

(No Model.)

E. G. SCOTT.
APPARATUS FOR EVAPORATING BRINE.

No. 566,627.

Patented Aug. 25, 1896.

Fig. 1.

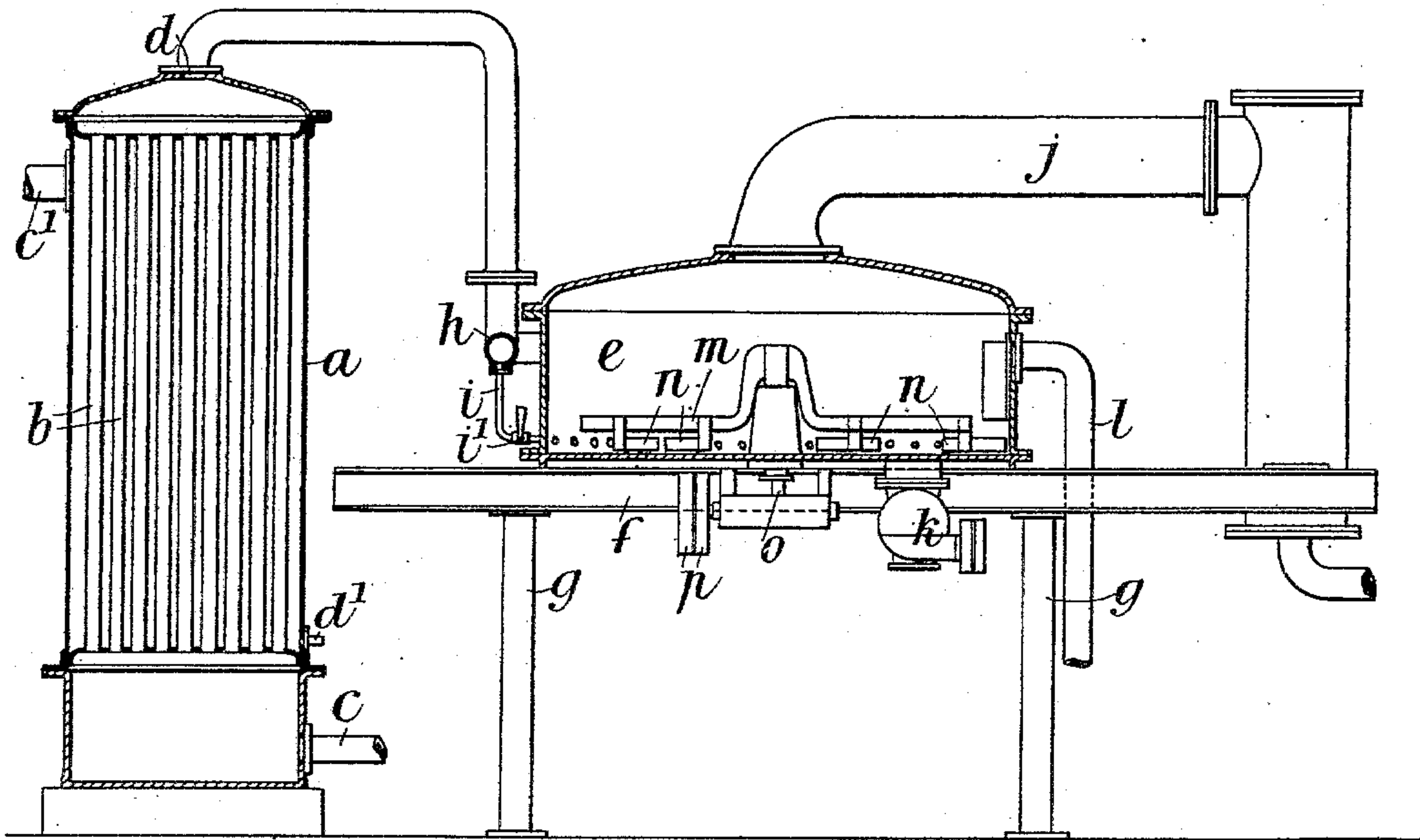
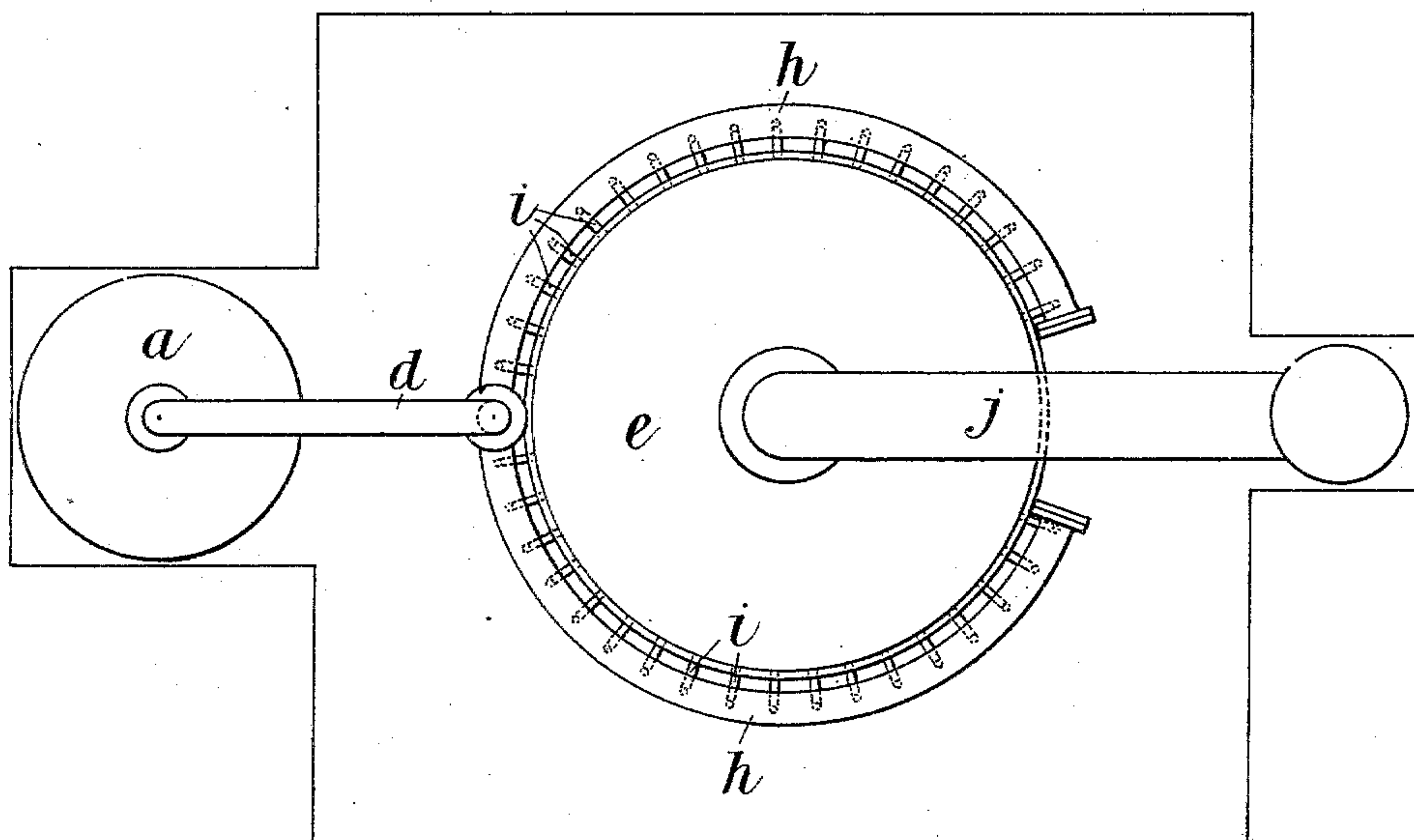


Fig. 2.



Witnesses.

J. D. Kingsbury.
D. W. Reinold.

Inventor.
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UNITED STATES PATENT OFFICE.

ERNEST GEORGE SCOTT, OF LIVERPOOL, ENGLAND.

APPARATUS FOR EVAPORATING BRINE.

SPECIFICATION forming part of Letters Patent No. 566,627, dated August 25, 1896.

Application filed October 5, 1895. Serial No. 564,766. (No model.)

To all whom it may concern:

Be it known that I, ERNEST GEORGE SCOTT, a subject of the Queen of Great Britain, residing at Liverpool, England, have invented
5 new and useful Improvements in Evaporating Brine and other Liquors and Apparatus Therefor, of which the following is a specification.

My invention consists in the novel features
10 hereinafter described, reference being had to the accompanying drawings, which illustrate one form in which I have contemplated embodying my invention, and said invention is fully disclosed in the following description
15 and claim.

Now the object of my improvements is to obtain large crystals, and for this purpose the hot liquor, instead of coming directly into contact with the vacuum, is caused to
20 give up its heat to the cooler liquor already under the action of the vacuum and is distributed over the whole area of such liquor in fairly equal degree, thus causing a gentle or steady evaporation instead of violent evapo-
25 ration at points.

In carrying out my invention I find it advantageous to employ a shallow evaporating-pan, preferably circular in shape, and to introduce the liquor coming from the heater
30 through a number of small pipes which are set around the pan or near the bottom thereof, so that the liquor enters the pan at various points below the level of the liquid already therein.

To enable my invention to be fully understood, I will describe the same by reference to the accompanying drawings, in which—

Figure 1 is a sectional elevation of an evaporating apparatus constructed according
40 to my invention. Fig. 2 is a plan of the same.

a is the heater, having vertical tubes *b b*, through which the liquor passes, *c* being the inlet for the liquor into the heater *a*, and *d* the outlet for the same.

45 *c'* is the inlet for the steam, and *d'* the outlet for condensed water.

e is the evaporating-pan, which is preferably shallow and circular in shape, as shown, and supported on girders *f* and standards *g g*.

The outlet-pipe *d* from the heater *a* communicates with a pipe *h*, running around the evaporating-pan *e*, from which a number of small tubes *i i* pass into the evaporating-pan near the bottom of the same, which tubes are provided with cocks *i'* to regulate the outflow
55 of liquor into the evaporating-pan, so as to keep a pressure in the heater.

j is the outlet-pipe from the evaporating-pan to the vacuum-pump.

k is the salting-valve or discharge-outlet
60 for the salt-crystals formed, and *l* is a pipe leading to the pump for circulating the brine or other liquor.

m is an arm carrying scrapers *n n*, the said arm being supported on a central shaft *o*, passing through the bottom of the evaporating-pan *e* and being actuated by suitable gearing by means of one of the pulleys *p p*.

The action of the apparatus is as follows: The liquor after passing through the heater *a* finds its way through the outlet-pipe *d* into the circular pipe *h*, from which it passes into the bottom of the pan *e* through the small tubes *i i*, whereby it is distributed evenly
75 over the whole area of the liquor already under the action of the vacuum, to which it is not exposed directly, and the crystals formed are of such size as to be of considerable commercial value.

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

In an apparatus for evaporating brine, the combination with the evaporating-pan, of a
85 distributing-pipe surrounding the same provided with a plurality of small inlet-pipes each provided with a cut-off valve and communicating with the evaporating-pan adjacent to the bottom of the same, and a brine-
90 heating device connected with said distributing-pipe, substantially as described.

ERNEST GEORGE SCOTT.

Witnesses:

JOHN E. BOUSFIELD,
CHARLES G. REDFERN.