No. 731,216. PATENTED JUNE 16, 1903.

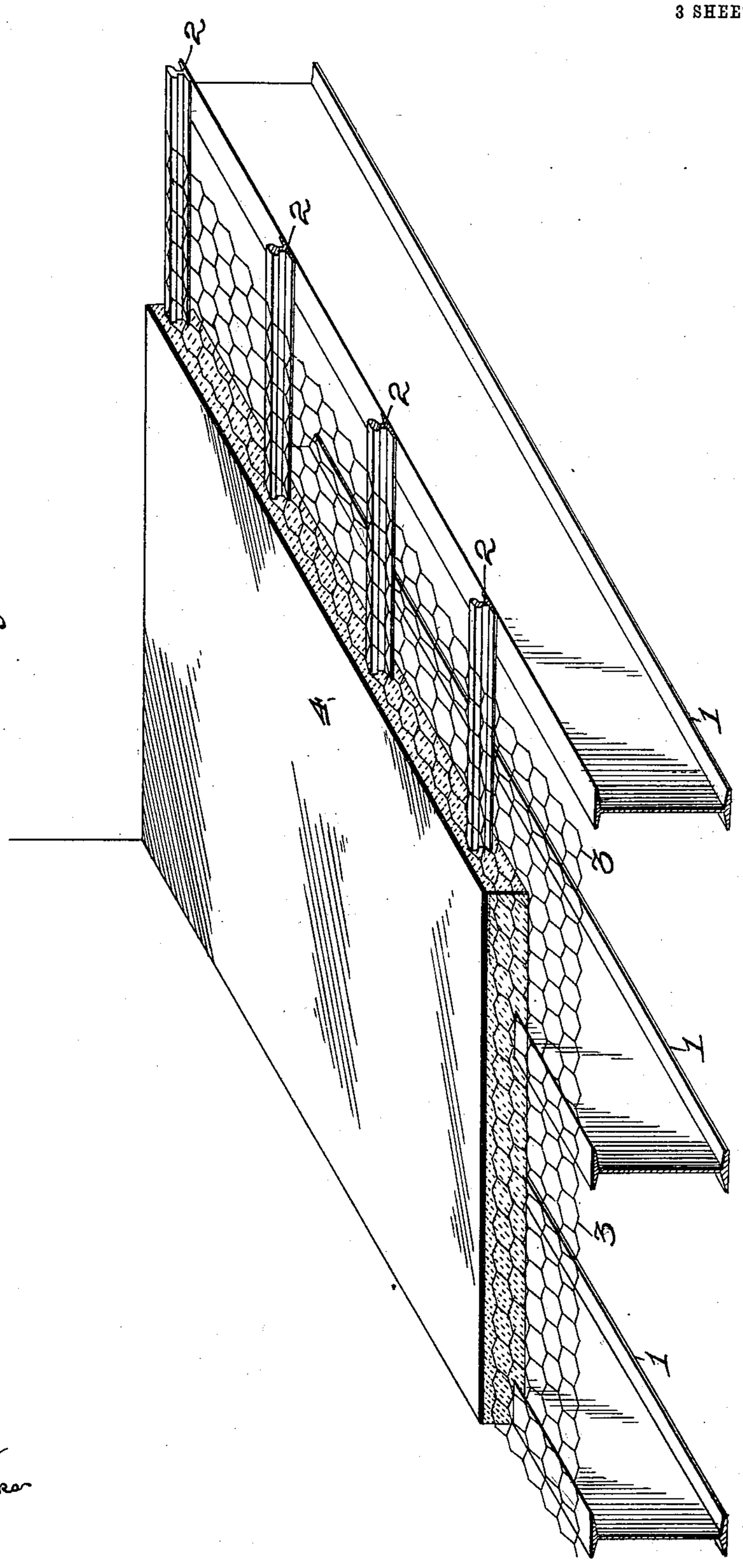
N. PELLIGREEN.

FIREPROOF CONSTRUCTION.

APPLICATION FILED MAR. 12, 1903.

NO MODEL. 3 SHEETS—SHEET 1.

Fig. 1.



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NO MODEL. 3 SHEETS—SHEET 2.

Fig. 2.

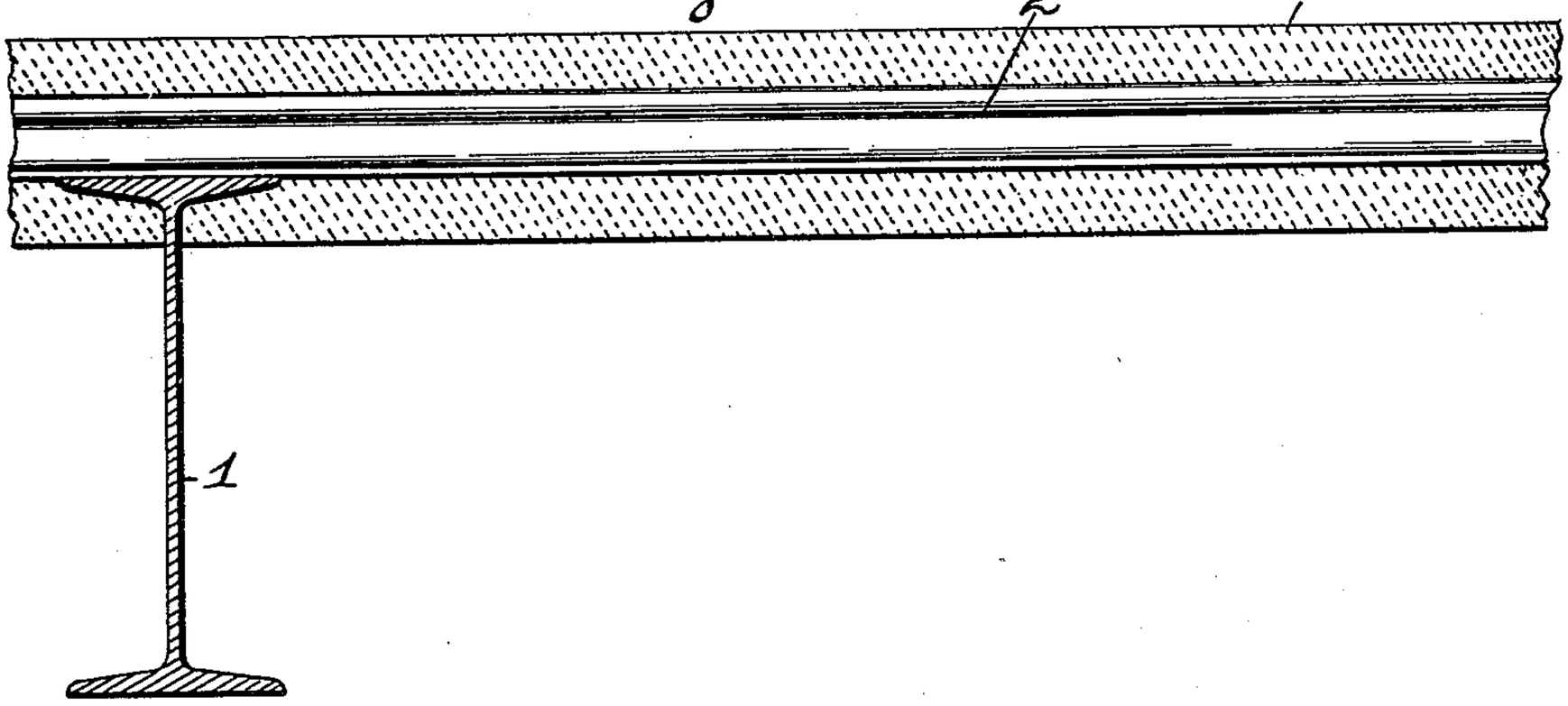
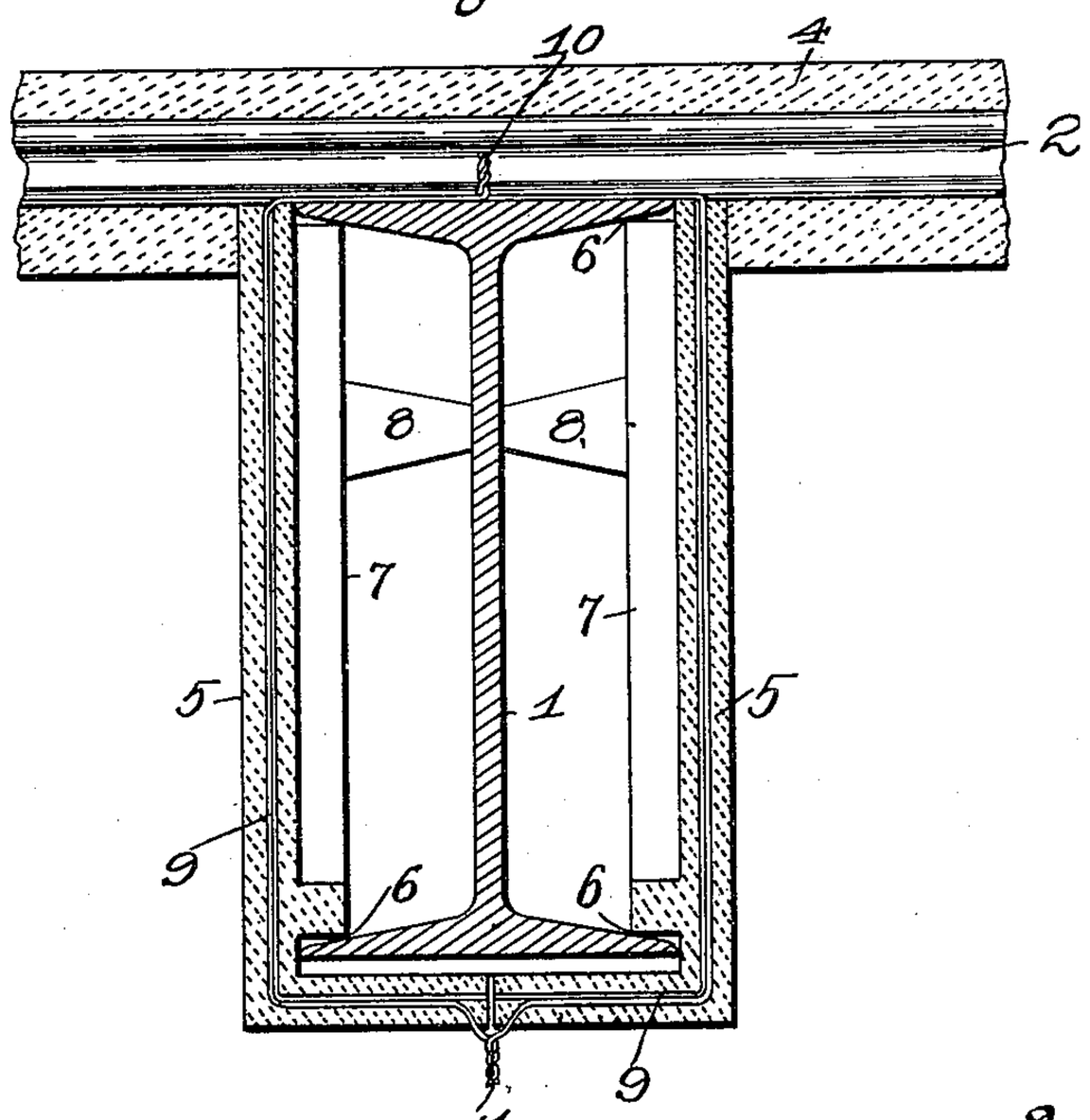


Fig. 3.



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No. 731,216. PATENTED JUNE 16, 1903.

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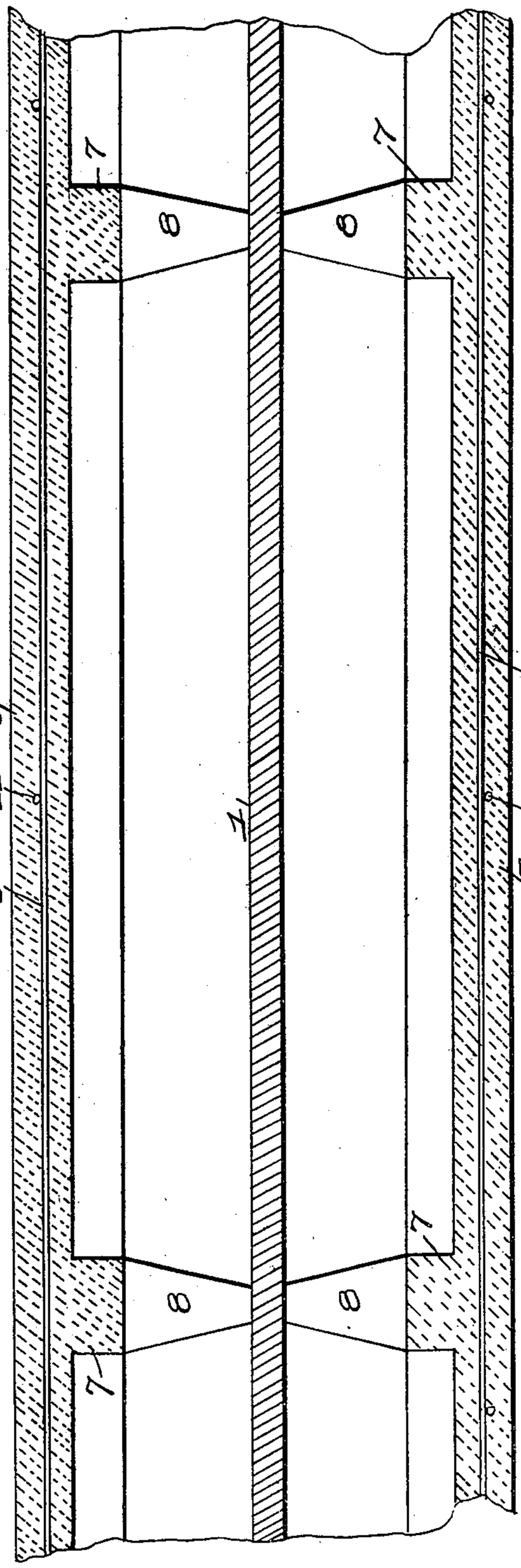
FIREPROOF CONSTRUCTION.

APPLICATION FILED MAR. 12, 1903.

NO MODEL. 3 SHEETS—SHEET 3.

Fig. 4.



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No. 731,216. Patented June 16, 1903.

UNITED STATES PATENT OFFICE.

NICHOLAS PELLIGREEN, OF ST. LOUIS, MISSOURI.

FIREPROOF CONSTRUCTION.

SPECIFICATION forming part of Letters Patent No. 731,216, dated June 16, 1903.

Application filed March 12, 1903. Serial No. 147,387. (No model.)

To all whom it may concern:

Be it known that I, NICHOLAS PELLIGREEN, a citizen of the United States, residing at St. Louis, State of Missouri, have invented certain new and useful Improvements in Systems of Fireproof Construction, of which the following is a specification containing a full, clear, and exact description, reference being had to the accompanying drawings, forming a part hereof.

My invention relates to an improved system of fireproof construction for use in steel-frame buildings and the like, and has for its object to provide a system for building concrete floors having a high factor of safety with materials of the smallest possible weight, bulk, and expense.

In the drawings which form a part of this specification, Figure 1 is a perspective of a floor, the floor being partly filled in with concrete. Fig. 2 is a transverse vertical section of a floor embodying my invention. Fig. 3 is a transverse vertical sectional view of an I-beam employed in my system of building construction, showing the manner in which I apply a casing of concrete provided with metallic bonds to the same.

In the drawings the numeral 1 indicates I-beams, upon which the rails 2 are laid transversely. The rails 2 are of the ordinary well-known form of railway-rails of any desired weight.

My floor is constructed by placing a temporary decking between the I-beams 1 at a plane lower than the plane of the top flanges of said I-beams. Concrete is then imposed upon the decking and around the rails 2 until it has attained the plane of the tops of the rails 2. At this point I superimpose upon the top surface of the concrete and over the tops of the rails 2 an interstitial web 3 and then proceed to add concrete until the floor is of the desired thickness. As shown in Fig. 1, the interstitial web employed is preferably the ordinary poultry-fencing, which is of sufficient tensile strength when introduced at or near the neutral axis of the concrete to act as sufficient bond. The floor resulting from my construction is the monolithic mass 4, which completely embraces the interstitial web 3, the rails 2, and the top flanges of the I-beams 1.

I am aware that heretofore interstitial webs of various materials have been employed as a bond in the protection of concrete slabs; but hitherto in the art such interstitial web has been usually made of heavier and more expensive material than the poultry-netting specified by me, and the interstitial web has been relied upon as the source of the tensile strength of the resulting floor, wall, or ceiling structure. In the system of my invention, however, I have preferred to gain tensile strength by the employment of the ordinary railway T-rails, which are universally available for the purpose and which may be installed with minimum expense. I utilize the tensile strength of the rails 2 by placing them at and beneath the neutral axis of the floor, as shown in section in Fig. 2, that portion of the concrete below the level of the rails 2 being used only for the purpose of protecting the bottoms of the rails 2 and the upper flanges of the I-beams 1 from exposure to the atmosphere or dampness and consequent oxidation. In order to secure similar protection for the I-beams 1, I have provided a protective covering for said I-beams, which is shown in section in Fig. 3 and which may be described as follows: I have provided sections 5, having inwardly-projecting longitudinal depressions 6 to receive the upper and lower flanges of the I-beams. The concrete is molded to form internal vertical strengthening-ridges 7 and projections 8, which are of the desired length to hold the sections 5 at the proper distance from the webs of the I-beams 1. Each of the sections 5 is provided with the interstitial web 9, preferably of poultry-netting, as before. The outer ends of the rails of which the interstitial web 9 is composed project from the tops and bottoms of the sections 5, and after the sections are put in place about the I-beams 1 the said ends are brought together and twisted at the top of the I-beams, as indicated by the numeral 10, and brought together and twisted at the bottom of the I-beams, as indicated by the numeral 11, whereby the I-beams are completely incased and the sections 5 held together upon both sides of the I-beams. When this form of protective structure for the I-beams is employed, the sections 5 are first placed in position

about the I-beams. The decking or centering is then placed in position, and the floor or slab 4 is built up to the outer sides of the sections 5, as indicated in Fig. 3.

Having fully described my invention, what I claim as new, and desire to have secured to me by the grant of Letters Patent, is—

In a system of fireproof construction, a protective covering for horizontal I-beams consisting of the sections 5 provided with the ridges 7, projections 8 and depressions 6, and interstitial metallic web embedded in the sections, and having its ends projecting to form means whereby the sections may be united to surround and incase the I-beams, substantially as and for the purposes specified.

In testimony whereof I have signed my name to this specification in presence of two subscribing witnesses.

NICHOLAS PELLIGREEN.

Witnesses:

M. G. IRION,

JOHN C. HIGDON.