Nov. 8, 1955 J. H. SUMMERS 2,722,823

PRECAST CONCRETE STEP CONSTRUCTION

Filed March 29, 1952

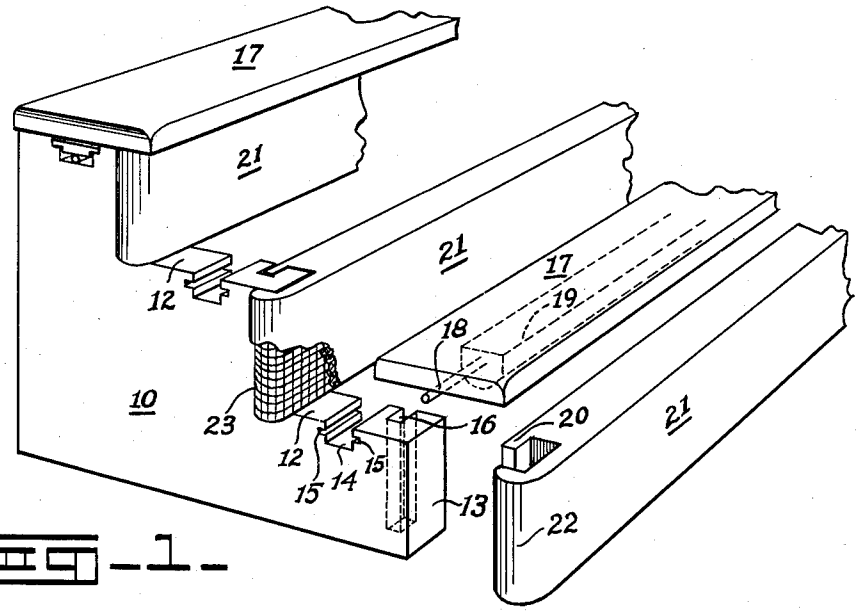


FIG. 1

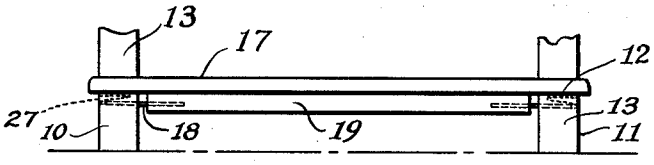


FIG. 2

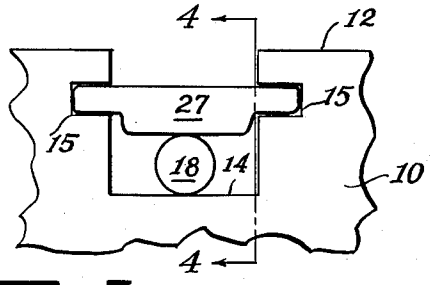


FIG. 3

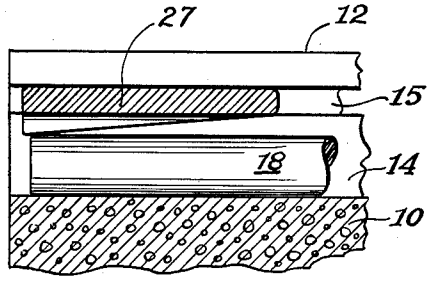


FIG. 4

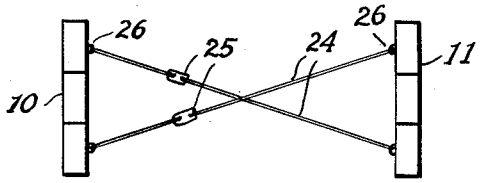


FIG. 5

INVENTOR.
James H. Summers.
BY
W. B. Harpman
ATTORNEY.

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PRECAST CONCRETE STEP CONSTRUCTION

James H. Summers, Youngstown, Ohio

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1 Claim. (Cl. 72—96)

This invention relates to steps and more particularly to precast concrete units for interlocking engagement in forming a step construction.

The principal object of the invention is the provision of a precast concrete step construction including a plurality of registering parts capable of being economically formed and easily assembled.

A further object of the invention is the provision of a precast concrete step construction in which the various portions space and brace one another to form a rigid assembly.

A still further object of the invention is the provision of a precast concrete step construction wherein each of the several precast parts are locked together in the final assembly.

A still further object of the invention is the provision of a precast concrete step construction in which the majority of the interengaging and locking portions of the parts are concealed in the final assembly.

The precast concrete step construction disclosed herein comprises an improvement in the art in that a well appearing, rigid step construction may be easily assembled from interengaging precast parts and which step construction, in assembled form, will closely resemble a unitary step construction and at the same time offer the advantages of economical construction and rapid assembly.

With the foregoing and other objects in view which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed, it being the intention to cover all changes and modifications of the example of the invention herein chosen for purposes of the disclosure, which do not constitute departures from the spirit and scope of the invention.

The invention is illustrated in the accompanying drawing, wherein:

Figure 1 is a perspective view of several precast portions of a step construction in partially assembled relation and with parts broken away.

Figure 2 is a detail of one of the tread portions illustrating its position and locking to the side sections of the step assembly.

Figure 3 is a fragmentary detail on an enlarged scale showing the means locking the tread portion to the side portion.

Figure 4 is a cross section taken on line 4—4 of Figure 3.

Figure 5 is a top plan of the side sections of the step assembly showing tensioning means therebetween.

By referring to the drawings and Figures 1 and 2 in particular it will be seen that the precast concrete step construction includes a pair of spaced side sections **10** and **11**, respectively, each of which has a plurality of horizontal and vertical surfaces forming its uppermost and foremost edge in a step pattern, the horizontal portions being generally indicated by the numeral **12** and the vertical portions being generally indicated by the

numeral **13**. The vertical front surfaces **13** are flat and unbroken and the horizontal top surfaces **12** are provided with transversely extending notches **14**, each of which is in turn formed with oppositely disposed undercut grooves **15** on their vertical side sections.

The inner surfaces of the side sections **10** are also provided with vertically extending grooves **16**. The transversely extending notches **14** provide for the reception of portions of treads **17** and specifically rod-like extensions **18** which extend longitudinally from a depending elongated rib **19** on the bottom of each of the treads **17**. The rod-like extensions **18** are preferably metal and form part of the reinforcing material included in each of the tread portions **17**. The side sections **10** may also be reinforced with suitable metal mesh if desired.

The vertically extending grooves **16** on the inner sides of each of the side sections **10** and **11** are adapted to receive tongues **20** forming part of the end formation of each of a plurality of risers **21** which, as best illustrated in Figure 1 of the drawings, are formed with curving end portions which overlie the corners of the sides **10** and the front vertical surfaces **13** thereof. The risers **21** as well as their curving end sections **22** are reinforced with metal mesh **23**, as shown in the middle riser of Figure 1, and it will be observed that the risers **21** in position are so formed that they engage the inner, outer and front surfaces of the side sections **10**.

In assembling the step construction, the side sections **10** are positioned in spaced relation, as shown in Figures 2 and 5 and secured to one another by tensioning rods **24** which include turnbuckles **25** and the ends of which engage eyelets **26** cast into the sides **10** and **11**. The sides are preferably assembled on a suitable base which has been prepared for the steps and the risers **21** are then installed by sliding the same downwardly so that the tongues **20** and the curving end sections **22** engage the vertical grooves **16** and the outer and front portions of the side sections, as heretofore described.

When the risers **21** are installed, the tread portions **17** are then positioned thereover, as shown in the uppermost part of Figure 1, with the rod-like extensions **18** lying in the notches **14**. Keys **27** are then inserted with their edge portions engaging the oppositely disposed undercut grooves **15**. It will be observed by referring to Figures 2, 3 and 4 of the drawings that the lower surfaces of the keys **27** are tapered so that a firm engagement is effected between the keys **27** and the rods **18** thus holding the treads **17** in locked position with respect to the sides **10** and **11** and the risers **21**.

Those skilled in the art will recognize that suitable mortar is desirably positioned in the notches **14** prior to and after the hereinbefore described assembly procedure so that upon setting the construction becomes substantially integral. In this respect the ends of the keys **27** may be covered and the surface of the mortar finished to correspond with the surface plane of the sides **10** and **11**, thereby completely concealing the only means of assembly visible from the exterior of the precast step construction.

It will thus be seen that the several objects of the invention have been met by the precast concrete step construction disclosed herein.

Having thus described my invention, what I claim is:

In a precast step construction including a pair of spaced side sections having flat outer and inner sides and having their front and top surfaces formed in a plurality of steps, the flat inner sides of each of said side sections having vertical channels formed therein adjacent each of the front surfaces thereof, and each of the top surfaces thereof having transverse notches therein, the opposite sides of which are undercut, a plurality of risers, the ends of which are bifurcated to form extending sections, one

of each of said extending sections being longer than the other and having an inturned flange thereon, said extending end sections being respectively engaged in said vertical channels and overlying said front and outer side surfaces of said side sections, a plurality of treads, each of which has a depending longitudinally extending central section with rod-like extensions thereon, said rod-like extensions engaged in said transverse notches and means in said notches engaged in said undercuts to retain said rod-like extensions therein.

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