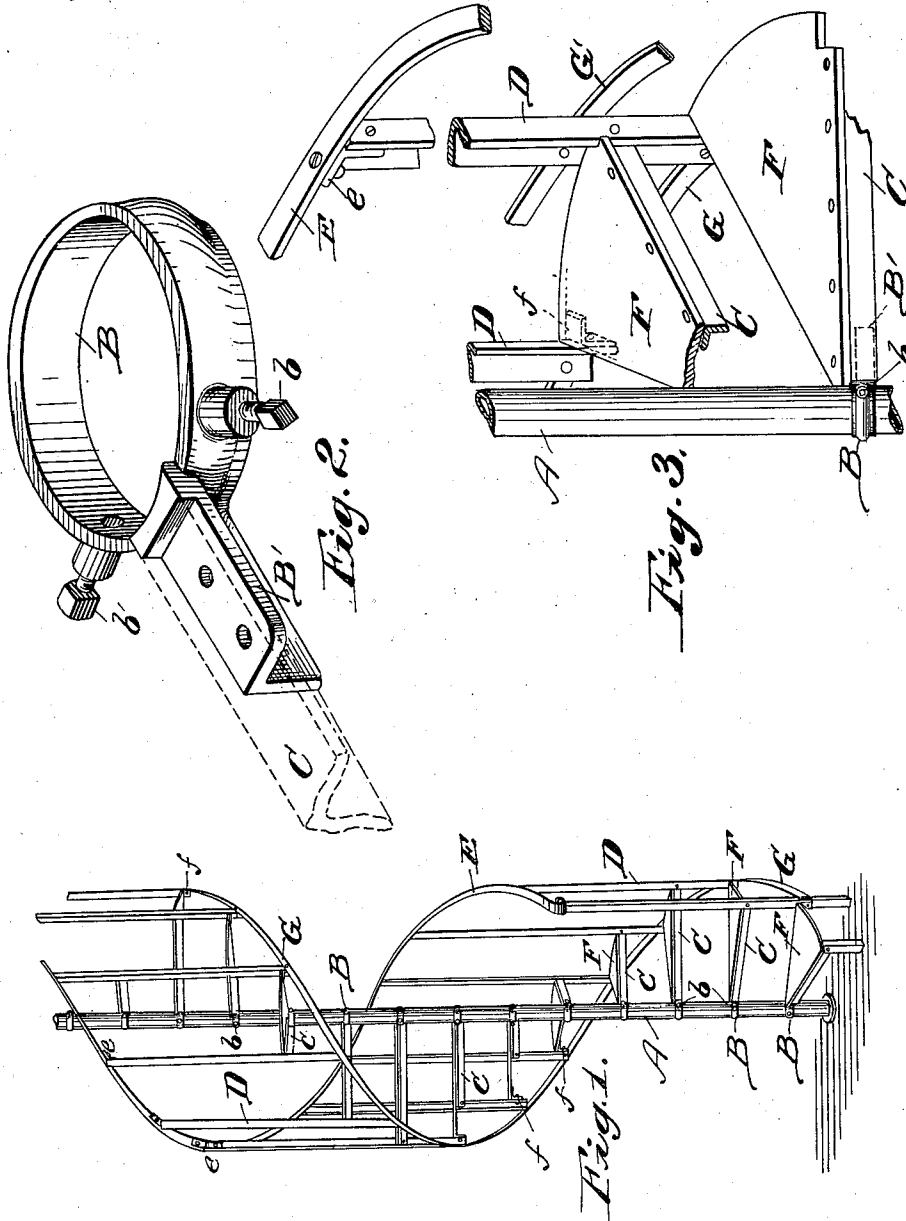


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 SPIRAL STAIRWAY.
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Patented July 2, 1912.



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SPIRAL STAIRWAY.

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To all whom it may concern:

Be it known that I, GEORGE H. HASKELL, citizen of the United States, residing at Detroit, county of Wayne, State of Michigan, have invented a certain new and useful Improvement in Spiral Stairways, and declare the following to be a full, clear, and exact description of the same, such as will enable others skilled in the art to which it pertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification.

My invention relates to an improvement in spiral stairways, shown in the accompanying drawings and more particularly pointed out in the following specification and claims.

The object of my invention is to provide means whereby a spiral stairway may be readily constructed of any desired diameter, height, and altitude of tread that may be necessary in order to adapt it for the particular location for which it is required.

A further object is to provide means whereby it may be constructed principally of commercial iron,—the treads being formed of sheet steel,—by means of which the weight and cost of manufacture is materially reduced over that of the usual cast iron construction, while the strength of the structure is enhanced.

A further object is to provide tread supporting bars preferably of angle or other commercial iron, adapted for engagement at one end to rings sleeved upon the central column, the other end of the bars being engaged to the pickets to which the hand rail is bolted, then upon cutting treads of sheet steel of the required length, a spiral stairway of any desired diameter and raise of tread may be constructed without the necessity of carrying in stock a great variety of steps of varying length and height of tread.

Other advantages and improvements will hereafter appear.

In the drawings accompanying this specification, forming part thereof: Figure 1 is a side elevation of a spiral stairway embodying my invention. Fig. 2 is a perspective view of one of the collars sleeved upon the central column, to which is engaged a tread supporting angle iron shown in dotted lines. Fig. 3 is an enlarged fragmentary view of the spiral stairway with parts broken away and in section, indicating the means em-

ployed to support the treads, hand rail, etc.;—showing also a modification, by the use of an additional strap brace engaging the uprights, whereby the structure is given greater stability.

Referring now to the letters of reference placed upon the drawings:—A denotes a central column or pipe secured to the floor and to the ceiling by suitable collars or other supporting means.

B, B, indicate a plurality of rings sleeved upon the column and adapted to be secured to the column by set screws *b* and *b'*, carried by the rings.

B' is a radial arm preferably integral with the ring.

C is a tread supporting angle iron bolted at one end to the radial arm B' of the rings B, and at the other end to the pickets or uprights D, to which the hand rail E is secured by an angle bracket *e* bolted thereto.

F, F, are treads bolted to the angle irons C and either directly to the pickets D, or to brackets *f* secured to the several uprights or pickets.

G is a strap brace secured to the lower end of the several pickets D, serving to stiffen the structure;—which may be further strengthened by the strap brace G' bolted to the several uprights between the tie brace G and the hand rail E, as indicated in Fig. 3.

Having denoted the several parts by reference letters, the construction of the stairway and method of assembling the parts will be readily understood.

The central column A is first set in position and secured in suitable floor and ceiling plates with a sufficient number of rings B sleeved thereon, to support the several treads F. The rings B are then properly spaced and their respective arms B' radially adjusted. To these several arms are secured the angle irons C bolted at their opposite ends to the several uprights D. The treads F are bolted to the angle irons C, the back of the treads being supported by the angle brackets *f*, or the treads may be secured directly to the pickets or uprights D to which the brackets are bolted, as previously explained.

It will be obvious that the angle iron C performs a plurality of functions; first it serves as a supporting member for the tread to which it is secured; second it ties the uprights to the central column thereby stiffen-

ing the structure, and third it provides an apron depending from the underside of the tread which materially improves the structural appearance of the stairway. While it is not essential, the added strap brace G' bolted to the uprights between the lower tie brace G and the hand rail materially stiffens the entire structure.

Having thus described my invention, what I claim is:—

1. A central column, a plurality of rings sleeved upon the column severally provided with a radial arm, means for securing the rings to the column, tread supporting rails bolted at one end to the radial arm of the several rings, pickets bolted to the other end of the tread supporting rails, a hand rail secured to the upper end of the pickets, a tie brace connecting and bolted to several pickets below the hand rail, and suitable treads bolted to the tread rails and to the pickets.

2. A central column, a plurality of rings sleeved upon the column severally provided with a radial arm, set screws carried by the rings to secure the latter to the column, a plurality of angle irons severally bolted at one end to the radial arms of the respective rings and at the other end to a plurality of pickets, the pickets, a hand rail carried by the pickets and engaged thereto, suitable tie brace irons bolted to the several pickets to

give strength and rigidity to the structure, and a plurality of treads secured to the angle irons and to the pickets.

3. A device of the class described comprising a central column, a plurality of rings mounted upon the column at spaced intervals, each ring being provided with a radial extension, a plurality of angle irons each secured at one end to the radial extension of one of the rings and disposed radially to the ring, a plurality of pickets each of which is secured to the free end of an angle iron, and a plurality of treads, each resting upon an angle iron and secured to a picket.

4. A device of the class described, comprising a central column, a plurality of rings mounted upon the central column, each ring having a radial arm, a plurality of pickets, a plurality of angle irons, each angle iron being secured at one end to a radial arm of a ring and at its other end to a picket intermediate the ends of the latter, angle brackets secured to the lower ends of the pickets, and treads supported upon and secured to the angle irons and the angle brackets.

In testimony whereof, I sign this specification in the presence of two witnesses.

GEORGE H. HASKELL.

Witnesses:

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