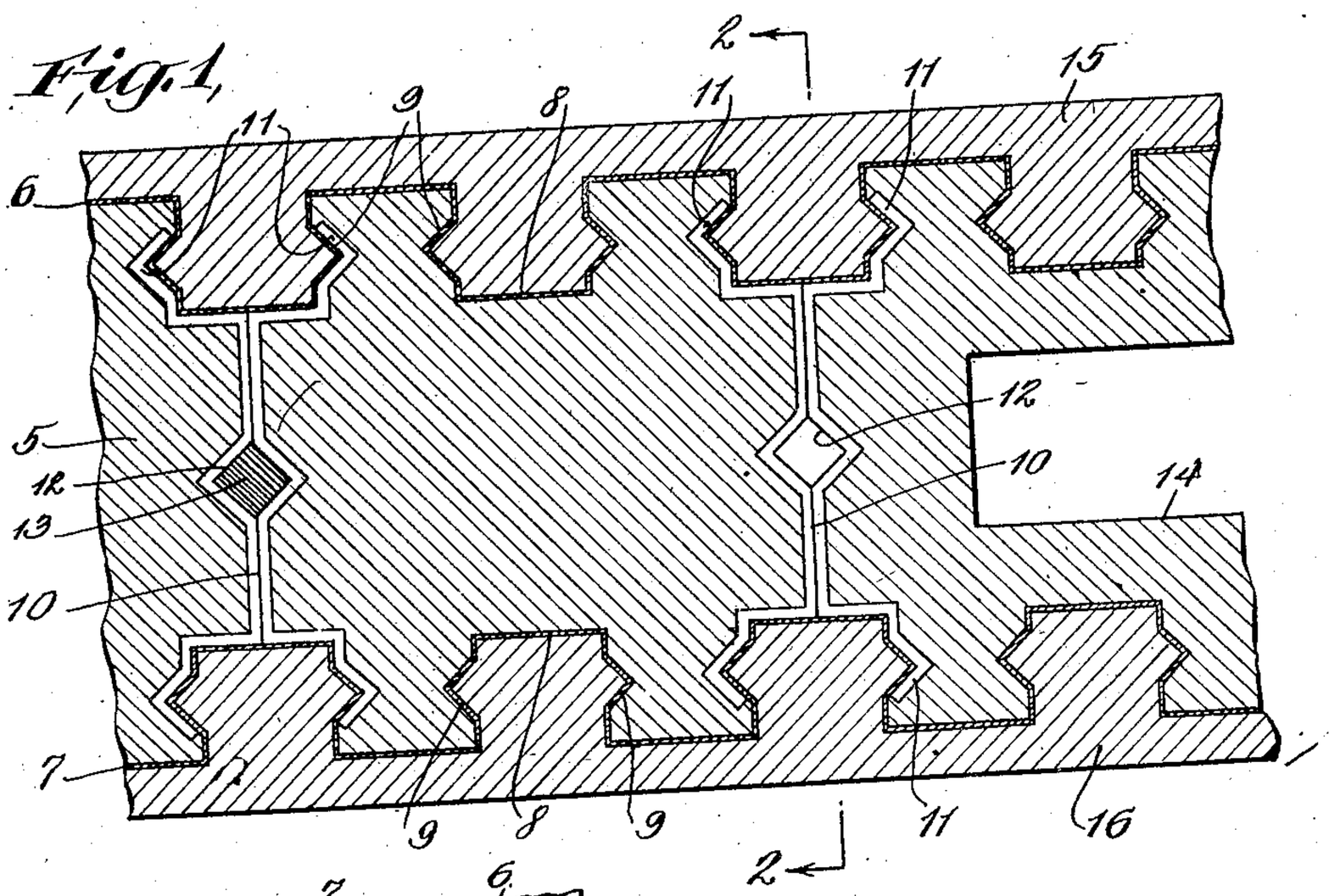
Nov. 18, 1924. 1,516,239

F. NEHSMANN

REENFORCED CONCRETE STRUCTURE

Filed April 17, 1923

Fig. 1,



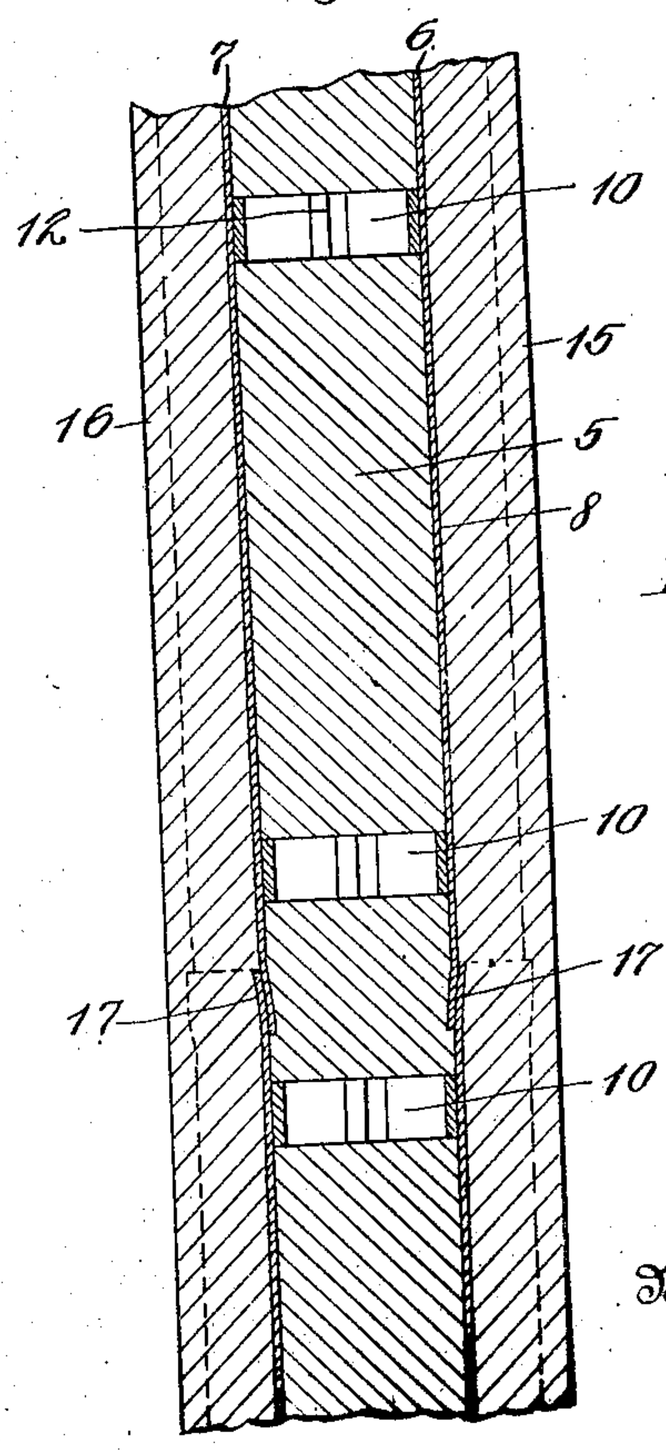


Fig. 2,

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UNITED STATES PATENT OFFICE.

FERDINAND NEHSMANN, OF BRONX, NEW YORK.

REENFORCED CONCRETE STRUCTURE.

Application filed April 17, 1923. Serial No. 632,631.

To all whom it may concern:

Be it known that I, FERDINAND NEHSMANN, a citizen of the United States, and residing at Bronx, in the county of Bronx and State of New York, have invented certain new and useful Improvements in Reenforced Concrete Structures, of which the following is a specification, such as will enable those skilled in the art to which it appertains to make and use the same.

This invention relates to concrete structures such as building walls, ceilings, floors and the like, and particularly to what is known as reenforced concrete structures; and the object of the invention is to provide improved means for reinforcing a concrete wall or other structure and for rendering said wall or other structure waterproof; a further object being to provide means for retaining and spacing the reinforcing means in a wall or other concrete structure; and with these and other objects in view, the invention consists in a reenforced concrete structure constructed as hereinafter described and claimed.

The invention is fully disclosed in the following specification, of which the accompanying drawing forms a part, in which the separate parts of my improvement are designated by suitable reference characters in each of the views, and in which:—

Fig. 1 is a transverse sectional view through a part of a wall structure made according to my invention; and,

Fig. 2 is a partial section on the line 2—2 of Fig. 1 on a reduced scale.

In Fig. 1 of the drawing I have indicated at 5 a concrete wall structure made according to my invention and in which is imbedded two metal sheets 6 and 7 which function as reinforcing members, and each of said sheets are fashioned to form a plurality of inwardly projecting longitudinal ribs 8 spaced transversely of the separate sheets, and the side walls of the ribs are pressed outwardly to form V-shaped extensions 9 as clearly shown in Fig. 1 and these extensions serve to strengthen the separate sheets 6 and 7 or the ribs 8 thereof.

In forming the wall structure 5, the sheets 6 and 7 are mounted in vertical position and spaced apart as shown in Fig. 1 and are retained in such position and reinforced by interlocking and spacing members 10, two of which are shown in Fig. 1 of the drawing, and these members are composed of two substantially similarly formed sheet metal strips secured together to form at the opposite sides thereof, jaw members 11 adapted to engage the ribs 8 of the sheets 6 and 7 and also to pass over the V-shaped extensions 9 of said ribs, and centrally of the members 10 are angular apertures 12 through which a reinforcing rod 13 may be passed as indicated at the left of Fig. 1 of the drawing. After the sheets 6 and 7 have been mounted in the manner above set out, concrete is poured between the adjacent faces thereof to fill the space between the sheets and also the recesses formed between the ribs 8, as will be apparent, and if desired a vertical chamber 14 may be formed in the concrete of the wall structure between the sheets 6 and 7, and one of these is shown at the right of Fig. 1.

After the interior concrete structure has been formed or partially formed, outer facings 15 and 16 are applied to the outer faces of the sheets 6 and 7, and these facings may be of concrete or plaster or a combination of suitable materials and may form the outer face of the wall of a building, and the inner face, or may form two inner faces, especially in the formation of what are known as partition walls. It will be understood that any desired number of the members 10 may be employed and these members will be spaced longitudinally and transversely of the separate sheets, and in practice when more than one sheet is employed or desired, the separate sheets are placed one within the other, where they abut at the ends in the manner shown at 17 in Fig. 2 of the drawing, the spring properties of the sheets 6 and 7 facilitating the accomplishment of this result.

It will be understood that my invention is not necessarily limited to wall constructions as the same may be used in floor or ceiling constructions and also in the construction of roofs or other concrete bodies, the distinctive feature of my invention being in providing continuous sheet metal sheets imbedded wholly or partially in a concrete wall structure, thereby preventing the passage of moisture through the concrete wall or other structure provided with said sheets, and while I have shown certain details of construction for carrying my invention into effect, it will be understood that I am not necessarily limited to these details and various changes in and modifications of the

construction herein shown and described may be made within the scope of the appended claims without departing from the spirit of my invention or sacrificing its advantages.

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

1. A reinforcing member for concrete structures, comprising a sheet fashioned to form substantially rectangular projecting members on one face only of said sheet, the faces of said projecting members being parallel to the face of the sheet, said members forming corresponding grooves in the other face of the sheet and the side walls of said projecting members being fashioned centrally thereof to form V-shaped portions forming corresponding recesses at the sides of said grooves.

2. A reinforcing member for concrete structures, comprising a sheet fashioned to form substantially rectangular projecting members on one face only of said sheet, said members forming corresponding grooves in the other face of the sheet and the side walls of said projecting members being fashioned centrally thereof to form V-shaped portions forming corresponding recesses at the sides of said grooves, and said projecting members being equally spaced on said sheet to provide between said members and on the first named side of the sheet grooves substantially rectangular in cross section, said rectangular members and grooves being of substantially the same size, the V-shaped extensions of said first named members projecting into said last named grooves.

In testimony that I claim the foregoing as my invention I have signed my name in presence of the subscribing witnesses this 16th day of April 1923.

FERDINAND NEHSMANN.

Witnesses:

ROBERT W. SPENCER,

ALEXANDER J. WITMER.