

F. W. WILSON.  
COMPOSITE FLOOR CONSTRUCTION.  
APPLICATION FILED DEC. 24, 1909.

999,286.

Patented Aug. 1, 1911.

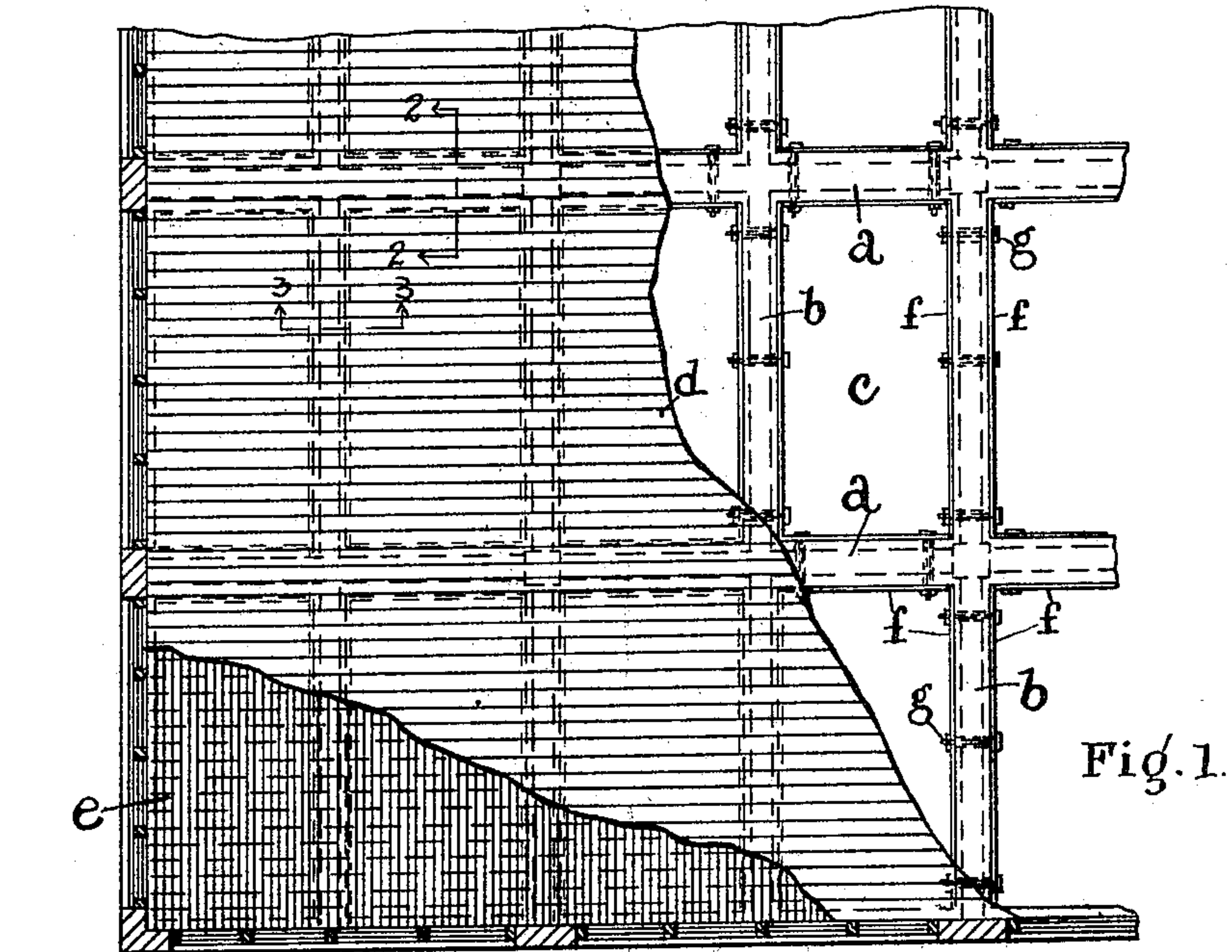


Fig. 1.

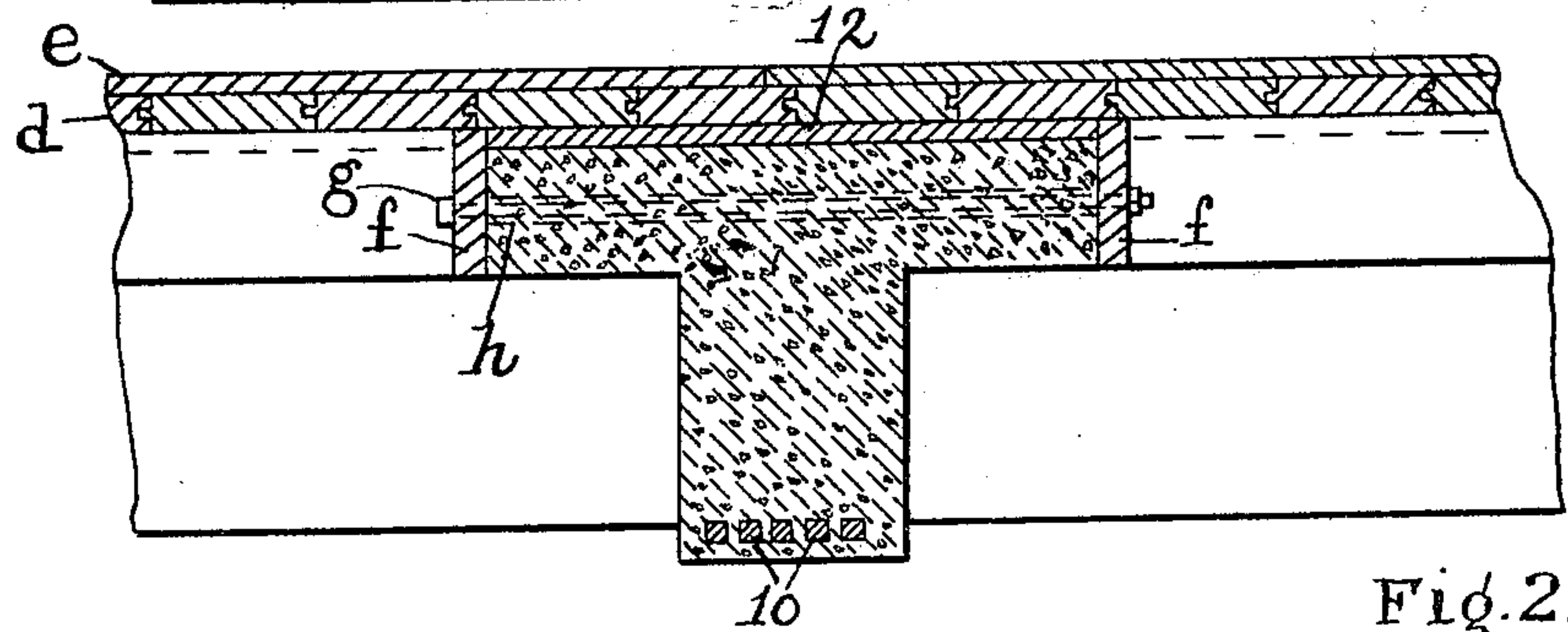


Fig. 2.

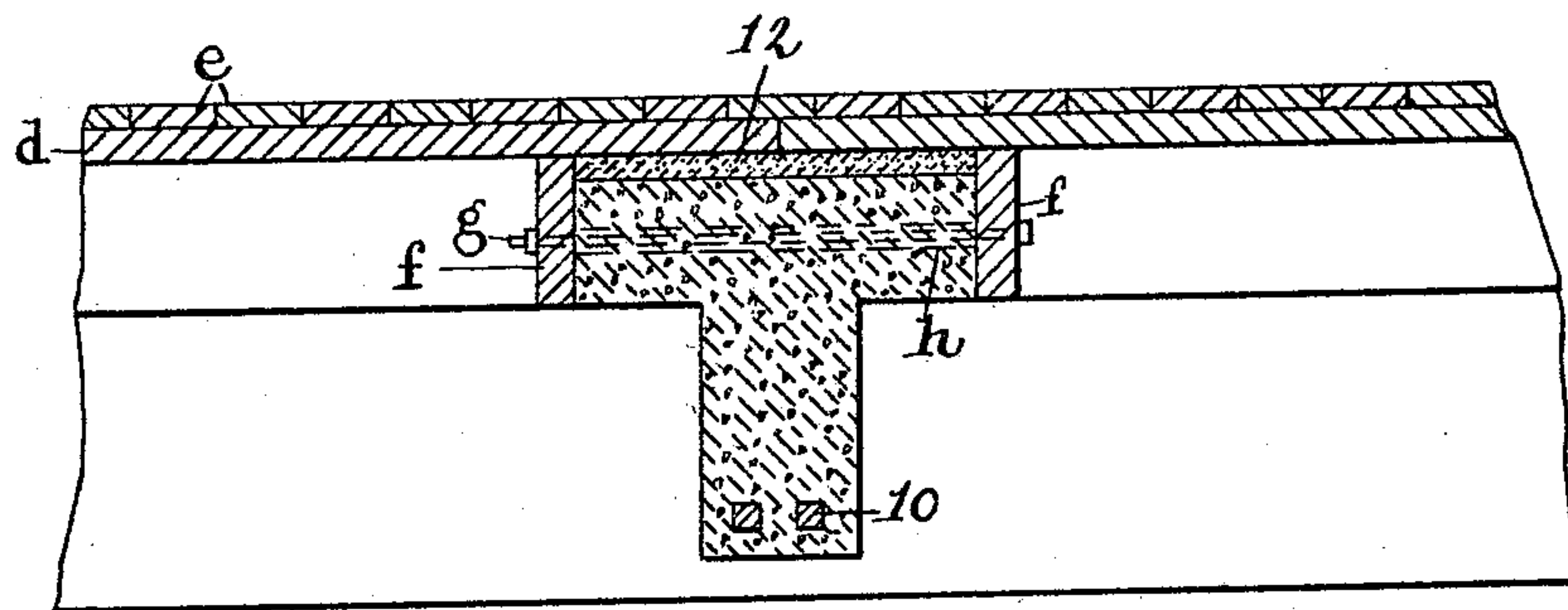


Fig. 3.

Witnesses.  
G. P. Stuart.  
J. Murphy

Inventor.  
Francis W. Wilson  
by Jas. H. Churchill  
Atty.



# UNITED STATES PATENT OFFICE.

FRANCIS W. WILSON, OF BOSTON, MASSACHUSETTS.

## COMPOSITE FLOOR CONSTRUCTION.

999,286.

Specification of Letters Patent.

Patented Aug. 1, 1911.

Application filed December 24, 1909. Serial No. 534,766.

*To all whom it may concern:*

Be it known that I, FRANCIS W. WILSON, a citizen of the United States, residing in Boston, county of Suffolk, and State of Massachusetts, have invented an Improvement in Composite Floor Construction, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

This invention relates to a composite floor construction for concrete buildings and has for its object to provide a floor construction, which is composed in part of concrete and in part of wood or like non-metallic material, whereby the cost of concrete buildings may be materially reduced without materially detracting from the fire-proof qualities of the building. For this purpose, I employ a skeleton floor frame of concrete, and a flooring proper composed of wood or like non-metallic fibrous material, which is suitably fastened to the concrete skeleton frame.

Figure 1 is a plan view with parts broken away of a sufficient portion of a composite floor construction embodying this invention, to enable it to be understood. Fig. 2, an enlarged detail in section, taken on the line 2—2, Fig. 1, and Fig. 3, an enlarged detail in section, taken on the line 3—3, Fig. 1.

Referring to the drawings, *a*, *b*, represent sets of concrete supporting members, such as girders and beams, which may be of any suitable or usual construction and one of which is, and preferably both are T-shaped in cross section and arranged as herein shown substantially at right angles to each other so as to leave substantially narrow open spaces *c* and form a monolithic skeleton concrete floor frame extending from wall to wall of the building. The concrete skeleton frame has laid upon it floor boards of wood or other non-metallic fibrous material, and in the present instance, two layers *d*, *e* of floor boards are shown, which cover the openings *c* and form a continuous floor surface. The layer *d* of floor boards constitutes the under floor, and the layer *e* the upper floor, which is nailed or otherwise secured in the usual manner to the under floor, which latter is firmly secured to the concrete skeleton frame.

In the present instance, I have shown one method of firmly securing the under floor to the concrete skeleton frame, and while I may prefer the arrangement herein shown,

I do not desire to limit the invention in this respect.

In the construction herein shown, the concrete skeleton floor frame has secured to the opposite sides of its girders *a* and beams *b* pieces *f* of wood or other non-metallic material, which are fastened to said girders and beams by bolts *g* extended transversely through the same, and preferably through iron or steel tubes *h* embedded in said girders or beams, or they may be otherwise fastened and in practice the pieces *f* may be a part of the mold in which the girder or beam is formed. The wooden pieces *f* form anchoring devices for the under floor and afford means to which the said floor may be nailed, in a manner well understood.

The concrete girders and beams *a*, *b* may be of any suitable or usual construction except that the cross piece or head is made of sufficient length to obtain the desired strength above the neutral axis of the girder or beam and are provided with the usual metal reinforcement 10. In a girder 12 inches wide, the head is made 30 inches wide, and in a beam 7 inches wide, the head is made 16 inches wide.

The wood floor above the concrete girders and beams may be leveled by a filling of wood as shown in Fig. 2 or of cinder concrete as shown in Fig. 3.

From the above description and by reference to the drawing, it will be seen that the cost of the concrete building may be materially reduced without materially diminishing the fire-proof qualities of the building as the columns and foundations are required to sustain a materially less weight of the concrete portion of the floor, and therefore may be materially reduced in size with corresponding reduction in cost.

By reference to Figs. 2 and 3, it will be seen that the floor has a bearing on the frame for the entire width of each girder or beam.

The composite floor herein shown is especially adapted for use in the construction of mills and factories, wherein it is desired to have a flooring to which the machinery can be bolted or screwed without the necessity of boring or drilling into the concrete construction, while at the same time the beneficial properties of a solid concrete floor to avoid or reduce vibration are obtained by the concrete skeleton frame.

Claims:

1. A composite floor construction com-



prising a monolithic reinforced skeleton floor frame composed of sets of supporting members extending at an angle to each other and one of which sets is T-shaped in cross-section to leave a plurality of substantially narrow open spaces, non-metallic anchoring pieces secured to the heads of the T-shaped members, and a floor of non-metallic material firmly secured to said anchoring pieces, substantially as described.

2. A composite floor construction, comprising a monolithic reinforced concrete skeleton floor frame composed of reinforced concrete T-shaped girders and beams having substantially wide head portions extended beyond the vertical portions to form substantially narrow open spaces between adjacent heads, pieces of non-metallic fibrous material located on opposite sides of the head portions of said girders and beams and secured thereto, and a floor of non-metallic fibrous material supported by and

firmly secured to said side pieces, substantially as described.

3. A composite floor construction, comprising a concrete floor frame composed of substantially T-shaped reinforced concrete girders and beams arranged at an angle to each other to leave open spaces, pieces of wood located on opposite sides of the head of the T-shaped girders and beams, means extended through the heads of said girders and beams to secure said pieces to said girders and beams, and a wood floor secured to said side pieces and resting on said heads, substantially as described.

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

FRANCIS W. WILSON.

Witnesses:

JAS. H. CHURCHILL,  
J. MURPHY.