F. H. GRANT.

SHINGLE.

APPLICATION FILED FEB. 12, 1914.

1,094,893. Patented Apr. 28, 1914.

Fig. 1.

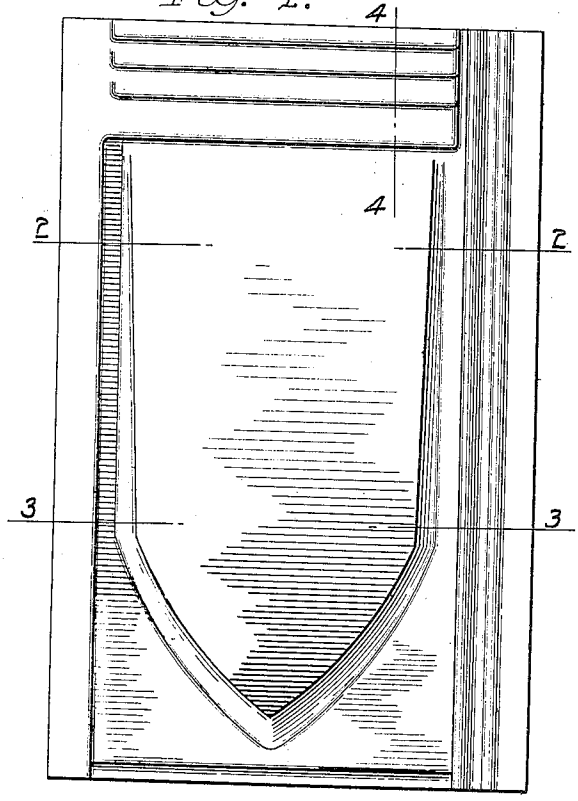


Fig. 4.

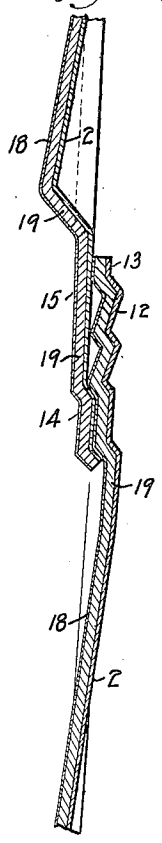


Fig. 2.

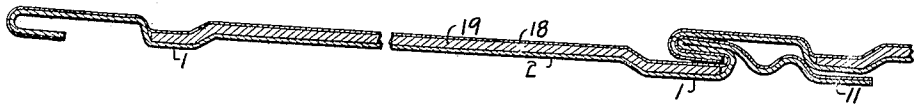


Fig. 3.

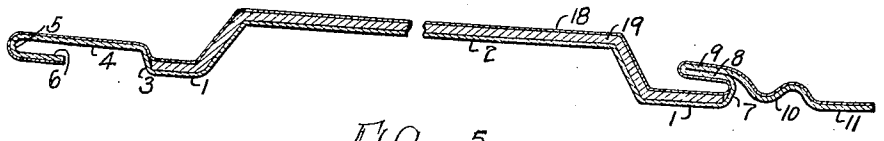
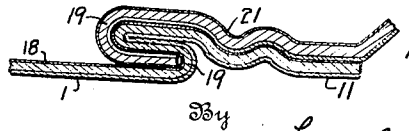


Fig. 5.



Inventor

Frank H. Grant.

Witnesses

E. R. Barrett

Edward N. Pagelsen

By

Louis M. Spencer

Attorney

UNITED STATES PATENT OFFICE.

FRANK HALL GRANT, OF ST. CLAIR HEIGHTS, MICHIGAN.

SHINGLE.

1,094,893. Specification of Letters Patent. Patented Apr. 28, 1914.

Application filed February 12, 1914. Serial No. 818,247.

To all whom it may concern:

Be it known that I, FRANK HALL GRANT, a citizen of the Dominion of Canada, and a resident of St. Clair Heights, in the county of Wayne and State of Michigan, have invented a new and Improved Shingle, of which the following is a specification.

This invention relates to a shingle, and its object is to provide one that shall be sound-proof, durable and inexpensive. Its object is also to provide a shingle that may be readily secured in place upon the roof, and that may be easily interlocked with similar shingles to form a substantially integral roof having no seams through which the water may pass.

This invention consists in a shingle formed of a thin sheet metal cover, a thin sheet metal base and a filler of sound-deadening material; it also consists in a shingle of this type, the side edges of which are bent to form male and female members of joints for interlocking with adjacent shingles and for securing the base, the cover and the filler rigidly together.

It also comprises a shingle of this type provided with an integral nailing strip; and it further comprises the novel details of construction shown and described, and particularly pointed out in the claims.

I have discovered that very thin sheets of soft metal, particularly of copper, when hammered upon an asphalt surface, may be beaten into various forms without the metal becoming torn or broken in the slightest degree. This principle I have embodied in my improved shingle in which the blows of hail-stones or other objects upon a copper cover are resisted by an asphalt filler, the result being that the copper is merely hammered or dented into the filler without becoming torn or broken in the slightest degree, as would be the case were the cover applied directly to the roof or other rigid support.

In the drawings, Figure 1 is a plan view of one embodiment of my invention. Fig. 2 is a section thereof on about the line 2—2 of Fig. 1, showing the manner of interlocking with an adjacent shingle. Fig. 3 is a section on about the line 3—3 of Fig. 1. Fig. 4 is a section on about the line 4—4 of Fig. 1, showing the manner in which an upper shingle overlaps a lower one. Fig. 5 is a section of the interlocking edges of two shingles of a modified construction.

Similar reference characters refer to like parts throughout the several views.

The sheet metal base, which may be of steel, is shown of substantially rectangular shape, having a flat portion 1 that contacts directly with the roof, and an embossed or struck out central portion 2. One of the side edges of the base is bent upwardly at 3, then outwardly as indicated at 4, and is finally bent downwardly at 5 and returned upon itself at 6 to form the female member of an interlocking connection between the shingle and an adjacent shingle. The opposite side edge of the base is bent upwardly at 7, then inwardly at 8, and is then returned outwardly upon itself as indicated at 9, finally terminating in the corrugations 10 and flat nailing strip 11. The upper end of the base plate is ribbed or corrugated at 12 and may have a flat edge 13 to engage with and receive the correspondingly ribbed or corrugated lower edge 14 and flat portion 15 of the shingle next above.

The cover portion shown in Figs. 2 and 3 comprises a relatively thin sheet of copper or lead 18 which is a counterpart in form of the sheet metal base with the single exception that the portion corresponding to the bend 3 is shorter than the latter, thereby forming between the base plate and the cover plate a narrow space that may be filled with asphalt 19. In the manufacture of the shingle, the sheet metal base plate is preferably dipped in liquid asphalt, after which the sheets and filler 19 are pressed tightly together. The asphalt, which is of a somewhat viscous nature, forms a bond between the two metal sheets which prevents any separation of the parts such as might be caused by blows or by expansion or contraction of the sheets in respect to each other. As shown in Figs. 2 and 3, the asphalt filler extends laterally only to the bends 3 and 7, respectively; it preferably extends to the upper and lower edges of the sheet (Fig. 4).

It is found desirable in some cases to extend the filling laterally throughout the sheet as indicated in Fig. 5. This construction is advantageous in that it deadens the vibration in the immediate vicinity of the joint and at the same time strengthens the latter, and also provides a better nailing strip. In this modification the female member is shown provided with the corrugation 21 corresponding to the corrugation 10 in the nailing strip, thus more positively interlocking

the parts than is the case wherein this corrugation is omitted.

A shingle constructed in accordance with my invention will be a non-conductor of heat or cold and when properly laid will form an absolutely water tight covering for the roof which will not sweat or rust. The metal covering of the shingles will protect the latter from hail stones and heavy storms and the body of the shingle inclosed by the covering will act to deaden the sound caused by heavy storms or hail striking the roof.

In the construction shown, the cover possesses very little strength, but has great wearing qualities. The steel base plate reinforces the cover and gives the shingle its strength, and the asphalt serves as a bond for preventing the cover from separating from the base plate, besides deadening the sound of rain or hail, preventing any rusting of the base plate, and affording a cushion into which the cover may sink when subjected to blows.

Owing to the fact that the coverings are constructed from very thin metal the cost of a roof covered with my improved shingles will be considerably less than the usual metal roof.

It will be understood that changes may be made in the details shown without departing from my invention. While I prefer to form the cover of copper or lead, it may be advisable in some cases to make it of aluminum or other metal. I do not, therefore, wish to be limited otherwise than as indicated by the subjoined claims.

I claim:

1. A shingle comprising a thin cover sheet of metal whose strength is insufficient to withstand the stresses to which the shingle is subjected, a relatively thicker sheet metal base plate and a thin filling of a sound-deadening material between the cover and base plate, the edges of the cover and the base plate being interlocked to hold the parts rigidly together.

2. A shingle comprising a thin cover sheet of metal whose strength is insufficient to withstand the stresses to which the shingle is subjected, a relatively thicker sheet metal base plate spaced apart slightly from the cover, a thin filling of sound-deadening material between the cover and the base plate, the cover and base plate being interlocked along one edge to form a female member and being interlocked along an opposite edge to form a male member whereby adjacent shingles may be secured together upon the roof.

3. A shingle comprising a thin copper cover sheet whose strength is insufficient to withstand the stresses to which the shingle is subjected, a sheet metal base plate spaced apart slightly therefrom, a thin filling of asphalt between the cover and base plate, the whole being pressed tightly together whereby the asphalt serves as a bond between the cover and the base plate, the cover and base plate being interlocked along one edge to form a female member, and along the opposite edge to form a male member whereby adjacent shingles may be secured together upon the roof.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

FRANK HALL GRANT.

Witnesses:
ALVIN H. GEORGE,
OTTO FRANK SCHABERG.