Jan. 10, 1928. 1,655,406

G. L. BENNETT

FURRING STRIP

Filed Feb. 1. 1926

Fig. 1.

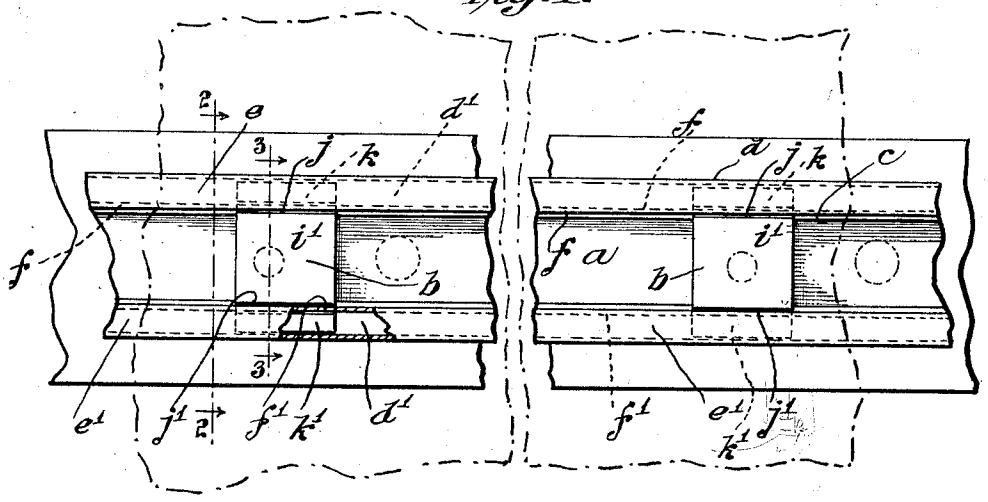


Fig. 2.

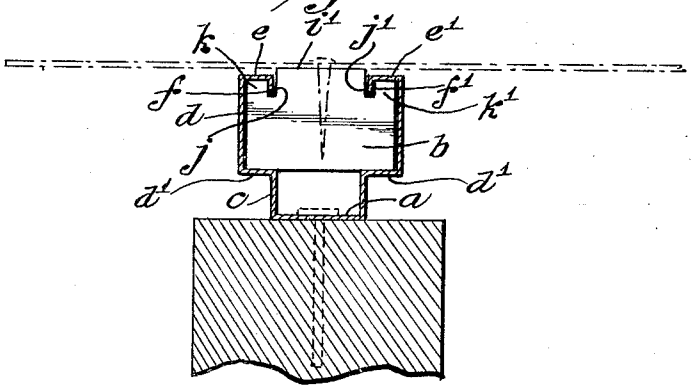
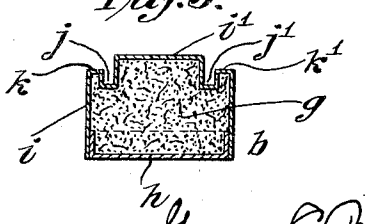


Fig. 3.



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UNITED STATES PATENT OFFICE.

GEORGE L. BENNETT, OF CLEVELAND, OHIO.

FURRING STRIP.

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My invention relates to furring strips, and more particularly to strips of this character particularly adapted for use with metallic fireproof wall and ceiling constructions.

A furring strip embodying my invention is so constructed that it may readily be secured by means of nails to wooden studding, or by means of expansion or toggle bolts, to wall or ceiling blocks, and permit the metallic wall or ceiling covering to be secured thereto by means of nails, notwithstanding that the furring is essentially a sheet metal product, and that the nails for securing the wall or ceiling sheet metal are engageable therewith only at separated or isolated points.

In furring strips embodying my invention nail blocks or studs are used which are so constructed as to be adjustable with relation to the portion of the furring strip supporting same, thus permitting their location upon the strips with regard to the desired positioning of nails securing the metal wall or ceiling sheets in place, and not to the building construction itself.

Said nail blocks or studs have dimensions, and are so constructed, that no great accuracy is required as to their location, a sufficient contact area between same and the wall or ceiling sheets being afforded to ensure the engagement of a nail therewith, even though there be considerable inaccuracy in the locating of the nail blocks or studs.

The nail blocks or studs themselves while relying upon compressible material embodied in the structure thereof for holding the nails, are of themselves of a fireproof construction.

While the nail blocks or studs are movable in relation to the portions of the furring strip supporting same, the construction is such as to ensure a sufficiently rigid support for said blocks or studs to permit nails to be readily driven within the block or stud. The block or stud and the support therefor are, furthermore, so constructed as to prevent the loosening of the connecting means between same as a result of the blows upon a nail when driving it into the block or stud. The means by which the blocks or studs are mounted in relation to the supporting strip therefor, while permitting the adjustment of these blocks or studs longitudinally of said strip, will nevertheless frictionally engage said blocks or studs in a manner to prevent accidental displacement thereof with relation to said strips.

The construction of the blocks or studs and the manner of mounting same are such as to afford an area of supports for the metal ceiling or wall sheets, which will prevent deformation of such sheets as a result of blows upon the nails securing them in position, all blocks or studs carried by each strip, and the strips themselves, ensuring the plates or sheets being located with their faces in sufficiently accurate alinement to ensure the desired flatness of the sheets secured thereto. Irregularity in the walls or ceilings of a building structure will be at least partially compensated for, by furring strips of my invention.

The invention consists primarily in a furring strip embodying therein a channelled strip adapted to be secured in relation to a building structure, a plurality of blocks each having a metal sheathing completely inclosing a compressible body, and cooperating means upon said channelled strip and upon said blocks, whereby said blocks are supported in relation to, and adjustable longitudinally of, said channelled strip; and in such other novel features of construction and combination of parts as are hereinafter set forth and described, and more particularly pointed out in the claims hereto appended.

Referring to the drawings,

Fig. 1 is an elevation of a section of furring strip embodying my invention;

Fig. 2 is a section on the line 2—2 of Fig. 1, showing the furring strip attached to a ceiling beam; and

Fig. 3 is a detail view of the stud or block removed from the channelled strip by which it is secured in relation to the building structure.

Like letters refer to like parts throughout the several views.

In the embodiment of my invention shown in the drawings, a furring strip is illustrated which includes therein a channelled strip a having mounted therein a plurality of nail blocks or studs b. Said strip a is preferably provided with a neck c, and an enlarged angular head d, affording upon opposite sides of the neck c, bearing seats d' for the block or stud b. The seats d' and the depth of the metal in the neck c will afford a sufficiently rigid backing for the blocks or studs b to resist the force of blows applied to the block while driving a nail thereinto. The dimensions of each block or stud are

such as to have a snug sliding fit between the side walls of the head *d*.

The edges of the channelled strip *a* are bent inwardly as at *e*—*e'* and have rectangularly formed edges or rims *f*—*f'* which are adapted to enter channels adjacent opposite sides of the blocks or studs *b* for the purpose of preventing the expansion of a block as a result of blows thereon, or the loosening of the co-operating means for securing said blocks or studs in position in relation to said strips due to movement of the sides of the head *d* in relation to said blocks or studs.

The blocks or studs proper comprise a core *g* preferably of compressed asbestos or other fibrous material and an inclosing metallic casing consisting of a cupped base *h* and a cupped top *i*, the edges of which are adapted to overlap so as to permit this base and top to be permanently secured in relation to each other in any desired manner as by spot, or other, welding methods. The upper face of the cupped top *i* is provided with a raised central portion *i'*, inwardly formed channels *j*—*j'* upon opposite sides thereof, and raised edge portions *k*—*k'* adapted to pass within the channel formed by the inturned and right angular edges *f*—*f'* of the sides of the head *d* of the channelled strip. In this manner the central portion *i'* will project slightly beyond the channelled strip and afford a bearing area adapted to be engaged by the metal of the ceiling or wall sheets which will resist deformation of these sheets, while at the same time compensating for any slight inaccuracy in the positioning of the various blocks or studs with relation to the point upon the sheets where the nail is to be driven.

The channelled piece *a* is made of fairly light sheet metal stock which may be readily penetrated or pierced by an ordinary nail. The material used for the sheathing of the nail block or stud is also made of light metal stock which may be readily penetrated or pierced by the type of nail commonly used for securing the metal ceiling or wall sheets in position.

While, as stated, the core of each nail block or stud may be made of compressed asbestos or other fibrous material, it may, if desired, also be made of wood since the metal sheathing inclosing this core will prevent the combustion of the core in the event of fire, even though it may be made of wood. Wooden core, metal sheathed constructions are commonly used in certain types of fireproof structures and have been found highly efficient.

The bent or formed edges *e*—*e'* and *f*—*f'* of the channelled strip and the channels *j*—*j'* and raised edge portions *k*—*k'* of the blocks or studs *b* constituting interlocking members firmly holding the blocks in relation to the channel furring strips, and prevent the spreading of the sides of the channel as a result of blows upon said blocks or studs.

In addition to affording a non-combustible or fireproof support for the metal sheets of the wall or ceiling finish, the furring strip of my invention spaces said sheets, in their entirety, away from the building studding or ceiling beams so that in the event that said studding or beams are of wood, additional fire protection is afforded by the air space between said sheets and said studding or beams.

The formation of the neck *c* of the channelled strips *a*, when the strips are assembled in a building, positions the means securing these strips out of engaging relation with the blocks or studs *b*. By increasing or decreasing the length of this neck any desired spacing of the metal sheets of the wall or ceiling finish with relation to the building structure, may be secured, while permitting the use of blocks or studs *b* of uniform dimensions irrespective of variation in the depth of the neck *c* of different strips *a*.

In the accompanying drawings short nails are indicated as the securing means between the metal sheets of the wall or ceiling finish and the blocks or studs *b*. If, however, it is desired to lock these blocks or studs with relation to the channel or the building structure, long nails may be used which will pass through the cupped top *i*, the cupped base *h* and the channel *a*.

In the use of furring strips embodying my invention, channelled strips *a* are first secured to the studding or the building block structure of the walls or the ceiling of a room by means of nails in the first instance, or by means of expansion bolts in the event of solid walls, or by toggle bolts in the event of hollow tile walls. These strips are positioned at approximately the desired distance apart.

The various blocks or studs are mounted in relation to the strips either before or after they are connected with the wall or ceiling structure, it being possible to shift these blocks if they are in a position to interfere with the mounting of the strip *a*. A plurality of parallel strips, or course, are used and they may be run in any direction desired. The channel-form of the strip *a* and the holding of the side webs thereof by the blocks *b*, imparts rigidity to these strips so that even if they are run transversely to the ceiling beam or studding, the blocks *b* may be placed without regard to the point of attachment of the strips to the building structure.

Blocks or studs *b* of a number required by the desired spacing of the points of connection of the metallic ceiling or wall sheets with the furring strips are mounted in each

channeled strip, and after the strips are positioned, are adjusted to substantially the desired relation with each other, it being possible, however, to have a variation of one-half of an inch, or more, in one direction or the other along the strip *a*, since the exposed face of each block or stud *b* has sufficient area to receive and firmly hold nails within this range. The same range is permitted as to the positioning of the parallel furring strips. This condition permits accuracy in the placing of nails, as to the wall or ceiling sheets, without requiring corresponding accuracy as to the furring strips.

As a nail is driven into the block or stud, it will penetrate and pass through the exposed face of the cupped top *i* and into the filler *g*, the expansion of this filler after compression by the nail, taking a firm grip upon the nail and thus firmly holding it.

Blows upon the nail are transmitted to the block or stud *b* and therethrough to the seats *d'* upon which the block or stud *b* rests. These shocks are transmitted through the side walls of the neck *c* to the beam, studding or wall structure with which the channeled strip *a* is connected. By reason of the interlocking members *e*—*e'*, *f*—*f'*, *j*—*j'* and *k*—*k'* upon the channeled strip *a* and the blocks or studs *b*, the force of such blows cannot spread the sides of the channeled strip. These interlocking members also prevent spreading of the filler *g*. Hence the blocks or studs *b* will always be frictionally held in position by the channeled strip *a* although as stated, if desired long nails may be used which in addition to penetrating the block or stud, will pass through the bottom thereof and through the bottom of the channeled strip.

A furring strip embodying my invention possesses simplicity of construction, and convenience of installation, being capable of use without requiring any extreme accuracy in the relation of parts. The nails may be driven perfectly straight or at an angle as desired, but under all circumstances an adequate holding of the nail is assured.

A furring strip embodying the invention may also be inexpensively produced, since its construction is such as to permit the use of fairly light sheet metal.

It is not my intention to limit the invention to the precise details of construction shown in the accompanying drawings, it being apparent that such may be varied without departing from the spirit and scope of the invention.

Having described the invention, what I claim as new and desire to have protected by Letters Patent, is:—

1. A furring strip embodying therein a channeled strip adapted to be secured in relation to a building structure, a plurality of blocks each having a metal sheathing completely inclosing a compressible body, and co-operating means upon said channeled strip and upon said blocks, whereby said blocks are supported in relation to, and adjustable longitudinally of, said channeled strip.

2. A furring strip embodying therein a channeled strip adapted to be secured in relation to a building structure, comprising a neck portion and an enlarged angular head portion forming seats spaced away from the bottom of the channel, whereby the means securing said channeled strip in position will be spaced away from said seats, a plurality of blocks each having a metal sheathing completely inclosing a compressible body slidably mounted upon said seats, and co-operating means upon said channeled strip and upon said blocks, whereby said blocks are adjustably supported in relation to said channeled strip.

3. A furring strip embodying therein a channeled strip adapted to be secured in relation to a building structure, a plurality of blocks each having a metal sheathing completely inclosing a compressible body, co-operating means upon said channeled strip and upon said blocks, whereby said blocks are adjustably supported in relation to said channeled strip, and co-operating means formed upon said blocks respectively and upon the edges of said channeled strip whereby spreading of the sides of said strip with relation to said blocks is prevented, and the sides of the channel are caused to reinforce opposite sides of said block.

4. A furring strip embodying therein a channelled strip adapted to be secured in relation to a building structure, comprising a neck portion and an enlarged angular head portion forming seats spaced away from the bottom of the channel, whereby the means securing said channelled strip in position will be spaced away from said seats, a plurality of blocks each having a metal sheathing completely inclosing a compressible body slidably mounted upon said seats, co-operating means upon said channelled strip and upon said blocks, whereby said blocks are adjustably supported in relation to said channelled strip, and co-operating means formed upon said blocks respectively and upon the edges of said channelled strip whereby spreading of the sides of said strip with relation to said blocks is prevented, and the sides of the channel are caused to reinforce opposite sides of said block.

5. A furring strip embodying therein a channelled strip adapted to be secured in relation to a building structure, the opposite edges of said strip being bent inwardly toward each other and toward the bottom of the channel, and a plurality of blocks each

having a metal sheathing completely inclosing a compressible body, each of said blocks having a high raised central top portion and lower raised edge portions forming channels adapted to receive the angularly formed edges of the flanges of said channelled strip and to enter the space between said edge portions and the sides of the channelled strip, whereby said blocks are adjustably supported with relation to said channelled strip and have opposite faces thereof reinforced by the sides of said channelled strip, and separation of the sides of said channelled strip is prevented.

6. A furring strip embodying therein a channelled strip adapted to be secured in relation to a building structure, comprising a neck portion and an enlarged angular head portion forming seats spaced away from the bottom of the channel, whereby the means securing said channelled strip in position will be spaced away from said seats, the opposite edges of said strip being bent inwardly toward each other and toward the bottom of the channel, and a plurality of blocks each having a metal sheathing completely inclosing a compressible body slidably mounted upon said seats, each of said blocks having a high raised central top portion and lower raised edge portions forming channels adapted to receive the angularly formed edges of the flanges of said channelled strip and to enter the space between said edge portions and the sides of the channelled strip, whereby said blocks are adjustably supported with relation to said channelled strip and have opposite faces thereof reinforced by the sides of said channelled strip, and separation of the sides of said channelled strip is prevented.

In witness whereof I have hereunto affixed my signature this 23rd day of January, 1926.

GEORGE L. BENNETT.