

W. F. McKAY.
MULTISTRIP, KERFED EDGE ROOFING.
APPLICATION FILED AUG. 28, 1911.

1,063,710.

Patented June 3, 1913.

2 SHEETS—SHEET 1.

Fig. 3.

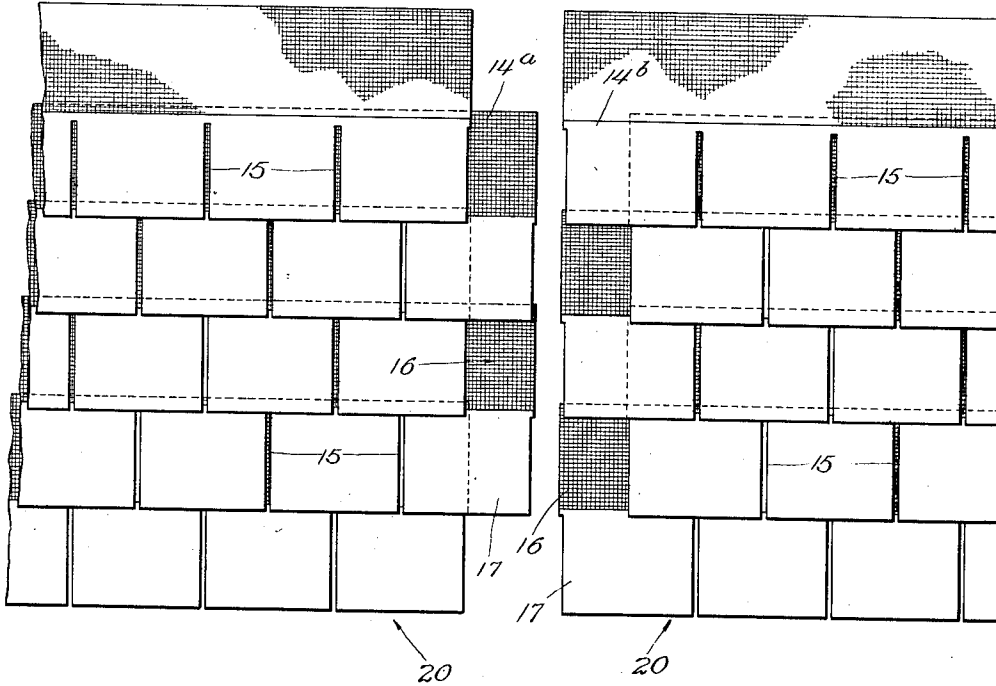


Fig. 1.

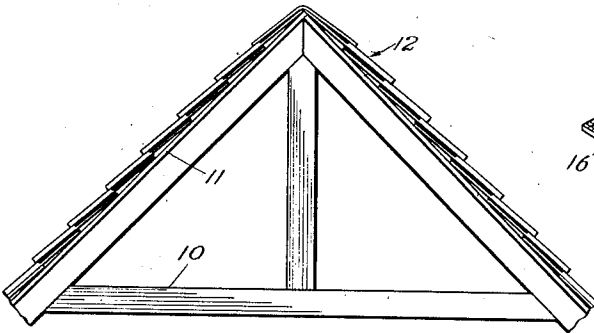
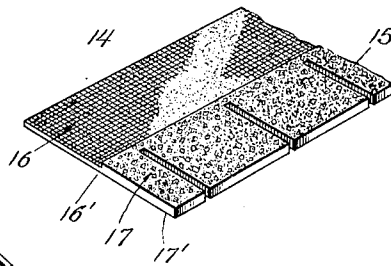


Fig. 2.



Witnesses:
Robert H. Meier
J. W. Daggett.

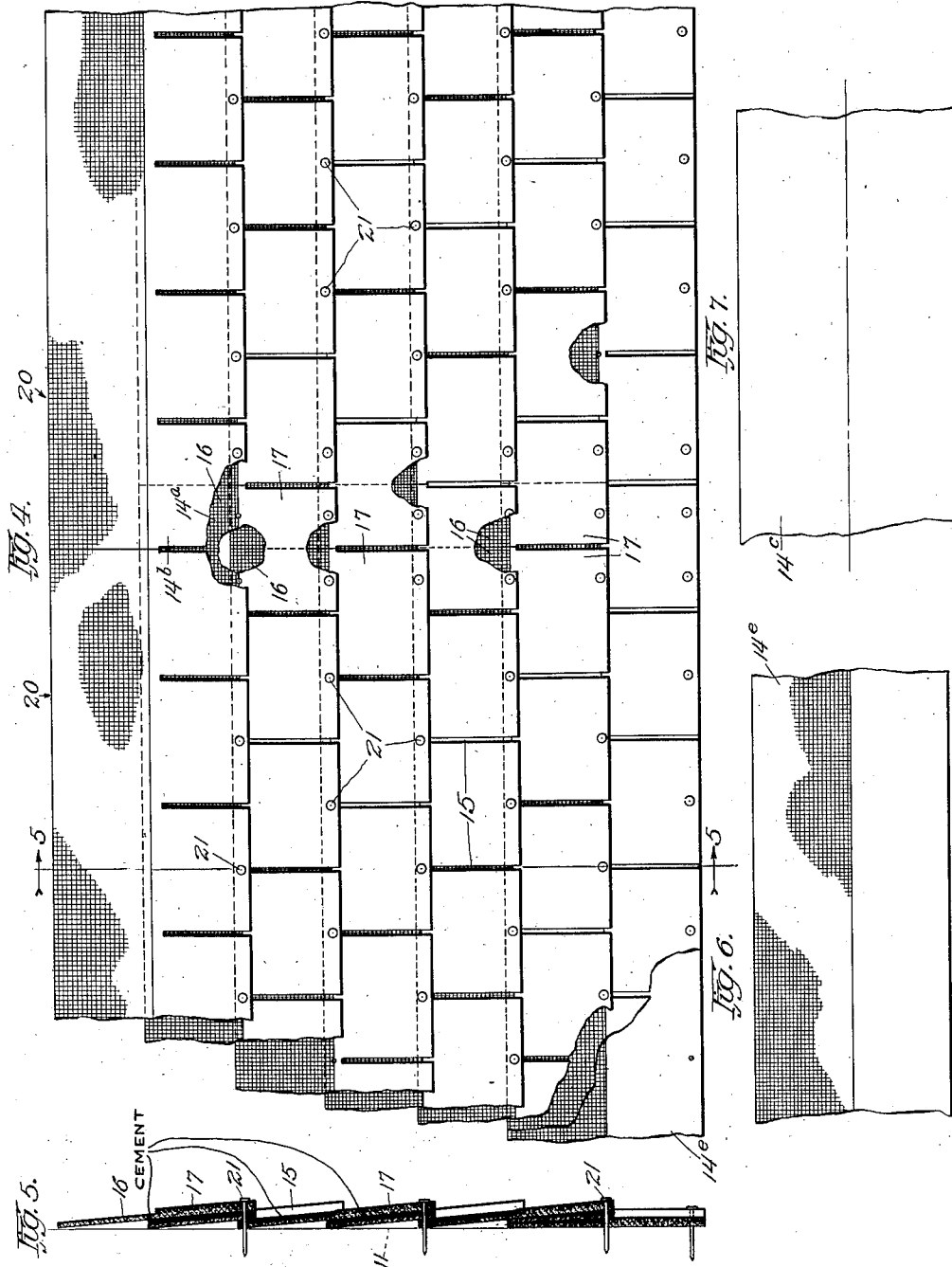
Inventor:
William F. McKay
by G. C. Sain May
Atty.

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2 SHEETS—SHEET 2.



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Robert H. Weir
J. C. Daggett.

Inventor:
William F. McKay
by George Dainman
Atty.

UNITED STATES PATENT OFFICE.

WILLIAM F. McKAY, OF LA GRANGE, ILLINOIS.

MULTISTRIP KERFED-EDGE ROOFING.

1,063,710.

Specification of Letters Patent.

Patented June 3, 1913.

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To all whom it may concern:

Be it known that I, WILLIAM F. McKAY, a citizen of the United States, residing at La Grange, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Multistrip Kerfed-Edge Roofing, of which the following is a specification.

My invention relates to improvements in roofing, and more particularly to the so-called "prepared" roofings in which the material employed to constitute the weather-resisting exterior surface of the roof consists of flexible, fibrous, felt-like material, suitably weather-proofed, and prepared in the form of long sheets for attachment to the roof sheathing.

One of the most serious objections to such prepared roofing material is the "dead" and cheap appearance of the completed roof, that is to say, the unrelieved flatness and monotony of the large unbroken areas of the roof and the obviousness of the strip formation. Many efforts have been made for a long time past to provide a roofing-material which would not be subject to these objections but which when laid would simulate in ocular effect roofs of tile, slate, shingle or other of relatively costly character. For instance, prepared roofing has been provided in the form of strips serrated or pointed on their lower edges to be laid with succeeding courses having their points alternating and sometimes with the succeeding courses in contrasted colors, for simulation of a lozenge, or diamond-tile effect; other prepared-felt roofing material has been made up in the form of individual shingles, as a substitute for ordinary wooden shingles, and in some cases the edge joints of strips of the ordinary sheet-form material have been outlined with cement, or other substance of contrasting color to relieve the monotony of the roof. Each of these methods seeking to overcome the objection referred to, has been open to objection of increase in cost in the laying of the roof and no prior roofing structure of the character described, of which I am aware, has proven artistically satisfactory in its imitative effects. Furthermore, in all roofings of which I am aware, heretofore made, it has been uniform practice to make up the roofing in single-strip form, securing each strip individually in place on the roof, where all work must be done by hand and where even

hand work is carried out in inconvenient positions and under conditions otherwise preventing the efficient joining of the strips into a complete roofing sheet which will be satisfactory in all respects.

My present invention contemplates a roofing material effectively simulating when laid, a shingle or slate roof, preferably constructed in sheet form composed of unit-strips, and which is simple and easy of manufacture, easily laid, and highly efficient in its protective value.

In the drawings, wherein I have illustrated an embodiment of my invention, Figure 1 is a side elevation of a laid roof; Figure 2 is a fragmentary detail of a unit-strip; Figure 3 is a view of the opposite ends of two complete sheets separated; Figure 4 shows said sheet-ends joined; Figure 5 is a transverse section on line 5-5 of Fig. 4; Figure 6 is a detail of a bottom-finishing strip; Figure 7 is a fragmentary detail of a crest finishing strip.

In Fig. 1, 10 indicates in general a frame structure supporting the sheathing 11, on which the roofing 12 is laid. The roofing material, specifically exemplified in the drawings, embodies a plurality of strips 14, which I may term unit-strips, each having kerfs 15 at intervals extending substantially the full width of that zone of the strip which is to be exposed upon the surface of the roof when laid, and extending deep enough below the surface of the material for sharp demarkation, such kerfs preferably extending through the strip from face to face.

In the structure of the individual strip, I prefer that its width be about double the width of the zone of exposure, and that the concealed zone be of less thickness than the exposed zone. Thus, as shown in Fig. 2, I preferably construct the strip with a longitudinal zone 16, relatively thin, and with a parallel zone 17 of greater thickness, the kerf 15 being local to the thicker zone 17 and extending deep enough into the material to give the exposed zone the appearance of being composed of a number of separate blocks. In practical manufacture I preferably construct the strips of a full-width base layer, 16, and a superposed thickening layer 17 intimately united at factory so that the thicker portion is substantially homogeneous. Further, it is my preference that the top surface, for exposure of the zone 17, be of

a lighter color than the body of the material, and to this end, I preferably make the entire strip structure of black material, except for a superficial coating of lighter material on the face of the zone 17. The superficial color of the zone 17 may, of course, be provided in various ways, well known in the art, and may be a slate gray, red or green, brown or other color appropriate for the simulation of slate or shingle colorings. The kerf I preferably cut clear through the material from the thickened edge almost to the thinner zone.

While the individual strips 14 might be laid singly, following previous methods of applying prepared roofings, in which case only those advantages will be gained which arise from the construction of the strip itself, I prefer that the complete article of manufacture, as marketed, shall be made up in the form of sheets, each compounded of a plurality of unit-strips, properly united and correlated, so that the roofing shall possess qualities unattainable by applying the strips one by one to the roof as heretofore. In the formation of such sheets, generally indicated at 20, I use a suitable plurality of strips 14, each having its thickened lower edge overlapping the thinner upper edge of the subjacent strip, and, preferably, overlapping slightly the thicker zone of such lower strip. The strips are all of the same length, but successive courses are arranged to bring the kerfs 15, of their pattern-cut edges, in staggering relation, as indicated in Figs. 2 and 3, the strips being secured together with any suitable adhesive, such as asphalt cement, so that they are permanently united, preferably throughout their overlapped length. In cementing the strips together, the adhesive is applied between each strip and the upper surface of the next subjacent strip entirely above the shoulder on said subjacent strip which divides its zones 16 and 17, so that the extreme edges of the thicker zones freely overlie the subjacent thicker zones, while the remainder of each thicker zone is cemented to the underlying zone. When the strips have been properly arranged and the adhesive applied the whole is pressed by machinery to make a unit of the whole series of cemented parts. This results in a sheet having a solid impervious body from edge to edge of the sheet (see Fig. 5), while the upper surface provides a plurality of shingle-imitating members each having a free lower edge, but each effectively secured above its edge against flapping in the wind, as has been the case in similar roofings as heretofore applied. Thus, when it is considered that the adhesive used may be of the same material as was used in making the homogeneous strips above described, and that the strips may be cemented and machine-pressed together at just the

right degree of hardening of both the strip and adhesive, it will be seen that the sheet resulting from the cementing of a plurality of strips in the manner described will have a homogeneous body from edge to edge thereof. The use of such adhesive in accordance with practice heretofore does not result in such homogeneous body, since to carry out the previous practice the strips must be made and cooled for convenience in shipping and handling the individual strips, and further since the adhesive so applied to the individual strips must be of such a nature in regard to temperature, thickness, amount applied, etc., as to preclude the attainment of the kind of sheet which may be provided in the manner I have described. The homogeneity of the sheet of course makes it unnecessary to apply nails between the several rows of shingle-imitating members constituting the exposed surface of each sheet and this distinguishes the sheet herein described from that resulting from individual application of prepared strips where homogeneity is not attainable for reasons stated and where nails are indispensable. The shoulder provided on each strip of course makes easier the embodiment of the above ideas on account of its operation when the superposed strips are being machine-pressed. It may be possible, however, to provide a sheet having the essential features of that here described by the use of means analogous to the shoulder, my invention contemplating the use of strips and adhesive treated by machinery at temperatures, etc., to make a sheet having an exposed surface with its overlapping members and a body homogeneous from edge to edge. The staggering relation, or imbrication, of the strips leaves, at each end of the sheet, alternate strips protruding beyond the edge of what I may term the solid portion of the sheet, that is the portion in which the transverse overlapping exists, the protruding strip-ends 14^a at one extremity of the sheet being portions of the second, fourth, etc., courses, and the ends 14^b protruding at the other extremity of the sheet being the first, third, etc., courses. These protruding ends are free from each other, and when the sheets are laid, as shown in Fig. 4, the protruding ends 14^a and 14^b are interlapped, forming a broken lapped joint of advantageous character.

The sheets described are secured in place upon the sheathing 11 by nails 21, the exposed heads of which are preferably substantially the same color as the surface of the zone 17 of the sheet.

In laying a roof, an edge strip 14^c, as shown in Fig. 6, having preferably an uninterrupted edge surface may be preliminarily laid to underlie the lower course of the first sheet, and then the sheets are suc-

cessively laid to the crest of the roof, where an uninterrupted crest strip 14^c (see Fig. 5) may be placed to overlie the zones 16 of both upper sheets as illustrated in Fig. 1.

5 A roof laid as above described is very closely imitative of shingle or slate (according to the color of the exposed zones of the strips and the spacing of the kerfs) the sharpness of outline of the blocks or
10 plates being enhanced by the black color of the edges thereof, and of the underlying zone of the subjacent course. I find that this sharpness of outline tends to give to the laid roofing an appearance of thickness,
15 which is very desirable, and that the completed roof structure combines a high degree of mechanical effectiveness with a very pleasing appearance.

It will be noted that a roof laid with
20 sheets as above described will have advantages over a roof laid simply with the strips cemented individually when being applied upon the roof. When my strips are laid individually, the roof will have the advantage of closer imitation to shingle roofing
25 than heretofore, and will also have the advantages which lie in cementing the thicker zone above the thinner zone with the thicker zone extending freely a short distance beyond the zone-dividing shoulder and over
30 the thicker zone of the subjacent strip, so that the "butt" ends or shingle-imitating members give the appearance of lying freely one over the other as shingles do, but in fact are effectively retained against flapping. Yet when laid singly the cementing
35 must be done by hand upon the roof, and without pressure, in which event the cement most advantageous to be used for joining the strips into a homogeneous sheet is cooled
40 too rapidly; nails must be applied to every strip to secure the joints between it and the adjacent strip, and other disadvantages arise from the inadequacy of hand work,
45 however skillful, to effect sufficient sealing between the strips by means of cement alone while the strips are being applied on the roof. Thus the roofing applied in single strips cannot compare in efficiency with the
50 sheets which are permanently united at the factory where the cement is allowed to cool to just the right degree and the whole passed through pressure-producing machinery to make the same a primarily-completed unit
55 article of manufacture applicable as a whole to the roof, without necessitating perforation of its solid impervious body with nails unless desired for other reasons.

What I claim is:

60 1. A plurality of substantially homogeneous overlapping strips each having two distinct zones, a thicker zone having its upper surface suitably treated and a thinner zone divided from the thicker zone by a
65 shoulder near the longitudinal central line

of the strip, said thicker zone being suitably kerfed from its edge to points near said shoulder; the thinner zone constituting an adhesive-receiving surface for connection of the strip to the strip next above it, the
70 thicker or exposed zone of said upper strip to extend from the adhesive-receiving zone of the lower strip a suitable distance beyond the shoulder freely to overlie the upper unkerfed portion of the exposed strip.

2. A prepared roofing strip kerfed at intervals from one edge inwardly, the kerfed portion constituting the exposed portion of said strip when in use on the roof, and the remaining portion constituting the overlain
80 portion thereof, said overlain portion of the strip being reduced along a line above the ends of said kerfs, the upper surface of said exposed portion and the non-reduced overlain portion being suitably treated for
85 purposes described.

3. An article of manufacture comprising a roofing sheet having from edge to edge thereof a homogeneous impervious body and an upper surface having overlapping shingle-imitating members, the portion of each member which overlies the subjacent member lying freely thereabove and the remaining portion of said overlying member constituting a homogeneous portion of said
95 body of the sheet.

4. An article of manufacture comprising a roofing sheet having from edge to edge thereof an impervious homogeneous body and an upper surface having overlapping
100 shingle-imitating members, a portion of each member freely overlying the subjacent member and the remaining portion of said overlying member being homogeneous with said body of the sheet, the line at which
105 each said member extends from homogeneity with the impervious body to overlie the subjacent member lying uniformly spaced from the extreme edge of said overlying member throughout the length of said sheet.

5. A unit prepared-roofing-sheet formed of a plurality of connected strips, each strip comprising a longitudinal exposed zone, suitably treated to simulate a roofing
115 of shingle construction and partially overlain by the exposed zone of the strip next above it, and a second longitudinal zone wholly overlaid by the exposed zone of the strip next above it, the upper surface of said second zone being depressed below that
120 of the first, and an adhesive material in the space above said depressed surface.

6. A unit prepared-roofing-sheet formed of a plurality of connected strips, each strip comprising a longitudinal exposed
125 zone, suitably treated to simulate a roofing of shingle construction, and a second longitudinal zone overlaid by the exposed zone of the strip next above it, the upper surface of said second zone being de-

pressed below that of the first, and an adhesive material in the space above said depressed surface, each exposed zone extending slightly beyond the underlain zone and the interposed adhesive of the strip next below it to provide for said unit sheet a body solid and imperforate longitudinally and laterally and an exposed surface including a plurality of free overlapping edges, in simulation of a roofing of genuine construction.

7. The combination of two or more strips having shingle-imitating edges, arranged in

overlapping relation with an adhesive between the underlying strip or strips, having a delimiting shoulder restricting the application of adhesive to a point slightly within the overlapping margin of the superadjacent strip. 15

In testimony whereof I hereunto set my hand in the presence of two witnesses. 20

WILLIAM F. MCKAY.

In the presence of—
W. LINN ALLEN,
MARY F. ALLEN.