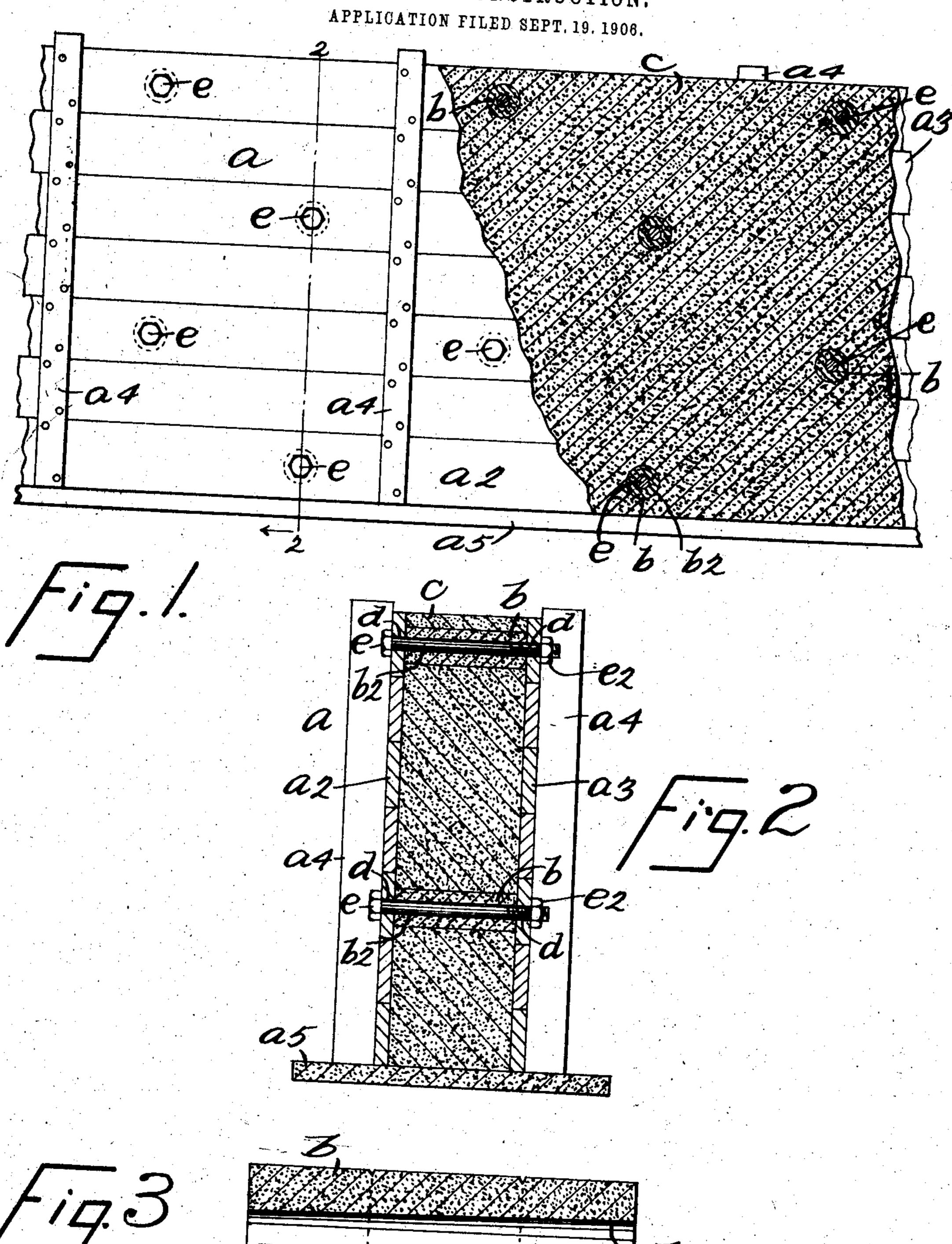
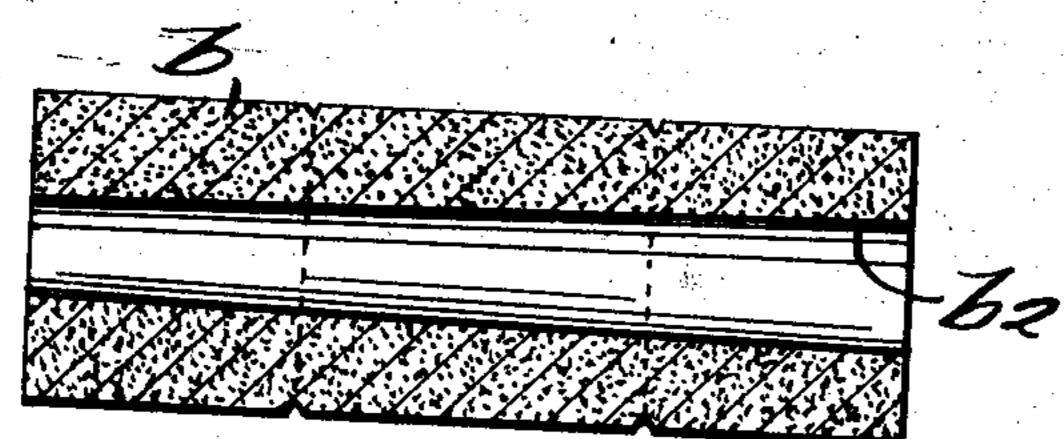
W. T. McCARTHY. CONCRETE CONSTRUCTION.





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## UNITED STATES PATENT OFFICE.

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## CONCRETE CONSTRUCTION.

No. 839,021.

Specification of Letters Patent.

Patented Dec. 18, 1906.

Application filed September 19, 1906. Serial No. 335,170.

To all whom it may concern:

Be it known that I, WILLIAM T. McCARTHY, a citizen of the United States of America, residing at Brooklyn, in the county of Kings 5 and State of New York, have invented certain new and useful Improvements in Concrete Construction, of which the following is a specification, such as will enable those skilled in the art to which it appertains to

ro make and use the same.

This invention relates to concrete construction, and has for its object to provide a device to accurately gage the distance between the sides of the form—as, for instance, is in the formation of a wall of concrete—a further object being to provide such a device which will become a component part of the wall when finished without the possibility of unequal shrinkage due to climatic conditions 20 or of defacing the said wall from rust or similar decomposition, and a still further object being to provide such a device which is simple in construction and very inexpensive and which permits of readily placing and dis-25 placing the form necessary for such concrete tormations.

My invention is fully described in the following specification, of which the accompanying drawings form a part, in which suit-30 able reference characters are used to indicate the several parts in each of the views, and in

which---

Figure 1 is an elevation of a form for concrete-wall formation, partly broken away and showing the method of using my invention. Fig. 2 is a section on the line 2-2 of Fig. 1, and Fig. 3 is a detail sectional view of my invention detached from the wall previous to the formation thereof.

40 In the drawings forming a part of this application I have shown a form a comprising two members  $a^2$  and  $a^3$ , each of which is composed of wood or other suitable material and supported by posts or scantlings  $a^4$ , the said 45 members resting upon the ground or upon a portion of concrete construction already

formed, as shown at  $a^5$ .

In Fig. 3 of the drawings I have shown my invention detached, and it comprises a tube 50 or sleeve b, composed of substantially the same material of which the wall c is to be formed, and the opening b2 through the tube b may be of any form, as may also the tube itself, although in practice I prefer to make 55 them circular, as shown in the drawings.

The members  $a^2$  and  $a^3$  are each provided with a plurality of bolt-holes d, which register with the corresponding ones in the opposite member, and when the members a' and as are placed in the position in which it is de- 50 sired to construct the wall c one of the tubes b is placed between the corresponding boltholes and a bolt e is then passed through the members  $a^2$  and  $a^3$  and through the tube b, after which the nut  $e^2$  is placed thereon and 65 secured. When a tube b has been so placed between the members in the positions of the several bolt-holes and secured by their respective bolts, the members  $a^2$  and  $a^3$  are then securely locked in position, and the liquid 70 concrete may then be poured therebetween and, as will be understood, immediately amalgamates with the material of which the tubes b are made, and when sufficiently hardened the bolts may be readily removed, as 75 may also the members  $a^2$  and  $a^3$ . After the removal of the form the openings  $b^2$  may be filled with concrete and the wall is complete, the tubes b forming a component part thereof and completely invisible.

Heretofore the removal of the form from a completed section of wall has been a difficult and trying operation because of the fact that the bolts or other devices employed to retain the members of the form in position have 85 necessitated great force in the removal thereof and generally resulting in a partial destruction of the wall, and it is to overcome this defect that my invention was conceived, and being composed of substantially the 90 same material not alone amalgamates and is invisible, but also prevents the running of rust streaks, which would result from the use of metal tubes, and is also much more economical in construction and use.

It will be apparent that the said tube may be made of any desired shape or size and any number of the same may be employed, and various other changes in and modifications of the form shown and described may be 100 made without departing from the spirit thereof or sacrificing its advantages.

Having fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a concrete construction, a tube composed of substantially the same material as said construction and means for holding the same in position.

2. In a form for concrete construction, a 110

tube composed of substantially the same material as said construction and adapted to-unite therewith.

3. In a form for concrete construction, a tube composed of substantially the same material as said construction and means for retaining said tubes in position during construction.

4. A form for concrete construction, comprising side members of wood or other suitable material and tubes of concrete between said members and serving to hold them apart.

5. A form for concrete construction, comprising side members of wood or other suitable material, tubes of concrete between said members and devices passed therethrough and secured to said members.

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6. In a mold for casting, a tube of substan-

tially the same material as said casting and devices passed therethrough to hold said 20 tubes in position.

7. A form for concrete construction, comprising side members, tubes of concrete mounted between said side members and bolts passed through said tubes and securely 25 locking said side members and said tubes together.

In testimony that I claim the foregoing as my invention I have signed my name, in presence of the subscribing witnesses, this 17th 30 day of September, 1906.

WILLIAM T. McCARTHY.

Witnesses:

H. HOLLAND, M. M. WHIPPLE.