No. 630,727. Patented Aug. 8, 1899.

W. MÜLLER.

CENTRIFUGAL COOLER.

(Application filed Jan. 12, 1899.)

(No Model.)

Fig. 1.

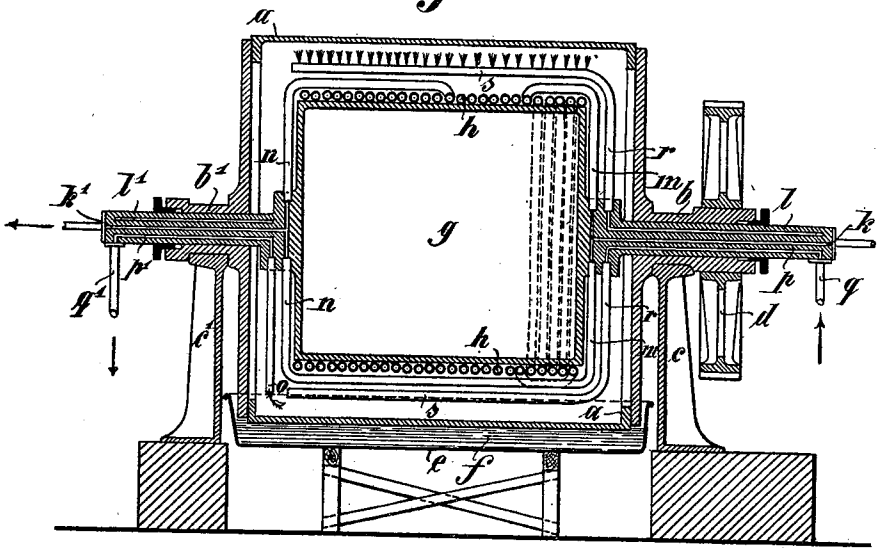
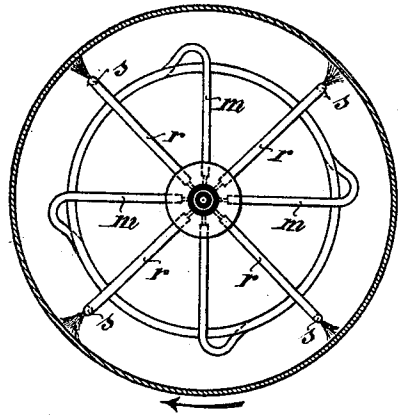


Fig. 2.



WITNESSES:
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WALTER MÜLLER, OF RIXDORF, GERMANY.

CENTRIFUGAL COOLER.

SPECIFICATION forming part of Letters Patent No. 630,727, dated August 8, 1899.

Application filed January 12, 1899. Serial No. 701,922. (No model.)

To all whom it may concern:

Be it known that I, WALTER MÜLLER, a subject of the German Emperor, and a resident of Rixdorf, near Berlin, Germany, have invented certain new and useful Improvements in Centrifugal Coolers, of which the following is a full, clear, and exact specification.

Drums or centrifugal coolers for cooling materials in liquid or pulp condition as heretofore constructed only permitted the use of water as a means of carrying cold, (frigorifics,) which naturally renders possible a transmission of cold to a little over 0° centigrade at the most. If a stronger refrigeration is wanted, other methods and devices for cooling must be employed which are very circumstantial and expensive. The purpose of the present invention is to employ centrifugal coolers also for the transmission of as low temperatures as are generated in the frigorific machines. This object is obtained by the construction hereinafter described and which is illustrated in the accompanying drawings, in which—

Figure 1 shows my apparatus in longitudinal section, and Fig. 2 shows it in transverse section.

a represents an ordinary centrifugal cooler rotating with hollow pins *b b'* in the support-bearings *c c'* and being geared, for example, by a toothed wheel *d*. Whichever part of the drum *a* is temporarily below dips into the material *f* to be cooled in a vessel *e*. Said material is carried along in a thin layer at the periphery of the drum in its rotation. It is cooled and scraped off from the drum at a determined place of the revolution by means of a suitable appliance. Into this drum the evaporator of a frigorific plant is built. One or more serpentines *h*, into which the condensed frigorific—such as ammonia, carbonic acid, sulfurous acid, &c.—evaporates, are wound in an appropriate manner around a fixed drum *g*, concentric with the drum *a*, so that only the space between the two drums is filled with salt water as a means of transmission of cold. The condensed frigorific is introduced through the central conduit *k* of the right interior stationary pin *l* and the distributing-pipes *m* into the coils *h* and is exhausted from these into the collecting-pipes *n* to the left and the central canal or conduit *k'* of the left interior stationary pin or stud *l'*.

In order to render possible as uniform a temperature as may be obtained over the whole drum, the salt solution in the lower drum-space is exhausted by means of a circulating-pump through the pipe *o*, the annular canal *p'* of the left interior stationary stud *l'*, through the connecting-pipe *q'*, and pressed through the pipe *q'*, the annular canal *p* of the right fixed stud *l*, and the pipe *r* into the horizontal pipe *s*. These pipes are closed at their extremities and provided lengthwise with several escape or exhaust openings radiating outwardly, whereby a fine distribution of the cold solution is obtained.

I claim—

In combination, the outer drum having hollow journals, means for supporting the outer drum so that it may rotate, means for rotating the drum, an interior drum having supporting-studs extending out through the hollow bearings the inlet and outlet ports extending through the said studs the refrigerating-pipes extending through the space between the two drums and connected with the said ports, said inner drum being stationary, and the inlet and outlet pipes *s*, *o* for the salt solution between the inner and outer drums, the said supporting-studs also having ports connected with the pipes *s*, *o*, substantially as described.

In witness whereof I have hereunto set my hand in presence of two witnesses.

WALTER MÜLLER.

Witnesses:

OTTO MUNK,

HUGO LOUIS BEIL.