J. V. CANEPA & P. CASALENA.

MACARONI DRIER.

APPLICATION FILED NOV. 3 1917.

1,285,615.

Patented Nov. 26, 1918.

2 SHEETS—SHEET 1.

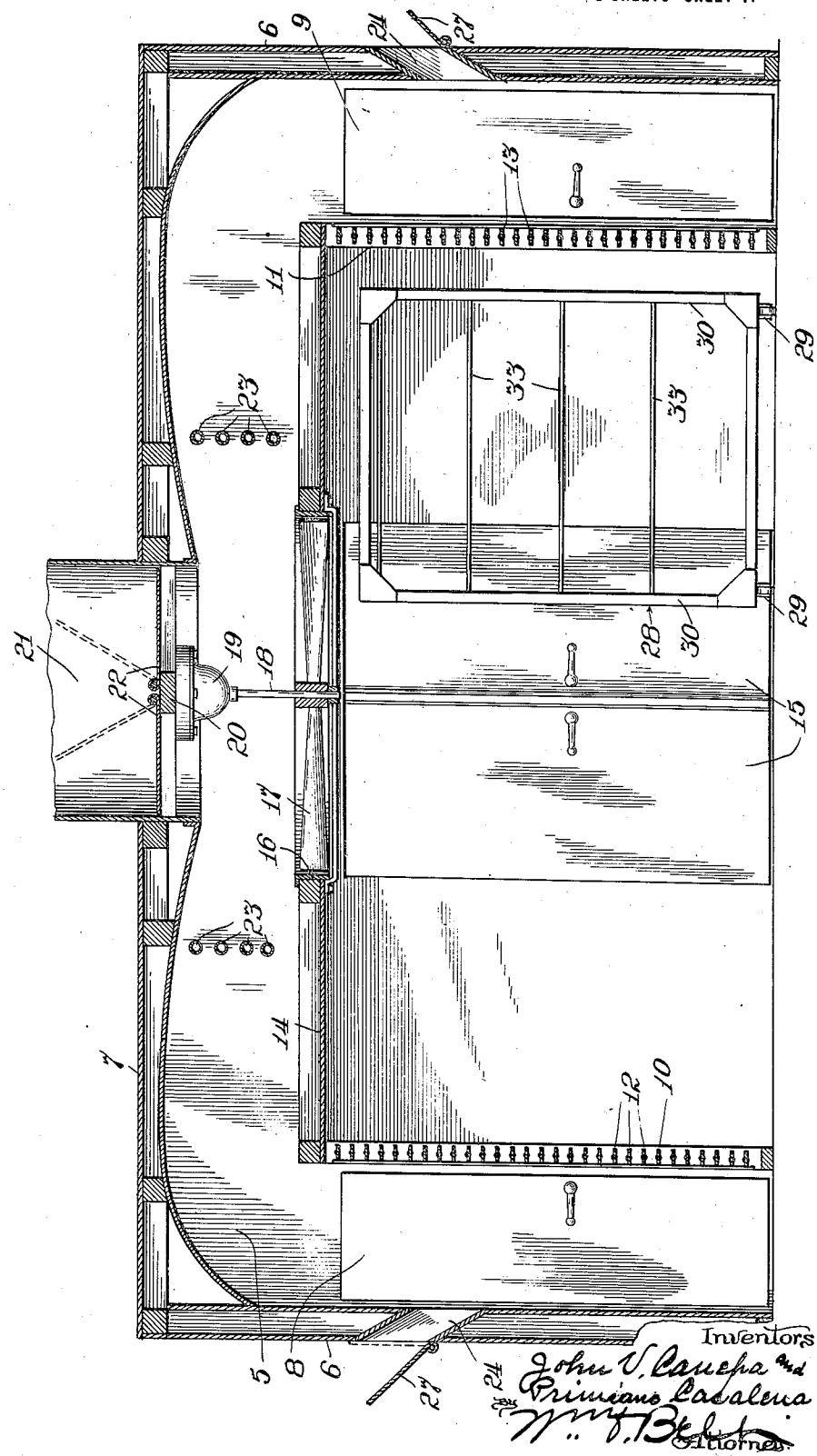


Fig. 1.

Inventors

John V. Canepa and

Primiano Casalena.

By W. V. Blake

Attorney.

J. V. CANEPA & P. CASALENA.

MACARONI DRIER.

APPLICATION FILED NOV. 3 1917.

1,285,615.

Patented Nov. 26, 1918.

2 SHEETS—SHEET 2.

Fig. 2.

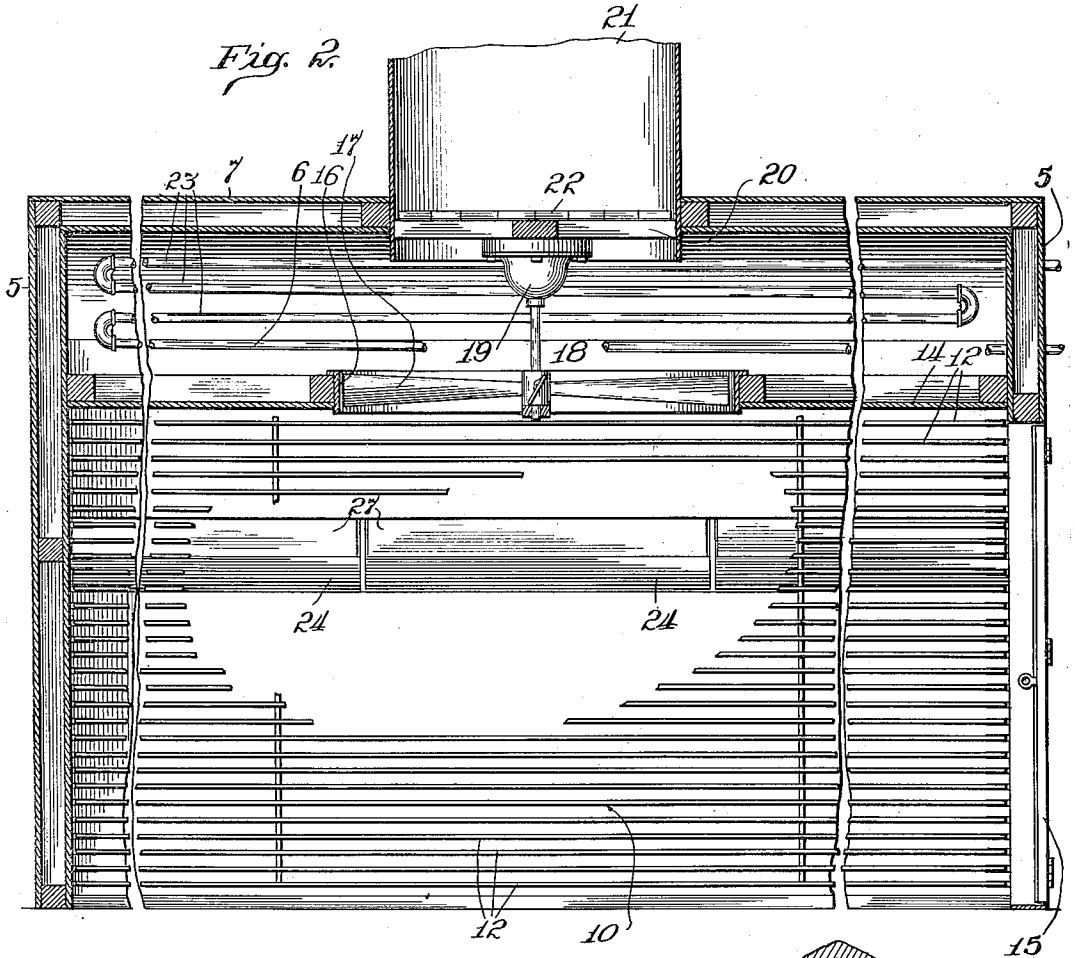


Fig. 3.

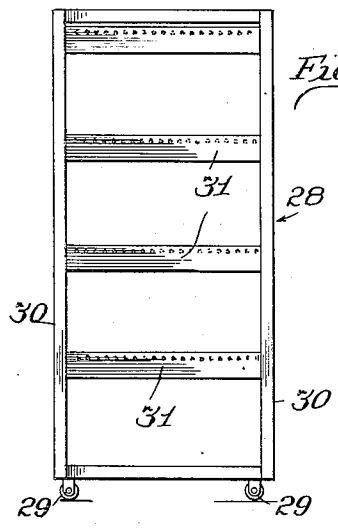
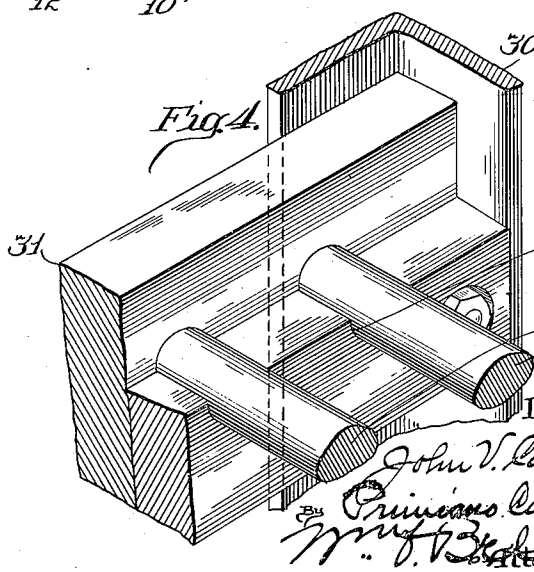


Fig. 4.



Inventors

John V. Canepa

Pruniano Casalena

By

Attorneys

UNITED STATES PATENT OFFICE.

JOHN V. CANEPA AND PRIMIANO CASALENA, OF CHICAGO, ILLINOIS.

MACARONI-DRIER.

1,285,615. Specification of Letters Patent. Patented Nov. 26, 1918.

Application filed November 3, 1917. Serial No. 200,038.

To all whom it may concern:

Be it known that we, JOHN V. CANEPA, a citizen of the United States, and PRIMIANO CASALENA, a subject of the King of Italy, both residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Macaroni-Driers, of which the following is a specification.

This invention relates to a macaroni drier and has for its object the provision of an apparatus for circulating air through and about a suitable chamber in which macaroni is disposed for the purpose of removing the surplus moisture.

A further object of our invention is the provision of an apparatus of the character described which may be easily regulated to produce uniform drying regardless of the exterior atmospheric conditions.

A still further object of our invention is the provision of an apparatus through which the air flows with a minimum of resistance so that a fan of relatively low capacity requiring a small amount of power may be employed therein.

Another object of our invention is the provision of an apparatus which is readily accessible so that the drying chamber may be quickly filled and discharged from time to time.

Further objects and advantages of our invention reside in the various combinations as hereinafter described as will be better understood by reference to the following specification when read in connection with the accompanying drawing illustrating the preferred embodiment thereof, in which—

Figure 1 is a longitudinal section through a drier according to our invention;

Fig. 2 is a transverse section through the drier;

Fig. 3 is a detail in elevation of one of the drying racks, and

Fig. 4 is a fragmentary detail in perspective illustrating the structure of the drying racks.

Our improved drier comprises an outer shell having side walls 5, end walls 6 and a top 7. The walls are preferably double, as indicated in Figs. 1 and 2, inclosing air spaces which insulate the interior of the drier and prevent temperature changes therein corresponding to changes in the surrounding atmosphere. Doors 8 and 9 in one of the side walls 5 adjacent the ends of the drier give access to the interior thereof. These doors may be otherwise disposed but are conveniently arranged as shown in the drawing.

Within the outer shell above described we provide transverse partitions 10 and 11 extending across the chamber. These partitions consist of a plurality of shutters connected to louvers 12 and 13 which permit manipulation of the shutters to adjust the opening therebetween. A ceiling 14 extends across the chamber connecting upper edges of the partitions 10 and 11 and forming therewith an inner drying compartment to which access is obtained through doors 15 in the side wall 5. The doors may of course be otherwise disposed.

A circular opening 16 is provided in the ceiling 14 at the center thereof and a fan 17 is mounted to revolve in the opening, the fan being mounted on the vertical shaft 18 of a variable speed motor 19 which is in turn secured to a spider 20 mounted in an exhaust opening 21 in the top of the drier. A damper 22 is disposed in the exhaust opening 21 to permit regulation of the passage of air therethrough.

Steam pipes 23 are arranged transversely of the drier above the drying compartment on either side of the fan 17. The top 7 of the drier is preferably curved as indicated in Fig. 1 in order that the resistance to the passage of air may be minimized. Thus a motor of relatively small capacity is sufficient to maintain circulation of air in the apparatus. Inlet openings 24 are provided in the end walls 6 of the drier and are controlled by suitable doors 27 which are preferably arranged in three separate sections as indicated in Fig. 2 to permit air to be directed to different portions of the drying compartment.

The macaroni is supported in racks 28, Fig. 3 mounted on casters 29, the racks 28 preferably constructed of angle irons 30 connected by cross bars 31 having recesses 32 therein to receive round bars 33 which are removably mounted in the recesses and over which the macaroni is hung as soon as it is received from the press. The racks 28 are than wheeled into the drying compartment through the doors 15 which are closed, after

which the drying operation is continued without disturbing the racks by suitable regulation of the damper 22 and doors 27. The shutters in the partitions 10 and 11 may also be adjusted to control the flow of air which is caused by the rotation of the fan 17. The speed of rotation of the fan may be adjusted at will by suitable regulating devices (not shown) for controlling the motor. When the damper 22 and doors 27 are closed, the air within the drier circulates through and about the drying compartment and is heated by the steam pipes 23. When the damper 22 and doors 27 are open the air is drawn between the shutters through the macaroni in the racks and is exhausted through the outlet opening 21.

From the foregoing description it will be apparent that we have perfected an apparatus embodying numerous novel features of construction which facilitate the handling and drying of macaroni which has been heretofore largely dried in trays. These trays are very bulky and require considerable handling as well as careful arrangement of the macaroni therein prior to the drying operation. Our invention makes it possible to materially shorten the time required for properly drying macaroni without producing a product in any way inferior to goods dried in apparatus heretofore in use. The air in my apparatus is so evenly distributed that the macaroni dries uniformly throughout the drying compartment and it is unnecessary therefore to shift the racks during the drying operation. Thus one of the inherent disadvantages of drying apparatus having forced circulation and usually provided with a fan at one end of the drying compartment, has been overcome in my apparatus through arrangement of the fan in the top of the drying compartment so that it draws the air from both ends thereof.

Various changes may be made in the form, construction and arrangement of the parts without departing from the spirit and scope of the invention or sacrificing any of its material advantages, the form hereinbefore described being merely the preferred embodiment thereof.

We claim:

1. In a macaroni drier, the combination of a drying compartment, an outer shell forming an air space about said compartment and suction means in the top of said compartment for withdrawing air directly therefrom.

2. In a macaroni drier, the combination of a drying compartment, an outer shell forming an air space about said compartment, means in the top of said compartment for withdrawing air therefrom and means at the ends of said compartment to regulate the passage of air thereto.

3. In a macaroni drier, the combination of a drying compartment, an outer shell forming an air space extending about the top and ends of said compartment, means in the top of said compartment for withdrawing air therefrom, and means in said air space for heating the air therein.

4. In a macaroni drier, the combination of a drying compartment, an outer shell forming an air space extending about the top and ends of said compartment, means in the top of said compartment for withdrawing air therefrom, heating means in said air space and means at the ends of said compartment to regulate the passage of air thereto.

5. In a macaroni drier the combination of a drying compartment, an outer shell spaced from and surrounding said compartment, means for admitting air to both ends of said compartment from said shell, and suction means in the top of said compartment for withdrawing air directly therefrom.

6. In a macaroni drier the combination of a drying compartment, an outer shell surrounding said compartment, an outlet in the top of said shell, suction means beneath said outlet in the top of said compartment and means for admitting air at the ends of said shell and compartment.

7. In a macaroni drier the combination of a drying compartment, an outer shell surrounding said compartment, an outlet in the top of said shell, suction means beneath said outlet in the top of said compartment, means for closing said outlet to cause the air to circulate through said shell and compartment, means for admitting air at the ends of said shell and compartment.

8. In a macaroni drier the combination of a drying compartment, an outer shell surrounding said compartment, an outlet in the top of said shell, means for closing said outlet, suction means beneath said outlet in the top of said compartment and adapted to withdraw air therefrom, means at the ends of said shell for admitting regulated quantities of air and means at the ends of said compartment for controlling the admission of air thereto.

9. In a macaroni drier the combination of a drying compartment, an outer shell surrounding said compartment and forming an air space about the top and ends thereof and means in the top of said compartment for withdrawing air therefrom and delivering to said space, the top of said shell being arched to facilitate the passage of air.

10. In a macaroni drier the combination of a drying compartment, an outer shell surrounding said compartment and forming an air space about the top and ends thereof, means in the top of said compartment for withdrawing air therefrom and deliver-

ing to said space, the top of said shell being arched to facilitate the passage of air, and heating means in said space.

11. In a drying apparatus the combination of a drying compartment, means for withdrawing air from the top of said compartment, means for admitting regulated quantities of air to both ends of said compartment and a plurality of racks having removable bars adapted to support the macaroni in said compartment.

JOHN V. CANEPA.
PRIMIANO CASALENA.

Witnesses:
ENRICA CANEPA BANO,
AUGUST PETERSON.