

F. D. WOLFE.
REINFORCED CONCRETE CONSTRUCTION.
APPLICATION FILED OCT. 22, 1919.

1,389,803.

Patented Sept. 6, 1921.

2 SHEETS—SHEET 1.

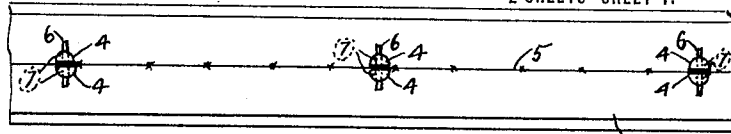


FIGURE 3

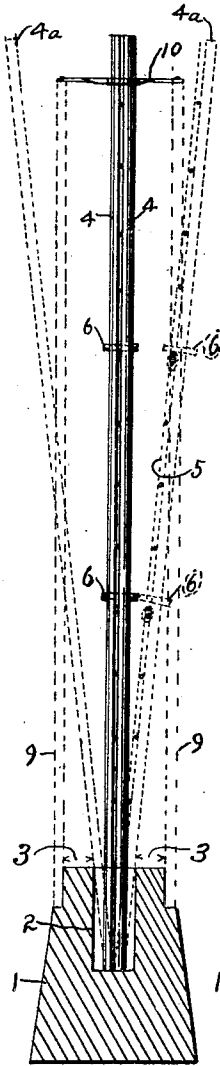


FIGURE 2

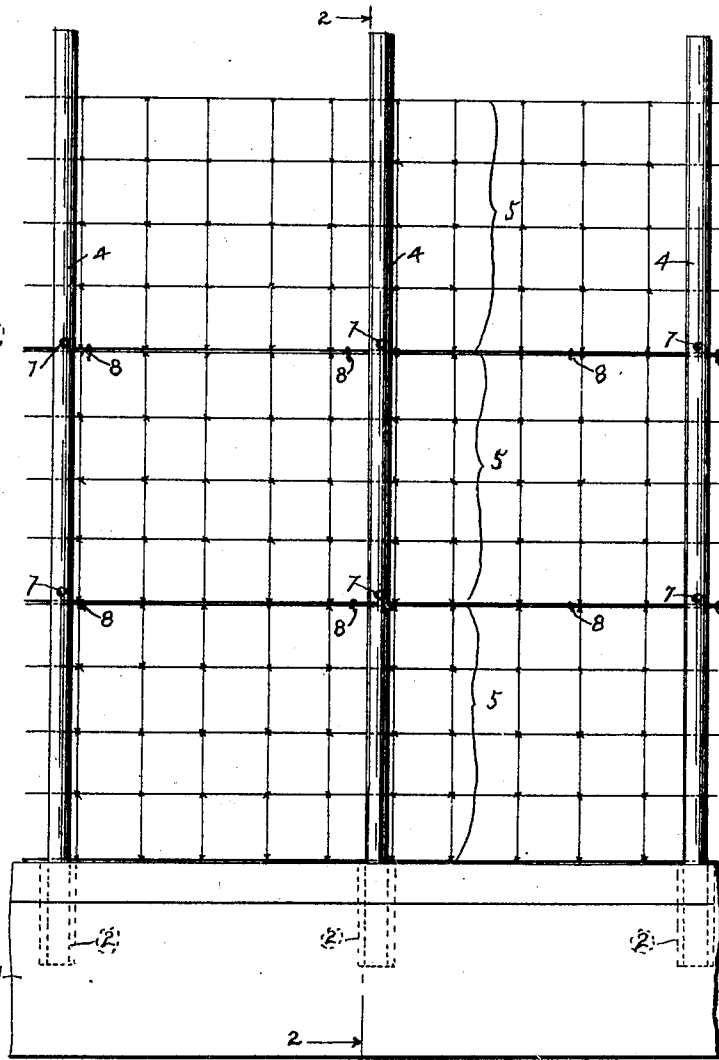


FIGURE 1

INVENTOR

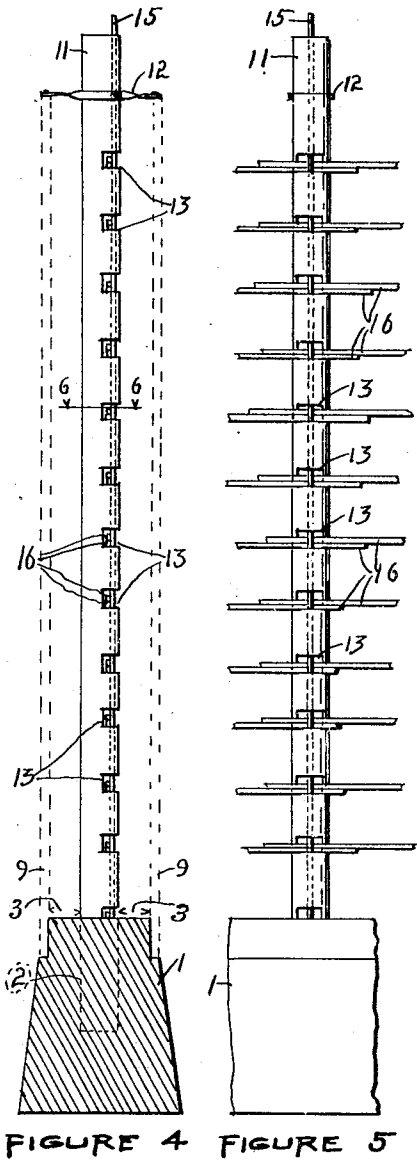
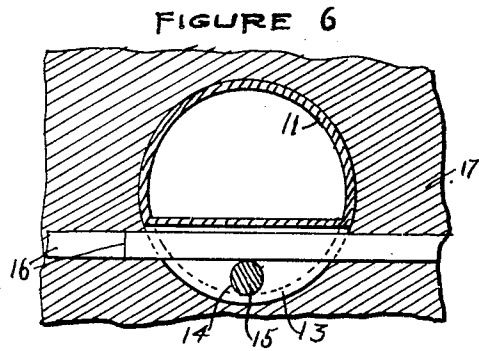
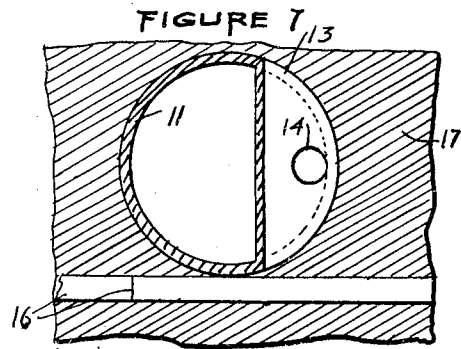
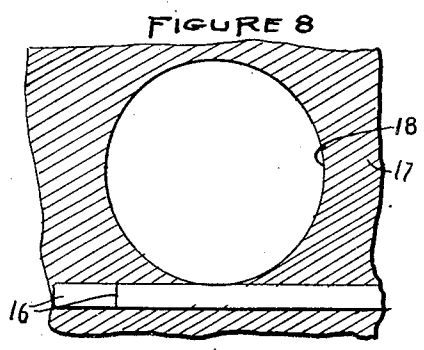
Frank D. Wolfe

BY John A. Craigmiles
HIS ATTORNEY

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UNITED STATES PATENT OFFICE.

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REINFORCED CONCRETE CONSTRUCTION.

1,389,803.

Specification of Letters Patent.

Patented Sept. 6, 1921.

Application filed October 22, 1919. Serial No. 332,445.

To all whom it may concern:

Be it known that I, FRANK D. WOLFE, a citizen of the United States, and resident of San Jose, in the county of Santa Clara and State of California, have invented certain new and useful Improvements in Reinforced Concrete Construction, of which the following is a specification.

My invention relates to a novel method of constructing reinforced concrete walls and the like, and to novel means for carrying out this method of construction.

It is one object of my invention to provide a simple and effective method of constructing a concrete wall with spaced tubular air pockets formed therein. It is another object to provide a simple, effective and highly efficient method of properly placing the reinforcement in a concrete wall, and of salvaging the members used for placing said reinforcement. It is another object to provide a means for positioning the reinforcing elements of a concrete wall during the pouring of the concrete that can be easily removed from the concrete after it is poured and before the forms are removed. It is another object of my invention to provide a means of the character indicated that will form a series of spaced tubular air chambers in the concrete without additional mechanical complication. A fifth object is to provide a means of the character indicated that is quickly and easily detached from the forms used during the pouring of the concrete and that, therefore, may be removed and used in the construction of other walls while the concrete in the first wall is setting. A sixth object is to provide a means of the character indicated that will satisfactorily support and position light or heavy reinforcement for thin or thick walls, such as wire mesh for thin walls of residences or bars for more heavy construction.

In the drawing:

Figure 1 is a side elevation of a portion of a concrete foundation having a wire reinforcement held in position by means of one form of the invention herein described.

Fig. 2 is a sectional view on line 2—2 of Fig. 1 and indicating the position of the concrete forms and the anchor secured thereto.

Fig. 3 is a plan view of the construction shown in Fig. 1.

Fig. 4 is a vertical cross-section through a foundation wall carrying another form of my invention.

Fig. 5 is a side elevation of the elements

shown in Fig. 4 and a portion of the foundation upon which it is mounted.

Fig. 6 is an enlarged horizontal cross-section on line 6—6 of Fig. 4.

Fig. 7 is an enlarged cross-section on line 6—6 of Fig. 4 showing the method of disengaging the vertical and horizontal members.

Fig. 8 is a horizontal cross-section on line 6—6 of Fig. 1 after the vertical members have been withdrawn.

Referring more particularly to the drawings, 1 indicates a portion of a foundation wall having a plurality of vertical uniformly spaced holes 2 formed therein a distance from the edges thereof as at 3—3.

In effecting my invention I place two semi-circular rods 4—4 in each hole 2 with their flat faces in opposed relation to each other but separated at their upper ends as shown in dotted lines at 4^a—4^a. The reinforcing wire mesh 5 is then placed in position between the upper ends of the several alined pairs of rods 4 and held in position thereon by pegs 6 inserted in holes 7 in one rod 4. The next lower strips are then placed in position and held by similar pegs 6, the several strips being preferably wired together as indicated at 8. When all of the required strips are positioned as described the two rods 4 are brought together and secured at their upper ends and the pegs 6 removed, the reinforcing material being securely clamped between the pairs of rods and effectively prevented from collapsing. Suitable forms indicated in dotted lines at 9—9 are now erected in any suitable manner and the upper ends of rods 4 secured thereto by any suitable means as tie 10. This straightening of the mounted strips 5 from an angular to a vertical position tends to place the same under tension and take up any slack that may have developed in positioning the same.

It may now be readily seen that by this construction, or slight variations thereof, any form of light or heavy reinforcement may be securely held in position midway between forms 9 while the concrete is being poured, and effectually prevents the same or any part thereof from being forced to the side of the wall during the pouring of said concrete, a fault that is common in the methods now employed.

When the pouring of the concrete is completed the ties 10 and the rods 4—4 are drawn up vertically out of the partially set

concrete leaving a chamber therein of the same size as the parts withdrawn. These chambers are desirable since they provide ventilation and drainage through the wall and materially assist in keeping the same dry.

In another mode of effecting my invention I provide a series of pipes 11 set in holes 2 in foundation 1 and held to forms 9 by a tie 12. Each pipe 11 is formed with a series of recesses 13 provided with holes 14 in their upper and lower surfaces and adjacent their outer edges, and a rod 15 is inserted in said pipe in engagement with all of said holes and passing through said recesses. The horizontal reinforcing bars 16 are placed in position to overlap in recesses 13 as shown and back of rods 16 so that they are securely held in position during the placing of the concrete. After the concrete 17 has all been poured the rod 15 is withdrawn. The several pipes 11 are then turned through an arc of ninety degrees or more as shown in Fig. 7 while the concrete is sufficiently strong to permit the turning thereof thereby disengaging bars 16 from recesses 13 after which the said pipes are withdrawn, leaving chambers in the concrete of substantially the same size as said pipes as shown at 18, and leaving the reinforcing bars 16 in the desired position in the center of the wall or substantially so.

It is understood, of course, that while I have herein shown and described certain specific embodiments of my invention that changes in details of construction and method of carrying out the invention may be made within the scope of the appended claims.

I claim:

1. The method of constructing a concrete wall or the like which consists in providing a plurality of spaced substantially parallel reinforcement supporting elements, mounting reinforcement elements thereon, erecting forms to inclose said supporting elements, anchoring said supporting elements between said forms, pouring the concrete, and finally withdrawing said supporting elements before said forms are removed.

2. The method of constructing a concrete wall which consists in providing a foundation, erecting on said foundation spaced reinforcement supporting elements having reinforcement elements arranged thereon, erecting forms for receiving the concrete, anchoring said supporting elements in substantially vertical position between said forms, pouring the concrete in said forms to embed said reinforcement elements, and finally removing said supporting elements before said forms are removed.

3. The method of constructing a concrete wall which consists in providing a foundation with spaced sockets in the upper surface thereof, positioning reinforcement supporting elements in said sockets, positioning reinforcing elements on said supports, erecting forms for receiving the concrete, anchoring said supporting elements between said forms, pouring the concrete to embed said reinforcing and supporting elements, and finally withdrawing said supporting elements before the said forms are removed.

4. The method of constructing a concrete wall which consists in providing a foundation with spaced vertically positioned sockets formed therein, positioning in each socket a pair of supporting elements, connecting the corresponding element of each pair of supporting elements with reinforcing elements and providing temporary supports for the same thereon, locking each of said pairs of supporting elements together and removing said temporary supports, erecting forms for receiving the concrete, anchoring said supporting elements between said forms, pouring the concrete, and finally removing said supporting elements before said forms are removed.

5. In reinforced concrete construction a reinforcement supporting element comprising a pair of rods, removable means for supporting reinforcement elements therebetween, means for locking said elements together and means for holding said elements in a predetermined position in the concrete.

6. A removable holder for the reinforcing elements in reinforced concrete construction, consisting of a pair of rods having transversely positioned aligned orifices formed therein, removable pegs to engage said orifices and support reinforcing material on said rods, and means for locking said rods together and holding the same in a predetermined position in the concrete.

7. The method of constructing a concrete wall or the like consisting in the employment of a plurality of spaced reinforcement supporting elements, mounting reinforcement elements thereon, erecting forms to inclose said supporting elements, anchoring said supporting elements between said forms, pouring the concrete, and finally withdrawing said supporting elements.

8. In a reinforced concrete construction, the combination with a support of reinforcement supporting elements removably mounted therein, erecting forms on the support, and means carried with the erecting forms and engageable with the elements for locking and temporarily holding the elements in a predetermined position in the concrete.

FRANK D. WOLFE.