

(No Model.)

D. McDONALD.  
FLOOR.

No. 530,959.

Patented Dec. 18, 1894.

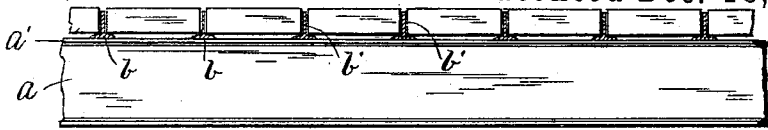


Fig. 2

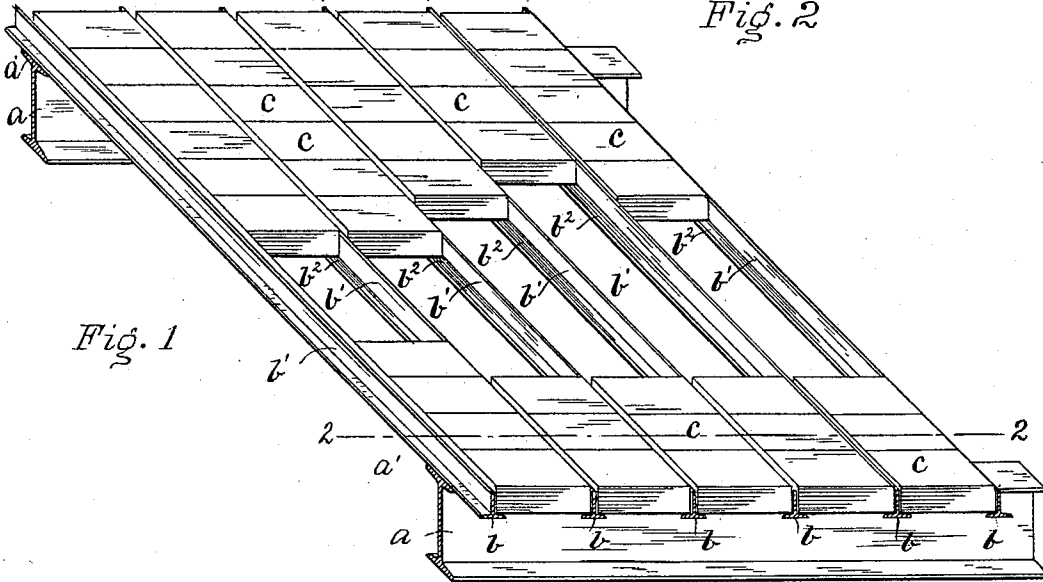


Fig. 1

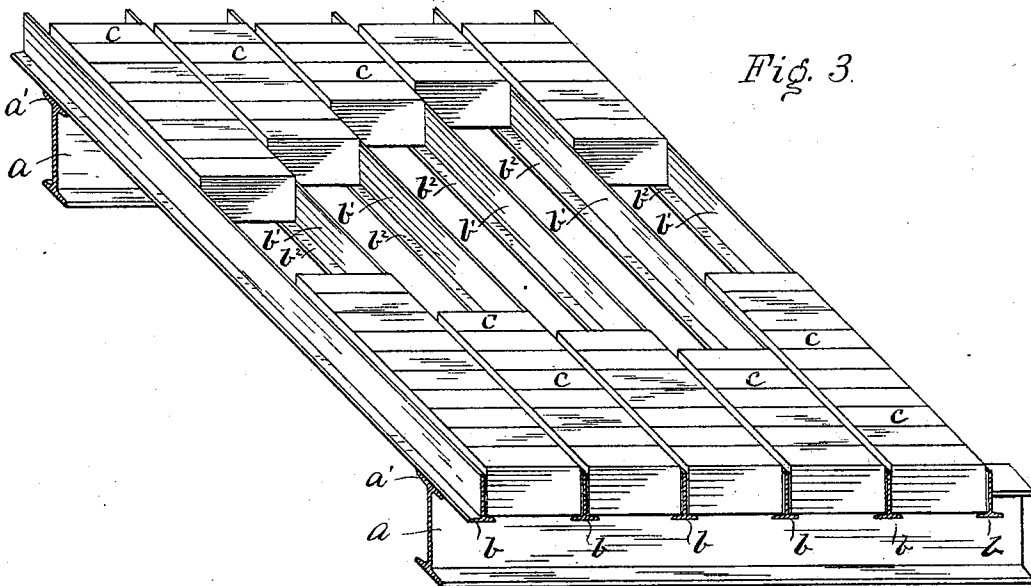


Fig. 3

WITNESSES  
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INVENTOR  
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# UNITED STATES PATENT OFFICE.

DONALD McDONALD, OF LOUISVILLE, KENTUCKY, ASSIGNOR, BY MESNE ASSIGNMENTS, TO THE NATIONAL HEAT AND POWER CONSTRUCTION COMPANY, OF PENNSYLVANIA.

## FLOOR.

SPECIFICATION forming part of Letters Patent No. 530,959, dated December 18, 1894.

Application filed April 16, 1894. Serial No. 507,708. (No model.)

To all whom it may concern:

Be it known that I, DONALD McDONALD, a resident of Louisville, in the county of Jefferson and State of Kentucky, have invented a new and useful Improvement in Floors; and I do hereby declare the following to be a full, clear, and exact description thereof.

My invention relates to fire-proof floors, its object being to construct a strong, durable and inexpensive floor suitable for gas-works, mills, warehouses, and other buildings.

Heretofore, for instance, floors for gas-works have generally been constructed of plates formed either of cast or wrought iron, but they are objectionable on account of their great cost, their great weight, and the difficulty of cutting holes through them for the introduction of pipes and other purposes. Furthermore, in the construction of tile or cement floors, it has been customary to support the tiles or cement upon bars connecting the floor beams. As the floor beams in most cases consist of I-beams, the usual ways of supporting the cross-bars is by resting them upon the lower flanges of the I-beams. This construction leaves the cross-bars weak, and requires special construction of parts, because the length of the bars is confined to the distance between the I-beams.

The object of my invention is to obviate these difficulties, and it comprises, generally stated, a series of supporting I-beams, a series of inverted solid metal T-bars resting upon the upper flanges thereof, (each T-bar extending over two beams) and incombustible blocks supported on the flanges of said inverted T-bars.

To enable others skilled in the art to make and use my invention, I will describe the same more fully, referring to the accompanying drawings, in which—

Figure 1 is a perspective view of my improved floor. Fig. 2 is a section on the line 2—2, Fig. 1. Fig. 3 is a view with the blocks laid on their edges.

Like letters of reference indicate like parts in each of the figures.

The beams  $a$  are ordinary steel I-beams used in floor construction, and arranged at suitable intervals apart. Resting upon the

top flanges  $a'$  of said I-beams  $a$  are the inverted T-bars  $b$ , said T-bars extending over several of the I-beams and receiving support and bracing from each such beam, while there is no necessity of cutting into either beams or bars, except such bolting or riveting as is necessary to hold the T-bars stationary. Said T-bars have their webs  $b'$  preferably of less height than the thickness or width of the blocks they are to support, for the reason more fully hereinafter set forth. The blocks  $c$  are formed of a vitreous substance, fire-clay, or other durable material incombustible in its nature. These blocks rest with their ends upon the flanges  $b^2$  of the inverted T-bars  $b$ , either having their flat faces resting on said flanges  $b^2$ , as shown in Fig. 1, or where the floor is constructed to bear heavy loads, with their edges resting on said flanges, as shown in Fig. 2.

As above stated, the web  $b'$  of the T-bars  $b$  are of less height than the width or thickness of the blocks  $c$ , so that whether said blocks are laid flat or on their edges they will extend above said webs  $b'$  and leave a slight groove between the ends of the adjoining rows of blocks, as at  $d$ . These grooves  $d$  are filled in with cement or other suitable material flush with the blocks  $c$ , thereby presenting an even and well packed joint.

My improved floor can be quickly constructed and at small cost, and as short connecting pieces between the beams are done away with, and the T-bars each extend over a number of bars, a strongly braced floor is obtained, while if any part thereof needs repairing it is only necessary to remove the worn-out blocks and replace them with new ones without tearing up the rest of the floor. As the blocks rest upon the flanges of the inverted T-bars above the I-beams, ready access may be had for the removal of the blocks. The vertical webs of the T-bars furnish a very strong support between the I-beams, and there is no liability of the sagging of the floor. No rivet holes are formed in the webs of the I-beams which tend to weaken same.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. In a floor, the combination with the sup-

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porting beams, of inverted T-bars resting thereon, (each T-bar extending over two or more beams) and incombustible blocks resting on the flanges of said T-bars, substantially as and for the purposes set forth.

2. In a floor, the combination with the supporting bearings, of inverted solid metal T-bars resting thereon, each T-bar extending over two or more beams and incombustible blocks resting on the flanges of said T-bars,

said T-bars having webs of less width than the thickness of said blocks, substantially as set forth.

In testimony whereof I, the said DONALD MCDONALD, have hereunto set my hand.

DONALD MCDONALD.

Witnesses:

THOS. W. KENNEDY,  
WM. H. CRUTCHER.