

No. 699,993.

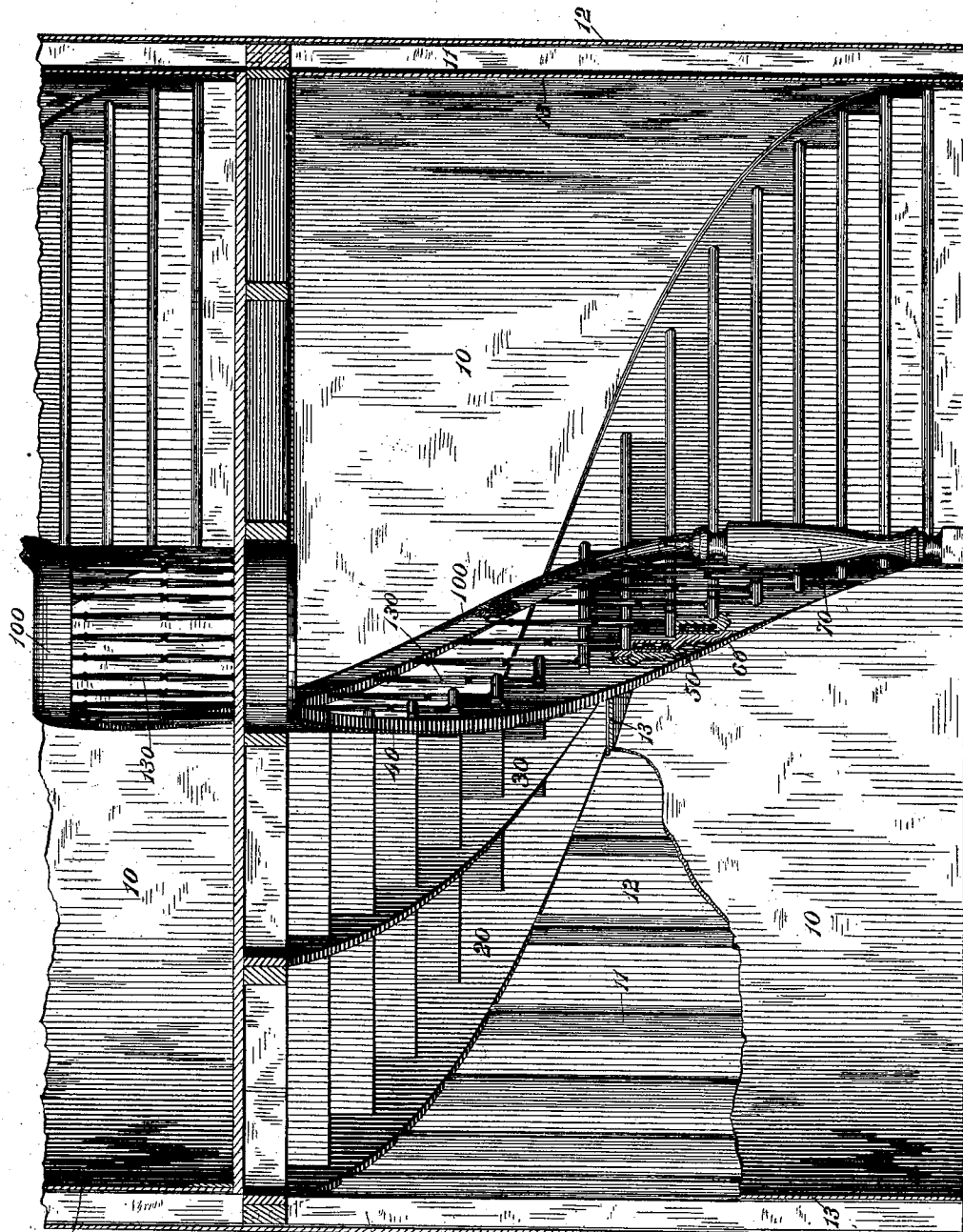
Patented May 13, 1902.

F. W. WEBER.
STAIRWAY.

(Application filed Feb. 25, 1902.)

(No Model.)

3 Sheets—Sheet 1.



WITNESSES

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Fig. 1.

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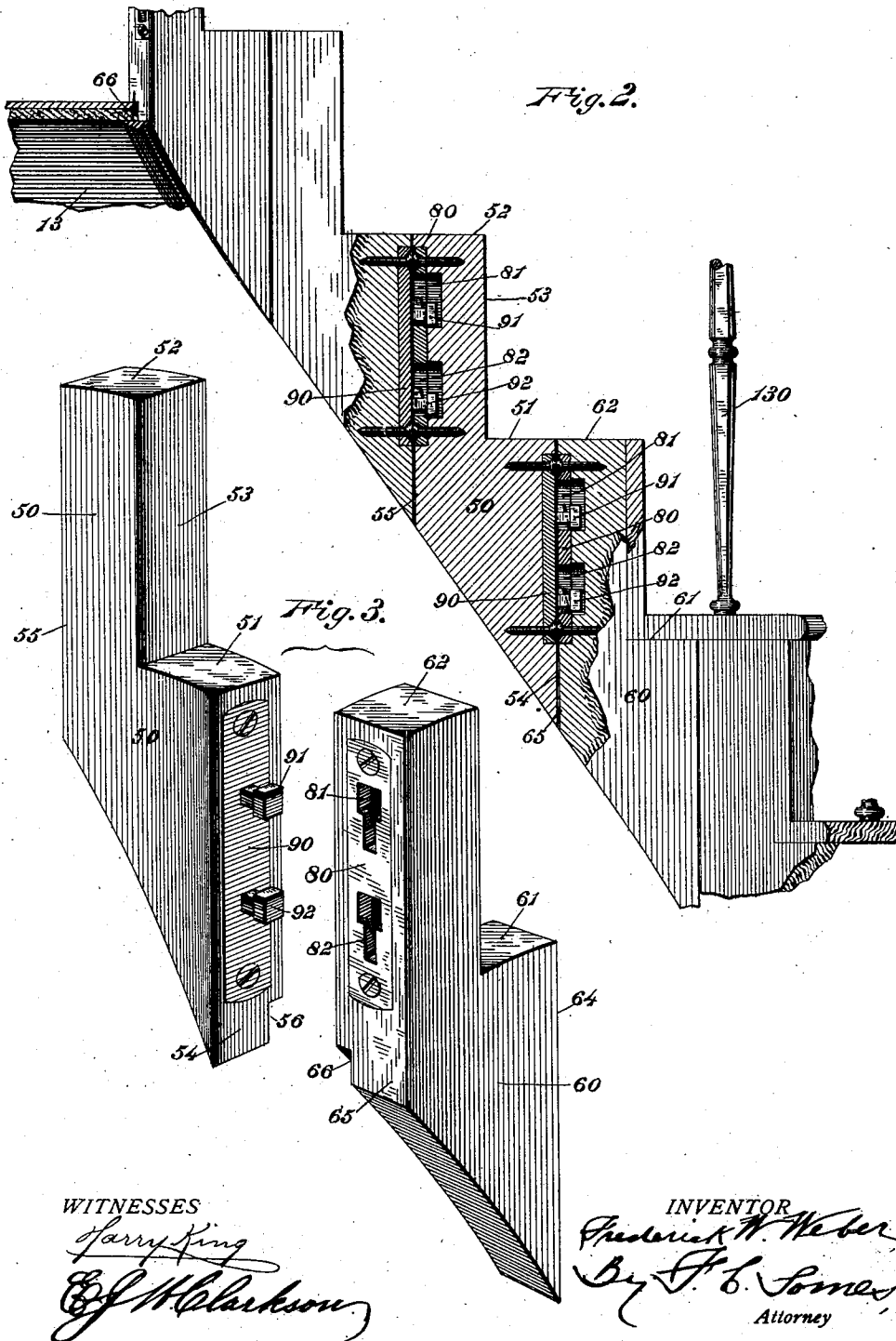
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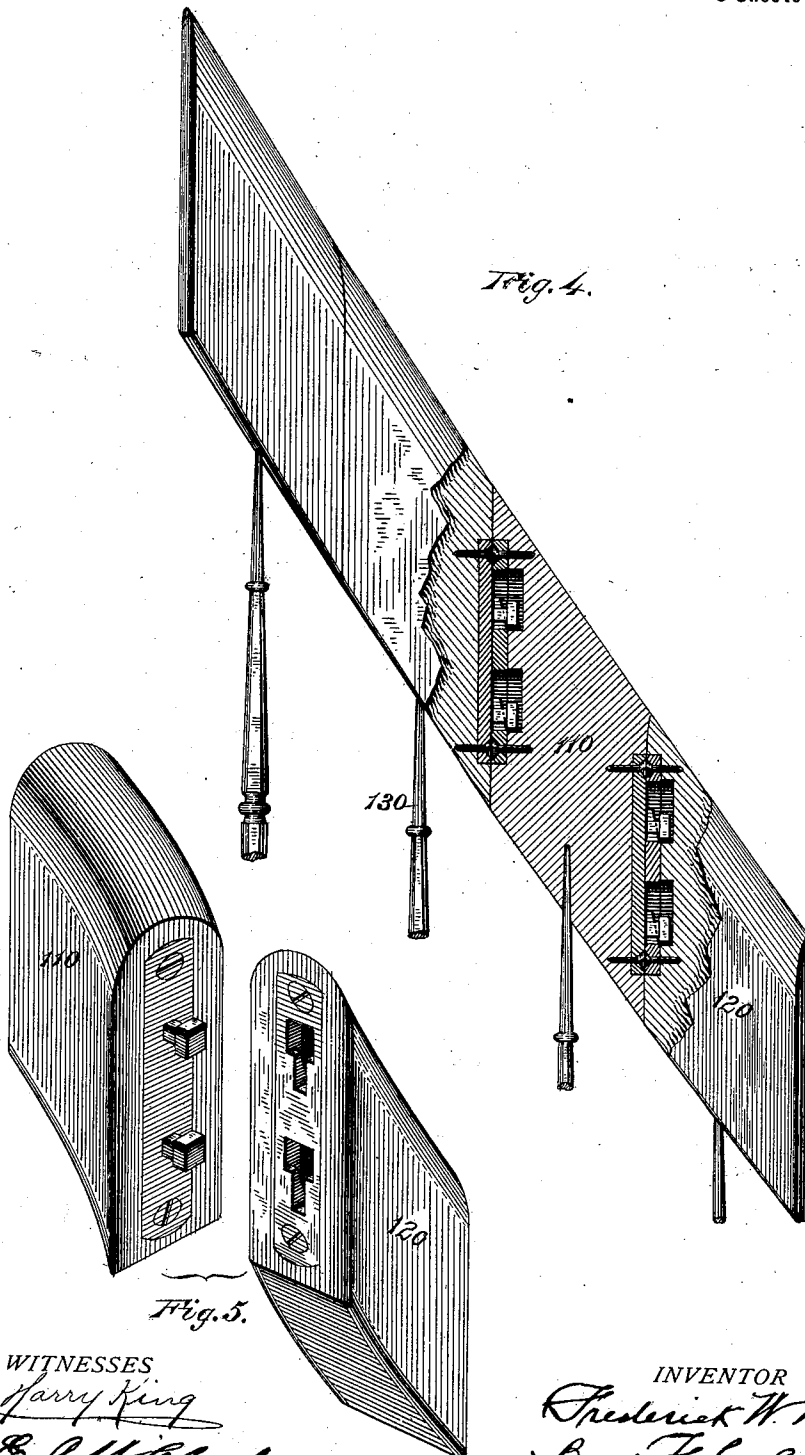
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UNITED STATES PATENT OFFICE.

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STAIRWAY.

SPECIFICATION forming part of Letters Patent No. 699,993, dated May 13, 1902.

Application filed February 25, 1902. Serial No. 95,578. (No model.)

To all whom it may concern:

Be it known that I, FREDERICK WILLIAM WEBER, a citizen of the United States of America, residing at Boalsburg, in the county of Center, in the State of Pennsylvania, have invented certain new and useful Improvements in Stairways, of which the following is a specification.

This invention relates to improvements in the construction of rails for the supporting-frame and balusters of stairways, and is especially adapted to stairways constructed in spiral form, whereby economy of space is secured.

The principal object of the invention is to provide for the string-boards or supporting-frame and balusters of stairways, sectional rails which can be produced as a factory product and easily set up where required by unskilled labor. When made of wood, short and inexpensive pieces of timber may be employed, such as parts from the branches and tops of trees, and in spiral stairways the expense of bending is avoided.

The invention consists of a sectional rail adapted to serve as a string-board or baluster, composed of machine-made detachable sections provided with fastening devices whereby they are locked together, substantially as hereinafter described.

Figure 1 of the accompanying drawings represents an elevation of a spiral stairway embodying this invention, including two landings, parts being broken out. Fig. 2 represents a fragment of the inner supporting-rail, on an enlarged scale, parts being broken away, showing the means for connecting the sections. Fig. 3 represents enlarged perspective views in different positions of two detachable sections of said supporting-rail. Fig. 4 represents an elevation of a fragment of the baluster-rail, on an enlarged scale, parts being broken out to show the locking devices. Fig. 5 represents enlarged perspective views in different positions of two sections of the baluster-rail detached.

The same reference-numbers are used in all the figures to designate the same parts.

The invention is illustrated as embodied in a stairway of spiral form, in which the inner

rail, string-board, or carriage of the supporting-frame and the baluster-rail are made in accordance with this invention. This spiral stairway may or may not be inclosed in a circular casing 10, comprising a studding 11, an outer covering 12, composed of lathing and plastering or other suitable material, and an inner covering 13 of like or different material. The stairway herein shown is provided with three supporting-rails or string-boards 20, 30, and 40, which act as supports for the treads and risers and to which the laths are secured. The outer string-board rail 20 and middle string-board rail 30 being of wide curvature, may, if desired, be of ordinary non-sectional construction, in which case the rail 20 may be bent and disposed in recesses in said studding, and the rail 30 may be fastened at its upper and lower ends to the beams of the floor above and below.

The inner supporting-rail 40, which is comparatively sharp in curvature, is composed of a series of interlocked sections, as 50 and 60, the lowest section being connected with the newel-post 70. The joints between the sections are preferably vertical and disposed apart about the distance of one step of the stairway, and each section supports the inner ends of parts of two adjacent treads and the inner end of the riser between them. Each section, as 50, for instance, is step-shaped along its upper edge and inclined along its lower edge and contains a horizontal seat 51 for one end of the rear portion of the tread of one step, a higher seat 52 for one end of the front portion of the tread of the next higher step, and a vertical seat 53 for the riser between said steps. Each section when designed to form a part of a spiral supporting-rail is arc-shaped to correspond with the circle described by said rail, and the vertical face 54 at the lower end of the section and the vertical face 55 at the upper end thereof, which meet the corresponding faces of adjacent sections, are slightly beveled laterally to correspond with the radius of said circle, and each face is provided with a part of a locking device to lock with another part on one of the adjacent sections. Each section is also provided along its lower inner edge

with a rabbet, as 66, to receive the lathing and plastering.

The locking device may be constructed separate from the sections, if desired, and it is herein shown as composed of a plate, as 80, provided with slots, as 81 and 82, disposed one above the other and having enlargements at their upper ends, and a plate 90, provided with headed studs, as 91 and 92, adapted to engage the slots of the plate 80. The plate 80 is attached to the upper end of one of the sections over a recess formed therein, and the plate 90 is attached to the lower end of the adjacent section, and the parts are so placed relatively that when the sections are put together the headed studs 91 and 92 enter the enlarged portions of the slots 81 and 82 and engage the plate 80 along the sides of the contracted portion of said slots when the sections are adjusted in position. When the shanks of the headed studs are at the lower ends of the slots, the horizontal upper seat, as 62, of the lower section is flush with the horizontal lower seat, as 51, of the upper adjacent section. The baluster 100 is also divided vertically or otherwise into a series of interlocked sections, as 110 and 120, each section preferably corresponding in length to the width of one stair and having one or more supports, as 130. Each section is provided at one end with a part of a locking device adapted to lock with a counterpart thereof in the end of the adjacent section. The drawings illustrate a locking device for a baluster-rail like that used for the string-board.

In a baluster-rail for a spiral stairway the sections are preferably curved to constitute arcs of a circle to correspond to the circle described by the baluster, and the ends of the sections are beveled to correspond with the radius of said circle.

The sections to constitute the supporting and baluster rails when made of wood may be made by machine in large quantities at woodworking-factories from small scraps or blocks of wood and supplied to the trade as articles of manufacture at low prices. They can be made with different arcs and bevels for different curvatures of spiral stairways and can be put together readily by unskilled labor to form stairways of any desired length. The sections may also be made of metal, and parts of the locking devices may be formed integral with adjacent sections. The lock-

ing devices are concealed in the joints of the sections.

I claim as my invention—

1. A sectional rail adapted to support or guard a stairway composed of a series of similar sections provided with locking devices whereby they are interlocked together.

2. A sectional rail for supporting or guarding a stairway composed of a series of similar are-shaped interlocked sections having beveled joints.

3. As an article of manufacture a section for a rail adapted to support or guard a stairway consisting of a block having beveled ends provided with parts of two locking devices.

4. As an article of manufacture a block adapted to constitute a section of a stairway string-board and provided at its opposite ends with parts of two locking devices, said block having horizontal seats in different planes and an intermediate vertical seat.

5. As an article of manufacture a block adapted to constitute a section of a stairway string-board and provided at its opposite ends with parts of two locking devices, said block being step-shaped along its upper edge and inclined along its lower edge, said lower edge being provided with a rabbet.

6. A sectional rail for a stairway comprising a series of similar sections provided with concealed locking devices whereby they are interlocked together.

7. As an article of manufacture a block adapted to constitute a section of a stairway string-board having a vertical face at its lower end and a vertical face at its upper end, one of said faces being provided with a plate having slots enlarged at their upper ends and the other of said faces being provided with a plate having headed studs.

8. As an article of manufacture a block adapted to constitute a section of a stairway-supporting rail, said block being step-shaped along its upper edge and inclined along its lower edge and provided with vertical faces at its opposite ends, one of said faces being provided with a plate having slots enlarged at their upper ends and the other of said faces being provided with a plate having headed studs.

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