

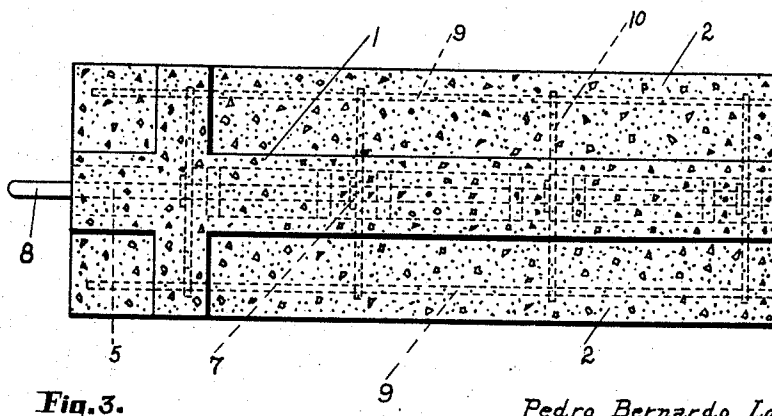
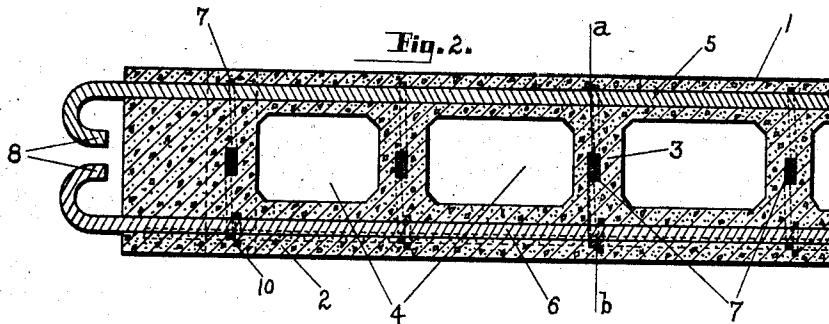
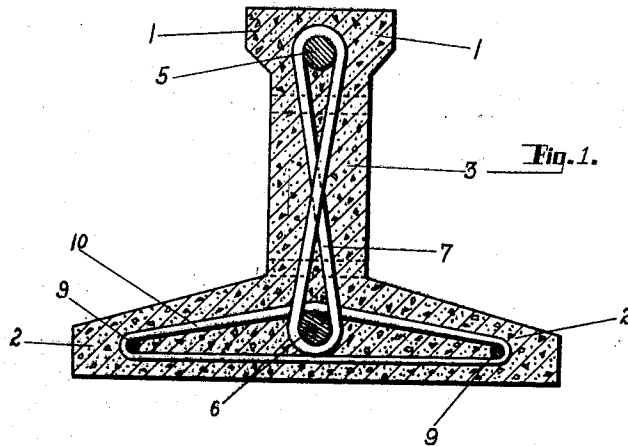
May 19, 1925.

P. B. LOYEAU

1,538,293

REINFORCED CONCRETE BEAM

Filed Feb. 21, 1924



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UNITED STATES PATENT OFFICE.

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REENFORCED-CONCRETE BEAM.

Application filed February 21, 1924. Serial No. 694,335.

To all whom it may concern:

Be it known that I, PEDRO BERNARDO LOYEAU, citizen of the Republic of France, residing at 400 Galeria Guemes, Buenos Aires, Argentina, have invented certain new and useful Improvements in Reenforced-Concrete Beams, of which the following is a specification.

My present invention relates to certain improvements in beams or joists for buildings and the like its main object being to provide a beam or joist of reenforced cement concrete which may be easily manufactured and which is of relatively light weight.

The beam or joist according to my present invention which may be used in connection with any kind of building structure such as reenforced concrete, metallic or masonry, has many advantages on those now in use, which is specially due to its reduced weight which is approximately 50% less than the ordinary reenforced concrete beams, and due to the fact that by using such beams, all the usual false-work for the floorings as well as the intermediate joists between the main beams or between the supporting walls may be dispensed with.

The beams or joists according to my present invention, when placed closely adjacent one to each other as will be hereafter explained, form in themselves the floor, and in this way the ordinary floor and the false-work for said floor may be also dispensed with, whereby a considerable reduction in the weight and the cost of the construction is obtained. Furthermore and due to the special structure of the beams, a series of parallel and normal channels are formed within the floor, said channels being adapted to conveniently house the water and gas pipes, electric cables, etc. Furthermore, said passages form a continuous air chamber by which a good insulation against noises and changes of temperature is obtained.

In order that my present invention may be clearly understood and easily carried into practice a preferred embodiment thereof has been shown in the appended drawings wherein—

Figure 1 is a vertical transverse section of a beam or joist according to my present invention on line *a-b* of Figure 2.

Figure 2 is a vertical longitudinal section of the end part of a beam and

Figure 3 is a plan view of the part of the beam corresponding to Figure 2.

Similar characters of reference denote same or like parts throughout the said drawings.

The beam according to my present invention, which is of cement concrete (its composition being any of those usually used in the art) comprises in its vertical cross-section substantially the form of a double T, the upper arms 1 of which are shorter than the lower arms 2, and the web 3 being formed with a series of equidistant and symmetrical openings 4. Said openings, besides considerably reducing the weight of the beam, form a series of parallel transverse channels, as hereinbefore explained when said beams are placed with the outer edges of their lower arms 2 adjacent to each other.

The upper and lower portions 1 and 2 of the beam are centrally and longitudinally traversed by iron bars 5 and 6 respectively of suitable cross-section, said bars being tied together by means of rods 7 bent in the form of an 8, as shown in Figure 1, said tie rods passing vertically through the massive part of the web. The ends of said rods are suitably connected together.

The ends 8 of the bars 5 and 6 are looped and may be used as anchoring means for the beam.

The lower arms 2 of the beam are longitudinally traversed by iron bars 9 said bars being connected together by a rod 10 passing around the same and also around the central bar 6, whereby a rigid reinforcement is obtained.

The number of the tying rods as well as their cross-section and the cross-section of the bars 5 and 6 are selected according to the stress to be borne by the beam.

The plaster-ceiling may be directly applied to the lower face of the beam and the floor, as usual, to its upper face.

It is obvious that many constructional and other changes may be introduced without departing from the scope of my present invention which has been clearly set forth in the appended claiming clauses.

Having now fully described and ascertained the nature of my present invention and in what manner the same is to be carried into practice, I declare that what I claim and desire to protect by Letters Patent is:—

A reenforced concrete beam comprising a double T-shaped concrete structure having upper arms and lower arms, said upper and

lower arms being connected together by a web portion having a series of openings formed transversely therethrough; an iron bar arranged longitudinally in the web portion between said upper arms; an iron bar arranged longitudinally in the portion between said lower arms; a plurality of vertically arranged 8-shaped rods in the web portion for securing said bars together; a longitudinally arranged bar for each lower arm; and a plurality of looped horizontal rods separate from the first-named rods arranged around and connecting said last-named bars together, said looped rods having their upper members resting on the iron bar in the web portion of the lower arms.

In testimony whereof I affix my signature.
PEDRO BERNARDO LOYEAU.