J. B. HERNANDEZ.

THREE-WAY FLOOR CONSTRUCTION.

APPLICATION FILED AUG. 24, 1915.

1,231,348.

Patented June 26, 1917.

2 SHEETS—SHEET 1.

Fig. 1

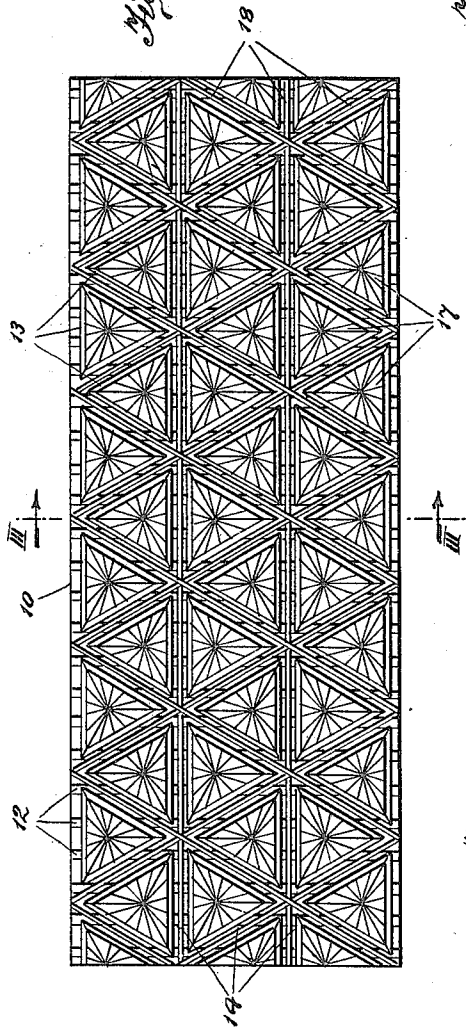


Fig. 2

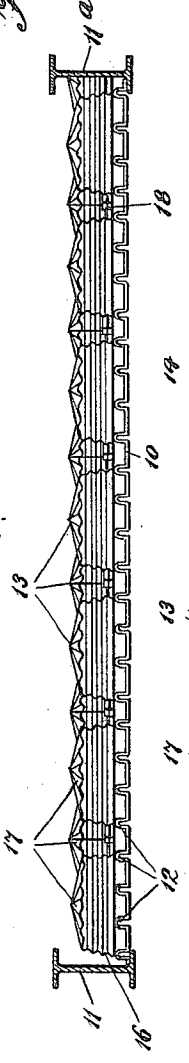
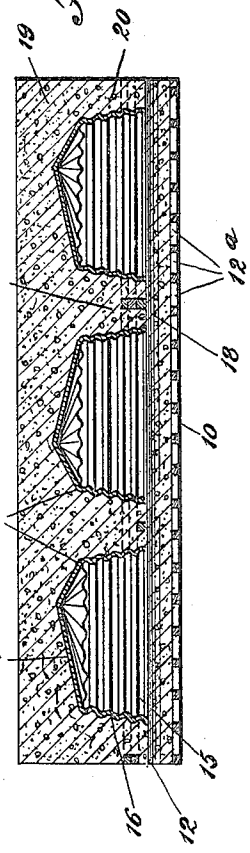


Fig. 3



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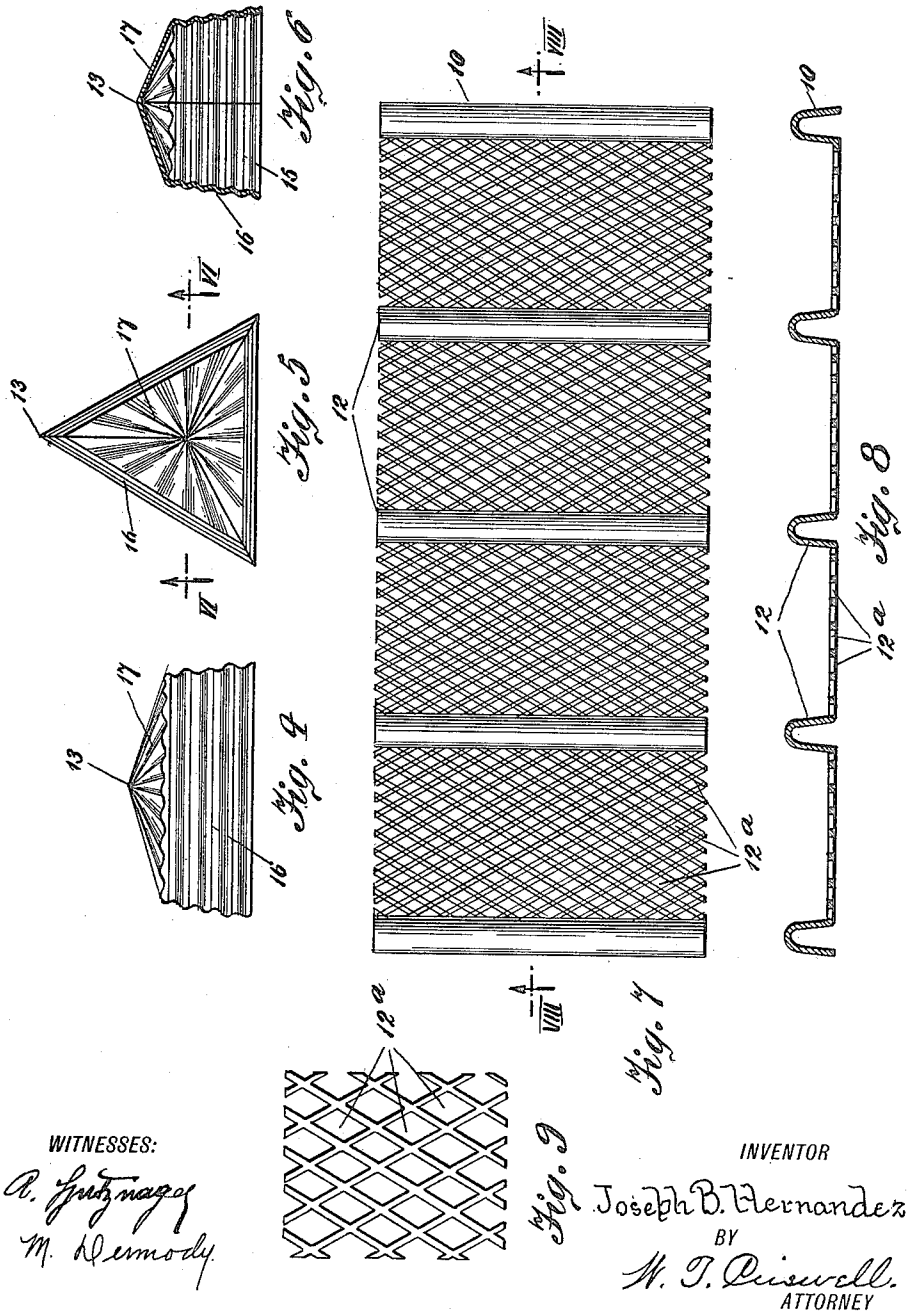

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THREE-WAY FLOOR CONSTRUCTION.

1,231,348. Specification of Letters Patent. Patented June 26, 1917.

Application filed August 24, 1915. Serial No. 47,104.

To all whom it may concern:

Be it known that I, JOSEPH B. HERNANDEZ, a citizen of the Republic of Cuba, and a resident of Corona, county of Queens, and State of New York, have invented certain new and useful Improvements in a Three-Way Floor Construction, of which the following is a full, clear, and exact specification.

This invention relates more particularly to a class of construction for buildings and the like.

My invention has for its object primarily to provide a form of concrete construction whereby practically fire-proof and sound-proof floors of buildings and other structures may be built at a great saving in the consumption of cement so as to be comparatively light in weight as well as being capable of withstanding the strain of unusually heavy loads, and which is commonly known as a three-way system. This is accomplished mainly by providing a base plate, or supporting surface, or ceiling member on which are a plurality of substantially triangular hollow blocks, or tiles, or filler members formed with upwardly projecting tapered, or cone-shaped tops, and these blocks are relatively arranged in spaced relation to provide approximately triangular spaces, or passages therebetween. On the tops of the cone-shaped blocks is a layer of cement formed with depending triangular ribs disposed in the passages to hold the blocks against lateral movement, and embedded in the ribs of the layer are a plurality of triangularly disposed reinforcing bars, or rods.

A further object of the invention is to provide a floor construction which may be used in conjunction with structures of various classes, and which is susceptible of being easily built.

With these and other objects in view the invention will be hereinafter more particularly described with reference to the accompanying drawings, forming a part of this specification in which similar characters of reference indicate corresponding parts in all the views, and will then be pointed out in the claims at the end of the description.

In the drawings, Figure 1 is a top view of the floor construction embodying my invention showing the assembled arrangement of the parts thereof before the cement layer is applied thereon.

Fig. 2 is an edge view of these parts of the floor construction, showing the manner in which construction is supported between the girders of a building and the like.

Fig. 3 is a sectional view taken on the line III—III of Fig. 1, and which also shows the layer of cement when the floor is finished.

Fig. 4 is a side elevation of one of the hollow cone-shaped blocks used in the floor construction.

Fig. 5 is a top plan of the block.

Fig. 6 is a section taken through the block.

Fig. 7 is a top plan of the ribbed perforated base plate.

Fig. 8 is a section taken on the line VIII—VIII of Fig. 7, and

Fig. 9 is an enlarged fragmentary view of part of the base plate.

The floor construction consists in arranging a base-plate, or supporting surface, as 10, between the girders 11 and 11^a of the room, or compartment of the building, or structure in which the floor is laid. The base plate 10 may be of a well-known form of sheet metal having upwardly projecting spaced parallel ribs, as 12, transversely thereof, and through the plate at closely spaced intervals between the corrugations are a number of perforations 12^a or this base-plate may be of any of the other types commonly used for this purpose. When the floor is constructed the ribbed perforated base-plate 10 serves as a ceiling member on the underside of which the plaster is spread in the usual manner, the perforations 12^a permitting the plaster to firmly adhere to the base-plate, or ceiling member.

On the base-plate 10 and disposed on top of its ribs 12 are a number of substantially triangular blocks, or tiles, or filler members, as 13, all of which are preferably of corresponding formations, and these blocks are arranged in spaced relation to each other to provide a series of approximately triangular passages 14 therebetween. The blocks 13 may be made of metal, tile, terra cotta, or any other suitable fireproof material, and each block has a hollow, or recessed underside 15, the blocks being so disposed that these recesses are in opposed relation to the base plate. Each of the hollow triangular blocks 13 has an upwardly inclined lower

wall portion 16 which may be corrugated, and projecting upwardly from this lower wall portion is a substantially triangular tapered, or cone-shaped upper wall, or top 17, which is also preferably corrugated to cause a layer of cement, or concrete, as will be hereinafter more fully explained, to firmly adhere thereto as well as permitting the blocks to be made of comparatively thin material without tending to bend, or buckle out of shape under the pressure of the layer of cement, or concrete.

Disposed in the passages 14 between the hollow triangular corrugated blocks 13 are a number of reinforcing bars, or rods 18 all of which are made of metal in square or other forms of any desired diameters. These rods are disposed in overlapping triangular arrangement, as shown, and the lower rods rest upon the ribs 12 of the base plate 10 so that all of the rods will be spaced from the perforated surfaces of the base plate proper.

When these parts of the floor construction are assembled in this manner a layer of cement, or concrete, as 19, or a layer of other desired plastic material is provided by any suitable means on top of the hollow corrugated blocks 13, the cement being applied so that the passages 14 as well as the corrugations of the blocks will be filled to provide substantially triangular ribs 20 depending from the layer for wedging the blocks against all possibility of accidental movement, and by entirely filling the triangular passages 14 with the cement the triangularly disposed reinforcing rods 18 will be embedded in the depending ribs 20 of the layer 19. The layer 19 may be of any suitable thickness to provide the surface proper of the floor, or if desired on the top of this layer may be laid a flooring of wood, or any other material, while on the underside of the base plate may be applied a layer of plaster to form a ceiling. Thus a three-way floor system when constructed according to my invention in buildings and other structures will be practically fireproof and soundproof as well as combining great strength and durability.

In the foregoing description, I have embodied the preferred form of my invention, but I do not wish to be understood as limiting myself thereto, as I am aware that modifications may be made therein without departing from the principle or sacrificing any of the advantages of this invention, therefore I reserve to myself the right to make such changes as fairly fall within the scope thereof.

Having thus described my invention, I claim as new and desire to secure by Letters Patent:—

1. A filler for floor constructions comprising a substantially triangular hollow member having the sides thereof inclined, horizontally disposed corrugations in said sides, a cone shaped top for said member, the apex of said cone being equidistant from the corners of said triangular member and reinforcing ribs in said top.

2. A filler for floor constructions comprising a substantially triangular hollow member having the sides thereof inclined, horizontally disposed corrugations in said sides, a cone shaped top for said member, and reinforcing ribs in said top, said reinforcing ribs meeting said corrugations at an angle.

3. In a floor construction, supporting means, a base plate, a plurality of substantially triangular corrugated hollow blocks arranged on the base plate in spaced relation to provide approximately triangular passages therebetween, said hollow blocks having cone shaped tops, reinforcing ribs radiating from the apices of the cones, the triangular blocks being so positioned upon said base plate that the apices of the successive cones are out of alinement perpendicularly with the supporting beams.

4. In a floor construction, a plurality of substantially triangular hollow members having the sides thereof inclined, horizontally disposed corrugations in said sides, cone shaped tops for said members with reinforcing ribs radiating from the apices of said tops, in combination with a base plate adapted to support said hollow members, said base plate comprising a plurality of transversely extending ribs with perforated portions disposed therebetween.

This specification signed and witnessed this twenty third day of August A. D. 1915.

JOSEPH B. HERNANDEZ.

Witnesses:
ROBT. B. ABBOTT,
M. DERMODY.