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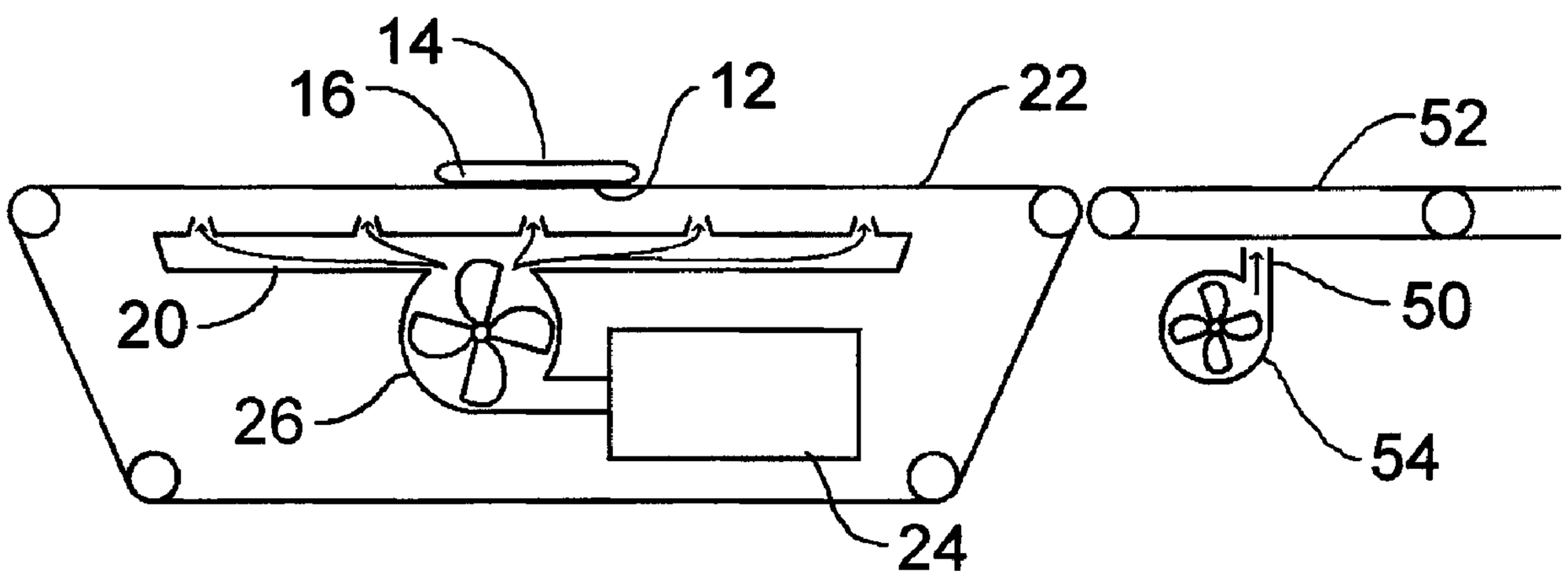
(54) Titre : METHODE DE STABILISATION DE LA PATE DE CUISSON
(54) Title: METHOD OF DOUGH STABILIZATION



(57) Abrégé/Abstract:
A method of dough stabilization consists of a single step of rapidly heating an underside of a dough product of a desired shape until a thin crust is formed that imparts a structural quality to the dough product that enables the dough product to withstand conveyor belt transfers without distorting it's shape. This eliminates the need for a pan or parchment paper.

ABSTRACT OF THE DISCLOSURE

A method of dough stabilization consists of a single step of rapidly heating an underside of a dough product of a desired shape until a thin crust is formed that imparts a structural quality to the dough product that enables the dough product to withstand conveyor belt transfers without distorting it's shape. This eliminates the need for a pan or parchment paper.

TITLE OF THE INVENTION:

Method of dough stabilization

FIELD OF THE INVENTION

The present invention relates to a method of dough stabilization for use with relatively flat dough products, such as pizza crusts and flat breads.

BACKGROUND OF THE INVENTION

In high speed production bakeries, conveyors are used to transfer products from one operation to another. Dough, which has been formed into a desired shape, is very pliable and unstable. In view of the fact its shape can be easily distorted, it is usually placed in a pan or onto parchment paper for transfer by conveyor.

SUMMARY OF THE INVENTION

According to the present invention there is provided a method of dough stabilization, comprising a single step of rapidly heating an underside of a dough product of a desired shape until a thin crust is formed that imparts a structural quality to the dough product that enables the dough product to maintain the desired shape.

With the method of dough stabilization, as described above, dough is able to withstand conveyor belt transfers without distorting it's shape. This eliminates the need for a pan or parchment paper.

BRIEF DESCRIPTION OF THE DRAWINGS

These and other features of the invention will become more apparent from the following description in which reference is made to the appended drawings, the drawings are for the purpose of illustration only and are not intended to in any way limit the scope of the invention to the particular embodiment or embodiments shown, wherein:

FIG. 1 is a side elevation view, in section, of a conveyor with a preferred form of heating assembly using high temperature forced air in accordance with the method of dough stabilization.

FIG. 2 is a side elevation view, in section, of a conveyor with an alternative form of

heating assembly using radiant heating elements in accordance with the method of dough stabilization.

FIG. 3 is a side elevation view, in section, of a conveyor with an alternative form of heating assembly using a hot contact surface in accordance with the method of dough stabilization.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

The preferred method of dough stabilization will now be described with reference to **FIG. 1** through **3**.

Method:

Referring to **FIG. 1, 2,** and **3,** the method of dough stabilization consists of a single step of rapidly heating an underside 12 of a dough product 14 of a desired shape until a thin crust 16 is formed that imparts a structural quality to dough product 14 that enables dough product 14 to maintain the desired shape. This enables dough product 14 to withstand conveyor belt transfer without distorting its shape; eliminating the need for a pan or parchment paper. This enables dough product 14 to maintain its shape during further processing, such as proofing, baking or freezing. The step of rapidly heating involving taking underside 12 of dough product 14 from ambient room temperature (which may be, for example, be approximately 70 degrees) to a temperature of approximately 400 degrees Fahrenheit in a matter of seconds. As will hereinafter be further described, the difference between **FIG. 1, FIG. 2,** and **FIG. 3,** lies in the type of heating assembly used.

Variations:

Referring to **FIG. 1,** the preferred heat source is high temperature forced air. High temperature forced air is supplied by an air supply manifold 20 which underlies a porous conveyor 22. Beneficial results have been obtained when conveyor 22 is a wire mesh conveyor. A heater 24 is provided to heat the air and a blower 26 is used to force the air along air supply manifold 20 and through wire mesh conveyor 22 to rapidly heat underside 12 of

dough product 14.

Referring to **FIG. 2,** an alternative heat source is radiant heat. In the illustrated embodiment, radiant heat is supplied by electric heating elements 30, which underlie a porous conveyor 22. Beneficial results were obtained when conveyor 22 was a wire mesh conveyor, such as was used with the preferred embodiment. Reflectors 32 underlie heating elements and reflect radiant heat up through conveyor 22 to rapidly heat underside 12 of dough product 14. The radiant heat just barely provided enough heat to form thin crust 16. Although radiant heat worked, it was not preferred.as it did not deliver as much heat as high temperature forced air.

Referring to **FIG. 3,** an alternative heat source was a hot contact surface. A hot plate 40 was provided. A conveyor belt 42 capable of withstanding high temperatures passed over hot plate 40, maintaining physical contact with hot plate 40. The belt used was made of Teflon, but other high temperature materials would work equally well. The hot contact surface required physical contact to work. Wherever there was insufficient physical contact, thin crust 16 was not uniform. Although the hot contact surface worked, it was not preferred as the heat provided was not as uniform as high temperature forced air.

Cautionary Warnings:

The best way to implement of the method of dough stabilization is to create thin crust 16, without cooking into the interior of dough product 14. It must be kept in mind, that dough product 14 has to undergo further processing. If premature cooking takes place, the yeast cells in dough product 14 will be killed and dough product 14 will not rise as intended. In all Figures, **FIG. 1, FIG. 2**, and **FIG. 3**, there is shown an optional further step of cooling underside 12 of dough product 14 immediately after thin crust 16 has been formed, in order to prevent premature baking of dough product 14. As illustrated, this cooling has been done by providing an air flow manifold 50, which underlies conveyor 52. A blower 54 is provided in air flow manifold to supply cool air to cool underside 12 of dough product 14.

In this patent document, the word "comprising" is used in its non-limiting sense to mean that items following the word are included, but items not specifically mentioned are not excluded. A reference to an element by the indefinite article "a" does not exclude the possibility that more than one of the element is present, unless the context clearly requires that there be one and only one of the elements.

It will be apparent to one skilled in the art that modifications may be made to the illustrated embodiment without departing from the spirit and scope of the invention as hereinafter defined in the Claims.

What is Claimed is:

1. A method of dough stabilization, comprising the steps of:

rapidly heating an underside of a dough product of a desired shape until a thin crust is formed that imparts a structural quality to the dough product that enables the dough product to maintain the desired shape.

2. The method as defined in Claim 1, high temperature forced air being to rapidly heat the underside of the dough product.

3. The method as defined in Claim 1, the dough product being passed over a hot contact surface to rapidly heat the underside of the dough product.

4. The method as defined in Claim 1, radiant heat being used to rapidly heat the underside of the dough product.

5. The method as defined in Claim 1, including a further step of cooling the underside of the dough product immediately after thin crust formation in order to prevent premature baking of the dough product prior to proofing.

6. The method as defined in Claim 1, the step of rapidly heating involving taking the underside of the dough product from ambient room temperature to a temperature of approximately 400 degrees Fahrenheit.

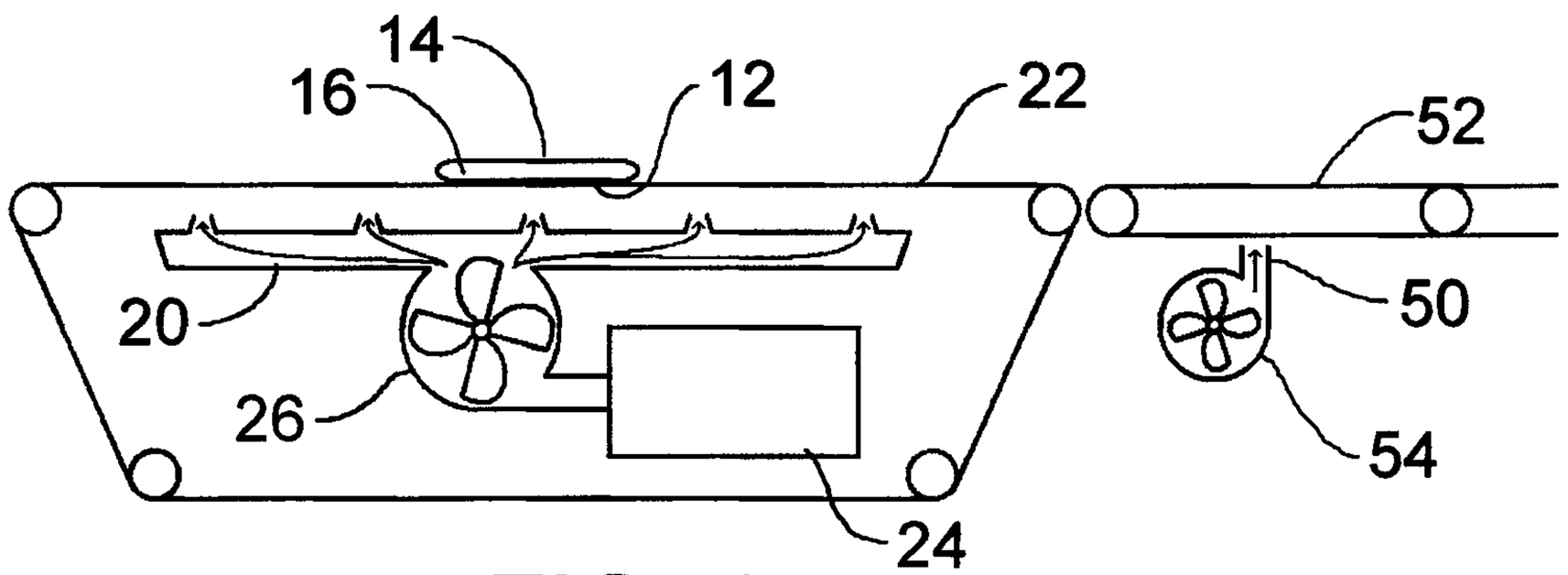


FIG. 1

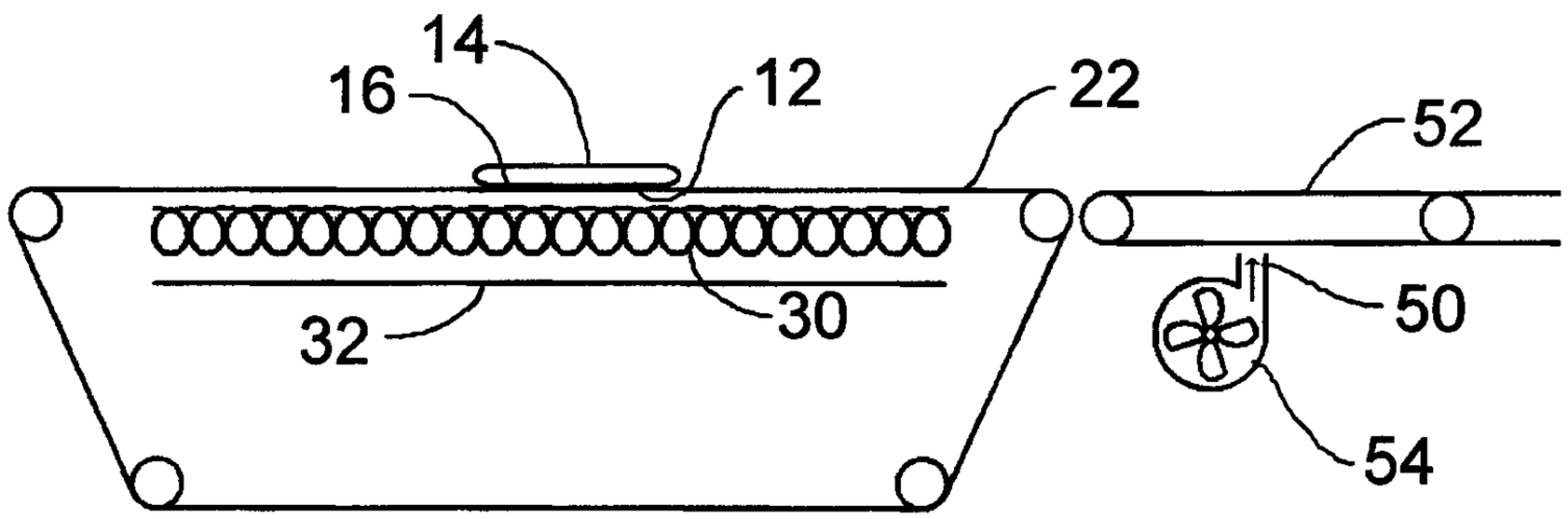


FIG. 2

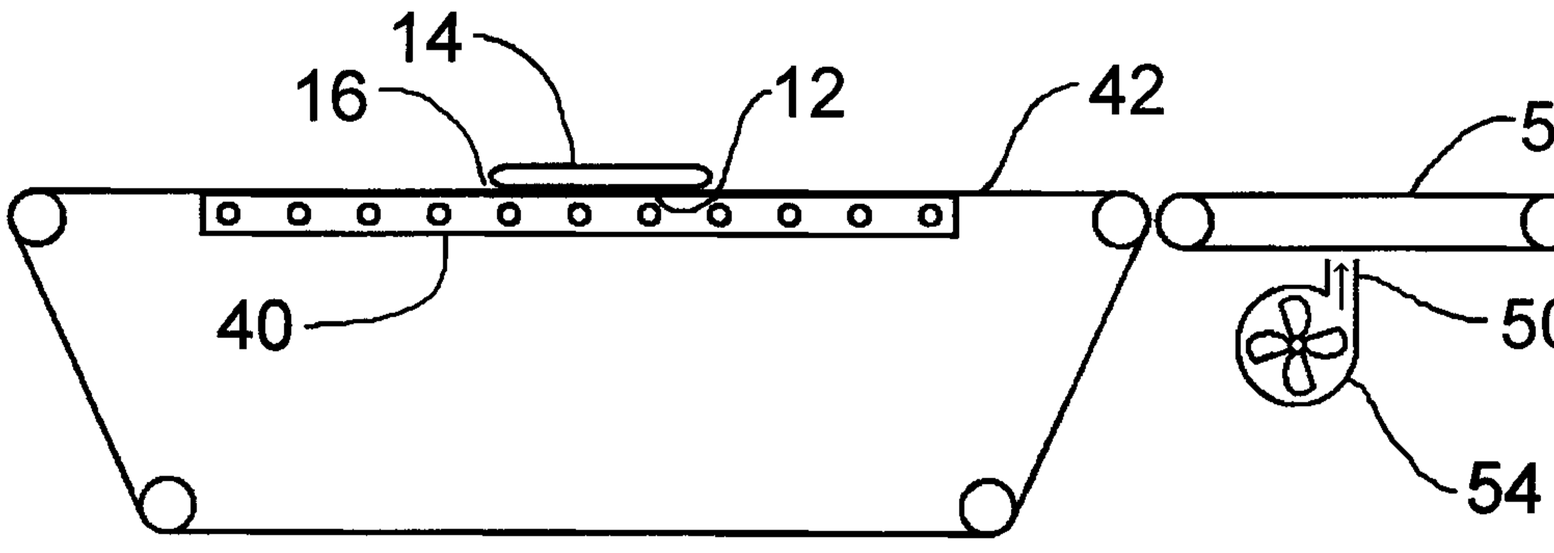
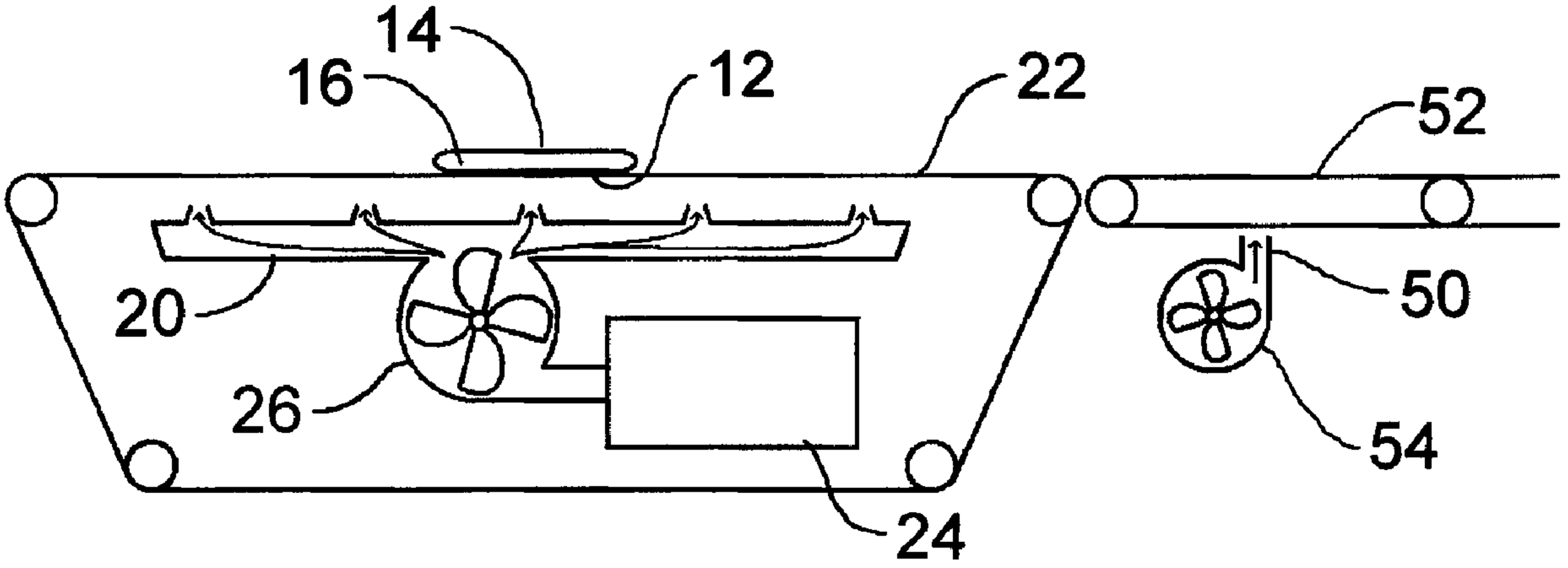


FIG. 3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