

(No Model.)

2 Sheets—Sheet 1.

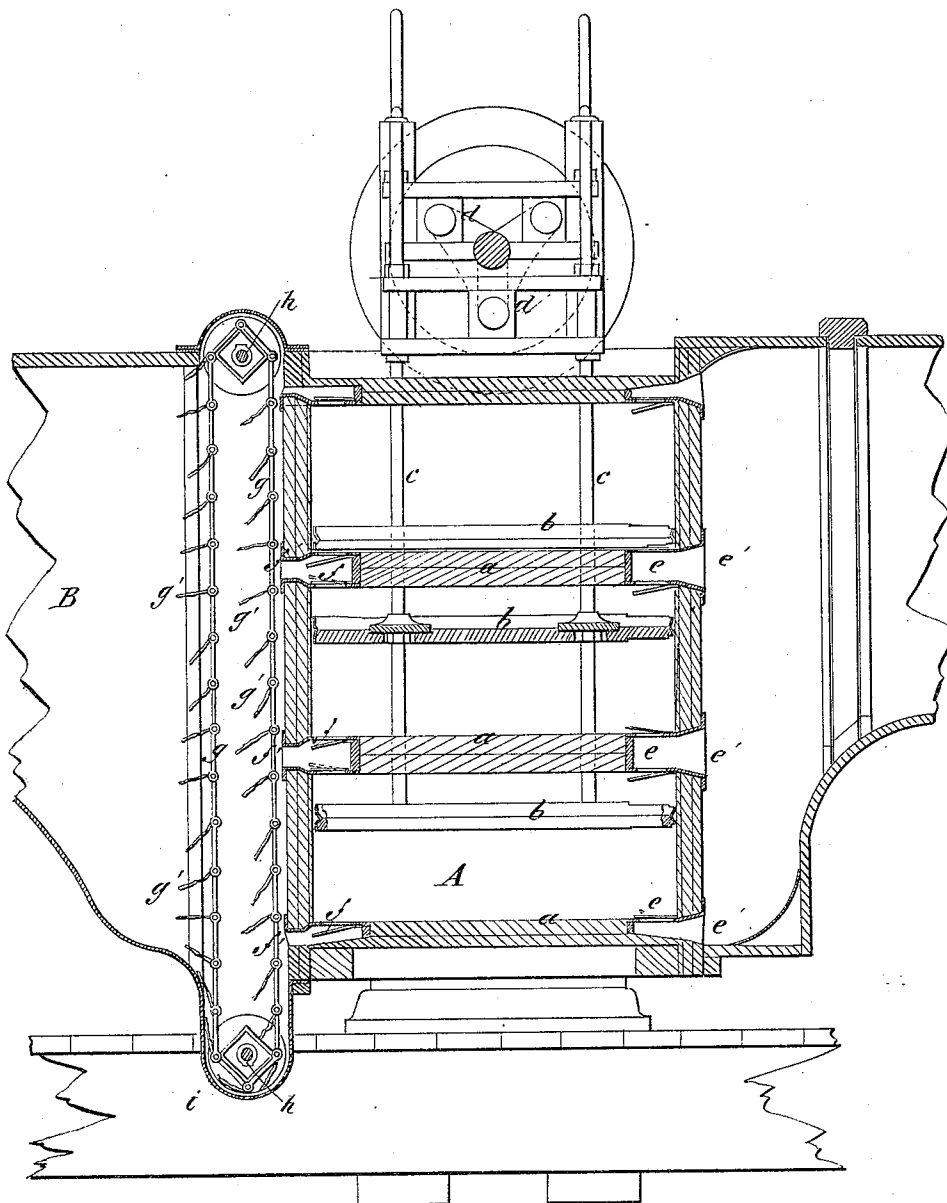
H. WILSON.

APPARATUS FOR BLOWING, COOLING, PURIFYING, AND OTHERWISE
ATTEMPERATING AIR.

No. 246,263.

Patented Aug. 23, 1881.

Fig. 1.



WITNESSES:

Chas. Nida
C. Sedgwick

INVENTOR:

H. Wilson

BY

Munn & Co
ATTORNEYS.

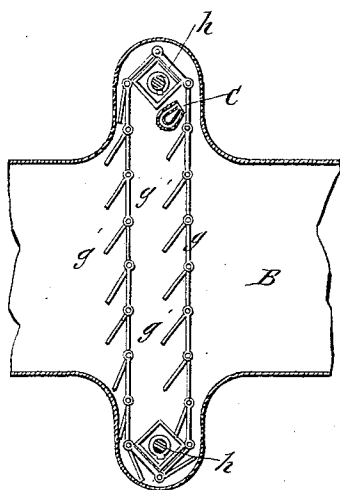
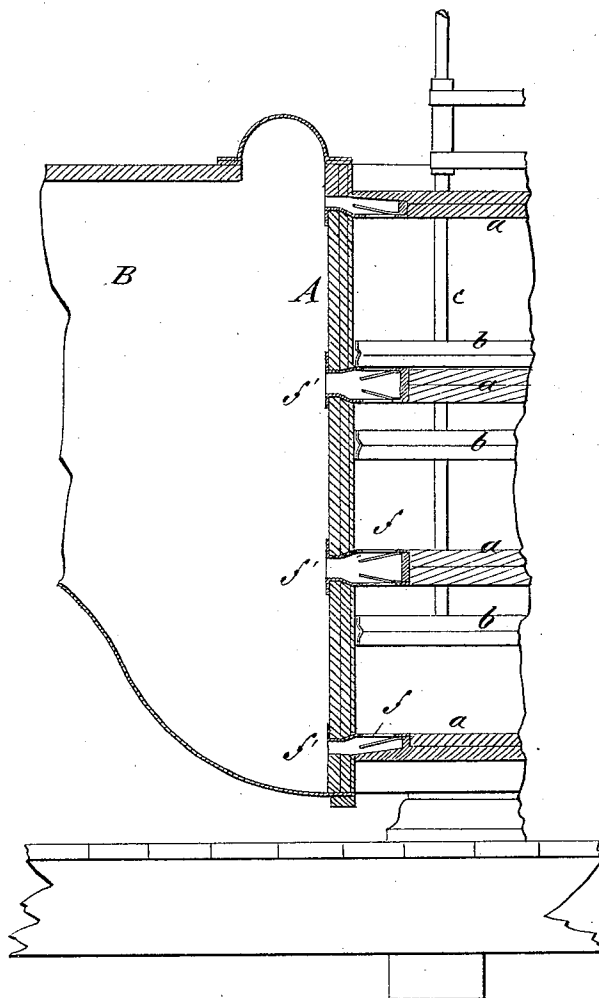
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Fig. 2.



WITNESSES:

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UNITED STATES PATENT OFFICE.

HENRY WILSON, OF STOCKTON-ON-TEES, COUNTY OF DURHAM, ENGLAND.

APPARATUS FOR BLOWING, COOLING, PURIFYING, AND OTHERWISE ATTEMPERATING AIR.

SPECIFICATION forming part of Letters Patent No. 246,263, dated August 23, 1881.

Application filed February 7, 1881. (No model.) Patented in England October 6, 1879.

To all whom it may concern:

Be it known that I, HENRY WILSON, of Stockton-on-Tees, in the county of Durham, England, have invented a new and useful Improvement in Apparatus for Blowing, Cooling, Purifying, and Otherwise Attemperating Air, of which the following is a specification.

In the accompanying drawings, Figure 1 is a vertical longitudinal section of an air pump or blower embodying my invention; and Fig. 2 is a similar section with modifications of construction.

Similar letters of reference indicate corresponding parts.

My invention consists in certain novel features in the construction and arrangement of air-pumps, suction and blowing engines, and devices combined therewith, for cooling, purifying, heating, and otherwise attemperating air or gas, as described and claimed hereinafter.

Referring to Fig. 1, the barrel of the pump or engine is a case, A, of oblong rectangular form, divided by partitions *a* into two or more spaces. The sides are formed by plates of glass let into open frame-work, so as to render the internal working parts visible. Within each space works a bucket or plunger, *b*, packed at its edges with elastic material, and slabs of wood or other fibrous material may be let into the edge of the plungers and kept in contact with the glass sides by springs. The buckets or plungers *b* are actuated by rods *c*, passing through the divisions *a* and connected with the triple cranks *d*. The divisions *a* are fitted with inlet-valves *e* and outlet-valves *f*, of any usual character, in connection with inlet and outlet openings in case A, the outlets *f* being sometimes smaller than the inlets *e*, to impart a certain pressure to the air passing through the blower. The air-outlets *f* of case A discharge into a pipe, B, which is enlarged to form a chamber that receives the devices next described.

g is one of two endless chains or belts fitted on top and bottom shafts, *h h*, one of which is to be actuated by suitable power, so that the belts shall move in front of the outlets *f*. This belt carries flaps *g'*, of cloth or fringe, hung on rods fitted to the belts, so that the flaps extend the whole length of outlets *f*. The lower shaft, *h*, extends through a trough, *i*, formed at the

lower part of the chamber, for containing water or other fluid, so that the flaps *g'* shall pass through such fluid, and thereby be kept saturated. The air coming out by the openings *f* is forced in contact with the flaps *g'*, and is thereby thoroughly saturated, cooled, or purified, according to the qualities of the fluid used.

The fluid may be water or disinfecting-fluid, or volatile liquids may be used to give the desired impregnation, purification, or attemperation to the air passing through, after which the air will pass by pipe B to the place of use.

There may be perforated pipes, fitted to supply jets of water or other fluid, in front of openings *f*, to aid in cooling and purifying the air and to saturate the flaps *g'*.

In place of using cloth flaps there may be a series of wire paddles or frames carrying strands of fibrous material or cloth.

When it is desired to extract moisture from the air forced out from the blower, it will be caused to pass through a series of passages formed by cloth, and a current of air will be caused to pass outside such passages in the opposite direction, for the purpose of carrying off the moisture absorbed by the cloth. The drying-current may be induced by a steam-jet or otherwise.

If the air is to be heated, the arrangement shown in Fig. 2 is preferable. In this case the belts or chains *g'* are placed in pipe B at a distance from the blower, and the belts are fitted with flaps *g'* of wire-gauze or metal plates. A gas blow-pipe or Bunsen burner, C, is placed so that the flame will impinge on the flaps as they pass. The flaps *g'* being kept heated by the flame the air passing through becomes more or less heated by contact therewith.

The purposes to which the hot, cold, or attemperated air is to be applied are various, viz: for malting processes; for roasting and drying grain; for purifying, disinfecting, and changing air in hospitals, ships, and like places, and for the dissemination of air charged with medicated germs; for ventilating and cooling ships' holds, cabins, and like places; for cleansing and purifying cloth, clothes, and other materials, and for evaporating liquids.

Having thus fully described my invention, I claim as new and desire to secure by Letters Patent—

1. The apparatus for attemperating air, consisting of a pump or blower, a chamber for receiving the air, connected with a conveying-pipe, a traveling belt or chain carrying flaps, 5 between and in contact with which the air passes, and a trough or other receptacle for liquid, all substantially as shown and described, combined for operation as set forth.
2. In an apparatus for attemperating air, the 10 endless traveling chains *g*, carrying flaps *g'*, and the trough *i*, combined with the pipe B, and pump or blowing-engine, having outlets *f'*, substantially as shown and described.
3. In apparatus for attemperating air, the 15 combination of the burner or heater C, endless traveling chains *g*, carrying flaps *g'*, and air-conveying pipe B, substantially as and for the purposes set forth.
4. In air-attemperating apparatus, the blowing-engine consisting of case A, formed with 20 partition *a*, provided with valves *e f*, and fitted with reciprocating plungers *b*, substantially as shown and described, for operation as set forth.

The above specification signed by me this 12th day of October, 1880.

HENRY WILSON. [L. S.]

Witnesses:

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