

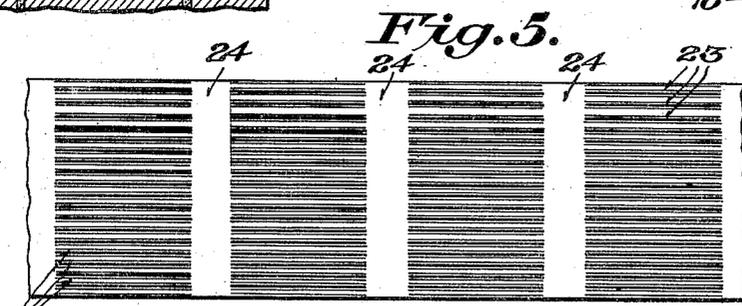
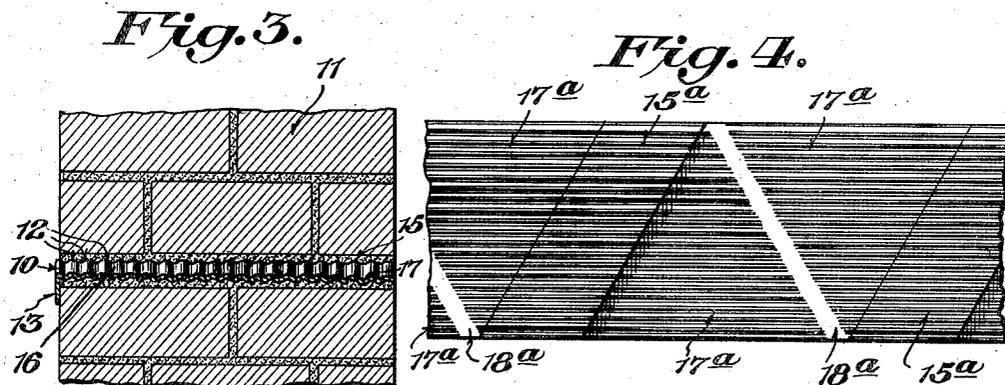
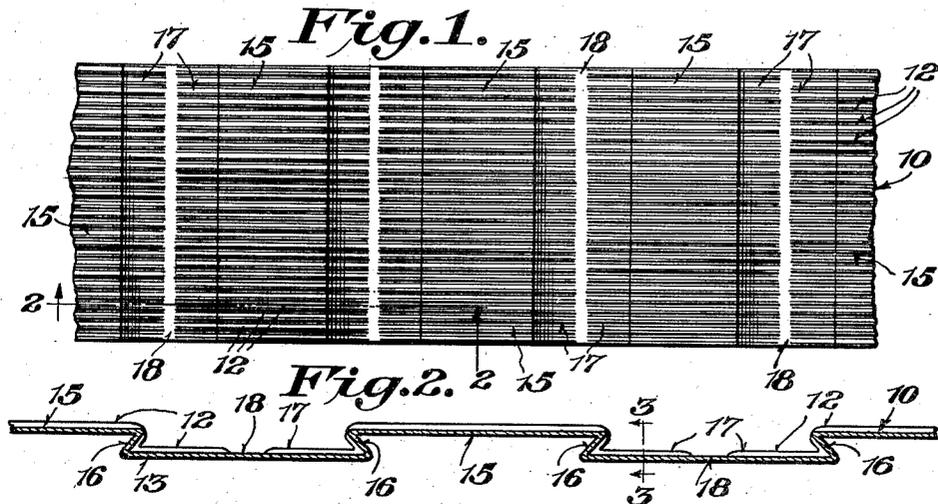
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2,125,841

CRIMPED COPPER FLASHING

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# UNITED STATES PATENT OFFICE

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## CRIMPED COPPER FLASHING

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9 Claims. (Cl. 72—127)

The present invention relates to through-wall flashings for masonry buildings and the like and aims generally to improve existing flashings of the types shown in my prior Patents Nos. 1,715,000 and 1,871,585.

Through wall flashings for masonry walls are preferably made of sheet metal such as sheet copper and are constructed so that when embedded in a mortar joint of a building wall they will act to bond the masonry above and below the flashing against movement in all directions, i. e. against vertical tilting as well as lateral and longitudinal shifting. As disclosed in my prior patents referred to, a full dovetail rib or a half dovetail or sawtooth rib is advantageous in bonding the masonry against movement vertically and in one horizontal direction. Other means, for example tapered sides of the ribs have been necessary to prevent shifting of the masonry in other horizontal directions, but the use of such means requires special manipulation of the sheet metal piece during each forming operation.

Heretofore many attempts have been made to form interlocking through-wall flashings from corrugated or crimped sheet copper, but such previous attempts have not been successful because the use of corrugated copper interferes seriously with proper drainage of water of infiltration across the surface of the flashing sheet.

Crimped or corrugated sheet copper, i. e. sheet copper that is uniformly crimped or corrugated throughout its length and width is highly advantageous for use in certain installations because of the inherent increased strength imparted to the copper sheet by the crimping operation.

One of the primary aims and objects of my invention is the provision of a highly satisfactory throughwall flashing, that may be made of crimped or corrugated copper without sacrificing in any way the bonding characteristics of the flashing or its ability to readily drain water of infiltration across the surface of the flashing to the outside of the wall.

Other aims and advantages of the invention will be apparent to those skilled in the art from a consideration of the following more detailed description, reference being had to the accompanying drawing—

In the drawing

Fig. 1 is a plan view of a through-wall flashing constructed in accordance with one form of the invention;

Fig. 2 is an enlarged sectional view on the line 2—2 of Fig. 1;

Fig. 3 is a detail sectional view taken on the

line 3—3 of Fig. 2 of a section of a masonry wall, showing my improved flashing in place;

Fig. 4 is a plan view of a slightly modified form of flashing;

Fig. 5 is a plan view of a blank of crimped metal suitable for the manufacture of a further modified form of flashing; and

Fig. 6 is a side edge elevation of a modified form of flashing.

According to the invention the through-wall flashing is formed from a suitable length of sheet metal 10, for example copper, of sufficient width to extend entirely through the masonry wall 11 in which it is to be used. The copper sheet 10 is preferably crimped or corrugated, providing a series of alternate ridges 12 and valleys 13, throughout its surface, and advantageously these ridges 12 and valleys 13 are extended lengthwise of the sheet. The ridges 12, as produced by the crimping are substantially one-sixteenth ( $\frac{1}{16}$ ) of an inch in height, and act materially to stiffen the body of the sheet so that it will lie uniformly in horizontal planes free from low or depressed areas.

The crimped or corrugated sheet 10 is advantageously formed with locking means adapted to be imbedded in and interlocked with a layer of mortar and preferably these locking means extend transversely of the sheet. According to one form of the invention (Figs. 1 and 2) the locking means may comprise parallel sided dovetail ribs 15, preferably about three inches in width and approximately three-sixteenths of an inch in height, so as to be imbedded in a layer of mortar constituting a joint of the masonry wall. The dovetail ribs 15 having overhanging side edges, see Fig. 2, presenting recesses 16 opening on opposite sides of the sheet are adapted to receive mortar which, upon hardening, will bond the flashing to the courses of masonry above and below it against movement vertically and transversely of the rib. Relative movement of the courses of masonry and flashing in the direction of the ribs is prevented by the opposed ridges 12 and valleys 13 at the overhanging edges of the rib, the mortar tongue filling the recesses 16 being characterized by an undulated thickness vertically.

The formation of the plurality of spaced dovetail ribs 15 as above described, presents complementary crimped grooves 17 between adjacent ribs, these grooves serving to receive all water of infiltration seeping through the masonry wall which is stopped by the flashing as a whole. In order to drain such water of infiltration from

the wall, a desired area of the ridges 12 of each groove 17 is flattened to provide smooth unobstructed drainage channels 18 extending the entire width of the flashing sheet. Thus any water of infiltration stopped by the flashing sheet as a whole will drain longitudinally through the valleys 13 to the nearest cross-drainage channel 18 along which it may drain to the outside of the wall.

Instead of forming the ribs 15 transversely of the sheet, as shown in Fig. 1, I may arrange ribs 15<sup>a</sup> transversely and obliquely to afford greater resistance to longitudinal and transverse shifting of the masonry in directions at right angles. Such ribs 15<sup>a</sup> advantageously are formed with overhanging sides, as described above and as illustrated in Fig. 2. In such case the drainage channels 18<sup>a</sup> may be positioned centrally of the grooves 17<sup>a</sup>, as in Fig. 1, or may extend diagonally of the grooves 17<sup>a</sup> as shown in Fig. 4.

Instead of forming the locking means as full dovetail ribs, as shown in Fig. 2, I may form them as half-dovetail or sawtooth ribs as in Fig. 6. In this form of the invention the locking means comprises an overhanging reversed bond 20, providing opposed mortar-receiving recesses 21 and 22, the edges of the recess 22 being connected by vertically inclined body portions 23, generally described as of sawtooth shape. In this form of flashing the recesses 22 constitute transverse drainage grooves for draining water of infiltration from the wall and advantageously these are plain and flat and may be formed by first flattening the blank of crimped copper at intervals, as at 24, Fig. 5, and then bending the blank so that the recess 22 is confined in the flattened area 24.

Advantages of the invention reside principally in the added strength and quick drainage afforded by the use of crimped or corrugated copper while retaining all of the advantages of the interlocking means.

By using crimped copper the outer surface of the flashing is divided into drainage channels which confine the drainage of all water of infiltration in definite paths, first longitudinally of the sheet and then transversely through the channels 18. The construction insures that the flashing will be free from low areas such as will collect and hold water of infiltration.

It is to be understood that the invention contemplates the use of other locking means for preventing shifting of the masonry longitudinally and/or vertically, those illustrated and described being intended only as illustrative of the most efficient forms of locking means. The invention is susceptible of various changes without departing from the spirit thereof as defined by the appended claims.

I claim:

1. A through-wall flashing for masonry structures and the like comprising a sheet of metal of sufficient width to extend substantially through a masonry wall, said sheet having substantially its entire surface crimped providing alternate ridges and valleys extending lengthwise thereof, said sheet being formed with spaced locking means for bonding engagement with a layer of mortar, and transverse drainage channels between said locking means communicating with said valleys for draining water of infiltration to the outside of said wall.

2. A through-wall flashing for masonry structures and the like comprising a sheet of metal of sufficient width to extend substantially through a masonry wall, said sheet having substantially its

entire surface crimped providing alternate ridges and valleys extending lengthwise thereof, a plurality of spaced transverse ribs having overhanging sides formed in said sheet for bonding engagement with a layer of mortar, and transverse drainage areas communicating with said valleys for draining water of infiltration to the outside of said wall.

3. A through-wall flashing for masonry structures and the like comprising a sheet of metal of sufficient width to extend substantially through a masonry wall, said sheet having substantially its entire surface crimped providing alternate ridges and valleys extending lengthwise thereof, a plurality of alternate transverse dovetail ribs and grooves formed in said sheet for bonding engagement with a layer of mortar and transverse drainage areas communicating with said valleys for draining water of infiltration to the outside of said wall.

4. A through-wall flashing for masonry structures and the like comprising a sheet of metal of sufficient width to extend substantially through a masonry wall, said sheet having substantially its entire surface crimped providing alternate ridges and valleys extending lengthwise thereof, a plurality of alternate transverse parallel-sided dovetail ribs and grooves formed in said sheet for bonding engagement with a layer of mortar and transverse drainage areas communicating with said valleys for draining water of infiltration to the outside of said wall.

5. A through-wall flashing for masonry structures and the like comprising a sheet of metal of sufficient width to extend substantially through a masonry wall, said sheet having substantially its entire surface crimped providing alternate ridges and valleys extending lengthwise thereof, a plurality of alternate transversely extending obliquely disposed parallel-sided dovetail ribs and grooves formed in said sheet for bonding engagement with a layer of mortar and transverse drainage areas communicating with said valleys for draining water of infiltration to the outside of said wall.

6. A through-wall flashing for masonry structures and the like comprising a sheet of metal of sufficient width to extend substantially through a masonry wall, said sheet having substantially its entire surface crimped providing alternate ridges and valleys extending lengthwise thereof, a plurality of alternate transverse dovetail ribs and grooves formed in said sheet for bonding engagement with a layer of mortar and transverse drainage areas formed in said grooves and communicating with said valleys for draining water of infiltration to the outside of said wall.

7. A through-wall flashing for masonry structures and the like comprising a sheet of metal of sufficient width to extend substantially through a masonry wall, said sheet having substantially its entire surface crimped providing alternate ridges and valleys extending lengthwise thereof, a plurality of spaced transverse sawtooth ribs formed in said sheet and presenting superposed recesses opening on the opposite sides of the sheet for the reception of mortar, the groove opening toward the upper surface of the sheet being transversely flattened and affording a smooth drainage channel communicating with said valleys.

8. A through-wall flashing for masonry structures and the like comprising a sheet of metal of sufficient width to extend substantially

through a masonry wall, a plurality of alternate dovetail ribs and grooves extending transversely of the sheet, the metal constituting the tops and sides of said ribs being crimped providing alternate ridges and valleys extending across said ribs, and said grooves having uncrimped surfaces providing transverse drainage channels for draining water collected by said flashing to the outside of the wall.

9. A through-wall flashing for masonry struc-

tures and the like comprising a sheet of metal crimped to provide throughout its surface alternate longitudinally extending ridges and valleys, said ridges being flattened at spaced intervals providing smooth transverse drainage channels communicating with said valleys, whereby water of infiltration in said wall will be collecting in said valleys and drained therefrom through said flat drainage channels to the outside of said wall.

ALLAN CHENEY.