Nov. 21, 1933. D. HEANEY 1,936,055

COMPOSITE SHINGLE

Filed Aug. 8, 1929

Fig. 1

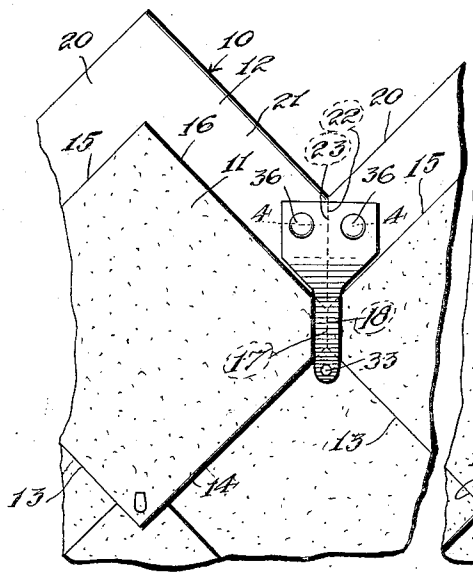


Fig. 2

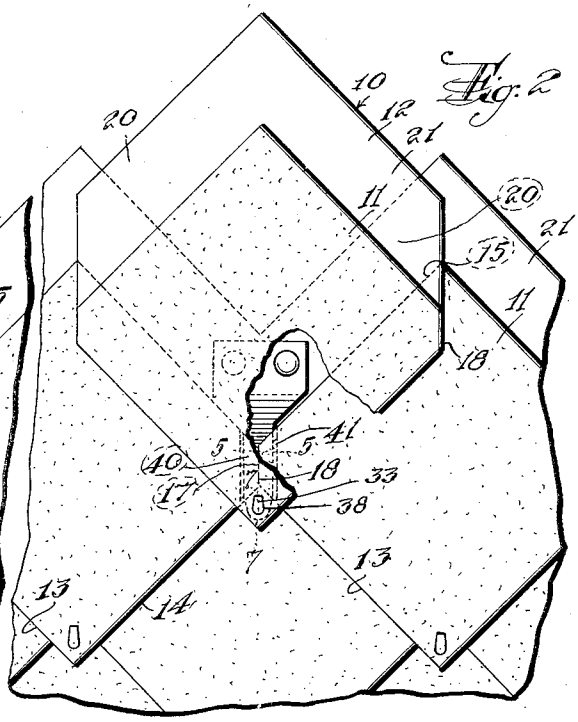


Fig. 3

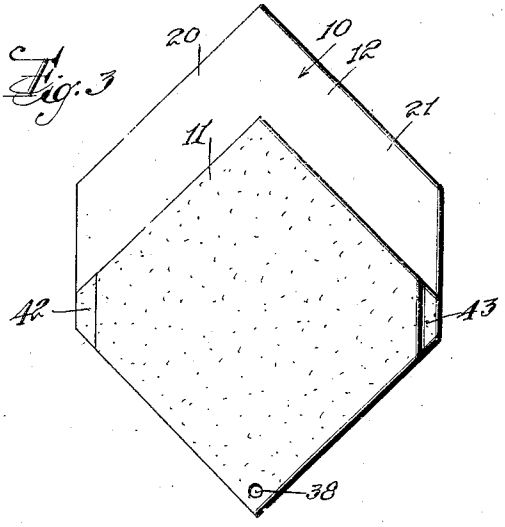


Fig. 7

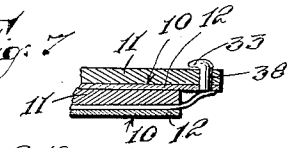


Fig. 4

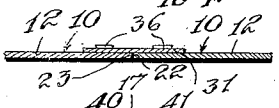


Fig. 5

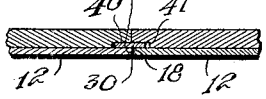
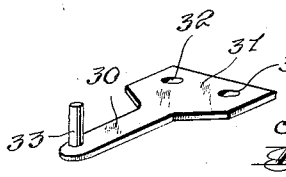


Fig. 6



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1,936,055

COMPOSITE SHINGLE

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3 Claims. (Cl. 108—8)

This invention relates to roofing shingles and is more particularly directed to improvements in the construction of rigid shingles such as those made from asbestos cement compositions.

As is well known, rigid shingles of the type made from cement and asbestos are subject to injury as by cracking or splitting during handling and application thereof upon a roof owing to the fragile nature of the material.

One object of my invention is to provide shingles of this type with a reenforcement which will render them less liable to splitting or cracking under the conditions named.

It is also well known that while these shingles are fireproof they do not provide any substantial degree of waterproofing qualities to a roof, and the liability of leakage through a roof laid up with shingles of this type is further increased when cracks are developed therein during the course of laying of the shingles or under the stresses set up after the shingles are in place.

Another object of my invention therefore is to provide shingles of this type with a reenforcement as above indicated which will serve also to render the shingles waterproof.

It is likewise well known that in order to secure rigid shingles of the type indicated to a roof it is necessary to drill or punch holes thereto at the desired nailing points. This operation is time consuming and costly and entails a further possibility of cracking or splitting of the shingles. With this in mind, my invention has as another of its objects, the provision of a composite shingle in which the rigid member will be reenforced by waterproofing material, as above stated, and which composite shingle can be secured to the roof by nails driven through portions of the reenforcing member without the necessity of drilling or punching the nail holes through the rigid member of the composite shingle.

My present invention is particularly designed to accomplish the objects above stated in conjunction with rigid shingles of the type set forth which are of generally rectangular configuration and laid according to what is known as the French method, that is with one diagonal running vertically of the roof and the other diagonal of the shingle running horizontally of the roof.

Other objects and advantages of the invention will more clearly appear from the following detailed description and from the accompanying drawing in which

Figure 1 is a fragmentary view showing several shingles constructed in accordance with my invention, as they appear when laid on the roof.

Figure 2 is a similar view illustrating a modified arrangement.

Figure 3 is a view in plan of still another modified form of the composite shingle constructed in accordance with my invention.

Figure 4 is a cross-section taken along the line 4—4 of Figure 1.

Figure 5 is a cross-section taken along line 5—5 of Figure 2.

Figure 6 is a detail in perspective of a fastener that may be employed with the composite shingles of my invention.

Figure 7 is a cross-section taken along line 7—7 of Figure 2.

Referring first to Figure 1 of the drawing, the numeral 10 designates one of the composite shingles as a whole.

This composite shingle in accordance with my invention consists of an upper rigid member or shingle 11 which is intended to form the exposed portion of the composite shingle, and an adherent reenforcing member 12. The rigid shingle member 11 may be formed of an asbestos cement composition, such as is now in wide use, or it may be composed of any other type of rigid shingle which is of fragile nature and otherwise subject to substantially the same difficulties that are met with in the asbestos cement shingles.

As already stated, the rigid member of the composite shingle is of generally rectangular configuration having lower side edges 13 and 14 and upper side edges 15 and 16. The diagonally opposite side corners are truncated to form vertical aligning edges 17 and 18 which are generally in substantial abutment when the shingles are arranged in proper position on the roof. To the underface of the rigid member 11 there is affixed a sheet of flexible waterproof material consisting preferably of roofing felt saturated with asphalt or other waterproofing material. If desired this saturated felt may also be provided with a layer of asphaltic or similar coating material on its opposite surfaces. The reenforcing sheet 12 may be secured to the rigid member 11 in any convenient way as by means of waterproof adhesive material which will provide the necessary bond between the rigid member and the reenforcing sheet. For this purpose I may employ asphalt of 100 to 200° F. melting point. If desired, this sealing may be derived from the adhesive nature of the coating material on the upper face of the reenforcing member 12.

The reenforcing member 12 takes somewhat

the same configuration as the rigid body member 11, but is of somewhat greater areas than the latter. At its lower side edges, the member 12 is coterminous with the lower side edges 13 and 14 of the rigid member 11. The reenforcing sheet is of sufficiently greater area than the rigid member 11 to provide extensions or prolongations 20, 21 beyond the upper side edges 15, 16 of the rigid member 11, these extensions merging into vertical side edges 22, 23 respectively, and the latter terminating in the planes of edges 17 and 18 of the rigid member 11. The depth of extension or prolongations 20, 21 of the reenforcing sheet 12 will depend upon the desired amount of overlap between the shingles of the succeeding courses.

By the aforedescribed construction of my composite shingle the backing or reenforcing sheet 12 serves as a cushioning and reenforcement for the rigid member 11 to protect the latter against splitting or cracking during handling or application to the roof. In the event that the rigid member does develop cracks under conditions of use, penetration of water to the roof boards will be prevented by the waterproof backing sheet sealed to the rigid member. Furthermore, should the rigid member crack through its entire depth, the broken piece will stay in place since it is sealed to the reenforcing sheet 12. This feature also distinguishes my composite shingle from the rigid shingles as ordinarily produced since cracks that develop in the latter through the entire depth thereof frequently result in the broken portions of the shingle being blown away by the wind, thus necessitating replacement of the broken shingle.

Replacement of rigid shingles is in itself a troublesome and costly operation and the necessity therefore is entirely avoided by the composite shingle of my invention, for even though hair cracks develop in the rigid member thereof, the reenforcing sheet 12 provides ample waterproof protection, while the fireproofing qualities of the shingle are not materially reduced since the separate portions of the rigid member remain sealed to the reenforcing sheet 12.

The shingles will be assembled on the roof in the well-known manner in successive overlapping courses and secured to the roof in any convenient way by nails driven through the extensions 20 and 21 of the flexible backing member 12 instead of through the rigid member. I prefer to use a fastening device for holding down the lower weather corner of the shingle and to secure this fastener by nails driven therethrough and through the portions 20, 21 of the flexible backing, thus simultaneously securing the shingles to the roof boards. This fastener may be formed as shown in Figure 6 and comprises a flat metal tongue 30 having at one of its ends an enlargement 31 provided with nail receiving holes 32. At the opposite end of the tongue 30, there is formed an upwardly projecting prong or lug 33. The fastener is secured in place with the enlarged portion 31 thereof arranged symmetrically with respect to the abutting edges of a pair of adjoining shingles and is held in place by nails 36 driven through the nail holes 32 and through the adjacent extensions 20, 21 of the adjoining shingles as shown. The tongue portion 30 of the fastener, as shown in Figure 1, overlies the upper surface of the rigid members 11 and extends downwardly below the edges 17, 18 thereof in position for the prong or lug 13 to pass through an opening 38 formed at the weather exposed corner of the overlying shingles, the lug or prong 33 being then hammered over so as to form an anchor for preventing the weather exposed corner of the shingle from being blown upwardly by the wind.

As will be noted, when the shingles are assembled in courses on the roof, rain or water that may be driven below the lower side edges of the exposed portion thereof, will enter the channel provided between the upper side edges of the rigid member 11 and flow downwardly along the extensions 20, 21 of the waterproof back member, and over the upper surface of the subjacent shingle. This draining effect will accordingly serve further to prevent water or rain from reaching the roof supporting structure.

In Figure 2, I have shown a modified construction, in which like parts are designated by similar reference characters. In this form the rigid member 11 is chamfered or cut away from the underface, at opposite side corners thereof, to provide pockets 40, 41 for the reception of the tongue 30 of the fastening member, whereby to aid further in holding the shingles flatwise against the subjacent surface. In Figure 3, the opposite side corners of the rigid members are similarly chamfered from the upper side thereof to provide depressions 42, 43, for the reception of the tongues 30 of the fastening members.

I claim as my invention:

1. A composite shingle comprising an upper exposed member of rigid fragile material having chamfered opposite side corners, and a reenforcing backing secured to the underface of the rigid member and extending upwardly beyond the upper converging side edges thereof.

2. A composite shingle comprising an upper exposed member of rigid fragile material, of substantially rectangular configuration having chamfered side corners and adapted to be laid with one of its diagonals vertically of the roof, and a reenforcing backing secured to the under face of the rigid member and extending upwardly beyond the upper converging side edges thereof.

3. A roof covering comprising composite shingles laid in successive courses, said shingles being of a general rectangular configuration and laid with one diagonal vertically of the roof, and comprising an upper exposed rigid member of fragile material being chamfered at its opposite side corners, and a reenforcing backing secured to the underface of the rigid member and projecting upwardly beyond the unexposed edges thereof, and a fastening element secured to the upwardly projecting portions of the backing of a pair of contiguous shingles, said fastening element provided with means that lie in the chamfered side corners and with means for holding down the weather corner of the overlying shingle.

DONALD HEANEY.