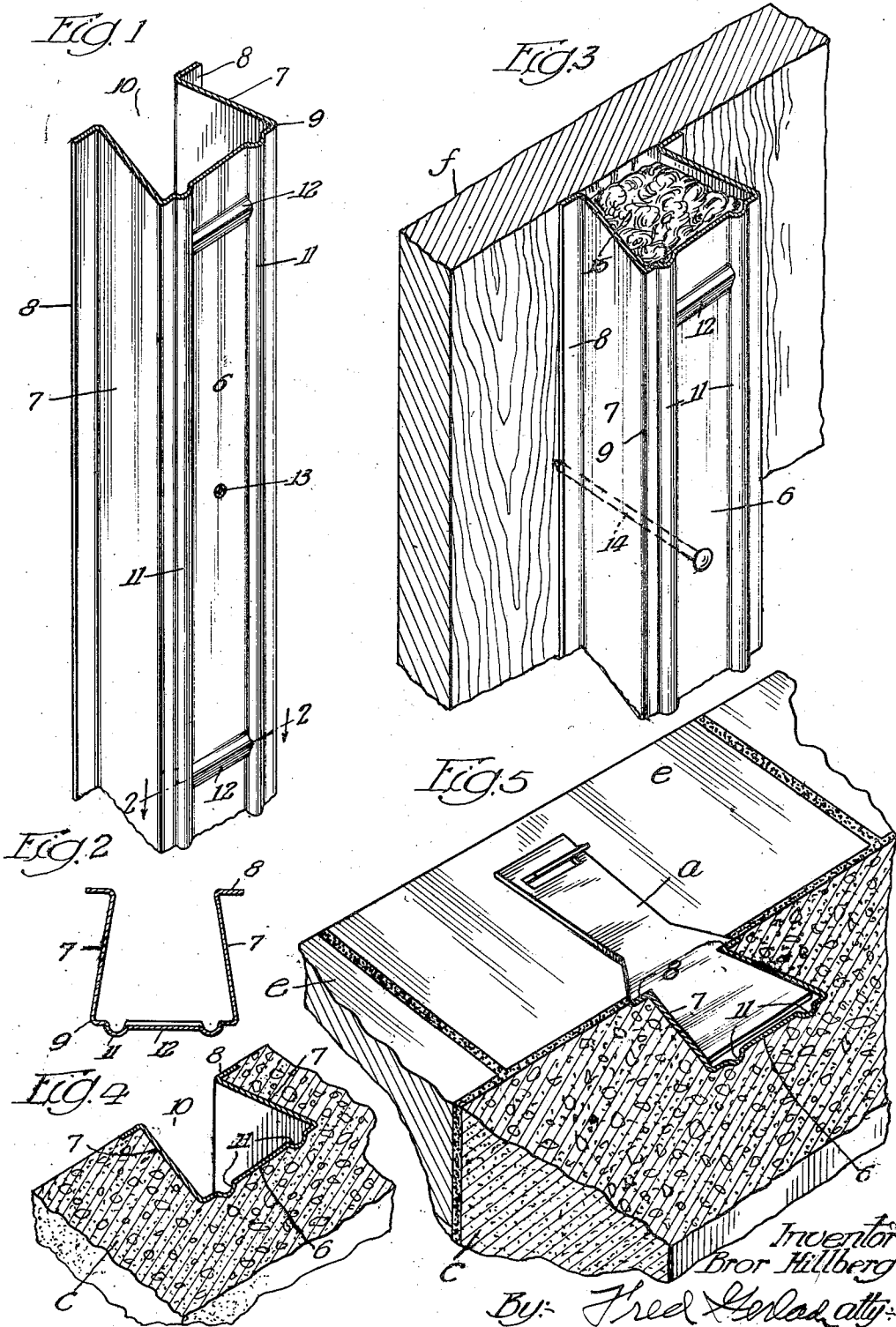


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B. HILLBERG
CHANNEL SHAPED ANCHOR RETAINING STRIP
FOR EMBEDMENT IN CONCRETE
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CHANNEL SHAPED ANCHOR RETAINING STRIP FOR EMBEDMENT IN CONCRETE

Bror Hillberg, Chicago, Ill., assignor to Superior Concrete Accessories, Inc., Chicago, Ill., a corporation of Illinois

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1 Claim. (Cl. 72—103)

The present invention relates generally to channel shaped anchor retaining strips for embedment in concrete. More particularly the invention relates to that type of strip which is formed of galvanized sheet metal, consists of a crosswall and a pair of forwardly and inwardly extending side walls with outwardly extending integral flanges along their front margins, and is adapted in connection with use thereof first to be nailed against a wooden form in such manner that the outwardly extending flanges abut directly against the inner surface of the form, then to have concrete in plastic form poured around it for wall or column forming purposes, and then, after hardening of the concrete and removal of the wooden form, to form in the outer surface of the concrete an exposed restricted entrance or dovetail slot for receiving and retaining the dovetail inner ends of conventional anchors, the outer portions of which are adapted for embedment in mortar and serve to hold bricks or tiles in place against the outer surface of the concrete.

It has heretofore been proposed in the fabrication of a channel shaped anchor retaining strip of the aforementioned type to make the crosswall substantially flat and to form in the crosswall spaced apart holes for the nails that are used to secure the strip against the wooden form. In practice it has been found that a strip having a substantially flat crosswall is subject to the objection that when the plastic concrete is poured around the strip after nailing of the latter in place the crosswall in most instances bulges or arches away from the form due to the pressure of the concrete against the flange-equipped side walls of the strip. Such bulging or arching on the part of the crosswall results in the flange equipped side walls moving towards one another and also the nails pulling away from the form. When the side walls of the strip move toward one another the restricted entrance or dovetail slot becomes narrowed or reduced in width and hence precludes reception of the preformed dovetail ends of the anchors unless such ends are ground or cut away so as to conform them to the cross sectional shape of the strip defined slot. When, as the result of bulging or arching of the crosswall of the strip, the nails are pulled partially or completely out of the wooden form concrete during the pouring operation flows between the flanges and the inner surface of the form and so clogs the slot as to preclude insertion of the dovetail ends of the anchors.

The principal object of this invention is to provide a channel shaped anchor retaining strip which is an improvement upon, and eliminates the objection to, previously designed strips having substantially flat crosswalls and is characterized by the fact that its crosswall has integral longitudinally spaced transversely extending out-struck ribs which so reenforce the crosswall as to preclude it from bulging or arching away from the wooden form in connection with normal use of the strip concrete is poured around the latter and the flange-equipped side walls are subjected to heavy pressure. By employing such ribs and thereby precluding or preventing bulging or arching of the crosswall there is no likelihood in connection with a concrete pouring operation of the flange-equipped side walls moving toward one another and thus

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narrowing or reducing the width of the restricted entrance or dovetail slot. Furthermore, there is substantially no possibility of the attaching nails pulling out of the form with the attendant possibility of flow of concrete into the slot.

Another object of the invention is to provide a channel shaped anchor retaining strip of the last mentioned character in which the crosswall embodies in addition to the transversely extending ribs two parallel longitudinally extending out-struck ribs which are disposed in straddled relation with the transversely extending ribs and directly inwards of the side margins of the crosswall and serve to reenforce the strip as a whole against bending or twisting.

A further object of the invention is to provide a channel shaped anchor retaining strip which is generally of new and improved construction, effectively and efficiently fulfills its intended purpose and is characterized by durability and low cost of manufacture.

Other objects of the invention and the various advantages and characteristics of the present channel shaped anchor retaining strip will be apparent from a consideration of the following detailed description.

The invention consists in the several novel features which are hereinafter set forth and are more particularly defined by the claim at the conclusion thereof.

In the drawing which accompanies and forms a part of this specification or disclosure and in which like letters and numerals of reference denote corresponding parts throughout the several views:

Figure 1 is a perspective of a channel shaped anchor retaining strip embodying the invention;

Figure 2 is a horizontal transverse section taken on the line 2—2 of Figure 1 and illustrating in detail the shape and design of the transverse and longitudinal out-struck ribs on the crosswall of the strip;

Figure 3 is a fragmentary perspective view showing the strip after it has been nailed in place against the inner surface of a wooden form preliminary to pouring of concrete within the form for wall or column forming purposes;

Figure 4 is a fragmentary perspective view showing the strip after the concrete has hardened and the wooden form has been removed so as to expose the restricted entrance or dovetail slot within the strip; and

Figure 5 is a fragmentary perspective view showing the manner in which the concrete embedded strip serves to retain a conventional anchor so that it holds bricks or tiles in place against the outer surface of the concrete.

The channel shaped strip which is shown in the drawing constitutes the preferred form or embodiment of the invention. It is essentially an element for use in connection with concrete construction and is designed and adapted for embedment in the outer surface of a mass of concrete *c*. The principal purpose of the strip is to retain conventional anchors *a* which, in turn, serve to hold block-like facing elements *e* against the outer surface of the concrete. The concrete may be in the form of a wall or column and the elements *e* may be in the form of bricks, tiles or stone blocks. As well understood in the art, an upstanding wooden form *f* is used in connection with the formation of the concrete wall or column.

The strip is in most instances quite long and normally extends vertically. It is of one-piece construction and is formed of galvanized sheet metal or other suitable material. As its parts or components the strip comprises a vertically elongated crosswall 6, a pair of vertically elongated forwardly and inwardly extending side walls 7 and a pair of vertically elongated outwardly extending flanges 8. These parts are coextensive. The side walls 7 have the rear margins thereof connected to the side margins of the crosswall 6 by acute angle bends 9 and define with

the crosswall a vertically elongated restricted entrance or dovetail slot 10. The bends 9 which serve to connect the side walls to the crosswall are approximately 80°. The flanges 8 are connected to, and project outwards from, the front margins of the side walls 7 and are adapted in connection with use of the form *f* to fit flatly against the inner surface of the form as shown in Figure 3 of the drawing. They are flat and coplanar and extend in parallel relation with the crosswall 6. The latter is provided directly inwards of the acute angle bends 9 with two longitudinally extending integral out-struck ribs 11. The latter are of uniform width from end to end, extend through the entire length of the crosswall and are disposed in parallel relation. They are substantially semi-circular in cross section and serve to reenforce the strip as a whole against bending or twisting. The crosswall 6 embodies in addition to the two longitudinally extending out-struck ribs 11 a longitudinal series of transversely extending integral out-struck ribs 12. The latter are spaced equidistantly apart at intervals of approximately 6 inches and have the ends thereof joined to the adjacent portions of the longitudinally extending ribs 11. They are of arcuate cross section and serve so to reenforce the crosswall 6 as to prevent transverse bulging or arching thereof away from the form *f* to the end that, when the strip is in connected relation with the wooden form as hereinafter described, the side walls of the strip are fixedly or rigidly held at a predetermined distance apart. As shown in the drawing the transversely extending ribs 12 are of uniform width from end to end. The ends of such ribs, because they join the adjacent portions of the longitudinally extending ribs 11, terminate adjacent the bends 9. The crosswall 6 of the strip is provided midway between the longitudinally extending ribs 11 and the transversely extending ribs 12 with holes 13 for nails 14. The latter, as shown in Figure 2, serve temporarily to secure the strip in connected relation with the frame *f*.

The strip in connection with use thereof is positioned vertically and is then placed against the wooden form *f* so that the outwardly extending flanges 8 abut against the inner surface of the form. After proper positioning of the strip the nails 14 are inserted through the holes 13 in the strip crosswall 6 and are then driven forwards so that the ends thereof become embedded in the form. After driving of the nails into place the strip is held in connected relation with the form. If desired, the restricted entrance or dovetail slot 10 may be filled with any suitable light filler material 15 so as positively to prevent entry of concrete into it. After nailing of the strip the concrete *c*, while in plastic form, is poured around the strip and against the inner surface of the form. Upon hardening or setting of the concrete the form *f* is removed and the filler material 15 is withdrawn from the slot 10. This results in exposure of the slot 10 (see Figure 4). It is contemplated that after removal of the form *f* from the concrete *c* the block-like facing elements *e* will be built up against the outer surface of the concrete and secured in place by layers of mortar. The anchors *a* are used to hold the facing elements in place. Such elements are applied by inserting the dovetail inner ends thereof into the slot 10 while the anchors are disposed in a vertical position. After insertion of the dovetail inner ends of the anchors into the slots the anchors are turned into a horizontal position in order to bring the dovetail inner ends into interlocked relation with the slot 10. It is contemplated that the outer end portions of the anchors will overlies certain of the facing elements *e* and be embedded in the mortar that is used to secure the elements in place.

The herein described channel shaped anchor retaining strip effectively and efficiently fulfills its intended purpose and this is directly attributable to the fact that it includes the out-struck reenforcing ribs 11 and 12. As previously pointed out, the ribs 11 reenforce the strip against bending and twisting and the ribs 12 prevent trans-

verse bulging or arching of the crosswall 6. By preventing transverse bulging or arching of the strip crosswall there is no likelihood of the concrete in connection with pouring thereof, forcing the side walls inwards and so narrowing or reducing the width of the restricted entrance or dovetail slot 10 as to preclude ready insertion of the dovetail inner ends of the anchors *a* into the slot. Furthermore there is no likelihood of the nails 14 being pulled out of the form *f* during pouring of the concrete and hence inflow of concrete into the slot 10 is avoided. The strip is extremely durable. In addition it is not likely to become distorted in connection with transportation thereof and this is directly attributable to the fact that the crosswall 6 embodies the integral out-struck ribs 11 and 12. The transversely extending out-struck ribs 12 serve not only to reenforce the crosswall 6 against transverse bulging or arching but also to prevent the strip from sliding longitudinally with respect to the concrete. The last mentioned function is due to the fact that the ribs 12 become interlocked with the concrete after hardening of the latter.

The invention is not to be understood as restricted to the details set forth since these may be modified within the scope of the appended claim without departing from the spirit and scope of the invention.

Having thus described the invention what I claim as new and desire to secure by Letters Patent is:

As a new article of manufacture, a one-piece channel shaped strip formed of comparatively thin sheet metal and comprising a crosswall and a pair of forwardly and inwardly extending side walls connected to the side margins of the crosswall by acute angle bends and provided at their front margins with outwardly extending coplanar flanges said strip being adapted in connection with use first to be secured against an upstanding form in such manner that it extends vertically and the outwardly extending flanges thereof abut directly against the inner surface of the form, then to have concrete in plastic form poured around it and then after hardening of the concrete and removal of the form to form in the outer surface of the hardened concrete an exposed dovetail slot for receiving and retaining the dovetail ends of conventional anchors for securing block-like facing elements in place, the side walls and flanges of the strip being truly flat throughout and the crosswall of the strip being substantially flat and having formed in its side margins at comparatively small distances inwards of the bends a pair of parallel continuous longitudinally extending hollow out-struck ribs which extend throughout the length of the crosswall, are of uniform width from end to end and serve to reinforce the strip against bending and twisting, said crosswall having formed in the portion thereof between said longitudinally extending ribs a longitudinal series of equidistantly spaced transversely extending hollow out-struck ribs which are of uniform width from end to end, have the ends thereof joined to the adjacent portions of said longitudinally extending ribs, serve in connection with pouring of the plastic concrete around the strip to reenforce the crosswall against transverse bulging or arching away from the form due to pressure of the plastic concrete against the side wall of the strip, and are adapted upon hardening of the concrete to become so interlocked with the latter as positively to hold the strip against lengthwise displacement relatively thereto.

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