Aug. 10, 1965 J. L. CONSIDDER 3,199,256

ROOFING STRUCTURE

Filed Feb. 12, 1962 2 Sheets-Sheet 1

Fig. 1

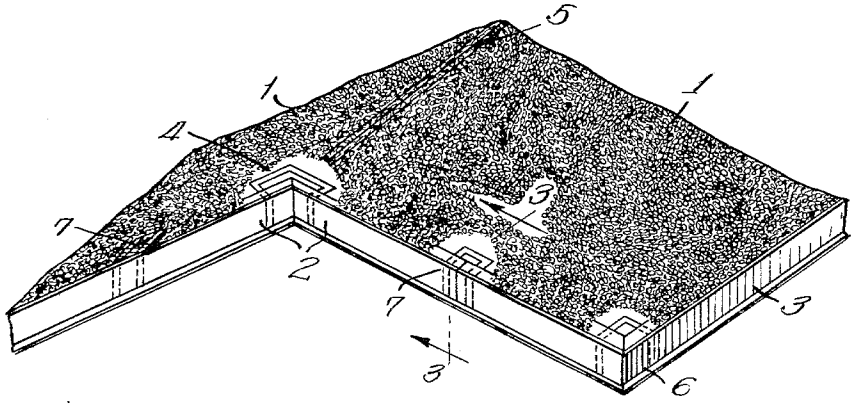


Fig. 2

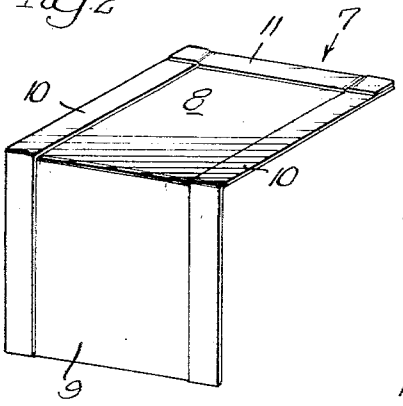


Fig. 3

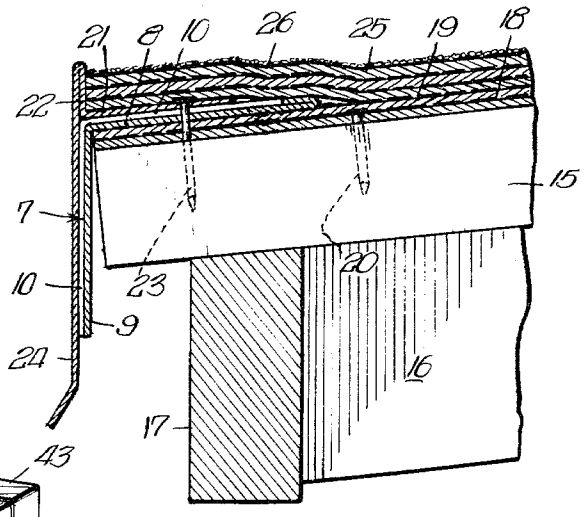
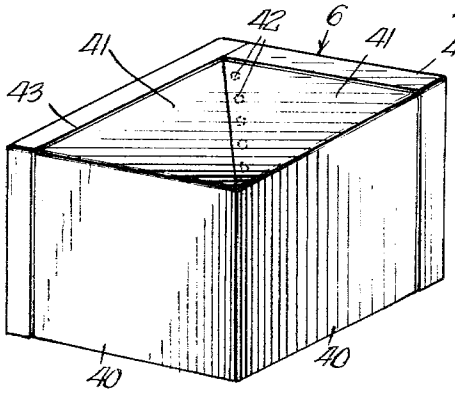


Fig. 5



INVENTOR.
James L. Considder,
BY George H. Simmons
Atty.

Aug. 10, 1965 J. L. CONSIDDER 3,199,256

ROOFING STRUCTURE

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Fig. 4

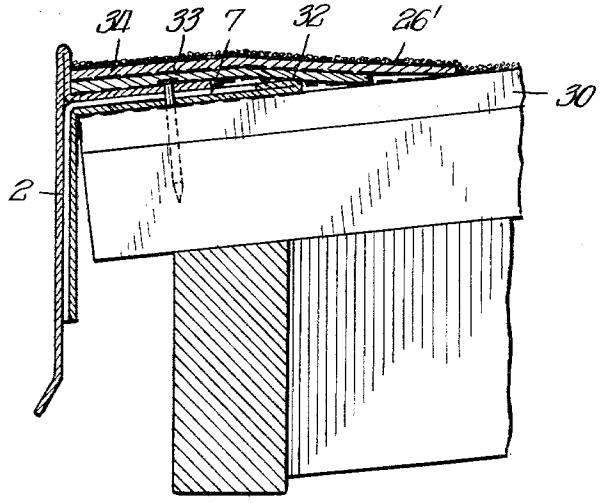


Fig. 8.

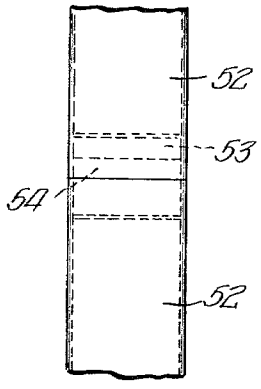
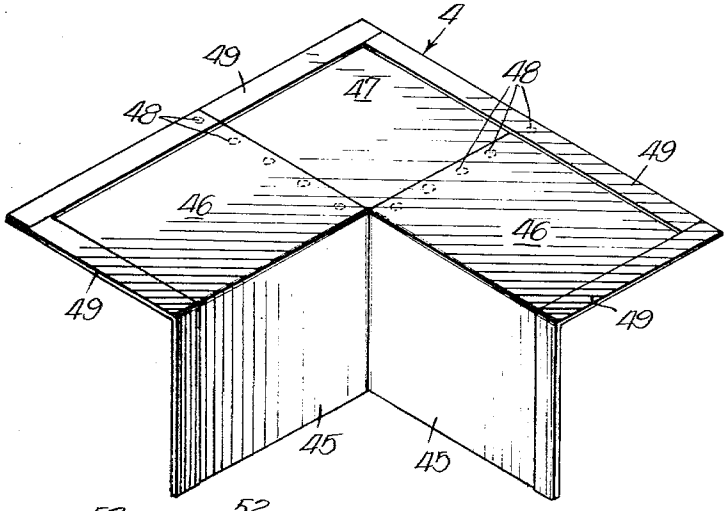


Fig. 6



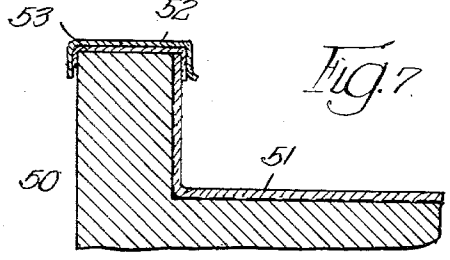


Fig. 7

INVENTOR.
James L. Considder,
BY George H. Simmons
Atty

United States Patent Office 3,199,256 Patented Aug. 10, 1965

3,199,256

ROOFING STRUCTURE

James L. Considder, Winter Park, Fla.
(Rte. 1, Box 95C, Maitland, Fla.)

Filed Feb. 12, 1962, Ser. No. 172,688
1 Claim. (Cl. 52—95)

This invention relates to built-up gravel coated roofing and has for its principal object the provision of a new and improved roofing of this type.

It is a main object of the invention to provide a multi-ply built-up gravel coated roofing equipped with gravel stops and with protectors which prevent seepage of water into engagement with the sheathing over which the roofing is laid.

Another object of the invention is to provide a built-up gravel coated roofing equipped with gravel stops on the lower edges and gable ends of the roof and in which inside corner protectors are provided at the junctions of lower edge gravel stops, outside corner protectors are provided at the junctions of lower edge and gable end gravel stops, and in which other protectors are provided under the adjacent ends of adjacent sections of both the lower edge and gable end gravel stops.

Another object of the invention is to provide protectors and gravel stops having roof engaging portions disposed between adjacent layers of a built-up multi-ply roofing, which portions are secured to the sheathing of the roof by nails and to which portions the overlying ply of the roofing is secured by the mastic used in building up the roof.

Another object of the invention is to provide a protector for the cap members of a parapet wall to at least one side of which the layers of a multi-ply roofing are affixed.

Further objects of the invention not specifically mentioned here will be apparent from the detailed description and claim which follow, reference being had to the accompanying drawings in which a preferred embodiment of the invention is shown by way of example and in which:

FIG. 1 is a fragmentary view of a roof with lower edge and gable and gravel stops attached;

FIG. 2 is a perspective view of a protector for use between adjacent ends of adjacent sections of a gravel stop;

FIG. 3 is a cross sectional view taken substantially along the line 3—3 of FIG. 1, looking in the direction of the arrows and drawn to an enlarged scale;

FIG. 4 is a view similar to FIG. 3 and showing another way of applying gravel stops to a roof;

FIG. 5 is a perspective view of an outside corner member;

FIG. 6 is a perspective view of an inside corner member;

FIG. 7 is an end elevational view of a parapet wall with a protector applied under the joint between adjacent cap members; and

FIG. 8 is a fragmentary plan view showing a protector applied between adjacent ends of adjacent cap members on a parapet wall.

Relatively flat roofs having a slope of not more than 30° are usually made watertight by applying thereto a built-up roofing. Such built-up roofings usually consist of a plurality of layers or plies of roofing felt the first of which is secured to the sheathing of the roof by nails and the remaining plies secured to each other by a mastic such as, for example, tar. The uppermost layer of felt is coated with the mastic and gravel applied thereto to increase the abrasive resistance of the roofing. In regions where heat is a problem, the gravel is usually white so that at least a part of the sun's rays will be reflected by the gravel and hence not absorbed by the roofing.

Inasmuch as the gravel is but partially embedded in the mastic and some of it may not be embedded, it is advantageous to apply gravel stops to the lower edges and gable ends of the roof to aid in holding the gravel on the roof.

Gravel stops used for this purpose are metal members such as galvanized iron, aluminum or copper, and are provided in convenient lengths which are laid end-to-end to span the edges of the roof. Adjacent ends of adjacent lengths or sections of the stop may be abutted together; preferably, however, the adjacent ends are overlapped a short distance usually about a quarter of an inch.

Capillary attraction causes water to seep through the joints between adjacent sections of the stop and this water can come into contact with the sheathing and facia of the roof, causing the wood therein to rot, making replacement necessary in a relatively short time and long before replacement of the built-up roofing becomes necessary.

To guard against this contingency, roofings involving the teachings of the present invention are equipped with protectors located at the joints between adjacent sections of the stops, which protectors drain off water seeping through the joints, thus preventing it from coming into contact with the sheathing and facia of the roof. The life of the roofing and roof is thereby lengthened.

Referring now to the drawings in more detail, from FIG. 1 it will be seen that the built-up roofing 1 on the sections of the roof are equipped with lower edge gravel stops 3 and with a gable end gravel stop 2. An inside corner protector 4 is placed beneath the ends of the stops 2 at the peak 5 of the roof and an outside corner protector 6 is placed at the junction of stops 2 and 3.

The gravel stops are composed of metal preferably of about 26 gauge and are supplied in convenient lengths, say ten (10) feet, for example. The lower edge stops 3 and the gable end stops 2 must usually be composed of several sections of stop stock laid end-to-end with adjacent ends preferably overlapped a short distance, say about one-quarter (¼) of an inch. A protector 7 is located at each junction between adjacent ends of adjacent sections of the stop stock.

As will be seen in FIG. 2, each protector 7 consists of a roof engaging portion 8 and a downwardly depending portion 9. The protectors are made of sheet metal preferably about 26 gauge and the metal at the sides of both portions is bent over on itself, as indicated at 10, to form double thickness sides on the protector. The metal at the upper end of the roof engaging portion 8 is also double thickness, as indicated at 11. As shown in FIG. 2 the corners at the junctions of double thickness portions 10 and 11, contain three thicknesses of metal. This results from cutting off the portions of sides 10 to be folded over, along the line of fold of end portion 11. The width of the protector 7 is sufficient to extend for several inches on either side of the joint between adjacent sections of the stop and the length of the portion 8 is sufficient to extend above the roof engaging portion of the stop.

In FIG. 3, I have shown the stop and protector applied to a typical roof structure. The sheathing 15 is fixed upon the rafters 16 and a facia 17 fixed to the ends of the rafters in the usual manner.

In this figure, a 5-ply built-up roofing is shown by way of example only, as the number of plies is not of the essence of the invention. As shown, a lower layer or ply 18 of roofing felt is fixed to the sheathing 15 by roofing nails 20. A layer of mastic, indicated by the dash line, is applied to the ply 18 and a second ply of felt 19 laid thereover. A spot of mastic is then applied and the protector 7 put in place with its portion 8 engaging the mastic.

The gravel stop is then applied with its roof engaging portion 21 resting on the double thickness sides 10 of the

protector. It will be noted that the portion **21** of the stop is spaced from the portion **8** of the protector by the thickness of the metal in the protector. Mastic may be used to fill this space if desired; however, it is preferable that the space remain unobstructed. It will be noted that the portion **21** of the stop is narrower than the portion **8** of the protector. The stop is secured to the sheathing by nails **23**, preferably all located beyond the edges of the protector. Mastic is usually applied between the portion **21** of the stop and the felt **19**.

Upstanding from the lower edge of the stop is a portion **22** and depending from the upper edge of the portion **22** is a portion **24** which lays against the double thickness sides **10** of the protector and extends below the lower edge of the protector, hence below the sheathing. Mastic is then applied over the felt **19** and portions **8** and **21**, and additional layers of felt then applied. In the example shown, such layers are three in number. Mastic is then applied to the upper most layer **25** of felt and gravel applied to that mastic, as indicated by the -o- line **26**. It will be noted that the portion **22** of the stop extends slightly above the surface of the gravel coat.

Through this arrangement any water seeping through the joint between the adjacent sections of the stop is caught by the protector and drained off through the space between portion **9** of the protector and portion **24** of the stop.

In FIG. 4, I show a different application of the protectors and stops. In this embodiment, the multi-ply roofing **30** is built up with the specified number of layers of felt. The protector **7** and stop, such as **2**, are applied and secured as before. A layer of mastic **32** is then applied over the roof engaging portions of the protector and stop, and a narrow layer **33** of felt secured by the mastic. A second layer of mastic and narrower felt **34** are applied and the mastic-gravel layer **26'** extended over the felts **33** and **34**. Otherwise the embodiment shown in FIG. 4 is the same as that shown in FIG. 3.

As will be seen in FIG. 5, the outside corner member **6** has depending portions **40** disposed at right angles to each other and roof engaging portions **41** which are overlapped and secured together in convenient manner such as by spot welding, as indicated at **42**. Double thickness edge portions are provided on portions **40** and **41**, as indicated at **43**.

As will be seen in FIG. 6, inside corner members **4** have depending portions **45** disposed at right angles to each other and roof engaging portions **46** which are connected together by an auxiliary member **47** secured to the members **46** in convenient manner such as spot welds indicated at **48**. Double edge portions **49** are provided on members **45**, **46** and **47**.

As will be readily apparent to one skilled in the art, it may be advantageous in many instances to form outside and inside corner stops, not shown, in the manner illustrated in FIGS. 5 and 6, respectively. In such instances the corner stops will extend a short distance in both directions from the corner. The junctions of such corner stops with the straight sections of stops such as **2**, will be equipped with protectors of the type shown in FIG. 2.

The teachings of the invention may also be applied to the protection of parapet walls. In FIGS. 7 and 8, I have illustrated such an application. The parapet wall **50** extends above the roofing **51** which may be affixed to one face of the wall. A protector **53** is secured to the top of the wall in convenient manner such as by a mastic, and cap members **52** are lapped, as indicated at **54**, and secured to the wall by mastic. Both the protector and cap members consist of a flat upper portion with side portions depending from the two sides of this portion. The edges of the protector **53** are double thickness, as indicated by the double dotted lines in FIG. 8.

From the foregoing, it will be apparent that the protectors disposed beneath the joints in gravel stops and parapet wall caps and incorporated in the roofing structure, as taught by the present invention, prevent water that may seep through the joints from coming into contact with the roof or wall and the rotting of the same is thereby definitely prevented.

While I have chosen to illustrate my invention by showing a preferred embodiment of it, I have done so by way of example only, as there are many modifications and adaptations which can be made by one skilled in the art within the teachings of the invention.

Having thus complied with the statutes and shown and described my invention, what I consider new and desire to have protected by Letters Patent is pointed out in the appended claim.

I claim:

A built up roofing comprising:

(a) a plurality of layers of roofing felt secured together by a mastic with a layer of gravel secured to the uppermost layer of felt by a coat of mastic;

(b) a plurality of gravel stops disposed along the edges of the roof with said gravel stops composed of sections in an end to end relationship, each stop comprising:

(1) a roof engaging portion disposed between adjacent layers of felt and secured to the sheathing of the roof by nails;

(2) a portion upstanding from the roof edge side of the roof engaging portion to a line disposed slightly above the gravel layer;

(3) and a portion depending from the upper edge of the upstanding portion and extending below the edge of the sheathing on the roof;

(c) a protector at each junction between adjacent ends of adjacent sections of said gravel stops, each protector consisting of:

(1) a roof engaging portion disposed beneath adjacent ends of the stop sections and between adjacent layers of felt and secured to said felt by mastic, said portion extending from the edge of the roof a distance greater than the distance the roof engaging portion of the stop extends;

(2) double thickness side sections and a double thickness end section on the roof engaging portion of the protector, the side sections of which are engaged by the roof engaging portion of the stop to space the latter said portion from the roof engaging portion of the protector;

(3) a portion depending from the edge of the roof engaging portion of the protector and disposed between the depending portions of the stop sections and the edge of the roof and extending downwardly from the sheathing to a line disposed above the bottom end of the depending portions of the stop sections;

(4) and double thickness edge sections on the depending portion of the protector engaging the depending portions of the stop sections to define a passage between the protector of stop sections through which moisture may pass.

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HENRY C. SUTHERLAND, *Primary Examiner.*

WILLIAM I. MUSHAKE, *Examiner.*