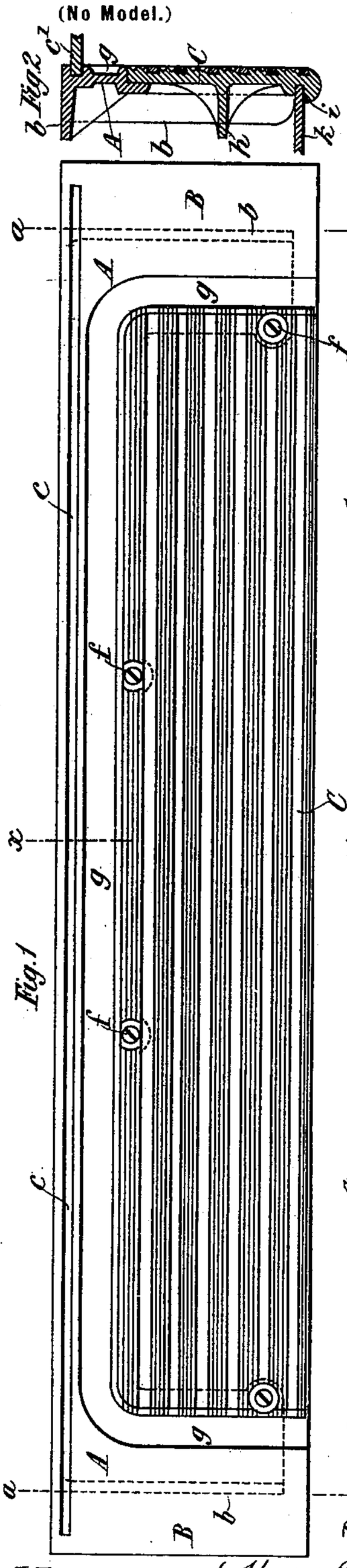
No. 666,868. Patented Jan. 29, 1901.

E. S. HIGGINS.

CONSTRUCTION OF STEPS FOR STAIRCASES.

(Application filed Nov. 2, 1900.)

(No Model.)



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UNITED STATES PATENT OFFICE.

EDWARD S. HIGGINS, OF LONDON, ENGLAND.

CONSTRUCTION OF STEPS FOR STAIRCASES.

SPECIFICATION forming part of Letters Patent No. 666,868, dated January 29, 1901.

Application filed November 2, 1900. Serial No. 35,201. (No model.)

To all whom it may concern:

Be it known that I, EDWARD SMITH HIGGINS, consulting engineer, of 11 Leigham Court road, West Streatham, London, England, have invented an Improved Construction of Steps for Staircases of All Kinds, of which the following is a specification.

This invention consists in a novel construction of steps for staircases, and is chiefly applicable to staircases having exceptionally heavy traffic; but the invention may also be employed for lighter or any staircase.

In the accompanying drawings, Figure 1 is a top plan view of the improved step. Fig. 2 is a cross-section of the same, taken on the line *x x*, Fig. 1. Fig. 3 is a front or edge view of the step with the riser removed. Fig. 4 is an under side plan of the frame, and Fig. 5 is an under side plan of the removable tread.

In carrying out the invention the step is formed in two parts, viz: first, a frame which can be built in between brick walls or between a brick wall and an iron or wood stringer or between wood or iron stringers, and, second, a tread which can when worn or become otherwise unfit for use be renewed and replaced with a new one without any danger to or interference of any kind with the walls or stringers (as the case may be) and at a nominal cost.

A is an open frame for carrying the tread or wearing portion provided at each end with an extension-piece B, which is to be built into the brick walls. When iron or wood stringers are to be used, these pieces B are not required. All around the frame on the under side is a rib or flange *b*, which serves to strengthen the frame, and the flanges at the ends of the frame may be bolted to the stringers when of wood or iron. This frame is also furnished on the top side with a groove *c* to receive the riser *c'* for the next step and also a rabbet or lip *d* to receive the removable tread C, the edges of which are coated with red lead or other material before the tread is placed in position in order to insure a perfectly water-tight joint or joints. This lip *d* has also four or more lugs *e*, to which the tread C is secured by bolts or screws when in position through the countersunk holes *f* in the tread C. The frame A is also provided with a channel or groove *g*, into which all rain or surface water can drain, thus providing for a comparatively dry step.

The treads which it is preferred to use for the steps made according to this invention are those produced in the manner described in the Letters Patent granted to Mason, Mason, and Codner, dated the 30th of August, 1892, No. 481,702, with the addition of a rib or flange *h* on the under side of a size sufficient to insure perfect safety and to prevent all danger of deflection; but any other suitable treads may be adapted to the step-frames A.

The tread C is formed with the usual nosing and on the under side with a groove *i* to receive the riser *k*.

In the figures the lines *a a* represent the lines of the brick walls or other portion of the building into which the steps are built, or it may be the stringer to which the frame is bolted.

In constructing steps according to this invention the treads C are not inserted in the frames A until the frames have been firmly secured in position.

Steps constructed as above described may be equally well employed for spiral or other light staircases as for heavy staircases.

What I claim is—

A step for staircases consisting of an oblong frame having an open front with a rabbeted edge and lugs and on the under side a flange, a removable metal tread to fit into the rabbet of the frame and having on its under side a strengthening-rib, and means for securing the tread to the frame all as herein shown and described.

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