

No. 789,807.

PATENTED MAY 16, 1905.

F. HOLL.

APPARATUS FOR COOLING AND DRYING GRANULAR MATERIALS.

APPLICATION FILED MAY 31, 1904.

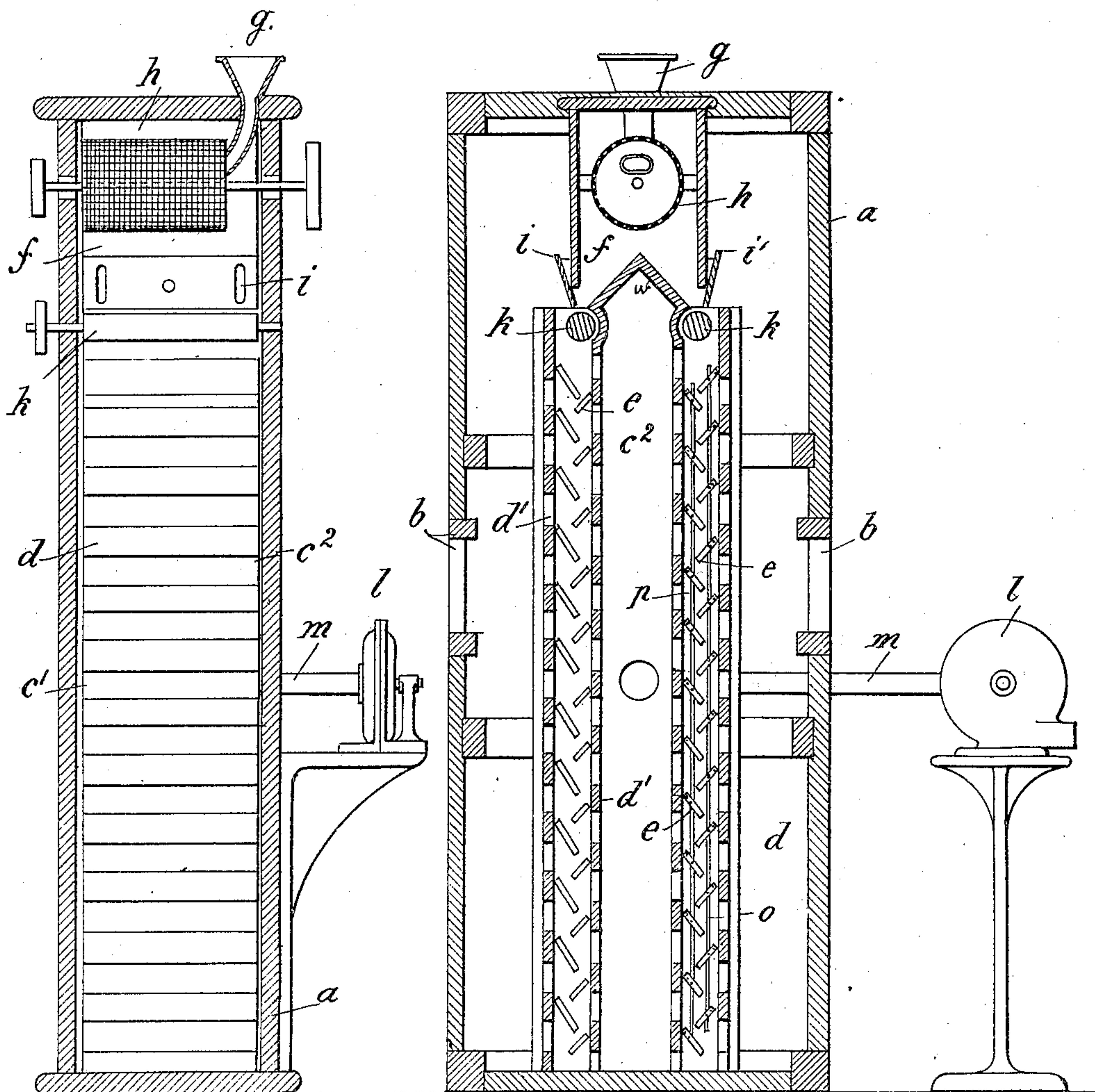


Fig. 1.

Fig. 2.

Witnesses:

M. J. Raleigh
J. H. Hynes.

Inventor:

Franz Holl
by *[Signature]*
Attorney.

UNITED STATES PATENT OFFICE.

FRANZ HOLL, OF WORMS, GERMANY.

APPARATUS FOR COOLING AND DRYING GRANULAR MATERIALS.

SPECIFICATION forming part of Letters Patent No. 789,807, dated May 16, 1905.

Application filed May 31, 1904. Serial No. 210,541.

To all whom it may concern:

Be it known that I, FRANZ HOLL, a subject of the German Emperor, and a resident of Worms-on-the-Rhine, Germany, have invented new and useful Improvements in Apparatus for Drying Granular Materials, such as Moist Sugar and the Like, of which the following is a specification.

This invention relates to an apparatus for cooling and drying granular materials, such as moist sugar and the like. The apparatus is constructed in such a manner that the material is first passed through a sifting-drum and then traverses the apparatus from top to bottom zigzag, being continuously exposed to a current of fresh air. If the apparatus is to be used for drying excessively-moist material, steam-pipe coils may be inserted in the apparatus.

In the accompanying drawings the improved apparatus is shown in Figure 1 in a vertical section. Fig. 2 is a side view of the cooling-tower without the outer casing.

As can be seen from the drawings, the apparatus is inclosed in a casing *a*, which has two openings *b b* opposite each other for the admittance of outer air. In this casing *a* the drying apparatus proper is inclosed, which consists of a tower, suitably of rectangular cross-section. The tower is composed of two solid walls *c' c''*, of wood or any other material which is a bad heat-conductor, and of two walls made of laths which are fixed with both ends to the walls *c' c''* at a certain distance from each other. In the cooling-tower two vertical partition-walls *d' d''* are arranged, which are composed of cross-laths standing opposite the intervals between the laths *d*. To the laths *d* and *d'* baffle-plates *e* are linked. In each set the baffle-plates *e* are interconnected by means of rod *o* or *p*, respectively, so that the position of the baffle-plates of each set can be adjusted according to requirement.

In the upper end of the cooling-tower, between the outer and inner lath walls *d' d''*, distributing-rollers *k* are rotatably mounted. On the upper end of the inner partition-walls *d' d''* a rectangular cover-plate *w* is fixed, which serves as a guide for the material to be dried.

A feeding-channel *f* is fixed to the inner surface of the top plate of casing *a*. A rotary sieve *h* is mounted in said feeding-channel, and a funnel *g* is provided in the top plate of the apparatus, through which funnel the material to be dried is fed into the rotary sieve. At the two side walls of the feeding-channel *f*, which run parallel with the lath walls *d' d''*, guide-plates *i i'* are fixed, which lead the material to be dried onto the distributing-rollers *k k*.

An aspirator *l*, arranged outside the apparatus, is connected with the drying-tower by a suction-pipe *m*.

The apparatus operates as follows: The granular material to be dried is fed through the funnel *g* onto the rotary sieve *h*, whereby the lumps are separated. The sifted material—sugar or the like—is transported through the rotary sieve onto the rectangular top wall and guided by the same and the guide-plates *e* onto the distributing-rollers *k k*. The material now passes from one baffle-plate *e* to the other down to the bottom of the apparatus. A continuous current of air is produced in the apparatus by the aspirator, to which the material is exposed. The thickness of the flow of material can be varied by adjusting the position of the baffle-plates.

Having fully described my invention, what I claim, and desire to secure by Letters Patent, is—

An apparatus for drying and cooling granular material such as moist sugar, comprising in combination with the outer casing provided with openings for the admittance of the outer air a vertical drying-tower consisting of two solid walls of wood and of two walls made of cross-laths arranged at a uniform distance apart, two inner vertical partition-walls parallel with said outer lath walls consisting of laths placed at the intervals of the laths of the outer walls, baffle-plates hinged with one end to the inner surface of the outer and inner laths, means for adjusting the position of said baffle-plates, a rectangular top plate fixed to the upper ends of the inner lath walls, two distributing-rollers rotatably mounted below the lower edges of said rectangular top plate, a feeding-channel projecting from the top

plate of the casing, a rotary sieve rotatably
mounted in said channel, guide-plates fixed to
the lower edges of the two opposite walls of
the channel parallel to the lath walls and an
5 aspirator connected with the cooling-tower by
a suction-pipe, substantially as described and
shown and for the purpose set forth.

In testimony whereof I have hereunto set
my hand in presence of two subscribing wit-
nesses.

FRANZ HOLL.

Witnesses:

H. W. HARRIS,
JACOB ADRIAN.