(No Model.)

J. CHELLEW.

Apparatus for Cooling Air.

No. 233,072. **Patented Oct. 12, 1880.**

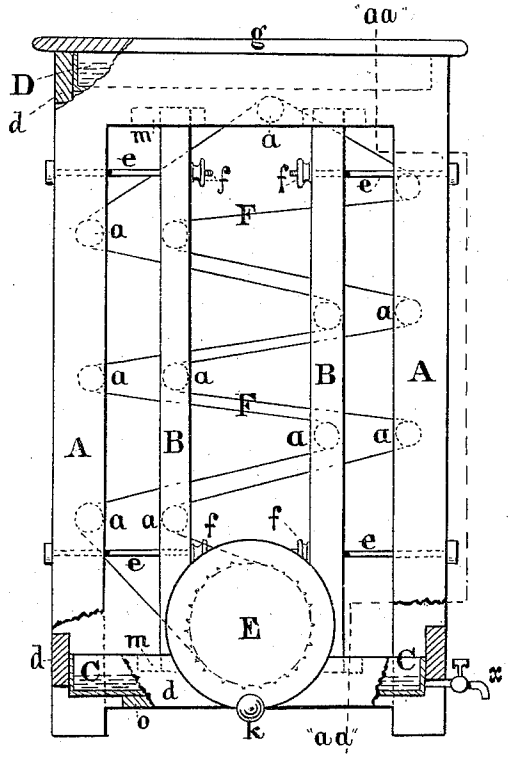

Fig. 1.

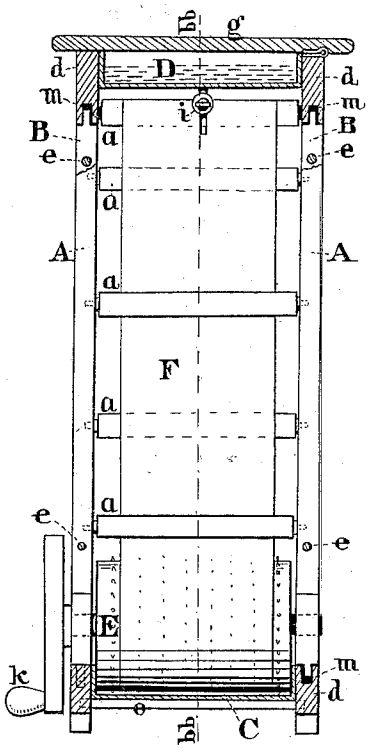

Fig. 2.

End elevation & Sec. on line "a a" fig. 1.

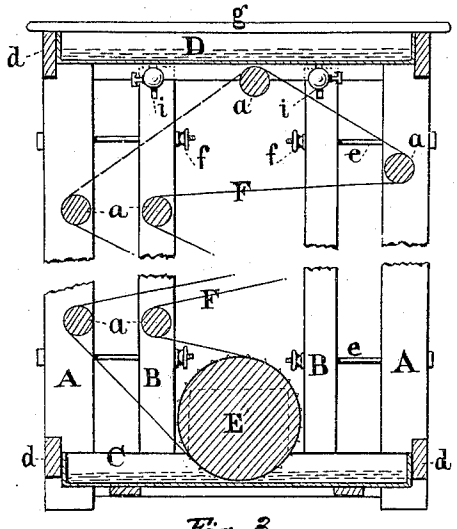

Fig. 3.

Vert. Sec. on line "b b", fig. 2.

Attest.

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UNITED STATES PATENT OFFICE.

JOSEPH CHELLEW, OF GLASFORD, ILLINOIS.

APPARATUS FOR COOLING AIR.

SPECIFICATION forming part of Letters Patent No. 233,072, dated October 12, 1880.

Application filed April 2, 1880. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH CHELLEW, of Glasford, in the county of Peoria, in the State of Illinois, have invented an Improvement in Apparatus for Purifying, Disinfecting, Medicating, or Cooling the Air of Rooms, &c., or for Oxidating Spirits, &c.; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the annexed drawings, making a part of this specification, in which like letters of reference refer to like parts, and in which—

Figure 1 represents a side elevation; Fig. 2, an end elevation with partial section of upper reservoir and lower reservoir; Fig. 3, a vertical longitudinal section, on line *b b*, Fig. 2, through center of apparatus.

This is an improvement in that class of apparatus intended to purify, disinfect, or medicate the air of rooms, provision-safes, &c., by exposing said air to surfaces of sheeting or similar suitable material that will retain moisture in a greater or lesser degree when wetted with water, liquid disinfectants, or medications.

I use preferably an endless band of linen, of convenient width and length, or of such surface as to afford a good extent of surface, stretched back and forth in a zigzag direction in descending inclines upon and around a series of rollers supported in a frame and capable of rotation, for the more equal distribution of the liquid thereon, by passing said band through a trough of the latter or by reception of a fall of the same from a reservoir above. By this means the band thus kept wetted offers a large surface for the absorption from the air of carbonic-acid gas and other impurities, in sick-rooms especially.

It is well known that water itself is a great absorbent of gases, and this liquid alone I design to use as the most available absorbent, substituting other absorbents or disinfectants or purifiers when desirable.

One of the forms in which I construct this apparatus is described as follows:

A A A A represent four corner-posts of the apparatus, which are united above and below by means of cross-bars *d*, each being the pivot for several rollers, *a*. B B are four vertical adjustable roller-supports, extending between the respective bars *d*, in which the ends of the respective supports B slide within the slot *m*. Each of these supports is pierced by two adjusting rods, *e*, or screws, extending to the adjacent corner-post A, to which each rod *e* is fixed, one rod to manage the upper end of each support B, the other, for the lower end of the same, being used to tighten the band upon the rollers or slacken it at occasion. The rollers *a a*, &c., extend between their respective supporting-bars B, across each end of the apparatus, and are arranged at regular intervals, for the most part, near and on the same level as the rollers in the adjacent posts A, toward which they are advanced or withdrawn by means of the respective adjusting-screws *f*.

C is a liquid-tray, forming the bottom of the apparatus, and in which the motor-roller G revolves in order to wet the band F. It is provided with a faucet, *x*, for carrying off spent liquids, water, &c.

D is a reservoir for water, disinfectant-solutions, &c., provided with faucets *i*, for discharging liquids upon the upper two inclines of the endless band F, and surmounted by a hinged cover, *g*, which forms the top of the apparatus; E, a large roller, with handle or crank *k* extending horizontally across the tray or trough C, and pivoted at each end in one of the bars *d*, uniting the posts A at the bottom in such a position as to immerse the cloth or band F in any water or liquid contained in said trough.

F is an endless band, of linen, cotton, or other absorbent fabric, made of a convenient breadth to offer the required evaporating-surface for cooling purposes, or for absorbing purposes, as required. It is stretched around the motive-roller E, above the tray C; thence around the next rollers, *a a*, above; thence diagonally upward across the apparatus to the next rollers above, and in this manner continuously, and in nearly parallel surfaces, until near the upper reservoir, D, below which the band is divided or separated, so as to form a final bend over the upper roller and expose a wide extent of the band to saturation from liquid issuing from the faucets *i* of the reservoir D, and to run in two different currents down the anticlinal stretches of said band, by which means the said band may be kept moist or saturated by a downflowing current of liq-

uid without the use of the roller E, which latter is used merely to run the band through liquid in the tray C, to dampen the same the better to absorb the added drip from the faucets *i*.

The operation of this apparatus is as follows: In using this apparatus for purifying and cooling the air of rooms, safes, &c., the endless band F is saturated with water or other desirable liquid suitable for the purpose by means of the reservoir D above and faucets *i*, or by means of the roller E, which will carry the band through the liquid in trough C, which, when saturated, can be kept so by means of said faucets *i* and reservoir D, when properly supplied, and thus present a large surface covered with disinfectant liquid (as long as the band is kept moist) to the air in a room, &c., or, on the other hand, a cooling-surface for air when water is used.

The operation of the same apparatus (with the addition of a tight inclosure around it) for the oxidation of liquors, spirits, &c., is similar to that just described.

The roller E continually rotated causes the band F to carry into the air for oxidation a perpetually-ascending film of spirits, converting the fusel-oil, &c.; or the reservoir D above may be the medium for the distribution of the liquor, spirits, &c., to be oxidated in a slower or faster stream or streams down the opposite or adjacent parts of the band F, while the treated liquor or spirits may be drawn off through the faucet *b* after this exposition to the air.

What I claim as my invention is—

1. The endless band F, rollers *a a*, and motive-roller E, in combination with the frame A, having the adjusting-bars B and the reservoir C D.

2. The combination of the frame A *d*, provided with slots *m*, and the band-rollers *a a*, with the adjusting-bars B, and the adjusting-rods *e*, with nuts *f*.

In testimony that I claim the foregoing apparatus for purifying, disinfecting, or medicating rooms, &c., I have hereunto set my hand this 13th day of March, A. D. 1880.

JOSEPH CHELLEW.

Witnesses:
HENRY W. WELLS,
LYNDHURST THURLOW.