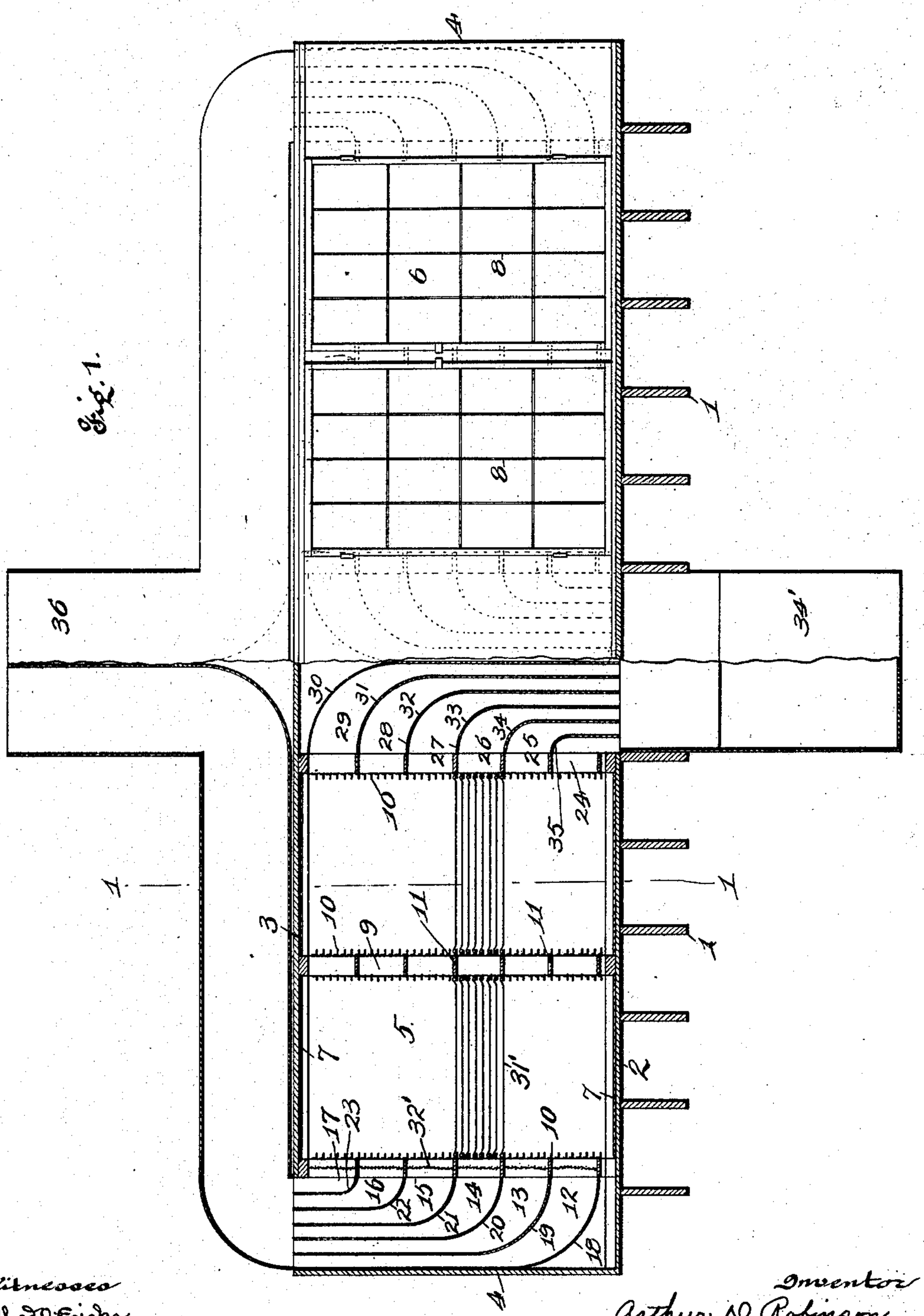
No. 757,347. PATENTED APR. 12, 1904.

A. D. ROBINSON.

APPARATUS FOR DRYING EGGS.

APPLICATION FILED MAY 25, 1903.

NO MODEL. 3 SHEETS—SHEET 1.



Witnesses
Alfred A. Wicks
W. Dunn.

Inventor
Arthur D. Robinson
by Higdon & Langan & Hopkins Attys

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NO MODEL. 3 SHEETS—SHEET 2.

Fig. 2.

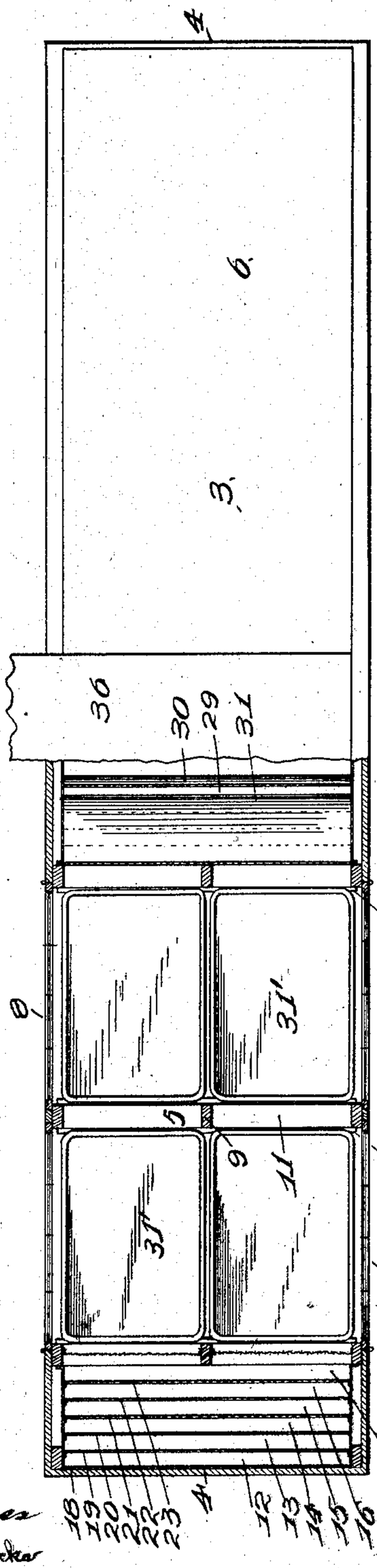
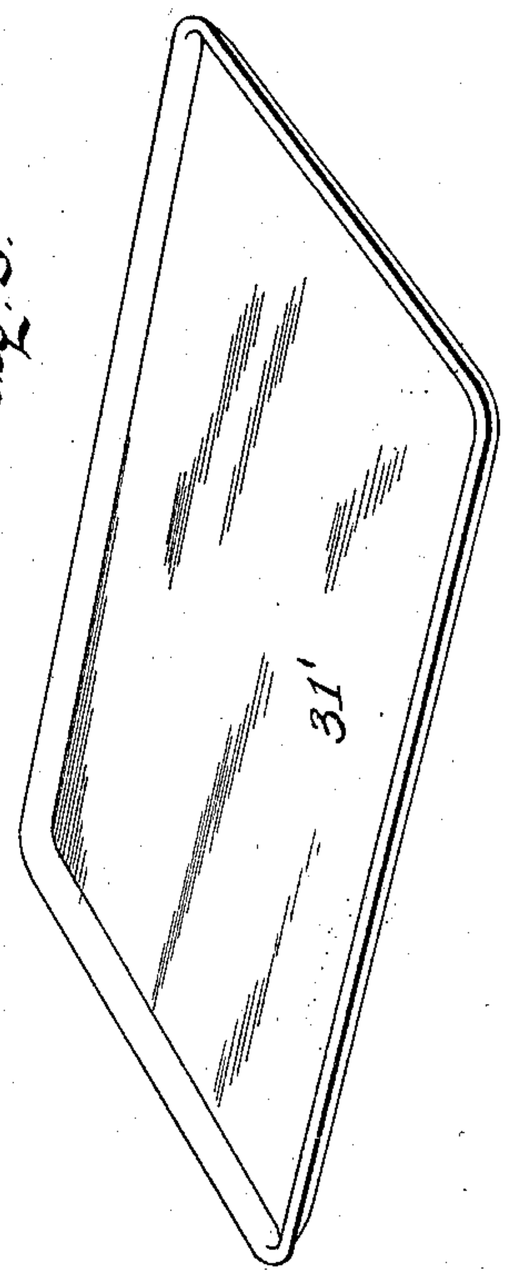


Fig. 3.



Witnesses
Alfred A. Fucker
M. S. Dion

Inventor
Arthur D. Robinson
by Hazdon & Longan & Hopkins Attys.

No. 757,347. PATENTED APR. 12, 1904.

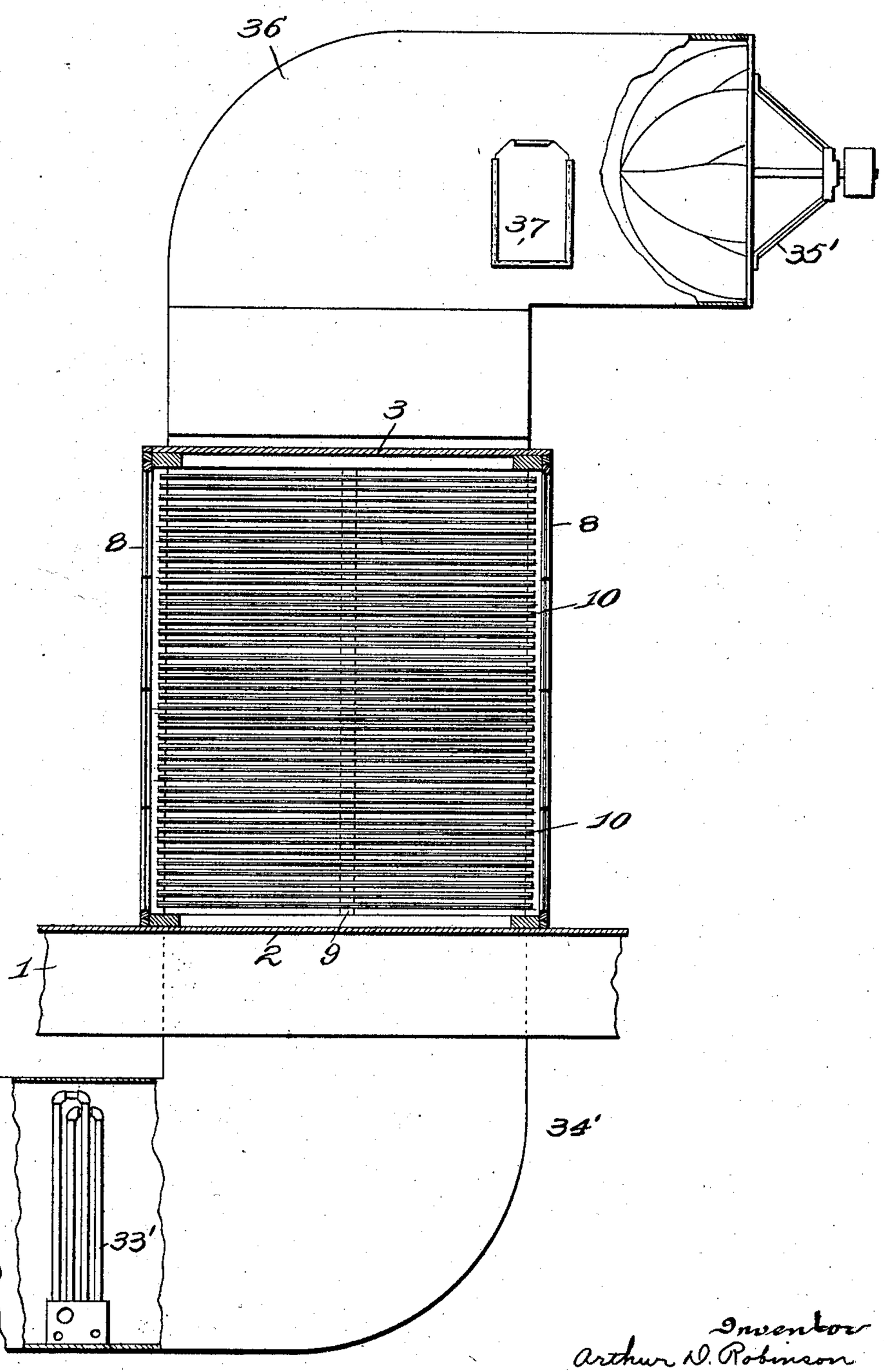
A. D. ROBINSON.

APPARATUS FOR DRYING EGGS.

APPLICATION FILED MAY 25, 1903.

NO MODEL. 3 SHEETS—SHEET 3.

Fig. 4.



Witnesses
Alfred D. Ricker
M. L. Orrison

Inventor
Arthur D. Robinson
by Hazdon & Longan & Hopkins attys.

No. 757,347. Patented April 12, 1904.

UNITED STATES PATENT OFFICE.

ARTHUR D. ROBINSON, OF ST. LOUIS, MISSOURI.

APPARATUS FOR DRYING EGGS.

SPECIFICATION forming part of Letters Patent No. 757,347, dated April 12, 1904.

Application filed May 25, 1903. Serial No. 158,765. (No model.)

To all whom it may concern:

Be it known that I, ARTHUR D. ROBINSON, a citizen of the United States, residing at St. Louis, State of Missouri, have invented certain new and useful Improvements in Apparatus for Drying Eggs, of which the following is a specification containing a full, clear, and exact description, reference being had to the accompanying drawings, forming a part hereof.

My invention relates to an apparatus for drying eggs; and it consists of the novel construction, combination, and arrangement of parts hereinafter shown, described, and claimed.

In the drawings, Figure 1 is a side elevation of my apparatus with a part in section. Fig. 2 is a top plan view with a part in section. Fig. 3 is a detail perspective view of one of the drying-pans. Fig. 4 is a transverse vertical section taken on the line 1 1 of Fig. 1.

The object of my invention is to construct an apparatus for drying desiccated eggs, the principal advantages of my apparatus over others now in use being a construction whereby a greater percentage of moisture may be expelled from the egg, thus preventing the egg from turning rancid. Another advantage is economy of floor-space, as my apparatus has a greater drying-surface, and therefore a greater capacity on less floor-space than any other driers in use, so far as I am informed. Then, again, by my apparatus no heavy or expensive machinery is required. Then, again, economy of help is brought about, as only a few persons are required to operate my apparatus. Another advantage is cleanliness.

My apparatus is composed of units or drying-compartments entirely independent of each other, and there is no danger of spoiling a large quantity of eggs by getting a musty egg in a batch. Then, again, by my improved drier the hot air is confined in the apparatus and not blown into the room, thus making the work of the operators much easier and more agreeable.

Other points of advantage over the present driers now in use will be pointed out in connection with the detailed description of my apparatus.

In terms my invention consists of a main drying-compartment, partitions partly forming subcompartments having a common source of hot-air supply and having a common exhaust-pipe, drying-pans adapted to complete said subcompartments, doors opening into said subcompartments, an exhaust-fan in said exhaust-pipe, and gauzes in said subcompartments between the door and the pan.

Referring to the drawings, 1 indicates suitable supporting-sills, on which my drier is supported and built.

2 indicates the floor or bottom of my apparatus, which is constructed out of flooring or any suitable material; 3, the top, which is likewise constructed, and 4 the ends, which are likewise constructed.

I have shown my apparatus having two drying-compartments 5 and 6, the same being identical in construction. In this connection I would state that I may construct my device having one or a series of drying-compartments, depending, of course, upon the capacity of drier desired. The drying-compartments 5 and 6 are lined with galvanized iron 7. Each compartment 5 and 6 is provided with a pair of glass doors 8, through which the drying process may be observed without opening the doors. Said doors are hinged to the apparatus in a suitable and mechanical manner. It may be noted in this connection that the opposite side of the drying apparatus is also provided with a pair of doors, such as 8, for the same purpose, and also that drying-pans may be removed from both sides of the apparatus.

9 indicates a two-by-four studding, which is located on the inside of the drying apparatus and to which is fastened a series of angle-irons 10.

Passing transversely across the drying-compartment is a series of wooden or metallic pieces 11, the function of which will be hereinafter described.

The drying-compartment 5 is provided with a series of exhaust-flues 12, 13, 14, 15, 16, and 17. These exhaust flues or openings extend

transversely of the drying-compartment. They are formed by using sheet-iron deflectors 18, 19, 20, 21, 22, and 23. The flues or openings heretofore mentioned answer as an exhaust or exit for the hot air from the drier. Aside from the flues heretofore mentioned each drying-compartment is provided with heat-distributing openings 24, 25, 26, 27, 28, and 29. These heat-distributing openings, which lead into the drying-compartments, are formed by using sheet-metal sheets 30, 31, 32, 33, 34, and 35. The openings 24, 25, 26, 27, 28, and 29, which I have referred to as heat-distributing openings, conduct and distribute the heat from where it is generated into the drying-compartments 5 and 6. It will be noticed in this connection that the openings or flues 12, 13, 14, 15, 16, and 17 lie in alinement with the heat conducting and distributing openings 24, 25, 26, 27, 28, and 29.

31′ indicates a series of drying-pans which are stamped out of sheet-steel, being perfectly flat, free from buckles, and slightly sunken and having around their edges a five-sixteenth welded-steel rod rolled in around the edge. In the apparatus shown the drying-compartments 5 and 6 have four tiers of such pans; but the apparatus may be so constructed as to have any number of tiers and any number of pans in a tier. These pans are supported in the drying-compartments 5 and 6 by means of the angle-irons 10. In Fig. 1 I have shown eight drying-pans in each tier in proper position. When the pans are located as illustrated in Fig. 1, it will be seen that by the use of the wooden or metallic strips 11 a continuous and separate passage or compartment is formed from the opening 26 to the opening 14, and by the employment of pans of an imperforate construction and the strips 11 I form in the drying-compartments 5 and 6 separate and independent drying-compartments and continuous passages between the openings 12, 13, 14, 15, 16, and 17 and 24, 25, 26, 27, 28, and 29. By this construction should a bad egg be placed in one compartment by mistake the eggs in the other compartments will not be at all affected. In other words, the compartments 5 and 6 are subdivided by the insertion of the drying-pans 31′ in the proper places, and, furthermore, said compartments are cleared by removing said pans or to any desired extent by removing a part of the pans, there being no other shelving or partitions to remove. The drying-pans 31′ may be inserted and removed from either side of the drying-compartments.

32′ indicates a wire-gauze which prevents the dry eggs located on the pans 31′ from being drawn out of the drying-compartment by the exhaust. This gauze creates a resistance to the air, thereby equalizing the pressure of the air-draft between the different subcompartments; otherwise there might be a strong draft through one compartment and little or no draft in another compartment. This resistance is especially important when a door is opened, as without the resistance a strong cold draft would rush in through the open door. The finer the gauze the better the regulation or equalization of draft.

33′ indicates steam-pipes by which the desired amount of heat may be generated. The heat generated by said steam-pipes is conducted into the drying apparatus by means of a pipe 34′. The heat generated by the steam-pipes 33′ passes up through the pipe 34′ and is fed and distributed into the drying-compartments, as heretofore described.

35′ indicates a powerful exhaust-fan, by means of which the hot air generated by the steam-pipes 33′ is drawn through and exhausted from the drying apparatus. Said exhaust-fan 35′ may be operated by a small motor.

36 indicates a pipe which connects the casing of the exhaust-fan with the drying-compartments. When the air has been drawn through the drying-compartment from its source of generation, it passes out of the drying-compartment through the openings 12, 13, 14, 15, 16, and 17 and through the pipe 36. Located in the pipe 36 is a damper 37, by means of which the exhaust is regulated. In the construction shown the air is drawn from the heating or steam pipes by means of the exhaust-fan 35′ and half passes through the drying-compartment 5 and the other half through the drying-compartment 6.

In drying eggs by my improved apparatus the eggs are first broken and placed onto the drying-pans 31′ and evenly distributed over the same by means of a brush or any other suitable appliance. The pans are located after being filled as heretofore stated, and the air is drawn over the eggs through the drying-compartments. By passing the air over the eggs by means of a powerful exhaust-fan I have found by practical experience that all the moisture desired may be expelled from the egg.

In an apparatus for drying eggs where the heat is forced into the drying-compartment by means of a blower it is almost impossible to uniformly distribute hot air and to control the same. In my apparatus, where the hot air is drawn over the eggs in the drying-compartment by means of an exhaust-fan or suction, the heat can be uniformly distributed and easily controlled. Then, again, it is frequently necessary in the drying operation to open one of the doors of the drying-compartment, and when this is done where a blower is used the dry parts of an egg are liable to be blown out into the room, whereas if a suction or exhaust is used the dry particles of the egg are not blown into the room, but retained in the drying-compartment, and consequently saved. The gauze 32′ is of great value in creating a

resistance to the air, thereby equalizing the air-pressure in the various compartments. I also desire to emphasize the importance of the manner of subdividing the compartments 5 and 6. The subcompartments are so constructed that they are only complete when the pans are in place, and when the pans are removed the subdivisions practically disappear. This is a great advantage over a construction in which the subcompartments are permanently formed by imperforate shelving or even by removable shelving, because my construction saves the time and expense of putting in and taking out the shelving.

Having fully described my invention, what I claim as new, and desire to have secured to me by the grant of Letters Patent, is—

1. An apparatus for drying eggs, comprising a drying-compartment, partitions subdividing said compartment into subcompartments having a common source of hot-air supply and having a common exhaust-pipe, a suction-fan in said exhaust-pipe, doors opening into said subcompartments, and gauze in said subcompartments stretched across the passage-ways leading to the fan to equalize the draft-pressure through said subcompartments, substantially as specified.

2. An apparatus for drying eggs, comprising a main drying-compartment, partitions partly forming subcompartments having a common source of hot-air supply and having a common exhaust-pipe, a suction-fan in said exhaust-pipe, drying-pans adapted to complete said subcompartments, doors opening into said subcompartments, and gauzes in said subcompartments stretched across the passage-ways leading to the fan to equalize the draft-pressure through said subcompartments, substantially as specified.

In testimony whereof I have signed my name to this specification in presence of two subscribing witnesses.

ARTHUR D. ROBINSON.

Witnesses:
M. G. IRION,
JOHN C. HIGDON.