Sept. 26, 1967 B. E. CURRAN 3,343,325

EXTERIOR SIDING AND INNER SHEATHING STRUCTURE THEREFOR

Filed March 24, 1965

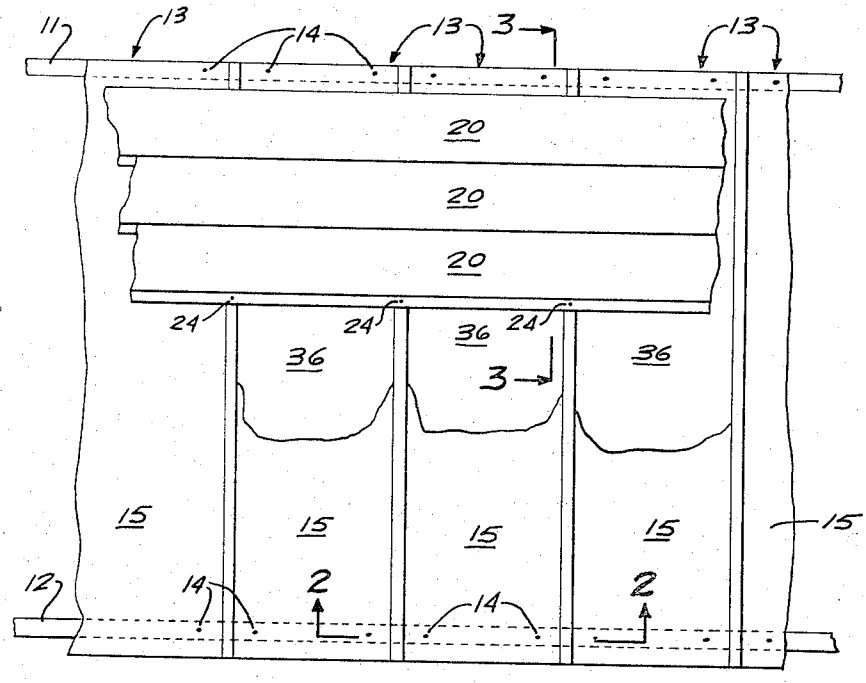


Fig. 1

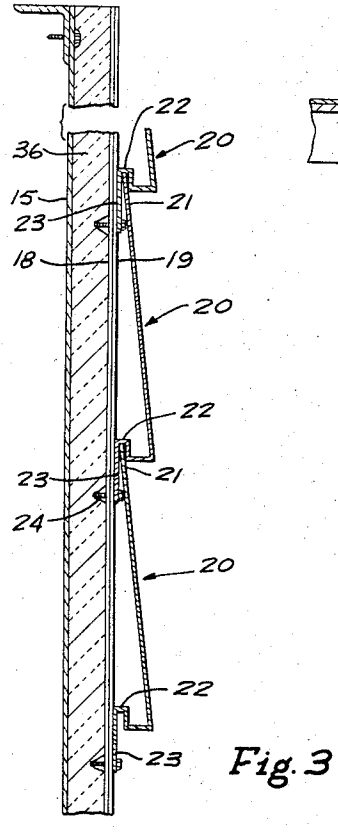


Fig. 3

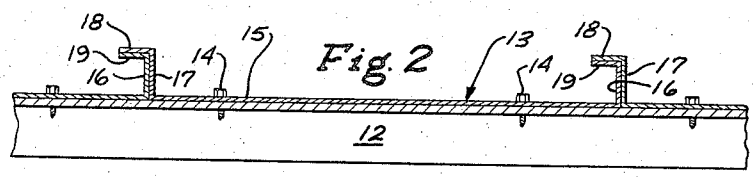


Fig. 2

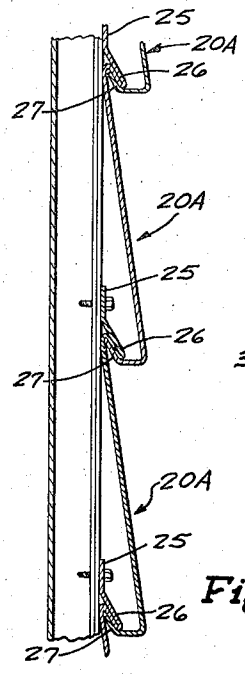


Fig. 4

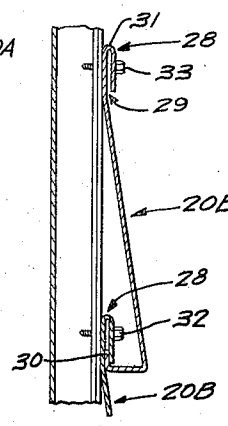


Fig. 5

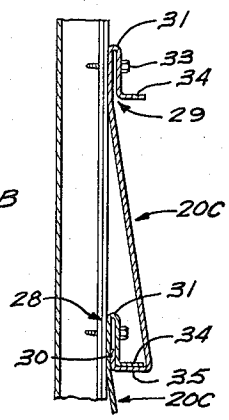


Fig. 6

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United States Patent Office 3,343,325
Patented Sept. 26, 1967

3,343,325

EXTERIOR SIDING AND INNER SHEATHING STRUCTURE THEREFOR

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Filed Mar. 24, 1965, Ser. No. 442,345
1 Claim. (Cl. 52—478)

The present invention concerns building outer wall structures of the double-sheathed variety.

The present double-sheathed wall for a building combines versatility of construction with ease of fabrication, simplicity and remarkable structural strength.

The present wall construction utilizes an inner sheathing formed from overlapped rectangular sheathing sections which are secured to a building framework in side-by-side relation. The rectangular sheathing sections have lateral marginal flanges, one of which overlaps a marginal lateral flange of the next adjacent one of the sheathing sections, and the other of which in turn is itself overlapped by a marginal lateral flange of the other adjacent sheathing section. The two overlapped marginal flanges serve as vertical mullions for receiving a subsequently applied outer sheathing of horizontal strips of tongue-and-groove, weather-resistant sheathing. The tongue-and-groove weather-resistant sheathing is secured to the overlapped terminal marginal flanges by means of screws which extend through the outer sheathing and through both of the overlapped and overlapping flanges of the inner sheathing sections.

Tongue-and-groove sheathing of the type with which this invention is concerned is available commercially. Typical sheathing strips are described in U.S. Patents 3,158,960, 2,682,236 and 3,001,332 for example.

It is a further feature of this invention that suitable thermal insulation material may be applied between the outer sheathing and the inner sheathing according to well-known practices in the building art.

The present invention, its objects and advantages, will become apparent from the following detailed description with reference to the accompanying drawings in which:

FIGURE 1 is a fragmentary view of a building outer wall during construction in accordance with the present invention;

FIGURE 2 is a cross-section view taken along the lines 2—2 of FIGURE 1;

FIGURE 3 is a cross-section view taken along the lines 3—3 of FIGURE 1; and

FIGURES 4, 5 and 6 are cross-section views, similar to FIGURE 3, showing alternative embodiments of the horizontal sheathing element which may be utilized in the present construction.

Referring to FIGURE 1, there is illustrated a fragmentary view of a building under construction according to this invention wherein a plurality of generally horizontal subgirts **11, 12** are secured in outboard relation to the columns of the building (not shown). Spanning across and secured to the subgirts **11, 12** are a plurality of essentially rectangular inner sheathing sections **13**, each being secured to the subgirts **11, 12** by means of fasteners **14**. If desired, the inner sheathing sections **13** may be spot-welded to the subgirts **11, 12.**

The rectangular inner sheathing sections **13** comprise an essentially rectangular central flat surface **15** having lateral outwardly disposed flanges **16, 17**. Each of the flanges **16, 17** has a terminal marginal strip **18, 19** both of which extend in the same direction and are generally parallel with the flat surface **15**. The terminal marginal strip **18** extends from the flange **17** and overlies the flat surface **15**. The terminal marginal strip **19** extends from the flange **16** and is disposed away from the flat surface

15. When two of the present sheathing sections **13** are assembled in side-by-side relation, the flange **16** of one is in abutting relation with the flange **17** of the other; the terminal marginal strip **19** of one is in overlying engagement with the terminal marginal strip **18** of the other. The outboard surface of the terminal marginal strip **19** serves as a mounting surface for the horizontal sheet-like sheathing elements of the present wall. The sheet-like sheathing elements **20**, as shown in FIGURE 3, have a tongue element **21** at one end and a groove element **22** at the other end.

Means are provided adjacent to the tongue element **22**, such as a fastening lip **23**, for receiving a suitable screw **24** which extends through the fastening lip **23** and through the terminal marginal strips **18, 19** as seen in FIGURE 3. The screw **24** is disposed in such manner as it will be hidden from external view in the final wall assembly.

The external horizontal sheathing elements **20** are assembled one-by-one from top-to-bottom when the strips are of the type shown in FIGURE 3 are employed.

Alternatively, the horizontal sheathing strips **20A**, shown in FIGURE 4, may be employed where bottom-to-top assembly of the external sheathing is desirable. As shown in FIGURE 4, the horizontal sheathing strips **20A** have a fastening lip **25** adjacent to a groove element **26** and have a re-entrant tongue element **27**. Sheathing elements of the general type shown in FIGURE 4 are described in U.S. Patents 3,001,332 and 2,766,861, for example.

A further alternative embodiment of the bottom-to-top assembly variety of horizontal sheathing elements is illustrated in FIGURES 5 and 6. The individual sheathing elements of FIGURE 5, 20B, have a fastening lip **28** and groove element **29** at one end and a re-entrant tongue element **30** at the other end. A single outwardly presented, hook-shaped flange **31** at the top of the sheathing strip **20B** provides both the fastening lip **28** and the groove element **29**. To assemble the wall of FIGURE 5, the lowermost horizontal strip **20B** is secured by means of the fastener **32**. Thereafter the next upper horizontal sheathing strip **20B** is positioned in place by inserting the tongue element **31** into the groove element **28** of the lowermost strip. Thereupon the next upper horizontal strip **20B** of FIGURE 5 is secured by extending the fastener **33** through the fastening lip **28**. A still further embodiment of the bottom-to-top horizontal sheathing **20C** is shown in FIGURE 6 which includes an outwardly presented terminal flange **34** at the end of the outwardly presented, hook-shaped flange **31**. This outward flange **34**, in abutment with the bottom horizontally disposed flange **35** of the sheathing element **20C** serves to rigidify and strengthen the wall assembly.

If desired, batts of thermal insulating materials such as fibrous mineral wool, fibrous glass, foam resinous substances such as foamed polystyrene or foamed polyurethane may be secured to the inner sheathing sections **13** beneath the outer horizontal sheathing elements **20**. Such insulation batts are identified by the numeral **36.**

The present wall construction avoids the need for intervening subgirts between the inner shetahing sections **13** and the external horizontal sheathing elements **20.**

A preferred form of the inner sheathing sections **13** is described in co-pending U.S. patent application S.N. 425,-517, filed Jan. 14, 1965, and assigned to the assignee of the present invention.

The inner sheathing sections **13** preferably are fabricated from steel such as galvanized steel sheets having a thickness from 12 through 22 gauge.

The outer sheathing elements **20** may be fabricated from a variety of materials such as metals, plastics and the like. Steel sheeting or aluminum sheeting is satisfactory. The external sheathing should be provided with a weather-resistant exterior coating such as porcelainized enamel,

weather-resistant paints or enamels, adhesively secured plastic films, resinous coatings and the like. A preferred material for use in the external sheathing elements **20** is protected metal fabricated from zinc-coated steel sheets having an asphalt-impregnated asbestos covering secured to the metal sheet which is in turn covered a suitable weather-resistant resinous substance. Such preferred protected metals are described, for example, in U.S. Patents 1,862,332 and 2,073,334.

I claim:

A building outer wall construction comprising in combination:

a plurality of vertically aligned side-by-side sheathing sections;

each sheathing section having an essentially rectangular central flat surface and a pair of lateral outwardly disposed flanges at the side edges thereof, said sheathing elements being secured to a building framework intermediate their side edges, said flanges terminating in marginal strips which are generally parallel with said flat surface, one of said marginal strips on each section overlying and engaging a complementary marginal strip of the next adjacent section and the other of said marignal strips of each section being disposed beneath and engaged with a complementary marginal strip of the other adjacent section;

a plurality of horizontally disposed sheet-like siding elements, each having a weather-resistant outer covering and having tongue means along one longitudinal edge and corresponding groove means along the opposed longitudinal edge, each siding element being disposed in tongue-and-groove engagement along each of its longitudinal edges with the immediately adjacent siding elements, a portion of a longitudinal edge of each said siding element overlying and being directly engaged with the outer one of said marginal strips; and

a plurality of fasteners securing said siding elements to said sheathing sections, each of said fasteners extending through said siding element at the longitudinal edge thereof and also extending through a pair of the overlying marginal strips.

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