Feb. 11, 1930. A. J. WHITE 1,746,625

REENFORCING FABRIC

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Fig. 1.

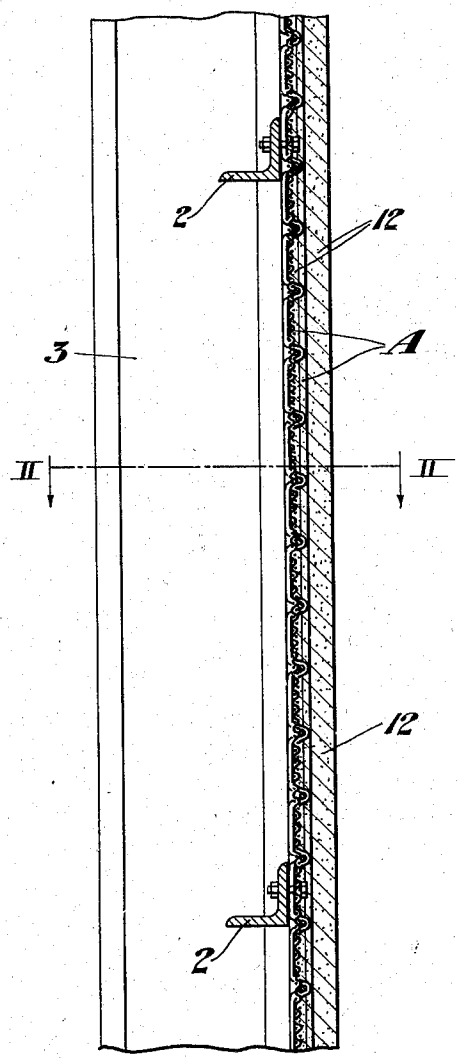
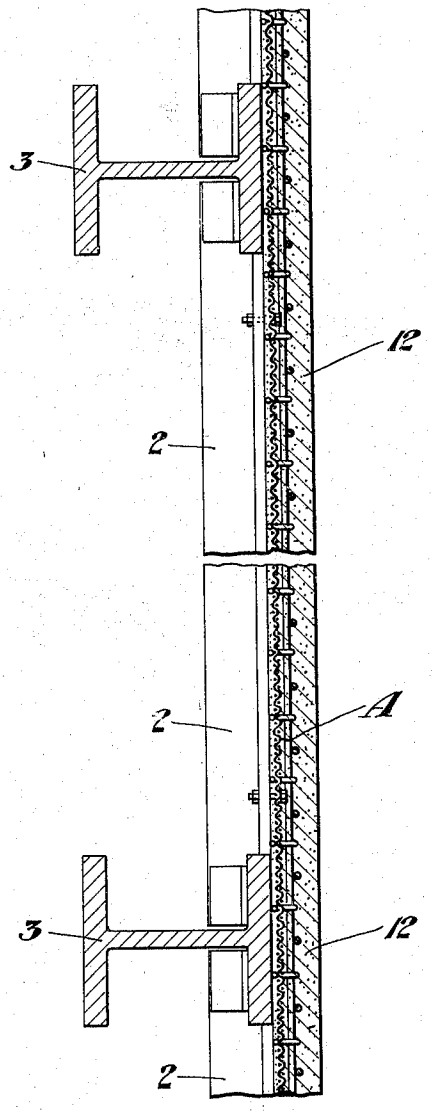


Fig. 2.



Inventor:
ARTHUR J. WHITE,
by:
D. Anthony Manna
his Attorney.

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Fig. 3.

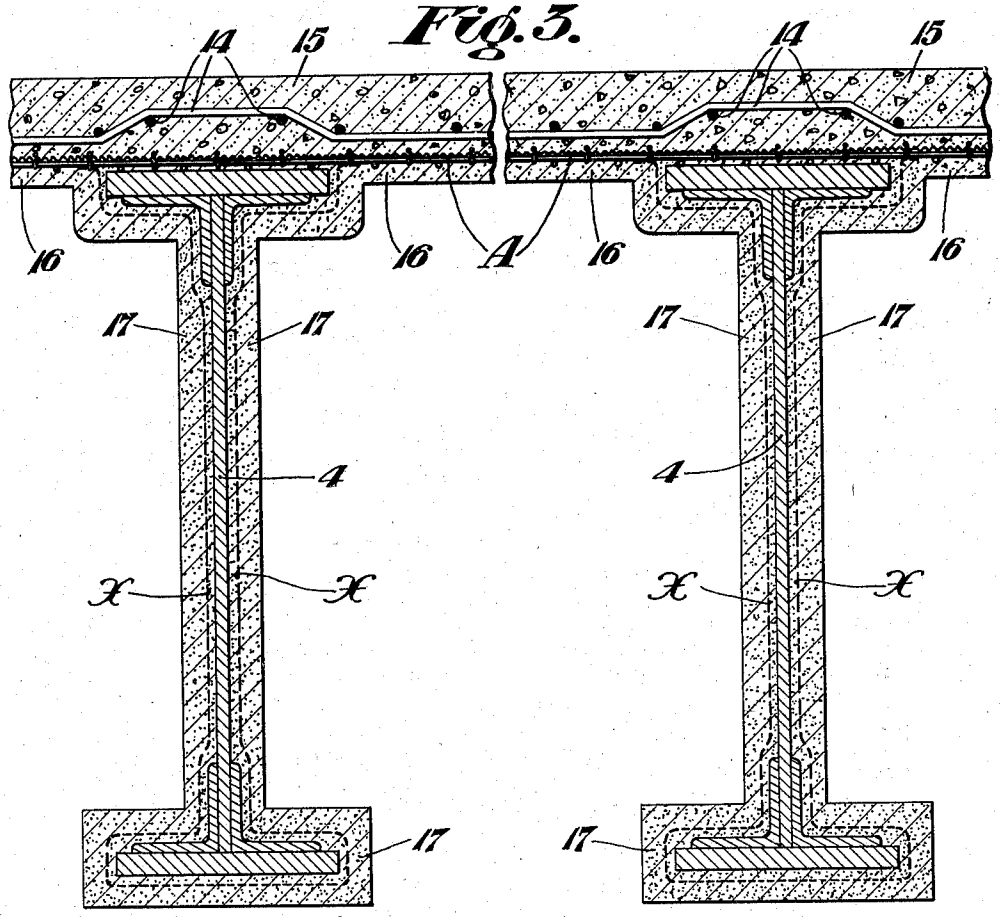


Fig. 7.

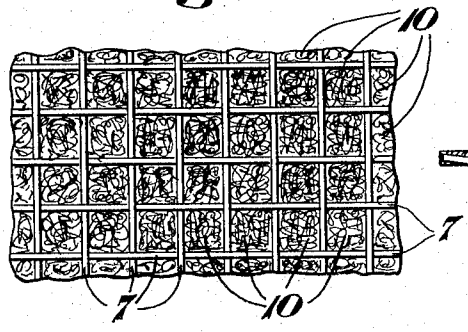
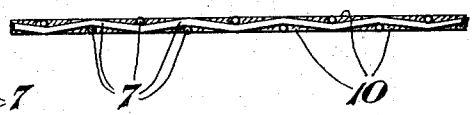


Fig. 8.



Inventor:
ARTHUR J. WHITE,
by: D. Anthony Usina
his Attorney.

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Fig. 4.

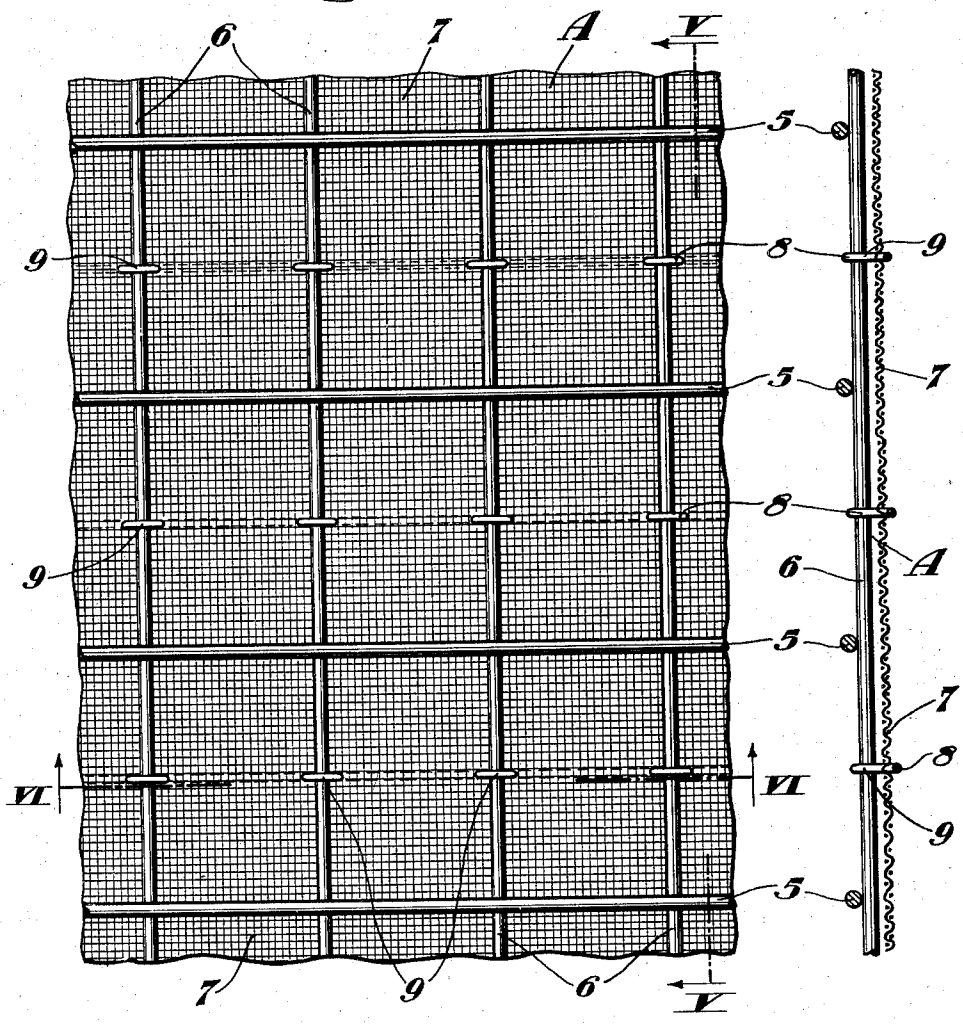


Fig. 5.

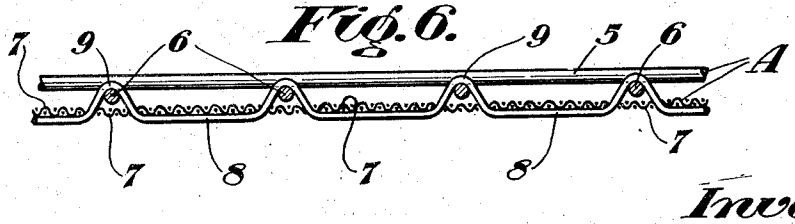


Fig. 6.

Inventor:
ARTHUR J. WHITE,
by: D. Anthony Usina
his Attorney.

Patented Feb. 11, 1930 1,746,625

UNITED STATES PATENT OFFICE

ARTHUR J. WHITE, OF PITTSBURGH, PENNSYLVANIA

REENFORCING FABRIC

Application filed October 6, 1928. Serial No. 310,801.

This invention relates to concrete and cement constructions and more particularly to a novel form of reenforcing fabric therefor, and has for its object the provision of a reenforcing fabric which will form a porous support for the concrete or other plastic material applied thereto.

Heretofore, when composite walls, floors, slabs and the like, were to be constructed having reenforcing mesh embedded therein, it has always been necessary to construct expensive forms to back up or hold the concrete and then to mount the reenforcing mesh in spaced relation with the form and apply the plastic concrete or cement which was forced through and around the reenforcing fabric and against the form. After the plastic material was set the form was removed and the form side of the wall was dressed to remove any imperfections.

By the use of my novel combined form and reenforcing fabric and in accordance with my novel method, the fabric is mounted in position and the concrete or other plastic material is applied directly to the opposite sides thereof by pouring, cement gun methods, or by hand, as desired or necessary, and the fine mesh wire fabric backing sheet forms a porous support for the material which will project thereto so as to bond and form a solid mass with the material applied to the other side, thus forming a solid composite structure with embedded reenforcing.

In the drawings:

Figure 1 is a vertical section through a wall constructed in accordance with my invention.

Figure 2 is a transverse section taken on the line II—II of Figure 1.

Figure 3 is a transverse section through a typical roof or floor structure constructed in accordance with my invention.

Figure 4 is a plan view of a section of my novel combined form and reenforcing fabric.

Figure 5 is a sectional view taken on the line V—V of Figure 4.

Figure 6 is a sectional view taken on the line VI—VI of Figure 4.

Figure 7 is a fragmentary plan of a portion of fabric showing the interstices of the backing sheet filled or closed with a readily soluble substance such as gelatin, glue, or the like.

Figure 8 is a sectional view of the same, the section of filling material being exaggerated for the purpose of illustration.

Referring more particularly to the drawings, the letter A designates the combined form and reenforcing fabric as a whole which, in Figures 1 and 2, is shown bolted to angle struts 2 secured to columns 3 so as to support a wall structure.

In Figure 3 the fabric A is shown secured across heavy floor girders 4 so as to support a concrete floor. The girders 4 are also adapted to be encased in concrete or cement and for this purpose a reenforcing fabric X is secured to the floor supporting fabric A and extended along each side and the bottom of the girders 4. This fabric X is spaced from the faces of the girder so as to permit the cement or concrete to key therebehind. The fabric X may be constructed like the novel fabric of this invention or may be of ordinary construction, as desired, since the girders form a back to support the concrete or cement.

Referring now to Figures 4 to 6, the reenforcing fabric A is composed of what I will term, for convenience of description, strand wires 5 and stay wires 6, preferably uniformly spaced and welded or otherwise secured together at their points of intersection. A backing sheet 7 of fine wire mesh fabric or cloth, such as is ordinarily used for fly screens, is placed behind the wires 5 and 6 and held in position by means of weaving or lacing wires 8 that are disposed mainly behind the backing sheet and are threaded therethrough and looped around the strand wires 6 at the points 9.

The bends or loops 9 of the wires 8 are preferably of such depth that the backing sheet 7 will be spaced from the plane of the mesh or fabric wires 5 and 6 an appreciable distance to permit the wires 5 and 6 to be completely embedded in the cement, concrete or other plastic material. The depth of the loops 9 may be varied when desired so as to properly position the mesh in the plastic structure.

The backing sheet 7 is adapted to serve as a back or form for the concrete or other plas-

tic material and is preferably provided with a filling or coating of a readily soluble substance 10, such as glue, gelatin, or the like, as shown in Figures 7 and 8.

The filling 10 will form a temporary filler to close the interstices or mesh of the fabric sheet and will stop the plastic material first applied to the fabric until the water of the plastic mixture dissolves the filling. By the time the filling 10 is dissolved, the plastic material will have partly set so that, while it may settle or be forced through the mesh of the backing sheet 7 to some degree, it will not run nor pass readily therethrough. All, or substantially all, of the filling material 10 will be dissolved by the water content of the plastic material so as to expose the plastic material and permit a second layer of plastic material applied to the other side of the fabric to join directly with the material previously applied on the first side.

In using the novel fabric of the invention as shown in Figures 1 and 2, the plastic material 12 is first placed on one side of the fabric and forced through the backing sheet and then on the other side, thus completely enclosing the backing sheet 7 and reenforcing fabric and forming a unitary composite reenforced wall without the use of separate wooden or other forms. The plastic material 12 may be applied in any of the several usual ways but is preferably applied first to the side of the fabric containing the reenforcing mesh wires 5 and 6, so as to force the backing sheet 7 away from said wires.

In forming the reenforced concrete floor construction of Figure 3, the reenforcing bars 14 are first mounted above the fabric A and the concrete floor 15 is poured directly onto the fabric backing sheet 7 without any other form. After the floor is poured, the reenforcing fabric is covered with a layer of cement or other plastic material 16 to form a reenforced finished surface which contacts and bonds with the concrete 15 through the mesh or interstices of the backing sheet forming a unitary composite structure.

The beams 4, which support the floor, are also enclosed in a coating or covering of concrete or cement 17 at the same time as the material 16 is applied, so as to form a continuous structure.

While I have described and illustrated certain specific embodiments of my invention, it will be understood that I do not wish to be limited thereto since the invention is capable of being practiced in many modified forms without departing from the scope of the invention, as defined in the appended claims.

I claim:

1. A combined form and reenforcing fabric comprising reenforcing strand and stay wires secured together at their points of intersection, a finely woven wire mesh backing sheet disposed adjacent the one side of said wires, said backing sheet having the openings therein closed by a readily soluble compound so as to be dissolved by the plastic material applied to the fabric, and retaining means for said backing sheet, said retaining means being connected to said wires and adapted to support said backing sheet in completely spaced relation thereto, so as to permit complete embedment of said strand and stay wires in the plastic material applied to said fabric.

2. A combined form and reenforcing fabric comprising reenforcing strand and stay wires secured together at their points of intersection, a finely woven wire mesh backing sheet disposed adjacent one side of said wires, said backing sheet having the openings therein closed by a readily removable compound adapted to be removed by the plastic material applied to the fabric, and means for securing said backing sheet to said reenforcing wires so as to form a unitary structure.

3. A combined form and reenforcing fabric comprising reenforcing strand and stay wires secured together by welding at all their points of intersection, a finely woven wire mesh backing sheet disposed adjacent one side of said wires, said backing sheet having the openings therein closed by a readily removable compound adapted to be removed by the plastic material applied to the fabric, and retaining means for said backing sheet, said retaining means consisting of weaving wires disposed mainly to the rear of the backing sheet but extending therethrough and bent over said strand and stay wires at a plurality of points, the bends of said weaving wires being of such depth that the backing sheet may have spaced relation to the strand and stay wires.

In witness whereof, I have hereunto set my hand.

ARTHUR J. WHITE.