Jan. 24, 1967 J. W. CHIVILLE 3,299,601

SLAB ANCHOR

Filed Jan. 22, 1964

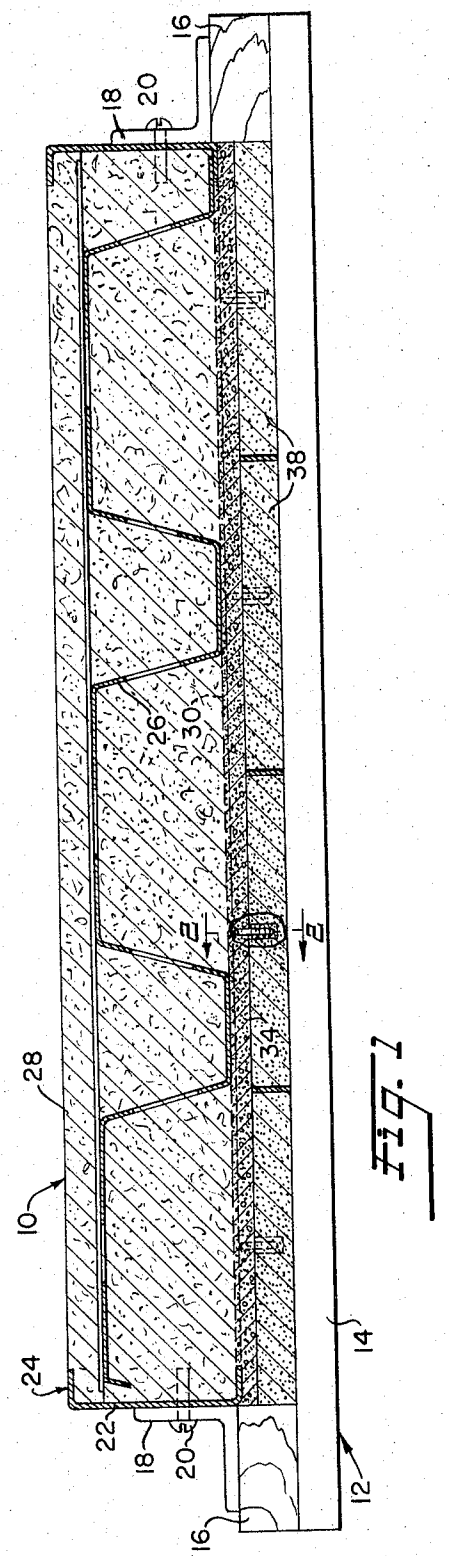

Fig. 1

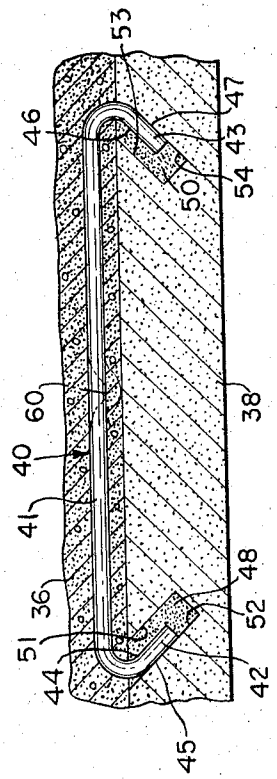

Fig. 2

INVENTOR

JOHN W. CHIVILLE

BY Scrivener, Parker, Scrivener & Clarke

ATTORNEYS

United States Patent Office 3,299,601 Patented Jan. 24, 1967

3,299,601
SLAB ANCHOR

John W. Chiville, Greenbelt, Md., assignor to Tecfab Incorporated, Beltsville, Md., a corporation of Maryland

Filed Jan. 22, 1964, Ser. No. 339,401
4 Claims. (Cl. 52—597)

This invention relates to facing slabs or the like and more particularly to improved anchoring means for securing slabs to a cementitious backing.

The object of the present invention is to provide improved anchoring means which is particularly though not exclusively useful for attaching decorative slabs of marble or the like to the faces of structural panels, articularly those of the precast variety as disclosed, for example, in the patent to Berliner, No. 2,839,812.

In the drawings:

FIG. 1 is a vertical cross-sectional view of a pre-cast structural panel which incorporates the anchor of the invention, the panel being shown disposed in a casting mold; and

FIG. 2 is an enlarged view of the anchor of the invention taken substantially on the line 2—2 of FIG. 1.

Referring now to FIG. 1, a structural panel generally indicated by the numeral **10**, is shown in a casting mold indicated by the numeral **12**. The mold comprises a platform or casting table **14** having a flat horizontal upper surface on which is laid a wooden rectangular frame, designated by the numeral **16**, carrying angles **18** to which are attached by screws **20** the vertical wall parts **22** of inwardly facing C-shaped channels **24** which compose the four sides of the completed structural panels.

Within the space defined by the side channels **24** is an appertured metallic corrugation **26** imbedded in porous cementitious material **28** such as pearlite or the like, and on the side of the layer **28** is a mesh sheet **30** which serves to lock the porous material **28** to a lower layer **34**, of dense cementitious material such as Portland cement. Bonded to the lower dense layer **34** by the anchoring means of the invention are decorative marble facing slabs **38**.

Referring now to FIG. 2, it will be observed that the anchoring means comprise resilient wirelike members **40** having an elongated central body part **41** and in-turned converging end parts **42**, **43**, having inner and outermost edge or wall parts **44**, **45** and **46**, **47** respectively, the end parts preferably forming 45° acute angles with the central part. Drilled in the rear face of the marble slab **38** are a pair of openings **48**, **50**, having substantially the same converging angularity as the anchor end parts and having diameters equal to substantially twice that of the anchor material and being spaced from each other a distance such that their outermost wall parts, indicated by the numerals **52**, **54**, are equal to the corresponding spacing between the outermost edge parts **45**, **47** of the in-turned end parts **42**, **43** of the anchor. With this arrangement it will be apparent that when the anchors are in their position of use the end parts engage the outermost wall parts **52**, **54** of the openings and the central part **41** of the anchor is thus supported in spaced relationship above the inner surface of the slabs **38** as clearly shown in FIG. 2. If desired, and as an alternative construction the central part **41** of the anchor can be centrally crimped downwardly as indicated by the phantom lines **60** to insure that the central part of the anchor is properly spaced away from the slab, thus avoiding the necessity of precise tolerances in the horizontal spacing between the openings **48**, **50**.

In use in the manufacture of a structural panel, the wooden mold frame **16** is first laid on the casting table **14** and thereafter the decorative marble slabs **38** are laid within the frame. The rear or upper faces of the slabs are pre-drilled to provide the pairs of openings **48**, **50** and the anchors are engaged in the openings by first inserting one in-turned end part, say end **43** in its opening and then sliding the anchor in the direction of the opposite opening **48** until the other in-turned end **42** enters the opening, the end being sprung slightly outwardly if necessary to insure that the end enters the second opening. After both ends are engaged in their respective openings, and where the slab is horizontal as in FIG. 1, when the anchor is released it drops slightly under the influence of gravity until the outer edge parts **45**, **47** engage the outermost wall parts **52**, **54** of the openings whereby the central part **41** is retained spaced above the adjacent surface of the slab as previously mentioned.

After the several anchors of all the slabs are in place the layer of dense cementitious material is spread over the rear faces of the slabs, care being taken to insure that the cement is forced into the openings to surround the in-turned ends of the anchors so that the latter are positively locked in position after the cement is hardened. As the cement is spread it flows beneath the several anchors as shown in FIG. 2 and before the first layer sets up the panel is assembled and the porous body of cementitious material is cast, the lower layer **36** of dense material setting up with the porous body and around the anchoring members of the invention to firmly and securely fix the marble slabs to the front face of the completed panel.

From the foregoing description it will be apparent that the anchor of the invention is not limited to use with pre-cast structural panels of the type shown and described but the anchor may be used with equal efficacy in other environments. It will also be apparent that the anchor is susceptible of changes and modifications without departing from the scope and spirit of the appended claims.

What is claimed is:

1. In combination, a slab-like facing member and an anchor for fixing said facing member to a cementitious backing, said facing member having at least one pair of spaced, inwardly converging openings in one face thereof, each of said openings having spaced inner and outermost wall parts, the innermost wall parts of said pair of openings being adjacent each other and the outermost wall parts of said pair of openings being remote from each other, said anchor comprising an elongated body part of resilient wire-like construction having in-turned end parts integral with said body part and converging toward each other at substantially the same degree of angularity as as said pair of openings and received therein, said in-turned end parts having inner and outer wall parts, the body part member having a dimension with respect to the spacing between the outermost wall parts of said pair of openings that the outermost wall parts of said in-turned end parts engage the outermost wall parts of said pair of openings in a position to space the body part of

said anchor away from said one face of said slab like member.

2. The anchor of claim 1 including a crimp in said body member intermediate the ends and extending in the same direction as said in-turned end parts.

3. The combination of claim 1 wherein the cross-sectional area of said openings is substantially greater than the cross-sectional area of said in-turned end parts, with the innermost wall parts of said openings being spaced a distance away from the corresponding innermost wall parts of said in-turned end parts sufficient to enable said parts to be engaged in said openings by lateral movement of said anchor with respect to said openings.

4. The combination of claim 3 wherein said openings are filled with cementitious material as to lock said end parts in said openings.

References Cited by the Examiner

UNITED STATES PATENTS

439,728	11/1890	Kelly	52—679
948,752	2/1910	Wightman	52—597
1,809,504	6/1931	Carvel	52—513
2,083,116	6/1937	Burgel	52—513 X
2,175,070	10/1939	Turco	52—597 X
2,839,812	6/1958	Berliner	52—602 X

FOREIGN PATENTS

29,364	12/1913	Great Britain.
547,838	9/1942	Great Britain.

FRANK L. ABBOTT, *Primary Examiner.*

A. C. PERHAM, *Assistant Examiner.*