

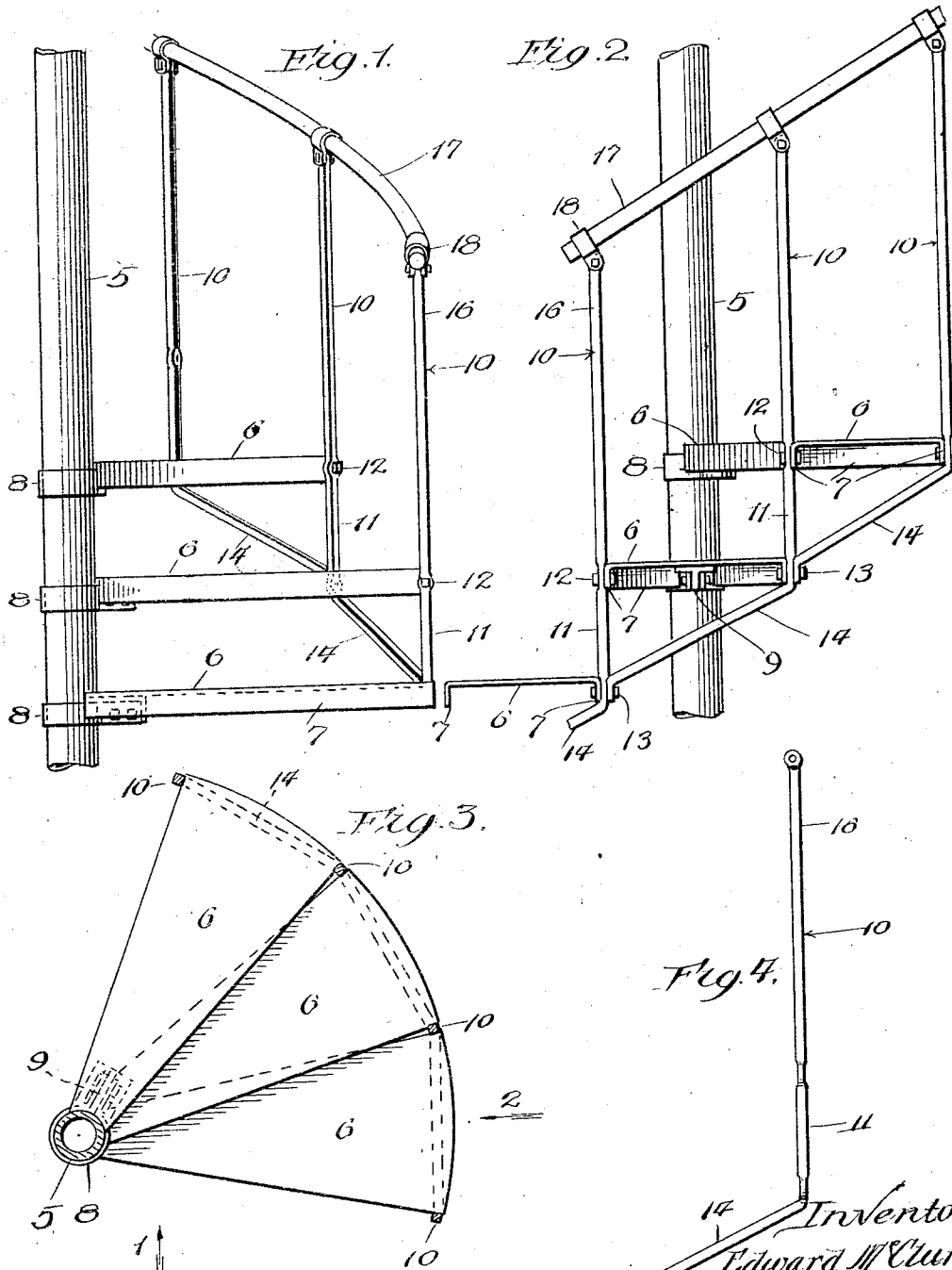
July 28, 1925.

1,547,254

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SPIRAL STAIRWAY

Filed Oct. 24, 1924



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# UNITED STATES PATENT OFFICE.

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## SPIRAL STAIRWAY.

Application filed October 24, 1924. Serial No. 745,567.

*To all whom it may concern:*

Be it known that I, EDWARD McCLOURE, a citizen of the United States, and a resident of Chicago, Cook County, and State of Illinois, have invented certain new and useful Improvements in Spiral Stairways, of which the following is declared to be a full, clear, and exact description.

This invention relates to spiral stairways and its principal object is to provide a spiral stairway construction in which sheet metal treads may be employed, whereby a lighter construction is obtained than with the usual cast iron treads. One object is to provide means for bracing the outer ends of the treads to thereby hold them in their horizontal position. Another object is to provide a spiral stairway that may be readily assembled, and in which any tread may be removed and replaced without disturbing the remaining treads. With these and other objects and advantages in view, this invention consists in the several novel features hereinafter fully set forth and claimed.

The invention is clearly illustrated in the accompanying drawing in which:

Fig. 1 is a front elevation of a portion of a spiral stairway embodying a simple form of the present invention; Fig. 2 is a side elevation thereof; Fig. 3 is a plan with the central column and railing posts shown in section, and Fig. 4 is a side elevation of one of the rail posts.

Referring to said drawing which illustrates one embodiment of the invention, the reference character 5 designates a column such as is usually used for the centre support of spiral stairways, said column is shown as of round form although this is immaterial. The treads 6, preferably formed of sheet metal, are secured to and supported by said column, and extend radially therefrom and around about the same in spiral formation. Each tread is approximately shaped in the form of a sector and its side edge portions are bent down to form stiffening and reinforcing flanges 7. Each tread is secured to the column by a clamp collar 8, which is passed about the column and bolted to one web of a T iron 9 which is secured to the lower side of the tread by bolts, rivets or the like. By drawing up tightly on the bolts of the clamp collar sufficient friction is created between the column and

clamp collar to firmly secure the tread to the column.

In order to support the outer ends of the treads, at the front and back portions thereof, I provide posts 10, the part 11 of each of which is secured to the front of one tread and to the back of the next tread therebelow by bolts, rivets or the like 12, 13. The lower end portion 14 of each post projects below the rear of the lower tread to which it is secured, and is bent forward at an oblique angle and runs to the back of the tread next below, to which it is also secured by the bolts, rivets or the like 17. It will therefore be seen that each post 10 is bolted to three treads, thus tying them together. Furthermore, that the part 11 of one post, a tread 6 and the oblique part 14 of another post form a triangular truss like structure of which the front portion is supported by an upright part 11 of a post, and the back portion is supported by the diagonal or oblique brace like part 14 of another post. Any tendency for the sheet metal tread to sag, either at the front or back is wholly eliminated.

The posts 10 are extended up above the parts 11 in the form of railing supporting posts 16 to which a hand rail 17 is secured, as for instance by clamp collars 18 bolted or otherwise fastened to the upper ends of the posts 10.

It will be observed that a rigid substantial structure is produced, which is light in weight. The treads are braced and tied together in such a manner that the whole structure is rigid throughout. In case it should become necessary to remove and replace any tread, the same may be readily done without disturbing the other treads. The stairway may be erected from the bottom up as the clamp collars may be slipped over the column at any place thereon.

More or less variation of the exact details of construction is possible without departing from the spirit of this invention; I desire, therefore, not to limit myself to the exact form of the construction shown and described, but intend, in the following claims, to point out all of the invention disclosed herein.

I claim as new, and desire to secure by Letters Patent:

1. A spiral stairway, comprising a central

column, light metal treads secured thereto and extending radially therefrom in spiral formation, and posts, one secured to the front of each tread, and to the backs of the two treads next below, the part of the post which is secured to said two last mentioned treads extending obliquely between said treads to form a brace therebetween.

2. A spiral stairway, comprising a central column, light metal treads secured thereto and extending radially therefrom in spiral formation, and posts, each having an upright portion secured to the front of one tread and to the back of the tread next below, and each post having an oblique brace portion below said upright portion, running to and secured to the back of the tread next below the lowermost above mentioned one.

3. A spiral stairway comprising a central column, sheet metal treads radiating therefrom and extending in spiral formation, clamp collars surrounding said column and secured to said treads, and posts, one secured to the front of each tread, and to the backs of the two treads next below, the part of the post which is secured to said two last mentioned treads extending obliquely between said treads to form a brace therebetween.

4. A spiral stairway comprising a central column, sheet metal treads radiating therefrom and extending in spiral formation, clamp collars surrounding said column and secured to said treads, and posts, each having an upright portion secured to the front of one tread and to the back of the tread next below, and each post having an oblique brace portion below said upright portion running to and secured to the back of the tread next below the lowermost above mentioned one.

5. A spiral stairway, comprising a central column, light metal treads secured thereto and extending radially therefrom in spiral formation, and posts, one secured to the front of each tread, and to the backs of the two treads next below, the part of the post which is secured to said two last mentioned treads extending obliquely between said treads to form a brace therebetween, and that part of each post which extends above the uppermost tread to which it is secured forming a hand rail supporting post.

6. A spiral stairway, comprising a central column, light metal treads secured thereto and extending radially therefrom in spiral formation, and posts, each having an upright portion secured to the front of one tread and to the back of the tread next below, and each post having an oblique brace portion below said upright portion, running to and secured to the back of the tread next below the lowermost above mentioned one, and that part of each post which extends above the uppermost tread to which it is secured forming a hand rail supporting post.

7. A spiral stairway comprising a central column, sheet metal treads radiating therefrom and extending in spiral formation, clamp collars surrounding said column and secured to said treads, and posts, one secured to the front of each tread, and to the backs of the two treads next below, the part of the post which is secured to said two last mentioned treads extending obliquely between said treads to form a brace therebetween, and that part of each post which extends above the uppermost tread to which it is secured forming a hand rail supporting post.

EDWARD McCLURE.