

No. 875,704.

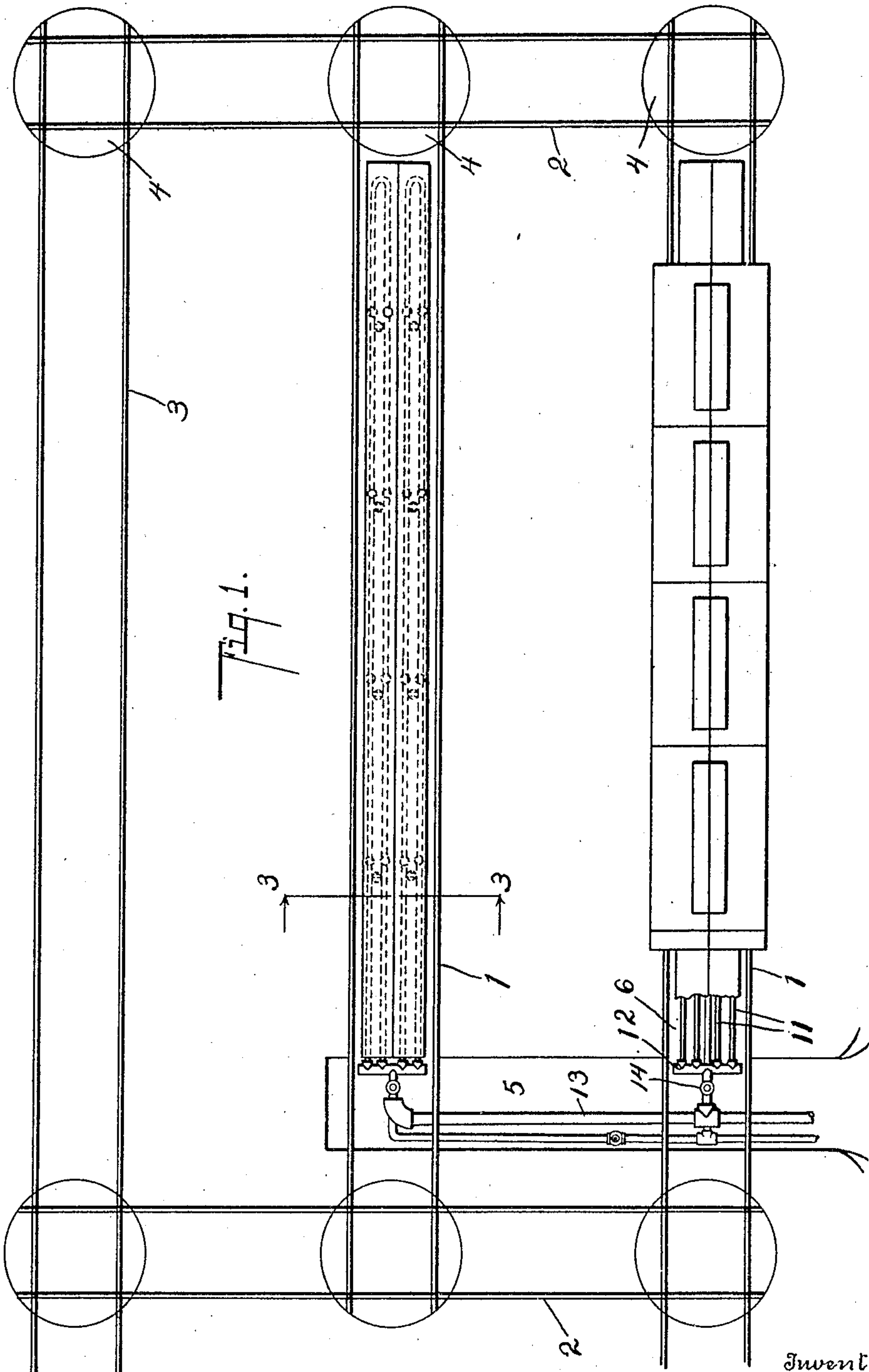
H. J. GERBSCH.

PATENTED JAN. 7, 1908.

DRIER.

APPLICATION FILED MAY 31, 1907.

2 SHEETS—SHEET 1.



Witnesses

Lily Greenfield
Gertrude Tallman.

By

Herman Gerbsch
Chapell & Co.

Attorneys

Inventor

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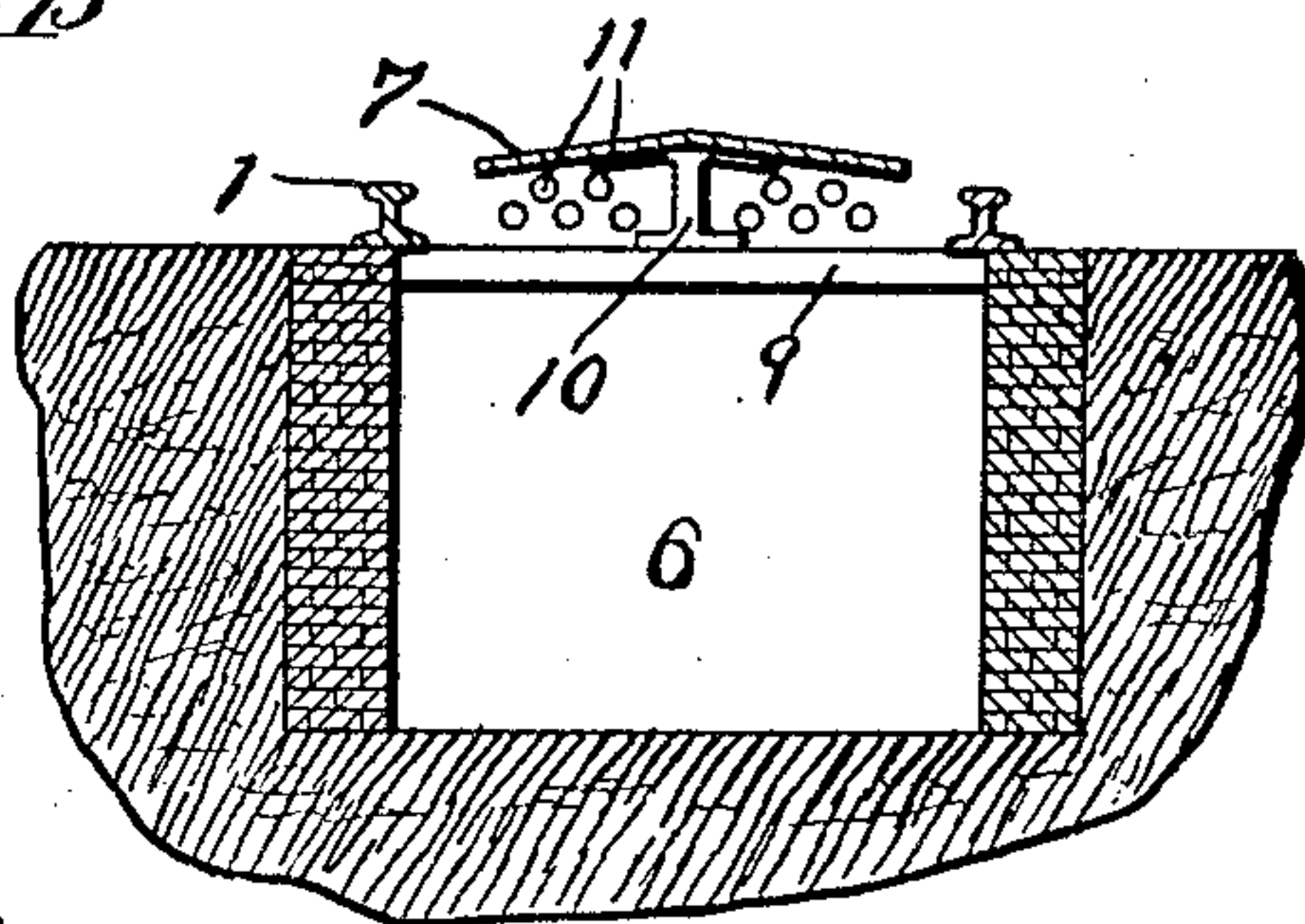
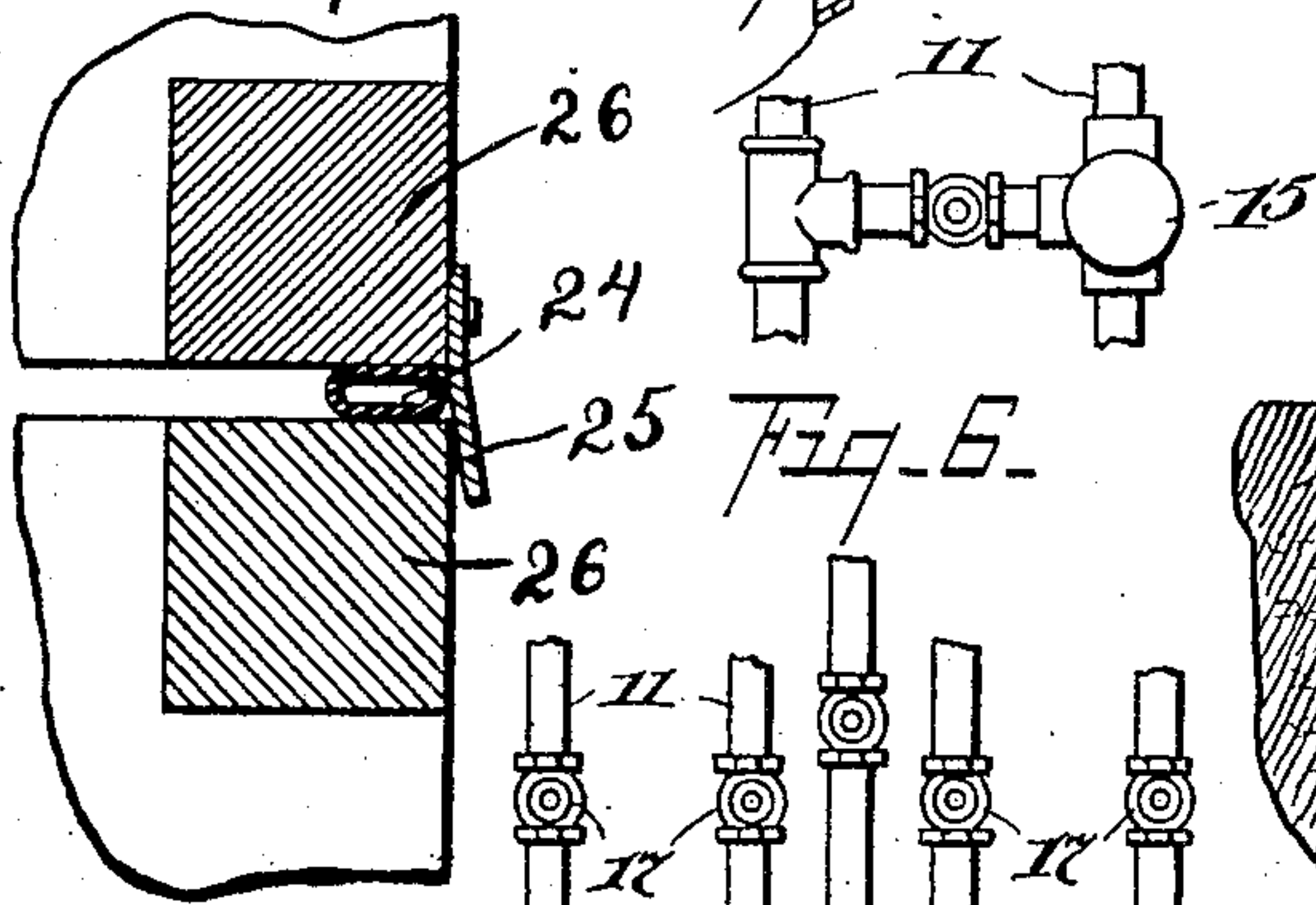
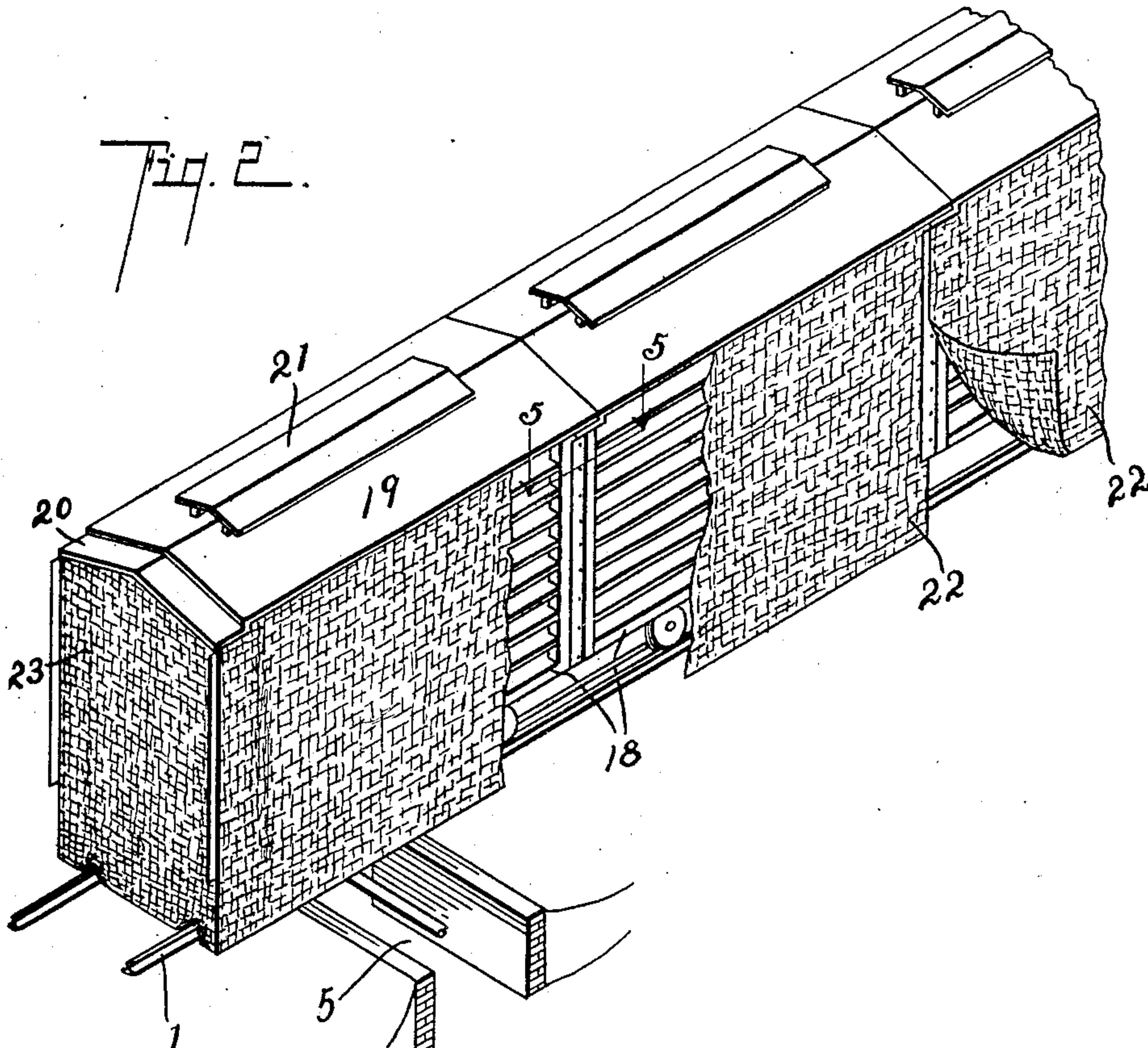


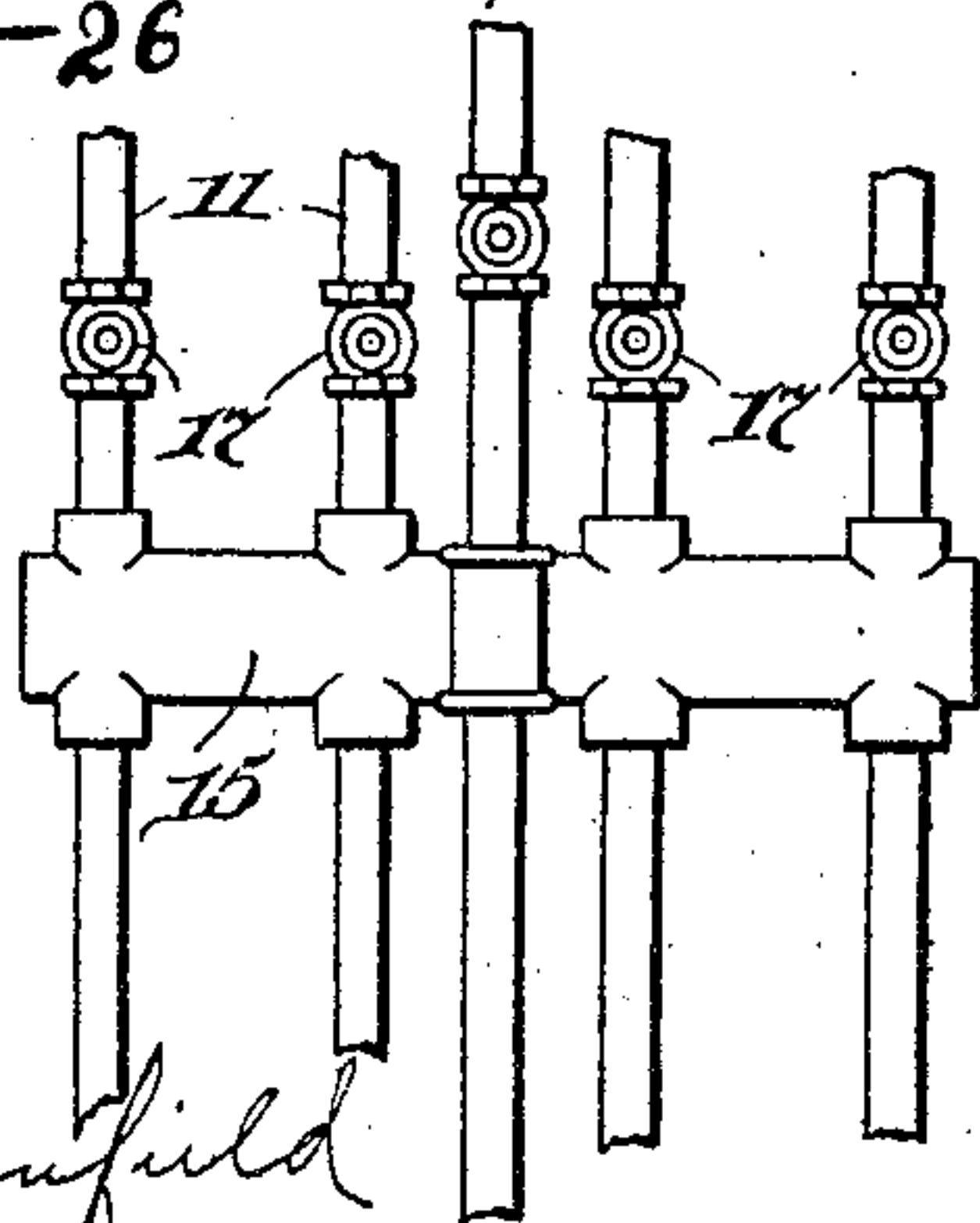
Fig. 5.

Witnesses

Lulu Greenfield

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Fig. 4.



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UNITED STATES PATENT OFFICE.

HERMAN J. GERBSCH, OF WAUSAU, WISCONSIN.

DRIER.

No. 875,704.

Specification of Letters Patent.

Patented Jan. 7, 1908.

Application filed May 31, 1907. Serial No. 376,574.

To all whom it may concern:

Be it known that I, HERMAN J. GERBSCH, a citizen of the United States, residing at the city of Wausau, county of Marathon, State of Wisconsin, have invented certain new and useful Improvements in Driers, of which the following is a specification.

This invention relates to improvements in driers.

10 My improved drying apparatus is especially designed by me for drying clay products, such as brick, tile, or the like, although it is adapted for use for other purposes and in other relations where drying is done on a large scale.

The main objects of this invention are, First, to provide an improved drying apparatus for the operating of which a minimum amount of labor is required. Second. To provide an improved drying apparatus in which very little heat is wasted. Third. To provide an improved drying apparatus which is very economical to install and operate. Fourth. To provide an improved drying apparatus in which the danger or liability of loss by fire is reduced to a minimum. Fifth. To provide an improved drying apparatus which has a very large capacity, that is, one in which the articles may be very rapidly dried.

Further objects, and objects relating to structural details, will definitely appear from the detailed description to follow.

35 I accomplish the object of my invention by the devices and means described in the following specification.

The invention is clearly defined and pointed out in the claims.

40 A structure embodying the features of my invention is clearly illustrated in the accompanying drawings, forming a part of this specification, in which:—

Figure 1 is a plan view of an apparatus embodying the features of my invention, the parts being shown mainly in diagrammatic form. Fig. 2 is a detail perspective, showing structural details of the drying cars. Fig. 3 is a detail cross section taken on a line corresponding to line 3—3 of Fig. 1, looking in the direction of the little arrows at the ends of the section lines. Fig. 4 is an inverted detail of the steam pipes. Fig. 5 is an enlarged detail section taken on a line corresponding to line 5—5 of Fig. 2 and Fig.

6 is an enlarged section showing details of the steam pipes.

In the drawing similar letters of reference refer to similar parts throughout the several views.

The accompanying drawings are intended to be merely illustrative of the invention, no attempt having been made to show the parts in proper proportion or the full structural details thereof.

Referring to the drawing, 1 represents a drying track. I preferably provide a series of these, two being illustrated in the accompanying drawing. At each end of the drying tracks I provide transfer tracks 2, and at one side a main track 3 leading to the mill or to the burning kiln. Suitable turn tables 4 are provided at each end of the drying tracks. At one end of the drying tracks I arrange a tunnel 5, which is connected to the tunnels 6 under the drying tracks. The steam pipes 11 are arranged at the top of these tunnels, as is shown in the drawing. Above the steam pipes I preferably arrange a deflector 7 extending from end to end of the drying track being open at each side for the passage of the heated air from the tunnels.

The steam pipes 11 are preferably connected by suitable headers as 12, the headers being connected to the supply pipe 13. Valves 14 are interposed between the supply pipe and the headers so that the steam may be cut off from either one or both of the drying tracks, as desired. The steam pipes 11 are preferably connected at intervals by cross pipes 15, the cross pipes having valves therein. To the rear of and adjacent to these cross pipes are valves 17. This arrangement enables the controlling of the pipes so that the circulation may be only through a part of the system, as desired. The cross pipes and valves are arranged at intervals along the drying track, corresponding in length to the length of the drying cars 18, so that should the track be only partially filled with cars, the heat is delivered only to that portion of the track in use.

The drying cars 18 are adapted to receive the articles to be dried, being provided with suitable shelves or trays for that purpose, and being skeleton-like in form to admit the passage of the heated air upwardly there-through.

The roofs 19 of the cars are preferably

adapted to overlap when the cars are arranged end to end on the drying track to form a continuous roof. To accomplish this, one end of the car is preferably provided with a drop ledge 20, which projects under the end of the roof of the adjacent car, as clearly appears in Fig. 2. The roof of each car is preferably provided with a ventilator 21 to cause a draft upwardly from the hot air tunnel. The sides of the car are preferably closed by means of curtain walls 22 of suitable material adapted to be rolled or otherwise held out of the way when desired. The corner posts 26 of the cars are preferably provided with gaskets or packing strips 24 to form a tight joint when the cars are brought end to end. These gaskets or packing strips also serve as buffers. Guide plates 25 are provided for the corner posts at one end of the cars, the plates being adapted to guide the adjacent car into place and to assist in making a tight joint.

By thus arranging the parts, the articles to be dried, as bricks or the like, may be loaded on the cars directly from the machines and run out on the drying tracks, and the steam turned on to the track or the portion of the track occupied. The hot air arising from the hot air tunnel passes upwardly through the cars, as stated. By this means I avoid the necessity of drying sheds and of handling the brick or other articles.

When it is desired to fire the brick or tile or the like, the cars may be run directly to the kiln after the articles are suitably dried.

I am by this apparatus enabled to dry the brick very rapidly with a minimum amount of fuel and labor. The equipment is also very economical as to its first cost and is very durable. Another advantage is that the danger of loss by fire is reduced to a minimum.

I have illustrated my improved drying apparatus conveniently and diagrammatically, the drawings being intended to be only illustrative rather than to show structural details.

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

1. The combination with a track, of a plurality of cars adapted to receive the articles to be dried, said cars having roofs adapted to form a substantially continuous roof when the cars are arranged end to end, the said car roofs being provided with ventilators; side walls for said cars adapted to form the cars into a continuous chamber; end walls for the outer ends of the end cars of the series; a tunnel beneath said track; steam pipes arranged in said tunnel; a header for said steam pipes; a deflector arranged longitudinally above the steam pipes; a steam supply pipe having a valved connection to said header; valved cross pipes for the said steam pipes, and valves in said steam pipes arranged at the

rear of and adjacent to the said cross pipe, dividing said steam pipes into sections corresponding in length to the length of the cars, for the purpose specified.

2. The combination with a track, of a plurality of cars adapted to receive the articles to be dried, said cars having roofs adapted to form a substantially continuous roof when the cars are arranged end to end, the said car roofs being provided with ventilators; side walls for said cars adapted to form the cars into a continuous chamber; end walls for the outer ends of the end cars of the series; a tunnel beneath said track; steam pipes arranged in said tunnel; a header for said steam pipes; a steam supply pipe having a valved connection to said header; valved cross pipes for the said steam pipes, and valves in said steam pipes arranged at the rear of and adjacent to the said cross pipes, dividing said steam pipes into sections corresponding in length to the length of the cars, for the purpose specified.

3. The combination with a track, of a plurality of cars adapted to receive the articles to be dried, said cars having roofs adapted to form a substantially continuous roof when the cars are arranged end to end, the said car roofs being provided with ventilators; side walls for said cars adapted to form the cars into a continuous chamber; end walls for the outer ends of the end cars of the series, and a heating tunnel beneath said track, for the purpose specified.

4. The combination with a track, of a plurality of cars adapted to receive the articles to be dried, said cars having roofs adapted to form a substantially continuous roof when the cars are arranged end to end; side walls for said cars adapted to form the cars into a continuous chamber; end walls for the outer ends of the end cars of the series; a tunnel beneath said track; steam pipes arranged in said tunnel; a header for said steam pipes; a deflector arranged longitudinally above the steam pipes; a steam supply pipe having a valved connection to said header; valved cross pipes for the said steam pipes, and valves in said steam pipes arranged at the rear of and adjacent to the said cross pipe, dividing said steam pipes into sections corresponding in length to the length of the cars, for the purpose specified.

5. The combination with a track, of a plurality of cars adapted to receive the articles to be dried, said cars having roofs adapted to form a substantially continuous roof when the cars are arranged end to end; side walls for said cars adapted to form the cars into a continuous chamber; end walls for the outer ends of the end cars of the series; a tunnel beneath said track; steam pipes arranged in said tunnel; a header for said steam pipes; a steam supply pipe having a valved connection to said header; valved cross pipes for the said steam pipes, and

valves in said steam pipes arranged at the rear of and adjacent to the said cross pipes, dividing said steam pipes into sections corresponding in length to the length of the cars, for the purpose specified.

6. The combination with a track, of a plurality of cars adapted to receive the articles to be dried, said cars having roofs adapted to form a substantially continuous roof when the cars are arranged end to end; side walls for said cars adapted to form the cars into a continuous chamber; end walls for the outer ends of the end cars of the series, and a heating tunnel beneath said track, for the purpose specified.

7. The combination with a track, of a plurality of cars adapted to receive the articles to be dried, said cars having roofs adapted to overlap and form a substantially continuous roof when the cars are arranged end to end, the said car roofs being provided with ventilators; curtain side walls for said cars adapted to overlap when the cars are arranged end to end to form the cars into a continuous chamber; and end walls for the outer ends of the end cars of the series, for the purpose specified.

8. The combination with a track, of a plurality of cars adapted to receive the articles to be dried, said cars having roofs adapted to form a substantially continuous roof when the cars are arranged end to end, the said car roofs being provided with ventilators; curtain side walls for said cars adapted to overlap when the cars are arranged end to end to form the cars into a continuous chamber; and end walls for the outer ends of the end cars of the series, for the purpose specified.

9. The combination with a track, of a plurality of cars adapted to receive the articles to be dried, said cars having roofs adapted to overlap and form a substantially continuous roof when the cars are arranged end to end, the said car roofs being provided with ventilators; side walls for said cars adapted when the cars are arranged end to end to form the cars into a continuous chamber; and end walls for the outer ends of the end cars of the series, for the purpose specified.

10. The combination with a track, of a plurality of cars adapted to receive the articles to be dried, said cars having roofs adapted to form a substantially continuous roof when the cars are arranged end to end, the said car roofs being provided with ventilators; side walls for said cars adapted when the cars are arranged end to end to form the cars into a continuous chamber, and end walls for the outer ends of the end cars of the series, for the purpose specified.

11. The combination with a track, of a plurality of cars adapted to receive the articles to be dried, said cars having roofs

adapted to overlap and form a substantially continuous roof when the cars are arranged end to end; curtain side walls for said cars adapted to overlap when the cars are arranged end to end to form the cars into a continuous chamber; and end walls for the outer ends of the end cars of the series, for the purpose specified.

12. The combination with a track, of a plurality of cars adapted to receive the articles to be dried, said cars having roofs adapted to form a substantially continuous roof when the cars are arranged end to end; curtain side walls for said cars adapted to overlap when the cars are arranged end to end to form the cars into a continuous chamber, and end walls for the outer ends of the end cars of the series, for the purpose specified.

13. The combination with a track, of the cars adapted to receive the articles to be dried, said cars having ventilated roofs; walls for said cars whereby the said cars are adapted to serve as drying chambers; a tunnel beneath said track; steam pipes arranged in said tunnel; and means for dividing said steam pipes arranged in sections corresponding in length to the length of the cars, for the purpose specified.

14. The combination with a track, of the cars adapted to receive the articles to be dried; walls for said cars whereby the said cars are adapted to serve as drying chambers; a tunnel beneath said track; steam pipes arranged in said tunnel; and means for dividing said steam pipes arranged in sections corresponding in length to the length of the cars, for the purpose specified.

15. The combination with a track, of the cars adapted to receive the articles to be dried, said cars having ventilated roofs; walls for said cars whereby the said cars are adapted to serve as drying chambers; a tunnel beneath said track; and steam pipes arranged in said tunnel, for the purpose specified.

16. The combination with a track, of the cars adapted to receive the articles to be dried; walls for said cars whereby the said cars are adapted to serve as drying chambers; a tunnel beneath said track, and steam pipes arranged in said tunnel, for the purpose specified.

17. The combination with a track, of a heating tunnel below said track; a plurality of cars adapted to receive the articles to be dried, said cars being provided with ventilated roofs, and walls for said cars adapted to form the same into drying chambers.

18. The combination with a track, of a heating tunnel below said track; a car adapted to receive the articles to be dried, said car being provided with a ventilated roof; and walls for said car whereby the car is adapted to serve as a drying chamber.

19. The combination with a track, of a

heating tunnel below said track; a car adapted to receive the articles to be dried, and walls for said car whereby the car is adapted to serve as a drying chamber.

5 20. The combination with a plurality of tracks, of a series of cars adapted to receive the articles to be dried, said cars having roofs adapted to form a substantially continuous roof when the cars are arranged end to end; 10 side walls for said cars adapted to form the cars of the series into a continuous chamber; end walls for the outer ends of the end cars of the series; tunnels beneath said tracks; steam pipes arranged in said tunnels; and deflectors 15 arranged longitudinally of the tracks above the steam pipes, for the purpose specified.

21. The combination with a plurality of tracks, of a series of cars adapted to receive the articles to be dried, said cars having 20 roofs adapted to form a substantially continuous roof when the cars are arranged end

to end; side walls for said cars adapted to form the cars of the series into a continuous chamber; end walls for the outer ends of the end cars of the series; tunnels beneath said 25 tracks, and steam pipes arranged in said tunnels, for the purpose specified.

22. The combination with the tracks, of a plurality of independently movable cars adapted to receive the articles to be dried 30 and adapted when brought together end to end on said track to form a continuous drying chamber, and means for supplying heat to said cars, divided into sections corresponding 35 to the cars.

In witness whereof I have hereunto set my hand and seal in the presence of two witnesses.

HERMAN J. GERBSCH. [L. s.]

Witnesses:

CATHERINE MARX,
PAUL ZIELADORF.