March 31, 1959 P. DUBECKY 2,879,555

FABRICATING ASBESTOS SHINGLE SIDING UNIT

Filed Dec. 7, 1956

Fig. 1.

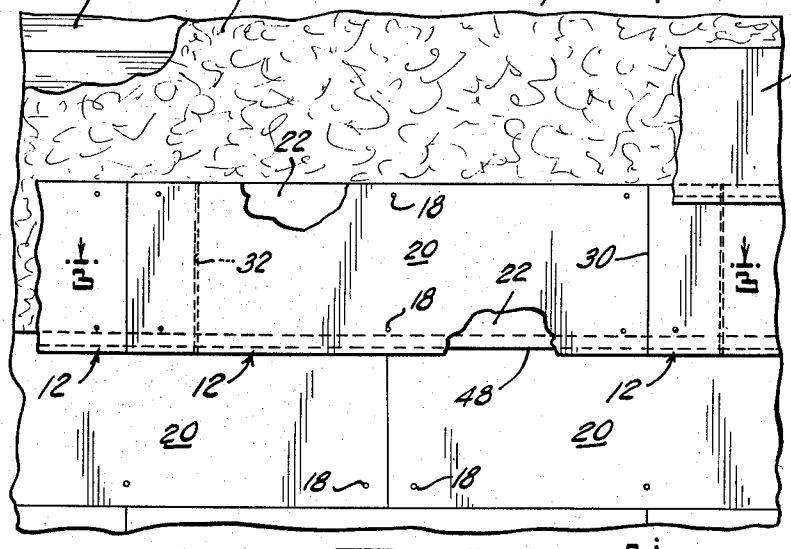


Fig. 2.

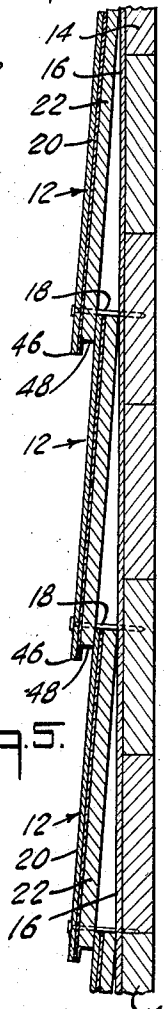


Fig. 3.

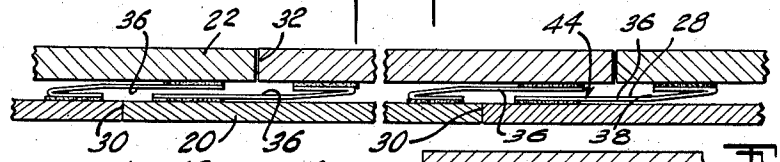


Fig. 4.

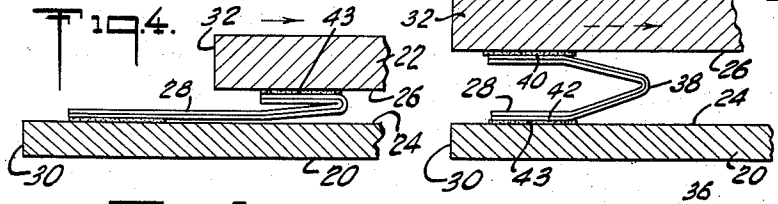


Fig. 5.

Fig. 6.

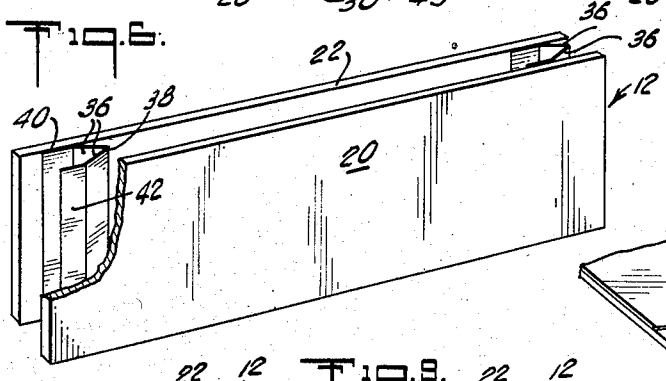


Fig. 7.

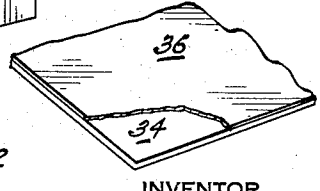


Fig. 8.

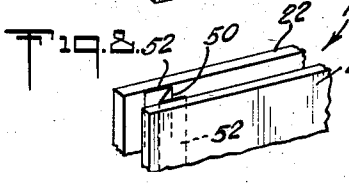
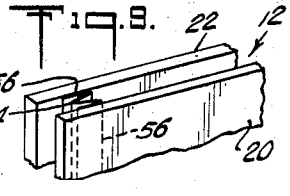


Fig. 9.



INVENTOR
PETRO DUBECKY

United States Patent Office 2,879,555 Patented Mar. 31, 1959

2,879,555

FABRICATING ASBESTOS SHINGLE SIDING UNIT

Petro Dubecky, Middlesex, N.J., assignor to Johns-Manville Corporation, New York, N.Y., a corporation of New York

Application December 7, 1956, Serial No. 626,904

18 Claims. (Cl. 20—5)

This invention relates to siding or covering units, such as shingles and like covering elements, and, more particularly to an improved siding or covering unit composed of a shingle and a backer board fastened together so that the assembly can be advantageously handled as a single unit.

Familiar practice in the construction of an insulated roof or side wall covering has been to apply composition backer boards, separately, to the sheathing of the wall structure as an undercoursing for overlying course of asbestos-cement shingles, or other covering elements of various types, secured to the sheathing over the underlying backer boards. The backer boards are usually applied with joints offset from those of the shingles, and with a water resistant paper or felt backer strip under the shingles at each joint thereof in order to keep moisture from coming into contact with the backer boards. In some cases, however, the shingles may be cemented directly to the backer boards before application thereof in order to reduce the cost of handling and application. In such cases in which the shingles are cemented directly to the backer boards, it has been found difficult and costly to obtain weather resistant joints, for if a ship-lap effect is used, it is costly to package the shingle and backer board units in such a way as to prevent damage to the projecting ends of the shingles and backer boards during shipment and handling. If, however, the end edges of the shingle and backer board units are made flush for preventing damage to the end edges, the backer board must be made waterproof, which is also costly, or the end edges of the shingles and backer board must be left uncemented for field insertion of backer strips of water resistant material, which operation requires extra labor or may easily be neglected, resulting in a job of poor quality. Further, a directly cemented siding unit of this type may be subject to warpage, both before and after application, due to absorption of moisture, since usually the co-efficients of expansion of the shingles and backer boards are different, thereby resulting in a differential length change which obviously produces a warpage. Also, there is no known simple way for field cutting shingle and backer board directly cemented units.

It is therefore a main purpose of the present invention to provide a siding unit of the character described, which is composed of a shingle or other building covering element fastened to a backer board or member by novel fastening means forming a hinge therebetween, whereby the shingle and backer board edges may be flush all around, or at least at any desired edges, when fabricated and packaged, and when unpacked in the field for application, the shingle and the backer board can be moved horizontally or laterally with respect to each other, forming a ship-lap effect at each lateral or vertical side end thereof, and with the fastening or hinge means, being of water resistant material, interposed between the shingle and the backer board and under the vertical edge joints of the adjoining shingles. This arrangement enables the siding unit to be applied on the

wall sheathing, shingle fashion, in conjunction with other similar siding units, so that weather resistant and waterproof joints are formed by the ship-lap lateral ends thereof.

It is further a purpose of the present invention to provide a siding or covering unit of the type referred to, which allows its edges to be flush for packaging at a minimum of cost, but which retains the advantages of a plied unit formed with ship-lapped lateral ends and provided with backer strips automatically positioned in place to give lowest cost of application and to guarantee all joints to be waterproof.

It is still further the purpose of the present invention to provide an improved siding unit employing non-rigid or flexible connections between the two components thereof, so that warpage cannot occur.

It is also the purpose of the present invention to provide a siding unit of the type described in which, when a cut is to be made, the shingle and backer board may be separated and cut independently, using conventional tools.

These and other features of the present invention are described in detail below in connection with the accompanying drawing, in which like numerals designate like parts, and in which:

Fig. 1 is a plan view of a section, with parts broken away for purposes of illustration, of a wall sheathing covered with siding units embodying the present invention;

Fig. 2 is a sectional view, on an enlarged scale, taken substantially along the line **2—2** in Fig. 1;

Fig. 3 is a sectional view, on an enlarged scale, taken substantially along the line **3—3** in Fig. 1, but showing components of the siding unit slightly spaced apart for a clear illustration;

Fig. 4 is a fragmentary edge view, on an enlarged scale, of a siding unit embodying the present invention, with a shingle component shown as being displaced horizontally with respect to a backer board component and slightly spaced apart, forming a ship-lap effect at an end thereof;

Fig. 5 is a view similar to that of Fig. 4, but showing the shingle and the backer board being pulled away from each other for a clear illustration of the fastening means and of the position thereof when the shingle and board lateral edges are in register;

Fig. 6 is a perspective view, with a part broken away for purposes of illustration, showing a siding unit of the preferred form of Figs. 1 and 3, but illustrating a slightly different arrangement of the fastening means;

Fig. 7 is a fragmentary view, in perspective, with a part broken away for purposes of illustration, of one type of water resistant material employed for the fastening means;

Fig. 8 is a fragmentary view, in perspective, of a siding unit of Fig. 1 showing a modified form of the fastening means; and,

Fig. 9 is a fragmentary view similar to Fig. 8, but showing another modified form of the fastening means.

Referring now in detail to the drawing, there is shown a siding structure comprising a base wall, as generally indicated at **10**, to which there is secured a plurality of courses of overlapping siding or covering units **12**, as shown in Figs. 1 and 2. In accordance with conventional practice, the base wall **10** may consist of a series of spaced studs (not shown) carrying sheathing **14** and an overlying waterproof layer **16**, the exterior covering units **12** being secured to the base wall **10** by nails **18**, or other fastening devices. The nails **18** may be driven through preformed apertures adjacent the heads and also adjacent the butts of the units **12**, the nailing operation being referred to as "face nailing" and illustrated by the nails **18**, as shown in Fig. 1 and 2.

Published by AsbestosClaims.Law
asbestosclaims.law/library/22256/2

The covering or siding units **12** each consists of two components, one being a shingle or other building covering element in the form of elongated, substantially rectangular, strip **20**, and the other component being a composition backer board or other backer member **22** of similar size and shape as the shingle **20**. The backer board **22** may comprise any material, but preferably material having insulating properties.

The instant invention finds its principal field of usefulness, as previously pointed out, in connection with asbestos-cement covering units and will be particularly described in that connection, although it will be appreciated that it is also applicable to siding units employing shingles of other types and shapes. Such shingles, made from a compressed asbestos-cement composition, as previously pointed out, are relatively thin and fragile, their thicknesses ranging from approximately ⅛" to 3/16". The backer boards **22**, however, are of relatively greater thickness than the shingles **20**, their thickness being approximately ⅜".

In accordance with the instant invention, the shingle **20** and the backer board **22** of each siding unit **12** are arranged in back-to-back relation, with surfaces **24** and **26** thereof facing each other. The shingle **20** and the backer board **22** of each siding unit **12** are then interconnected by fastening means comprising a backer strip **28** interposed therebetween and positioned and secured adjacent to the vertical or lateral edges **30** and **32** of the shingle **20** and the backer board **22**, respectively, at each side end of the siding unit **12**. The backer strips **28** are preferably adhesively secured to the opposed surfaces **24** and **26** of the shingle **20** and backer board **22** and are adapted to act as hinges, thereby permitting horizontal or lateral displacement of the shingle **20** and the backer board **22** with respect to each other.

The material of which the backer strips **28** are made is preferably relatively thin but sufficiently strong and water resistant paper or other felt or suitable material or combinations of materials. As shown in Fig. 7, a sheet of paper of which the backer strip **28** may be made is composed of a layer **34** of kraft paper and a layer **36** of aluminum foil adhesively secured together. However, any other type of material may be used which has similar properties.

In the preferred embodiment of Figs. 3 through 6, a backer strip **28** is folded into a generally V shape at a folding line **38** extending lengthwise, substantially at the center thereof, to form a pair of exposed faces **40** and **42**. The backer strip **32** is then adhesively secured, as at **43**, at the exposed marginal faces **40** and **42** to the opposed surfaces **24** and **26** of the shingle **20** and the backer board **22**, and extends the length of the lateral edges **30** and **32** of the shingle **20** and the backer board **22**. It may be mentioned, however, that the cement employed for adhesively securing the backer strips **28** to the shingle **20** and backer board **22** may be of any commercially known cement, but need not be long lasting or of high strength, since once the unit **12** is nailed in place, the cement has served its essential purpose.

In employing a V-shaped backer strip **28**, there is an additional advantage, in that the backer strip **28** need not be folded before it is adhesively secured to the surfaces **24** and **26**, for it may first be secured to the surfaces **24** and **26**, and then by bringing the shingle **20** and the backer board **22** together, the backer strip **28** is automatically folded at its folding line **38**, thereby considerably increasing the production rate of siding units **12**.

Referring to Figs. 3, 4 and 5, there is also illustrated, particularly in Fig. 3, ship-lap type joints formed by adjacent siding units **12** of a given course, the shingles **20** of which are displaced horizontally with respect to their backer boards **22**, and, preferably, the shingles **20**, and likewise the backer board **22**, abut vertical edges to vertical edges, in non-overlapping, flush relation, to form the ship-lap type joints between the units **12**. The joints are also waterproofed by the automatic placing of the water resistant backer strips **28** underneath each joint of the abutting lateral edges of adjacent shingles **20**. Where the backer strips **28** are made of material as shown in Fig. 7, the reflective, water repellant foil side **36** is located so as to face the joints between both the shingles and the backer boards. Thus, in the arrangement of Fig. 3, the foil side **36** is located at the inside of the fold **36** of the backer strip **28** at both ends of the unit **12**, while in the arrangement of Fig. 6, the foil side **36** is located at the inside of the fold at one end of the unit **12** and at the outside of the fold at the other end. In the application of each siding unit **12**, the shingle **20** may first be raised slightly above the backer board **22**, as shown in Fig. 5, and then be displaced horizontally in either direction with respect to the backer board **22**, and finally be lowered again on the backer board **22**, as shown best in Fig. 2, thereby forming a ship-lapped end **44** at each end of the siding unit **12**. The siding unit **12** may now be applied on the sheathing **14**, shingle fashion, in conjunction with the other siding units **12**, as pointed out above, in such a manner that weather resistant or waterproof joints may be formed by the ship-lapped ends **44**, thereby furnishing an insulating, pre-decorated side wall surface with attractive deep shadow lines, yet with the applicator having to handle no more units or drive no more nails than required for the application of only the shingles.

It is also preferred, that each siding unit may be formed with the butt edge **46** of the shingle **20** projecting somewhat from the butt edge **48** of the backer board **22**, which backer board **22** may be fabricated with the lateral edges **32** thereof being shorter than the lateral edges **30** of the shingle **20**, as shown best in Fig. 2, while the rest of the edges of the shingle **20** and backer board **22** are arranged substantially in register for shipping and other handling purposes prior to application of siding unit **12** to a building, as previously described above. This arrangement of the butt edges **46** and **48** of the shingle **20** and the backer board **22** has the additional advantage of preventing or minimizing the possibility of water or moisture draining from the butt edge **46** of the overlying shingle **20** being absorbed by the underlying backer board **22**, which would tend to defeat one of the purposes of the backer strip **28**. If the backer board itself becomes wet enough to drip moisture down over the exposed surfaces of the shingles of lower courses, unsightly stains may result. The backer boards may also then tend to deteriorate.

In Fig. 8, there is shown a modified backer strip **50** folded into a generally Z shape, with exposed marginal or end faces **52** being adhesively secured to the opposed surfaces **24** and **26**, respectively, of the shingle **20** and the backer board **22**. In this arrangement, only one of the backer strips **50** need be of water resistant material, since the Z-shaped backer strip **50** permits the shingle **20** to be displaced only in one direction to form a ship-lapped end. The backer strip **50** of water resistant material should obviously be provided adjacent to that lateral end of the unit **12** at which the backer strip **28** will underlie a joint between shingles. It is not required that the backer strip **28** at the other end of the unit, which overlies a joint between the backer boards **22** and serves primarily as a hinge connecting the shingle **20** and its associated backer board, be moisture proof.

In Fig. 9, there is shown another modified backer strip **54** which is folded into a generally W shape, with two exposed marginal surfaces **56** adhesively secured to the opposed surfaces **24** and **26**, respectively, of the shingle **20** and the backer board **22**. This backer strip **54** likewise permits the shingle **20** to be displaced horizontally or laterally with respect to the backer board **22** in either direction as the V-shaped backer strip **28** of Fig. 6.

It will be noted that the backer strips **28** of the form shown in Figs. 3, 5, 6 and 9 can be arranged on each

Published by AsbestosClaims.Law
asbestosclaims.law/library/22256/3

unit 12 with their lateral end edges pointing in the same or in opposite directions, but preferably with the lateral end edges extending outwardly, so that a shingle joint and backer joint will both be faced by a reflection, moisture proof surface of the backer strip 28. However, as pointed out above, in the form illustrated in Fig. 8, the Z-shaped hinges must be arranged in the same direction at both ends of the unit 12, in order to permit endwise shifting of the shingle and backer board relative to each other in the one direction possible to form the ship-lap joint in that form of the invention. Therefore, in the arrangement shown in Fig. 8, where a backer strip obtaining its moisture proof characteristics from a surface ply such as 36 is employed, surface 36 should thus be arranged so as to be on that side of the sloping leg of the Z facing the backer board, when the shingle and backer board are in register, so that in this shifted and applied position, a shingle joint will always be faced by a surface 36.

It should also be noted that the instant invention is not limited to the herein disclosed preferred use of moisture proof or other types of backer strips, with their many attendant advantages, since there are also important advantages in merely being able to "prefabricate" a building unit such as 12 in a manner to provide for handling and shipping with the shingle or other building covering element in register with the backer board or other backer member, but still providing for their shifting relative to each other to result in some form of desirable stepped edge or other relationship adapted for joint forming. According to this broader concept, the backer strips may be considered merely as one form of any suitable means for interconnecting the shingles or other building covering elements with the backer boards or the like for such relative shifting movement.

It will therefore be apparent that the present invention has been described in detail above for purposes of illustration only and is not intended to be limited by this description or otherwise except as defined in the appended claims.

What I claim is:

1. A building construction unit comprising, a building covering element, a backer member, and means interconnecting said element and said member and providing for movement of said element and said member relative to each other between a relatively contiguous position for handling and a substantially abutting position for application to a building.

2. A building covering unit comprising, a building covering element and a backer member, said element being contiguous to said member and having at least one edge lying in a first predetermined relationship with respect to a corresponding edge of said member, for handling purposes, and means interconnecting said element and said member for relative movement to a second contiguous position in which said one edge lies in a second predetermined relationship with said corresponding edge, for purposes of application to a building.

3. A building covering unit comprising, a building covering element and a backer member, said element and said member being sheet-like or board-like and arranged with major faces thereof face-to-face in at least partial register, said element having at least one edge lying in a handling position of substantial registry with a corresponding edge of said member, and means interconnecting said element and said member for relative shifting to an application position in which said edges lie in stepped-edge relationship for joint-forming purposes and the major faces are face-to-face in at least partial register.

4. A building covering unit comprising, a building covering element and a backer member, said element and said member being sheet-like or board-like and arranged with major faces thereof face-to-face in at least partial register, said element having at least one edge lying in a handling position of substantial registry with a corresponding edge of said member, and means interconnecting said element and said member for relative shifting to an application position in which said edges lie in stepped-edge relationship for joint-forming purposes, said interconnecting means comprising a backer strip attached to said element and said member adjacent to said edges so as to be exposed when shifted to said application position to face toward and lie behind a joint formed in applying a plurality of said units to a building with their stepped edges in joint-forming relationship.

5. A building covering unit comprising, a building covering sheet and a correspondingly shaped backer member, said sheet and said member being arranged with a major surface of one facing and adjacent and substantially parallel to a major surface of the other and registering at least predominantly therewith, at least one pair of opposite edges of said sheet being substantially in register with a corresponding pair of opposite edges of said member, and means interconnecting said sheet and member for relative shifting transversely of said edges to a stepped-edge relationship for joint-forming purposes.

6. A building covering unit as defined in claim 5, in which said interconnecting means comprises backer strips attached to said sheet and said backer member adjacent said edges and substantially parallel thereto, so as to cover at least portions of those areas of said sheet and backer member which would otherwise be exposed for joint-forming upon said shifting of the sheet and backer member to said stepped-edge relationship.

7. A building covering unit comprising a shingle and a backer board arranged in face-to-face relation, and backer strips interposed between and adhesively secured at marginal face portions thereof to said shingle and said backer board for permitting relative movement of said shingle and said backer board with respect to each other.

8. A building covering unit comprising a shingle and a backer board arranged in face-to-face relation, and at least one backer strip interposed between and secured to said shingle and said backer board at face portions thereof, thereby permitting relative movement of said shingle and said backer board with respect to each other.

9. A building covering unit comprising a relatively fragile asbestos-cement shingle and a backer board of insulating material arranged in parallel relation with faces opposing each other, and fastening means of the type of a strip of water impermeable material interposed between and connecting said shingle and said backer board together for shifting movement relative to each other, said fastening means having faces secured to said opposed faces of said shingle and backer board.

10. A building covering unit comprising a shingle and a backer board arranged in face-to-face relation, a backer strip of water resistant material interposed between said shingle and said backer board adjacent to lateral edges at each end thereof, each of said backer strips being folded lengthwise thereto into a plurality of sections, each of said backer strips being secured at end sections thereof to said shingle and said backer board, thereby permitting relative movement between said shingle and said backer board.

11. A building covering unit comprising a relatively fragile asbestos-cement shingle and a backer board of insulating material each having a plane surface and lateral edges, said shingle and said backer board arranged with said surfaces facing each other and said lateral edges substantially in register, a backer strip of water resistant material interposed between said shingle and said backer board adjacent to said lateral edges and extending the length thereof, said backer strip being folded lengthwise thereof to form exposed surfaces adhesively secured to said surfaces of said shingle and said backer board, thereby permitting relative movement between said shingle and said backer board in a direction transversely of said lateral edges thereof for forming a ship-lap type joint at the ends of said shingle and said backer board.

Published by AsbestosClaims.Law
asbestosclaims.law/library/22256/4

12. A building covering unit comprising a relatively fragile asbestos-cement shingle and a backer board of insulating material, said shingle and said backer board arranged with surfaces in face-to-face relationship and with lateral edges at each end thereof substantially in register, a backer strip of water impermeable material disposed between and adjacent to said lateral edges at each end of said shingle and said backer board, each of said backer strips being folded lengthwise thereof to form exposed surfaces adhesively secured to said surfaces of said shingle and backer board, thereby permitting relative movement of said shingle and said backer board with respect to each other for forming a ship-lap type joint at each end of said shingle and backer board.

13. A building covering unit comprising a shingle and a backer board arranged in face-to-face relation, backer strips of water resistant material interposed between and adjacent to end edges at each end of said shingle and said backer board, each of said backer strips being folded lengthwise into a plurality of surfaces and being adhesively secured at marginal surfaces thereof to said shingle and said backer board, thereby permitting relative movement of said shingle with respect to said backer board for forming a ship-lap type joint at the ends thereof.

14. A building covering unit as defined in claim 13 and in which at least one of said backer strips is folded into a generally V-shaped cross-section.

15. A building covering unit as defined in claim 13 and in which at least one of said backer strips is folded into a generally Z-shaped cross-section.

16. A building covering unit as defined in claim 13 and in which at least one of said backer strips is folded into a generally W-shaped cross-section.

17. A building covering unit comprising a cover element and a backer board for said cover element, said cover element and said backer board having opposed surfaces, and head and lateral edges arranged substantially

in register, the lateral edges of said backer board extending short of the lateral edges of said cover element, a moisture barrier strip interposed between and adjacent to the lateral edge marginal portions at each end of said cover element and said backer board, each of said strips extending the length of said lateral edges of said backer board and having exposed surfaces adhesively secured to said opposed surfaces, thereby hingedly connecting said cover element and said backer board together for permitting relative movement therebetween for forming a ship-lap-like joint at the lateral ends of said cover element and said backer board.

18. A building covering unit comprising a relatively fragile asbestos-cement shingle and a backer board of insulating material each being of substantially rectangular shape and having a front and back surface, a head edge, a butt edge, and lateral edges, said shingle and said backer board being arranged with one of said surfaces of said shingle facing one of said surfaces of said backer board, and with at least the head and lateral edges thereof being substantially in register, a backer strip of water impermeable material interposed between and adjacent to said lateral edges at each end of said shingle and said backer board, each of said backer strips extending the length of said lateral edges and being folded lengthwise thereof forming hinges with sections having exposed surfaces, said backer strip being adhesively secured at said exposed surfaces thereof to said surfaces of said shingle and said backer board facing each other, thereby permitting relative movement of said shingle and said backer board with respect to each other for forming a ship-lap type joint at said lateral edges of said shingle and said backer board.

References Cited in the file of this patent

UNITED STATES PATENTS

2,061,486 Schuh ---------- Nov. 17, 1936

Published by AsbestosClaims.Law
asbestosclaims.law/library/22256/5

UNITED STATES PATENT OFFICE

CERTIFICATE OF CORRECTION

Patent No. 2,879,555

March 31, 1959

Petro Dubecky

It is hereby certified that error appears in the printed specification of the above numbered patent requiring correction and that the said Letters Patent should read as corrected below.

Column 6, line 56, for "thereto" read -- thereof --.

Signed and sealed this 28th day of July 1959.

(SEAL)

Attest:

KARL H. AXLINE
Attesting Officer

ROBERT C. WATSON
Commissioner of Patents

Published by AsbestosClaims.Law
asbestosclaims.law/library/22256/6