

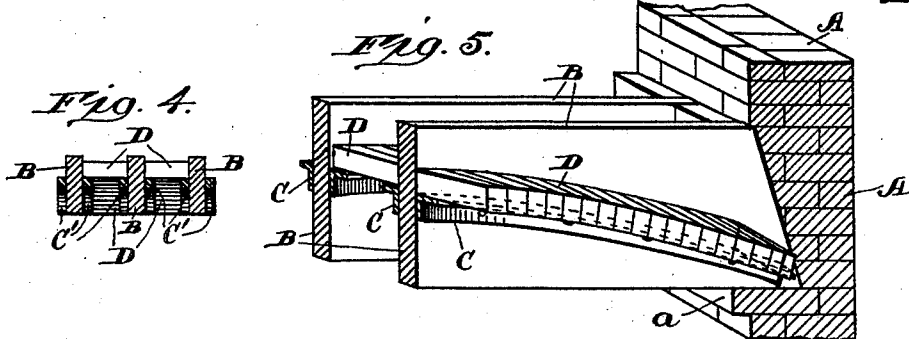
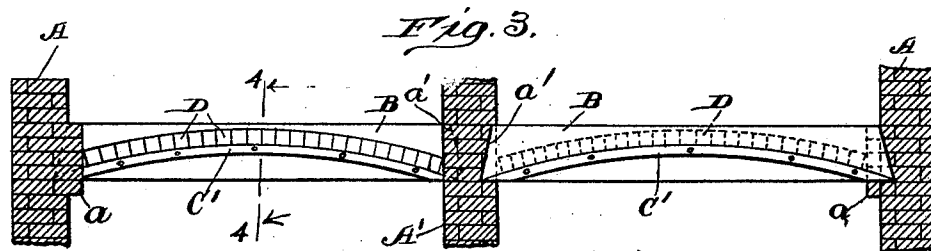
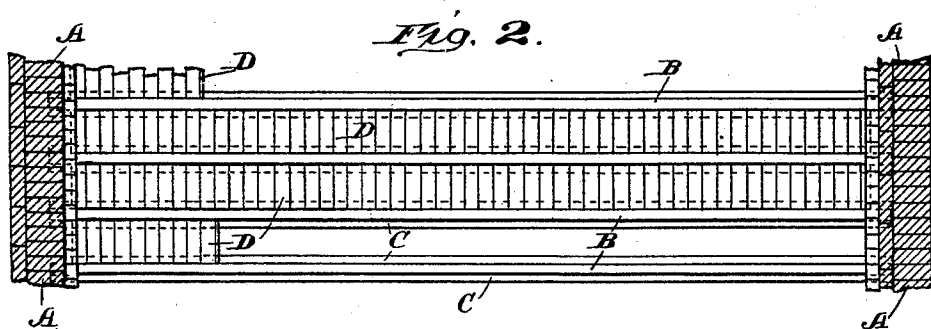
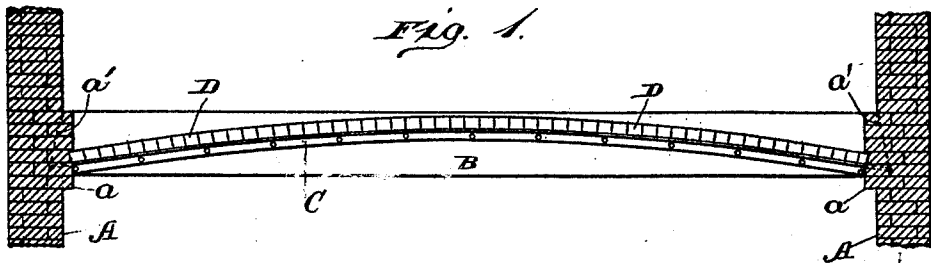
No. 714,876.

Patented Dec. 2, 1902.

W. H. DRAKE.
BUILDING CONSTRUCTION.

(Application filed Aug. 16, 1902.)

(No Model.)



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UNITED STATES PATENT OFFICE.

WILLIAM H. DRAKE, OF CHICAGO, ILLINOIS.

BUILDING CONSTRUCTION.

SPECIFICATION forming part of Letters Patent No. 714,876, dated December 2, 1902.

Application filed August 16, 1902. Serial No. 119,857. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM H. DRAKE, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Building Construction, of which the following is a specification.

This invention relates to improvements in the construction of buildings, and has particular reference to the floors and roofs thereof; and it consists in certain peculiarities of the construction, novel arrangement, and operation of the various parts, as will be hereinafter more fully set forth and specifically claimed.

The principal object of my invention is to form along the floor and roof lines from wall to wall a barrier that will prevent or retard the passage of fire from one story to another inside of the building, also from without or from within through the roof.

Other objects of the invention are to strengthen or reinforce the joists, to hinder the passage of vermin, odors, and sound, to save the expense of the common mortar floor-deafening and the rough floor and deafening-strips, thus decreasing the amount of combustible material.

Other objects and advantages will be disclosed in the subjoined description and explanation.

In order to enable others skilled in the art to which my invention pertains to make and use the same, I will now proceed to describe it, referring to the accompanying drawings, in which—

Figure 1 is a longitudinal view of a portion of a building embodying my invention, showing the walls thereof in section and the joist and arched barrier in elevation. Fig. 2 is a plan view thereof. Fig. 3 is a longitudinal view, partly in section and partly in elevation, of a portion of a building, showing a partition-wall and illustrating a modification of the supporting-strips for the arches or barriers. Fig. 4 is a cross-sectional view taken on line 4-4 of Fig. 3 looking in the direction indicated by the arrows; and Fig. 5 is a fragmental perspective view, partly in section and partly in elevation, of a portion of one of the walls of the building and parts of the

joists and arches comprising the floor or roof as constructed in Figs. 1 and 2.

Similar letters refer to like parts throughout the different views of the drawings.

A represents the walls of the building, which are preferably provided on their inner or adjacent surfaces with projecting courses of brick *a* to form shoulders or springers for the series of arches comprising a part of the floor or roof. Extending from one wall to the other and embedded at their ends therein and resting on the courses *a* of brick when the latter are used are a series of joists B, which are placed parallel with one another and horizontally, as shown.

To each of the side surfaces of each of the joists B is a reinforcing and arch-supporting strip C, which is preferably made of angle-iron bent to form an arc, with its ends extending to about the lower edge and ends of the joist to which it is secured. On the laterally-extending flanges of the strips C of angle-iron is laid in mortar, brick, or terracotta D, thus forming arched barriers of fire-proof material, which extend from end to end of the joists and from wall to wall in the spaces between the joists and between the joists and walls.

In Figs. 3 and 4 of the drawings I have illustrated a modification in my construction, which consists in employing wooden strips C' instead of angle-iron strips for supporting the arched barriers of brick or terracotta D or other suitable material, which strips are bolted or otherwise secured to the side surfaces of the joists in a manner similar to that of the angle-iron strips and above described. In Fig. 3 I have also shown a partition-wall A' between the outer walls, in which partition-wall the courses of brick *a*, forming the shoulders or springers, may be omitted, the joists being fitted into suitable recesses *a'* in said partition-wall.

Experience has shown that where fire in rising meets a horizontal barrier there is a lack of fresh air or oxygen to feed the fire, which consequently smolders or is smothered, so that the woodwork below may be consumed before the bearing capacity of the floor or roof constructed according to my invention becomes seriously impaired.

From the foregoing and by reference to the drawings it will be readily understood and clearly seen that by employing my construction a perfect barrier to prevent or retard the passage of fire is provided, thus confining the action of the flames to one story only and greatly aiding in extinguishment.

It is further evident that my construction greatly strengthens the joists and economizes in the expense of floor-deafening material, and, besides, decreases the amount of combustible material.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A floor or roof construction, comprising the walls, the parallel joists extending from one wall to the other and suitably supported at their ends thereby, the curved angular reinforcing and supporting strips secured to the joists, the said strips having their hori-

zontal portions or flanges projecting from their upper edges, and the brick or terra-cotta laid upon the upper surface of said flanges or horizontal portions and filling the spaces between the joists and extending from wall to wall, substantially as described.

2. A floor or roof construction, comprising the walls, the horizontally-projecting shoulders or springers thereon, the parallel joists extending from wall to wall and resting at their ends on said shoulders, the curved reinforcing and supporting strips secured to the sides of the joists, and the brick or terra-cotta laid upon the supporting-strips and filling the spaces between the joists and extending from wall to wall, substantially as described.

WILLIAM H. DRAKE.

Witnesses:

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