Dec. 28, 1954 F. C. SCHILL 2,697,931

CONCRETE STEP

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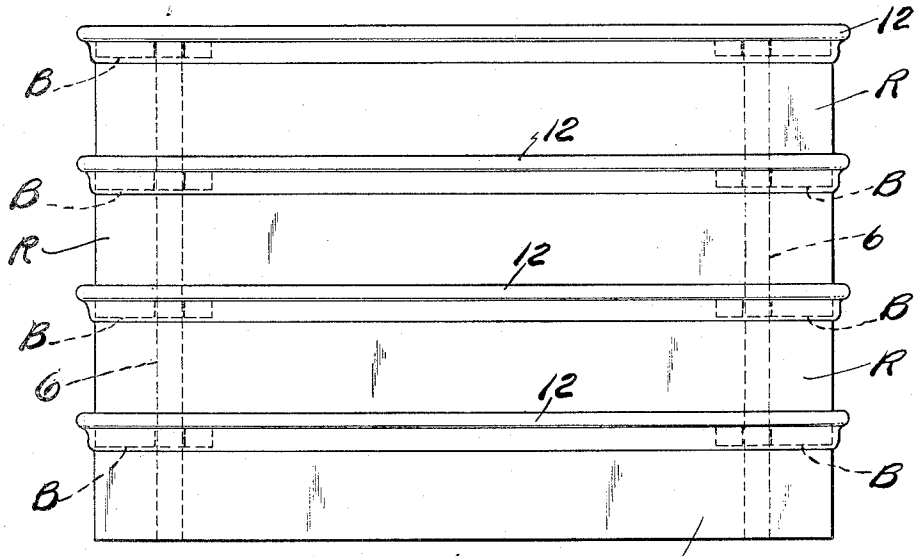


Fig. 1

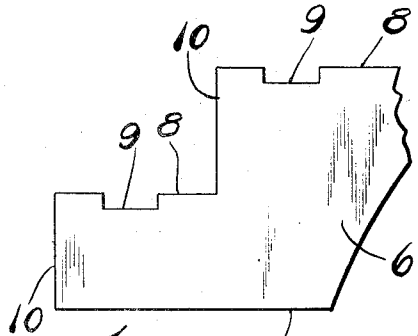


Fig. 6

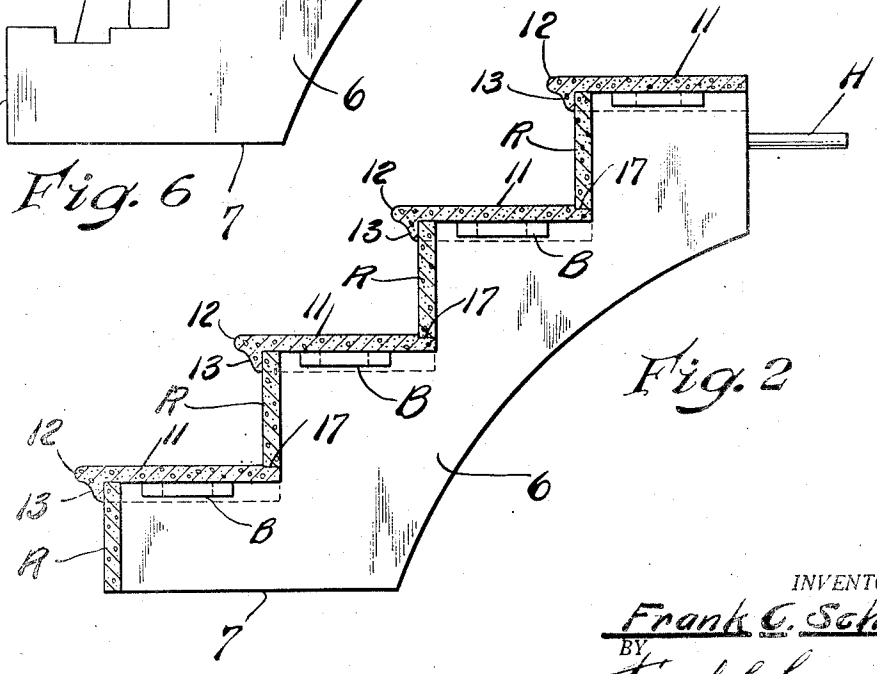


Fig. 2

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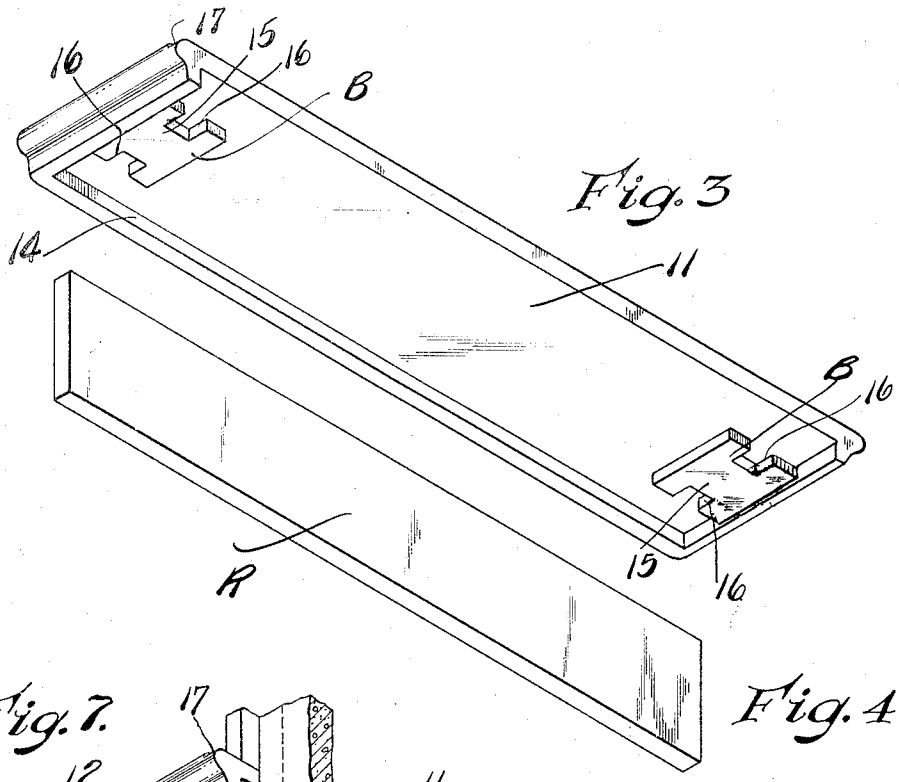


Fig. 3

Fig. 4

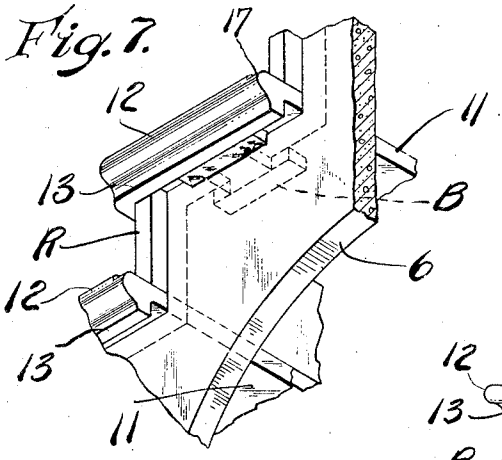


Fig. 7.

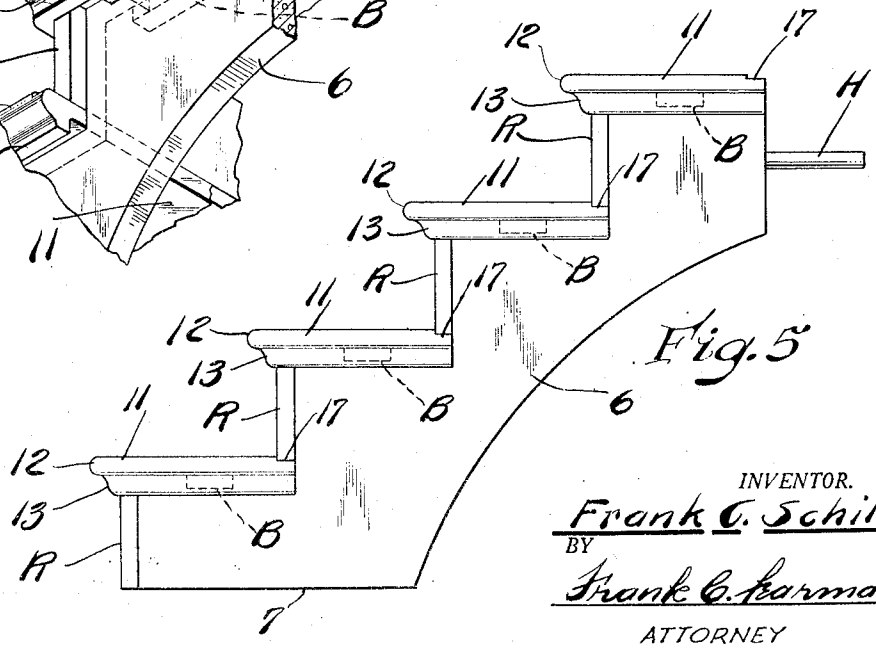


Fig. 5

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Patented Dec. 28, 1954

2,697,931

CONCRETE STEP

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Application October 14, 1950, Serial No. 190,169

1 Claim. (Cl. 72—96)

This invention relates to concrete steps of the type used in connection with porches, landings, and entrances to buildings of all kinds.

One of the prime objects of the invention is to design concrete steps in which the step slabs, risers, and side stringers may be individually pre-cast and then assembled and held in assembled relation without the use of pegs, keys or other securing means.

Another object is to design a stairway of simple, practical, and unique design in which the individual steps, risers, and side stringers interlock to form a firm, rigid structure.

A further object is to design a neat appearing reinforced concrete step in which the individual members are pre-cast so that they can be mass produced and carried in stock by the dealer, eliminating the necessity of constructing a form on the job, mixing the aggregate and waiting the necessary time for curing, and providing a much neater job which is ready for immediate use and at far less cost.

A further object still is to provide a concrete stair wherein the various parts are light in weight and very durable, so that they can be carried as stock articles, making it possible for a builder to purchase a complete stair of standard width, which can be transported to the job ready for assembly, and which requires no skilled labor or equipment to assemble.

With the above and other objects in view, the present invention consists in the combination and arrangement of parts, hereinafter more fully described, illustrated in the accompanying drawings, and more particularly pointed out in the appended claim, it being understood that changes may be made in the form, size, proportion, and minor details of construction, without departing from the spirit, or sacrificing any of the advantages of the invention.

In the drawings:

Fig. 1 is a front-elevational view showing my pre-cast stairway in assembled position.

Fig. 2 is a transverse sectional view thereof.

Fig. 3 is an isometric view showing the bottom face of one of the tread slabs.

Fig. 4 is an isometric view showing the inner face of one of the risers.

Fig. 5 is a side elevational view of an assembled stairway.

Fig. 6 is a fragmentary, side elevational view of one of the stringers.

Fig. 7 is a fragmentary, isometric view illustrating the manner in which the tread slabs are received on the stringers.

Referring now more specifically to the drawings in which I have shown the preferred embodiment of my invention, the end stringers of the stairs are indicated at **6** and are spaced-apart a distance sufficient to suit the width of stair desired.

The lower end of each stringer **6** is preferably flat as at **7**, and usually rests on a base (not shown), the upper end being connected to a porch or other landing by means of hollow rods H projecting from the ends of said stringers, each stringer being formed with stepped faces **8** having recesses **9** provided therein, and for a purpose to be presently described.

It will, of course, be understood that all of the members are suitably reinforced, including the risers R which are formed as clearly shown in Fig. 4 of the drawings, and these can be of the necessary length and height to span the stringers and bear against the face **10** of the stringer **6**.

The tread slabs **11** are formed as clearly shown in Fig. 3 of the drawings, the front edge and ends having a rounded nose **12** terminating in a depending beaded rib **13**, the inner edge of the bead forming a square shoulder **14** against which the face section of the riser R is disposed with the ends butting against the end beads, thus holding the riser in position, eliminating water seeping into the joint and providing a neat finish for the tread. H-shaped bosses B are cast on the lower face of the tread slab **11**, the intermediate section **15** of each boss being accommodated in the recess **9** provided in the stepped sections **8** of the stringers, with the laterally projecting sections **16** of the bosses bearing against the outer faces of said stringers, thus spacing and locking the risers, treads and stringers in assembled relation.

A recess or rabbet **17** is formed on the rear upper face of the tread **11** and is of a width to accommodate the lower edge of the riser R, and a coating of mastic or other water-proofing material (not shown) can be provided in said recess to form a tight joint thereat and exclude moisture and water.

This method of interlocking the various sections forms a rigid, substantial structure that can be easily and quickly assembled by inexperienced workmen; the sections are relatively light in weight and can be carried in stock, any number of steps can be used to suit the job, and the various members can be individually handled by a single workman.

From the foregoing description, it will be obvious that I have perfected a very simple, practical and inexpensive stair construction and arrangement.

What I claim is:

A precast concrete stair construction comprising spaced, parallel, upwardly and rearwardly sloped stringers; horizontally disposed stepped surfaces formed on the upper edges of said stringers; each of said stepped surfaces having a recess formed therein, said recess extending longitudinally of said stepped surface and being disposed intermediate the ends of said surface; tread slabs spanning said stringers and projecting beyond the edges of said stringers, each of said tread slabs having depending ribs at the ends thereof and along one side thereof, each of said tread slabs having a longitudinally extending rabbet along the other side on the top surface thereof; each of said tread slabs having an H-shaped boss on the underside thereof adjacent each end thereof, each of said H-shaped bosses comprising spaced parallel legs joined by a connecting member whose width corresponds substantially to the length of said recess and which is received in said recess, the outermost legs of said H-shaped bosses having a width which corresponds substantially to the space between the outer edges of said stringers and the inner surfaces of the ribs at the ends of said tread slabs; and substantially vertically disposed risers, each of which is seated in said longitudinally disposed rabbet in one of said tread slabs and which extends upwardly behind the depending rib along the said one side of an adjacent tread slab and between the depending ribs at the ends of said adjacent tread slab.

References Cited in the file of this patent

UNITED STATES PATENTS

Number	Name	Date
1,475,777	Ballenger	Nov. 27, 1923
1,497,058	Barriball	June 10, 1924
1,861,751	Nicols	June 7, 1932
1,879,996	Sherwood	Sept. 27, 1932
2,515,823	Dettling	July 18, 1950