J. F. WARWICK.

TANK AND STAND PIPE PROTECTOR.

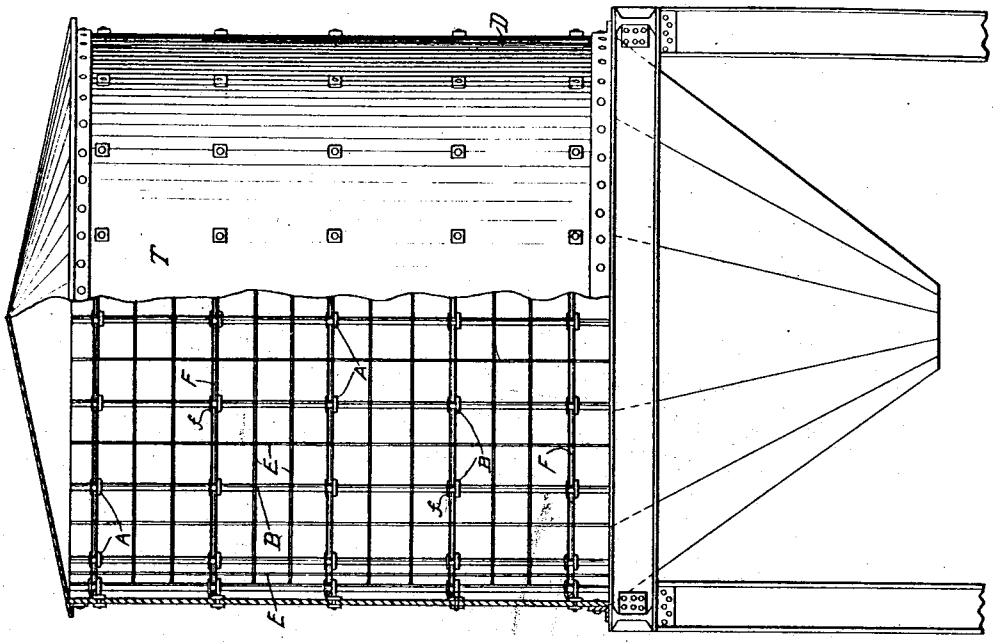
APPLICATION FILED APR. 4, 1914.

1,120,108.

Patented Dec. 8, 1914.

2 SHEETS-SHEET 1.

FIG. 2.



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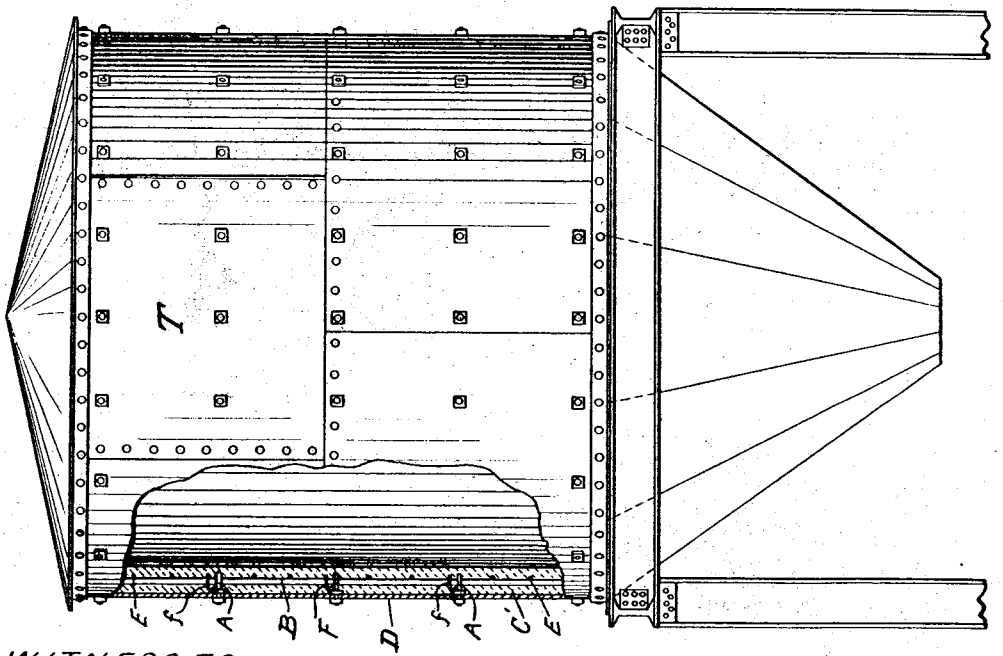

WITNESSES

Paul A. Viersen

Otto Melchior

INVENTOR

John F. Warwick,

BY Edwin C. Crawford ATTY.

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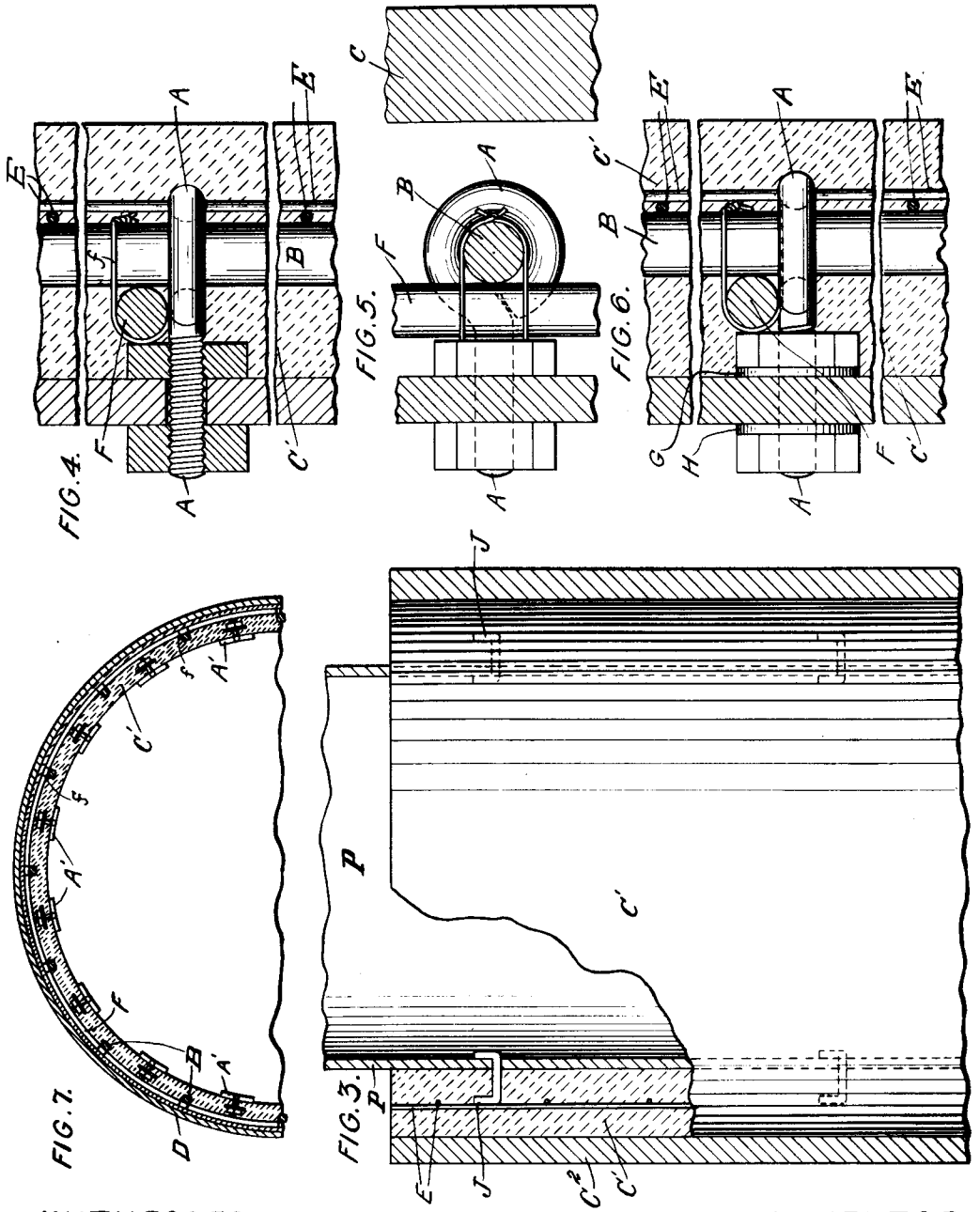

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UNITED STATES PATENT OFFICE.

JOHN F. WARWICK, OF CHICAGO, ILLINOIS.

TANK AND STAND-PIPE PROTECTOR.

1,120,108. Specification of Letters Patent. Patented Dec. 8, 1914.

Application filed April 4, 1914. Serial No. 829,573.

To all whom it may concern:

Be it known that I, JOHN F. WARWICK, a citizen of the United States, residing in Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Tank and Stand-Pipe Protectors, of which the following is a specification.

My invention relates to appliances formed of reinforced concrete combined with eye bolts or anchors, and the object of my invention is to furnish protection to water tanks, coal and ash bunkers and hoppers, or like objects, against corrosion caused by atmospheric or chemical action.

I attain such object by the use of the appliances illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation partly sectioned showing the vertical and horizontal rods cemented together, presenting one form of my invention. Fig. 2 is a side elevation with the metal exterior partly sectioned showing the construction of rods, bolts and vertical wires before the application of cement. Fig. 3 is a fractional side elevation, partly sectioned, of a stand pipe showing the exterior cement mold in section presenting another form of my invention. Fig. 4 is a detail construction in side elevation showing how the rods and eye bolts are fastened together and embedded in the cement lining of the tank. Fig. 5 is a plan view of Fig. 4 shown before the pouring in of cement, with a part of the inner cement mold. Fig. 6 is a detail view of water-tight construction in side elevation. Fig. 7 is a horizontal section of Fig. 3.

Similar letters refer to similar parts throughout the several views.

Referring to the drawings, A represents eye bolts.

A′ represents toggle-joints which are shown in Fig. 7. The eye-bolts A pierce holes made in the side of the tank, T, or like receptacle, and are secured at suitable distances apart. B is a rod extending vertically through the eyes of these bolts.

C is the temporary wall of the form designed to receive cement, poured. The other wall, D, is the side of the tank.

E represents the vertical and horizontal reinforcing wires; F represents the horizontal reinforcing rods extending from the junctions of the vertical rods B and the eye bolts A.

The wires B and the rods F, are secured to each other at their cross-sections by the sections of wire *f*, wound about them and fastened by twisting.

In case of the use of my invention in a water receptacle the eye bolts will be fitted with the lead gaskets G, and the steel washers H to make the joint water-tight.

The vertical wires, horizontal rods, and the connecting wire connections are all of well known common construction in general use in formation of reinforced concrete; and the arrangement of them above described need not be strictly followed in applying my invention to its proposed use.

The above, or a like arrangement, having been made in combination with the eye bolts and other connecting vertical rods, cement, C′ is poured into the form and when hardened, the temporary wall C will be removed and my invention as applied to tanks and like receptacles is ready for use. The inner surface of the tank having thus been covered with cement adhering closely to it, atmospheric or chemical elements can not reach it and it thus will remain free from corrosion.

I propose to incase stand pipes by means of the appliances described in the following paragraph following this sentence, viz.

E and F in Fig. 3 as in Figs. 1 and 2 represent respectively the vertical and horizontal wires and horizontal rods provided in common well known reinforced concrete construction, and the purpose of the anchors, the toggle joints or U beams which are inserted at suitable distances apart in vertical lines, is to furnish support for the horizontal rods F.

I do not wish to be confined in the application of my invention to water tanks, but to have it applied also as above suggested, to coal and ash bunkers and hoppers, and like devices, which are subject to corrosion from atmospheric and chemical action.

Having fully described my invention, what I claim as new and useful therein and desire to have secured by Letters Patent of the United States is—

In a tank protector, the combination of a tank or stand pipe formed of metal plates,

eye bolts piercing the side of the tank, vertical rods passing through such eyes, horizontal rods supported by said eye-bolts and vertical wires secured to said rods, and concrete formed about the inner surface of the tank or stand pipe, substantially as and for the purpose specified.

In witness whereof I have hereunto subscribed my name at Chicago, Illinois, this 28th day of February, A. D. 1914.

JOHN F. WARWICK.

Witnesses:

CHAS. F. MCKINLEY,

JOHN KUEFEL.