if desired, be also fastened by means of fastening devices 31 such as nails and the like driven through the studding and through the flanges 11 to form the respective faces of the wall of the building.

In the form of the invention shown in Figure 7 the upright studdings 34 are each provided with a groove 35 opening through one of their edges, into which grooves the flanged edges of the panels 36 are respectively seated. The flanges on the panel 36, however, preferably terminate short of the extremity 37 of the panel and this extension 37 is preferably arranged in the plane of the body of the panel 36 so that when the panel 36 is secured to the studdings or members 34 and then placed in position in a wall and

when the sill 38, which corresponds to the sill 19 in the form shown in Figure 4, is placed in position the extension at the extremity 37 will overlap the sills and rest against the face thereof thereby providing an additional means whereby fastening devices such as nails 39 or the like may be driven through the panel 36 and into the sill 38.

The panels in each unit are secured at the upper and lower ends thereof by fastening devices driven therethrough and into the respective sills.

In order to protect or cover such fastening devices at the extremities of the panels, suitable molding 40 may be provided at the junction of the wall with the ceiling and similar molding 41 may be provided at the junction of the wall or the lower end of the panels with the floor 17.

In the formation of a window opening such as designated by the reference numeral 42 a similar panel 43 is arranged below the sill 44. In this instance the studding at one edge of the panel constitutes or forms the sill while the studding 46 at the other end of the panel 43 rests upon the sill 18, uprights 47 being provided between the sills 44 and 46 to support the former.

In the formation of a partition the panel unit is constructed as in the manner as already described and is then secured in position as shown in Figure 2 by fastening one of the studdings to one of the studdings 12. This is rendered possible by reason of the fact that the panels 49 on one side of the partition are not assembled or placed in position until the unit has been secured in the manner just described.

After this portion of the panel has been assembled then the panels 49 are placed in position by inserting the flanges 50 thereof into the grooves 51 in the studding 48. When thus assembled the panels 49 are held in position by the fastening or anchoring means at the upper and lower ends of the panel.

In the formation of a window or door opening the upright studding 12 along the edges of the spaced panels form the jambs or abutments, as a portion of these uprights will project beyond the edges of the panels and also beyond the flanges 11 thereof as shown more clearly in Figure 1, and designated by the reference numeral 52.

While the preferred forms of the invention have been herein shown and described, it is to be understood that various changes may be made in the details of construction and in the combination and arrangement of the several parts, within the scope of the claims, without departing from the spirit of this invention.

Throughout the claims, where the term "wall" is employed, it is to be construed to include a wall, ceiling or partition.

What is claimed as new is:

1. As a unitary structure a panel for wall construction formed of sheet material elements each having a laterally projecting flange along each of two oppositely disposed edges, said flanges being substantially co-extensive with said element, and a stud adjacent each of said flanges and being substantially co-extensive with the respective flanges, said studs being each provided with a recess opening through opposite faces and substantially throughout the length thereof, one of said elements being arranged adjacent each of the opposite faces of said studs, the flanges of said elements entering respective recesses, the free ends of the flanges on opposite

elements overlapping, and a fastening device driven into each of the said studs through said overlapping flanges and across the respective recesses.

- 5 2. As a unitary structure a panel for wall construction formed of sheet material constituting a body and having a laterally projecting flange along only two oppositely disposed edges, and a stud adjacent and secured to each of said
10 flanges and being substantially co-extensive with the respective flanges, said studs being each provided with an open recess substantially throughout the length thereof and into which recesses the respective said flanges project, the said
15 flange terminating short of one of the edges of said body whereby the said body between the studs will extend beyond the adjacent extremities of the said flanges and said studs will be

normally disposed substantially within the plane of said body.

3. As a unitary structure a panel for wall construction embodying a plurality of body portions each formed of sheet material and each provided with a laterally projecting flange of substantial
5 width adjacent each of two oppositely disposed edges, a stud disposed adjacent each of the flanges, said studs provided with a groove opening through each of two opposite faces and into
10 which grooves flanges of the body portions adjacent the respective grooved faces project, the flanges of opposite body portions overlapping, plastic material in said grooves and into which
15 plastic material the free edges of the flanges project, and means securing the said studs and flanges against separation.

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