

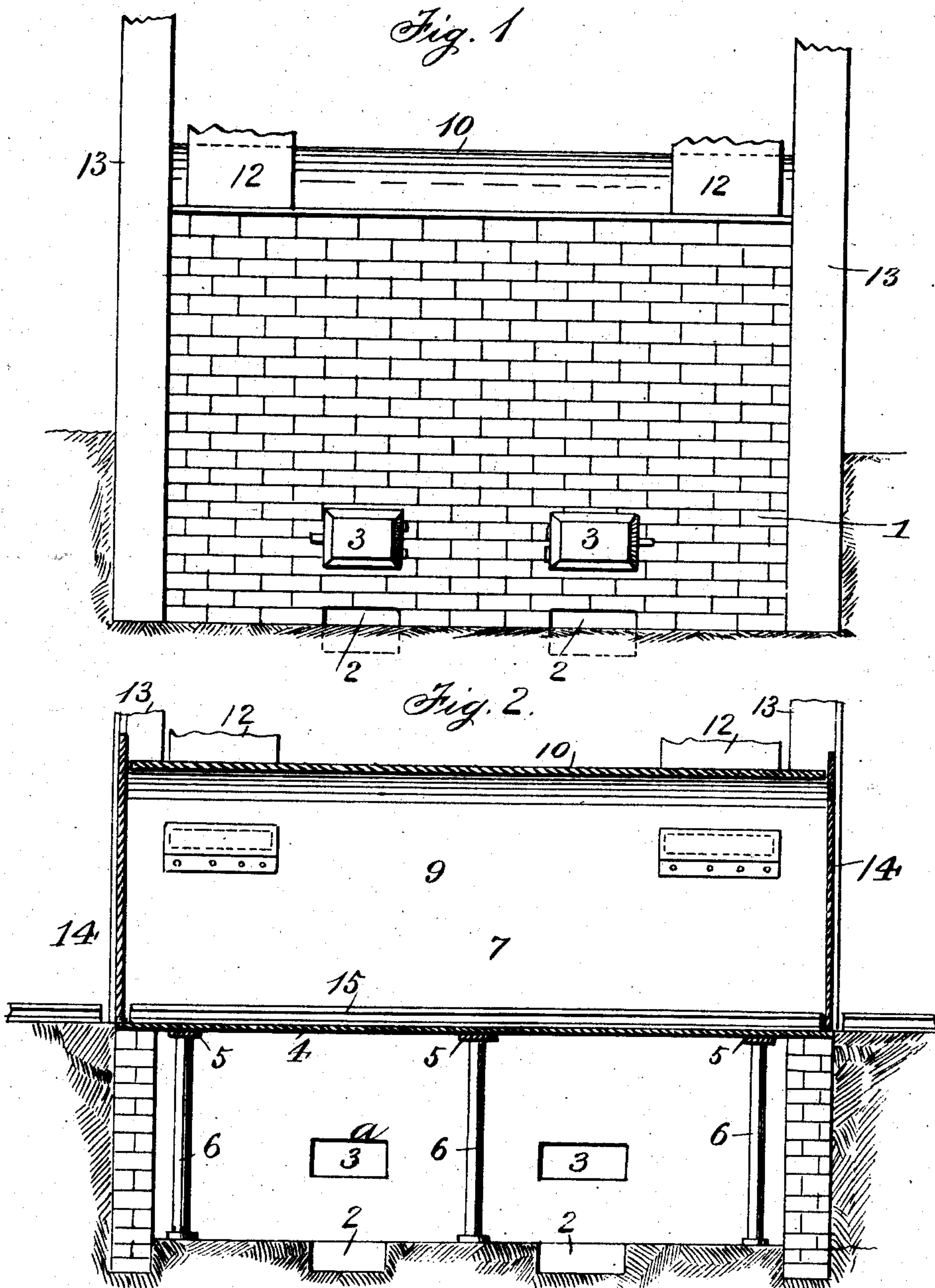
No. 854,251.

PATENTED MAY 21, 1907.

W. E. STEPHENS.
DRYING KILN.

APPLICATION FILED NOV. 19, 1906.

3 SHEETS—SHEET 1.



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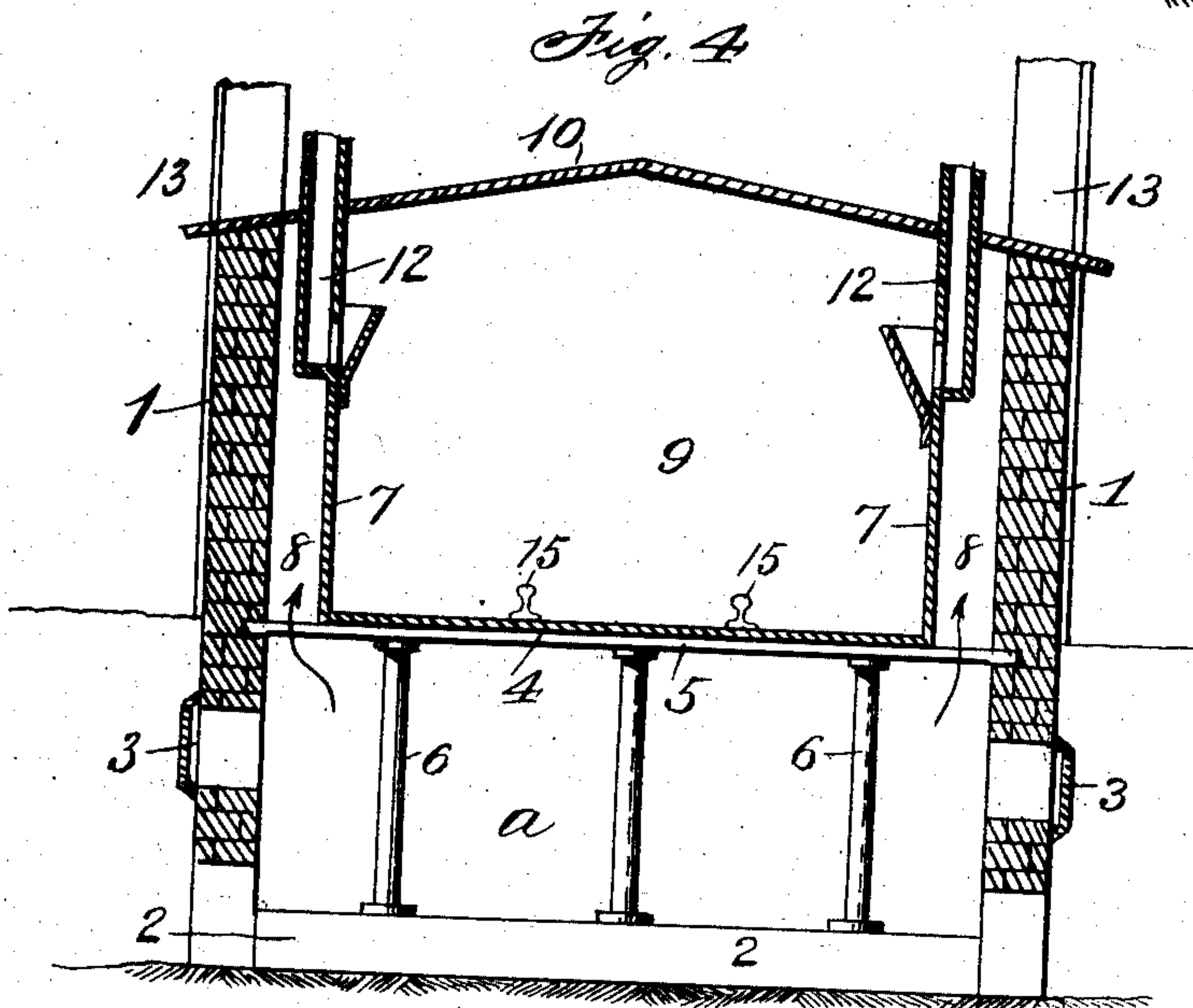
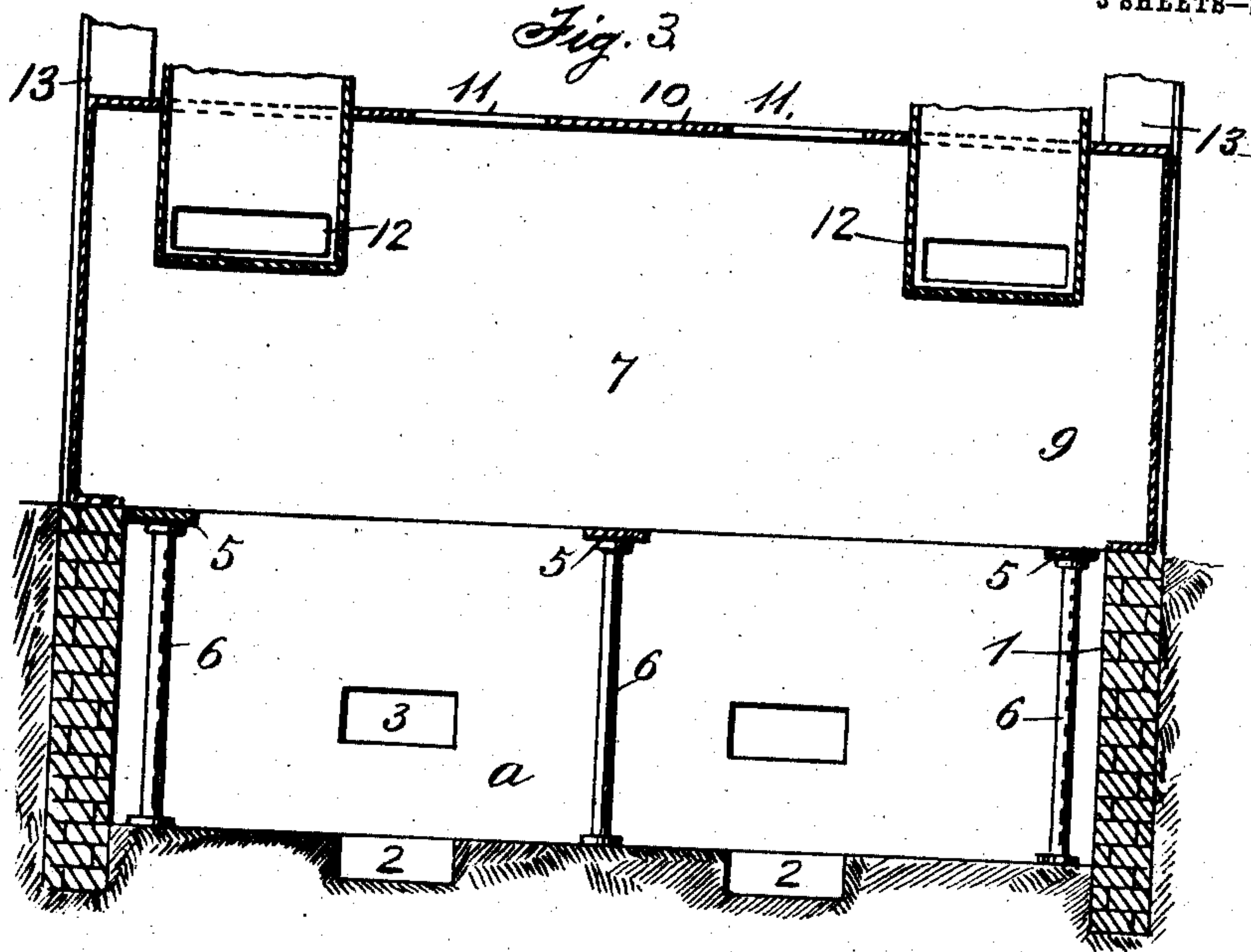
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3 SHEETS—SHEET 3.

Fig. 5.

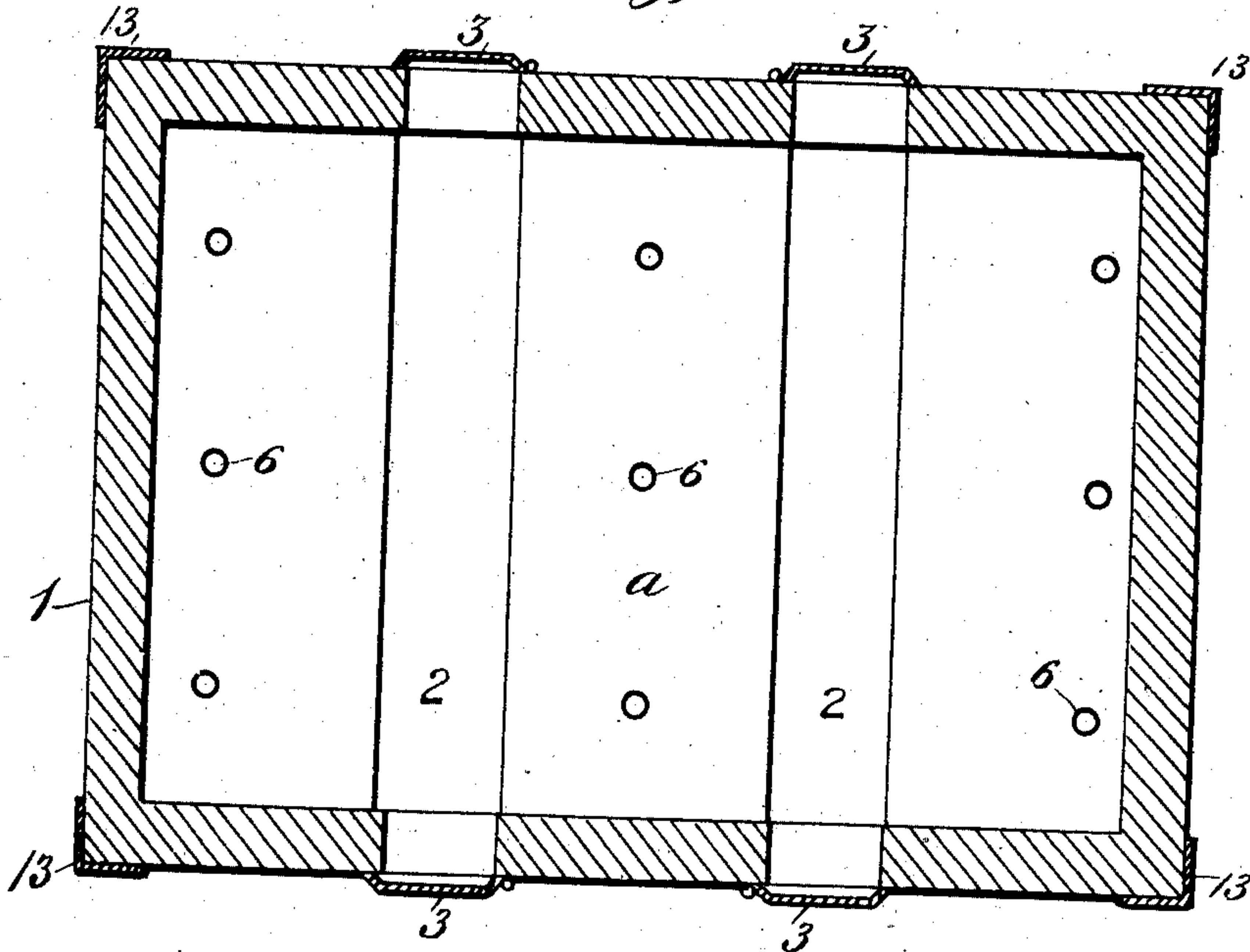
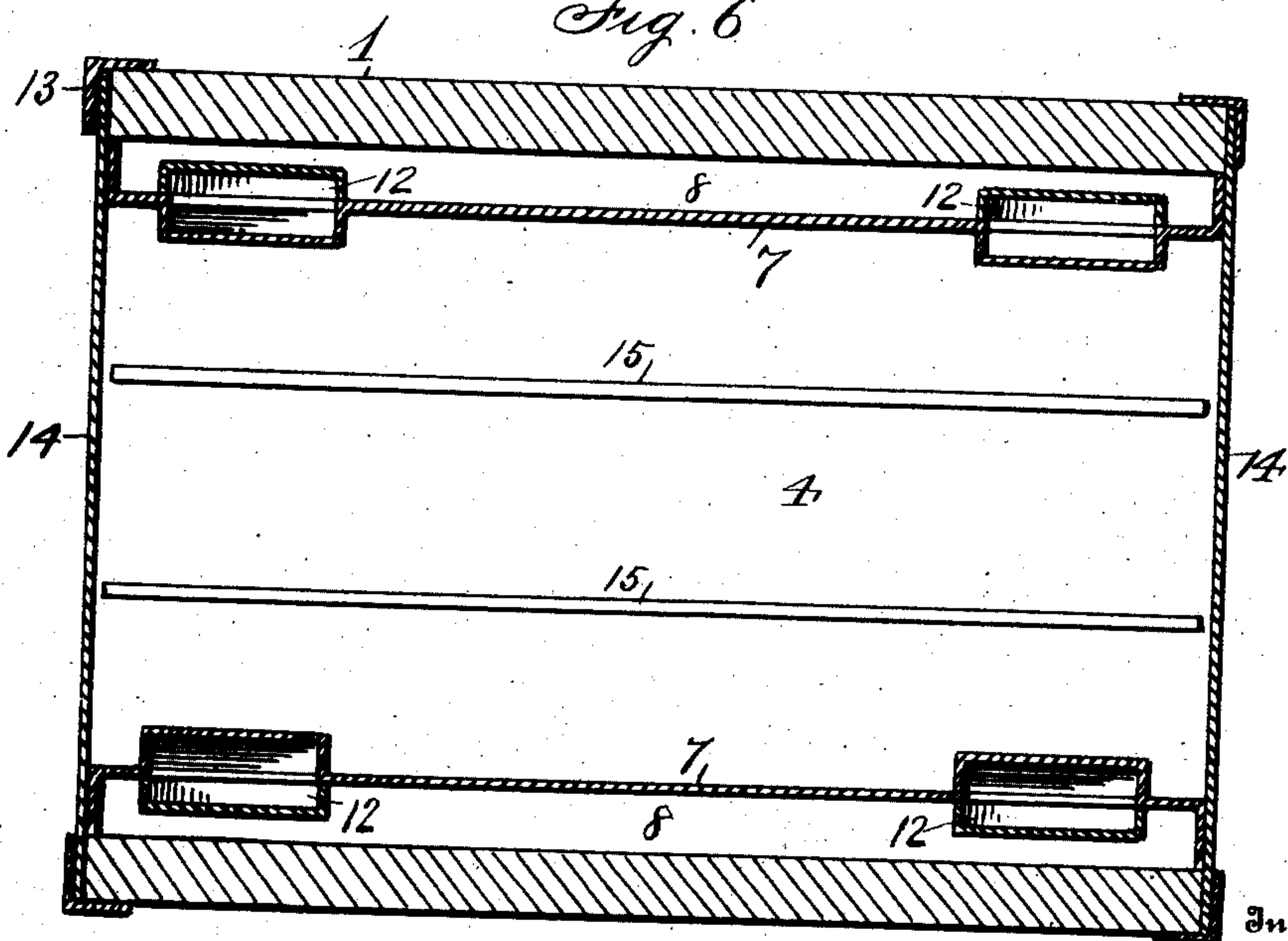


Fig. 6.



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UNITED STATES PATENT OFFICE.

WILLIAM E. STEPHENS, OF WALLISVILLE, TEXAS.

DRYING-KILN.

No. 854,251.

Specification of Letters Patent.

Patented May 21, 1907.

Application filed November 19, 1906. Serial No. 344,175.

To all whom it may concern:

Be it known that I, WILLIAM E. STEPHENS a citizen of the United States, residing at Wallisville, in the county of Chambers and State of Texas, have invented certain new and useful Improvements in Drying-Kilns, of which the following is a specification.

My invention relates to improvements in kilns or driers, more especially for treating or drying lumber. Its object is to provide for suitably conducting or controlling the drying or curing action of the furnace-heat as delivered to the drying chamber of the kiln or drier; to provide for the requisite ventilation of the drying chamber; and to carry out these ends in a simple, economic and effective manner.

Said invention consists of certain structural features or instrumentalities substantially as hereinafter fully disclosed and specifically pointed out by the claims.

In the accompanying drawing illustrating the preferred embodiment of my invention—Figure 1 is a side elevation thereof. Fig. 2 is a central vertical longitudinal section of the same. Fig. 3 is a similar section produced through the ventilating tubes also through the lateral heat conducting spaces, and out through which the smoke &c., also pass. Fig. 4 is a vertical transverse section produced in the line of an ash-pit. Fig. 5 is a horizontal section taken below the floor of the drying chamber. Fig. 6 is a like section produced above said floor and through said chamber.

In the disclosure of my invention, I suitably erect directly upon the ground an outer inclosure 1, with end and lateral walls, of either bricks or iron and preferably of the general outline shown. In the ground-bottom of the inclosure 1 are formed ash-pits 2 opening out below the fire-chamber *a* at one side, and directly below the fire-chamber doors 3.

The floor 4, which is of suitable material, as sheet iron, is supported upon transverse iron straps or bars 5 extending, and suitably fastened to the lateral walls of the inclosure 1, which iron bars or straps are themselves supported in position upon the upper ends of upright pipe-sections or posts 6 resting upon the ground floor of the kiln or drier, the space below said floor forming the fire-chamber or furnace, access to which may be obtained through the doors 3, for replenishing the fuel thereof.

From the floor 4, extending upward the rest of the height of the inclosure lateral-walls, are additional lateral walls 7 preferably of iron, suitably joined at their ends to the ends of said inclosure lateral-walls, thus forming lateral passages or spaces 8, opening down into the fire-chamber or furnace *a* and conducting or delivering the heat or fire-products up around the drying chamber 9 also thus formed, for drying the lumber or contents of the latter. Said inner lateral-walls have secured to their upper edges a preferably sheet-iron roof 10, which also extends over the upper edges of the outer lateral-walls 2 thus closing the upper ends or passages 8, to provide for suitably retaining the heat for utilization in drying the lumber or chamber-contents and for the exclusion of the combustion-products from said chamber or the drying lumber. Said roof has formed through it, in the plane of the lateral heat-conducting passages or spaces 8, at suitable intervals apart, openings or outlets 11 for the escape of the utilized products of combustion.

Opening laterally into the drying chamber 9 are ventilating tubes or flues 12 for carrying off the moisture or other foreign matter eliminated from the drying lumber, said tubes or flues extending upward through the lateral spaces 8 and a short distance above the roof 10 and opening out into the atmosphere for the requisite disposition of the aforesaid eliminated matter. By this arrangement, it will be noted that the ventilating tubes, being exposed to the heating action of the combustion-products entering the lateral spaces, they will exert a suction action and thus facilitate their ventilating effect, as is obvious.

At the ends of the chamber 9 and suitably guided in upstanding corner standards or guides 13 of the inclosure 1 as one way of supporting the same in position, are slidable doors or closures 14 for obvious purposes. These slides or doors may be conveniently operated in any well known way, as is apparent.

Suitable rail-sections 15 are fastened to the drying-chamber floor 4, upon which may be run the lumber-loaded car into the drying chamber 9 as commonly practiced, for treating or drying the lumber.

The number of outlets or exits for the combustion-products and the number of ventilating tubes are regulated or varied according to the length or dimensions of the in-

closure or drier, which will be readily appreciated.

I claim—

1. A drier for lumber employing a general inclosure, having a fire chamber and in its upper portion additional lateral inner walls, and a roof-member overlying said inner lateral walls and the corresponding inclosure walls, a drying chamber and lateral spaces or passages being thus formed the latter opening into the fire-chamber, said drying chamber having ventilating tubes or flues arranged within said lateral spaces for heating and opening thereinto and extending out through said roof.

2. A drier, employing a fire chamber, a general inclosure having its roof provided with openings and inner additional lateral walls forming in connection with the corresponding inclosure walls lateral spaces or passages opening into the fire-chamber below, a drying chamber having a floor equipped with means for receiving the lumber or material carrying means, and ventilating tubes opening at their lower ends through said inner lateral walls and communicating

with said drying chamber, said ventilating tubes delivering out through the roof of said general inclosure, and said lateral spaces or passages opening upward through openings or outlets formed in said roof.

3. A drier, employing an upper drying chamber having its roof provided with openings and its floor upheld by transverse bars secured at their ends in the outer lateral walls of the drier, and uprights or posts placed under said transverse bars, inner additional lateral walls forming in connection with the corresponding walls of the drier lateral heating spaces opening into the fire-chamber below, and opening upward through openings in the inclosure-roof, and ventilating tubes arranged within said lateral heating spaces or passages and opening out through said roof and communicating with said drying chamber.

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

WILLIAM E. STEPHENS.

Witnesses:

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JAMES X. ADAMS.