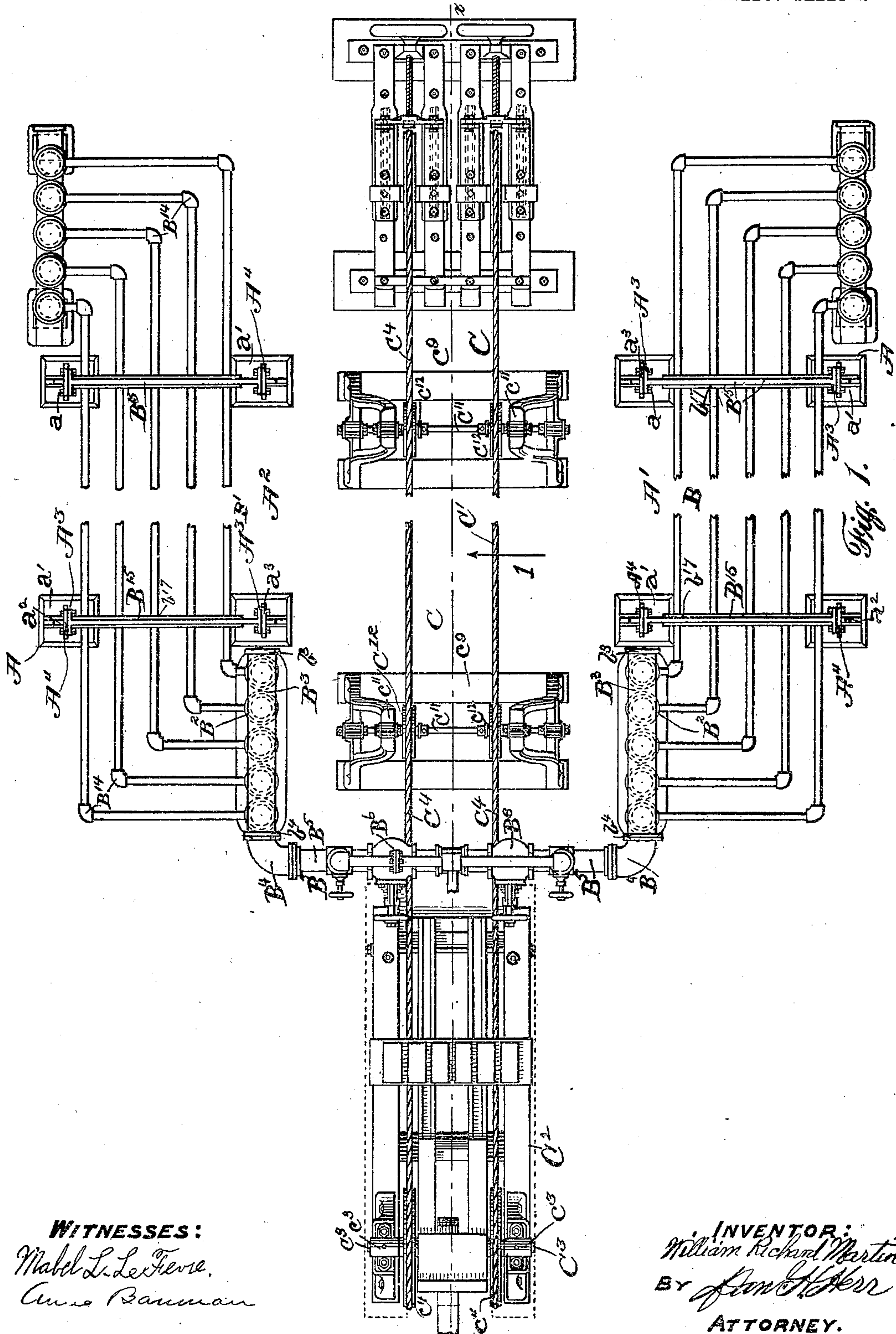


W. R. MARTIN.
BRICK DRYING APPARATUS.
APPLICATION FILED MAR. 17, 1906.

956,123.

Patented Apr. 26, 1910.

3 SHEETS—SHEET 1.



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3 SHEETS—SHEET 2.

Fig. 2.

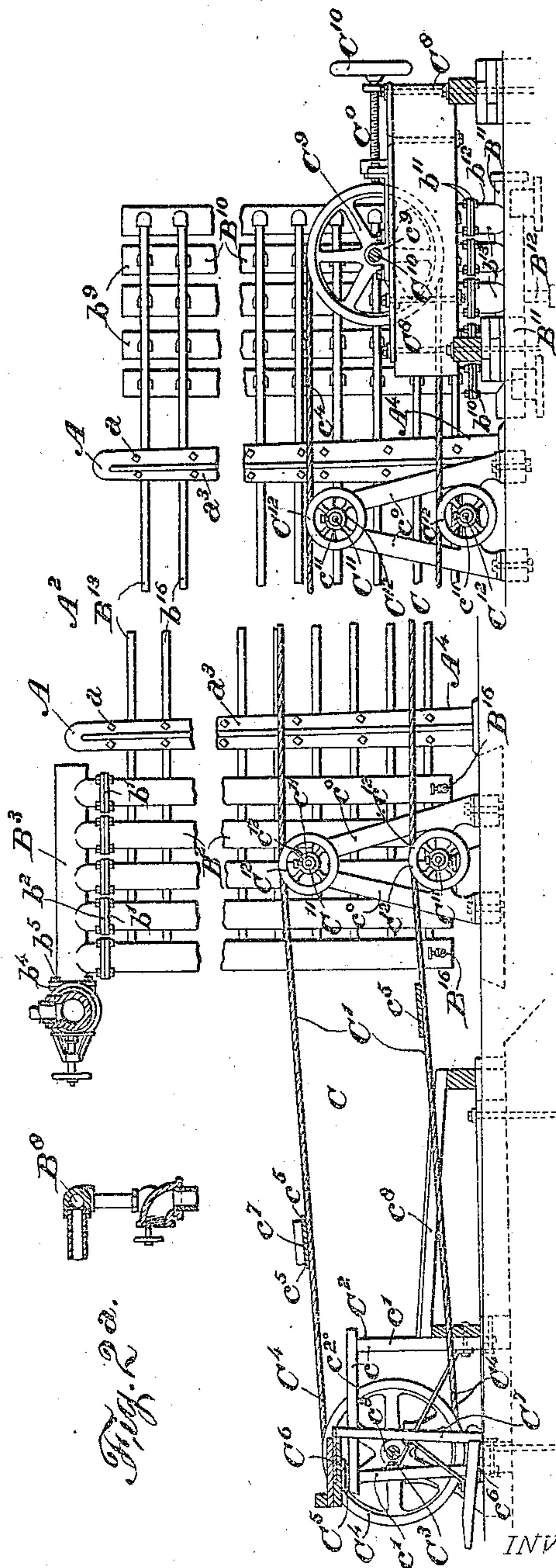


Fig. 2a.

WITNESSES

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3 SHEETS—SHEET 3.

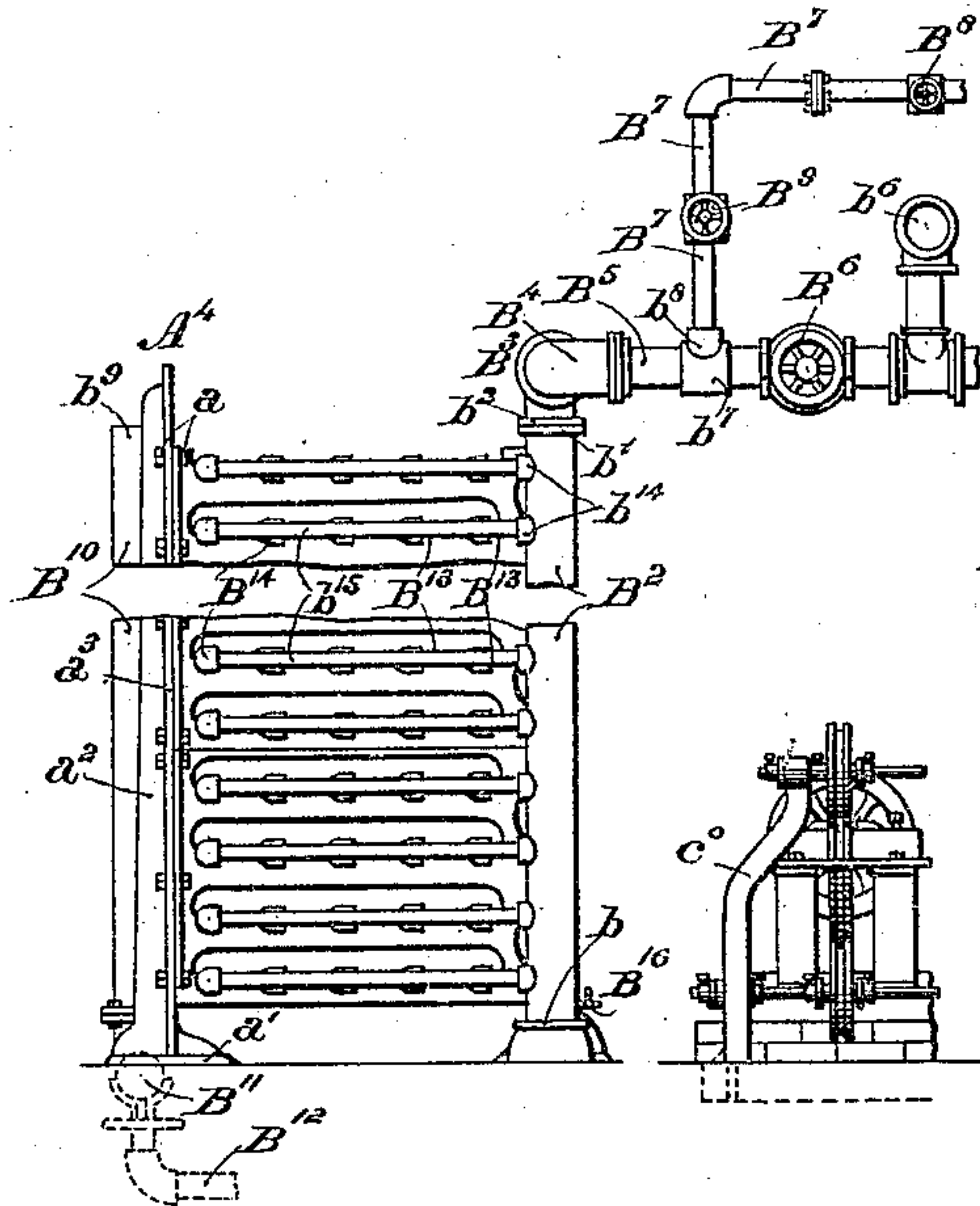


Fig. 3.

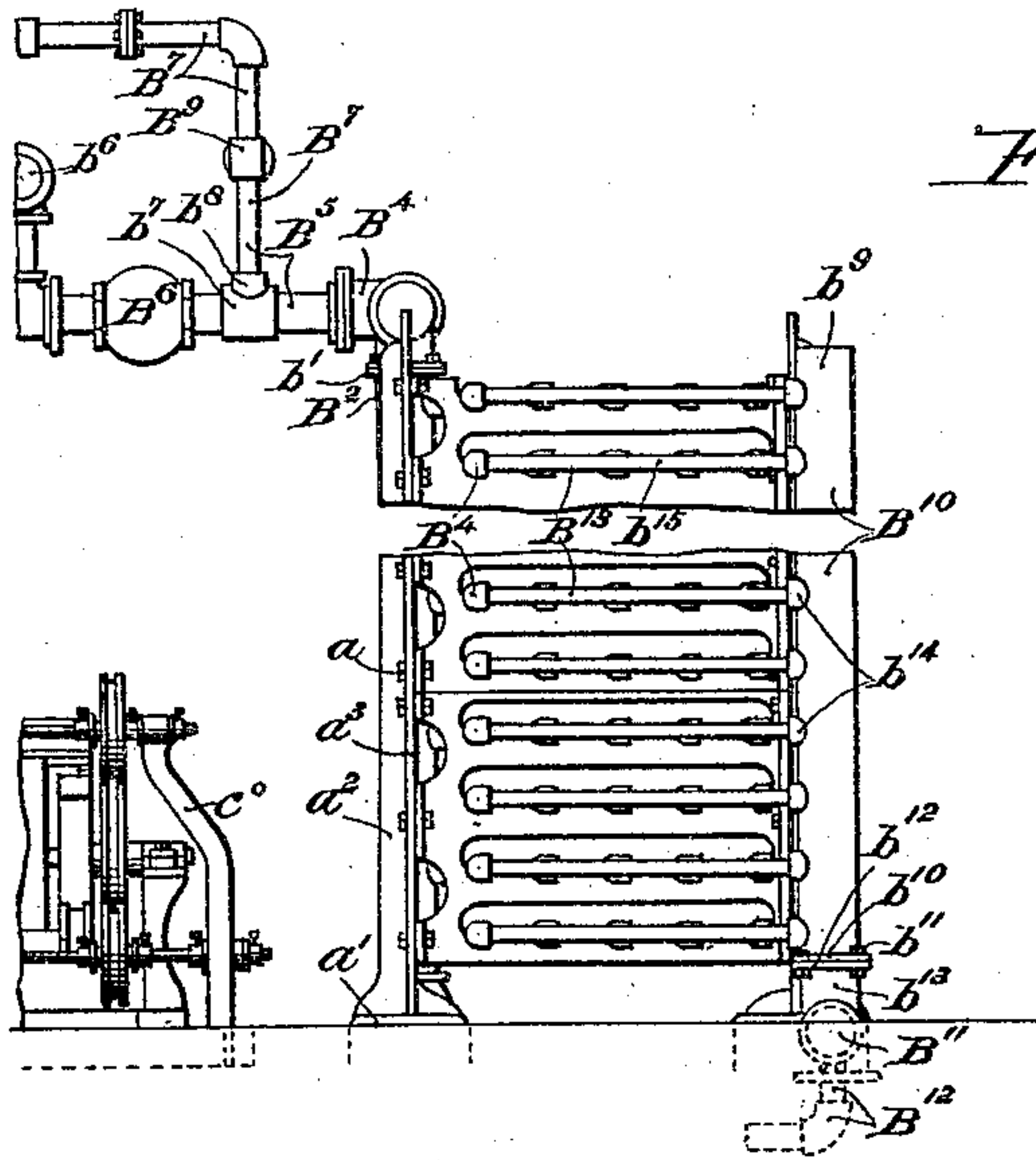


Fig. 4.

WITNESSES

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UNITED STATES PATENT OFFICE.

WILLIAM RICHARD MARTIN, OF WEST HEMPFIELD TOWNSHIP, LANCASTER COUNTY,
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BRICK-DRYING APPARATUS.

956,123.

Specification of Letters Patent.

Patented Apr. 26, 1910.

Application filed March 17, 1906. Serial No. 306,686.

To all whom it may concern:

Be it known that I, WILLIAM RICHARD MARTIN, a citizen of the United States, residing at the "Hedges," Marietta avenue, in West Hempfield township, just outside the limits of Lancaster city, but in the county of Lancaster and State of Pennsylvania, have invented new and useful Improvements in Brick-Drying Apparatus, of which the following is a specification.

My invention relates to steam-pipe rack driers, and provides an improved drier in two branches with an intermediate aisle for a conveyer, and certain structural improvements in the drying racks.

The invention will be hereinafter fully described with reference to the accompanying drawings, and then more particularly pointed out in the claims annexed to this specification.

In said drawings, Figure 1 is a plan view of an apparatus embodying the invention. Fig. 2 is a sectional elevation on line $x-x$ of Fig. 1, looking in the direction indicated by the arrow 1. Fig. 2^a is a sectional elevation of a portion of the steam intake tubes removed from Fig. 2. Fig. 3 is a front end elevation of the left hand wing of the drier and of the conveyer, looking at the head end of Fig. 1. Fig. 4 is a rear end elevation of the same portion of the drier and of the conveyer.

The apparatus shown in the drawings will now be particularly described, it being understood, however, that the invention is not restricted to the precise details of construction and arrangement shown and described.

In the drawing A designates the supporting frame, which consists of two wings, the right hand wing being designated by the reference character A¹ and the left hand wing by the reference character A², while between the two is formed an open passage way extending longitudinally throughout the length of the frame in which is arranged the conveyer to be hereinafter described.

The supporting frame A is practically the same as that described in my former Patent No. 804,489, dated Nov. 14, 1905, in which the two wings here mentioned are combined together in one, while in the present invention the wings are separated at the center of the bracket plates, which bracket plates have at their inner and outer

ends flanges A³, which flanges are secured to the side flanges of oppositely disposed posts A⁴ by bolts and nuts similar to those described in said former patent, supporting the frame and drier, said posts being provided with base plates a^1 , constituting feet upon which to stand and having strengthening ribs a^2 and side flanges a^3 through which side flanges bolts and nuts a secure the bracket plates and posts together.

As shown in the drawing in this instance the drier consists of two branches or members corresponding with the two wings of the supporting frame before mentioned, the right hand member being designated by the reference character B and the left hand member by the reference character B¹. The head ends of the members B and B¹ of the drier are formed with a plurality of vertically disposed tubular manifolds B² having integrally closed lower ends b and open upper ends surrounded by ring flanges b^1 on to which are fitted the ring flanges b^2 surrounding the open ends of tubular nipples projecting downwardly from horizontal manifolds B³, having integrally closed rear ends b^3 and forward open ends surrounded by ring flanges b^4 on to which are fitted, by bolts b^5 with nuts on their threaded ends, forwardly disposed elbow fittings B⁴, which fittings have a tubular connection B⁵ having at its center an exhaust steam in-take elbow b^6 and on each side thereof said tubular connection B⁵ is provided with a gate valve B⁶ to regulate the flow of the exhaust steam to either member of the drier, or to entirely shut it off therefrom. Between the valves B⁶ and the end elbow fittings B⁴ said tubular connection B⁵ is provided with T-fittings b^7 having upwardly projecting tubular branches b^8 , which branches have a tubular connection B⁷ with a live steam intake elbow B⁸ at the center thereof. On each side of said live steam in-take elbow B⁸ said latter tubular connection B⁷, above said T-fittings, is provided with a gate valve B⁹ to regulate the flow of live steam to either member of the drier, or to entirely shut it off therefrom. The rear end of said members B and B¹ are formed with a plurality of vertically arranged, but oppositely disposed tubular manifolds B¹⁰ having integrally closed upper ends b^9 and open lower ends surrounded by ring flanges b^{10} on to which are fitted and rigidly secured by bolts and nuts b^{11} , the sur-

rounding ring flanges b^{12} of tubular nipples b^{13} , projecting upwardly from horizontal manifolds B^{11} , which latter manifolds have both ends integrally closed and are centrally provided with a downwardly projecting outlet tube B^{12} for the discharge of condensed steam or air from the drier. Both the head end tubular manifolds and the rear end tubular manifolds are provided on opposite sides in their respective vertical center lines with bosses b^{14} , through which are rigidly secured into said manifolds the front and rear ends of tubes B^{13} , provided with elbow fittings B^{14} , thus dividing said tubes into horizontally disposed branches b^{15} and b^{16} , b^{15} extending from said manifolds to their respective elbow fittings B^{14} and the branches b^{16} extending rearwardly are passed through orifices b^{17} formed in bracket plates B^{15} , which have their central end flanges, as well as their outer end flanges, secured to the before mentioned posts A^4 as shown, while the manifolds B^2 , adjacent to their lower ends, are provided with pet-cocks B^{16} for the outlet of air from the manifolds, which would prevent the inlet of steam, thus completing the drier.

An open passage way C extends throughout the length of the frame A , or between the members B and B^1 of the drier, in which is arranged the conveyer C^1 , which will now be described and which is used in conjunction with the drier. Said conveyer comprises, first, a dumping or loading table C^2 , which is arranged between the vertical manifolds at the head end of the members B and B^1 of the drier, and consists of a frame c , which frame is composed of upright standards c^1 with longitudinal bars c^2 rigidly secured to the upper ends of said standards. Somewhat centrally arranged with reference to said frame are bearings c^3 , journaling horizontally therethrough, the extremities of a revoluble shaft C^3 , having mounted thereon peripherally grooved wheels c^4 , carrying in their peripheral grooves, endless cables C^4 , while hinged to the top of the frame c as by a hinge C^5 is a tilting top C^6 adapted to be inclined to receive the pallets or metal plates c^5 loaded with green bricks received from the molds of the machine, not shown in the drawing. The frame is provided with angularly disposed kicker-bars C^7 hinged to the frame as by a hinge c^6 to be operated by a foot of the attendant. The upper end of the vertically disposed kicker-bar is adapted to hold said tilting top in an inclined position to receive the brick loaded pallets before mentioned and when said vertically disposed bar is removed, said tilting top will turn down, dumping said loaded pallets, one by one, on to the cables C^4 to be carried thereby to the desired points where they are removed from the cables to be placed in position on the tubes of the

drier, said pallets being indicated by the reference character c^5 , and the bricks thereon are indicated by the reference character c^7 . At the rearward side of the frame c are arranged rearwardly and downwardly inclined slats c^8 up which may slide the empty pallets when they are returned by the lower portions of the cables. At the rear or outlet ends of the members B and B^1 is arranged a frame work C^8 , provided with bearings c^9 , journaling therethrough, the ends of a revoluble shaft c^{10} , having mounted on its body peripherally grooved wheels C^9 , similar to the wheels c^4 before mentioned, carrying in their peripheral grooves the rear end portions of said cables C^4 . The rear end bearings c^9 are provided with sliding means, movable back and forth on the frame work C^8 by means of rotatable screws C^9 , operated by hand wheels C^{10} , whereby the tension of the cables C^4 may be increased or diminished at pleasure, or as may be required. Between the head end frame c and the rear end frame work C^8 , are erected, at desired intervals, triangular standards c^9 , provided with bearings c^{11} through which are rigidly secured by means of set screws, horizontally disposed rods or shafts C^{11} on which are mounted the hubs c^{12} of revoluble peripherally grooved idler pulleys C^{12} , carrying in their peripheral grooves the rearwardly and forwardly moving cables C^4 .

The elements of the invention hereinbefore described and occupying the several positions indicated in the drawing, it will be observed: The elbow fittings B^{14} , joining the horizontal tubular branches b^{15} and b^{16} , are diagonally disposed with reference to the drier, thus compensating, in diagonal directions, for the expansion and contraction of the tubes B^{13} , materially aiding in preventing leaks caused by breakage of the elbow fittings B^{14} .

The invention having thus been ascertained and described and the manner in which its functions are performed, fully shown and set forth, what is considered new and desired to be secured by Letters Patent is:—

1. The combination in a brick drier with the two branches, each branch having at its head end vertically disposed tubular manifolds and at its rear end tubular, but oppositely disposed manifolds, said head end manifolds having open upper ends with horizontal manifolds formed with downwardly projecting tubular nipples connecting the open ends of said head end manifolds and said rear end manifolds having integrally closed upper ends and open lower ends with horizontal manifolds having upwardly projecting tubular nipples joined to the open ends of said rear end manifolds; drier tubes, each having shorter outer end branches with their extremities interiorly

connecting said head end and rear end vertically disposed manifolds, said branch tubes having their extremities joined by elbow fittings, as shown, all substantially as described and for the purpose hereinbefore set forth.

2. The combination in a brick drier having two branches, as described, with vertically disposed tubular manifolds at the head and rear ends of the members; drier tubes having longer and shorter branches with elbow fittings joining the extremities of said branches, the shorter branches having their outer ends tubularly connecting the adjacent sides of said manifolds; the elbow fittings joining the outer extremities of said drier tubes in a series diagonally arranged with relation to the length of the drier, allowing for expansion and contraction of said tubes, thereby preventing breakage at said elbow fittings, substantially as described and for the purpose hereinbefore set forth.

3. In a brick-drying apparatus, the combination of parallel drying racks with an intermediate longitudinal passage-way therebetween, each rack comprising superposed tiers of steam-pipes constituting shelves for supporting pallets of brick, supply-manifolds for the pipes of the respective racks connected with the head ends of said pipes, and an overhead steam-pipe spanning said passage-way and connected with the manifolds for both racks.

4. A brick-drying apparatus having two branches, each comprising superposed tiers of pipes, there being an intermediate passage-way between said branches, said pipes having inwardly-disposed front portions and outwardly-disposed rear portions, confronting series of manifolds respectively

connected with the inwardly-disposed head ends of the pipes of said branches, at opposite sides of said passage-way, a source of steam-supply in communication with both of said series of manifolds, and series of manifolds respectively located at and connected with the outwardly-disposed rear ends of the pipes.

5. In a brick-drying apparatus, a drying-rack comprising superposed shelves each composed of longitudinal steam-pipes all having front elbows arranged in a diagonal series with relation to the length of the rack and with laterally disposed arms of successively increasing lengths, the shorter elbow-arms being inclosed by the longer ones, and said pipes all having rear elbows also diagonally disposed and having similarly arranged arms but extending in an opposite direction, a series of manifolds connected with the head ends of said pipes, and a series of manifolds connected with their rear ends.

6. In a brick-drying apparatus, the combination of a drying rack comprising superposed shelves composed of steam-pipes, a series of vertically disposed manifolds respectively connected with the ends of corresponding pipes of the several shelves, said manifolds being closed at one end and having the other ends open, and a longitudinally-disposed manifold having a series of lateral nipples respectively joined to the open ends of said first-mentioned manifolds.

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

WILLIAM RICHARD MARTIN.

Witnesses:

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MABEL L. LE FEVRE.