

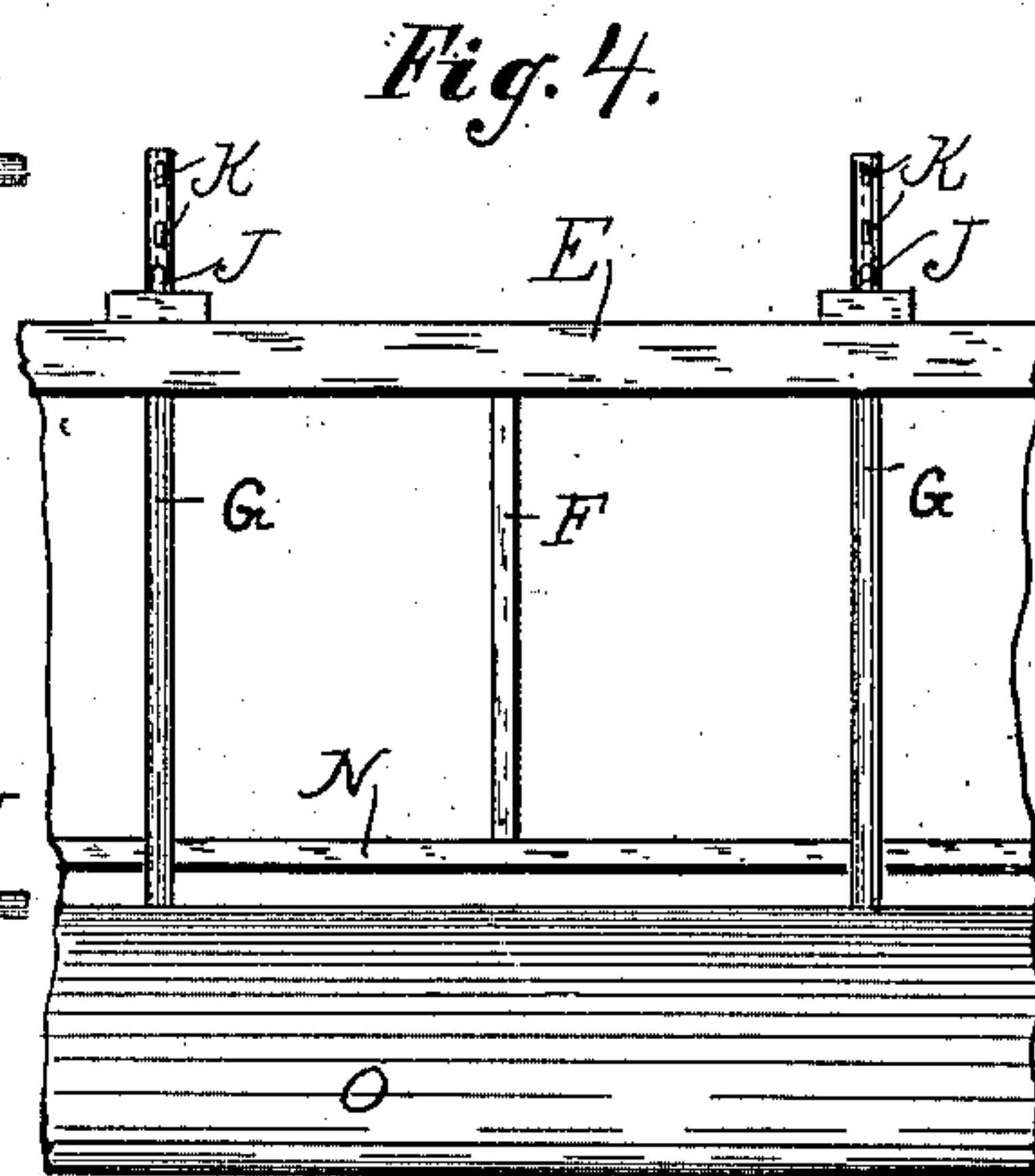
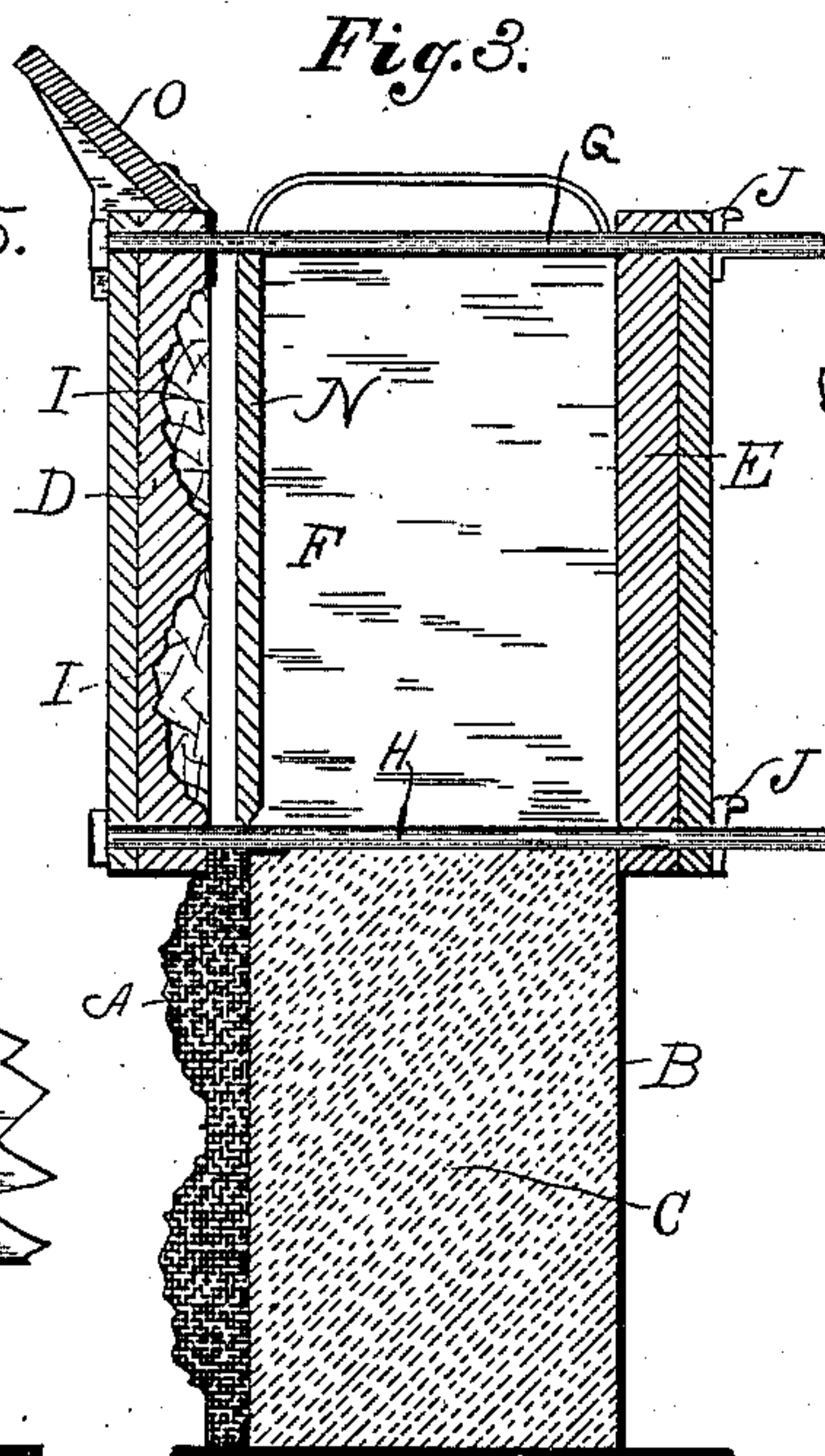
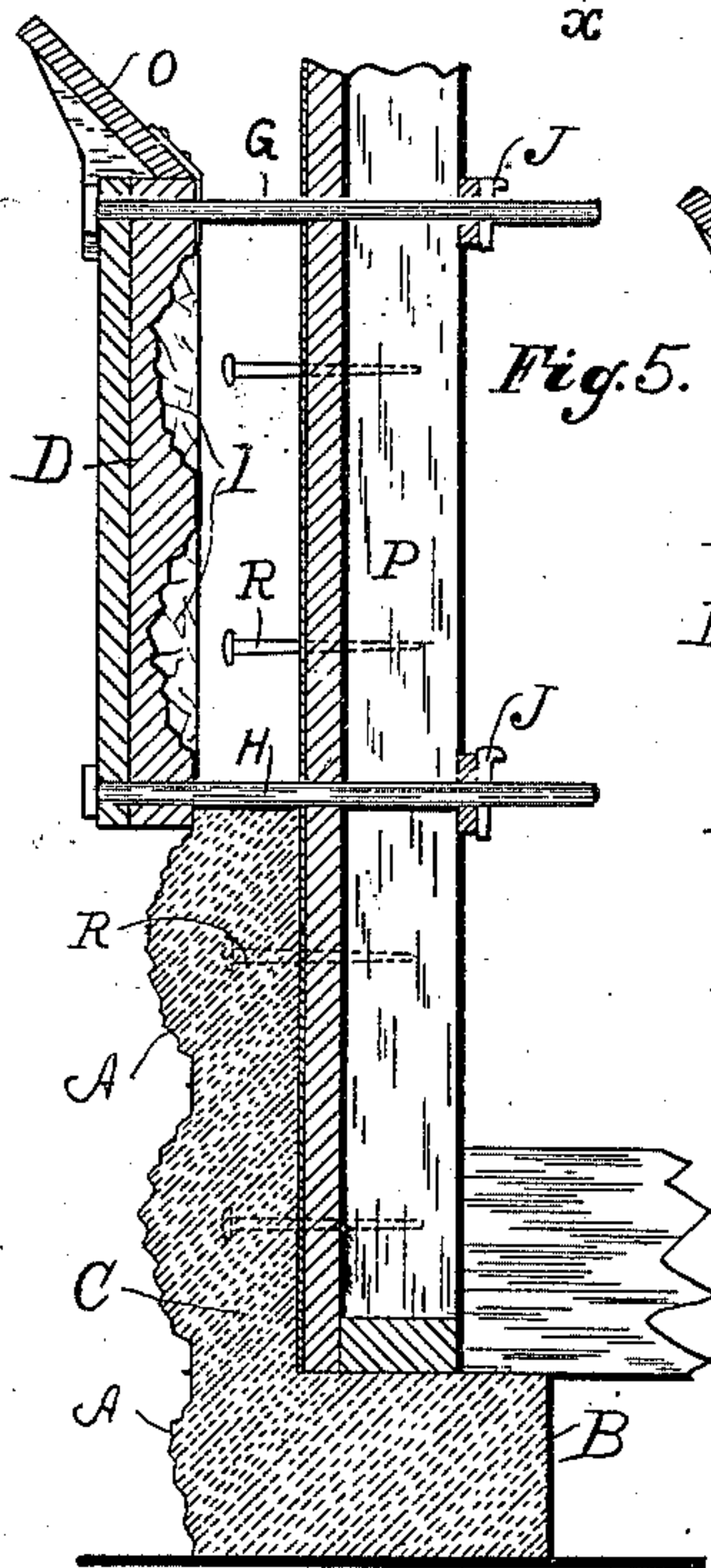
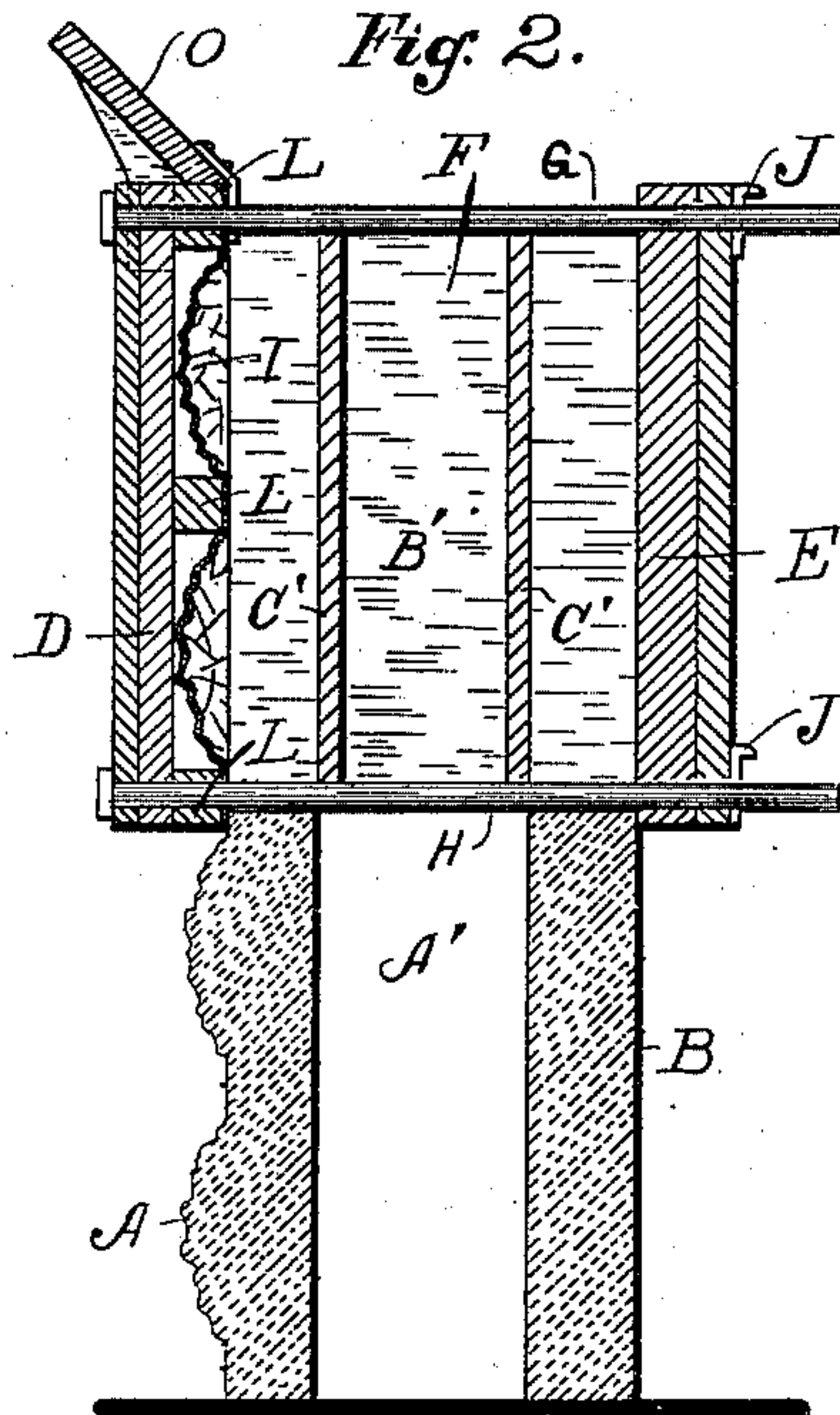
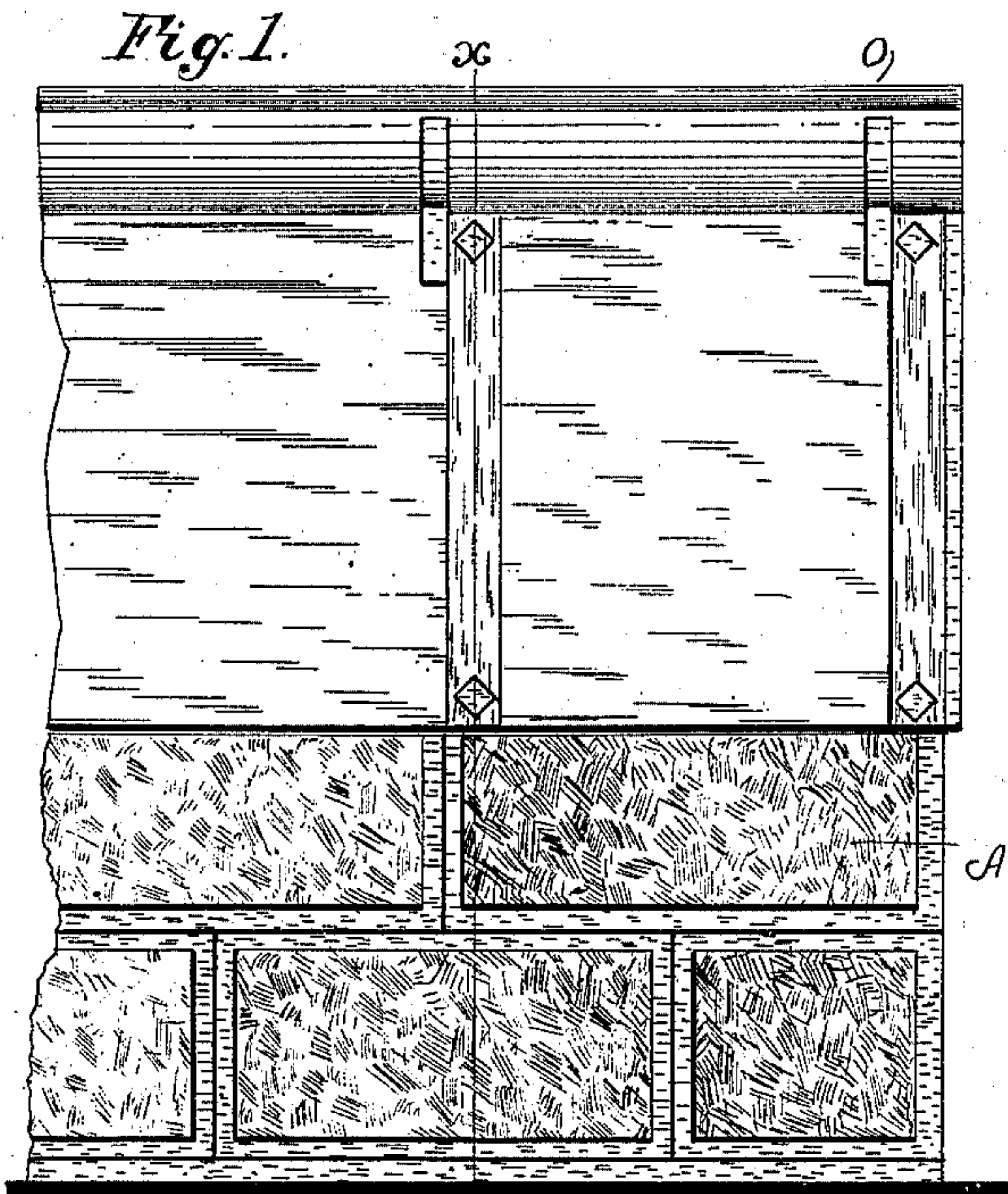
No. 748,352.

PATENTED DEC. 29, 1903.

A. I. DEXTER.
CONCRETE BUILDING WALL.
APPLICATION FILED JULY 11, 1903.

NO MODEL.

2 SHEETS—SHEET 1.



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2 SHEETS—SHEET 2.

Fig. 6.

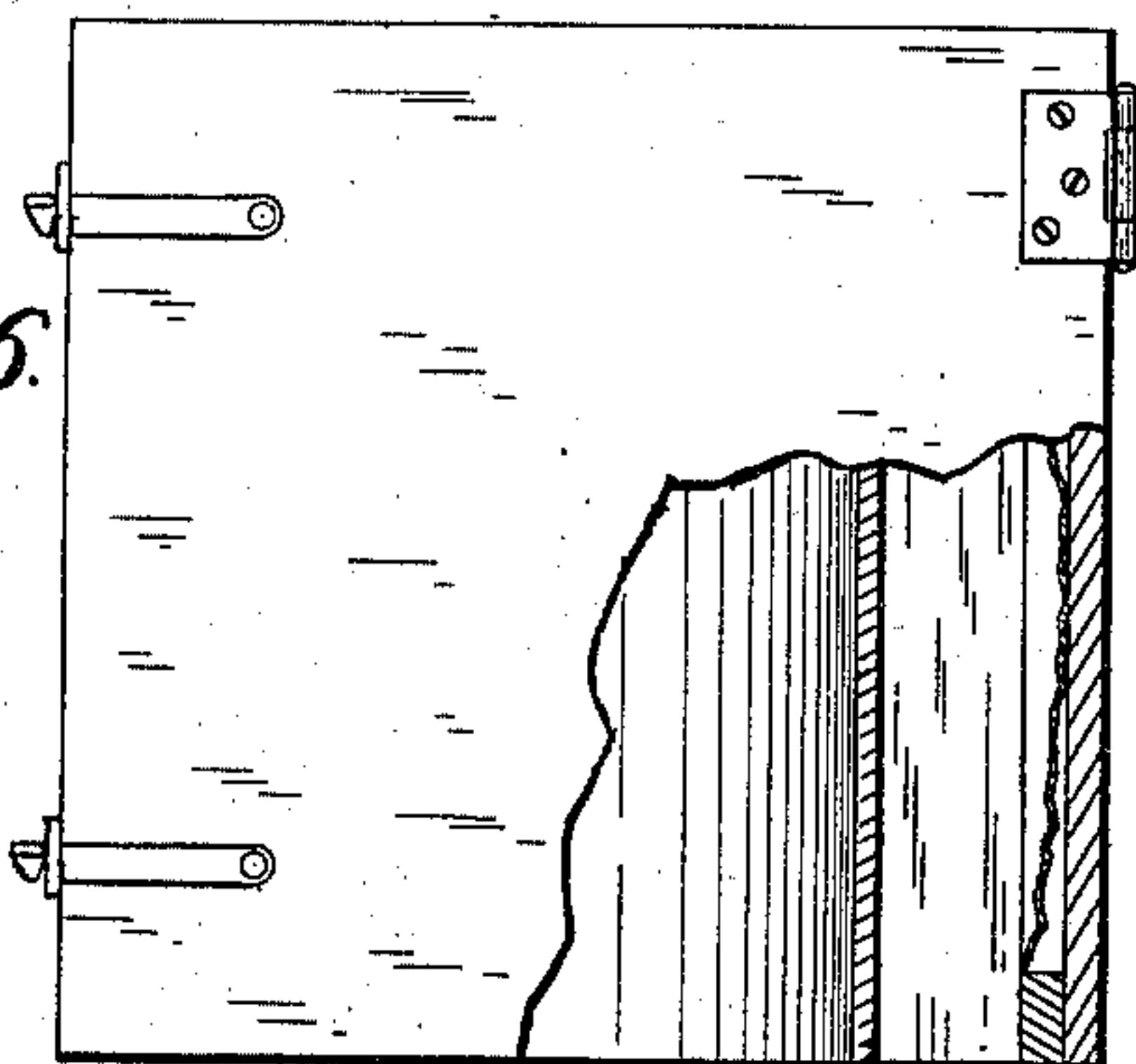


Fig. 7.

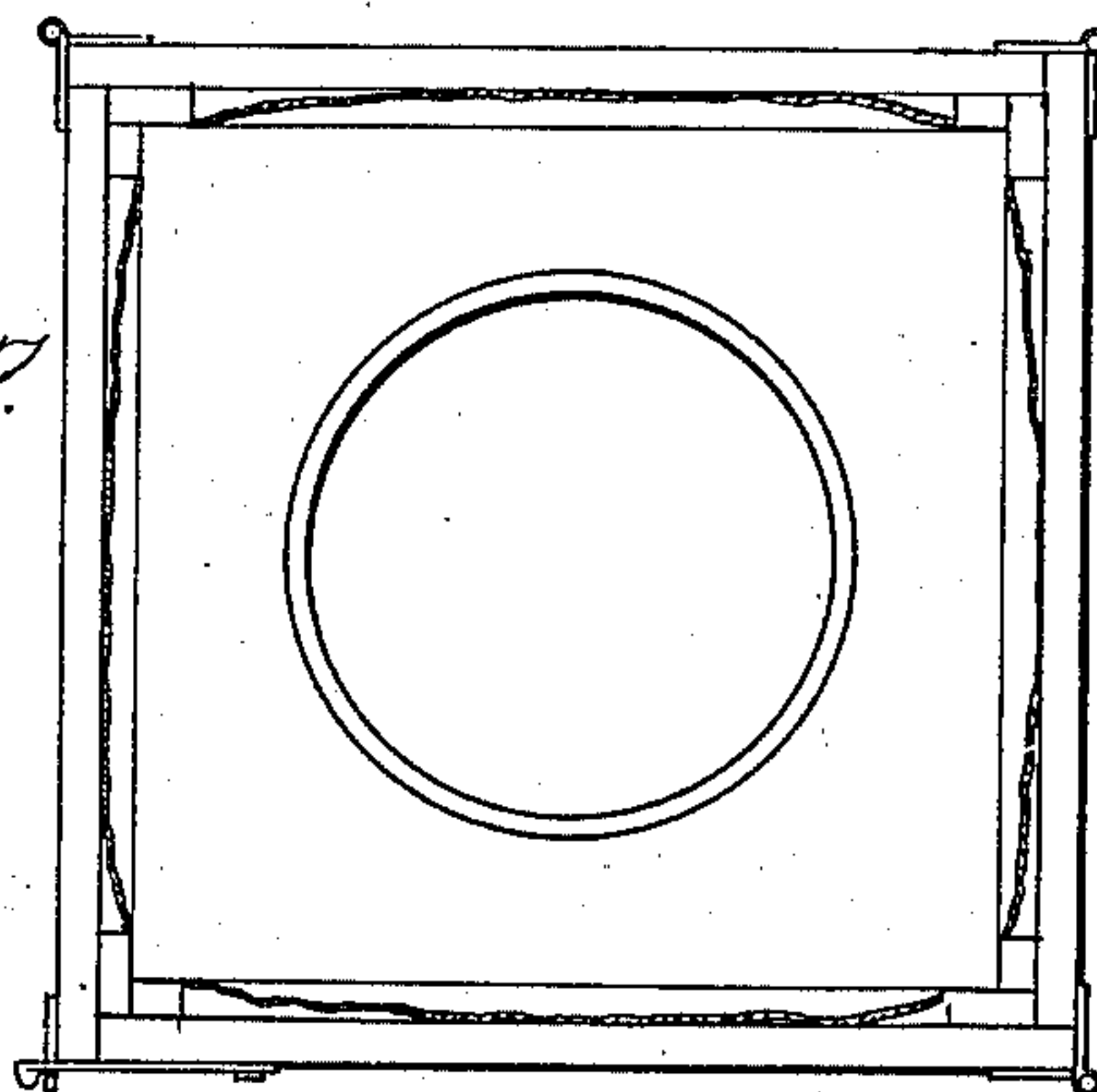


Fig. 9

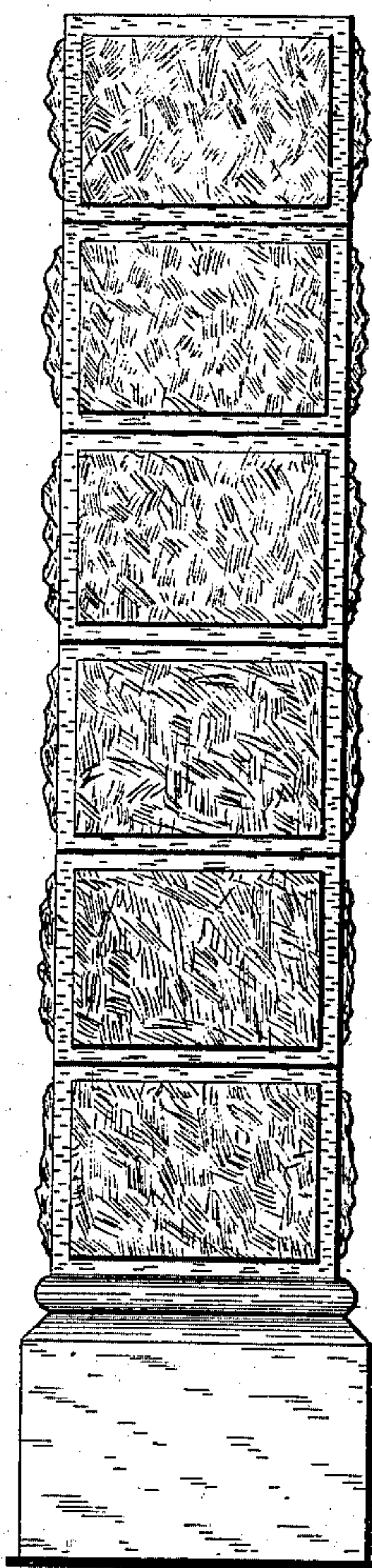
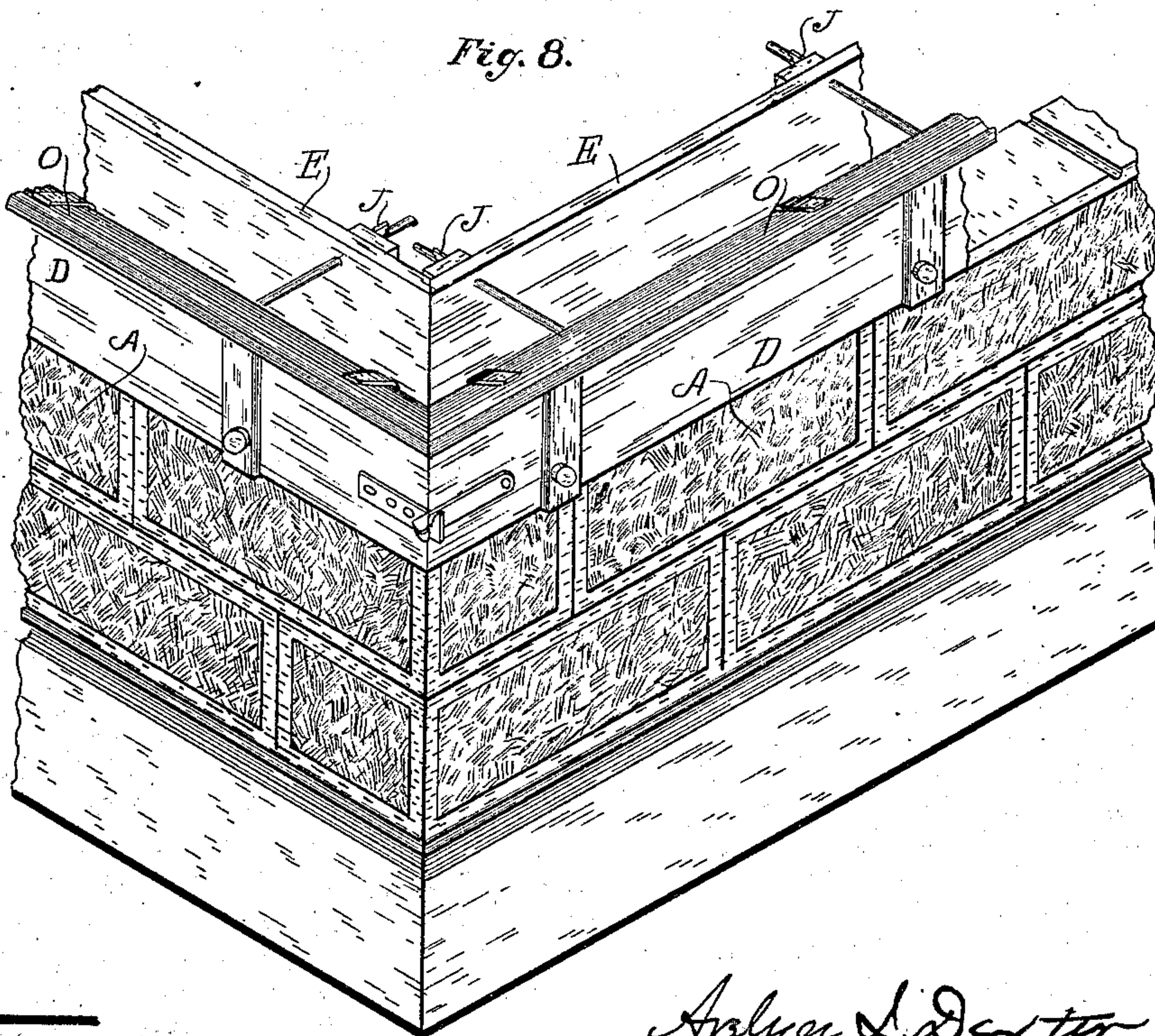


Fig. 8.



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CONCRETE BUILDING-WALL.

SPECIFICATION forming part of Letters Patent No. 748,352, dated December 29, 1903.

Application filed July 11, 1903. Serial No. 165,068. (No model.)

To all whom it may concern:

Be it known that I, AVELYN I. DEXTER, a citizen of the United States, residing at Birmingham, county of Jefferson, and State of Alabama, have invented new and useful Improvements in Concrete Building-Walls, of which the following is a specification.

My invention relates to improvements in concrete walls of buildings and the processes of making the same.

The object of my invention is to form a building-wall of one continuous piece of concrete which when complete resembles in appearance a wall formed in courses of separate pieces of cut stone or other building material.

My invention is further explained by reference to the accompanying drawings, in which—

Figure 1 represents a front view of a portion of my improved wall in process of construction. Fig. 2 represents a vertical section of the same, drawn on line *xx* of Fig. 1. Fig. 3 represents a similar vertical section to that shown in Fig. 2 provided with a device for forming a veneer or front surface of a different grade or quality of concrete from that used in the central or interior surface of the wall. Fig. 4 represents a top view of the molding-box which is used in the construction of my concrete wall. Fig. 5 is a vertical section of my invention as used in forming a veneer for a frame, brick, or other building which has been previously constructed. Fig. 6 represents a side view of the molding-box for forming the columns. Fig. 7 is a top view of the same. Fig. 8 is a perspective view of the corner of a building with a molding-box connected therewith. Fig. 9 is a side view of one of the columns.

Like parts are identified by the same reference-letters throughout the several views.

A represents the exposed or front surface of a concrete wall formed by my process.

B is the rear surface.

C is the interior or central portion.

The front surface A is preferably formed of a finer and harder grade of concrete containing a larger percentage of cement, which gives a finer finish to the wall and is better adapted to resist the action of the elements.

The interior portion C is preferably formed of a larger percentage of crushed stone or

other cheaper material commonly used in making concrete in connection with the required quantity of cement and sand.

In constructing the wall a molding-box of the required dimensions corresponding with the thickness of the wall and height of the courses is employed, which box comprises, among other details, a front board D, rear board E, transversely-arranged stay-boards F, connecting-rods G and H, and an ornamental molding-plate I. The front and rear boards D and E are adjustably retained at the desired distance apart corresponding with the thickness of the wall by the stay-boards F and the retaining-keys J J, which keys are inserted in apertures K, provided therefor in said connecting-rods. The molding-plate I is preferably made of sheet metal, which metal may be formed with dies in a great variety of shapes corresponding with the various designs, styles, or kinds of masonry which it is desired to represent. For example, at the base of the building a molding-plate may be employed which will produce a surface which resembles large blocks of rock-faced stone, such as are usually employed for the foundations of buildings. For the next succeeding courses a molding-plate may be used which will produce a surface which resembles two courses of stone of smaller dimensions, such as are usually employed above the foundation-wall, while other forms of molding-plates may be used which will form a surface resembling ornamental panels and moldings, such as are usually employed around the windows, doors, cornices, &c., and as may be required to conform to the design of the architect. In the molding-box shown in Fig. 2 the molding-plate is formed of sheet metal, which is supported centrally and at its upper and lower edges from the front board D upon the longitudinal bars L. The molding-plate may, however, be formed of a solid piece of wood or metal, as shown in Figs. 3 and 5, in which case the molding-surface is carved or otherwise formed thereon and the bars L, used to support the sheet-metal molding-plate, are dispensed with. The molding-box being connected together, as shown in Fig. 2, the concrete is placed therein between the vertical walls of the boards D and E until the box is filled to the connect-

ing-rod G. A plurality of similar boxes to that shown are preferably provided, which together extend the entire length of the wall.

When a course of concrete has been thus formed the length of the wall and the cement has had time to set or harden, the lower rod H is withdrawn and the upper rod G is loosened and adjusted so that the front molding-board may be drawn forward and away from the front surface of the wall far enough to be brought out of contact therewith, when said molding-box is raised a height corresponding with its width, when the connecting-rod H is again inserted and the front and rear boards D and E are again secured in place, the rod H being inserted in that portion of the wall from which the rod G has been removed and supports the box as it is being filled. When all the molding-boxes have been thus raised, they are refilled with concrete, thus forming another series representing two additional courses of masonry, and this process is continued from the foundation upward to any desired height.

Assuming that the point in the wall has been reached where it is desirable to insert a panel, molding, or ornamental border, the molding-plate I is removed, and an ornamental molding-plate of the desired form is substituted therefor, by which such ornamental molding or border is produced. Thus it will be obvious that by the process described each successive course in the building from the foundation to the top, including the moldings and ornamental borders, adhere together and form one solid body of concrete, while the exterior surface has the appearance of a wall formed of ordinary stone or brick masonry conforming in shape and appearance to the architect's design of the building, while owing to the fact that the several courses of concrete adhere together in a solid mass the use of mortar is unnecessary in forming the wall. The wall thus formed is stronger and warmer than a wall formed of a multiplicity of parts and can be made at less expense both for material and labor employed in its construction, and owing to the fact that the ornamental molding-plates employed are interchangeable the builder is free to exercise his taste both as to color and ornamental configuration of its exterior surface.

With a view of giving the exterior surface of the wall a finer finish at less expense for cement I have provided a device by which the exterior surface may be formed separately of a finer grade of concrete than the central and rear portions, which are formed of coarser and less expensive material. To accomplish this object, I employ a vertical partition N, which is supported at a short distance from the molding-plate I and is held in place by the transversely-arranged stay-boards F. The partition N serves as a division-wall between the two kinds of concrete, the finer and more durable quality being placed between the partition N and the

molding-plate I, as indicated in Fig. 3, while the coarser grade is placed between the partition N and the board E, the partition N being raised at intervals from time to time as the concrete is placed in the molds, whereby when the two kinds of concrete are put in place they unite together, forming a solid continuous wall. It will also be understood that when desirous to form an ornamental border of a different color from the main portion of the wall the concrete which is placed between the molding-board and the partition N is given the desired color before inserting it.

To facilitate in placing the concrete in the molding-box, I have provided the same with a receiving-board O, which is supported from the upper edge of the front board D at an oblique angle thereto, diverging outwardly and upwardly therefrom, whereby when placing the concrete or other substances in the molding-box it is prevented from dropping against or being brought in contact with the exterior surface of the finished wall.

When desirous to use my process for forming a veneer for the exterior surface of frame or other buildings, the inner molding-board E is dispensed with, and the exterior board D is supported from the wall P of the building by the connecting-rods G and H, the inner ends of which are secured to such wall in apertures provided therefor, as indicated in Fig. 5.

Preparatory to supporting the molding-box from the wall the exterior surface is provided with a plurality of veneer-retaining spikes R, which are driven into the wall, leaving their heads projecting a slight distance therefrom, whereby when the concrete veneer sets around the protruding ends of the spikes it is retained in place thereby against the exterior surface of the building which it is adapted to cover.

It will of course be understood that as each successive course or layer of concrete is placed one upon another the rods G and H are withdrawn from the walls of the building which is being covered and said mold raised a height corresponding with the height of the series, the lower rod H being placed in the aperture above, from which the rod G has been withdrawn, and the rod G is placed in the next aperture provided therefor above. It will also be understood that by forming the molding-plate I so as to represent two courses of masonry in which the division-lines at the ends of the blocks of one course are caused to break joints with the division-lines of the next succeeding course the wall when completed will represent a succession of courses in which division-lines of the blocks break joints with each other as in ordinary masonry without the necessity of longitudinal adjustment of the molds, as would otherwise be required were the molds made to represent but a single course of blocks.

When desirous to economize material or to prevent the radiation of heat or absorption of moisture through the wall of the building, a dead-air space A' may be formed in the wall as it is being constructed by employing a central molding-block B', which block may be formed by the two longitudinal boards C' C', connected at their ends to the transversely-arranged stay-boards F, in which case said molding-block and boards may be handled together. The dead-air space may also be formed by using solid blocks of the desired length and thickness, in which case they may be handled separately from the molding-box or transverse stay-boards, as occasion may require.

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

The process herein described of making an integrally-formed concrete wall of different grades of concrete representing blocks and courses of masonry consisting, first, in providing a suitable molding-box, the exterior molding-plate of which is so shaped as to give the exterior surface of the concrete placed therein, when hardened, the form and ap-

pearance of courses of masonry; second, in subdividing the molding-box into two compartments by a longitudinally-arranged partition and depositing between such partition and the molding-plate, a finer grade of plastic cement and filling the mold on the opposite side of said partition with a cheaper grade of cement, and simultaneously raising said partition and molding-box from time to time as said different grades of cement are deposited in the mold, so as to permit the two grades of cement to come in contact and adhere together; third, in permitting the two kinds of cement thus deposited to set and harden in the mold; fourth, in separating the vertical sides of the molding-box so as to be raised free from contact with the finished courses of the wall, and fifth, in repeating the steps of the process described until the desired height of the wall is reached, substantially as set forth.

In testimony whereof I affix my signature in the presence of two witnesses.

AVELYN I. DEXTER.

Witnesses:

JAS. B. ERWIN,
H. Z. TAUGHER.