No. 696,503. Patented Apr. 1, 1902.

W. SEEFELS.

FIRE RESISTING STAIRCASE.

(Application filed Dec. 14, 1900.)

(No Model.)

Fig. 1

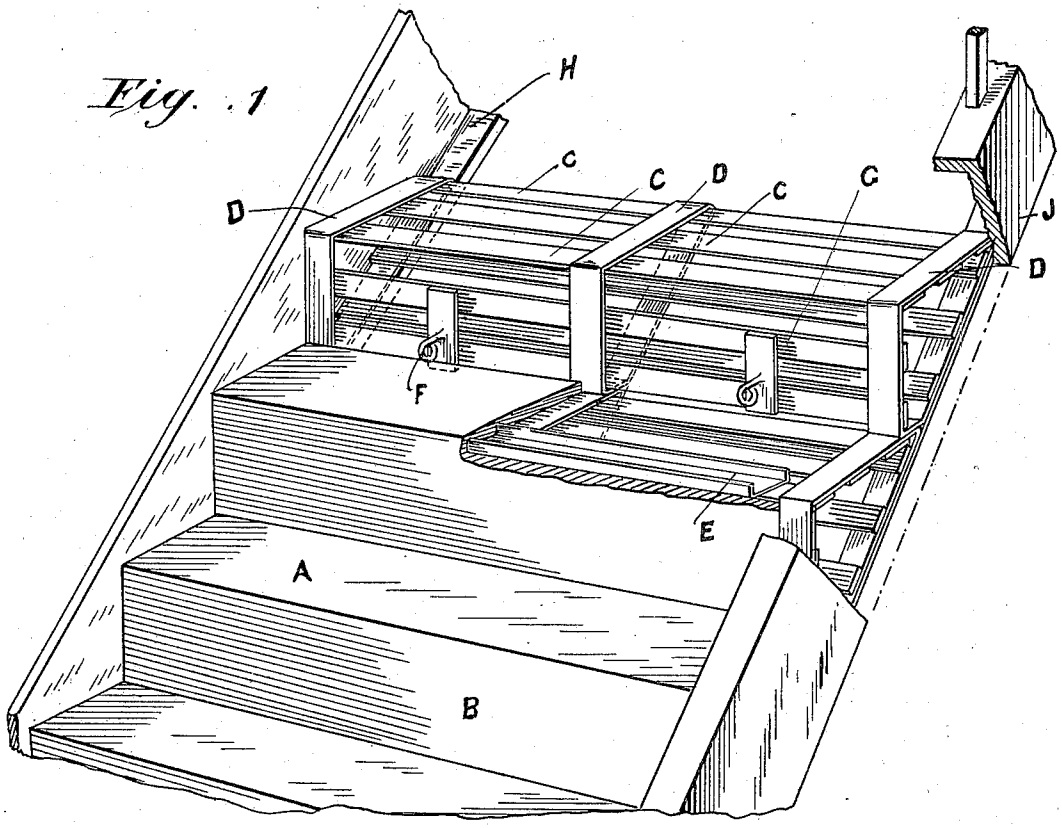
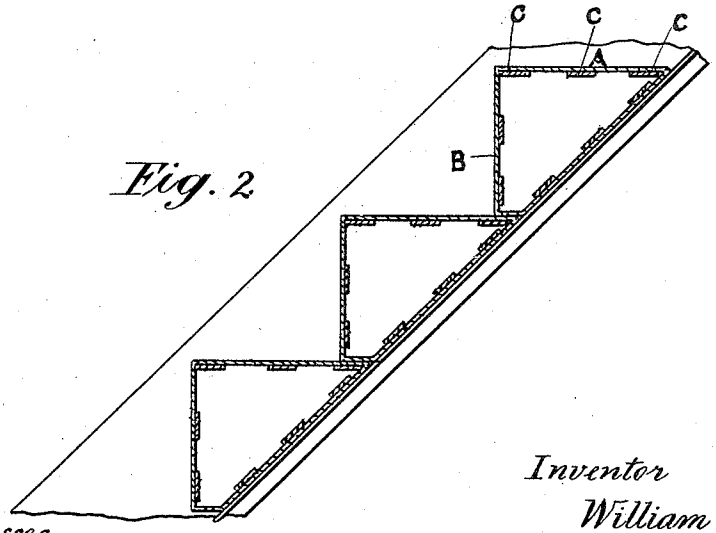


Fig. 2



Witnesses
Arthur W. Stanley
F. E. Johnson.

Inventor
William Seefels
By Stanley, Popp & Co.
Attorneys

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

UNITED STATES PATENT OFFICE.

WILLIAM SEEFELS, OF LONDON, ENGLAND.

FIRE-RESISTING STAIRCASE.

SPECIFICATION forming part of Letters Patent No. 696,503, dated April 1, 1902.

Application filed December 14, 1900. Serial No. 39,878. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM SEEFELS, a native of Germany, and a subject of the German Emperor, residing at 11 Tabernacle street, Finsbury, London, E. C., England, have invented certain new and useful Improvements in Fire-Resisting Staircases, of which the following is a specification.

My invention relates to improvements in the construction of fire-resisting staircases, its object being to enable the same to be made much more cheaply than heretofore and yet be more durable and efficient for their purpose and simpler in construction.

In carrying out my invention I prepare a number of surfaces or skeleton frames composed of metal lathing, preferably hoop-iron, suitably shaped to form the staircase, as hereinafter explained. Such surfaces or skeleton frames placed together in position form a framework or foundation upon or around which cement, plaster, or other composition is applied and adheres when set. Before the application of said composition, however, or in any case before the final coating of same has been applied, the surfaces or frames aforesaid are laid or fixed in the positions they are intended to occupy. Where hoop-iron or the like is employed as the material for making the surface or frame aforesaid it may be first cut into convenient lengths and a suitable number of the strips so formed fastened in parallel position to a common cross-strip retaining the members of the series a short distance apart in the form of open-ribbed work.

Reference will herein be made to the accompanying drawings, whereon—

Figure 1 is a perspective view of part of a staircase made in accordance with my present invention; Fig. 2, a vertical section through the center of same.

In carrying out my invention according to Figs. 1 and 2 I construct hollow skeleton frames, each in the general shape of an actual step, the section being a right-angled triangle, the tread A and riser B forming the right angle and the other side the ceiling or under surface of the stairs. The strips of lathing C C C are set parallel to the length of the step, and in each step there may be three strips for the tread, two for the riser, and three for the ceiling, and three cross-bands D D D, triangular in form, hold them all firmly together at the ends and at the center. The outside corner of the step may carry a piece of channel-iron E riveted thereto for the combined or alternative purpose of resisting any exceptionally heavy weight upon the step and containing lead or other substance which does not readily yield to attrition, or affording a key to the concrete at this edge, which is exposed to more risk of injury than other parts. I may supply means for holding the stair-rods by attaching eyelets F to short bars G, fixed upon the vertical riser portion B of the skeleton stairs. The latter may be held at their respective ends in an L-section girder H and a channel-iron girder J (usually termed "strings") parallel to each other and inclined at the proper angle, and after the several groups of lathing have been laid in position between the girders in the form of a staircase the concrete, plaster, or other covering is applied, the whole when set constituting a very strong, compact, and absolutely fireproof staircase.

It will be easily seen that staircases may be constructed in a volute or other required form according to my present invention without departing from its inherent character.

The lathing or ribbed work may be covered with a preliminary layer of cement or other composition, which will become hardened before being introduced into position, which may effect a saving of time in the drying of the final covering.

The flat under side or ceiling of the stairs may require to be secured down to the flanges of the supporting-girders.

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

In the construction of fire-resisting staircases, a hollow skeleton frame of the general shape of an individual step composed of strips of lathing arranged parallel to the length of the step, in combination with cross-bands holding them all firmly together at the ends and center, and a covering of concrete, plaster or other suitable material, the whole substantially as described with reference to Figs. 1 and 2.

In testimony that I claim the foregoing as my invention I have signed my name in presence of two subscribing witnesses.

WILLIAM SEEFELS.

Witnesses:
OTTO SOLDAN,
HERBERT OWEN HOWORTH.