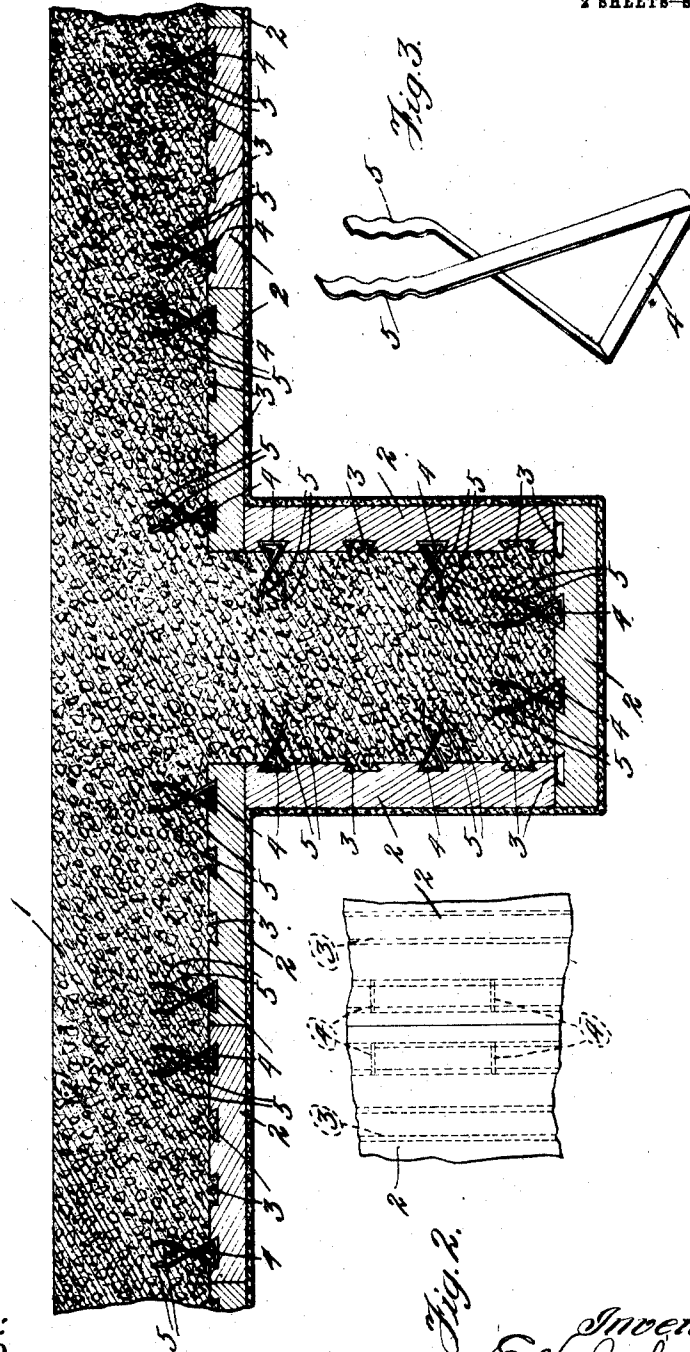


E. V. JOHNSON.
 MEANS FOR PROTECTING CONCRETE OR OTHER STRUCTURES FROM FIRE.
 APPLICATION FILED FEB. 11, 1907.

982,210.

Patented Jan. 17, 1911.

2 SHEETS—SHEET 1.



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John Nelson

Inventor:
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 by *Brown & Hopkins*
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Fig. 4.

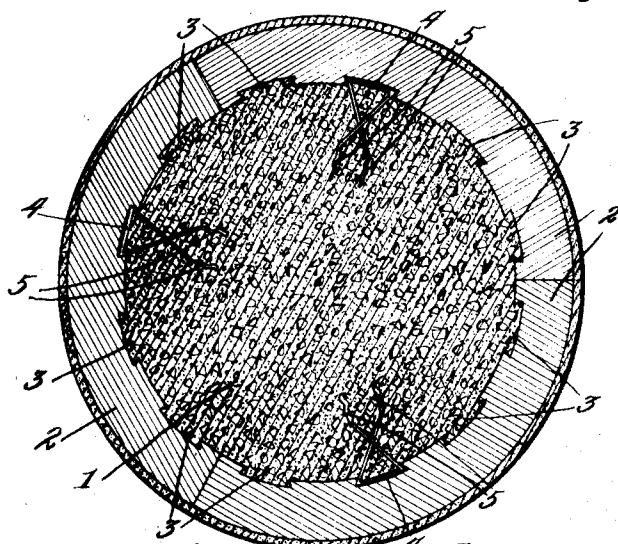
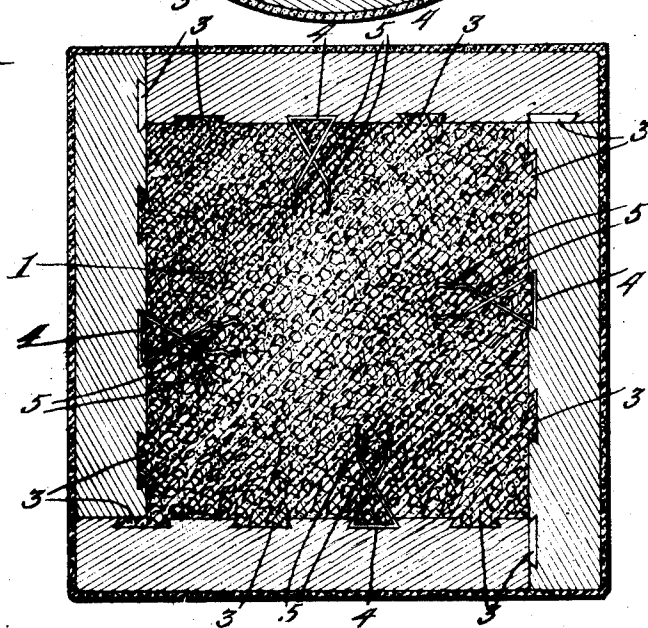


Fig. 5.



Witnesses:

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UNITED STATES PATENT OFFICE.

ERNEST V. JOHNSON, OF CHICAGO, ILLINOIS.

MEANS FOR PROTECTING CONCRETE OR OTHER STRUCTURES FROM FIRE.

982,210.

Specification of Letters Patent. Patented Jan. 17, 1911.

Application filed February 11, 1907. Serial No. 356,675.

To all whom it may concern:

Be it known that I, ERNEST V. JOHNSON, a citizen of the United States, residing at Chicago, county of Cook, and State of Illinois, have invented certain new and useful Improvements in Means for Protecting Concrete or other Structures from Fire, of which the following is a full, clear, and exact specification.

It is well known that concrete walls, columns and other like structures when subjected to the temperature ordinarily attained in a burning building, are materially deteriorated, and in fact, often damaged beyond usefulness. It is also known that where fireproofing slabs or facings are placed on such structures, the same are broken in the wreckage and hence have to be renewed.

My invention has for its primary object, therefore, to provide improved and simple means whereby the protecting facing or slabs may be readily attached to the structure and renewed when desired.

With a view to the attainment of these ends and the accomplishment of certain other objects, which will hereinafter appear, the invention consists in the features of novelty which will be now described with reference to the accompanying drawings and more particularly pointed out in the claims.

In the said drawings Figure 1 is a vertical sectional view of a part of a floor and a concrete beam depending from the ceiling below. Fig. 2 is a face view of the ceiling or underside thereof. Fig. 3 is a detail perspective view of one of the attaching anchors. Fig. 4 is a horizontal sectional view of a circular column provided with this invention. Fig. 5 is a similar view of a square column.

1 represents the concrete or other plastic material of which the structure is composed, and 2 are the slabs or facings which are placed against the surface thereof liable to be exposed to the fire, for protecting the concrete. It is, of course, apparent that the particular form of the structure to which these slabs are applied is entirely immaterial so far as this invention is concerned. However, in the drawings various adaptations are illustrated, Fig. 1 being a portion of a floor with a depending beam formation commonly employed in concrete structures and in Fig. 4 is shown the slabs curved in

cross-section to conform to the contour of 55 a round column, while in Fig. 5 a square column is illustrated as being bounded on all sides by the protecting slabs. These slabs are of the usual or any suitable construction and composed of fire brick or other suitable fireproofing material. Their inner 60 faces, however, are formed with grooves or sockets 3, which are preferably arranged in parallel lines. These sockets may be of dovetailed shape in cross-section, if desired, so 65 that a part of the concrete will engage therein and thereby assist in holding the slabs in place but their prime purpose is to receive and hold the outer flooring ends or heads of anchors which are embedded in the concrete while the latter is plastic or soft. A 70 multiplicity of these anchors are used and so disposed that a plurality of them will engage with each of the slabs and preferably a plurality in each groove of each slab. The 75 preferable form of such anchor is shown in Fig. 3 and is seen to consist of a strip bent at its intermediate portion to form a dovetailed or angular head 4, with its extremities crossed and preferably crimped, as 80 shown at 5, whereby they will be more securely rooted in the concrete. The extreme ends or crimped portions of the crossed extremities are preferably brought back more nearly into parallel so as to better facilitate 85 their introduction into the concrete without causing them to spread unduly. The structure thus equipped with these anchors is capable of having the protecting slabs or facing blocks 2 readily supported thereon 90 and when the blocks become damaged and it is desired to replace them, the old ones may be removed by sliding them longitudinally in their grooves or by breaking them off, and new ones substituted by slipping them 95 into place with their grooves engaging over the remaining anchors on the structure.

In order that the invention may be understood by those skilled in the art, the details of these examples have been thus specifically 100 described, but

What I claim as new therein and desire to secure by Letters Patent is—

1. The combination with a plastic material structure, of a means for engaging a 105 facing provided with sockets, embodying a plurality of anchors having their ends embedded in said structure and flattened por-

tions intermediate the ends bent to form outwardly enlarged projections for engaging the walls of said sockets.

2. In means for holding a facing upon a structure of the character described, the combination with a concrete structure, of a facing provided with a plurality of parallel grooves having inwardly enlarged cross section, a plurality of anchors having their ends embedded in said structure and the portions intermediate their ends bent to form projections adapted to slidably engage the walls of said grooves.

3. In a device for holding a recessed facing upon a structure of the character described, the combination with a concrete structure, of a recessed facing, of an anchor composed of a strip having corrugated extremities, said extremities being embedded in the structure and having its intermediate portion projecting from said structure and adapted to engage the lateral walls of the recess in said facing.

4. The combination with a plastic structure, of a means for holding a slab upon the structure of the character described, embodying an anchor composed of a flat strip with its extremities corrugated and adapted to be embedded in the plastic structure and

its intermediate portion bent to form an outwardly enlarged projection adapted to engage in a recess in a slab to be retained.

5. A means for holding a facing upon a structure of the character described embodying an anchor composed of a sheet metal strip with its extremities crossed and spaced in substantially parallel lines and adapted to be embedded in the structure and its intermediate portion bent to form a projection for engaging a recess in a slab to be mounted on said structure.

6. A means for holding a facing upon a structure of the character described, embodying an anchor composed of a strip with its extremities corrugated and crossed and spaced in substantially parallel lines, said extremities being adapted to be embedded in the structure and its intermediate part flat and being adapted to engage in a recess of a slab to be retained.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, on this 2nd day of February A. D. 1907.

ERNEST V. JOHNSON.

Witnesses:

FRANCIS A. HOPKINS,

CHAS. H. SEEM.