

R. M. McGRAW.
 ROOF FLANGE.
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1,406,469.

Patented Feb. 14, 1922.

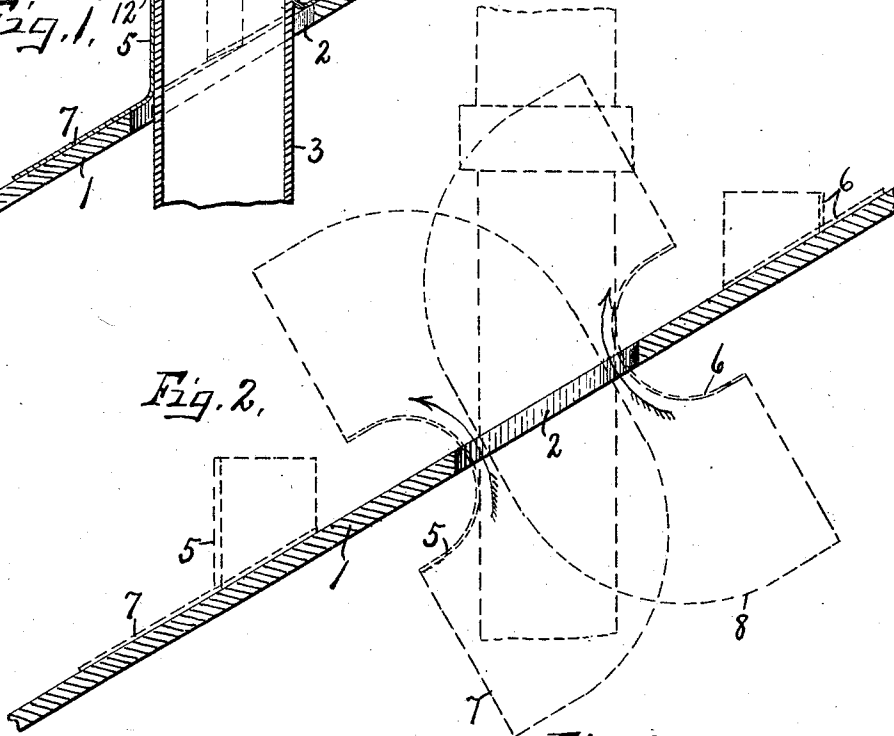
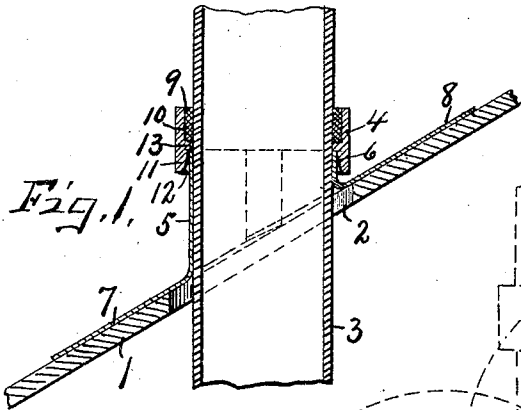
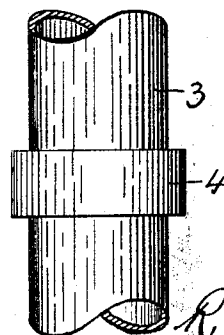
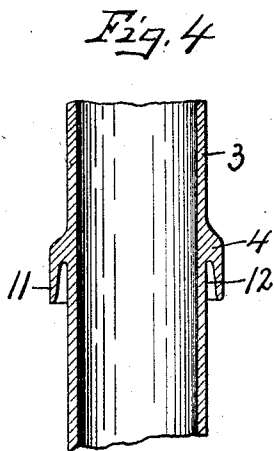


Fig. 3.



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ROOF FLANGE.

1,406,469.

Specification of Letters Patent. Patented Feb. 14, 1922.

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To all whom it may concern:

Be it known that I, RHODA M. MCGRAW, of Syracuse, in the county of Onondaga, in the State of New York, have invented new and useful Improvements in Roof Flanges, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

This invention relates to roof flanges and to the method of assembling and capping the same as applied to soil and other pipes extending through relatively steep roofs of buildings where the difficulties and dangers in securing the necessary tight joint between the roof flange and pipe are greater than when the roof is comparatively flat, or at a slight incline.

The main object of my invention is to provide a roof flange which may be easily and quickly secured in place upon the roof around the pipe and capped to form a water tight joint all from the inside of the building, or below the roof where suitable staging may always be erected with greater safety than upon the upper surface of the roof, and avoids mutilation or loosening of the shingles as would be the case if the staging were erected upon the upper face of the roof.

Another object is to provide the cap with a tapered socket, the walls of which wedge against the outer peripheral faces of the flange sections to firmly draw them against the pipe as the latter is lowered in place and immediately following the adjustment of the flange sections around and against the periphery of the pipe.

A further object is to construct the sections of the roof flange in such manner that they may be easily passed through the pipe openings in the roof from the underside and temporarily lodged upon the upper face of the roof for adjustment against the periphery of the pipe.

Other objects and uses relating to specific parts of the device and to the method of assembling the same will be brought out in the following description.

In the drawings:

Figure —1— is a vertical sectional view of a portion of the roof and soil pipe passing through an opening therein, together with the roof flange and cap therefor.

Figure —2— is a sectional view of the same roof, showing by dotted lines the man-

ner of passing the sections of the roof flange through the opening in the roof from the underside, said sections being also shown by dotted lines as temporarily lodged upon the upper surface of the roof, the soil pipe with the cap thereon being also indicated by dotted lines in position to permit the flanges to be adjusted from their temporarily lodged positions against the periphery of the pipe.

Figure —3— is a side elevation of the portion of the soil pipe with the cap thereon, as shown in Figure —1—.

Figure —4— is a sectional view of a soil pipe in which the cap is cast integral therewith.

In order that my invention may be clearly understood, I have shown a portion of a roof —1— of rather steep incline having an opening —2— for receiving a soil or other pipe, as —3—, the opening —2— being somewhat larger than the diameter of the pipe —3— or sufficient to permit the passage of a cap portion, as —4—, therethrough when the pipe —3— with the cap —4— thereon is in an upright position as shown in Figure —1—.

The "roof flange", which is designed to lie upon the upper face of the roof and around the periphery of the adjacent portion of the pipe —3—, is adapted to cooperate with the cap —4— to close the opening —2— around the pipe and to form a water-tight joint with said pipe to prevent the passage of rain, snow and other foreign matter from the upper surface of the roof to the opening —2—.

To this end, the roof flange is composed of opposite substantially semi-cylindrical sections —5— and —6— having a radius substantially equal to that of the external diameter of the pipe —3— around which they are adapted to fit, each section being provided with a substantially flat base portion —7— and —8— disposed in a plane at an angle to the axis of the pipe corresponding to the angle of the roof so that when placed in operative position the base portion —7— and —8— will lie flatwise upon the upper surface of said roof, while the cylindrical portions —5— and —6— will stand in an upright position and encircle adjacent portions of the pipe against the periphery thereof.

The opposite sides of the cylindrical portions —5— and —6— between the upper and lower sides thereof are preferably extended

beyond each other so that the sides of the upper section will overlap upon the outer faces of the opposite sides of the lower section, while the lower edge of the base —8— of the upper section overlaps upon the upper face of the upper edge of the base —7— of the lower section, the object of which is to cause the rain, snow and other foreign matter lodged upon the surface of the roof to drain from the upper surface of the upper section upon the upper face of the lower section somewhat after the manner of laying shingles it being understood that the sides of one section will have to be sprung outwardly sufficiently to permit them to overlap upon the adjacent sides of the other section.

The cap —4— as shown in Figure —1— is made separate from the pipe, but is fastened thereto by molten lead packing —9— which is tightly packed in an annular groove —10— in an upper end of the cap and serves to secure the cap to the pipe.

The lower end of the cap —4— is provided with an annular flange —11— of greater interior diameter than the exterior diameter of the pipe and also the exterior diameter of the cylindrical sections —5— and —6— when engaged with the pipe, thereby forming an additional annular groove —12— in the lower end thereof which is separated from the upper groove by an annular shoulder —13— having an interior diameter substantially equal to that of the exterior of the pipe so as to form a support for the lead packing —9—. The interior of the lower end of the flange —11— is tapered or flared outwardly, thus producing what may be termed a tapered socket below the annular shoulder —13— for wedging engagement with the periphery of the upper end of the cylindrical sections —5— and —6— of the roof flange which is seated in the tapering socket when the pipe —3— is finally adjusted.

In other wordes, while the roof flange sections —5— and —6— are being placed in position against the periphery of the pipe —3—, the latter is elevated a sufficient distance to cause the lower end of the flange —11— to clear the upper end of the sections —5— and —6—, after which the pipe —3— with the cap —4— thereon is lowered to cause the flange —11— to wedge against and surround the periphery of the upper ends of the sections —5— and —6—, thereby bringing the lower end of the flange —11— some distance below the upper edge of said roof flange sections to cap the same and prevent the entrance of rain, snow and other foreign matter through the joints.

In Figure —4—, the cap —4— is preferably formed integral with the pipe —3—, but is equipped with the annular flange —11— and annular groove —12— for per-

mitting the cap to fit over and upon the upper ends of the roof flange sections —5— and —6— in the manner shown in Figure —1—, thereby eliminating the extra expense of the lead packing —9— and groove —10—. 70

The object in making the roof flange in sections as described is to enable them to be placed in operative position from the underside of the roof through the opening —2— to avoid the dangers and difficulties of the usual method of placing these flanges in operative position from the top of the roof, which involves more or less danger to the workmen, particularly on steep roofs. To this end, the axial length of the cylindrical portions —5— and —6— and the widths of the flat bases —7— and —8— of both roof flange sections are made of less length and radial width, respectively, than the diameter of the opening —2— in the roof so that before the pipe —3— is placed in said opening, each of the roof flange sections may be inserted from the underside upwardly through the opening —2— in the manner shown by dotted lines in Figure —2— until all portions thereof are brought above the upper face of the roof whereupon it may be laid flatwise with its base flange resting upon the top of the roof, either above or below the opening with its concave side facing the pipe where it may be temporarily held by a string or wire attached thereto and brought through the opening —2— and attached to the inside of the building. 80 85 90 95

The pipe —3— with the cap —4— thereon is then inserted from the underside upwardly through the opening —2— and temporarily supported a sufficient distance to bring the lower edge of the flange —11— above the horizontal plane which the upper edges of the sections —5— and —6— would assume if they were brought against the periphery of the pipe with their bases —7— and —8— resting upon the top of the roof. 100 105

After the pipe has been brought to this position, the roof flange sections —5— and —6— are drawn toward and against the adjacent sides of the pipe or from the position shown by dotted lines in Fig. —2— to the position shown in Fig. —1—, whereupon the pipe —3— may be lowered to cause the inner walls of the flange —11— to wedge against and surround the upper end of the cylindrical portions —5— and —6—, the pipe being then connected to the underlying section to complete the job. 110 115 120

It will be seen from the foregoing description that by making the roof flange in sections in the manner described, they may be readily inserted one at a time from the underside of the roof through the opening —2— and temporarily supported flatwise upon the upper surface of the roof ready to be brought against the lower and upper faces of the pipe when the latter is placed 125 130

from the underside upwardly through the same opening —2—, thereby avoiding the dangerous operation of assembling these parts from the top of the roof, and, at the
5 same time; assuring a water-tight joint between the cap —4— and cylindrical portions —5— and —6— of the roof flange, the base of the section —6— overlapping upon the
10 base of the section —5—, while the edges of the cylindrical portions of the section —6— embrace the adjacent edges of the cylindrical portion of the section —5—.

What I claim is:

1. The herein described method of assembling and capping roof flanges consisting in making the roof flange in sections, inserting the sections one at a time from the underside of the roof through the pipe opening therein, and temporarily lodging them flatwise
20 upon the roof at their respective sides of the opening and then inserting the pipe with the cap thereon from the underside of the roof upwardly through the opening a sufficient distance to bring the cap above the up-

per edges of the roof flange sections, and
25 then drawing the roof flange sections against the corresponding sides of the pipe beneath the cap and finally lowering the pipe to cause the cap to embrace the upper edges of the roof flanges.

2. A two part roof flange for soil pipes and the like, each part having a substantially semi-cylindrical portion and a flat base portion, in combination with a pipe inserted through an opening in the roof and
30 provided with a cap fitting over and upon the upper edges of the semi-cylindrical portions of the roof flange, the radial width of each part of the roof flange being less than the diameter of the opening in the roof to
40 permit said parts to be inserted from the underside of the roof through the opening.

In witness whereof I have hereunto set my hand this 13th day of May, 1920.

RHODA M. MCGRAW.

Witnesses:

H. E. CHASE,
R. G. CARROLL.