

Aug. 26, 1941.

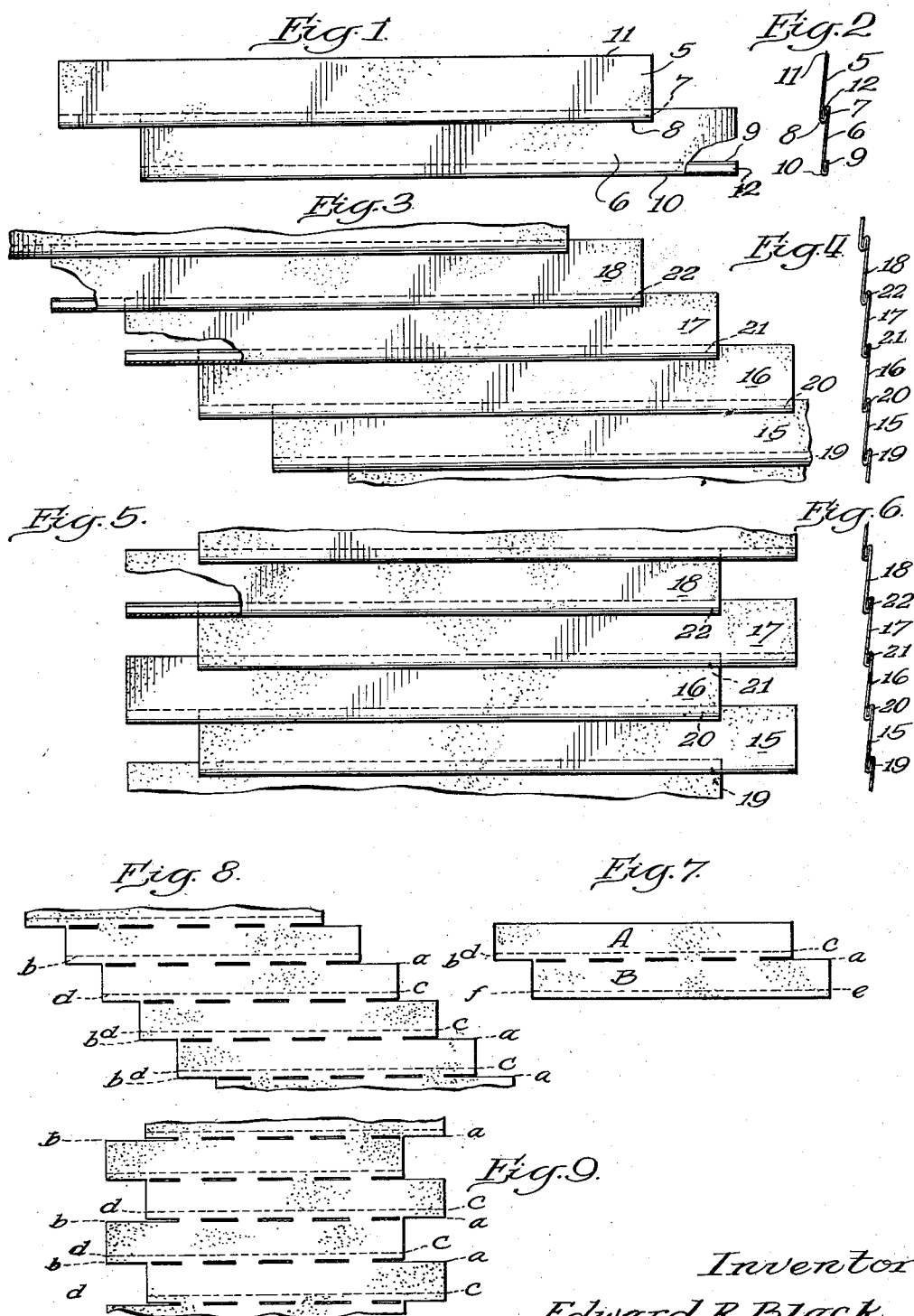
E. R. BLACK

2,253,753

BUILDING COVERING

Filed April 23, 1938

3 Sheets-Sheet 1



Inventor.

By *Edward R. Black*
Williams, Bradbury, McCaleb & Spink
Attys

Aug. 26, 1941.

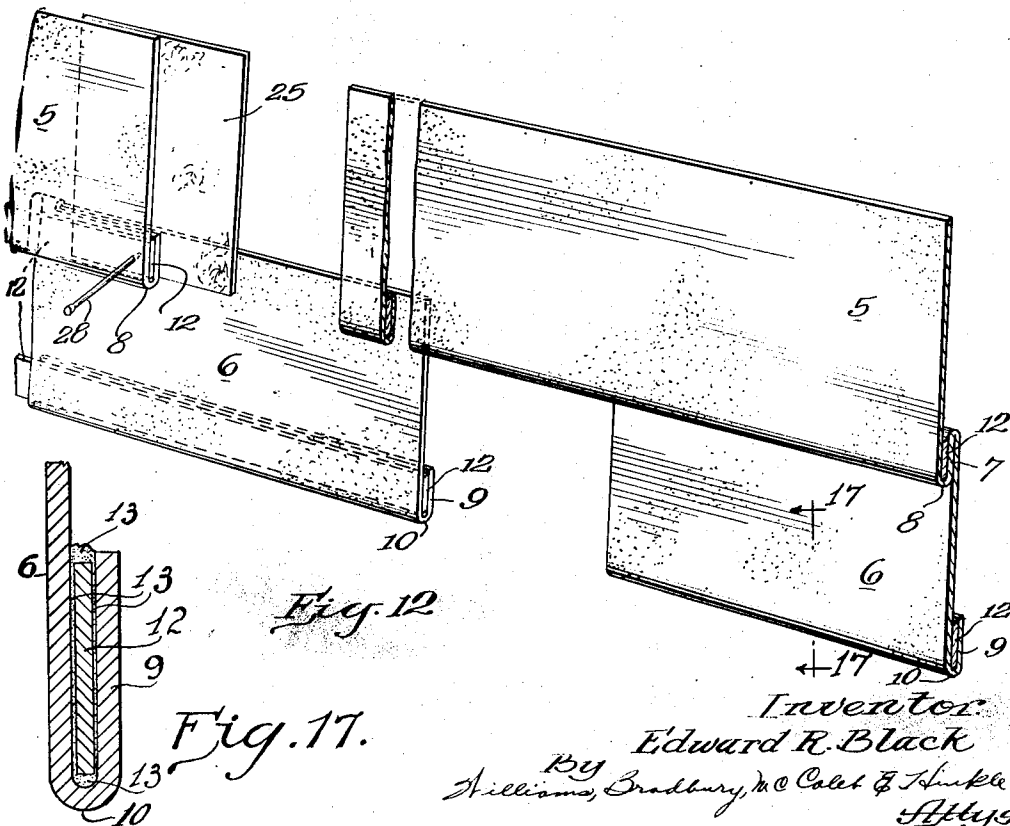
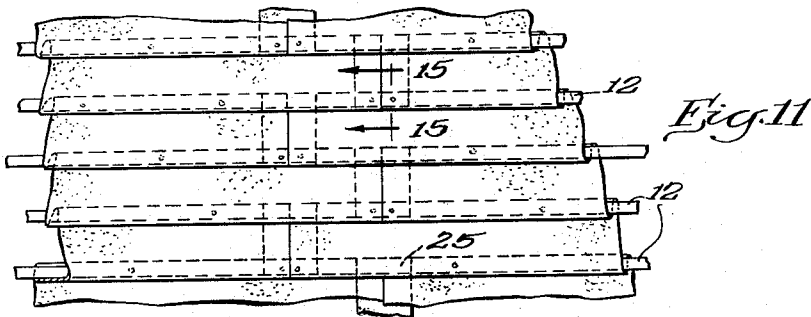
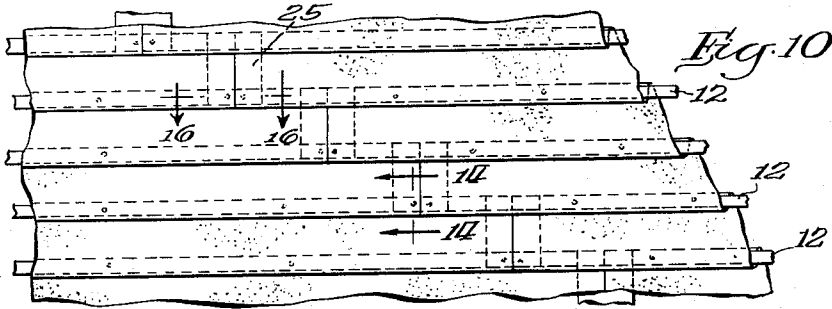
E. R. BLACK

2,253,753

BUILDING COVERING

Filed April 23, 1938

3 Sheets-Sheet 2



Inventor:
Edward R. Black
By Williams, Bradbury, McColl & Shupke.
Attys.

Aug. 26, 1941.

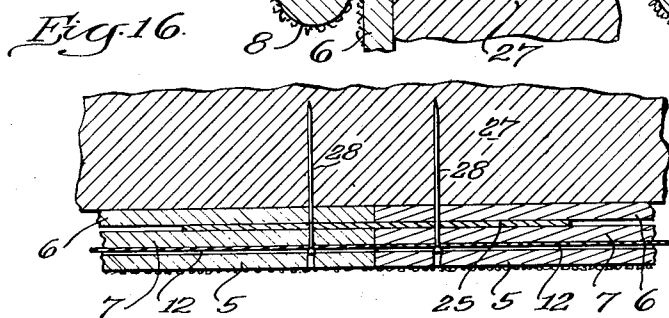
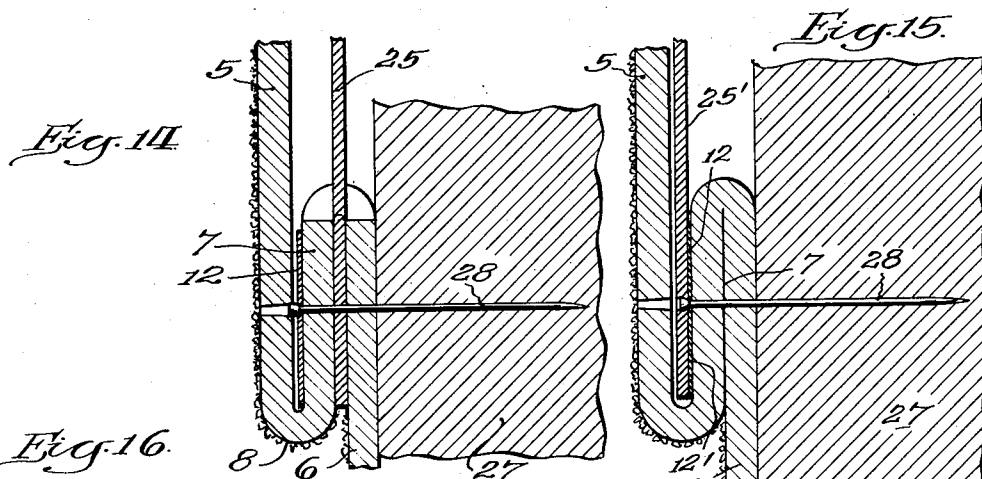
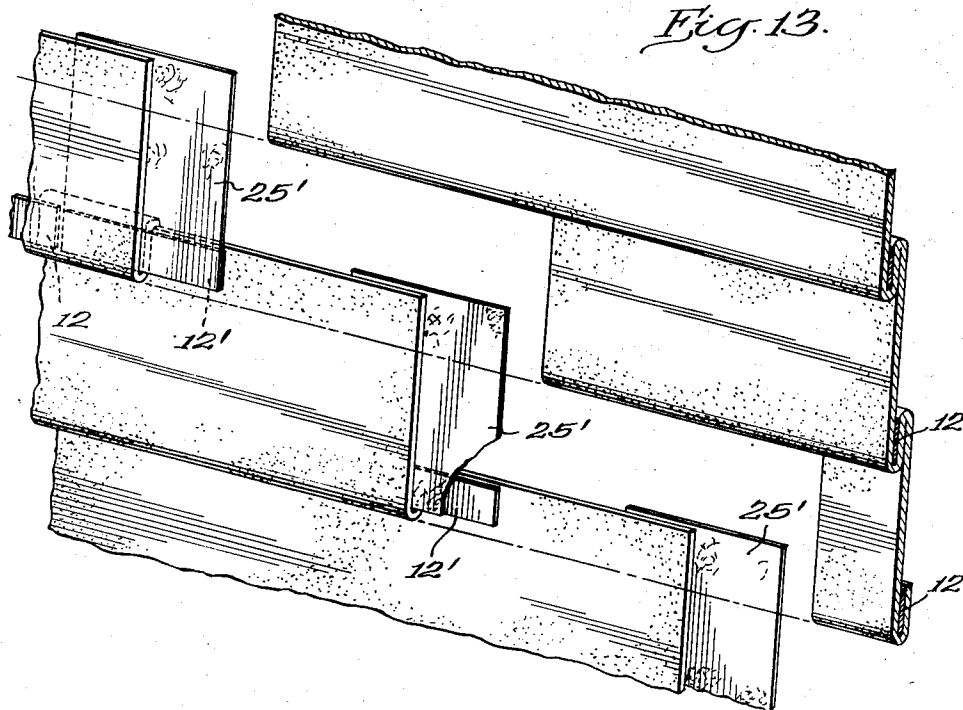
E. R. BLACK

2,253,753

BUILDING COVERING

Filed April 23, 1938

3 Sheets-Sheet 3



Inventor
Edward R. Black
By Williams, Bradbury
McCall & Hinkle
Attys.

UNITED STATES PATENT OFFICE

2,253,753

BUILDING COVERING

Edward R. Black, Chicago, Ill., assignor to said
Edward R. Black, James E. Black, and Elam L.
Black, co-partners doing business as Black Sys-
tems, Chicago, Ill.

Application April 23, 1938, Serial No. 203,908

4 Claims. (Cl. 20—5)

My invention relates to building coverings—the weatherproof and decorative sheath applied exteriorly of building walls and roofs.

More particularly it relates to a covering composed of units of what is frequently and herein referred to as "prepared roofing" consisting generally of a sheet of normally flexible material including a base of fibrous stock or "felt" which is impregnated with asphalt or other suitable weatherproofing and preserving substance. Usually the felt is covered, as well as being impregnated, with asphalt or the other substance and frequently it is surfaced on one side with granular mineral material, such as stone, to enhance the protective and decorative qualities. Because of its flexibility, particularly during warm periods, and the inherent frailty of its felt base, it is essential to anchor down the butts or exposed edges of units of such material and the anchorages, such as nails, should not be exposed.

Heretofore units of prepared roofing have not been employed as extensively as might be for the covering of building side walls, i. e., "siding," because the appearance has not been particularly attractive and on account of difficulties in handling, applying and anchoring the units and insuring waterproof joints where units come together.

My invention is especially applicable to and will be explained as embodied in side wall covering, i. e., siding, although it is also well adapted for roofs.

One of the objects of my invention is to provide an attractive building covering particularly adapted for production and application in relatively large units, i. e., units of a size considerably larger than that of ordinary shingles.

Another object is to provide units which may be horizontally aligned and abutted with ease and to insure water-tight joints between such abutting units.

A further object is to provide adequate and permanent butt anchorage by ordinary nails without the heads of the nails being exposed.

Another object is to provide units which will effectively cover relatively large areas for the amount of material used.

A further object is to provide a side wall covering that is attractive in appearance.

Another object is to provide units that may be easily laid.

Other objects and advantages will hereinafter appear.

In the accompanying drawings several typical and illustrative embodiments are shown.

Fig. 1 is a front elevation of a two- or twin-panel unit;

Fig. 2 is an end elevation of the unit shown in Fig. 1;

Fig. 3 is a front elevation of a portion of one form of multi-panel unit;

Fig. 4 is an end elevation of the unit shown in Fig. 3;

Fig. 5 is a front elevation of a slightly modified form of multi-panel unit;

Fig. 6 is an end elevation of the unit shown in Fig. 5;

Fig. 7 is a plan, in reduced scale, of the blank for forming the unit illustrated in Figs. 1 and 2;

Fig. 8 is a similar plan of the blank for forming the unit shown in Figs. 3 and 4;

Fig. 9 is a like plan of a blank for forming the unit of Figs. 5 and 6;

Fig. 10 is a front elevation of a section of siding in place—particularly showing how joints are made between horizontally aligned units of the type shown in Figs. 1 to 4;

Fig. 11 is a similar view showing joints between horizontally aligned units such as shown in Figs. 1, 2, 5 and 6;

Fig. 12 is an enlarged perspective view of two twin-panel units which are abutted in horizontal alignment—particularly showing the method of insuring a water-tight joint therebetween;

Fig. 13 is a similar view of two multi-panel units;

Fig. 14 is an enlarged vertical section at a joint between horizontally aligned units, such as on the line 14—14 of Fig. 10;

Fig. 15 is a similar section of a slight modification on a line such as 15—15 of Fig. 11,

Fig. 16 is an enlarged section on the line 16—16 of Fig. 10, and

Fig. 17 is an enlarged section on the line 17—17 of Fig. 12 showing a manner of rendering the unit assembly (panels and nail-holding strips) permanent for stiffness and easy handling.

Referring first to Figs. 1 and 2, the two- or twin-panel unit includes an upper exposed portion or panel 5, a lower exposed portion or panel 6, and an intermediate inter-connecting folded-under section 7. If granular coated or other one-surface-finish material is employed, it is to be understood that the finished surface is, at least usually, on the outer or exposed face of the units. The intermediate section is formed by folding the sheet or blank twice along parallel lines of different length and reversely, as will

presently be more fully explained, so that in this folded region the unit comprises three juxtaposed layers or thicknesses or plies. This results in an exposed fold or thickened butt-simulating line 8 extending between the ends or lateral edges of the unit intermediate its upper and lower edges, giving each unit the appearance of two vertically overlapping sections of siding. The lower edge of the unit includes a folded-under section 9, with the result that the lower edge forms an exposed double thickness butt-line 10. Preferably the intermediate butt-simulating-line 8 is spaced from the upper edge 11 of the unit a distance equal to the amount a panel is actually exposed, plus the length of the overlap between panels, i. e., the depth of the inter-connecting section. In other words, the upper and lower panels are preferably of the same overall depth, although the depth of the actually exposed area of the lower panel is less than the overall depth of that panel by the depth of the intermediate inter-connecting section. The upper panel is thus made deeper than the depth of the actual exposure of the lower panel in order that when the upper edge of one unit is overlapped by the lower edge of the next higher unit by an amount equal to the depth of the unit-intermediate section, the actual exposure of the upper panel will be the same as the actual exposure of the lower panel. The upper panel and intermediate section of a unit are offset from the lower panel, as shown clearly in Fig. 1, so that, as will be presently explained, units may be horizontally aligned and abutted to complete a course of siding of any length and the joint-line will be broken or staggered to facilitate prevention of leakage. In other words, each panel projects beyond the other at one lateral edge of the unit and is set back from the other at the opposite lateral edge of the unit. Of course, the offset may be in the opposite direction, if desired.

I prefer to complete each unit by inserting a holding piece—preferably in the form of a thin metal strip 12—in the pocket formed between each panel and the underlying portion—whether that portion be an intermediate section such as 7 or a lower edge turned-under section such as 9. In this manner the underlying sections 7 and 9 become anchor strips provided with overlying holding strips (such holding strips, however, being behind the exposed panels or body portions) and the units can be anchored by applying nails through the front or exposed faces and driving the nails into the underlying building framework until the heads thereof have been, in effect, countersunk through the body or exposed panels to lie against the holding strips, as clearly explained in my Patent No. 1,959,519 of May 22, 1934.

Figs. 3 and 4 show units—I term them multi-panel units—composed of any desired number of panels 15, 16, 17, 18, etc., adjacent panels being inter-connected by double-reverse folds and intermediate sections 19, 20, 21, 22, etc., in precisely the same manner as heretofore explained for the twin-panel unit. In this arrangement each panel is offset to the left from the one therebelow so that a joint between two horizontally aligned units will be broken or stepped diagonally across the face of the building. Of course, the offsetting may be in the opposite direction—i. e., to the right—if desired.

Figs. 5 and 6 show a multi-panel unit such as shown in Figs. 3 and 4 with this difference:

Alternate panels are offset in opposite directions so that when two such panels abut horizontally the joint-line therebetween is in the form of a broken or staggered line extending vertically across the face of the building wall.

Constructions such as illustrated in Figs. 3 to 6 lend themselves particularly well to conditions where it is desirable and feasible to handle and apply the covering in large units—panels being fabricated together into units several feet in length.

Referring now to Fig. 7, the twin-panel unit is formed from a blank, such as here shown, cut from a sheet of the desired character of prepared roofing. The upper section A—from which are formed the upper exposed panel and intermediate section—is offset to the left of the lower section B—from which are formed the lower exposed panel and turned-under edge—by an amount which will insure the desired break or staggering in the joint-lines between horizontally aligned and abutting units. Preferably this offset should be several inches.

Each blank is provided with three fold lines parallel to each other and parallel to the upper and lower edges of the blank. The intermediate of these fold lines *a-b* is shorter than the other two and preferably is formed by cutting entirely through the material at appropriately spaced intervals so that the material along this line will fold very abruptly and compactly. In practice, these cuts need be only slits—no material being actually removed—but in the drawings they are shown somewhat exaggerated into the appearance of slots more clearly to indicate that this shorter fold line is defined by something more and other than a mere indentation or scratch in the surface. This line of fold *a-b* defined by the slits or cuts constitutes the rear or concealed fold between the lower exposed panel 6 and the intermediate section 7. The fold line *c-d* in section A defines or locates the exposed butt-simulating fold 8 between the upper exposed panel 5 and the intermediate section 7. The fold line *e-f* defines or locates the fold along which the under-folded section 9 is turned back and under the body of the unit and marks the bottom-butt fold 10. Preferably the fold lines *c-d* and *e-f* are merely indentations or scratches extending only partially through the blank from the back—i. e., the unfinished surface. These cut-through and indented fold lines are for the purpose of facilitating the formation of the requisite folds precisely on the lines necessary to the production of units sufficiently perfect to lay properly and present a pleasing appearance when laid.

After a unit has been folded and holding strips 12 have been inserted between the upper panel and the folded-back intermediate section 7, and between the lower panel and the lower edge turned-back portion 9, I prefer that the folds be firmly and tightly held together in some suitable manner, such as shown in Fig. 17, by means of a suitable adhesive 13, for example, asphalt. By this treatment the folds are retained (that is, prevented from straightening out or unfolding to any objectionable extent), the holding strips are held in place and the units are rendered stiffer and otherwise more easily and safely handled as an entirety. This matter of complete unit handling is important because otherwise the metal strips would tend to fall out and, consequently, to insure against loss it might usually be advisable to ship the strips separately. Of

course, by retaining the strips permanently in place this objection is overcome. The extra stiffness at the butt is also an advantage.

The blanks shown in Figs. 8 and 9 are suitable for forming units such as illustrated in Figs. 3 and 5, respectively. The fold lines *a-b* and *c-d* are of different lengths and define the folds that join the panels to the intermediate sections in precisely the same manner as heretofore described in connection with Fig. 7. Holding strips are applied between each panel and the intermediate inter-connecting section therebehind. Each such multi-panel unit should have its lower edge turned under and back to provide it with a thickened butt and with an anchoring strip and pocket for accommodating a holding strip, essentially in the same manner as shown and described for the twin-panel unit.

Figs. 10, 11 and 12 show how horizontally aligned units may be abutted and in part overlapped so as to form a water-tight joint—Fig. 10 showing all of the vertical lines of the joint offset in the same direction (Fig. 1 or Fig. 3 type unit) and Fig. 11 showing the vertical joint lines alternately offset in opposite directions (Fig. 1 or Fig. 5 type units). Thus, as shown most clearly in Fig. 12, the units are horizontally aligned and fitted together so that the projecting or overhanging left end of the upper panel of one unit abuts the set-back right end of the upper panel of an adjacent unit. Similarly, the projecting right end of the lower panel of one unit abuts the set-back left end of the lower panel of the adjacent unit, and when thus fitted together the overhanging or projecting lower butt-fold of one unit vertically overlaps the projecting upper edge of the lower panel of the adjacent unit. Although Fig. 12 does not show the two horizontally aligned twin-units in final position (in such position they, of course, abut each other), still it does show very clearly how the projecting end of the upper panel of one unit overlaps horizontally and vertically the projecting end of the lower panel of the adjacent unit and how by this overlap the vertical joint line between the two units is broken and staggered to lessen the tendency toward leakage.

When the metallic holding strips 12 are substantially the same length as the panels back of which they lie, so that the strip ends come substantially flush with the ends of the panels, as shown in Fig. 12, a small joint-backing unit 25, which may be formed from a sheet of asphalt impregnated "felt" paper or other suitable material, is inserted upwardly between corresponding sets of panels of adjacent units and behind each of the two staggered vertical lines of abutment of the ends of adjacent horizontally aligned panels. After being inserted in this position the ends of the units adjacent the joint and the small joint-backing units may be held in place and anchored to the building framework 27 by nails 28 driven through from the front face until the heads are countersunk through the body of the panel against the metallic holding strip therebehind, as shown clearly in Fig. 14. Other nails may be applied from the front through the panels in the regions where they are backed by holding strips—i. e., along the lower butt edges and the intermediate butt-simulating folds—such nails being also countersunk through the panels and against the holding strips.

When it is desired to make the metallic holding strips of a length less than the length of the panels, I prefer to provide the small sheet joint-

backing units 25' with narrow metal strips 12' so that such strips will partly or completely bridge the gap between the main metallic holding strips 12 and thereby serve as holding strips in the immediate vicinity of the joints, as shown most clearly in Figs. 13 and 15.

Covering units such as herein described and illustrated aptly lend themselves to attractive surface designs, such as to simulate brickwork for side walls. Thus, before the folding is done, the blanks or the sheets from which the blanks are cut may be provided with vertical and horizontal lines of granular facing material of a color differing from the major portions of the surface—for example, lined with black whereas the major area may be red—to simulate bricks and interposed mortar. When decorative surfacing is desired, especially effective concealment of the nail heads may be provided by so arranging black or other metal simulating colors in the regions where nails are to be driven—that is, in the regions where holding strips are located therebehind. If desired, particularly when the roofing material is thin and relatively weak, the units fabricated as herein shown and described may be reinforced by being cemented or otherwise suitably secured to a backing sheet of heavy, tough strong paper or other appropriate material.

Having explained and illustrated the nature and typical embodiments of my invention, what I claim and desire to secure by United States Letters Patent is:

1. A building covering comprising a plurality of horizontally aligned and abutting units, each unit being formed from a sheet of prepared roofing material bent along a plurality of horizontal lines to form vertically overlapping exposed panels and intermediate concealed inter-connecting sections between panels, the marginal edges of adjacent panels being offset so that the adjacent units abut along horizontally staggered vertical lines; a nail-head holding strip interposed between the panels and inter-connecting sections of each unit; a joint-backing section located behind and underlapping the abutting edges of each horizontally aligned pair of panels; and anchoring nails applied from the exposed faces of the panels through the units and joint-backing sections and driven into the building framework until the heads thereof engage the nail-head holding strips.

2. A building covering comprising a plurality of vertically overlapping and horizontally aligned and abutting units, each unit being formed from a sheet of prepared roofing material bent along a plurality of horizontal lines to form vertically overlapping exposed panels inter-connected by concealed inter-connecting sections, the inter-connecting sections having a depth less than the depth of the exposed panels and the marginal edges of adjacent panels being offset so that horizontally aligned abutting units meet on staggered joint lines; a nail-head holding strip interposed between certain exposed panels and the inter-connecting sections therebehind; a joint-backing section located behind the joint lines between horizontally aligned units; and anchoring nails applied from the exposed sides of the panels and through the units until the heads thereof engage against the nail-head holding strips, some of the nails also passing through joint backing sections.

3. A building covering unit comprising a sheet of flexible prepared roofing material folded inter-

mediate its upper and lower edges along two lines parallel to such edges to form slightly overlapping upper and lower panels and an intermediate interconnecting concealed section therebetween, the upper panel and the interconnecting section projecting laterally beyond the lower panel at one lateral edge of the unit and the lower panel projecting equally beyond the upper panel and interconnecting section at the opposite lateral edge of the unit so as to enable the projecting portions of the upper panel and interconnecting section of one unit to overlie part of the laterally projecting portion of a lower panel of an adjacent unit when two units are laid in horizontal alignment and abutting each other.

4. A building covering unit comprising a sheet

of flexible prepared roofing material folded intermediate its upper and lower edges along a plurality of pairs of lines parallel to such edges to form a plurality of slightly overlapping exposed panels and intermediate interconnecting concealed sections between panels, some exposed panels and the interconnecting sections therebeneath projecting laterally beyond an adjacent panel at one end of the unit and terminating short of the adjacent panel at the other end of the unit, so that when units are laid in horizontally abutting relation the projecting portions of panels of one unit overlap portions of the horizontally adjacent unit both vertically and horizontally.

EDWARD R. BLACK.