

PATENT SPECIFICATION

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299,783

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COMPLETE SPECIFICATION.



Improvements in and relating to Refrigerating Machines.

I, Dr. LEO SZILARD, of 95, Prinz Regentenstrasse, Berlin-Wilmersdorf, Germany, of Hungarian Nationality, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

The present invention relates to refrigerating machines, in which the heat must be carried away when the temperature rises above the temperature in the cooling chamber, as is the case for example, in refrigerating machines in which a liquid cooling medium is evaporated, compressed in any suitable manner and reliquified in a condenser. The heat that is generated in the condenser during the process of liquefaction must then be carried away. In many cases this is effected by cooling with air.

According to the invention the condensing process can be confined to a period of one to two hours, even when the cooling in the condenser is not intense; in absorption machines the boiling period is thereby reduced, and in motor driven machines the heat corresponding to a sufficient production of cold for the whole day is dissipated in a short time. According to the invention, in a refrigerating machine in which heat is liberated during the intermittent condensation of the vapour of the cooling medium, at least a part of the heat evolved is transmitted to a solid substance surrounding the condenser, which substance is caused to melt and in this way to absorb the heat during the operative period in question. During the remainder of the time the substance cools slowly and again solidifies, giving up the heat that it has absorbed.

The invention is diagrammatically illustrated by way of example in the accompanying drawing.

In the drawing, 1 is the evaporator; the vapours are drawn off through the tube 2, compressed by the apparatus 3 and conveyed through the tube 4 into the condenser 5. The condenser 5 is disposed in the vessel 6, in which a solid substance—for example, phenol, or a mixture of phenol with other chemicals that lower the melting point of phenol—surrounds the condenser. The vessel

6 is provided with cooling ribs. If the device 3 is a compressor, it is easily possible in one to two hours to convert such a quantity of vapour, that the cold obtained which suffices for the whole day, is produced during this period. During this time the solid substance in the vessel 6 undergoes a change in its state and will absorb the heat which is liberated during condensation. If then the compressor is stopped after one to two hours, the vessel 6 gradually delivers up its heat to the air, the solid substance being regenerated. By this means not only can a fairly large quantity of ice be prepared immediately the machine is connected up, but the wear on the machine is reduced, because it is only necessary to keep the machine working for a short period each day.

If a periodically operating absorption device is employed, in place of the device 3, the so-called boiling period can be limited to a short time, during which a relatively large quantity of cold liquid collects in the evaporator 1 and during the whole day, drawn in by the absorber, produces the cold. Thus the cold is not produced here in a short working period but is spread over the whole day which is unlike the case which is referred to above and in which the device 3 represents a compressor.

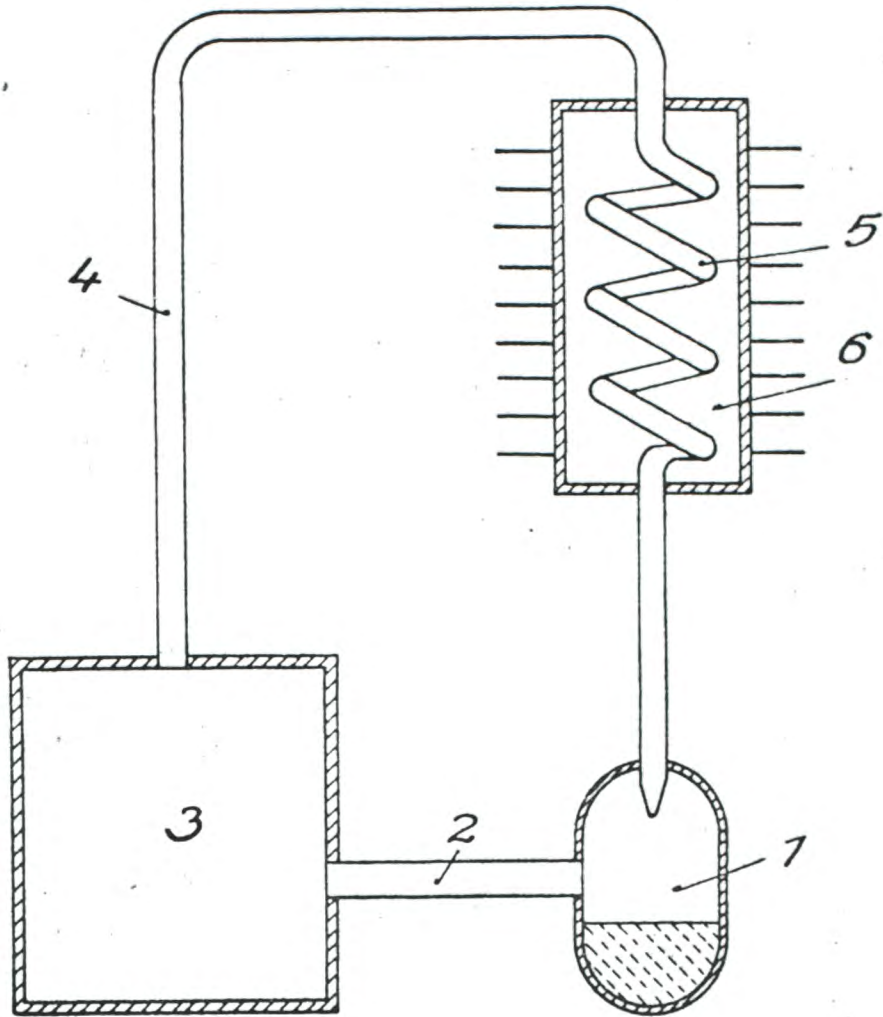
Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is:—

1. A refrigerating machine in which, during the intermittent condensation of the vapour of the cooling medium, heat is liberated, characterised in that at least a part of the heat liberated is transmitted to a solid substance surrounding the condenser which substance is thus melted and so absorbs the heat in order to deliver the heat up during a lengthy period, during which it re-solidifies.

2. A refrigerating process carried out in the manner and substantially as hereinbefore described.

Dated this 29th day of October, 1928.
EDWARD EVANS & Co.,
27, Chancery Lane, London, W.C. 2,
Agents for the Applicant.

[This Drawing is a full-size reproduction of the Original]



650 wds
1 p. drawing

ANDERSON, LUEDEN, FITCH, EVEN & TAGG
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