

[54] STEEL BUILDING COMPONENTS WITH ATTACHMENT MEANS FOR WALL AND FLOOR SURFACE ELEMENTS

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[51] Int. Cl. .... E04f 13/04

[58] Field of Search ..... 52/327, 335, 344-363, 52/443, 450, 451, 452, 453, 454, 481, 630, 735, 241

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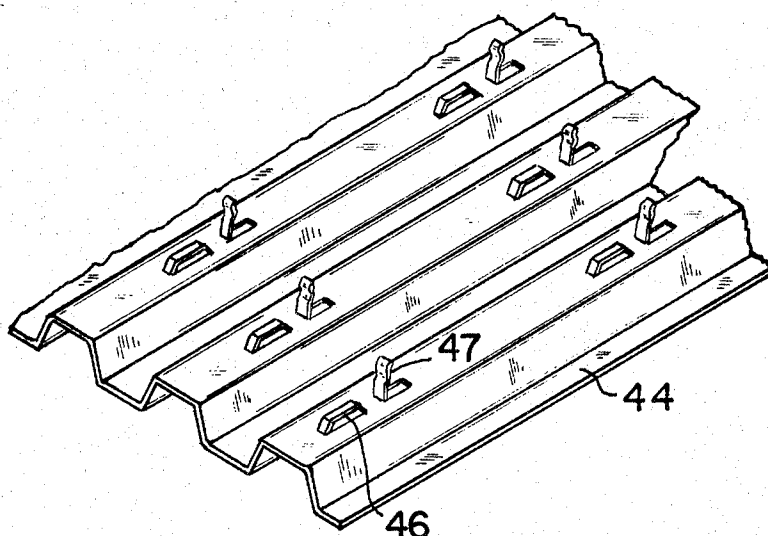
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[57]

ABSTRACT

This specification discloses steel building components, such as hollow thin-wall studding and corrugated steel sheet, having novel means integrally formed therewith by which wall and floor surface elements such as plaster, cement and concrete, may be attached to the components. Several forms of attachment means are disclosed. One form comprises an anchoring loop formed by raising a narrow strip between two slits in the sheet steel forming the studding or corrugated steel sheet. Another form is a combination of the loop and a locking prong in line therewith, the loop serving to support a reinforcing element, such as metal lath, in spaced relation to the studding or to the corrugated steel sheet and the prong serving to lock the metal lath to the raised loop. Another form comprises an inverted T-shaped tab, struck from the metal sheet and bent normal thereto. The base of the tab serves to support metal lath in spaced relation to the steel studding or to the corrugated steel sheet and the end portion of the tab is bendable to lock the metal lath to the base of the tab. Rolling apparatus and a method for forming the steel studding and the various attachment means is also disclosed.

7 Claims, 15 Drawing Figures



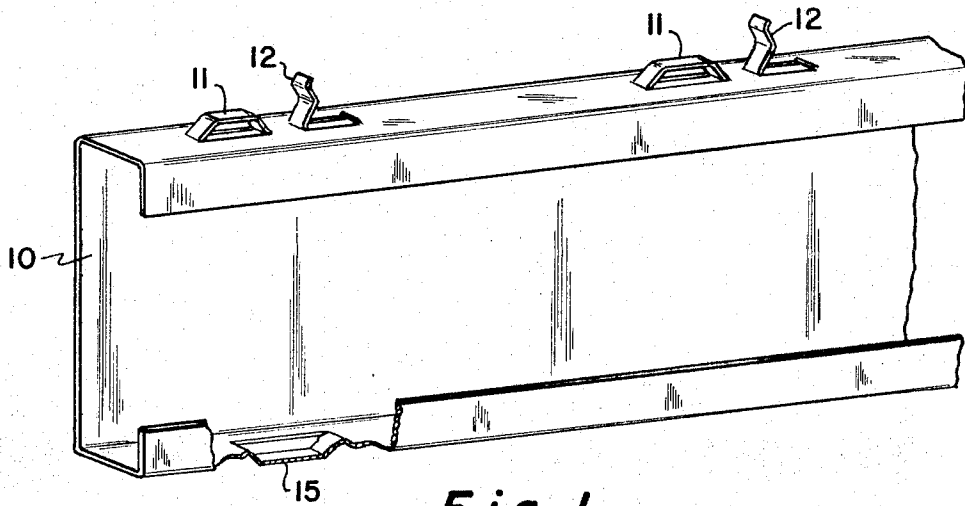


**Fig. 1**

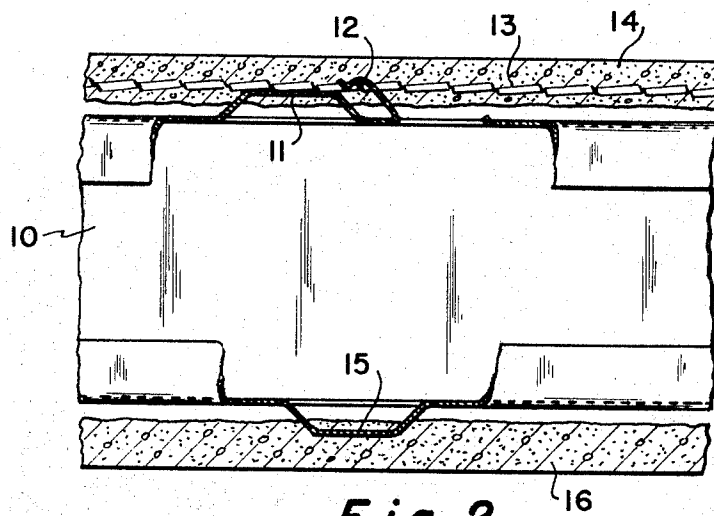


**Fig. 2**

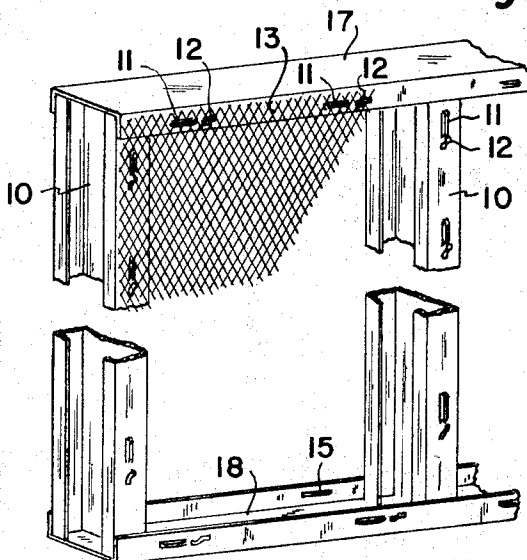


**Fig. 3**

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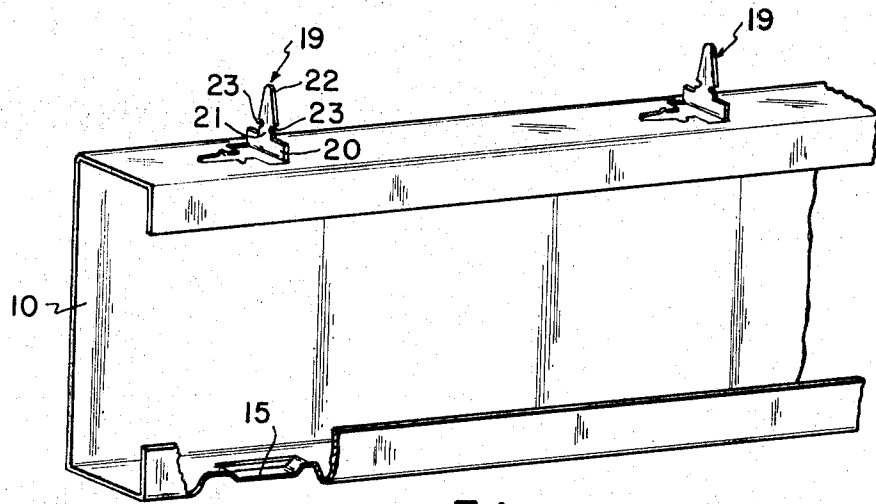


**Fig. 4**

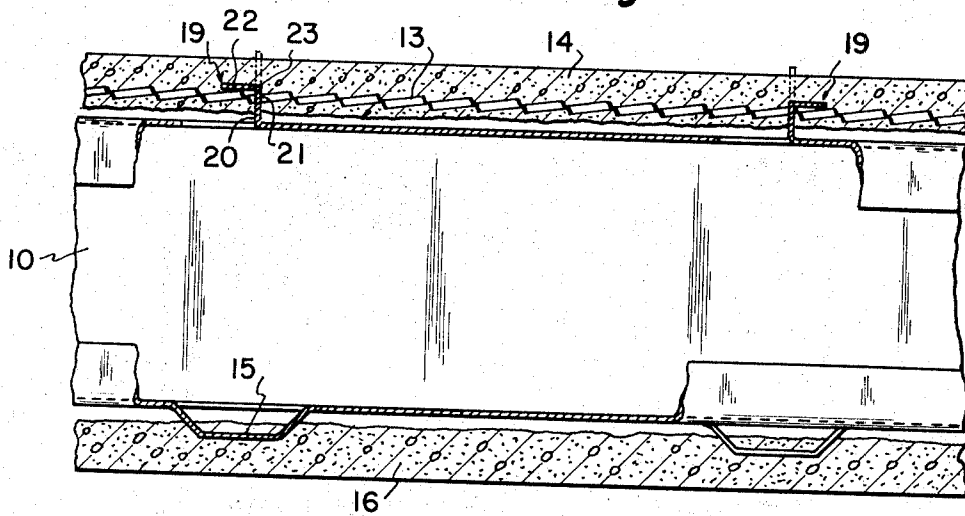


**Fig. 5**

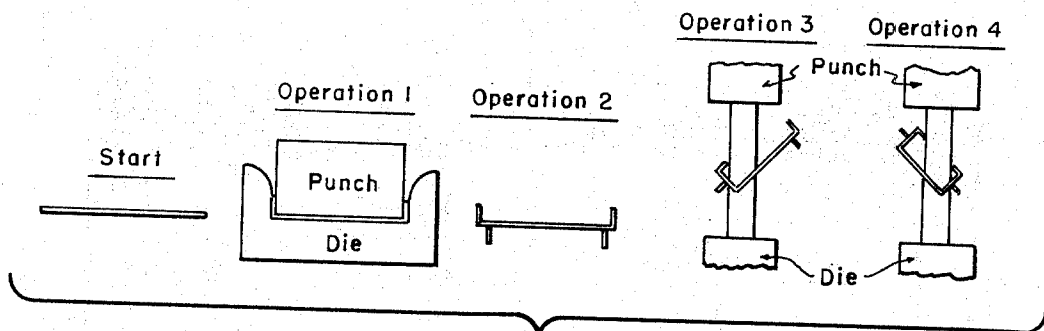


**Fig. 6**

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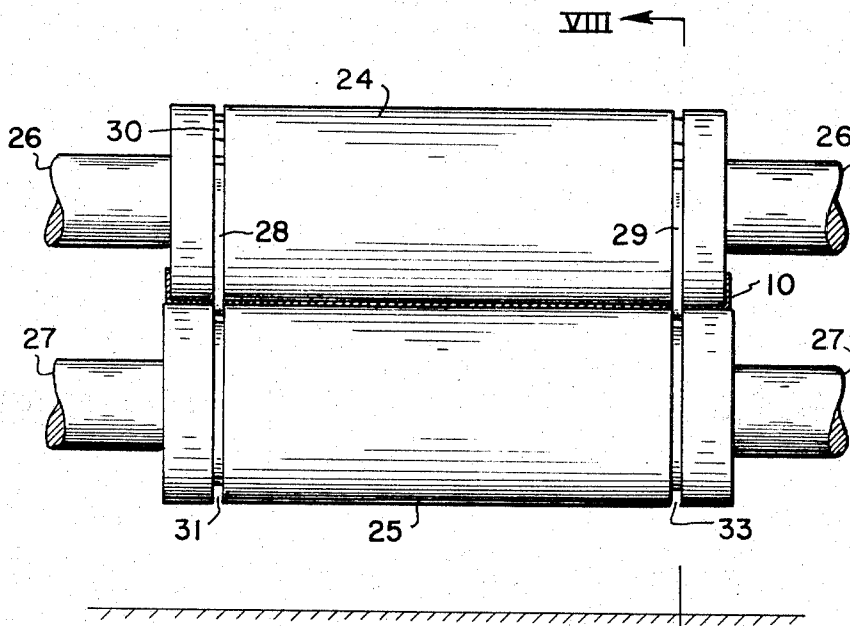


Fig. 7

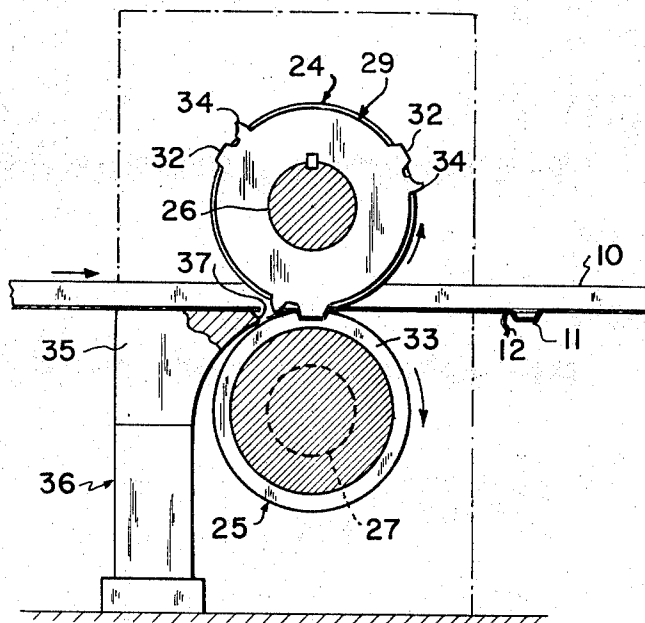


Fig. 8

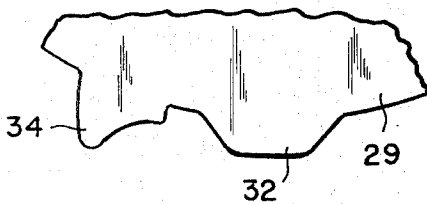


Fig. 9

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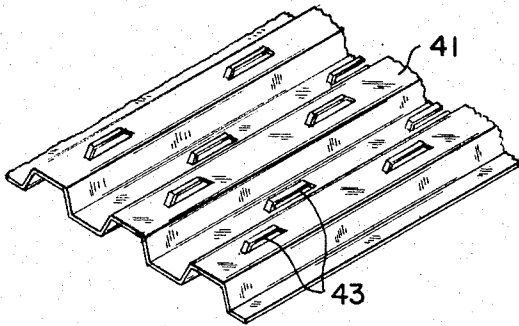


**Fig. 10**

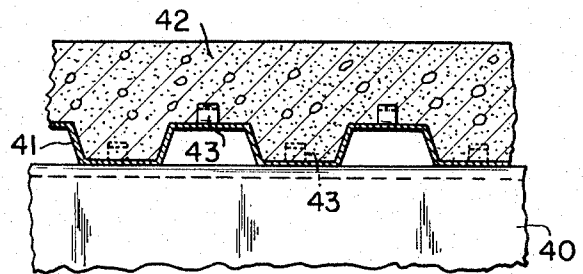


**Fig. 11**

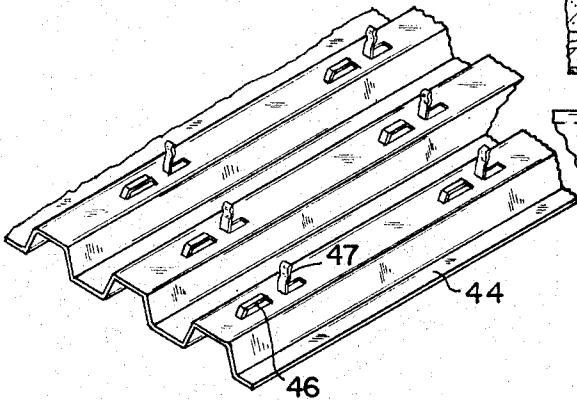


**Fig. 12**

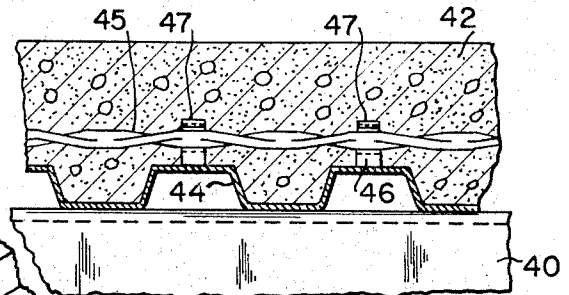


**Fig. 13**

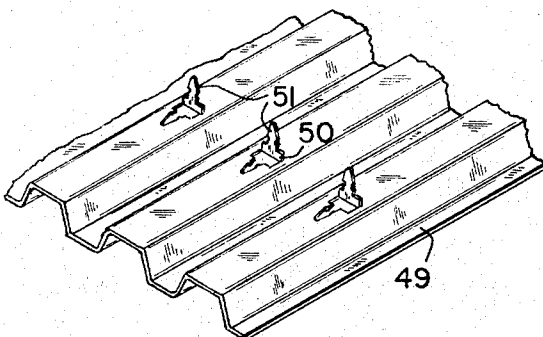


**Fig. 14**

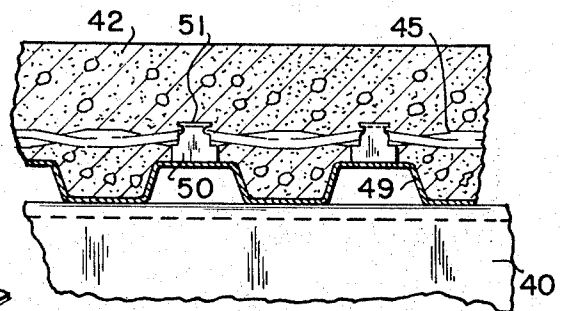


**Fig. 15**

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## STEEL BUILDING COMPONENTS WITH ATTACHMENT MEANS FOR WALL AND FLOOR SURFACE ELEMENTS

This invention relates to building components, such as steel studding of the hollow thin-wall type used in modular wall structures and corrugated sheet steel used in floor structures, having novel means for attaching both indoor and outdoor wall elements to the studding and indoor and outdoor floor surface elements to the corrugated sheet steel.

It has within recent years been proposed to employ in the building industry, especially for residences, apartment houses and the like, modular wall units employing steel studding to which both the outdoor as well as the indoor wall surface structure has been attached prior to the erection of the wall structure. Specifically it has been proposed to employ thin-wall hollow steel studding similar to channels but with the exposed edges of the sides of the channel turned in as flanges. The outer dimensions correspond closely to those of the familiar standard "two-by-four" of the lumber industry. Such steel studding may be formed by rolling sheet steel of relatively thin gauge, in the range of No. 18 (0.047 inch) to No. 20 (0.0359 inch), slightly in excess of 1/32 inch (0.03127 inch). The studding is usually 4-sided and of C-shape as distinct from 3-sided channel shape to impart greater cross-sectional rigidity to the studding.

The use of steel studding has necessitated the use of special means for attachment of wall surface structures to the studding. Means which have been commonly employed for this purpose is the familiar self-tapping metal screw which engages corresponding holes stamped or drilled through the studding wall, and used with or without accessory washers. Where metal lath is attached to the studding by metal screws, the lath of course directly contacts the metal studding and serves to directly conduct heat or cold applied to the wall surface surrounding the lath through the studding to the opposite wall surface. Consequently, this means of attachment of wall surface elements to the steel studding fails to insulate the wall structure against conduction of heat or cold through the wall from one side to the other. In the case of an outside wall, or even of a wholly inside wall, where one side of the wall is subject to colder temperature than the other side, the condensation of moisture on the wall surface subject to the warmer temperature over an area coinciding with the projection of the studding thereon, causes a collection over said area of dust or dirt particles from the ambient air. The deposit of such dust or dirt particles over a period of time results in a dark mark on the warmer wall surface exactly counterpart to and coinciding with the exact location of the studding on the wall surface which is clearly apparent and which is undesirable. Also, in the event of the occurrence of a fire on one side of a wall, the so-called "fire rate" or rate of rise of temperature of the wall surface on one side in consequence of the conduction of heat through the steel studding from the wall surface on the opposite side is relatively high. Also, the direct contact of metal lath with the studding imparts a drum-like character to the wall structure and aids in the transmission of sound through the wall.

In applying outside wall surface elements to steel studding employed as components in modular wall structures, it is the present practice to provide tangs on

the studding to which the concrete or other composition material adheres incidental to the molding process by which the outside wall surface elements are formed. These tangs are subject to be broken off incidental to the handling of the studding prior to the attachment of the wall surface elements. With the loss of the means of attachment, the effectiveness of the attachment of the wall surface element to the studding is clearly impaired.

In constructing floors utilizing corrugated steel sheet laid over structural steel beams as a base over which concrete, cement or similar composition material are poured and then smoothed to provide the floor surface, it has been the practice heretofore to simply apply an adherent or bonding agent to the corrugated steel sheet before pouring the concrete, cement or other composition material. It has been found, however, that after the concrete, cement or other composition material hardens, the adhesive agent is not effective in maintaining the bond between the concrete, cement or other composition material with the corrugated steel sheet. In consequence of the separation of the concrete, cement or other material from the corrugated steel sheet, relative movement occurs therebetween when the floor is subject to pedestrian traffic. Such relative movement results in disturbing and objectionable noise.

In order to overcome and obviate the difficulties heretofore experienced in attaching wall surface elements to steel studding or in attaching floor surface elements to corrugated steel sheet base, and at the same time avoid the inherent disadvantages hereinbefore pointed out in connection with the use of prior known attachment means, it is therefore proposed, according to the invention, to provide steel studding and corrugated steel sheet with novel integrally formed means of attachment of wall surface elements and floor elements thereto.

It is also proposed to provide a method of making steel studding of the hollow thin-wall type in which the means of attaching wall surface elements thereto is formed integrally with the studding incidentally with the process of manufacture. Accessory attachment devices, such as metal screws or clips are thus unnecessary. Incidentally, also, the time and expense required for separate additional processing of the studding to provide the attachment means thereon is avoided. The method of making steel studding which is proposed includes the provision of a set of rollers including appropriately located discs having cutting and shaping teeth thereon for forming the attachment means incidental to the manufacture of the studding itself.

It is also proposed to provide steel studding of the hollow thin-wall type with various integrally formed wall surface element attachment means thereon, each of which inherently serves to space the wall surface element from the studding and at the same time to strengthen the attachment of the wall surface element and to lock it to the studding. It is also proposed to provide a corrugated steel sheet with similar various integrally formed attachment means whereby to attach floor surface elements in elevated spaced relation to the corrugated steel sheet.

It is also proposed to provide steel studding of the hollow thin-wall type and corrugated steel sheet with integrally formed anchoring loops for attachment thereto of wall surface elements or floor surface elements molded or cast in place.

The various advantages and improvements obtained in consequence of the novel means of attachment of wall surface elements to steel studding and of floor surface elements to corrugated steel sheet will become more apparent from the forthcoming description thereof. In addition, it will be seen that the disadvantages inherent in and the difficulties experienced with prior known means for attaching wall surface elements to steel studding and floor surface elements to corrugated steel sheet are obviated and avoided by my invention. In particular, the maintaining of a spaced relation between the wall surface elements and the steel studding provides a more effective sound-proofing characteristic for walls, more effective insulation against transmission of heat and cold through the walls, a lower "fire rate" index or rate of conduction of heat through the wall, and elimination of the possibility of marking of the wall with lines delineating the projection of the studding thereon. Insofar as floor construction is concerned, it will become apparent that the attachment of floor surface elements to corrugated steel sheet in accordance with my invention insures permanent and intimate attachment of the floor surface material to the corrugated sheet and also improves the insulation against transmission of heat or cold and of sound there-through. In the accompanying drawings:

FIG. 1 is a fragmental isometric view, showing a portion of a steel studding with two different forms of wall structure attachment means;

FIG. 2 is a fragmental cross-sectional view, showing a portion of the steel studding depicted in FIG. 1 with wall surface structures attached thereto;

FIG. 3 is a fragmental isometric view of a modular wall structure embodying steel studding with one of the forms of attachment means depicted in FIG. 1;

FIG. 4 is a fragmental isometric view, showing a portion of a steel studding with another form of wall structure attachment means in addition to those shown in FIGS. 1 and 2;

FIG. 5 is a fragmental cross-sectional view, showing a portion of the steel studding depicted in FIG. 3 with wall surface structures attached thereto;

FIG. 6 is a diagrammatic view showing the sequence of steps, illustrative of the method by which steel studding with integral attachment means may be produced;

FIG. 7 is an elevational view showing the roll stand by which one of the steps, shown in FIG. 6, may be performed;

FIG. 8 is a cross-sectional view of the roll stand of FIG. 7, taken on the line VIII—VIII;

FIG. 9 is a fragmental view, on enlarged scale, showing with greater clarity the contour of the teeth on one of the discs of FIG. 8;

FIG. 10 is a fragmental perspective view of a corrugated steel sheet embodying one form of attachment means corresponding to that shown in FIGS. 1 and 2;

FIG. 11 is a fragmental sectional view on enlarged scale of a floor structure embodying the type of corrugated steel sheet and attachment means shown in FIG. 10;

FIG. 12 is a fragmental perspective view of a corrugated steel sheet embodying another form of attachment means like that shown in FIGS. 1 and 2;

FIG. 13 is a fragmental sectional view on enlarged scale of a floor structure embodying the type of corru-

gated steel sheet and attachment means shown in FIG. 12;

FIG. 14 is a fragmental perspective view of a corrugated steel sheet embodying another form of attachment means corresponding to that shown in FIGS. 4 and 5;

FIG. 15 is a fragmental sectional view on enlarged scale of a floor structure embodying the type of corrugated steel sheet attachment means shown in FIG. 14.

Referring now to FIGS. 1 and 2, a fragment of steel studding 10 is shown having attachment means on opposite faces thereof by which either indoor or outdoor wall surface structures may be attached to the studding. For convenience two different forms of attachment means are shown on opposite faces of the studding. However, this is illustrative only as either form of attachment means may be employed alone on both faces of the studding. The attachment means shown on one face of the studding, adapted particularly for outdoor wall surface structures, comprises a narrow strip 11 separated along its sides from the studding wall and formed in the shape of a trapezoid with a flat portion parallel to the studding wall and connected at opposite ends by a sloping portion to the studding wall. As will be apparent in FIG. 2, the strip 11 constitutes a support for the metal lath of the wall surface structure, which is thus supported in spaced relation away from contact with the faces of the studding. In longitudinal spaced alignment with the strip 11 is also formed out of the studding wall, in the manner and by means hereinafter described, a curved prong or tongue 12 extending substantially normal to the face of the studding as viewed in FIG. 1 and bent toward and contacting the flat portion of strip 11 as viewed in FIG. 2. It will be noted from FIG. 2 that the prong 12 extends through the perforations in the expanded metal lath 13 and in the bent position thereof around a section of the metal lath, to thereby lock the metal lath firmly in position on the support strip 11 and prevent sliding of the metal lath relative to the studding.

It will be understood that the attachment means, comprising the support strip 11 and locking prong 12, occurs repetitively along the face of the studding at convenient, selected intervals, which may vary from 3 inch to 6 inch, depending on the rigidity of the metal lath. Desirably, the spacing of the attachment means should be such as to maintain a substantially uniform separation of the metal lath from the studding without sagging toward the studding.

The cement, concrete or plaster coat 14 is applied to the metal lath 13 in conventional manner, the elevation of the metal lath from the face of the studding being such that little, if any, contact of the material with the studding occurs and an air space preferably is maintained between the material and the studding.

Referring again to FIGS. 1 and 2, the attachment means on the opposite face of the studding will now be described. As will be apparent, this attachment means consists of a narrow strip 15 of the studding wall, separated therefrom and formed essentially similarly to the support strip 11. A succession of such strips 15 occurs in longitudinally spaced relation along the face of the studding at intervals of from 3 inches to 6 inches apart. The outdoor wall surface structure 16 is applied by positioning the studding over a mold such that the level of wall surface material, such as plaster, concrete or

other material, to be molded in the mold is above the separated flat portion of the strip 15. Thus, in effect, strip 15 forms an integral loop through which the molded material extends and by which it is anchored to the studding when the material hardens. As will be seen in FIG. 2, the wall surface material in its solidified state remains out of contact with the face of the studding, thereby providing an insulating air space between the wall surface and the studding itself.

The anchor strip or loop 15 has the advantage over prior known tangs or tabs in that due to its flat configuration, it cannot readily be broken off or separated from the studding. Also it does not expose sharp projections or edges, thereby insuring against injury to workmen incident to packaging or handling the studding prior to application of the wall structure thereto. Moreover, two lengths of studding may be longitudinally nested together with the anchor strips 15 on the outside and the prongs 12 on the inside so that the prongs 12 are not bent or damaged prior to installation in a modular wall partition, of the type illustrated in FIG. 3.

Referring to FIG. 3, the manner in which the steel studding is employed in assembling a modular wall partition will be briefly described. The appropriate number of pieces of studding 10 are first cut to a uniform length corresponding to the desired height and length of the partition wall. They are then inserted into top and bottom channels 17 and 18 respectively at appropriate intervals, such as on 16 inch centers and spot welded to the channels to form the framework of the modular wall section. It will be noted that the flanges of the top and bottom channels are also provided at intervals along the length thereof with the same attachment means 11, 12 and 15 as are provided on the studding 10. The intervals between successive attachment means on the channels 16 and 17 may be such as to provide two or more attachment means between adjacent studdings.

Following the assembly of the modular wall partition, the appropriate wall surface elements may be applied to opposite faces of the partition in the manner previously described. It will be apparent that the studding may be provided on its opposite faces with the same attachment means comprising strips 11 and prongs 12, or strips 15 alone, for use in constructing modular wall partitions. Where one face of the modular wall partition is to have indoor wall surface elements attached thereto and the other face is to have outdoor wall surface elements attached thereto, the form of attachment means comprising strips 11 and prongs 12 is preferable as it provides the strongest attachment to the studding.

Referring to FIGS. 4 and 5, there is shown a studding 10 having a modified form of attachment means for metal lath. The modified form of attachment means comprises a single tab 19, punched or rolled out of the sheet metal wall of the studding. A succession of such tabs are provided at suitable intervals, such as 3 inches to 6 inches, along the longitudinal face of the studding. The tabs 19 are formed so as to project substantially normal to the face of the studding. Each tab is of inverted T-shape with the base 20 of the tab constituting the head of the T. The base of the tab provides a supporting shoulder on which to support the wall surface structure, such as metal lath, in spaced relation away from the face of the studding, as more clearly shown in

FIG. 5. The upstanding portion of the tab 19 beyond the base portion 20 tapers slightly toward the end of the tab and comprises two parts 21 and 22 in tandem separated at the opposite edges by small recesses 23 shown as semi-circular in shape. The tab part 21 corresponds in length substantially to the thickness of the metal lath. Recesses 23 provide the necessary reduction in width of the tab to insure proper bending of the outer tab part 22 at a right angle to the part 21 to lock the metal lath firmly on the supporting shoulder base portion.

As will be noted in FIG. 5, adjacent tabs 19 are bent oppositely, thereby locking the metal lath against longitudinal shifting relative to the studding. Also, while the studding shown in FIGS. 4 and 5 is provided on opposite faces with different forms of attachment means for wall surface elements, it will be apparent that opposite faces of the studding may be provided with the same form of attachment means.

Referring now to FIG. 6, the method for making the studding shown in FIGS. 1 and 2 will now be described, it being understood that the stages in the operation proceed from left to right. At the point identified by the legend "START" is shown the strip of sheet metal of appropriate length and width to arrive at the final desired dimensions of studding.

The initial step in the operation, identified as "OPERATION 1", comprises the forming of the flanges on opposite edges of the strip, as by a punching operation. The second step in the operation, identified as "OPERATION 2" comprises a rolling operation, hereafter more fully described in connection with FIGS. 7 and 8, in which the succession of strips 15 is formed adjacent one flange and a succession of strips 11 and tongues 12 are formed adjacent the opposite flange. It will be apparent that, depending on the form of attachment means desired, "OPERATION 2" may provide the same form adjacent both flanges. The third step in the operation, identified as "OPERATION 3", comprises the forming of one end face as by a punching operation. The fourth step in the sequence, identified as "OPERATION 4", comprises the forming of the opposite end face as by a punching operation. The third and fourth steps may be accomplished by a rolling operation also, if desired.

In order to perform the second step in the operation, identified as "OPERATION 2", the roll stand shown in FIGS. 7 and 8 may be employed. The stand comprises a pair of rollers 24 and 25, rotatably supported in parallel horizontal positions by their respective shafts 26 and 27 journaled in a suitable frame (not shown) and motor driven in conventional manner. The shafts of rollers 24 and 25 are in vertical alignment and so spaced as to provide sufficient space between the rollers to accommodate the gauge of the sheet metal.

The upper roller 24 is a composite one in which two forming discs 28 and 29 are secured between sections of the roller adjacent opposite ends thereof. The disc 28 has a plurality of projecting teeth 30 thereon which are adapted to fit closely in a counterpart groove 31 in roller 25 for cutting and forming the strips 15 on the studding. Depending on the spacing of strips 15 desired, the angularity of the spacing between the teeth 30 of the disc 28 is correspondingly selected. The disc 29 is similar to the disc 28 in that it is provided with projecting teeth 32 corresponding in contour to those

on disc 28 and adapted to closely fit a counterpart groove 33 in roller 25 to cut and form the strips 11.

Disc 29 differs from disc 28, however, in having another cutting tooth 34 at a predetermined angle following each of the teeth 32. As in the case of disc 28, the number and angular spacing of the sets of teeth 32 and 34 on the disc 29 are determined by the desired linear spacing of the sets of strips 11 and prongs 12 on the studding. The exact contour of the teeth 32 and 34 on disc 29 is shown in FIG. 9.

In advance of the roller 25 is an anvil 35 formed on or attached to a pedestal 36, the upper flat surface of the anvil being coincident with the lower face of the steel sheet and serving as a support for the sheet at a point slightly in advance of the point of tangency of the sheet with the rollers. Formed in the anvil face is an open-ended cutter groove 37 in which the tooth 34 on the cutter disc 29 closely fits, as the rollers turn to advance the steel sheet between the rollers.

The tooth 34 is of special design (see FIG. 9) in that the outer cutting edge of the tooth, in cooperation with the cutting edges of the groove 37, first severs the one end and two sides of prong 12 from the metal sheet and then the leading edge of the tooth 34 bends and forms the prong 12 so as to provide the desired curvature thereof. This curvature on the prong 12 is of special importance and significance in that it provides the necessary clearance for accommodating the thickness of the metal lath while, notwithstanding, allowing the end of the prong to approach or contact the end of the strips 11 and thus lock the lath to the studding and preventing sliding of the lath relative to the studding.

It will be apparent that the roll stand comprising the rollers 24 and 25 operates on the sheet metal while conveniently flat and before it is formed into the final rectangular studding shape, thus permitting the strips 15 and combination of strips 11 and prongs 12 to be formed adjacent opposite edges of the sheet metal simultaneously in one operation. Moreover, it will be seen that the roll stand may be conveniently disposed in the production line for the studding without requiring elaborate and complex apparatus for providing the attachment means after manufacture of the basic studding has been completed.

Referring now to FIGS. 10 through 15, there is shown a variety of types of corrugated steel sheet and floor structures embodying such corrugated steel sheet. FIGS. 10, 12 and 14 depict the different types of corrugated steel sheet with attachment means corresponding to those previously described for modular wall structures. FIGS. 11, 13 and 15 show floor structures embodying the corrugated steel sheet types respectively shown in FIGS. 10, 12 and 14.

In FIG. 11, the floor structure comprises structural channels or I-beams 40 on which the corrugated steel sheet 41 of FIG. 10 are laid transversely and spot welded thereto in different suitable locations. The floor surface material 42, such as concrete, cement or other composition material, is poured in slurry form over the corrugated steel sheet to a suitable depth, such as 1 inch to 2 inches, and then leveled and surface finished as desired as the slurry material begins to harden. In this instance, the attachment strips 43 corresponding to anchor strips 15 become embedded in the slurry material and are surrounded thereby, thus firmly attaching the floor surface material in hardened form to the corrugated steel sheet. Any suitable spacing between the

strips 43 may be selected which is adequate for insuring close contact between the entire mass of floor surface material and the corrugated steel sheet. With this form of attachment means the separation of the concrete or other floor surface material from the corrugated steel sheet is effectively prevented and close adherence of the floor surface material to the corrugated steel sheet is positively insured. Undesirable noise occasioned by pedestrian traffic on the floor surface is thus avoided.

In FIG. 13, the floor structure comprises structural channels or I-beams 40 on which the corrugated steel sheets 44 of FIG. 12 are laid transversely and spot welded thereto at frequent locations selectively and uniformly distributed.

In this instance, sheets of metal lath 45 are first laid over the corrugated steel sheet 44 resting on the supporting strips 46 corresponding to the support strips 11, and the prongs 47 are then bent over horizontally to lock the metal lath to the corrugated steel sheet. A slurry of floor surface material 42, such as concrete or other composition material, is then poured over the metal lath to a suitable depth, and, as the material hardens, leveled and smoothed to provide a desired floor surface. The slurry character of the material and the size of the openings in the grid mesh of the metal lath are such that the floor surface material passes through the mesh openings and envelopes the grid mesh. Accordingly, when the floor surface material hardens it becomes firmly bonded to the corrugated steel sheet by reason of the embedded metal lath which is locked to the corrugated steel sheet.

In FIG. 15, the floor structure comprises structural channels or I-beams 40 on which the corrugated steel sheets 49 of FIG. 14 are laid transversely and spot welded thereto at frequent locations selectively and uniformly distributed. In this instance, the sheets of metal lath 45 of relatively small grid mesh, are first laid over the corrugated steel sheet resting on the base portions 50 of the tabs 51. The tips of the tabs are then bent over to a horizontal position, some in one direction and others in the opposite direction to firmly lock the metal lath 45 to the corrugated steel sheet 49.

A slurry of floor surface material 42, such as cement or other composition material, is now poured over the metal lath to a suitable depth and as the material hardens, suitably leveled and smoothed to provide a desired floor surface. As in the floor structure of FIG. 13, the floor surface material 42 passes through the openings in the mesh and envelopes the grid mesh of the lath. Thus, when the material hardens, the floor surface material becomes firmly bonded to the corrugated steel sheet by reason of the embedded metal lath which is locked to the corrugated steel sheet. In this case, the depth to which the metal lath is embedded in the floor surface material may be varied according to the height of the base 50 of the tabs 51.

While various specific embodiments of wall and floor structures embodying the invention have been shown and described herein, it will be apparent that variations in structure and use of the component materials and of the attachment means described, may be made within the scope of the appended claims.

I claim:

1. A building component comprising a corrugated steel sheet of the type forming a base for floor surface elements, and steel sheet having integrally formed at-

tachment means comprising a loop for supporting a floor surface reinforcing element in elevated position with respect to said corrugated steel sheet and a prong separate from and adjacent to the loop, said prong being bendable towards the loop to lock the floor surface reinforcing element on said loop.

2. A building component according to claim 1, wherein said loop comprises a relatively narrow strip only the sides of which are severed from the steel sheet, said strip being raised into spaced relation to the steel sheet.

3. A building component according to claim 1, wherein said prong comprises a relatively narrow strip severed on both sides and one end from the steel sheet and extended to a position substantially normal to the steel sheet for installation of the floor surface element, and adapted to be bent subsequently to lock the surface element to the support loop.

4. A building component fabricated of sheet steel and comprising a steel studding of the hollow thin wall type, said studding having means integrally formed thereon by which wall surface elements are attached and supported in spaced relation thereon, said attaching means comprising loop means severed from the studding along two coextensive parallel lines and stretched later-

ally for supporting a wall element in parallel spaced relation to the studding wall, and flexible prong means partially severed from the studding wall separate from and adjacent to said loop means, when prong means is bendable toward the loop means to lock a wall surface element on said loop means.

5. A building component according to claim 4, wherein the said loop comprises a relatively narrow strip of the studding wall only the sides of which are cut from the studding wall and the portion intervening between the uncut ends of the strip being laterally deformed into spaced relation to the studding wall.

6. A building component according to claim 4, wherein said prong comprises a relatively narrow strip of the studding wall cut on the sides and on one end from the wall and extended to a position substantially normal to the studding wall for installation of the wall element and adapted to be bent subsequent thereto to lock the wall element to the studding.

7. A building component according to claim 4, wherein said prong is of a length and curvature such as to accommodate the thickness of the wall element when the prong is bent toward said loop to lock the wall element to the studding.

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UNITED STATES PATENT OFFICE  
CERTIFICATE OF CORRECTION

Patent No. 3,802,147

Dated April 9, 1974

Inventor(s) Theodore S. O'Konski

It is certified that error appears in the above-identified patent and that said Letters Patent are hereby corrected as shown below:

Column 5, line 66, "latch" should read --lath--.

Column 6, line 12, "bend" should read --bent--.

Column 8, Claim 1, line 67, "and" should read --said--.

Column 9, Claim 4, line 20, "thin wall" should read --thin-wall--; line 23, "thereon" should read --thereto--; Column 10, line 4, "when" should read --which--.

Signed and sealed this 24th day of September 1974.

(SEAL)  
Attest:

McCOY M. GIBSON JR.  
Attesting Officer

C. MARSHALL DANN  
Commissioner of Patents