

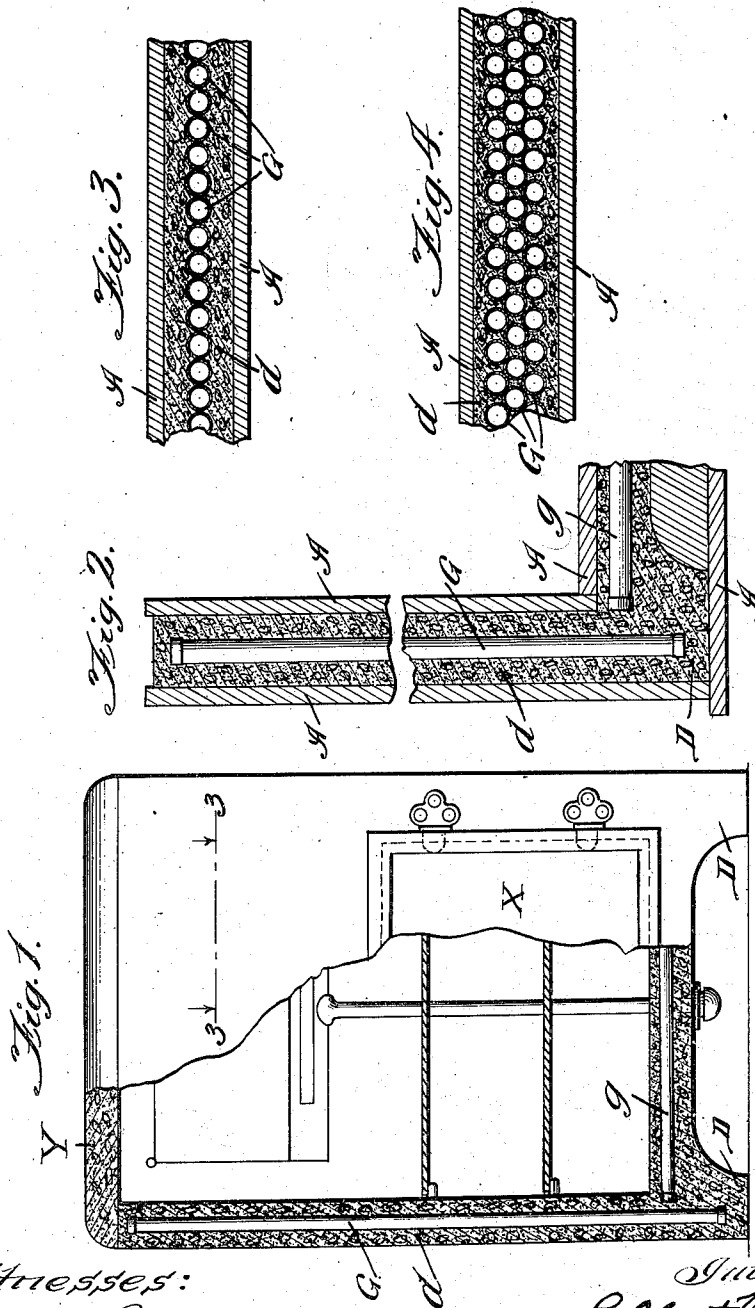
E. W. SHIRK.

REFRIGERATOR.

APPLICATION FILED JULY 8, 1910.

986,770.

Patented Mar. 14, 1911.



Witnesses:

W. D. Lipp
E. H. Clegg

Inventor:

Elbert Walker Shirk
By Bulley & Durand
Attys

UNITED STATES PATENT OFFICE.

ELBERT WALKER SHIRK, OF BEDFORD, INDIANA.

REFRIGERATOR.

986,770.

Specification of Letters Patent.

Patented Mar. 14, 1911.

Original application filed January 21, 1910, Serial No. 539,224. Divided and this application filed July 8, 1910. Serial No. 570,982.

To all whom it may concern:

Be it known that I, ELBERT WALKER SHIRK, a citizen of the United States of America, and resident of Bedford, Lawrence county, Indiana, have invented a certain new and useful Improvement in Refrigerators, of which the following is a specification.

My invention relates to refrigerators or ice chests made from cement or concrete or other similar material.

It contemplates a refrigerator or ice chest in which the walls are made hollow by the inclusion of paper tubes therein. In this way the structure is made light, and insulation in the form of dead air spaces is obtained in a simple and inexpensive manner. The tubes of paper, or other material, may be inserted in various ways, as will hereinafter more fully appear.

This is a division of my earlier application, Serial Number 539,224, filed January 21, 1910.

In the accompanying drawings—Figure 1 is a front elevation of a refrigerator embodying the principles of my invention, showing the same partly in vertical section. Fig. 2 is an enlarged vertical section through one side wall and the bottom, showing the mold by which the walls are formed in the process of manufacture. Fig. 3 is an enlarged section on line 3—3 in Fig. 1, showing the plates of the mold. Fig. 4 is a view similar to Fig. 3, but showing a different way of using the tubes.

As thus illustrated, the refrigerator has the solid top Y, the legs D, and the front door X, all made of cement or concrete. The sides *d* are vertical and have the tubes G embedded therein. The interior fixtures of the refrigerator may be of any suitable character.

The mold or form members A are arranged in position as shown, for the purpose of forming the side walls and the legs and the bottom of the body structure. Paper tubes G are disposed vertically between the vertical plates A, and the wet concrete is poured in and allowed to solidify around these paper tubes, thereby forming dead air spaces which are hermetically sealed all

around. These tubes, of course, can be made of metal or other suitable material, but I find that ordinary paper tubes, with a cap at each end, are very well adapted for the purpose. Similar tubes *g* can be embodied in the bottom of the refrigerator or ice chest, so that dead air spaces will be provided here also. When the concrete has dried and hardened the plates and members of the mold are then removed, and the concrete can then be finished in any suitable manner—that is to say, it can be given a superficial coating of enamel or other material, both inside and out, if such is desirable.

Thus it will be seen that by my invention I provide a particular way in which a refrigerator or ice chest can be constructed of concrete with walls having dead air spaces, and in which the concrete serves to give both shape and structural coherence to the entire body structure. This is true, of course, even though the concrete be reinforced in any desired manner. The tubes themselves serve, of course, as a sort of reinforcement for the concrete. A portable body structure thus formed by plain or reinforced concrete, molded into the desired form or shape, is not only strong and durable, but is also fire proof and moisture proof, and is a good heat insulator, whereby the ice within is prevented from melting too rapidly.

The concrete may be formed in the ordinary manner, as by using Portland cement with gravel or crushed rock, or by using Portland cement and sand in any suitable manner. Other cements may be used, as, for example, natural cement, or any of the equivalents of Portland or natural cement, which equivalents I hereby designate as calcareous cementitious materials, such as lime, gypsum &c.

What I claim as my invention is:

1. A refrigerator or ice chest having body walls of calcareous material with dead air spaces therein formed by tubes distributed separately throughout the said material, which material, such as a Portland cement mixture, serves to hold said tubes in place and together, said tubes being of paper and

sealed at each end, whereby the dead air spaces are obtained for insulating purposes, as set forth.

2. A refrigerator or ice chest having vertical tubes embedded in the calcareous side walls thereof and sealed at each end to form dead air spaces, as set forth.

3. A refrigerator or ice chest having vertical tubes embedded in the calcareous side

walls thereof and sealed at each end to form 10 dead air spaces, and horizontal tubes of similar character in the bottom, as set forth.

Signed by me at Chicago, Illinois, this 15th day of June, 1910.

ELBERT WALKER SHIRK.

Witnesses:

S. LEWIS,

J. NORBY.