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W. F. LA MORTE

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STRUT USED IN CONCRETE FIREPROOFING

Filed Jan. 13, 1928

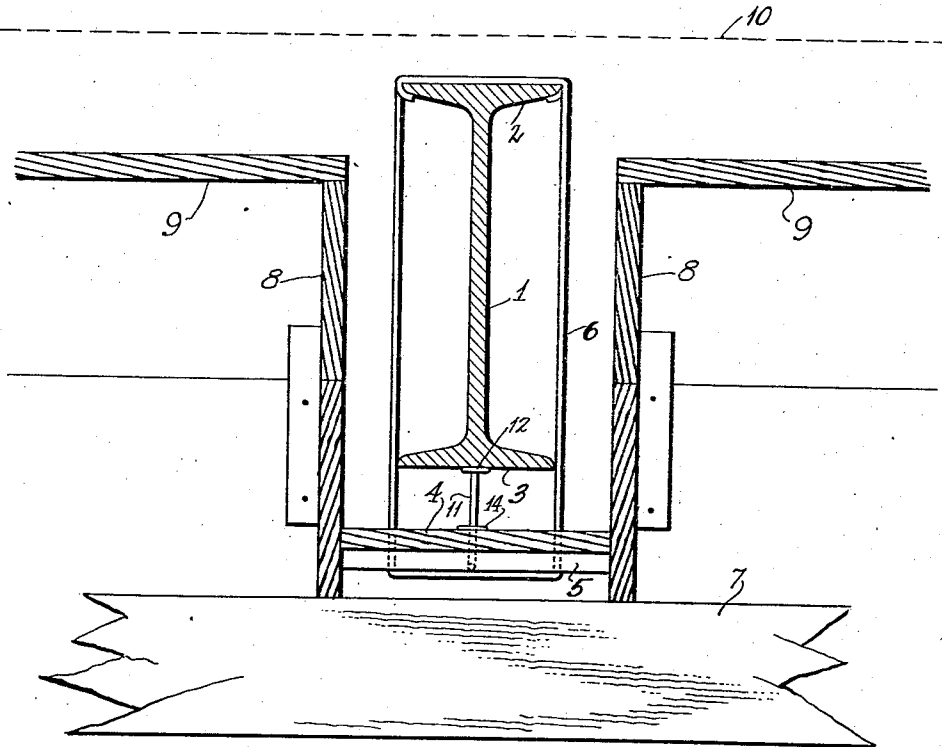


Fig. 1

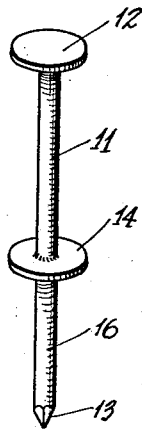
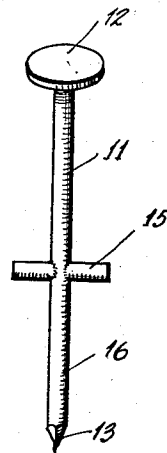


Fig. 2

Fig. 3



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STRUT USED IN CONCRETE FIREPROOFING

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This invention relates to the art of insulating metal beams or girders by enclosing the same in a concrete envelope, and particularly has to do with means for providing a strut to be interposed between the base of a beam or girder and a suitable soffit board.

In modern building construction beams and girders are employed, and it is customary to enclose such beams or girders in a concrete envelope. The result is accomplished by enclosing such beams or girders within suitable forms and in constructing said forms there is employed what is known as a soffit board lying parallel with the base of the beam or girder to be enclosed. This soffit board forms the base of the form and it is necessary that it should be spaced from the base of such form by a predetermined dimension. In like manner the walls of the form must be spaced apart from the beam or girder a predetermined dimension.

In work of this nature it has been customary to establish the position of said soffit board or of said side walls by interposing a block of wood nailed to the soffit board, and the walls of the form have been suitably sustained by their association with other portions of the form.

This invention relates to an instrument by which said spacing operation may be accomplished with celerity and economy, and the instrument is suitable for use primarily to space apart the soffit board and the base of a beam or girder, but it may be employed to space apart the walls of a form with reference to the girder, or for any other use or purpose in this connection.

The instrumentalities referred to are illustrated in the accompanying drawings, the parts being indicated by numerals, like numerals designating like parts.

Figure 1 is a horizontal section of a beam or girder enclosed within a suitable form illustrating the strut of this invention, as interposed between the base of the beam or girder and the soffit board.

Figure 2 is a perspective view of the strut which is the subject matter of this invention.

Figure 3 is a perspective view illustrating another form of strut construction.

Referring to Figure 1, 1 indicates the web of the beam or girder, 2 the top flange, and 3 the bottom flange thereof. 4 is a soffit board forming the base of the form, while 5 is a cross-axial support interposed cross-axially of said boards at suitable intervals longitudinal thereof, to serve as a support therefor. 6 is a wire passing over the top of the beam or girder and through apertures in the soffit board and also through the supporting bar 5. These wire supports are usually spaced apart by several feet. 7 is a platform adapted to support the form. 8 and 8 are vertical walls of the form, and 9 and 9 are horizontal walls, while the dotted line 10 indicates the point to which the concrete is permitted to fill the form.

11 is the shank or stem of the spacing instrument. It is provided with a head 12 and a point 13, while 14 is a detent integral with said shank and interposed intermediate said point and head. The length of the shank between the points 13 and 14, as 16, is variable to suit the thickness of the wood forming the soffit board 4 and the support 5, but it may be of any suitable length to sustain it in a vertical position. The space between the head 12 and the detent 14 is a predetermined dimension sufficient to satisfy the requirements with respect to the thickness of the fireproofing envelope lying between the base of the beam and the soffit board. The illustration of Figure 3 is the same as that of Figure 2, with the exception that instead of a disk 14, a bar 15 may be constructed perpendicular to the axis of the shank, to serve the purpose of a detent, in like manner as the detent 14.

The operation of the device is as follows. When the walls and platform 8 and 9 of the form are constructed, they rest on the platform 7. The strut 11 is then driven into the soffit board, as by a hammer engaging the head, preferably in a position axial of the soffit board, and it may also pass through the support 5 until the detent 14 comes in contact with the top surface of the soffit board, at which point it will be arrested by the detent 14. The soffit board is then drawn upward until the head 12 engages the base 3 of the beam or girder, thus establishing a definite

and predetermined dimension between the upper surface of the soffit board and the lower surface of the beam or girder. The wire 6 is then passed through suitable holes in the soffit board 4 and support 5 and run over the top of the beam 2, and tightened by any suitable means, so that the soffit board is drawn into position with respect to the base of the beam, as far as the strut 11 will permit such movement. The strut therefore performs the definite function of spacing apart the base of the beam and the upper face of the soffit board.

When the concrete is poured into the mold in the usual way, the head 12 and detent 14 and the shank between the same are enclosed within the concrete envelope, and remain imbedded therein. To remove the form, the wire 6 is cut at some point below the support 5 and straightened out, so that the support and the soffit board may be withdrawn. The ends of the wire 6 and the nail section 16 may be then cut off by any suitable means, while the wire 6 and the strut remain imbedded in the concrete.

As previously stated, these struts are preferably arranged in a line adjacent the axis of the soffit boards, and they may be spaced apart any predetermined dimension, but they may be employed as indicated in the drawing at the point where the soffit board is supported by wires, or otherwise, as the circumstances of the case may require.

It will be obvious that this form of strut may be employed in analogous positions in the building up of concrete forms, and the dimension of the strut, and the dimension of the nail end may be determined by the circumstances of each case, without departing from the spirit of the invention.

Claim:

In an assembly of the character described, a strut comprising a shank provided at one end with a head and at the opposite end with a point, and provided intermediate its head and point with an integral cross-axial detent adapted to limit the thrust of the shank a predetermined dimension and likewise to establish a predetermined dimension between said detent and said head, in combination with a girder which it is desired to enclose in concrete, a form board in which the shank is driven to seat the detent against the face of the form board, and means, independent of the strut, for supporting the form board in cooperative relation to the girder with the head of the shank in end abutting engagement with the girder to space the form board said predetermined dimension from the girder.

Signed by me at New York city, N. Y., this 12th day of January, 1928.

WILLIAM F. LA MORTE.