Sept. 9, 1930. W. M. BLACK 1,775,085

ROOF COVERING

Filed July 8, 1929

Fig.1.

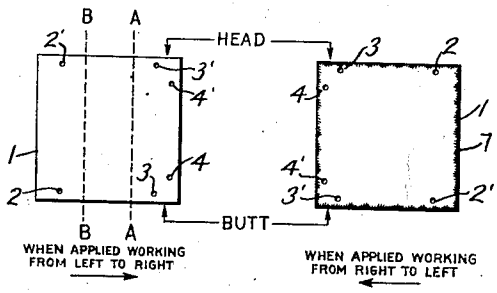


Fig.2.

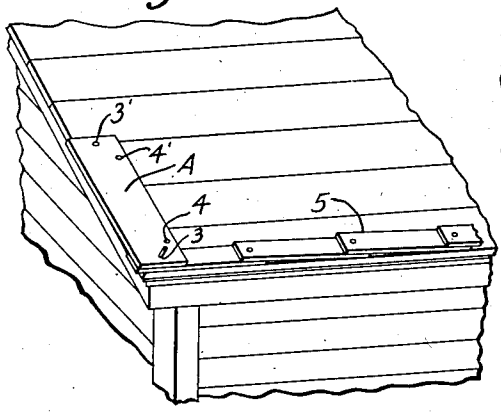


Fig.3.

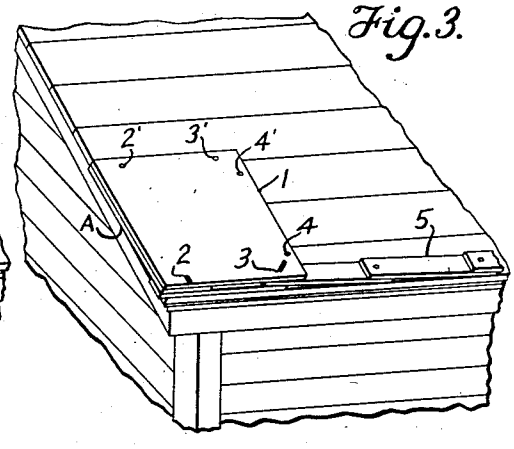


Fig.4.

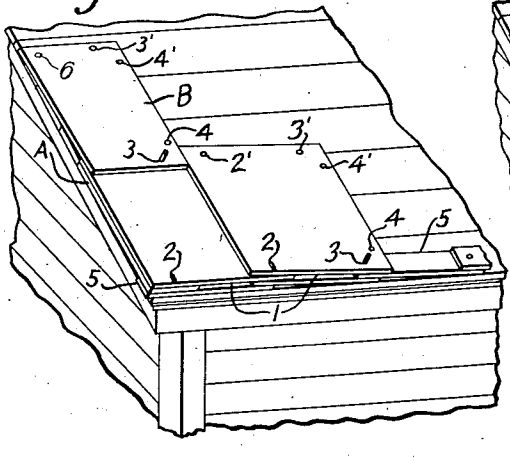


Fig.5.

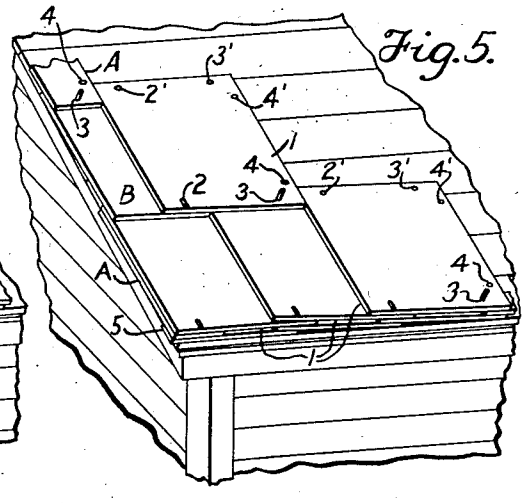
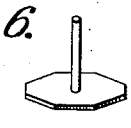


Fig.6.



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UNITED STATES PATENT OFFICE

WILLIAM M. BLACK, OF SAN MATEO, CALIFORNIA, ASSIGNOR TO JOHNS-MANVILLE CORPORATION, OF NEW YORK, N. Y., A CORPORATION OF NEW YORK

ROOF COVERING

Application filed July 8, 1929. Serial No. 376,730.

This invention relates to an improved covering comprising rectangular shingles, particularly those of the rigid or semi-rigid type, preperforated for the reception of fastening elements and adapted to be applied in a side lapped relation, and further relates to a method of applying the improved covering.

Objects of the invention are: to provide a roof covering comprising shingles which can be assembled and secured rapidly; also, to provide a roof covering which shall be as weather-proof as possible and be secured against dislodgement by the wind; and, further, to provide a covering attractive in appearance and comprising shingles which may be applied from left to right or vice versa so that the maximum decorative effect of the contours of the individual shingles is secured. Various other objects of the invention will be apparent as the description thereof proceeds.

The invention is particularly adapted to the provision of a roof covering comprising rectangular shaped shingles applied square with the roof and in a side lapped relation. The shingles may be formed of any suitable material having the requisite strength and weather-resisting properties, and are preferably of the rigid or semi-rigid type. Rigid shingles formed of a composition consisting of a mixture of asbestos and Portland cement have been used according to my invention with excellent results.

Referring to the accompanying drawings illustrating the preferred embodiment of the invention:

Fig. 1 illustrates in two views the preferred form of shingle and shows its position when applied to the roof deck working from left to right and when applied working from right to left.

Fig. 2 illustrates an initial step in the application of the roof covering and shows in detail the starting shingle for starting the first course.

Fig. 3 illustrates a further step and shows the first full size shingle in place.

Fig. 4 illustrates the application of the second full size shingle in the first row and the starting shingle used for the second course.

Fig. 5 illustrates the application of the first full size shingle in the second course and the starting of the third course.

Fig. 6 is a perspective view on a large scale of a storm anchor used in assembling and securing the shingles.

With the exception of the starting shingles, all of the shingles used in applying the roof covering are interchangeable and preferably are formed as illustrated in Fig. 1. Each shingle 1 is preperforated for the reception of fastening elements including both ordinary roofing nails and storm anchors, one of the latter being illustrated on an enlarged scale in Fig. 6. The storm anchors serve to secure adjacent shingles to each other and also to facilitate assembling of the shingles in a manner which will be fully described hereinafter.

In Fig. 1, left side, is shown a shingle in the position it assumes when laid from left to right and in a side lapped relation with adjacent shingles of the same course, that is, the left edge portion of each shingle is lapped over the adjacent shingle of the same course on the left, and the right hand edge portion of each shingle underlaps the adjacent shingle of the same course on the right. Perforations 2 and 3 in the butt portion of the shingle, when the shingle is in position, serve for the reception of storm anchors to secure the shingle to lapped portion of adjacent shingles of the same course, the storm anchor through perforation 2 serving to secure the lower left corner to an underlying shingle and the storm anchor through perforation 3 serving to secure the shingle to an overlapping portion of an adjacent shingle. Perforation 4 is for the reception of a roofing nail to secure the shingle to the roof deck, and is preferably so spaced from the edges that the nail driven therethrough will penetrate directly into the roof deck and not through any shingles of the underlying course. Perforations 2′ and 3′ are for the reception of roofing nails, a nail through 2′ serving to secure the upper left hand corner to the roof deck passing through a registering hole 3′, in an underlying portion of an adjacent shingle of the same course on the

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left, and a nail in the next overlapping shingle to the right passes through 3′ serving to secure the upper right hand corner to the overlapping shingle to the right and to the roof deck. Perforation 4′ is ordinarily not used. When it is desired to apply the shingles from right to left, the shingle is turned around as shown in the view on the right hand side of Fig. 1, and the positions and function of the perforations 2, 3 and 4, and 2′, 3′ and 4′, are respectively reversed, this reversibility being provided for by the symmetrical disposition of each set of perforations. In this view, the shingle is also shown as having uneven edges 7 which enhance its attractive appearance. The degree to which each shingle is sidelapped by adjacent shingles is dependent upon the distance (referring to Fig. 1, left side) from perforation 2 to the left lateral edge, and from perforation 3 to the right lateral edge. Each shingle is preferably overlapped one-third of its width, in which case the distance between the perforations 2 and the adjacent lateral edge and between perforation 3 and the adjacent lateral edge in each case is one-sixth of the total width. Adjacent courses are overlapped a distance about equal to that from perforation 4 to the lower edge.

Referring to Fig. 2, the shingle covering is preferably laid in the following manner:—First, a series of short strips 5 are laid at the eaves to give the first course of shingles the same angular relation to the roof as the subsequently laid courses. If desired, these strips and the rest of the roof deck may be covered with roofing sheets, such as waterproof felt or other suitable material, before the shingles are laid. The starting shingle A may be readily produced by cutting a full size shingle along the line A—A, Fig. 1, so that shingle A is one-third the width of a full size shingle and is provided with four perforations corresponding with those on the right hand size of the full size shingle. A storm anchor is threaded through perforation 3 so that the head thereof lies under the shingle and the shank projects above the surface of the shingle, as shown. Shingle A is then secured in position by a nail driven through perforation 4. In order to prevent any accidental shifting of the shingle before the next shingle to be laid is fixed in position, a nail may be driven through 4′; however, this perforation is not ordinarily used in this or subsequently laid shingles, except when the direction of laying is reversed, as hereinbefore described.

Fig. 3 shows the first full size shingle in place on top of shingle A. The full size shingle is placed in position by threading the storm anchor shank projecting from shingle A through perforation 2, and another storm anchor is threaded through perforation 3 for the next shingle. The storm anchor shank projecting through perforation 2 fixes the shingle at this point as on a pivot, and it may be readily swung or adjusted thereon until perforation 2′ is brought into registry with 3′ of shingle A, when a nail is driven through the registered perforations, thus securing the shingles to each other and to the roof deck. A nail is then driven through perforations 4 directly into the roof deck, and the storm anchor projecting through perforation 2 is clinched.

The second or full size shingle of the first course is applied by threading the perforation 2 therein over a storm anchor shank projecting from the complemental perforation 3 of the first full size shingle, and a storm anchor is threaded through perforation 3 for the next shingle as before. Perforation 2′ is then brought into registry with the complemental perforation 3′ of the underlying shingle by shifting it about the projecting shank of the storm anchor, and a nail is then driven through the set of registered perforations. The remainder of the shingles in this course are laid in the same manner.

For starting the second course, a starting shingle B is used similar to shingle A, but of two-thirds the width of a full size shingle, and preferably having an additional perforation 6 punched therein opposite 3′ for the reception of a roofing nail. Shingle B may be produced by cutting a full size shingle along the line B—B and then punching the perforation 6 therein. Shingle B is aligned vertically so that perforation 4 just clears the upper edge of the first course and horizontally so that its right lateral edge abuts against the left lateral edge of the second shingle in the first course. Before the shingle B is aligned, a storm anchor is threaded through perforation 3, and the shingle is then secured in the aligned position by nails driven through perforations 6 and 4. The first full size shingle of the second course is then secured to shingle B (Fig. 5) in the same manner as the first full size shingle is attached in the first course to shingle A, and the subsequent shingles are laid in a like manner. The third course is a repetition of the first course, except that the butt portions of the shingle overlap the head portion of the adjacent lower course, i. e., the second course, in the same manner as the second course overlaps the first course. In the third course the left lateral edge of each shingle is in alignment with a similar edge of each shingle in the first course, and this same alignment occurs in all alternative courses.

In the roof covering thus provided, it is apparent that each shingle is securely held at all four corners by suitable fastening elements of which only one fastening element is exposed, and since the exposed fastener is a weather-resistant storm anchor, failure of the roof covering due to deterioration of the

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fastening elements is practically eliminated. Although each shingle is secured at all four corners, only two nails and a storm anchor are used for each shingle. The arrangement lends itself to very rapid laying of the shingles and consequent low labor costs because of the pre-perforations therein and the ease which these perforations are brought into registry according to the method of applying above described. The shingle covering in its entirety presents an attractive appearance, since the heads of all nails are covered, and each shingle may be made to stand out to best advantage by laying the shingles from left to right or right to left, depending upon the position from which the roof is ordinarily viewed. For instance, referring to Fig. 5, the roof covering viewed from the left will show the left lateral edge in distinct outline, while when this covering is viewed from the right, these edges appear as straight lines and each course tends to assume the continuous surface appearance of strip or slab roofing. The arrangement further permits making the edges of the shingle slightly rough, since smooth edges are not essential to the proper alignment of the shingles, this alignment being attained by the symmetrical placing of the perforations. Rough edges add to the attractiveness of the shingles, and, further, permit of economies in manufacturing in the cutting operation, wherein such edges may at times be unavoidably produced.

What I claim is:

1. A rectangular shingle adapted to be laid in horizontal rows in a side lapped relation and preperforated for the reception of fastening elements, the butt portion of the shingle being provided in one corner with a perforation for the reception of a storm anchor to secure the corner to an underlying portion of a shingle of the same row, and in the other corner with a pair of perforations, one perforation being for the reception of a roofing nail to secure the shingle to the roof deck and the other for the reception of a storm anchor to secure the shingle to an overlying portion of a shingle of the same row.

2. A rectangular shingle adapted to be laid in horizontal rows in a side lapped relation and preperforated for the reception of fastening elements, the butt portion of the shingle being provided in one corner with a perforation for the reception of a storm anchor to secure the corner to an underlying portion of a shingle of the same row, and in the other corner with a pair of perforations, one perforation being for the reception of a roofing nail to secure the shingle to the roof deck and the other for the reception of a storm anchor to secure the shingle to an overlying portion of a shingle of the same row, and perforations in the corners of the head portion for the reception of fastening elements securing said portion, said perforation corresponding to those in the butt portion and being opposite thereto, whereby the shingle may be laid from left to right or right to left.

3. A rectangular shingle adapted to be laid in horizontal rows in a side lapped relation and preperforated for the reception of fastening elements, the butt portion of the shingle being provided in one corner with a perforation for the reception of a storm anchor to secure the corner to an underlying portion of a shingle of the same row, and in the other corner with a pair of perforations, one perforation being for the reception of a roofing nail to secure the shingle to the roof deck and the other for the reception of a storm anchor to secure the shingle to an overlying portion of a shingle of the same row, and perforations in the corners of the head portion of the shingle corresponding to those in the butt portion and opposite thereto, whereby the shingle may be laid from left to right or right to left, all of said perforations except the perforation first mentioned for the reception of a storm anchor in the butt portion being so spaced from the edges as to be covered by overlapping portions of adjacent shingles when the shingles are attached.

4. A roof comprising rectangular shingles arranged in rows, the shingles of each row being side lapped and the shingles of one row overlapping those of the adjacent underlying row so as to expose a single lower corner only of each shingle, each of said shingles being interchangeable and preperforated at the corners for the reception of fastening elements, the exposed corner of the shingle being secured to the underlying shingle by a storm anchor, said anchor having a head and clinching shank, the head lying under the underlying shingle and the shank passing up through registered perforations in the overlapped shingles and clinched thereover, the upper corners of the shingles being secured to the adjacent shingles of the same row and to the roof deck by roofing nails driven through registered perforations in the overlapped shingles, and the lower lapped corner of the shingle being secured to the roofing deck by a roofing nail driven through a perforation therein.

5. A roofing comprising flat, rigid, rectangular shingles arranged in rows, the shingles of each row being side-lapped and the shingles of one row overlapping those of the adjacent under-lying row so as to expose a single lower corner only of each shingle, each of said shingles being interchangeable and preperforated at each of the corners, said perforations being in registry with complemental perforations in the adjacent shingles in the same row, the exposed corner of the shingle being secured to the underlying shingle by a storm anchor, said anchor having a head and clinching shank, the head

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lying under the under-lying shingle and the shank passing up through a set of the registered perforations in the overlapped shingles and clinched thereover, the upper corners of the shingles being secured to the adjacent shingles of the same row and to the roof deck by roofing nails driven through the registered perforations in the head portions of the shingles.

Signed at city and county of San Francisco and State of California this 27th day of June A. D. 1929.

WILLIAM M. BLACK.

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