Jan. 29, 1929. 1,700,138

T. E. MURRAY, JR

METAL SHINGLE AND THE LIKE

Filed Nov. 14, 1924

Fig. 1.

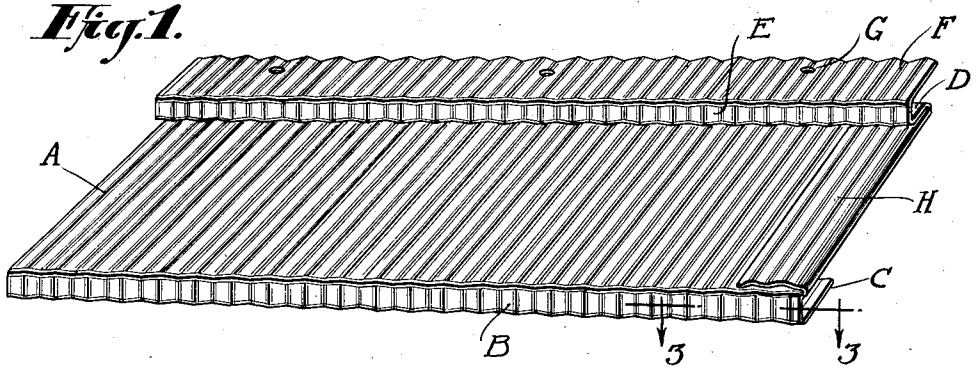


Fig. 2.

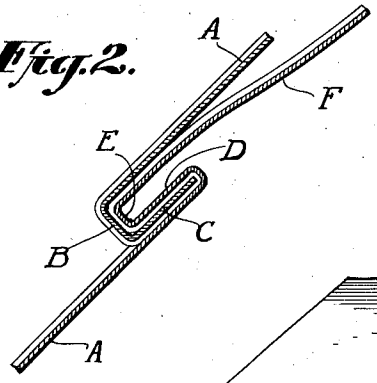
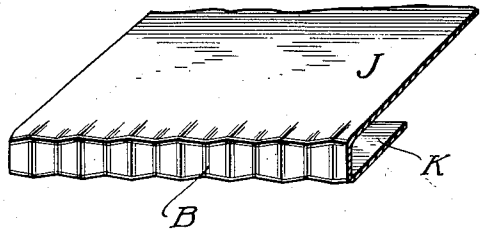


Fig. 3.



Fig. 4.



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METAL SHINGLE AND THE LIKE.

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Shingles of metal and particularly of copper are known, and it is the purpose of the present invention to provide certain improvements therein, described in detail hereinafter.

The accompanying drawings illustrate shingles embodying my invention.

Fig. 1 is a perspective view of a single shingle;

Fig. 2 is a cross-section of an overlapping horizontal joint between two shingles;

Fig. 3 is a section on the line 3—3 of Fig. 1;

Fig. 4 is a perspective of part of a modified form of shingle.

The shingle illustrated has a body portion A with a perpendicular lower flange B bent backward to form a flange C which hooks under a portion of the next lower shingle in the manner indicated in Fig. 2. At its upper edge the body of the shingle is bent perpendicularly upward and forward to provide a portion D for engagement by the flange C of the next shingle, and then perpendicularly upward to form a flange E and backward to form a portion F by which it is attached to the roof supports below by means of nails passing through holes G. At one side edge the metal is bent over the top to form a flange H for engagement with a similar flange on the underside of the adjacent edge of the next shingle so as to form locked vertical joints (that is in the vertical plane extending up and down the slope of the roof).

I propose to corrugate such shingles in whole or in part and either before the sheets are bent into shingle shape or afterward. The corrugations extend in the direction from top to bottom of the shingle and of the perpendicular flanges. On the body A which is exposed in use, they present a considerable improvement in appearance compared with a flat surface, giving the effect of a soft tinted surface instead of a very bright one. Also the corrugations serve to stiffen the shingle throughout. This is very important to the manufacturer, not only in economizing metal, but in making it possible to use certain metals which are otherwise ill adapted practically for such use.

For shingles stiffened in the way described, it is possible to use sheets of extremely thin metal. With non-corrodible metals like copper, the only limitation on the thinness of the sheets used in making the shingles is the stiffness required. By corrugating the sheets, thinner stock may be used. The corrugations may be so shallow that the wavy line of Fig. 3 will be very little longer than a straight line; the cross-section or weight of metal for a shingle of a given width being actually less than is required for the making of a shingle without corrugations.

The corrugations may be applied alone to the body portion of the shingle, or they may be applied alone to one or more of the perpendicular portions B and E. In Fig. 4 I have shown a shingle of which only the perpendicular flange B at lower edge is corrugated, the body J and the flange K being flat. The corrugating of the lower flange B has certain peculiar advantages whether the corrugations be extended to the other parts of the shingle or not. Efforts have been made to produce a shingle of deposited copper as distinguished from rolled sheets; the deposited copper being considerably cheaper weight for weight. But such deposited sheets are comparatively soft and weak so that they bend easily. The flange B has to have a certain stiffness in order to preserve its shape under the strains of handling and laying on the roof. With deposited copper of the minimum thickness which it is possible to use for the body and other parts of the shingle, it has been necessary to make the lower flange comparatively short in order that it shall be stiff enough to hold its shape. But it is very desirable to have the flange B of greater height, say equal to that of the butt end of ordinary wooden shingles, so as to give an agreeable relief effect to a roof of these shingles. The corrugating of the flange as indicated in Fig. 4 makes it possible to increase the height of this flange without loss in stiffness, while securing the economy involved in the use of deposited copper or other very thin metal.

Speaking roughly the flange should have a depth of about ¼ inch (which may be several times the thickness of the metal, as illustrated), which cannot be satisfactorily done with deposited copper unless the flange be stiffened. And while I prefer to stiffen the flange by means of corrugations as illustrated, yet my invention contemplates stiffening the flange in various other ways.

The corrugation may be effected in an ordinary pair of corrugating dies or by any other usual or suitable method. The lower edge alone of the sheet may be corrugated before bending, in which case the corrugations would extend over only the parts B and K. Or the part B alone may be corrugated (after bending to the perpendicular position)

between dies corresponding in width to said part B.

Though I have described with great particularity of detail certain embodiments of my invention, yet it is not to be understood therefrom that the invention is restricted to the particular embodiments illustrated. Various modifications may be made by those skilled in the art without departing from the invention as defined in the following claims.

What I claim is:

1. A shingle made of a sheet of comparatively soft and weak deposited copper of the minimum thickness which it is possible to use for the body of the shingle having a perpendicular flange at its lower edge, the depth of which flange is several times the thickness of the metal and the body of which flange is stiffer against bending toward the plane of the shingle than the flat metal from which the shingle and flange are formed.

2. A shingle made of a sheet of comparatively soft and weak deposited copper of the minimum thickness which it is possible to use for the body, having a perpendicular flange at its lower edge, the depth of which is several times the thickness of the metal, which flange is bent to form corrugations extending in a perpendicular direction.

3. A shingle made of a sheet of comparatively soft and weak deposited copper of the minimum thickness which it is possible to use for the body, having a perpendicular flange at its lower edge the depth of which is several times the thickness of the metal, the body of the shingle being flat and the lower flange being bent to form corrugations extending in the vertical direction so as to be stiffer than the body.

In witness whereof, I have hereunto signed my name.

THOMAS E. MURRAY, JR.