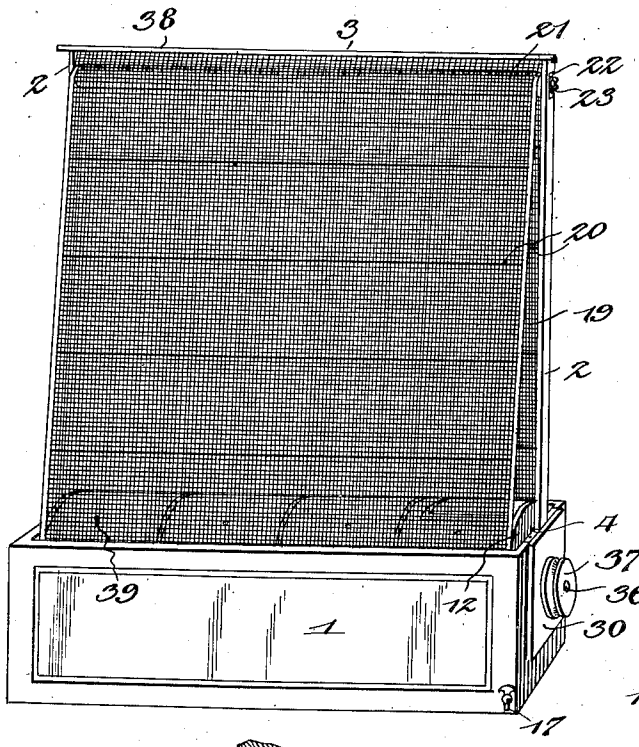
March 22, 1927. 1,622,131

E. CRISPIN

AIR COOLER

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Fig. 1.



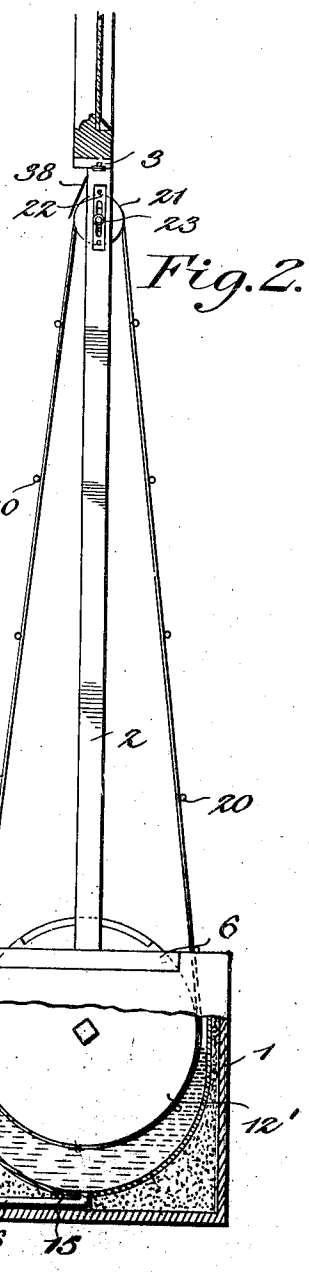


Fig. 2.

Fig. 5.

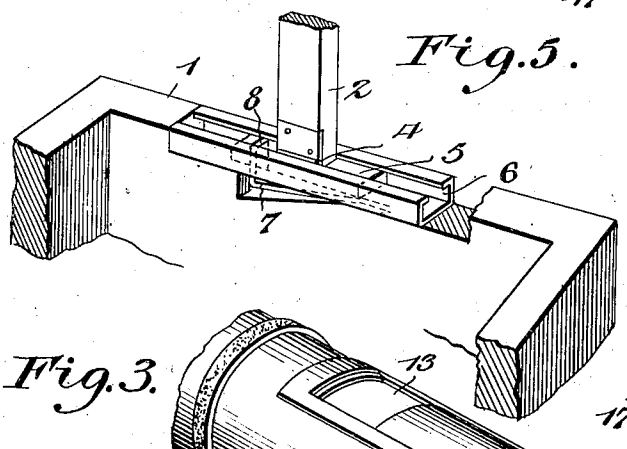
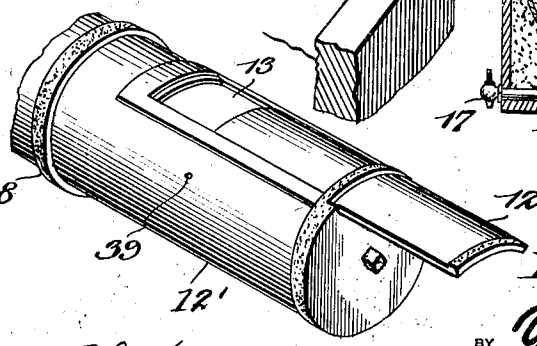


Fig. 3.



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AIR COOLER

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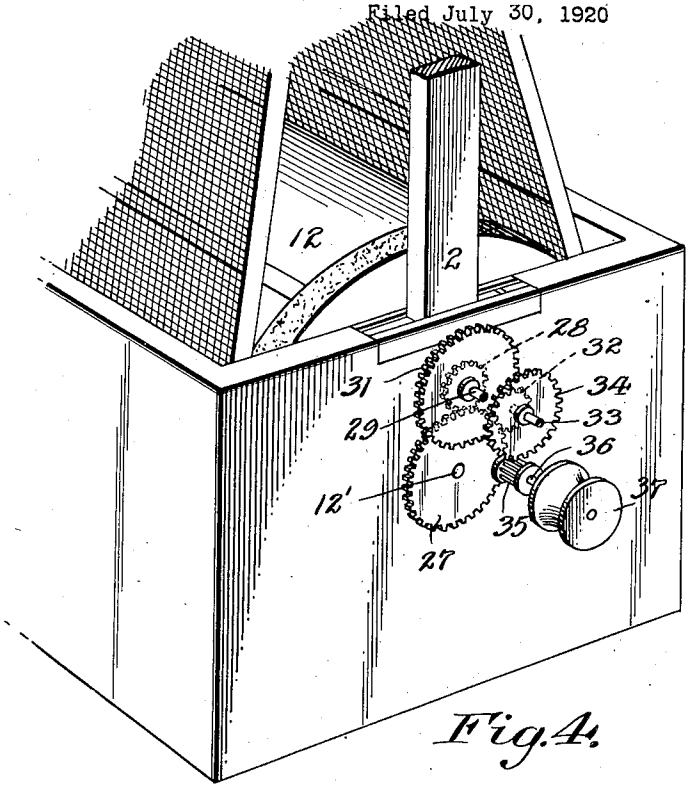


Fig. 4.

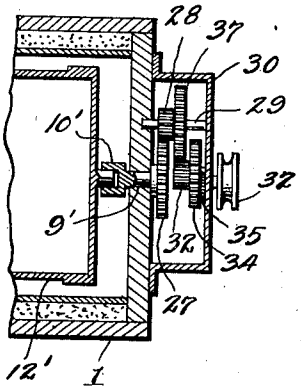


Fig. 7.

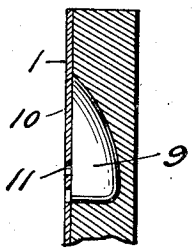


Fig. 6.

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UNITED STATES PATENT OFFICE.

EDWARD CRISPIN, OF NEW YORK, N. Y.

AIR COOLER.

Application filed July 30, 1920. Serial No. 400,293.

This invention relates to improvements in air coolers and one of the objects of the invention is to provide a device adapted to be set in window frames whereby air in or entering a room may be cooled.

Another one of the objects of the invention is to provide an air moistening and cooling means for air entering a room which comprises a surface adapted to be placed in the path of the entering air and said surface being moistened by a chilled liquid.

A further object of the invention is to produce a device of this nature which will be simple in construction, cheap to manufacture, and highly efficient for the purpose for which it is designed.

Another object is to provide means which can be conveniently used to medicate or perfume the air in or entering the room.

This invention also consists in certain other features of construction and in the combination and arrangement of the several parts, to be hereinafter fully described, illustrated in the accompanying drawings and specifically pointed out in the appended claims.

In describing my invention in detail, reference will be had to the accompanying drawings wherein like characters denote like or corresponding parts throughout the several views, and in which:

Figure 1 is a perspective view of my improved air cooling device.

Figure 2 is an end elevation of the same with the parts broken away for the sake of clearness.

Figure 3 is a fragmentary enlarged perspective view of the cooling agent containing roller.

Figure 4 is a fragmentary perspective view of one end of the device as shown in Figure 1 with the gear box omitted to illustrate the gearing.

Figure 5 is a detail view of the mounting for one of the uprights.

Figure 6 is a sectional view through one end of the liquid containing box to illustrate the spring hanger for one of the pivots of the roller.

Figure 7 is a detail view to illustrate the detachable connection between the roller and the gearing.

My invention contemplates the provision of a means for cooling the air in or entering a room of any building, and it is understood that the same can be used to advantage in private houses, public buildings, factories and many other like places.

Referring to the drawings in detail, the reference numeral 1 indicates a box which is made of suitable length and breadth to fit in a window frame, and the reference numeral 2 indicates a pair of uprights which are secured together at their top by a cross bar 3. As shown in Figure 5, the lower ends of the uprights are hinged at 4, and the hinge of one of the members 2 is mounted on a sliding block 5 which is mounted to slide crosswise in a groove formed in a plate 6 having angle shape side walls and which is secured to the box as shown, thus it will be apparent that the upright as shown in Figure 5 can be moved in its groove laterally to be positioned out of the way to permit the opening of the cover 12 hereinafter referred to. A spring 7 is seated in the end of the box 1 and normally has its free end engaging in an opening 8 in the plate 5 so as to lock the plate 5 against movement.

As shown in Figure 6, the inner surface of one end of the box is provided with a hollowed-out portion 9, and over this hollowed-out portion is placed a depending spring hanger 10 formed with a circular aperture or bearing 11 adapted to receive one of the pivots on a roller 12′. The other end pivot is square in cross section and is adapted to be secured in a socket 10′ having a bore of like shape and formed on a stub shaft 9′ which passes through one end wall of the box as shown in Figure 7. By this construction, the roller may be removed from the box when desired.

The roller 12′ is hollow and is adapted to be filled with ice through an opening 13 in its side and the edges of said opening are provided with grooves to slidably receive a cover 12. Secured to the sides of the box and extending across the bottom thereof in relation with the roller 12′ is a lining 15 of metal or the like. Water is adapted to be received in the lining 15 and a drain pipe 16 is provided for drawing this water from the box when desired, and this pipe 16 has a stop cock 17 on its outer end. In the spaces between the lining 15 and the box, is a packing of asbestos or sawdust to properly insulate the box as will be apparent. The roller 12′ is provided with several friction bands or hoops 18 adapted to operate an endless web 19 of fabric and reinforcing bars 20 of metal, wood or other suitable material are

secured to the web 19 and extend transversely thereof to hold the web rigidly.

This web passes over an upper roller 21 which is provided with trunnion like end pivots having their bearings disposed in plates 22 slidably mounted in the upper portion of the uprights 2 and are adapted to be secured in any adjusted position through the instrumentality of thumb nuts 23. By having the roller 21 adjustably mounted, it will be apparent that the web can be drawn taut when desired.

Secured to the outer end of the shaft 9' is a gear wheel 27 which meshes with a pinion 28 mounted on a stub shaft 29, which extends into and has its bearings in the sides of a gear box 30, mounted on one end of the box 1 as shown in Figure 7 of the drawings. Secured to the stub shaft 29 inside the gear box 30 is a large gear wheel 31 which meshes with a pinion 32 mounted on a stub shaft 33 having its bearings in the side of the box 30. Said stub shaft 33 has secured thereto a large gear wheel 34 which is adapted to mesh with a lantern gear 35 mounted on the shaft 36 having its bearings in the sides of the box 30 and extending therethrough to receive a pulley 37 which may be driven from any suitable source of power, as for instance an electric motor. However, if desired a hand lever may be attached to the shaft 36 so that the device may be given a few turns when desired, or a pulley system, or any other similar device may be used for operating the gears.

A strip of screening 38 is secured to the top rod 3 to prevent the ingress of insects and the like, and similar strips may be fastened to the sides of the window frame and have their vertical edges overlap the web. The roller 12 may be provided with one or more apertures 39 for permitting water from the ice to flow out into the box.

It will be obvious that as the pulley 37 is rotated the web will be gradually fed about the rollers and be moistened with ice water, or if desired with a perfumed or disinfecting solution, so that the air in or entering the room through the window in which the device is secured will be chilled and moistened for the purpose set forth.

It is thought from the foregoing description that the advantages and novel features of my invention will be readily apparent.

I desire it to be understood that I may make changes in the construction and in the combination and arrangement of the several parts, provided that such changes fall within the scope of the appended claims.

What I claim is:

1. An air moistening and cooling means for air entering the room and comprising an open top tank adapted to contain liquid, parallel uprights mounted in the end walls of the tank, one of said uprights being removably mounted on its supporting wall, a hollow roller adapted to contain a cooling agent for chilling the liquid in the tank, mounted for rotation in said casing and being provided with an opening in one end portion thereof, a sliding cover for said opening which can be moved to open position, a support mounted for rotation in the upper ends of said uprights, and means trained over said support and moved by the hollow roller as the latter rotates, the said last-mentioned means passing through the said liquid to be coated therewith to moisten the air entering the room.

2. An air moistening device of the character described comprising an open top casing adapted to fit a window frame, a hollow roller mounted for rotation in the casing and adapted to contain a cooling agent for the purpose of chilling liquid in the casing, means for rotating the roller, an endless web trained about the hollow roller and associated therewith in a manner to be coated with the chilled liquid, said web being revolved by the cylinder and means including a roller supported by said casing to receive the upper run of the web which is disposed in the path of air entering the room through the window.

In testimony whereof I have affixed my signature.

EDWARD CRISPIN.