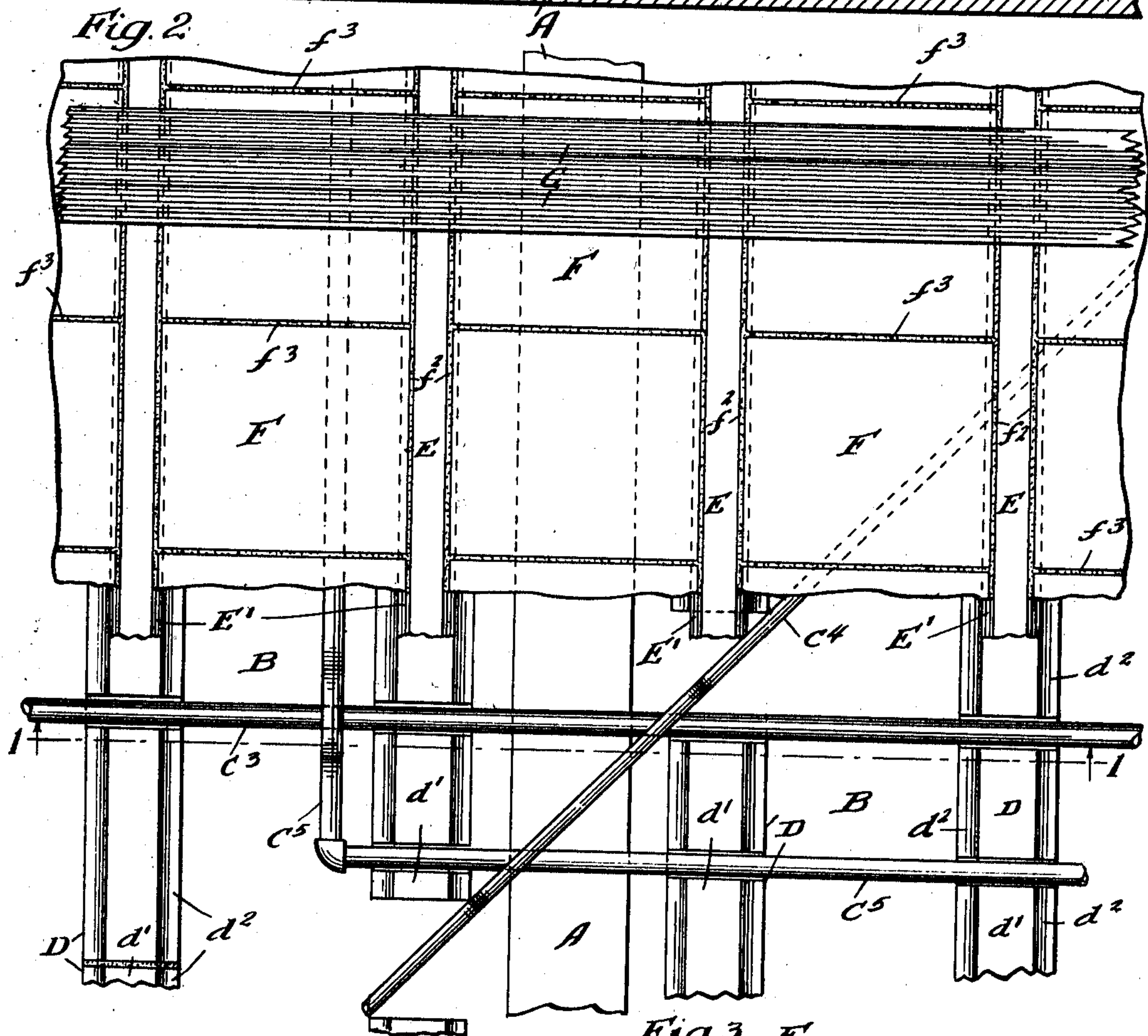
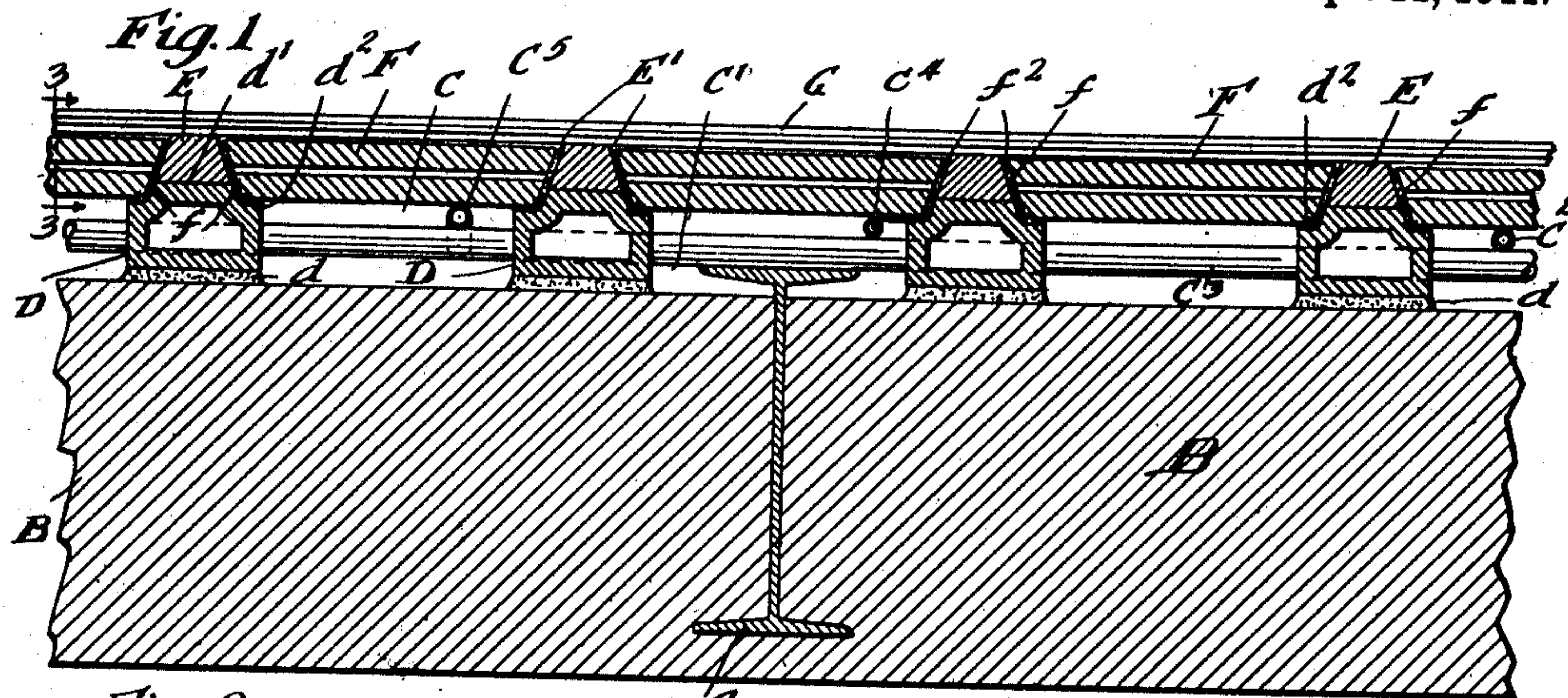


E. V. JOHNSON.
FIREPROOF BUILDING FLOOR CONSTRUCTION.
APPLICATION FILED DEC. 17, 1909.

989,016.

Patented Apr. 11, 1911.



Witnesses:

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UNITED STATES PATENT OFFICE.

ERNEST V. JOHNSON, OF CHICAGO, ILLINOIS.

FIREPROOF-BUILDING FLOOR CONSTRUCTION.

989,016.

Specification of Letters Patent. Patented Apr. 11, 1911.

Application filed December 17, 1909. Serial No. 533,687.

To all whom it may concern:

Be it known that I, ERNEST V. JOHNSON, a citizen of the United States, residing in Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Fireproof-Building Floor Construction, of which the following is a specification.

My invention relates to improvements in floor construction for fireproof buildings.

Heretofore in fireproof building floor construction, it has been customary to fill in the pipe space above the steel supporting beams or girders and the flat arch masonry or fireproof filling between such beams, with a cement and cinder filling, the gas, electric conduit, water, steam and other pipes being first put in position, and the wood floor strips being also put in position and supported on temporary blocks, before the cement cinder filling is applied over and around the pipes and tamped in solid to afford support for the wood floor strips embedded therein and to which the finished flooring is nailed. This cement cinder filler construction in practical operation is open to a number of serious objections or defects. It adds very greatly to the weight of the floor, ordinarily about 38 pounds per square foot; and this notwithstanding that this pipe space filling is composed of cinders, the lightest available fireproof material; the sulfur in the coal cinders in connection with the moisture tends to quickly oxidize and destroy the pipes embedded therein; the excessive moisture in this cement cinder or quasi concrete filling swells, warps and distorts the finished flooring laid on top of the wood floor strips and often makes it necessary to take up and relay at great expense the finished flooring, especially in cases where it is necessary to lay the finished flooring within a few weeks after the cement cinder filling is put in, as is often required to save great loss to the owner and to save heavy penalty to the constructor; and the pipes being embedded in and covered by the cement cinder filling, the gas, water, steam, and electric conduit pipes are not readily accessible for repairs or alterations, thus often necessitating great expense for simple repairs or changes; and the cement cinder filling in which the pipes are embedded prevents the steam and other pipes from expanding or giving under changes of temperature and

frequently causes them or their joints to open up and become leaky.

The object of my invention is to provide an improved fireproof floor construction by which the objections and defects above mentioned may be entirely overcome or obviated, and which will be strong, simple, efficient and durable and thoroughly fireproof and which will enable the finished flooring to be laid immediately after the pipe space filling is applied without danger of swelling or distorting the finished flooring, which will materially reduce the weight of the floor per square foot and also leave the water, gas, steam and other pipes comparatively freely accessible for changes or repairs.

My invention consists in the means I employ and herein shown and described to practically accomplish this object or result, the same being particularly set forth in the claims.

In the accompanying drawing forming a part of this specification, Figure 1 is a vertical section of a fire proof building floor construction embodying my invention, the section being taken transverse to the wood floor strips. Fig. 2 is a plan view, broken away at different levels to better show the construction and Fig. 3 is a detail section of one of the filler tile, taken on line 3—3 of Fig. 1.

In the drawing, A represents one of the steel supporting beams or girders of a fireproof building floor construction, B the flat arch masonry or fireproof filling between the beams or girders A, the same being of concrete, tile, or other suitable material, C C¹ the piping space above the flat arch or fireproof filling B and girder A containing the various steam, water, electric conduits and gas pipes C² C³ C⁴ C⁵ of the building, running in various directions and crossing each other as may be required, this piping being of any suitable or desired construction and arrangement.

D D are my narrow supporting tile extending preferably parallel to the girders A and having a suitable cement or mortar bed *d* on the fireproof filling or flat masonry arch B, and each having a flat upper face *d*¹ to receive the wood floor strips E, and seats or shoulders *d*² to receive the filler tile F. The wood floor strips E preferably have beveled sides or upright faces E¹, and the filler tile F have corresponding beveled faces

f. The finished flooring G is laid upon and nailed to the wood floor strips E. The narrow supporting tile D are preferably hollow and are made of various lengths to accommodate the space or distance between adjacent pipes which cross the lines of the supporting tile D. The supporting tile D are as a rule preferably made of a standard length, as for example, twelve inches, and the shorter ones only used as occasion may require. The filler tile F which fit between the supporting tile D and floor strips E cover the pipe space C and are preferably laid with tight cement or mortar joints f^2 between their beveled side edges and the supporting tile D and floor strips E and with similar cement or mortar joints f^3 between the ends of the adjacent filler tile F.

As the water, steam, electric conduit and gas pipes all fit loosely in an open pipe space C between the flat masonry arch or concrete filling B and the filler tile F, the same are free to slightly move or contract under variations of temperature and are thus not liable to be subjected to violent strains which might fracture them or their joints and cause leaks. And as in my invention, all the pipes are comparatively free and loose and not embedded in any concrete or cement filling, they are readily accessible for making repairs or alterations. And as in my invention, the supporting tile D and filler tile F are dry and absorbent of moisture when laid, the comparatively small amount of moisture in the cement joints or bedding of the tile is very quickly taken up by the tile so that the finished flooring G may be at once laid on the wood floor strips E as soon as the cement or mortar of the joints becomes set and firm without any

danger whatever of causing the floor to swell or warp or become distorted; my improved construction thus rendering it entirely unnecessary to employ salamanders for drying the cement cinder filling as has heretofore been customary.

I claim:—

1. In a fireproof building floor construction, the combination with a flat arch fireproof filling, of wood floor strips, supporting tile between said wood floor strips and said fireproof filling provided with ledges to receive filler tile, and filler tile resting upon said ledges and extending above the lower faces of the wood floor strips and embracing at their sides the wood floor strips to confine said wood floor strips in position, said filler tile and supporting tile forming a clear pipe space between the filler tile and fireproof filling, substantially as specified.

2. In a fireproof building floor construction, the combination with a flat arch fireproof filling, of wood floor strips, supporting tile between said wood floor strips and said fireproof filling provided with ledges to receive filler tile, and filler tile resting upon said ledges and extending above the lower faces of the wood floor strips and embracing at their sides the wood floor strips to confine said wood floor strips in position, said filler tile and supporting tile forming a clear pipe space between the filler tile and fireproof filling, said floor strips and said filler tile having beveled meeting faces, substantially as specified.

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