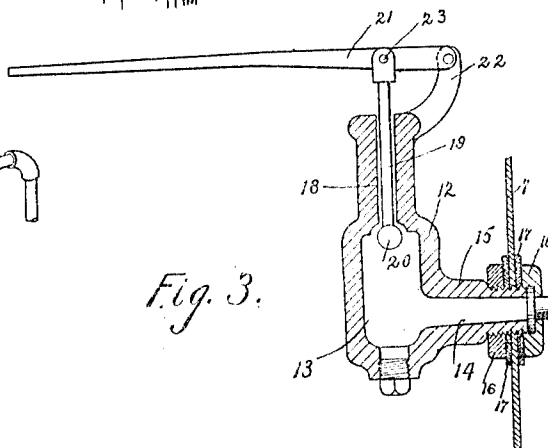
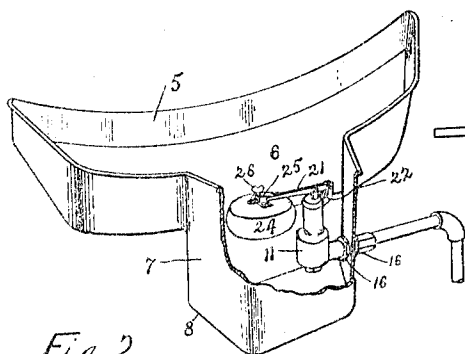
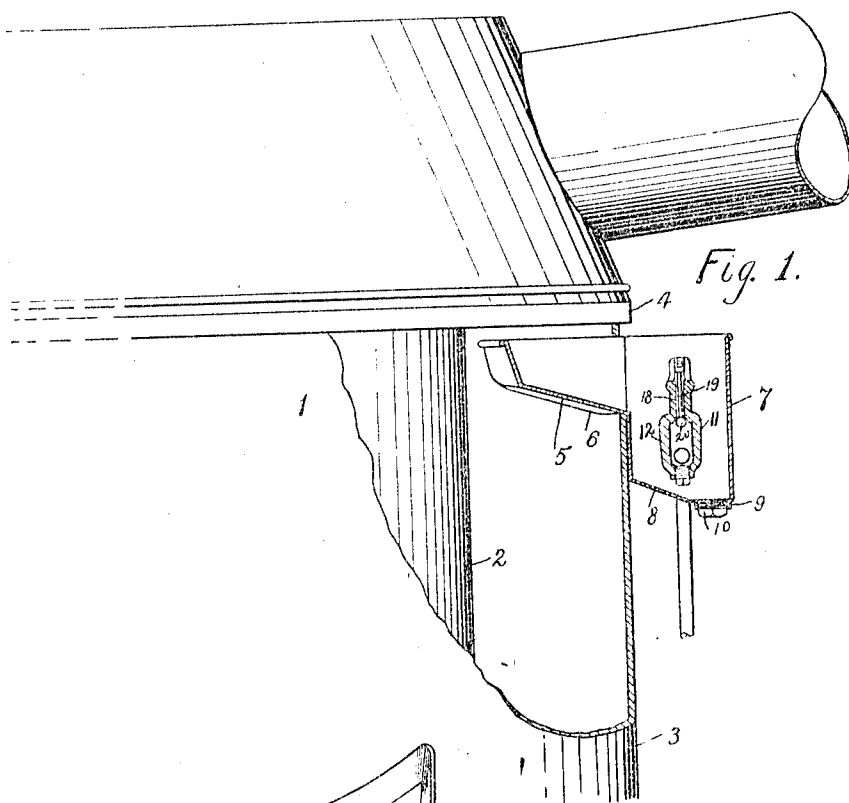


W. M. BOWEN.
AIR MOISTENING DEVICE.
APPLICATION FILED JULY 16, 1909.

967,867.

Patented Aug. 16, 1910.



Witnesses.
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UNITED STATES PATENT OFFICE.

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AIR-MOISTENING DEVICE.

967,867.

Specification of Letters Patent. Patented Aug. 16, 1910.

Application filed July 16, 1909. Serial No. 507,907.

To all whom it may concern:

Be it known that I, WILLIAM MERTON BOWEN, a subject of the King of Great Britain, residing at No. 122 Third avenue, in the city of Ottawa, in the Province of Ontario, in the Dominion of Canada, have invented certain new and useful Improvements in Air-Moistening Devices, of which the following is a specification.

10 The invention relates to improvements in air moistening devices for furnaces or the like, as described in the present specification and illustrated in the accompanying drawings that form part of the same.

15 The invention consists essentially in the novel arrangement and construction of parts whereby a shallow evaporating pan fitting within the interior of a furnace casing has a well secured thereto and communicating therewith and positioned on the outside of said casing whereby the evaporating pan is retained in position, suitable means being provided for automatically supplying the said well with water.

25 The objects of the invention are to devise a simple and durable means for the regular and efficient evaporation of water in furnace pans or the like, to provide a pan of convenient form, which will be retained in position in the furnace casing and be readily flushed of any accumulation of dust or other foreign matter.

In the drawings, Figure 1 is a side elevation of a furnace with the outer casing partially broken away, showing the evaporating pan and well, in section, applied thereto. Fig. 2 is a perspective view partially broken away to show the automatic means for supplying water to the well. Fig. 3 is an enlarged sectional detail view of the automatic means for supplying water to the well.

Like numerals of reference indicate corresponding parts in each figure.

Referring to the drawings, 1 is a furnace of the standard hot-air type having the inner casing 2, and the outer casing 3, the heated air from said furnace passing between said inner and outer casings.

4 is a retaining ring extending around the top of the outer casing 3, and supporting the outer dome of the furnace casing.

The outer casing 3 at the top thereof is cut away to form a substantially rectangular

opening therethrough immediately below the retaining ring 4.

5 is the pan preferably arc-shaped to conform with the inner periphery of the outer casing 3. The pan 5 is quite shallow in depth, and the bottom 6 thereof slants downwardly from the inner side to the outer side next the casing 3.

7 is a well of much greater depth than the pan 5, and of substantially rectangular shape, said well preferably being formed integral with the pan 5, so that the top of the pan, and top of the well are of an even height, whereby the pan practically forms an extension of the upper portion of the well. The well 7 is on the outside of the casing 3, the openings toward the top of said casing 3 fitting around the outside of the pan, where it is connected to the well 3, so that the lower part of the well projects below said opening in the casing 3. The arc-shaped pan is thus suspended within the casing at the top thereof owing to the weight of the well on the outside of said casing. The bottom 8 of the well 7 is also slanted toward the outside thereof, and it will be understood that any dust or foreign matter settling in either the pan or the well will find its way down the slanted bottom to the outer side of the well at the bottom thereof, where the orifice 9 is provided, through which the dust may be cleaned out. 10 is a plug closing the orifice 9.

11 is an automatically-operated valve contained within the well 7 and operating as hereinafter fully described for supplying the well with water, which in turn will flow into the evaporating pan on the interior of the furnace casing to be evaporated by the hot air passing through the furnace.

12 is the valve body having the vertical cylindrical central bore 13, and the inlet 14 communicating through the arm 15 of the body 12 with the said central bore 13.

The arm 15 is preferably formed integral with the body 12 of the valve and is threaded on the periphery thereof where it extends through a suitable orifice in the side wall of the well 7 intermediate of the height thereof.

16 are keeper nuts threaded on the arm 15, one to each side of the side wall of the well and securely holding said arm, so that

the valve body is suspended within the well, suitable washers 17 being fitted between the nuts on each side of the wall of the well, so that no leakage of water will occur where the arm 15 passes through the orifice.

18 is an orifice extending vertically through the upper portion of the valve body 12 from the central bore 13 to the top of said valve body.

19 is a pintle fitting loosely within the orifice 18, and having the ball 20 at the lower end thereof acting as a valve and closing the lower end of the orifice 18 when the pintle 19 is raised in said orifice.

21 is a lever pivotally secured at one end thereof to the brackets 22 projecting upwardly from one side of the valve body 12. The pintle 19 at the top thereof is pivotally secured to the lever 21 intermediate of its length by the pin 23.

24 is a float having a plate 25 secured to the top thereof and bridging the free end of the lever 21, a set-screw 26 being inserted through a suitable threaded orifice in the top of said plate against said lever and retaining the float 24 at the desired position thereon.

In the operation of the invention the arm 15 of the valve body is connected by suitable piping with a water supply, and the water will flow into the central bore 13, through the orifice 18, around the pintle 19, and then find its way out of the top of the valve into the well until the well is filled, and also the evaporating pan to a sufficient height.

The water as it rises in the well will buoy the float 24 up, and raise the pintle 18 until the ball valve at the lower end thereof closes the lower end of the orifice 18 and stops the flow of water through the valve until the surface of the water in the pan and the well has been lowered sufficient by evaporation to lower the float, which presses downwardly on the pintle 19 and lowers the ball valve 20 from its seat at the lower end of the orifice 18.

This is a very simple arrangement of valve, and will operate very satisfactorily. It must be understood, however, that I do not wish to be confined to the exact construction of the evaporating pan and well herein shown and described, as it may be

necessary with different types or shapes of furnaces to alter the shape of the pan. It may also be found an advantage to cover the well on the top side.

The essential features of the invention will be found in the peculiar shape of the pan, whereby it can readily be supported through an opening in the outer casing of the furnace at any convenient place, as the pan does not require any means of support other than the side wall of the casing itself.

A further essential feature is the manner in which the evaporating section of the pan contained within the casing is slanted at the bottom thereof, whereby there is little likelihood of any accumulation of scale or dust to interfere with the evaporation of the water from said section.

What I claim as my invention is:

1. The combination with the outer casing of a hot-air furnace or the like having an opening therethrough, of an arc-shaped pan of shallow depth fitting the interior contour of said casing and having a well section formed integral therewith and protruding through the opening in said casing and supporting said arc-shaped shallow pan on the interior thereof, a valve contained within said well and connected to a suitable water supply and a float operatively connected to said valve for supplying water to said pan.

2. The combination with the outer casing of a hot-air furnace or the like having an opening therethrough, of an arc-shaped pan of shallow depth fitting the interior contour of said casing and having the bottom thereof slanting toward said casing, a well section formed integral therewith and protruding through the opening in said casing and supporting said arc-shaped shallow pan on the interior thereof and having a threaded orifice through the bottom thereof, a plug fitting said orifice, a valve contained within said well and connected to a suitable water supply and a float operatively connected to said valve for supplying water to said pan.

Signed at the city of Ottawa, in the Province of Ontario, in the Dominion of Canada.

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Witnesses:

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