

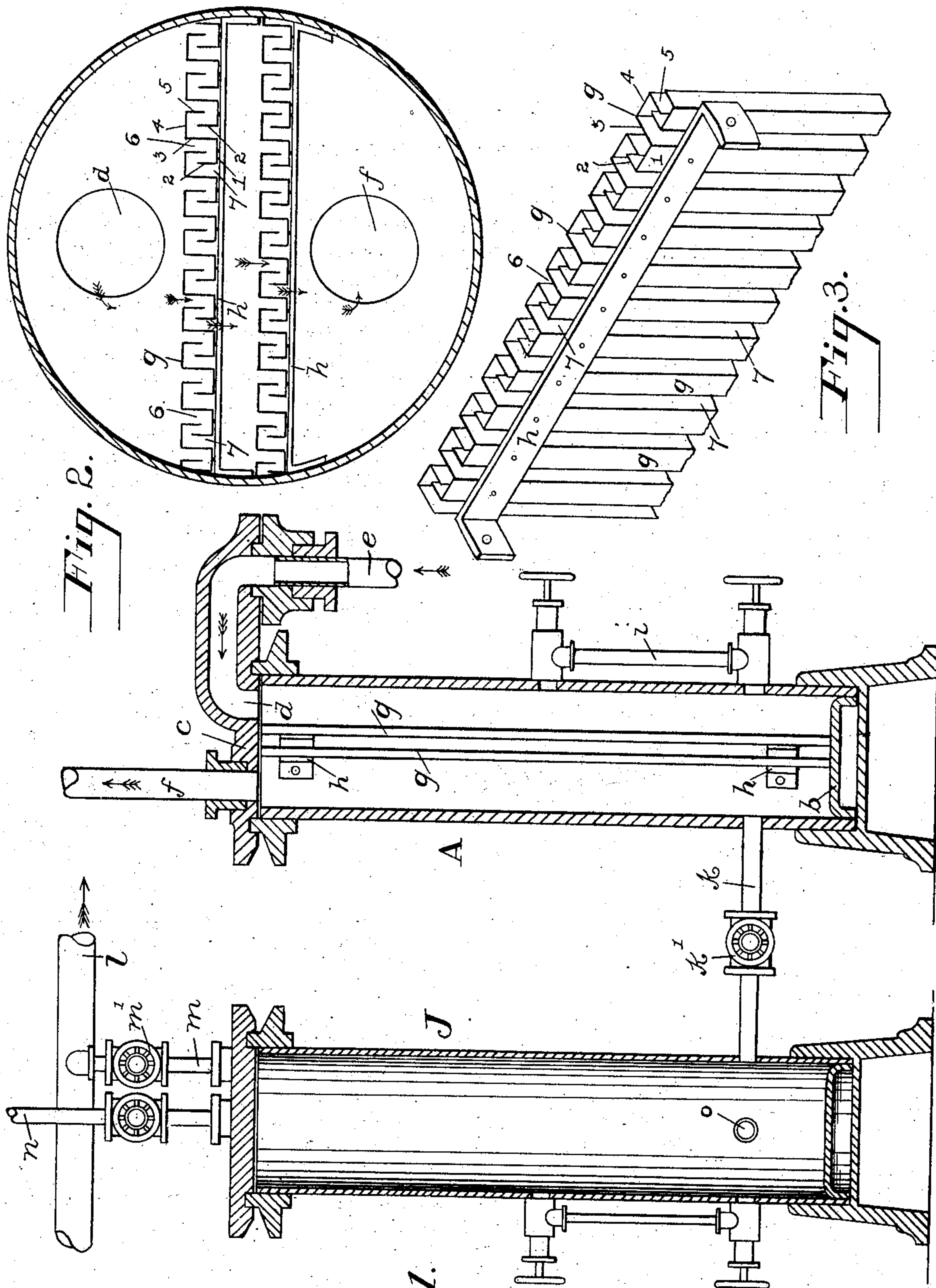
No. 768,415.

PATENTED AUG. 23, 1904.

T. R. WINGROVE.  
OIL INTERCEPTER.

APPLICATION FILED FEB. 8, 1904.

NO MODEL.



Witnesses:  
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Fig. 1.

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# UNITED STATES PATENT OFFICE.

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## OIL-INTERCEPTER.

SPECIFICATION forming part of Letters Patent No. 768,415, dated August 23, 1904.

Application filed February 8, 1904. Serial No. 192,541. (No model.)

*To all whom it may concern:*

Be it known that I, THOMAS R. WINGROVE, a citizen of the United States, residing at Baltimore, State of Maryland, have invented certain new and useful Improvements in Oil-Interceptors, of which the following is a specification.

This invention relates to an improved oil-separator or oil-interceptor for separating oil from any kind of gas, air, or vapor, such as ammonia or steam.

The invention consists of an improved baffle-plate structure, through which is passed the gases, air, or vapors containing oil and by means of which the oil is intercepted or separated.

In ice-making machines there is a great reduction of efficiency and much trouble and loss caused by oil carried by the ammonia-gas through the machinery and piping and deposited in a film or coating on the inner surfaces. My improvement herein described is particularly serviceable in this class of machines.

The invention is illustrated in the accompanying drawings and will first be described in connection therewith and then pointed out in the appended claims.

Figure 1 is a vertical section of two cylinders, one of which contains the improved baffle-plate for separating oil from ammonia-gas. Fig. 2 is a horizontal cross-section, on a larger scale, of the cylinder and oil-intercepting baffle-plate. Fig. 3 is a perspective view of the broad rear side of the upper end of the baffle-plate.

In this improved oil-interceptor provision has been made for a relatively large surface or area of baffle-plate, on which the entire volume of ammonia-gas and oil discharged from the compressor will strike, the oil being deposited thereon and then draining downward and the gas passing through the spaces or openings in said baffle-plate.

Referring to the drawings, the letter A designates a case or cylinder having bottom and top heads *b c*. This case has an inlet *d*, which in the present instance is at the top head and at one side, and a pipe *e* for ammonia-gas and oil leads from the compressor (not

shown) and is connected with said inlet. Of course said inlet may be at any other part of the case. An outlet-pipe *f* leads from the case to carry off the depurated ammonia-gas. This outlet is at the other side. The improved oil-interceptor or baffle-plate has vertical central position in the case A and is between the inlet *d* and outlet *f*. The baffle-plate forms a diaphragm or partition in the case. In the present instance two baffle-plates are used. The interceptor or baffle-plate is made up of a number of sheet-metal strips *g* of certain shape placed vertically and parallel and overlapping each other and forming tortuous passages between. All the vertical strips are secured together by horizontal battens *h*, to which each strip is fastened by rivets. Two battens are used in the present instance. Each strip in cross-section has a shape approximating a letter S, except instead of having a curved formation the parts are angular. Each strip has five surfaces. The surface 1 forms a concave back and rests against the batten, to which it is riveted; a surface 2 forms a division or bulkhead at right angles to said back 1, and surfaces 3 4 5 form a hood which has reversed position with respect to the concaved back 1. This hood projects away from said surface or division 2 and covers the like surface or division of the next adjoining strip. Thus the hood of one strip overlaps the division-surface of the next adjoining strip; but a vertical open space or passage 6, zigzag or tortuous, is left between the adjoining strips. It will be seen that the ammonia-gas, carrying more or less oil and entering one side of the case at the inlet *d*, will strike all the hoods of the relatively large baffle-plate and the gases will enter the vertical open spaces 6 to the concave back 1, then turn forward into the hood and pass around the right-angled division 2, and then through the vertical open space 7 to the other side of the case. Where two of these baffle-plates are used, as shown in the drawings, the ammonia-gas must pass through the second one in the manner just described for the first. The effect of this construction of oil-interceptor or baffle-plate is to provide a large surface for the adherence of oil and an unincumbered



downward drainage course or channel for the oil to the bottom of the case, and at the same time the gas will rise from the surface and pass through the vertical open spaces to the other side of the case and then upward and out through outlet-pipe *f* to a condenser. (Not shown.)

The oil-separator case has a gage *i* for showing the height of the oil.

10 A pipe *k* connects the two cylinders A J, and said pipe has a valve *k'*. This allows oil to pass from the separator-case A, which in ice-machines is the high-pressure trap, to the second case, J, which is the low-pressure trap. A suction-pipe *l* leads to the compressor and is for drawing off the gas, and a pipe *m* connects from said low-pressure case to said suction-pipe, and a valve *m'* is in this pipe. A pipe *n* leads from the case J to the condenser. (Not shown.) The oil left in the second case after the gas has been drawn off is removed through pipe *o*.

25 While this oil separator or interceptor and case has been here shown with a second case, as it would be used in an ice-machine, it is to be understood that its one case may be used alone and with other machines than ice-machines.

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

1. An oil-intercepting partition comprising a plurality of substantially S-shaped strips

forming two longitudinal channels one opening from each side of said strips and the edge of one strip overlapping the oppositely-turned edge of the next adjoining strip but separated therefrom to form a passage and means securing said strips together. 35

2. A device for separating oil from ammonia-gas, vapor or steam comprising a case having at one side an inlet and at the other side an outlet, and a partition in the case between said inlet and outlet, said partition comprising a plurality of substantially S-shaped strips forming two longitudinal channels one opening from each side of said strips and the edge of one strip overlapping the oppositely-turned edge of the next adjoining strip but separated therefrom to form a passage and means securing said strips together. 45 50

3. In an oil-separator case, a partition made up of parallel vertical strips each one of which is alike and each having a vertical hood formation which covers or overlaps a vertical projecting edge formation on the next adjoining strip and separated therefrom to form tortuous vertical passages between adjoining strips. 55

In testimony whereof I affix my signature in the presence of two witnesses. 60

THOMAS R. WINGROVE.

Witnesses:

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