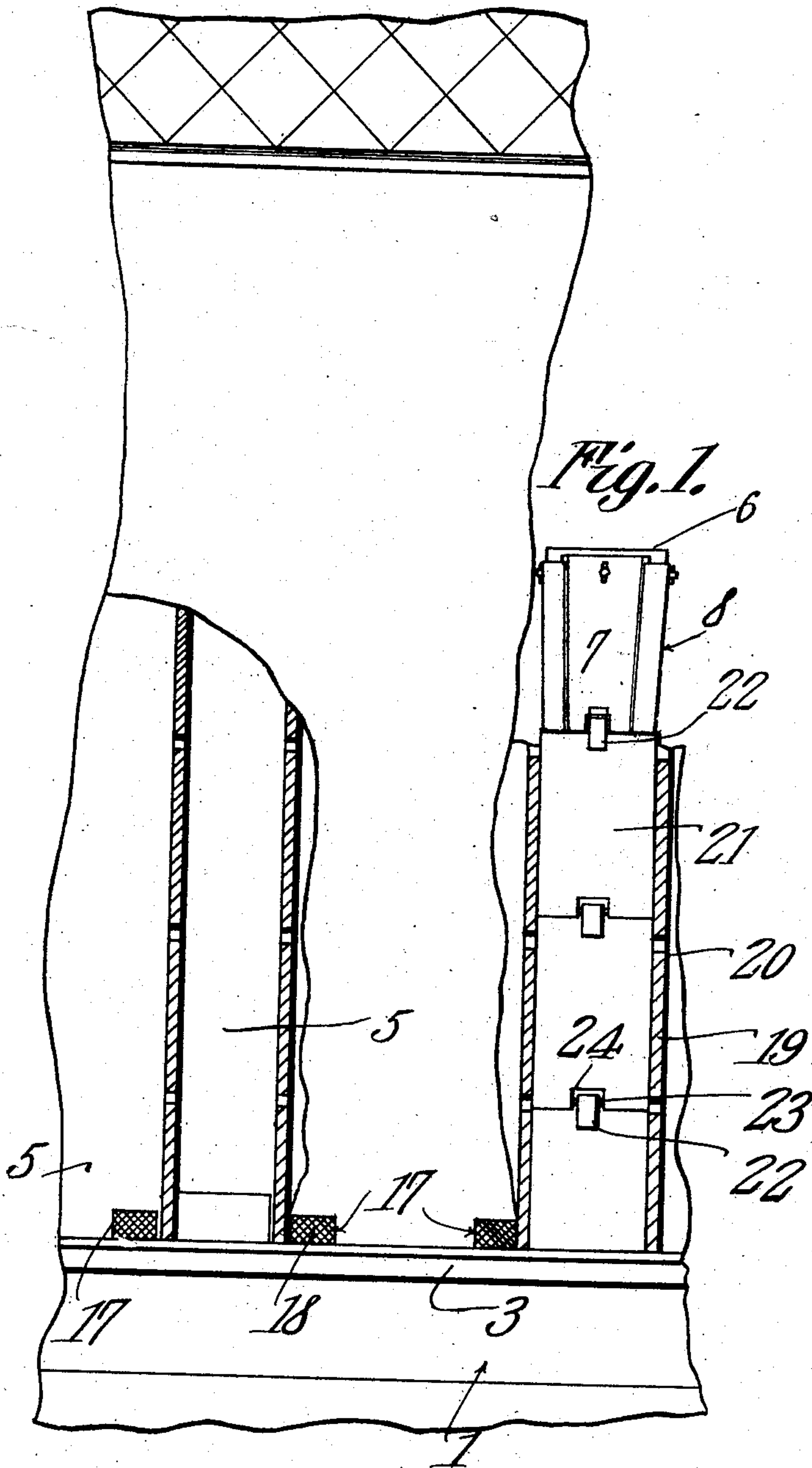


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R. C. HANSELL.
CONCRETE CONSTRUCTION.
APPLICATION FILED SEPT. 17, 1909.

Patented Oct. 25, 1910.

2 SHEETS—SHEET 1.



Witnesses

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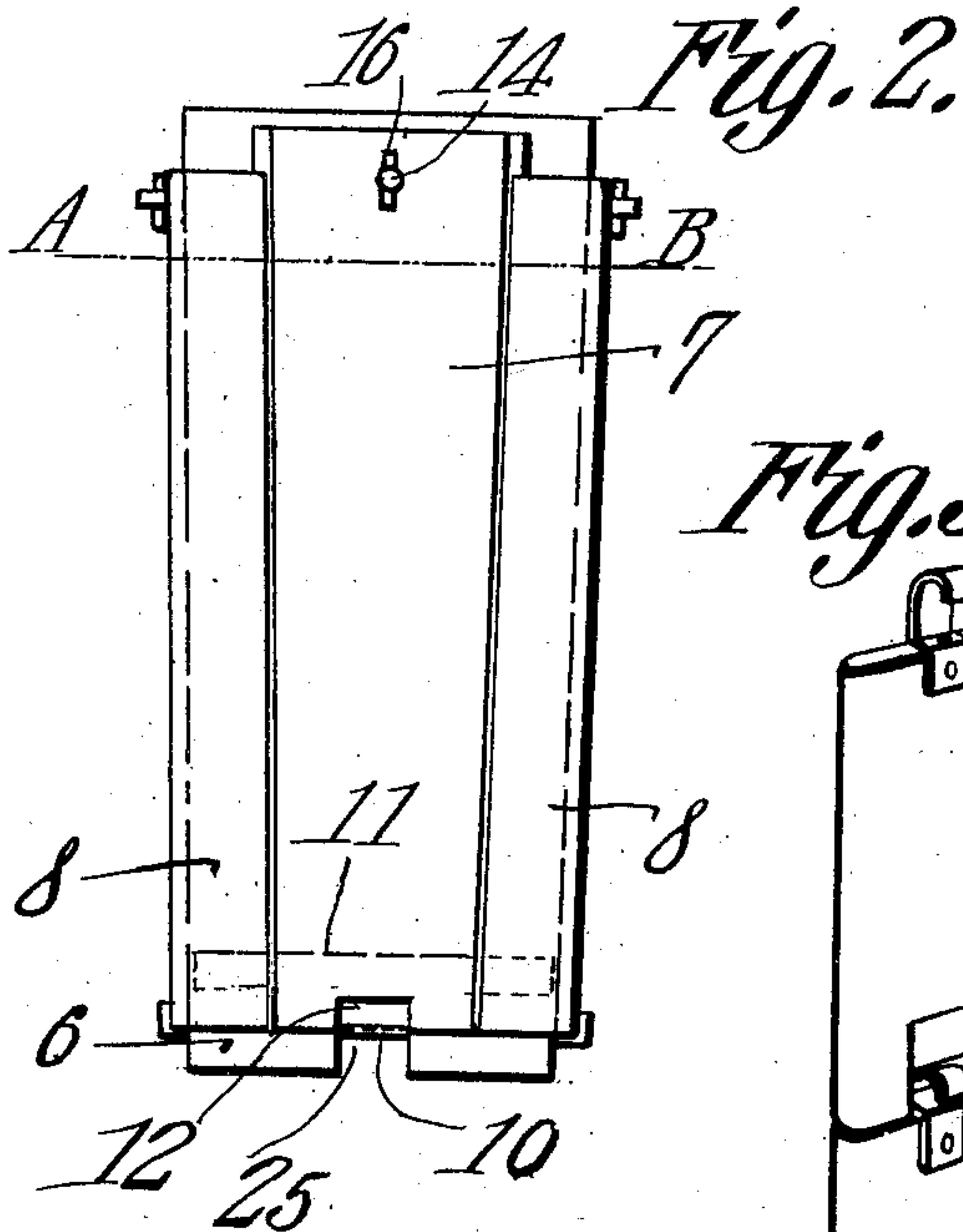


Fig. 5.

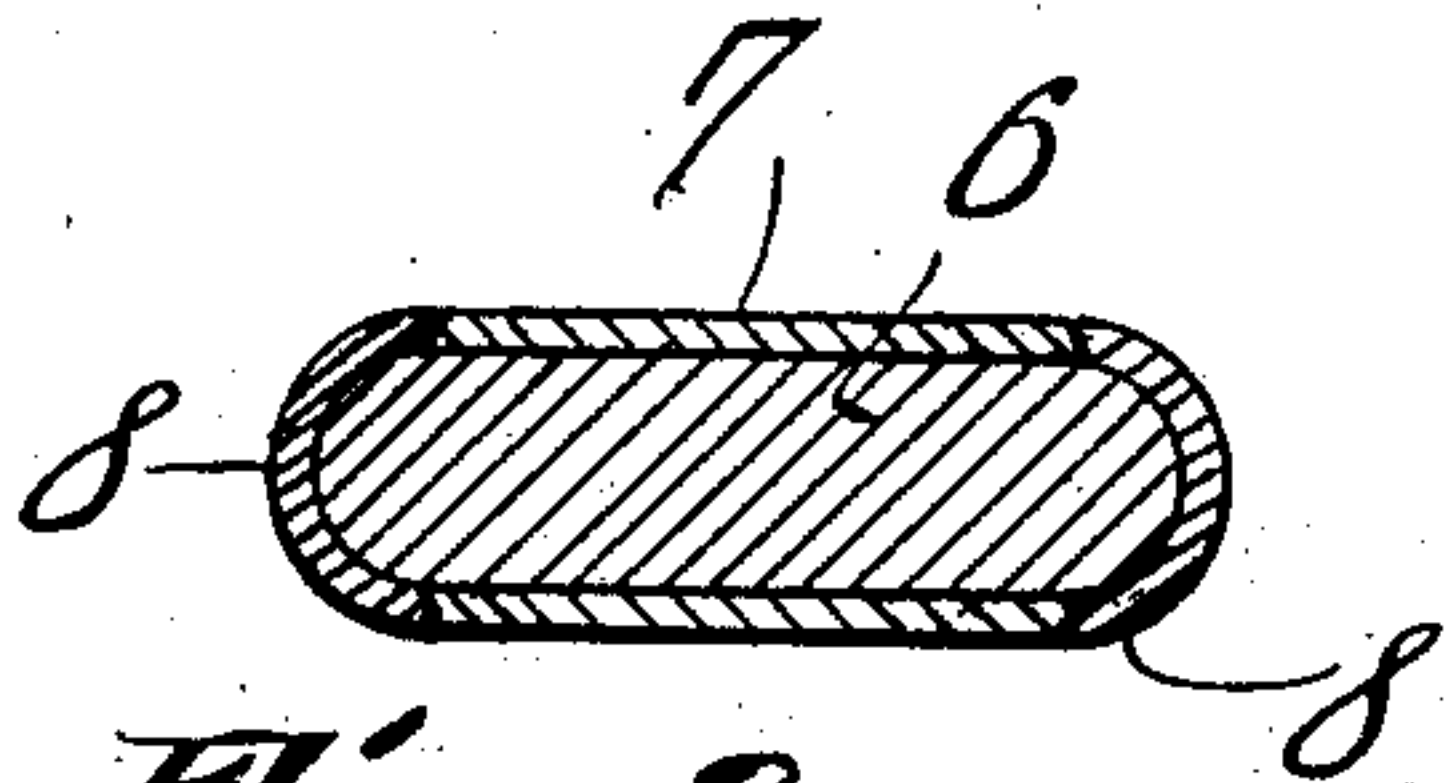
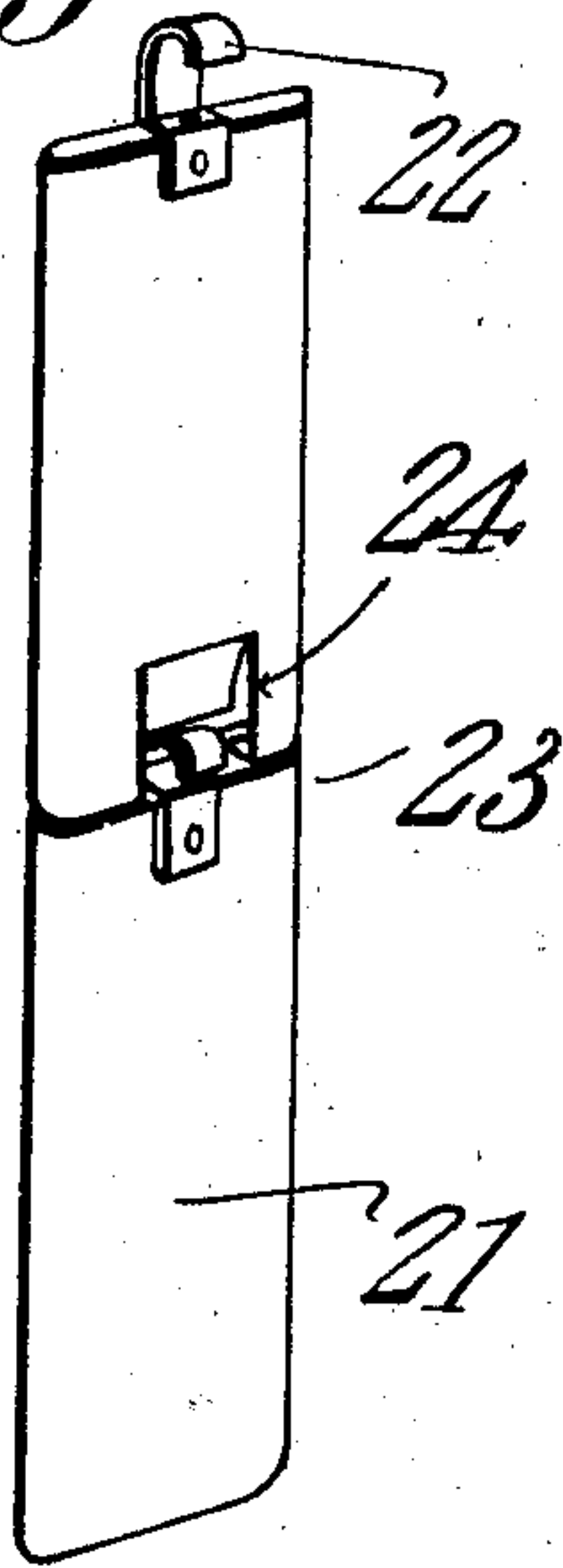
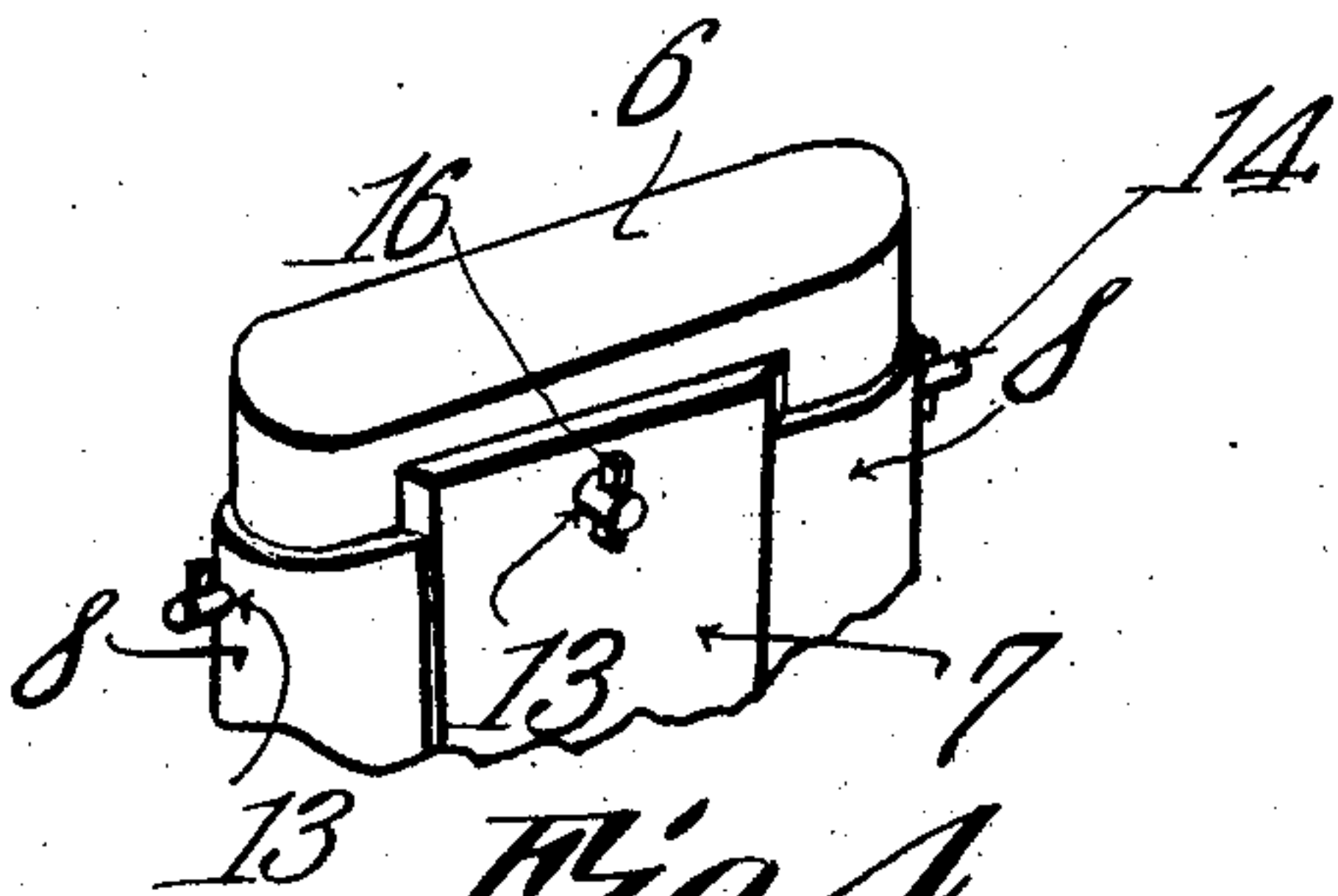


Fig. 3.



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CONCRETE CONSTRUCTION.

973,501.

Specification of Letters Patent.

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Application filed September 17, 1909. Serial No. 518,255.

To all whom it may concern:

Be it known that I, ROBERT C. HANSELL, a citizen of the United States, residing at Muskogee, in the county of Muskogee and State of Oklahoma, have invented a new and useful Concrete Construction, of which the following is a specification.

This invention relates to the construction of concrete buildings and consists in certain novel features hereinafter described and claimed.

In the accompanying drawings,—Figure 1 is a side view, partly broken away, of a concrete building showing the method of construction. Fig. 2 is a side elevation of a form used in the construction of a building in accordance with my invention. Fig. 3 is a view showing the form in horizontal section on the line A—B of Fig. 3. Fig. 4 is a detail perspective view of the upper end of a form showing the method of attaching the casing to the body, or core. Fig. 5 is a detail perspective view of dummy blocks which are used to prevent collapse of the green concrete after the form has been removed.

In carrying out my invention, I construct a foundation 1 in suitable mold forms. Upon the foundation is placed a cap piece 3 which may be of cement or other suitable material and is intended to prevent sagging or cracking of the walls due to settling of the building. There are openings or passages 5 in the walls of the building for the purpose of ventilating and draining the same and preventing the collection of moisture in and upon the walls. The inner and outer flat faces of the walls are formed by the ordinary molds which are built up of boards and studding and connected by cross wires so as to prevent spreading, and after the cement has set these cross wires are cut so as to permit the studding and boards to be taken down, leaving the cross wires within the cement so as to aid in reinforcing the same. The cement or concrete is poured between the said side mold forms in the usual manner and allowed to harden, and the usual metallic reinforcement may be employed if so desired.

In order to form the ventilating passages 5 in the walls I employ a form consisting of a core or body 6 which has a collapsible casing consisting of the side plates 7 and the end plates 8 which are made to extend across the ends or edges of the core which

converge downward. In the construction illustrated, the plates are held in position at their lower ends by hooks or lips 10 which engage behind straps 11 seated in grooves 12 in the core. To secure the upper ends of the plates I provide openings 13 in the said plates, and these openings are adapted to register with openings in the cores, fastening bolts 14 being passed through the said openings and slotted to receive keys 16 by which the said plates and the core will be securely held together, or an ordinary nut may be threaded on the end of the bolt, as will be readily understood. These forms are placed vertically between the inner and outer molds of the wall and any number of them may be employed and they may be arranged in any desired manner according to the number of vertical passages desired to be formed in the finished wall. A single row of passages may be formed along the central line of the wall or two or more parallel rows may be formed and the passages may or may not be staggered. A wall constructed in accordance with my invention also has ventilating openings 17 at its base communicating with the outside air and also with the outer vertical passages 5, and these openings are closed by screens, as indicated at 18, to prevent the entrance of vermin and rodents into the wall. These openings 17 may be formed in the wall in the course of construction by any convenient means but the invention contemplates the provision of a screened sash which is set in the wall in position to form the desired opening and become a part of the completed structure.

At intervals along the webs 19, which are formed between adjacent forms, I insert the horizontal tubes 20 which form communications between the vertical passages 5 and thereby establish ventilation and drainage throughout the wall. The walls, it will be understood of course, are built up by pouring the green concrete between the molds and around the forms to a height nearly equal to that of the forms and then building the side molds to a greater height and repeating the process until the building has reached the desired size. In order to permit rapid construction and avoid the use of a large number of forms while waiting for the concrete to set and also to facilitate the removal of the forms from the ventilating passages I allow the mixture to partially harden and

then lift the forms from their positions and substitute for each form a dummy 21 which is of a size to snugly fit within the opening formed by the form and is provided at its upper end with a hook 22 adapted to engage a pin 23 set in a recess 24 in the lower end of a similar dummy which is adapted to be superimposed. The dummy block 21 is equal to the height of the form and a row of dummy blocks is substituted for the first row of forms after the cement has sufficiently set to permit the removal of the form, and the forms are then again placed in position to rest upon the dummies, as shown most clearly in Fig. 1, the lower end of the form being provided with a recess 25 in order to fit over the hook 22 at the upper end of the dummy. After the wall has been built up to the height set by the second row of forms, the said forms are removed and a second row of dummies is placed in position upon the first row with the pins 23 of the second row in engagement with the hooks 22 of the first row and this operation is repeated through the whole process of building the walls whereby when the walls are finished a chain of dummies will be established in each of the ventilating openings 5. After the walls have set, the dummies can be easily removed by merely drawing upward on the top dummy thereby lifting the entire chain of dummies which may be readily separated from each other as they are drawn from the wall.

When the forms are to be removed, the key 16 and bolt 14 are removed thereby detaching the core from the casing. The core may then be lifted from its position in the wall without trouble owing to its tapered form and the casing will readily collapse. The core will generally be a solid block but it may be a collapsible or a skeleton frame if so desired.

A wall constructed in accordance with my

invention will be provided with air passages which by evaporation and otherwise will drain the walls of all moisture so that the interior of the building will be immune from dampness.

The forms may be so employed that passages of various sizes and shapes may be formed with a single set of forms. The side plates may be used without the end plates or the end plates may be used without the side plates or the cores may be used without any parts of the casing.

It is believed that the many advantages of my invention will be readily understood from the foregoing description, taken in connection with the accompanying drawings, without detailed enumeration of the same.

Having thus described my invention, what I claim is;—

1. The combination of a central block or body having a transverse opening near its upper end, side plates adapted to fit against the sides of the said block or body and having openings near their upper ends, a retaining bolt passing through the openings in the central core or body and the side plates, and a fastening device on the end of the bolt.

2. The combination with a body having grooves therein adjacent one end, of straps seated in the grooves, plates disposed upon the sides of the body and having hooks adjacent one end to engage behind the straps; and means engaging the other ends of the plates and the body to hold the plates upon the body.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

ROBERT C. HANSELL.

Witnesses:

W. M. CANTERBURY,
A. E. TANKERSLEY.