Dec. 11, 1934. J. J. SCHEEL 1,984,087

MOLD FOR ARTIFICIAL STONE STEPS

Filed Sept. 9, 1931

Fig. 1.

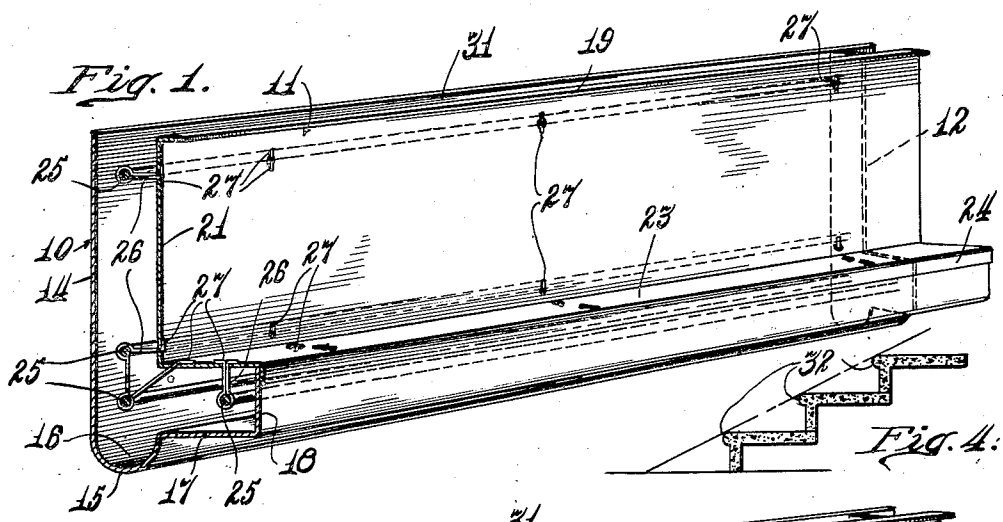


Fig. 4.

Fig. 2.

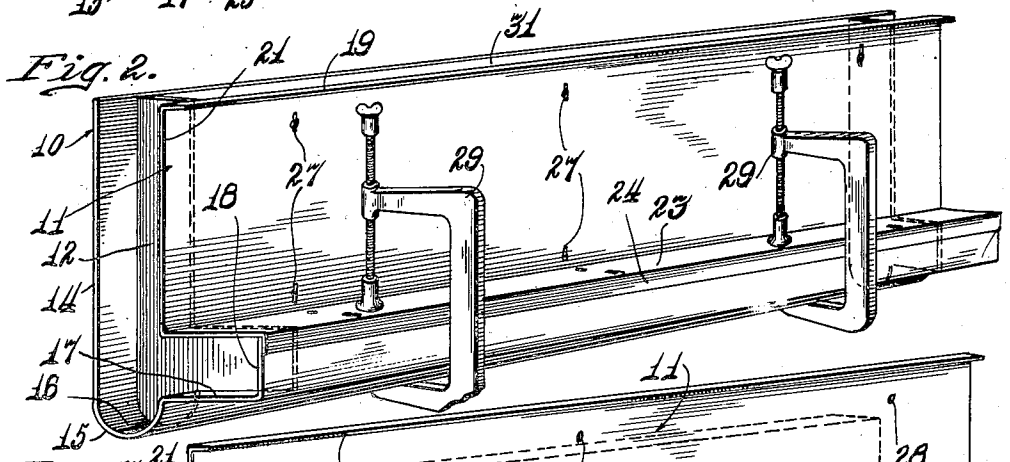
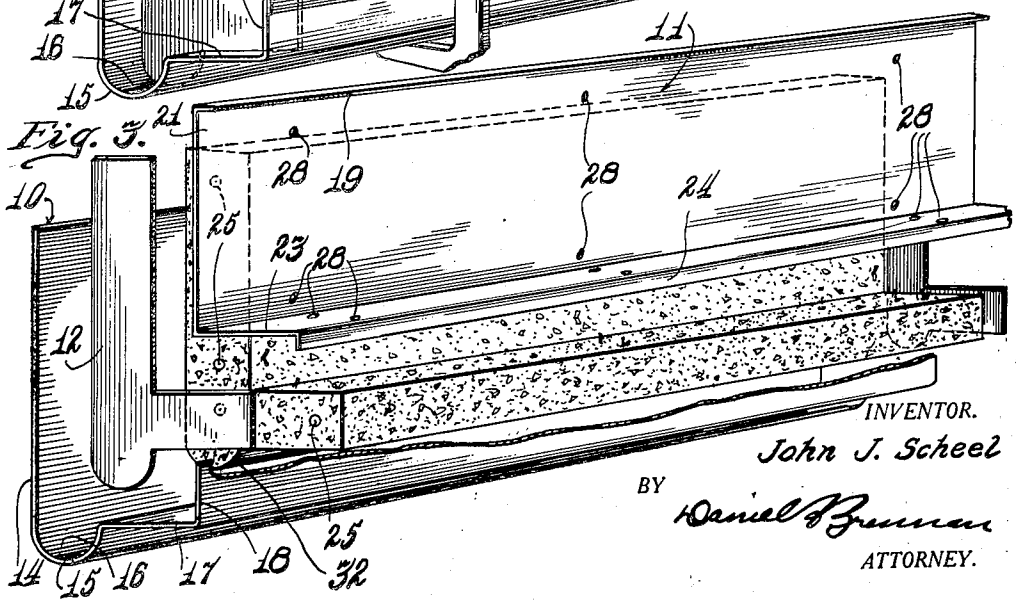


Fig. 3.



INVENTOR.
John J. Scheel
BY
Daniel A. Brennan
ATTORNEY.

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MOLD FOR ARTIFICIAL STONE STEPS

John J. Scheel, Detroit, Mich.

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2 Claims. (Cl. 25—121)

The invention relates, generally, to improvements in artificial stone steps, and particularly to the manufacture of reinforced concrete steps having the tread and riser formed integral.

An object of the invention resides in the improved method of manufacturing an artificial stone step from plastic or slushy concrete to provide a high grade concrete step.

Another object is to provide an improved method of manufacturing artificial stone steps by which the concrete, before setting, is puddled or vibrated by suitable means to remove all voids of air and water and produce a solid, dense mass of high grade concrete.

Another object is to provide a separable mold for reinforced concrete steps which is simple in construction, easy to assemble and disassemble, and inexpensive to manufacture.

Another object is to provide an improved mold for forming integrally and reinforcing the component parts of an artificial stone step; namely, the tread and the riser.

Another object is to provide an improved mold of the character referred to with removable means to retain the reinforcing means or elements in place during the molding process.

The foregoing and such other objects of the invention as will appear hereinafter as the description proceeds, will be more readily understood from a perusal of the following specification, reference being had to the accompanying drawing, in which:

Fig. 1 is a perspective view of the improved mold partially assembled.

Fig. 2 is a perspective view of the mold assembled and ready for pouring.

Fig. 3 is a perspective view illustrating the improved step and various parts of the mold disassembled.

Fig. 4 is a diagrammatic view showing steps formed by the improved method.

At present, cut or cast stone slabs are being used in the construction of steps, the tread and riser being of separate pieces and being supported only on their extreme ends. Steps constructed in this manner are unsatisfactory since they do not withstand the effects of the elements nor hard usage. Frost often forms in the joints between the treads and the risers resulting in an uneven expansion of the separate parts which oftentimes causes cracking and even crumbling of the slabs. Such steps when subjected to a heavy load often crack readily.

The improved step is of unitary construction, the tread and the riser of each step being formed integral substantially L-shaped in cross section. The improved step is also provided with reinforcing elements extending the entire length thereof. The artificial step preferably is formed in an improved mold of the type illustrated in the accompanying drawing, consisting of outer and inner shells 10 and 11, respectively, and removable end walls 12.

The outer shell 10, preferably a rectangular sheet of steel or nickel steel, has a flat substantially vertical portion 14 and a smooth arch 15 on its lower end to provide a longitudinal recess 16. The metal extending beyond the arch is turned horizontally at right angles to the portion 14, as at 17, and then upwardly along its marginal edge substantially vertical as at 18. The inner shell 11, also formed of sheet metal, has one marginal longitudinal edge 19 turned at right angles to the intermediate portion 21 and its opposite marginal edge is turned at right angles to the portion 21, providing portion 23, and then downwardly to provide a flange 24 which is adapted to engage over the flange 17 on the outer shell when the two shells are assembled to form the mold.

Suitable reinforcing rods 25 are held rigidly upon the inner shell 11 by suitable wire clips 26 which embrace said rods and have their free ends 27 extending through openings 28 in the inner shell and are bent over to effect their retention therein. As shown in Fig. 1 the reinforcing rods 25 terminate short of the ends of the mold and the L-shaped end walls 12 are inserted into the mold, one from each end, to provide an enclosure for receiving the concrete. When the mold is thus assembled, clamps 29 are applied to hold the parts firmly in place.

The material, consisting of concrete in its plastic or slushy form, is poured into the open edge 31 of the mold and said material is puddled or vibrated with an electric vibrator or other similar device, before setting, to remove all of the air and water and leave a dense solid mass. After the concrete has set, the bent over ends 27 of the wire clips 26 are straightened and the clamps 29 are removed to permit removal of the shell 11. The wire clips are then clipped close to the surface of the concrete and the step is removed from the shell 10.

The improved unitary step, thus formed, is a truss which is not distorted or broken by tension being exerted at any one place. Frost or any other agent which breaks the ordinary slab step causes the improved step to raise or lower uniformly. The step also is smooth and straight

because it is made in metal forms which remain true if proper precautions are taken. Voiding of air and water from the concrete before it has set provides a high grade of concrete which is more water proof than the usual dry tamped or semi-plastic product.

The recess 16, formed by the curved bottom 15 of the shell 10, provides a bull-nose 32 on the step, thus giving the improved product the outward appearance of steps built up from separate slabs of cut or cast stone.

Although an exemplary form of the improved step and the method of making the same has been illustrated in the accompanying drawing and described in detail in the foregoing specification, it is to be understood that the steps may be satisfactorily formed in any practical mold of any suitable material, however, a sheet metal mold of the character shown and described is preferable since such a mold insures a smooth finish and proper alignment and uniformity of the steps.

I claim:

1. A mold of the character described including a substantially L-shaped outer shell having an outwardly curved longitudinal depression on one side adjacent the juncture of the L, an L-shaped inner shell adapted to be arranged over said outer shell, removable end walls arranged between said shells, said end walls spacing the shells apart, a longitudinal flange on one edge of the inner shell cooperating with and overlying a similar flange on the corresponding edge of the outer shell, and clamps embracing said shells adjacent the overlying flanges to secure the assembly together.

2. A mold of the character described including a substantially L-shaped outer shell having an outwardly curved longitudinal depression on one side adjacent the juncture of the L, an L-shaped inner shell adapted to be arranged over said outer shell, end walls arranged between said shells, said end walls spacing the shells apart, a longitudinal flange on one edge of the inner shell co-operating with and overlying a similar flange on the corresponding edge of the outer shell, and clamps embracing said shells adjacent the overlying flanges to secure the assembly together, the inner shell having a plurality of holes to receive straps for supporting reinforcing rods spaced between said shells.

JOHN J. SCHEEL.