No. 755,171. PATENTED MAR. 22, 1904.

H. ROOT.

FIRE BARRIER WALL, PARTITION, &c.

APPLICATION FILED OCT. 12, 1903.

NO MODEL. 2 SHEETS—SHEET 1.

Fig. 1.

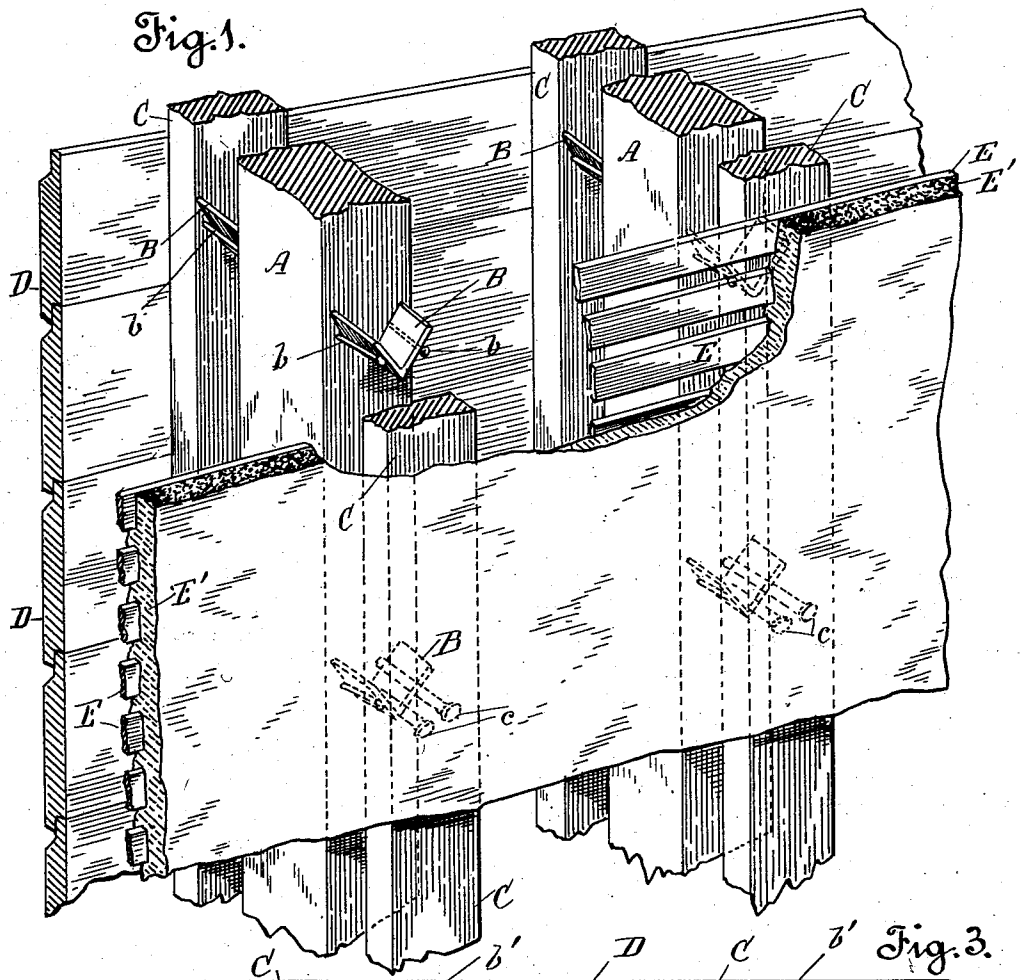
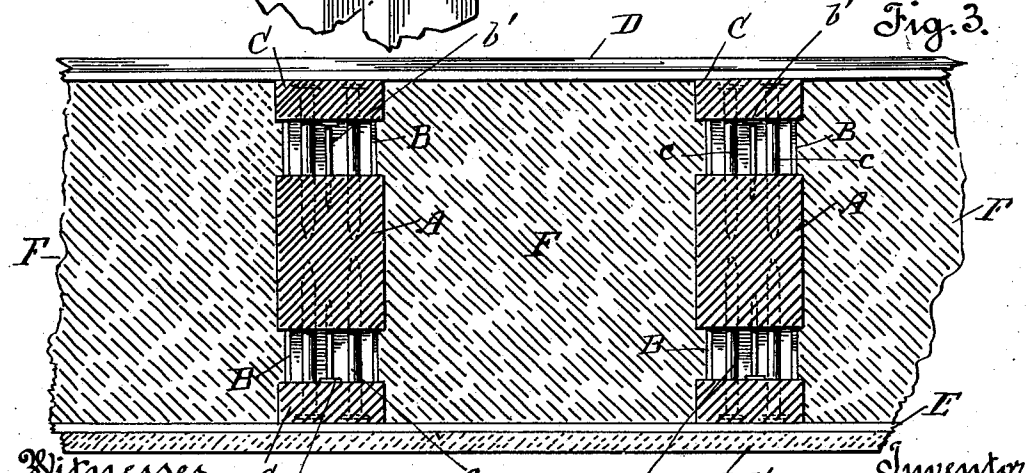


Fig. 3.



Witnesses.
F. Montevercle.
Walter D. Cane.

Inventor.
Henry Root
by Wm. F. Booth
his Attorney.

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

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NO MODEL. 2 SHEETS—SHEET 2.

Fig. 2.

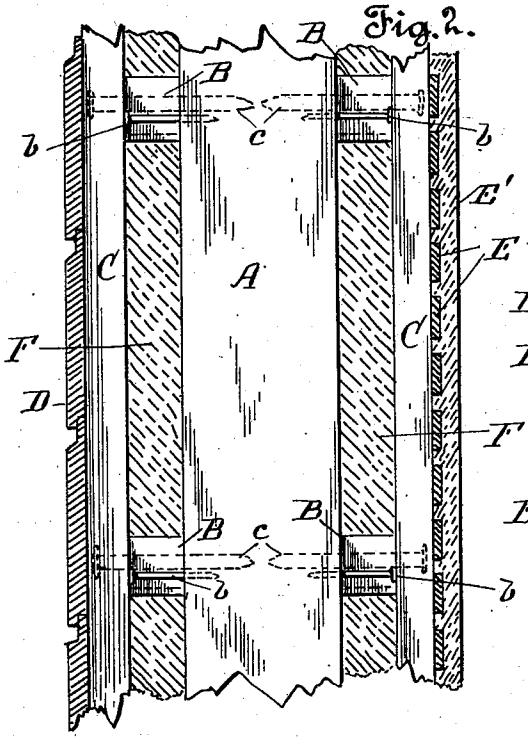


Fig. 4.

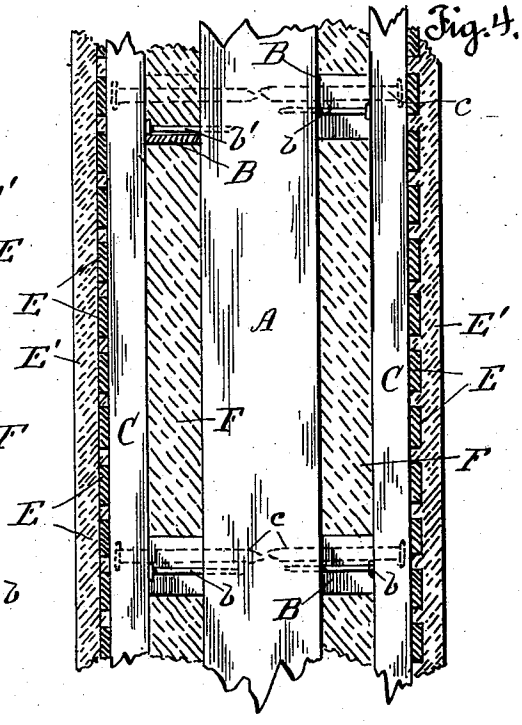


Fig. 5.

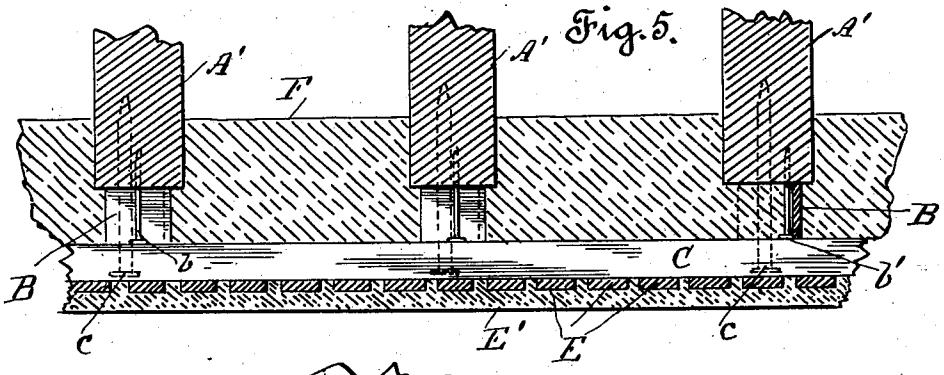


Fig. 6.

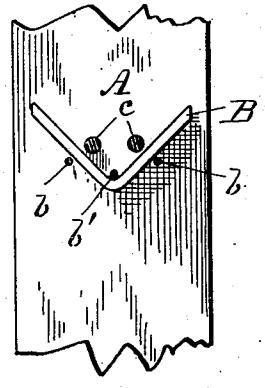
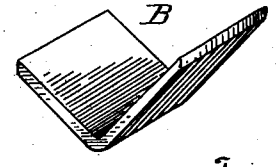


Fig. 7.



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THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

No. 755,171. Patented March 22, 1904.

UNITED STATES PATENT OFFICE.

HENRY ROOT, OF SAN FRANCISCO, CALIFORNIA.

FIRE-BARRIER WALL, PARTITION, &c.

SPECIFICATION forming part of Letters Patent No. 755,171, dated March 22, 1904.

Application filed October 12, 1903. Serial No. 176,636. (No model.)

To all whom it may concern:

Be it known that I, HENRY ROOT, a citizen of the United States, residing in the city and county of San Francisco, State of California, have invented certain new and useful Improvements in Fire-Barrier Walls, Partitions, and the Like; and I do hereby declare the following to be a full, clear, and exact description of the same.

My invention relates to fire-barriers, whether in the form of walls, ceilings, and partitions of houses and buildings generally or in any form or structure where a barrier is needed to prevent the fire from communicating to other parts.

The object of my invention is to incorporate the non-inflammable material in the most efficient manner, while preserving the simplicity of the structure, the other elements of which remain the same as are usually employed in walls, partitions, &c.

To this end my invention consists in the novel construction and arrangement of parts, which I shall now fully describe by reference to the accompanying drawings, in which—

Figure 1 is a broken perspective showing my invention applied to an outer wall, the filling being omitted. Fig. 2 is a cross-sectional elevation of same with the filling in place. Fig. 3 is a horizontal section of same. Fig. 4 is a cross-sectional elevation showing my invention applied to a partition. Fig. 5 is a vertical cross-sectional view of same applied to a ceiling. Fig. 6 is a front view of a stud, showing a spacer applied thereto. Fig. 7 is a perspective view of a spacer.

A represents the studs.

B represents the metallic spacers. These may be of any shape or form as far as their mere function as spacers is concerned. Their best form, however, for reasons which I shall hereinafter give, is that here shown, Figs. 1, 6, and 7—namely, an "angled" or **V** shape—the spread of the arms being about equal to the face of the stud to which they are applied and the width of the metal being that of the space desired. These spacers B are set edgewise to the face of the studs, with their apex line downwardly, Figs. 1 and 6, so that their wide or open bases are presented in the direction from which the filling is inserted—namely, from above. They may be set on one face only of the stud, if desired, which in the case of an outer wall would be the outer face of said studs; but I prefer to set them on both the outer and the inner faces of said studs, as I have shown. A good way to fix them to the studs is to hang them between nails *b* driven into said studs, and a third nail *b'* may be driven in the angle, as shown in Figs. 3, 4, 5, and 6, to steady the spacer, if desired. The spacers may be set to each stud at intervals and in proper numbers, as experience may dictate.

To the exposed edges of the spacers are applied the strips C, parallel with the studs, and said strips are secured to the studs and bear tightly against the spacers by means of long nails *c* driven through them and passing between the arms of the spacers into the studs.

In Figs. 1, 2, and 3 the outer sheathing is composed of the boards D, nailed to outer strips C, and the inner sheathing comprises laths E, secured to the inner strips C and plaster E' or other like finish. In the entire space inclosed by the two sheathings is placed a filling F of some non-inflammable material, a good material being coal-ashes concrete, composed of coal-ashes, lime, and cement. This filling occupies the entire inclosed space and embeds the studs and the spacers, as will be seen in Fig. 3. In said figure, however, for the sake of clearness I have not shown the filling in the space between the spacer-arms, though in practice it will be readily understood the filling will occupy such space.

In Fig. 4, the structure being a partition, both faces are composed of the lath-and-plaster sheathing E E'.

In Fig. 5, which represents a ceiling, the spacers B are disposed with their bases parallel with the joists A' in order to present said bases to the direction from which the filling is inserted, which in the case of the ceiling must be edgewise. In this arrangement no securing-nails are required, as the spacers are simply slipped into place between the joists and the strips C; but such nails may be used, as I have shown, if desired.

The effect of fire upon a barrier of this kind

can only be to burn away or char the sheathing and strips exposed to it. The fire will stop with the filling F. The particular shape of the spacers B, which I have here shown, is of decided advantage in several ways. They are stable by reason of their shape, as they bear extensively as to length upon the adjacent parts, thus furnishing in addition a firm bearing for said parts. They are easily applied, are inexpensive, strong, and durable. Finally they provide by their shape for the easy and complete insertion of the filling, which reaches every part of the stud and strips and embeds the spacers, leaving no unfilled spots, such as would result from transversely-disposed straight spacers or T-shaped ones.

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

1. A fire-barrier structure comprising studs, metallic spacers applied thereto, strips applied to the spacers, sheathings applied to the strips, and a filling of non-inflammable material occupying the space between the sheathings, and embedding the studs, strips and spacers.

2. A fire-barrier structure comprising studs, inner and outer sheathings, metallic V-shaped spacers applied edgwise between and separating the sheathings from the studs, and a filling of non-inflammable material occupying the space between the sheathings, and embedding the studs and spacers.

3. A fire-barrier structure comprising studs, metallic V-shaped spacers applied edgewise between and separating the sheathings from the studs, said spacers being disposed with their open bases facing the direction from which the filling is inserted, and a filling of non-inflammable material occuping the space between the sheathings, and embedding the studs and spacers.

4. A fire-barrier structure comprising studs, metallic V-shaped spacers applied edgwise thereto, strips applied to the other edges of the spacers, sheathings applied to the strips, and a filling of non-inflammable material occupying the space between the sheathings, and embedding the studs, strips and spacers.

In witness whereof I have hereunto set my hand.

HENRY ROOT.

Witnesses:
WALTER F. VANE,
D. B. RICHARDS.