No. 862,767. PATENTED AUG. 6, 1907.

O. STERKEL.

AIR COOLING APPARATUS.

APPLICATION FILED FEB. 23, 1907.

2 SHEETS—SHEET 1.

Fig. 1.

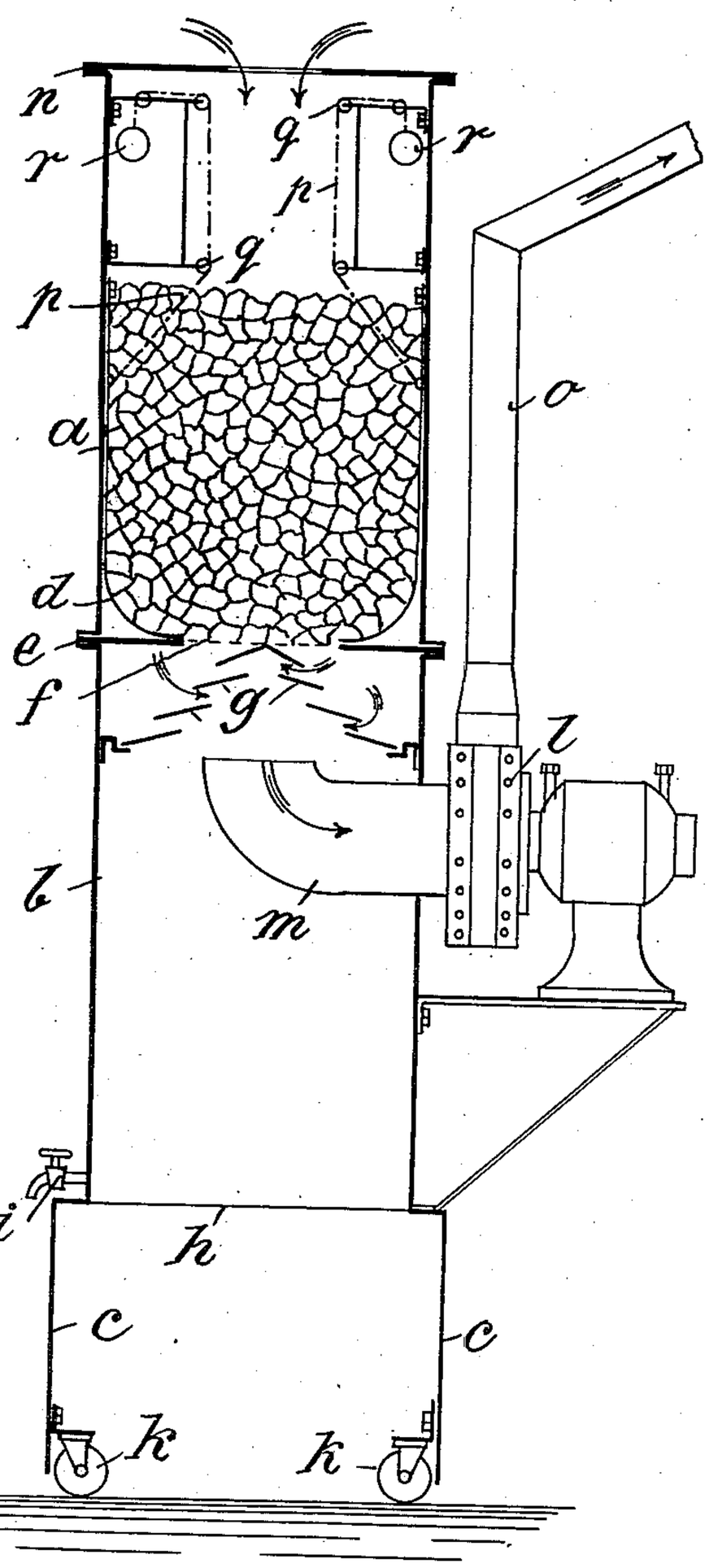


Fig. 2.

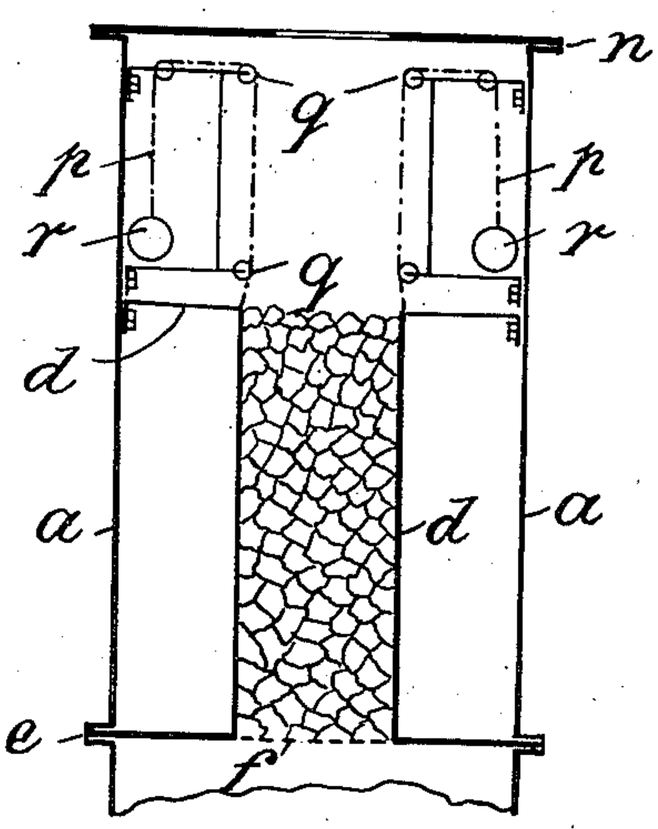
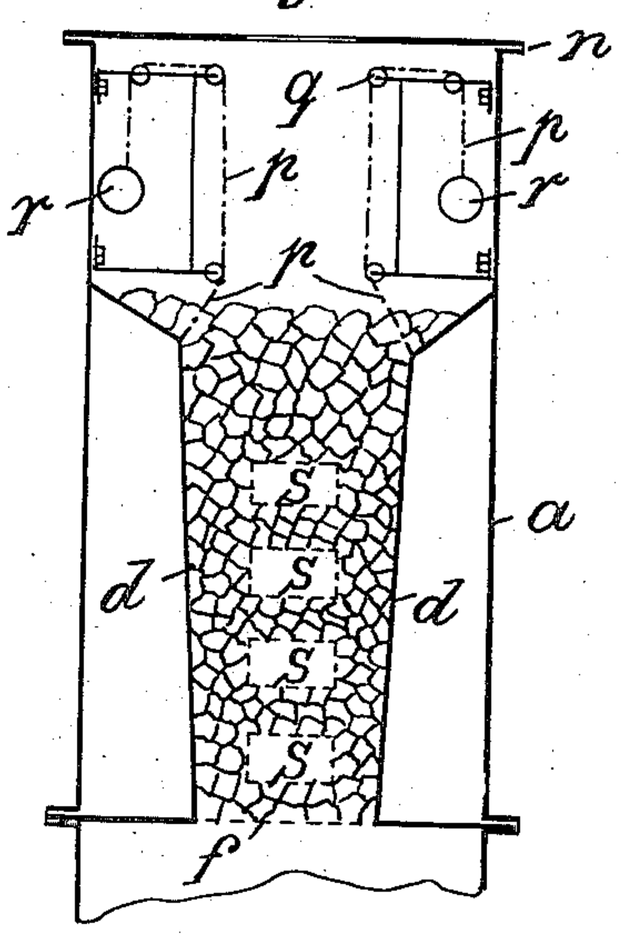


Fig. 3.



Witnesses:
Ger. Heinicke
F. Franke.

Inventor
Otto Sterkel
by G. Dittmar
Attorney.

No. 862,767. PATENTED AUG. 6, 1907.

O. STERKEL.

AIR COOLING APPARATUS.

APPLICATION FILED FEB. 23, 1907.

2 SHEETS—SHEET 2.

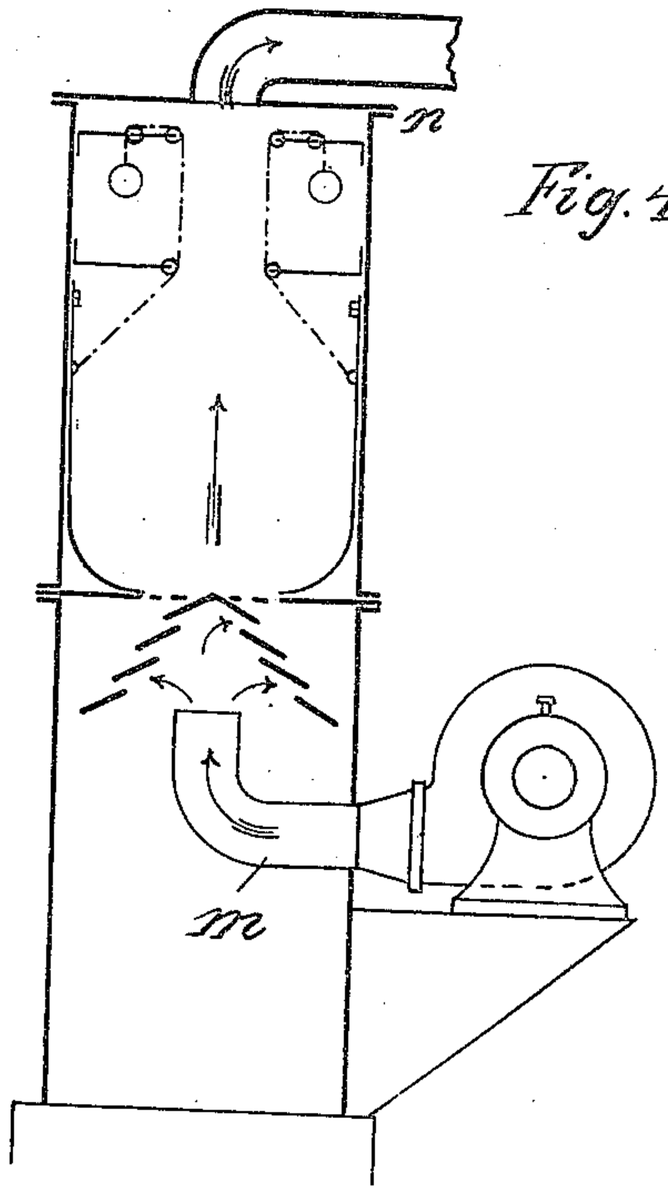


Fig. 4.

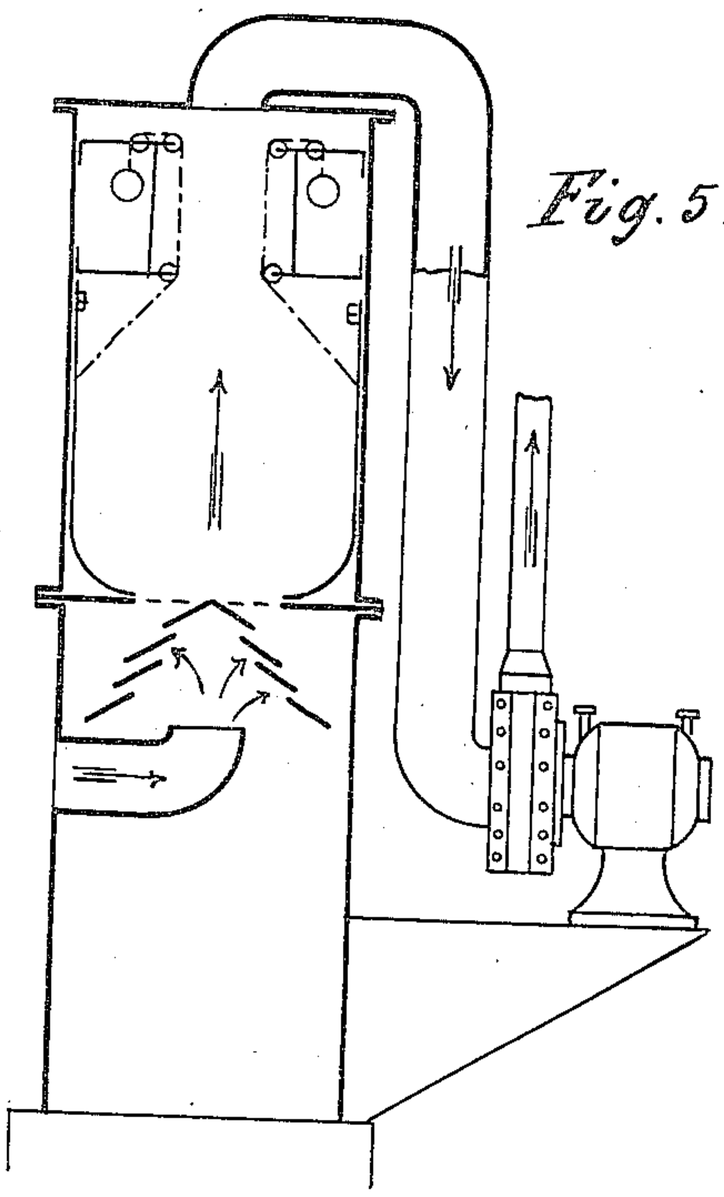


Fig. 5.

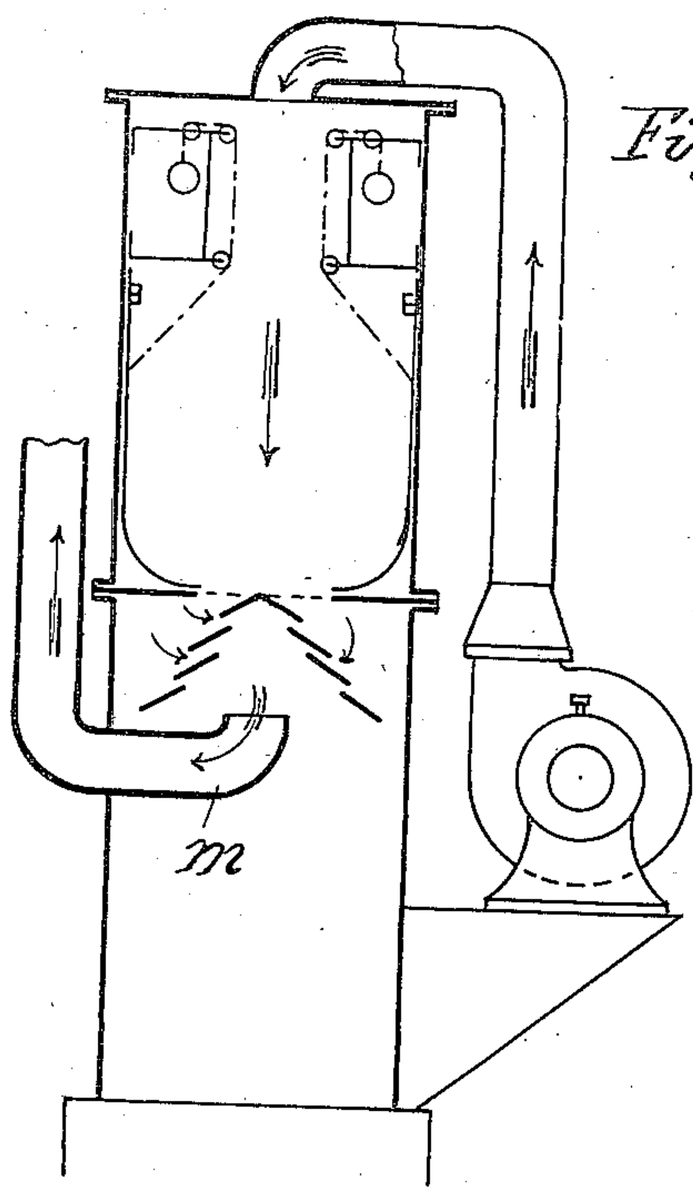


Fig. 6.

Witnesses:
Geo. Steinicke
J. Franke.

Inventor:
Otto Sterkel
by G. Dittmar
Attorney

UNITED STATES PATENT OFFICE.

OTTO STERKEL, OF RAVENSBURG, GERMANY.

AIR-COOLING APPARATUS.

No. 862,767. Specification of Letters Patent. Patented Aug. 6, 1907.

Application filed February 23, 1907. Serial No. 359,029.

To all whom it may concern:

Be it known that I, OTTO STERKEL, a subject of the Emperor of Germany, residing at Ravensburg, Germany, have invented certain new and useful Improvements in Air-Cooling Apparatus, of which the following is a clear, full, and exact description.

The object of the present invention is an air cooling device in which the air is cooled by passing through a column of ice contained in a bag which is gradually contracted by means of suitably arranged weights in proportion to the melting of the ice in such a way that the column of ice retains for a considerable time approximately the same height.

In the accompanying drawing forming part of this specification, Figure 1 is a longitudinal section through the apparatus with the ice bag filled to its capacity. Fig. 2 is a longitudinal section through the upper part of the air cooling apparatus showing the ice-bag contracted after part of the ice is molten away. Fig. 3 shows a similar section through the apparatus in which perforated hollow bodies are brought into the ice to facilitate the passage of the air. Figs. 4, 5 and 6 are longitudinal sections through modifications of the air cooling apparatus.

According to Fig. 1, *d* is the bag containing the ice. On diagonally opposite points the bag is suspended from chains *p* guided over suitable rollers *q* arranged in fixed positions, the ends of the chains bearing weights *r*. In its bottom the bag has a small opening *f* and corresponding to this opening a partition *e* of the casing *b* of the air cooler *a* is provided with a hole covered by wire netting. Through this hole the air is drawn and the ice water flows off. To prevent the water from dripping into the mouth of the pipe *m* deflecting plates *g* are provided deflecting the ice-water into the body of the casing *b*. The water is drawn off through a spigot *i* near the bottom of the casing *b*. This bottom *h'* is the top of a support *c* mounted upon rollers *k*. In proportion to the melting of the ice the bag is drawn together by the weights *r* so that the column of ice in the bag approximately retains its original height and offers thus for a considerable length of time a passage for the air of the same length. Under the cooler a pipe *m* projecting from a fan *l* into the casing *b* is arranged which draws the air through the cooler and leads it through a pipe *o* to any suitable place of consumption. If it is desired to pack the ice in the bag so tight that the air can only pass with difficulty, perforated hollow bodies S S may be inserted into the ice, see Fig. 3, which greatly facilitate the passage of the air.

The Figs. 4, 5 and 6 show modified forms of the air cooling apparatus. According to Fig. 4 a fan is used of the well known type, the mouth of the pipe *m* is arranged under the ice bag and the air blown in escapes through a bent pipe *n* at the top of the cooler. According to Fig. 5 the fan draws the air above the ice bag. According to Fig. 6 the air is forced by a fan from the top into the ice bag and escapes through the pipe *m* arranged below the bag.

The air cooler in its customary form is closed at the top by a cover *n* having an opening to admit the air to be cooled.

Having thus described my invention what I claim is

An air cooling apparatus comprising a receptacle, a bag for containing ice, chains from which the bag is suspended said chains being guided over suitably arranged rollers and provided at their free ends with weights, whereby to contract the width of the bag as the ice is melted, so that the column of ice in the bag retains approximately its original height, in combination with a fan to pass the air through the ice, and means for drawing off the water from the melted ice, substantially as described.

In testimony whereof I affix my signature.

OTTO STERKEL.

In the presence of—
ERNEST ENTENMANN,
WM. HAHN.