H. VON UFFEL.

STANDING WEATHERPROOF SEAM FOR FELT ROOFING.

APPLICATION FILED JUNE 23, 1914.

1,144,265.

Patented June 22, 1915.

2 SHEETS—SHEET 1.

Fig. 1.

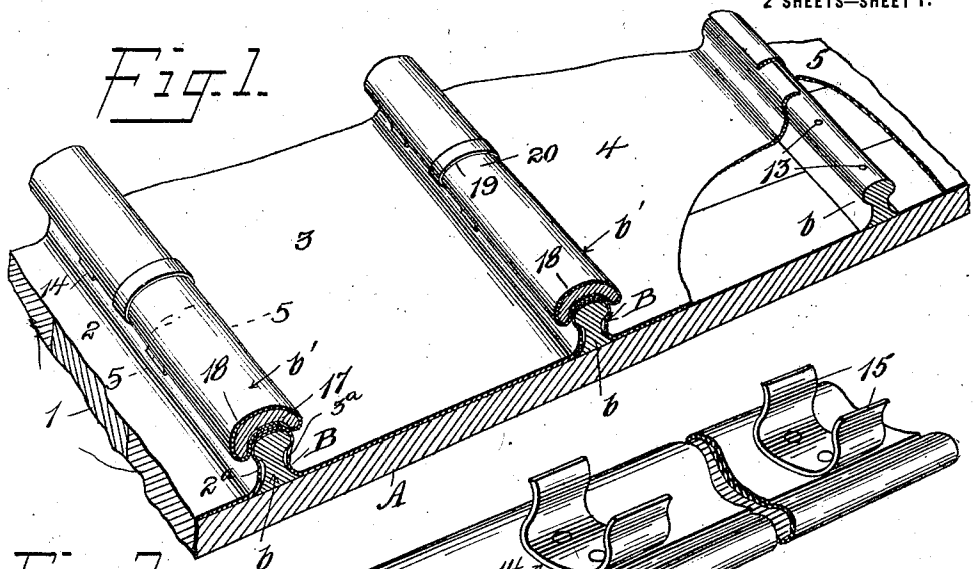


Fig. 2.

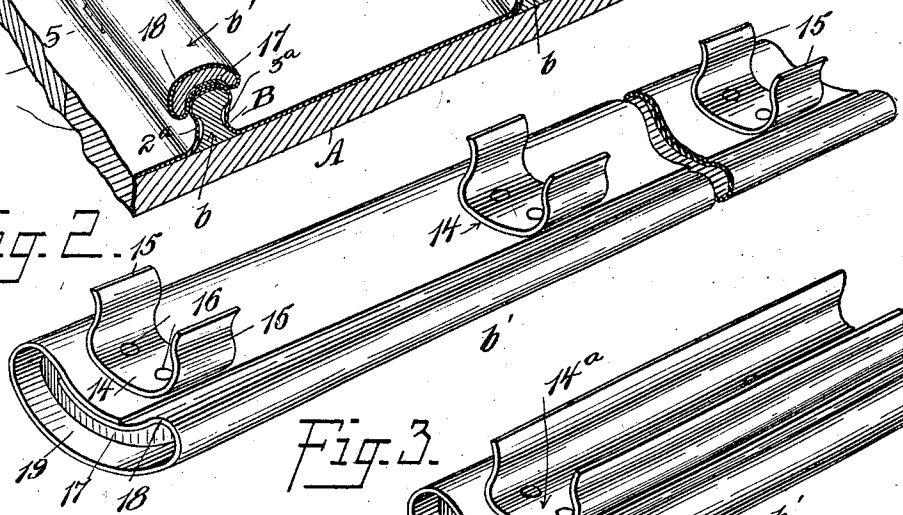


Fig. 3.

Fig. 4.

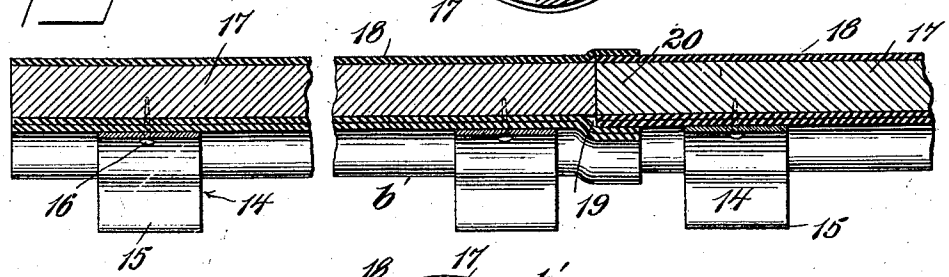
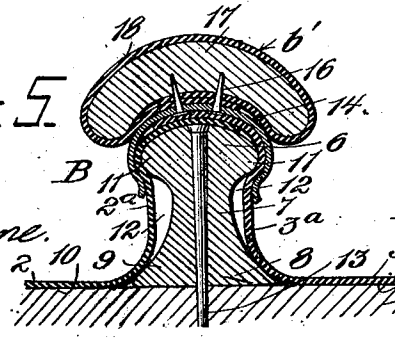


Fig. 5.



WITNESSES

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2 SHEETS—SHEET 2.

Fig. 6.

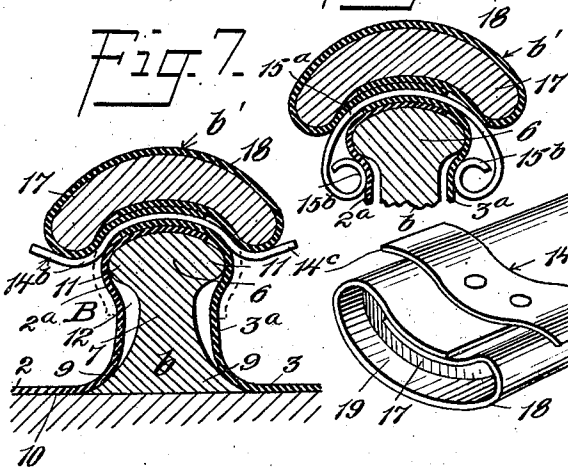


Fig. 7.

Fig. 8.

Fig. 10.

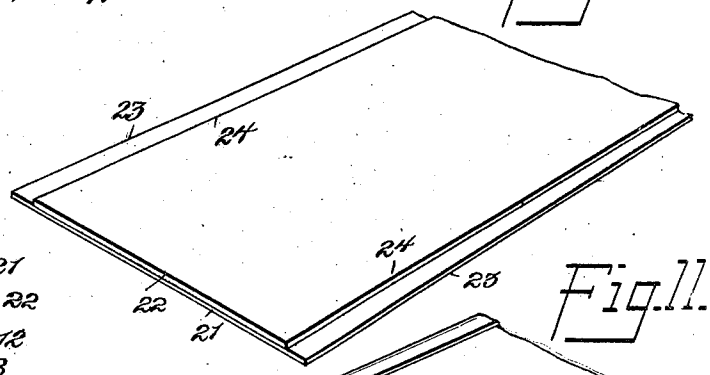


Fig. 9.

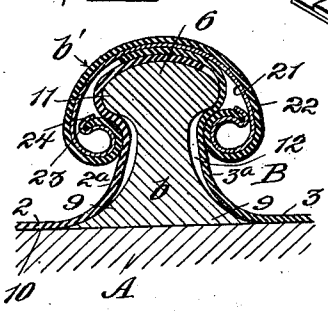


Fig. 11.

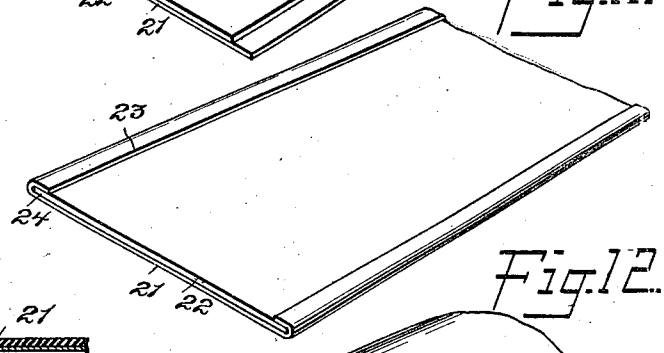


Fig. 13.

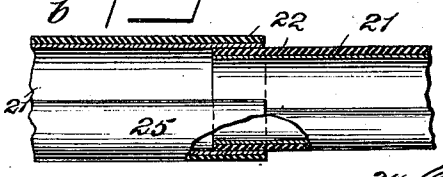
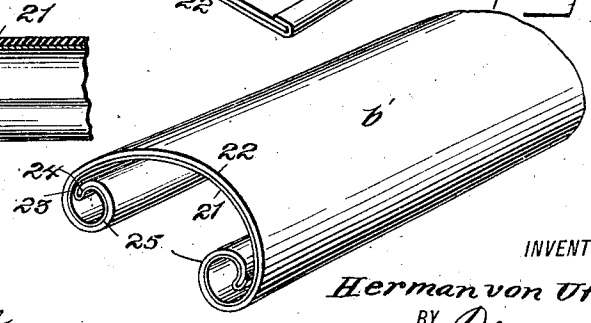


Fig. 12.



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UNITED STATES PATENT OFFICE.

HERMAN VON UFFEL, OF PHILADELPHIA, PENNSYLVANIA.

STANDING WEATHERPROOF SEAM FOR FELT ROOFING.

1,144,265. Specification of Letters Patent. Patented June 22, 1915.

Application filed June 23, 1914. Serial No. 846,762.

To all whom it may concern:

Be it known that I, HERMAN VON UFFEL, a citizen of the United States, and a resident of Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented a new and Improved Standing Weatherproof Seam for Felt Roofing, of which the following is a full, clear, and exact description.

This invention relates to roof coverings made of felt, tar, or asphalt material, and it relates particularly to joints or seams between adjacent strips, which joints are of the character set forth in my pending application for Letters Patent of the United States, filed April 8, 1914, Serial Number 830,366.

The general object of the present invention is to improve the cap construction for the joints, whereby the caps can be easily and quickly applied without the need of nails or other fasteners which penetrate the roofing material, and yet the caps are firmly retained in place in a manner to prevent wrinkling or buckling of the roofing material and permit of expansion and contraction.

Another object of the invention is the provision of a cap strip comprising a core of wood or metal and a covering of the same material with which the roof is covered, so as to protect the material of the core and give the appearance of sameness to the entire roof, as well as to provide an attractive construction, the covering material for each strip being extended beyond one end of the core so as to form a socket into which the end of another strip is adapted to fit when two or more strips are necessary to form a cap piece for a long joint.

The invention has as a further object the provision of novel and effective clamping means which may be applied to the under side of the cap strip when the core is made of wood, or which may be embodied in the strip when the core is made of sheet metal, as the clamping means is of such shape that it will tightly grip under the head of the base strip of the joint after the roof covering pieces of felt are lapped over and formed on the base strip. The clamping means is so designed as to provide for easy expansion and contraction of the roof material under temperature variations, as on opposite sides of the base strip ample space is provided directly under the head and above the bottom of the base strip for permitting the roofing material to expand, while at the same time the roofing material is in constant bearing with the bottom of the base section, so that the wet snow and ice on the roofing material will not have a fracturing tendency.

Still another object of the invention is the provision of a cap strip which is provided on its under side with a plurality of clamping or retaining members that are normally approximately flat so that the under side of the cap strip can be used as a mold, die or former to shape the overlapping edges of the roofing material to the base strip of the joint, and thereafter the said clamping members can be bent by a suitable tool downwardly into embracing engagement with the covered head portion of the base strip.

With such objects in view, and others which will appear as the description proceeds, the invention comprises various novel features of construction and arrangement of parts which will be set forth with particularity in the following description and claims appended hereto.

In the accompanying drawings, which illustrate certain embodiments of the invention, and wherein similar characters of reference indicate corresponding parts in all the views,

Figure 1 is a perspective view of a section of a roof covered with felt, tar or asphalt material and embodying the improved joint; Fig. 2 is a perspective view showing the under side of a cap strip for the joint; Fig. 3 is a fragmentary view of a cap strip with a different form of clamping means; Fig. 4 is a longitudinal section of a cap strip made in section; Fig. 5 is an enlarged sectional view on the line 5—5, Fig. 1; Fig. 6 is a sectional view through a joint, showing a modified form of cap clip clamping or holding means; Fig. 7 is a transverse section of a joint, showing the same completed but before the clamping means of the cap strip is bent into holding shape; Fig. 8 is a fragmentary perspective view of a cap strip in the form shown in Fig. 7; Fig. 9 is a transverse section of a joint with a modified form of cap; Fig. 10 is a fragmentary perspective view of the blanks of which the cap in Fig. 9 is constructed; Fig. 11 is a similar view showing the core and covering pieces bound together; Fig. 12 is a fragmentary

perspective view of the completed cap strip shown in Fig. 9; and Fig. 13 is a longitudinal section of a joint between two cap strips.

Referring to the drawings, A designates a roof made of boards 1 in the usual manner and covering the roof are strips of felt, asphalt or tar roofing, which strips are designated 2, 3, 4, 5, in Fig. 1, and B are the joints between adjacent strips. Each joint comprises a wooden base strip *b* and a cap strip *b'*, which operate to form an upstanding waterproof seam or joint. The base strip, as shown in Fig. 5, comprises a rounded head 6, a reduced web 7 and a base 8. The lateral portions 9 of the base slope outwardly and downwardly on curves approximately continuous with the roof surface 10, and the side portions 11 of the head 6 considerably overhang the web 7 of the base strip. The marginal portions 2^a and 3^a of the roofing strips 2 and 3 are bent upwardly along opposite sides of the base strip and curve inwardly over the head 6, so that the roofing strips will overlap on the top of the head 6. When the roofing material is laid in this manner there will be spaces 12 provided at opposite sides of the base strip into which the marginal portions of the roofing strips can expand, due to temperature changes, but the roofing material will have a substantial support on the base of the base strip *b* while the vertical marginal portions will be free or spaced from the web 7 to provide for expansion and contraction without wrinkling. It will be understood that the base strips *b* will be secured directly to the boards 1 of the roof, as by means of nails 13, and the base strips will be placed parallel with each other the proper distance apart, and after the roofing material is laid and formed on a base strip the cap strip *b'* is then applied.

The cap strips are secured in place without nails or equivalent fastenings, since each strip includes or embodies clamping means which embraces the head 6 of a base strip. In the construction shown in Figs. 1, 2 and 4 the under side of the cap strip is provided with U-shaped clamps or gripping clips 14 made of copper, brass or any other non-rusting material, and the jaws 15 of the clips are so shaped as to extend downwardly along the side portions of the head 6 of the base strip and to grip under the bottom of the head to the desired extent to provide the proper holding grip. These clips or clamps 14 are secured in any suitable manner, as for instance, by tacks 16. In Fig. 3 the channel-shape clamping element 14^a is provided, which may be as long as the cap strip to perform the same function as the clips 14 of Fig. 2. The cap strips *b'* may be constructed with a wooden core 17, as shown in Figs. 1 to 8 inclusive, and inclosed in a protective covering 18, which is preferably of roofing material to correspond with the material that covers the roof, so that not only is painting of the cap strip dispensed with, but a neat and pleasing appearance is obtained, because of the uniformity of the material and color. In order to make a complete cap for a long joint it may be necessary to employ a plurality of strips, and therefore to provide a simple and effective waterproof joint between the strips, covering material 18 extends beyond the core 17 at one end so as to form a socket 19, as clearly shown in Figs. 2, 3 and 4, and into this socket the end 20 of an adjacent cap strip can be entered. The covering material 18 being pliable and stretchable will enable the socket 19 to enlarge as the end 20 of an adjacent strip is entered, and to facilitate the making of the joint a workman can stretch the covering 18 at the socket 19 so as to more readily accommodate the end of the adjacent strip to be entered. In the modification shown in Fig. 6 the jaw members 15^a are formed with internal beads or rolls 15^b that are so disposed as to engage under the head 6 of the base section *b* and thereby insure an effective grip and facilitate the slipping of the clamp or clip on the head.

The core 17 has its upper and under surfaces approximately concentric with the upper surface of the head 6 of the base section *b*, and consequently the under side of the cap strip can be used as a mold or die for shaping the marginal edges of the roofing strips to the head 6 of the base strip *b*. For this purpose the clamps or clips 14^b, Fig. 8, are normally flattened out, so that the ends will not interfere with a back-and-forth or rocking motion of the cap strip on the base strip after the roofing material is laid. This use of the cap-piece will serve to bend down the edges of the roofing material on the head 6 and give the proper shape without danger of breaking or fracturing the fibers. After the edges of the roofing material are formed and while the cap-piece is still in position, a suitable tool is employed to bend down the gripping portions 14^c of the clamping elements 14^b, as shown by dotted lines in Fig. 7.

Instead of using a wooden core, as above described, the core of the cap strip may be made of a piece of sheet metal 21 with a covering 22 of roofing material. These two pieces 21 and 22 are preferably laid one on the other, as shown in Fig. 10, and the side edges 23 of the metal piece, which is wider than the covering piece 22, are bent over the edges 24 of the covering material, as shown in Fig. 11, and the two pieces thus bound together are shaped in a suitable bending and roll-forming machine into the form shown in Fig. 12, wherein the internal beads or rolls 25 form spring jaws which engage under the

side portions of the head 6 of the base section *b*, as clearly shown in Fig. 9. In this form of cap the necessary resiliency to insure a firm clamping action is provided in the body of the cap itself. In order to join cap strips together of the form shown in Fig. 12, so as to form a cap-piece for a long joint, the end of a lower cap-piece telescopes into an end of an upper cap-piece so as to form a telescoping joint shown in Fig. 13.

In forming joints between strips of roofing material after the plan herein suggested, it will be clear that the joints can be easily, quickly and effectively made without resorting to nails, except to fasten the base strips to the roof, and nevertheless a firm, tight and weatherproof seam is provided without requiring the use of cement or other waterproof materials. Another advantage is that the joints will have the same color as the roof, since the cap strips are covered with roofing material, and painting of the cap strips is dispensed with. The roofing material will be always kept smooth and straight, independently of the shrinking of the roof boards, and, furthermore, buckling and wrinkling is prevented by reason of the provision made at the joints for expansion and contraction of the roofing material.

From the foregoing description, taken in connection with the accompanying drawings, the advantages of the construction and method of operation will be readily understood by those skilled in the art to which the invention appertains, and while I have described the structure which I now consider to be the best embodiment thereof, I desire to have it understood that the structure shown is merely illustrative and that such changes may be made when desired as are within the scope of the appended claims.

Having thus described my invention, I claim as new and desire to secure by Letters Patent:

1. The combination of a roof, pieces of pliable roofing material covering the same, seam strips fastened to the roof at the joints between adjacent pieces, each strip having a base provided with rounded side surfaces, a relatively narrow web above the base, and a head wider than the web, the edges of the roofing pieces being bent upwardly at the sides of the strips and engaging the sides of the base and the head, and a cap strip for each strip covering the edges of the pieces of roofing material and including means engaging under the head to clamp the roofing material thereto while permitting the said material at both sides of the web to move inwardly and outwardly with the expansion and contraction of the roofing material.

2. The combination of a roof, strips of roofing material thereon, and an upstanding joint between the edges of the said strips, said joint comprising an upstanding seam strip formed with a base, a web and a head, the edges of the roofing strips being bent upwardly at opposite sides of the seam strip and contacting with the base and head thereof, and a cap strip of channel-shaped cross-section whereby the under side thereof forms a mold for bending the edges of the roofing strip down on the top of the head of the seam strip, said cap strip having means for engaging the under side of the head while the roofing strips are free from the web.

3. The combination of a roof, strips of roofing material thereon, and an upstanding joint between the edges of the said strips, said joint comprising an upstanding seam strip formed with a base, a web and a head, the edges of the roofing strips being bent upwardly at opposite sides of the seam strip and contacting with the base and head thereof, and a cap piece of channel-shaped cross-section having the side portions yielding for fitting down on the top of the seam, and the side portions engaging under the head of the seam strip and clamping the roofing strips against the under side of the head.

4. The combination of a roof, strips of roofing material thereon, an upstanding seam strip fastened to the roof and formed with a head at its top, the edges of the roofing strips being bent upwardly along the sides of the seam strip, and a channel shaped metal cap piece having its side portions yielding toward and from each other and formed with internal beads arranged to engage the roofing material and clamp it to the under side of the head of the seam strip, the side members of the cap strip forming clamping members to hold the cap strip in place.

5. A cap strip for an upstanding seam of roofing material of the class described, comprising a metal piece curved into channel shaped cross-section to form side members which are yielding toward and from each other, the edges of the side members being formed with internal beads, the combination with a seam strip having side surfaces under which the beads are engaged, and strips of pliable roofing material having their edges bent upwardly along the sides of the seam strip, and said edges being clamped against the side surfaces of the said strip by the said internal beads.

6. A cap strip for a seam of the class described, comprising a piece of metal, and a piece of roofing material narrower than the metal and overlying the latter, the edges of the metal being turned over the edges of the roofing material, said pieces being bent to form together a channel-shaped strip.

7. A cap piece for a seam of the class described, comprising a piece of metal, and a

strip of pliable roofing material narrower than the strip of metal, the edges of the metal being bent over the edges of the roofing strip, the edge portions of the strips being curled into beads, and the strips being bowed outwardly at the side opposite from the bead, whereby the cap piece is of channel-shaped cross-section, with the beads disposed internally thereof.

8. A cap strip for a seam of the class described, comprising a sheet metal core, and a covering of pliable roofing material, said covering and core being bent into a channel-shape strip having internal rolls or beads.

9. A cap strip for a seam of the class described, comprising a piece of sheet metal shaped into channel cross-section and having internal beads or rolls at opposite sides and a covering of pliable waterproof material.

10. A cap strip for a seam of the class described, comprising a piece of roofing material, a sheet metal piece wider than the first-mentioned piece and having its edges bent over the edges of the roofing material to bind the pieces together, and the bound pieces being bent into channel-shape cross-section and formed with internal beads extending longitudinally of the channel.

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

HERMAN VON UFFEL.

Witnesses:

CHATTER BRADWAY,

GEORGE H. EMSLIE.