Feb. 16, 1926. 1,573,280

F. E. SIMPSON

REENFORCED FLOORING CONSTRUCTION

Filed May 31, 1923

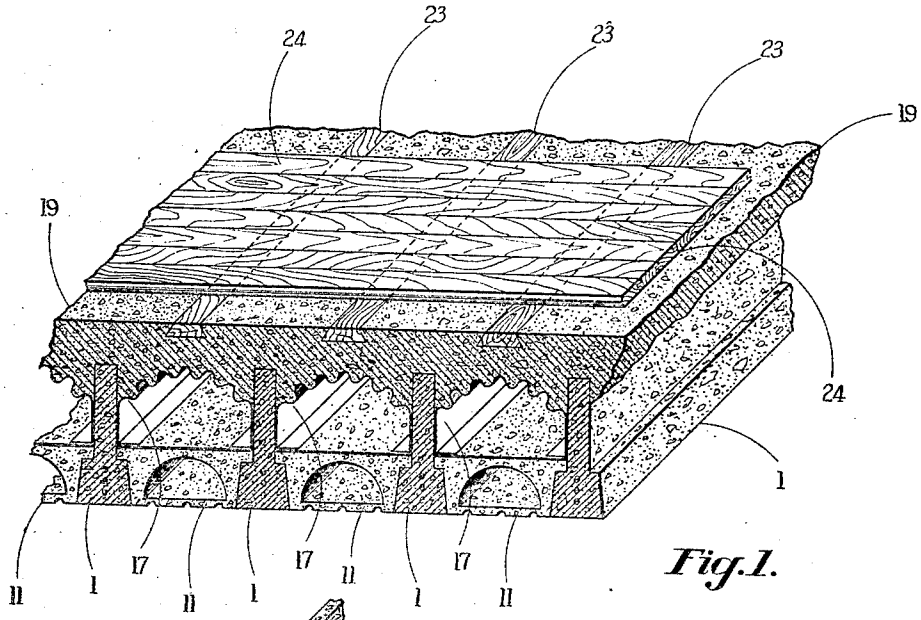


Fig. 1.

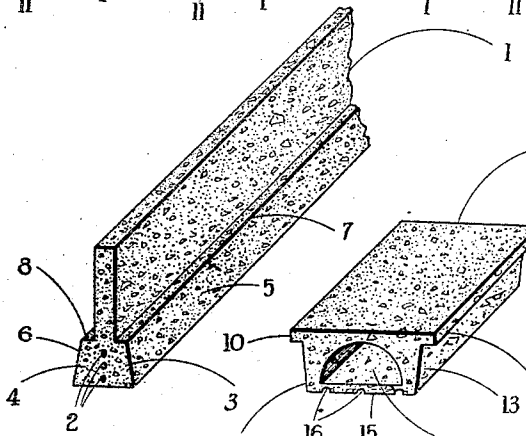


Fig. 2.

Fig. 3.

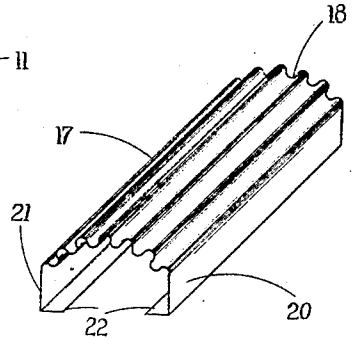


Fig. 4.

INVENTOR

F. E. Simpson

BY E. J. Fetherstonhaugh

ATTORNEY

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UNITED STATES PATENT OFFICE.

FRED EARNEST SIMPSON, OF TORONTO, ONTARIO, CANADA.

REENFORCED-FLOORING CONSTRUCTION.

Application filed May 31, 1923. Serial No. 642,520.

To all whom it may concern:

Be it known that I, FRED EARNEST SIMPSON, a subject of the King of Great Britain, and residing at No. 142 Peter St., in the city of Toronto, in the county of York and Province of Ontario, Dominion of Canada, have invented a new and useful Reenforced-Flooring Construction, of which the following is the specification.

This invention relates to reenforced flooring construction, as described in the present specification and shown in the accompanying drawings that form part of the same.

The invention consists of the novel features pointed out broadly and specifically in the claims for novelty following a description containing an explanation in detail of an acceptable form of the invention.

The objects of the invention are; to provide a reenforced flooring construction including spaced reenforced concrete joists retained in position by hollow spacing sections; and provided with a slab of concrete, formed of cement and aggregates of suitable proportions, to be laid in plastic form, and in which may be embedded sleepers, to which a flooring of wood or equivalent material may be fastened; to provide a reenforced flooring construction from a hygienic point of view, being fire proof, vermin proof, sound proof, warm, and well tempered, and desirable of depth of construction, wherein the omission of I girders effects saving of steel work and consequent diminution of risk in case of fire; to provide a reenforced flooring construction which is easily comprehensible, having clear static calculations, which admit of the most extensive use of concrete, and which provides an absolutely even soffit without interruption up to spans of thirty feet, whereby the architectural and decorative formation of the ceiling is unimpeded; to provide a reenforced flooring construction admitting of little moisture and dampness, the sections being brought upon the site of assembly, and only the top layer being laid in plastic form to provide a reenforced flooring construction wherein hollow spacing sections are employed which may accommodate ventilating tubes, water pipes, gas pipes, or electric wiring to provide a reenforced construction which obviates the necessity of centering, which greatly expedites the assembling of the sections to provide a reenforced flooring construction which may be used within a very short period after the assembling thereof and in which holes may be easily cut; in which the section may be easily trimmed, and in which damaged parts may be replaced with facility, or to which a continuous construction may be easily joined.

In the drawings:—

Fig. 1 is a fragmentary perspective view of a section of reenforced flooring construction.

Fig. 2 is a fragmentary perspective view illustrating a section of a concrete web as embodied in the invention.

Fig. 3 is a fragmentary view of one of the spacing sections, and

Fig. 4 is a perspective view of one of the corrugated sheet metal concrete retaining sections.

Like numerals of reference indicate corresponding parts in the various figures.

The numerals 1 designate in their entirety, concrete joists, in the lower part of which a plurality of binding rods 2 are embedded. It will be observed that the joists are very narrow in proportion to their height, so that they will present a very high supporting strength. Abutments 3 and 4 are provided with inclined surfaces 5 and 6 and shoulders 7 and 8, upon which the flanges 9 and 10 of the spacing sections 11 bear. The sides 12 and 13 of said spacing sections are also inclined, which serve to bring about a wedging effect upon the webs when positioned between them. Semi-cylindrical openings designated as at 14 extends longitudinally through said spacing sections 11 and serve to accommodate for ventilating tubes, water pipes, gas pipes, or electric wiring. The formation of the spacing sections 11 is such as will afford great rigidity combined with the maximum lightness. The numerals 17 designate concrete retainers formed of scrap sheet metal of any convenient length. The corrugated arcuate surfaces 18 provide very rigid supporting arches for the plastic concrete of which the slab 19 is formed. 20 and 21 designate side walls having their extremities 22 bending inwardly which bear upon the spacing sections 11.

Ensuing the assembling of the joists 1, the spacing sections 11, and concrete retainers 17, the slab 19 is laid in its plastic state. Thus the fresh concrete obtains a firm grip on the old concrete of the webs (have been made previously and have properly set), not only on the tops of the webs, but also

along the sides of them to the junction of the retainers 19, so that the adhering surface is sufficient to form a very rigid construction. It is obvious that the adhesion between the old and the new concrete will be such that, practically speaking, the slab and the webs will form a monolith.

Sleepers 23 are embedded in the slab 19 when in its plastic condition, and serve as retaining means to which the wooden flooring 24 may be fastened.

From the foregoing elucidation it is thought to be obvious that a reenforced flooring construction made in accordance with this disclosure is particularly well adapted for commercial purposes by reason of the facility with which the component sections may be made, and assembled on the site of construction. It is also apparent that deviations from such detail may be resorted to in the precise formation on and association of the sections without forming a departure spirit of the invention and the scope of the appended claim.

What I claim is:

A reenforced flooring comprising parallel concrete joists having tapering base portions and reduced upper portions forming shoulders at the upper ends of said bases, tubular concrete elements having flat upper sides projecting over said shoulders and tapering walls fitting between said joist bases and flat floors with grooves in the under sides, metal arches supported on the flat upper sides of said tubular elements, a concrete bed submerging the upper ends of said joists and supported on said metal arches.

In testimony whereof I affix my signature this 9th day of May 1923, at the city of Toronto, in the Province of Ontario and Dominion of Canada.

FRED EARNEST SIMPSON.