

No. 768,233.

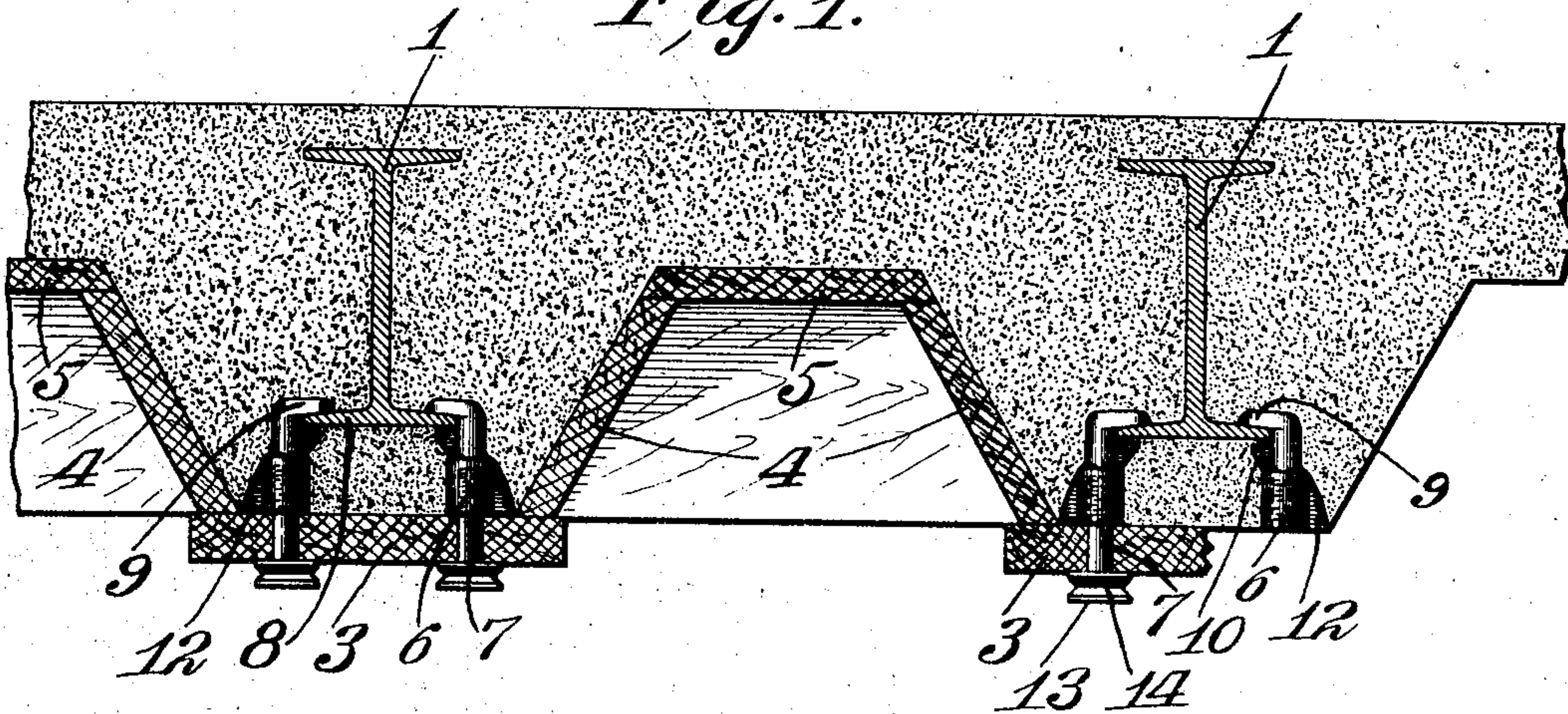
PATENTED AUG. 23, 1904.

F. J. LYONS.  
CONCRETE FLOOR CONSTRUCTION.

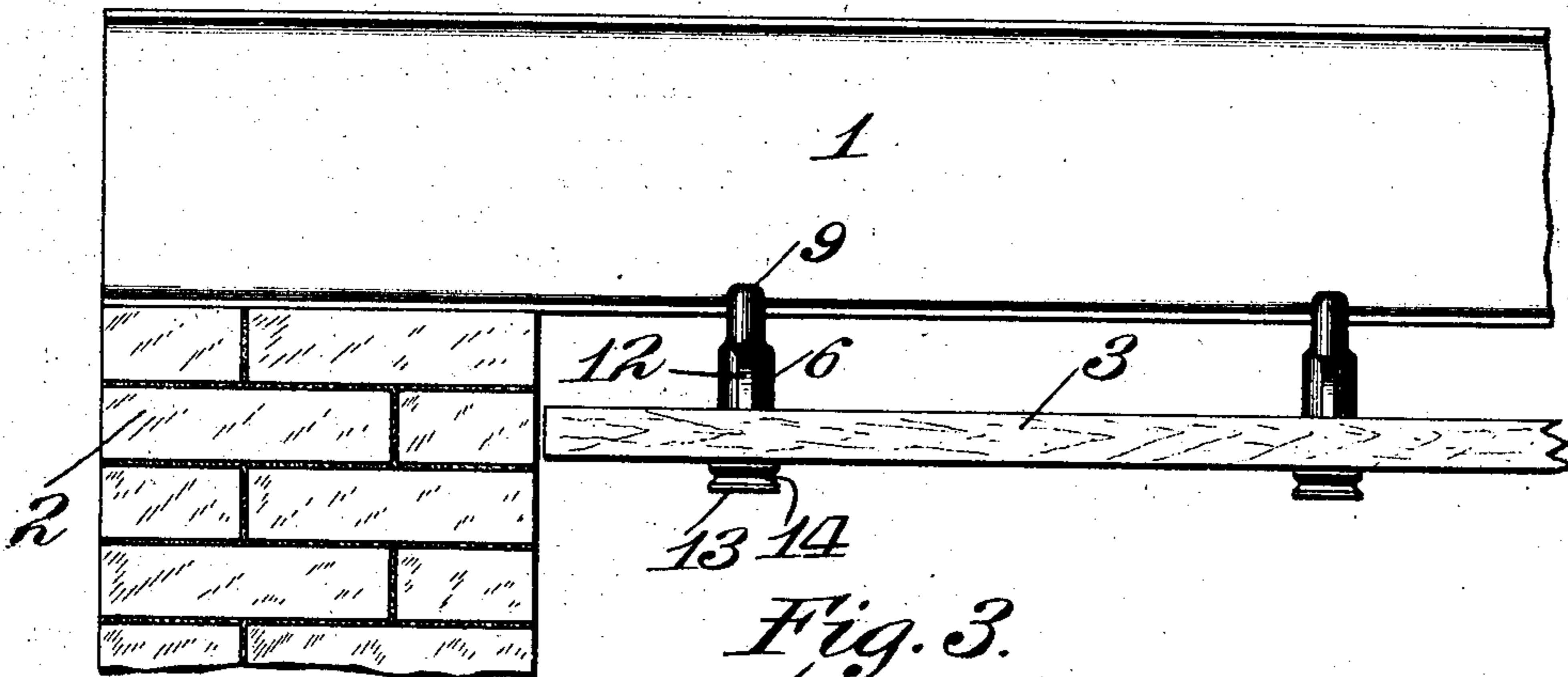
APPLICATION FILED APR. 4, 1904.

NO MODEL.

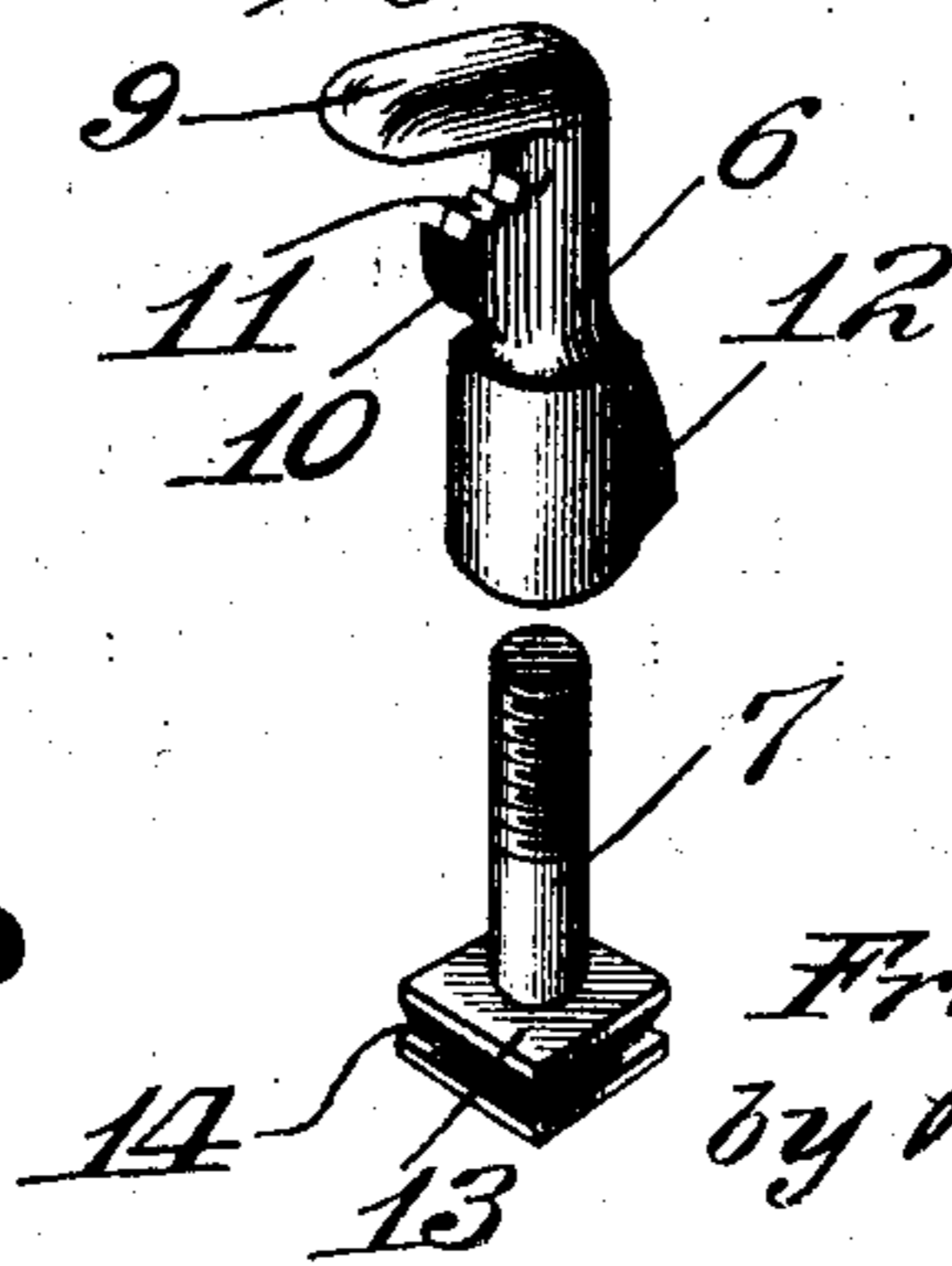
*Fig. 1.*



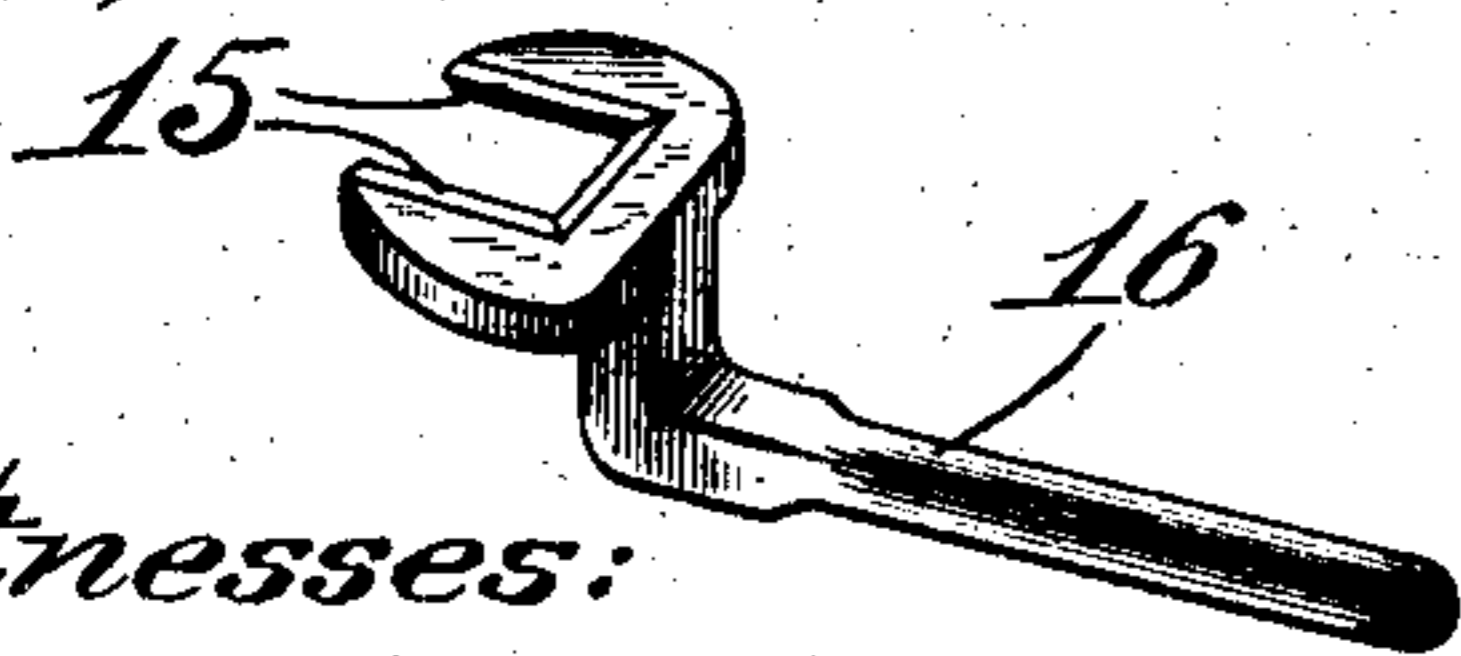
*Fig. 2.*



*Fig. 3.*



*Fig. 4.*



Witnesses:

G. A. Pennington  
B. J. Turk

Inventor:

Francis J. Lyons,  
by Bakerwell & Cornwall  
Attys.

# UNITED STATES PATENT OFFICE.

FRANCIS J. LYONS, OF ST. LOUIS, MISSOURI.

## CONCRETE-FLOOR CONSTRUCTION.

SPECIFICATION forming part of Letters Patent No. 768,233, dated August 23, 1904.

Application filed April 4, 1904. Serial No. 201,470. (No model.)

*To all whom it may concern:*

Be it known that I, FRANCIS J. LYONS, a citizen of the United States, residing at the city of St. Louis, State of Missouri, have invented  
5 a certain new and useful Improvement in Concrete-Floor Constructions, of which the following is a full, clear, and exact description, such as will enable others skilled in the art to which it appertains to make and use the  
10 same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a cross-sectional view through a concrete floor, showing the temporary supporting means in position. Fig. 2 is a side elevational view of one of the beams with the soffit-board and the hangers in operative positions. Fig. 3 is a disassociated detail perspective view of the hanger or anchor bolt,  
20 and Fig. 4 is a detail perspective view of a wrench used in connection with my invention.

This invention relates to concrete-floor construction, and particularly to means for supporting the grout or concrete in a semiplastic state previous to its being set, so that a predetermined form of the lower part of the floor or ceiling will be preserved. Heretofore it has usually been the practice to secure the soffit-board and the haunch-board by suitable  
30 wiring or sometimes by bolting the soffit-board to the beam embedded in the concrete structure. These methods, however, have been found to be inconvenient for divers reasons—for example, in wiring the soffit-board  
35 to its beam a bending-machine is necessary, and owing to the particular nature of this work considerable inconvenience was experienced in transporting the wiring-machine from place to place. In utilizing the bolts  
40 it was found necessary to cut off the ends thereof, so as to release the boards, and as a result the ends of the bolts either project through the ceiling or the ceiling would have to be pointed up to conceal the projecting  
45 ends. By employing a construction similar to the one described hereinafter these inconveniences are avoided.

Referring now to the drawings by numerals of reference, 1 1 designate suitable horizontal metallic beams, preferably I-beams, which

are supported upon suitable recesses generally in the form of a masonry wall, as indicated at 2 in Fig. 2.

3 designates the soffit-boards, and 4 the haunch-boards, the latter having inclined  
55 sides connected at their upper edges by a cross-board 5. In forming the plastic floor the soffit-boards are suspended or supported from the I-beams, which soffit-boards in turn support the haunch-boards, the whole forming  
60 an efficient support for the plastic material forming the floor. In order that the soffit-boards may be conveniently supported, suitable hangers are provided which are preferably constructed as illustrated in Fig. 3, in  
65 which 6 designates the socket member and 7 the complementary member. The socket member 6 is designed to be anchored to the flange 8, and in order that this may efficiently be accomplished I provide a projection 9 at one end  
70 thereof which is capable of embracing the upper side of the flange 8 of one of the beams. Co-operating with this projection 9 is a fin or web 10, which is provided with a plurality of serrations or shoulders 11, capable of independent  
75 contact with the bottom of one of the flanges. The purpose of having the irregular upper edge formed by the shoulders 11 is to insure a firm contact with the flange of the beam irrespective of its thickness. The web 10 is  
80 assisted by an oppositely-disposed web 12, carried by the socket member 6 in maintaining a rigid contact with the flange of the beam when the concrete has been flowed between the boards, so that any liability of the  
85 socket member turning will be avoided. Another advantage in providing the web 12 is that the edge thereof will abut against the side of the haunch-board, so that irrespective of the weight upon the soffit-board it will be  
90 impossible for the jaw formed by the projections 9 and 10 from becoming detached from the flange of the I-beam. The cooperating member 7 is provided with a threaded shank for engagement with corresponding threads  
95 in the socket member 6, and the rectangular head 13 of the member 7 is provided with a groove 14, preferably V-shaped in cross-section, so that the reduced edges 15, carried by  
100 the jaw of the wrench 16, may firmly grasp

the edges of the head 13, whereby the member 7 may be screwed into and out of contact with the member 6.

By reference to Fig. 1 the manner of assembling the parts will be clearly apparent, and after the plastic material has set it will only be necessary to remove the member 7, so that the soffit-boards may be released, which in turn will permit the haunch-boards to be released. As a result, there will be no projections to be cut off, and the manner of applying and removing the supporting-boards will be greatly facilitated. It frequently happens that a premises in which a concrete ceiling and floor is employed is partitioned after the concrete structure is formed. Heretofore the general practice has been to dig out the ceiling so that hangers can be attached to the beams, as it is desirable that the partition align with the beams. In order that this can be done, it is usually found necessary to attach some type of hanger to the beam, so that the skeleton forming the partition and which acts as a support for the concrete composition can be suitably held in place. Inasmuch as the socket member 6 will remain embedded in the concrete structure it will only be necessary to run a bolt through a part of the skeleton frame, which bolt can be inserted in the socket, and the frame will thus be securely supported without the necessity of digging out the concrete around the beam. Thus any liability of weakening the concrete structure will be avoided.

I am aware that minor changes in the construction, arrangement, and combination of the several parts of my device can be made and substituted for those herein shown and described without in the least departing from the nature and principle of my invention.

Having thus described the invention, what is claimed as new, and desired to be secured by Letters Patent, is—

1. A hanger for concrete structures comprising two members one of which is provided with a right-angularly-disposed projection for engagement with a support, and a headed complementary member removably secured to the first-named member; substantially as described.

2. A hanger for concrete structures having a right-angular projection at one end, and shoulders aligning therewith and in different planes; substantially as described.

3. A hanger for concrete structures comprising two members, one of which is adapted to remain embedded in the concrete and having means of attachment to a girder, oppositely-disposed anchor-fins carried by the embedded member, and means for removably connecting the two members; substantially as described.

4. A hanger for concrete structures comprising two members having threaded connection, one of which is provided with a head having a groove around the periphery thereof; substantially as described.

5. A hanger for concrete structures comprising two members having threaded connection, one of which is provided with a head having a V-shaped groove around the periphery thereof; substantially as described.

6. A hanger for concrete structures comprising two members having threaded connection, one of said members having anchor projections whereby said member can be permanently fixed in the concrete and the other member having means for removable attachment to the permanent member and provided with a head having a groove around the periphery thereof; substantially as described.

7. A hanger for concrete structures comprising two members one of which is provided with a rigid jaw for engagement with flanges of varying thicknesses, and a removable member connected thereto; substantially as described.

8. The combination with a plurality of beams, permanent hanger members connected to the lower flanges of the beams, a soffit-board beneath the permanent members, and removable members projecting through the soffit-boards and connected to the permanent members; substantially as described.

9. A hanger for concrete structures, comprising two members one of which is provided with a right-angularly-disposed projection, a cooperating fin below the first-named projection, an anchor-fin oppositely disposed with relation to the first-named fin, and a headed member removably connected to the first-named member; substantially as described.

10. A hanger for supporting a removable soffit-board for concrete structures, the same comprising an anchor member designed to be left in the concrete, said anchor member having a jaw for engagement with a beam-flange, and another member for supporting the soffit-board in position; substantially as described.

In testimony whereof I hereunto affix my signature, in the presence of two witnesses, this 31st day of March, 1904.

FRANCIS J. LYONS.

Witnesses:

B. F. FUNK,  
GEORGE BAKEWELL.