No. 861,026. PATENTED JULY 23, 1907.

A. G. GUSTAFSON.

STAIR.

APPLICATION FILED MAY 29, 1907.

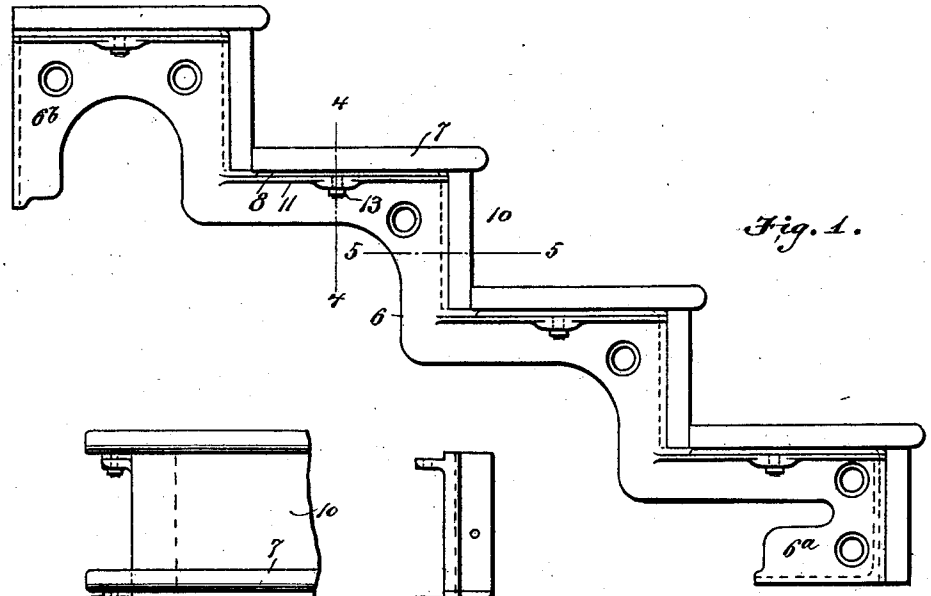


Fig. 1.

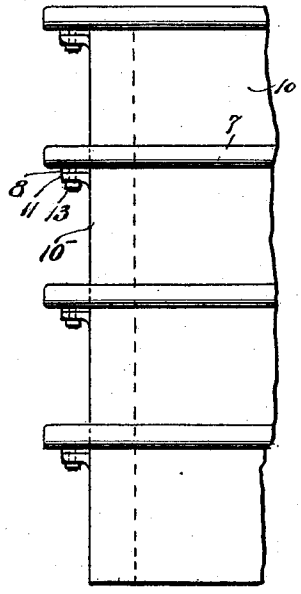


Fig. 2.

Fig. 3.

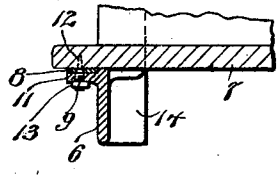


Fig. 4.

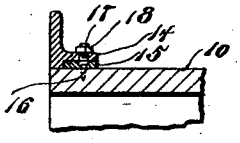


Fig. 5.

Andrew G. Gustafson
Inventor

Witnesses
M. A. Schmidt
Geo. E. Dew.

By Miles B. Stevens & Co.
Attorneys.

THE NORRIS PETERS CO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

ANDREW G. GUSTAFSON, OF AURORA, ILLINOIS.

STAIR.

No. 861,026. Specification of Letters Patent. Patented July 23, 1907.

Application filed May 29, 1907. Serial No. 376,283.

To all whom it may concern:

Be it known that I, ANDREW G. GUSTAFSON, a citizen of the United States, residing at Aurora, in the county of Kane and State of Illinois, have invented certain new and useful Improvements in Stairs, of which the following is a specification.

This invention relates to stairs, and especially to stairs having iron stringers, on which the treads and risers are supported.

The object of the invention is to improve the stringers and also the manner in which or the means by which the treads and risers are secured thereto.

A device is provided to prevent warping of the treads and risers, and the construction is such that they may be readily attached or applied to the stringers and held in position thereon.

The invention is illustrated in the accompanying drawings, in which

Figure 1 is a side elevation of the stair. Fig. 2 is a partial front elevation. Fig. 3 is a front view of one of the stringers. Fig. 4 is a section on the line 4—4 and Fig. 5 is a section on the line 5—5, of Fig. 1.

In the drawings, the treads are indicated at 7 and the risers at 10, these being preferably or conveniently made of wood. Each stringer consists of a casting, preferably integral, having a stepped web 6, and for the tread of each step there is a horizontal flange 11 on the outer side of the web. This flange is dropped or spaced slightly below the upper edge of the web, on which the tread rests. The spaces are for the purpose of receiving a metal strip 8 which is secured to the tread near the end thereof, as by screws 12, and is of proper shape to fill the space referred to and of proper thickness to bring its upper surface or edge flush with the top edge of the stringer. The strip 8 has a depending threaded lug 9 which extends through a hole in the flange 11 and receives a nut 13 under the same. This single stud and nut hold the tread at each end, and the tread is prevented from warping by the strip 8 which, as shown, extends across the under side thereof and is screwed at various points thereto. This avoids putting holes through the tread and also does not expose the heads of bolts or other attaching means on the top, but leaves the surface of the tread clear and unbroken. The web 6 also has vertical flanges 14 on the inner side thereof, and these flanges are set or spaced back a slight distance from the front edge of the stringer, and the risers 10 are secured to the flanges in a manner similar to that above described with respect to the treads. That is, a strip 15 is attached by screws 16 to the back of each end of the riser, and said strip has a rearwardly projecting lug or bolt 17 which extends through a hole in the flange 14 and receives a nut 18 behind the same.

The stringers are provided with suitable offsets 6^a and 6^b at opposite ends for the purpose of attaching the same to the porch, landing or other part of the building.

In assembling the steps, after the stringers are set in place, the treads and risers are provided with the plates 8 and 15 on the back thereof and may then be set in place by slipping the projecting threaded lugs through the holes made to receive them in the flanges of the stringers, and the nuts applied to fasten the parts together. This can be very quickly and readily done. When it becomes necessary to replace a tread it is an easy matter to take the same off by removing the nuts 13 and applying the end plates to a new tread. The prevention of warping, by means of the cross plates 8 at the ends, is an important and valuable feature, particularly for porch or other exposed steps.

I claim:

1. Stairs comprising stringers, and treads having cross plates fixed thereto under the ends thereof, the plates being attached to the stringers.

2. Stairs comprising stringers having flanges set back from the edge thereof, and treads having cross plates fixed thereto under the ends thereof and attached to the flanges, the treads resting on the edge of the stringers and the plates resting on the flanges.

3. Stairs having stringers with vertical flanges at each step, set back from the edge, and risers having cross plates fixed on the back thereof and fastened to the flanges.

4. Stairs having stringers with a horizontal flange at each step, spaced below the edge of the stringer, a tread resting on said edge, a cross plate secured to the under side of the tread, at each end thereof, and having a depending bolt extending through the flange, and a nut on the bolt under the flange.

In testimony whereof I affix my signature, in presence of two witnesses.

ANDREW G. GUSTAFSON.

Witnesses:
FRANK R. REID,
J. ASKELAND.