

(No Model.)

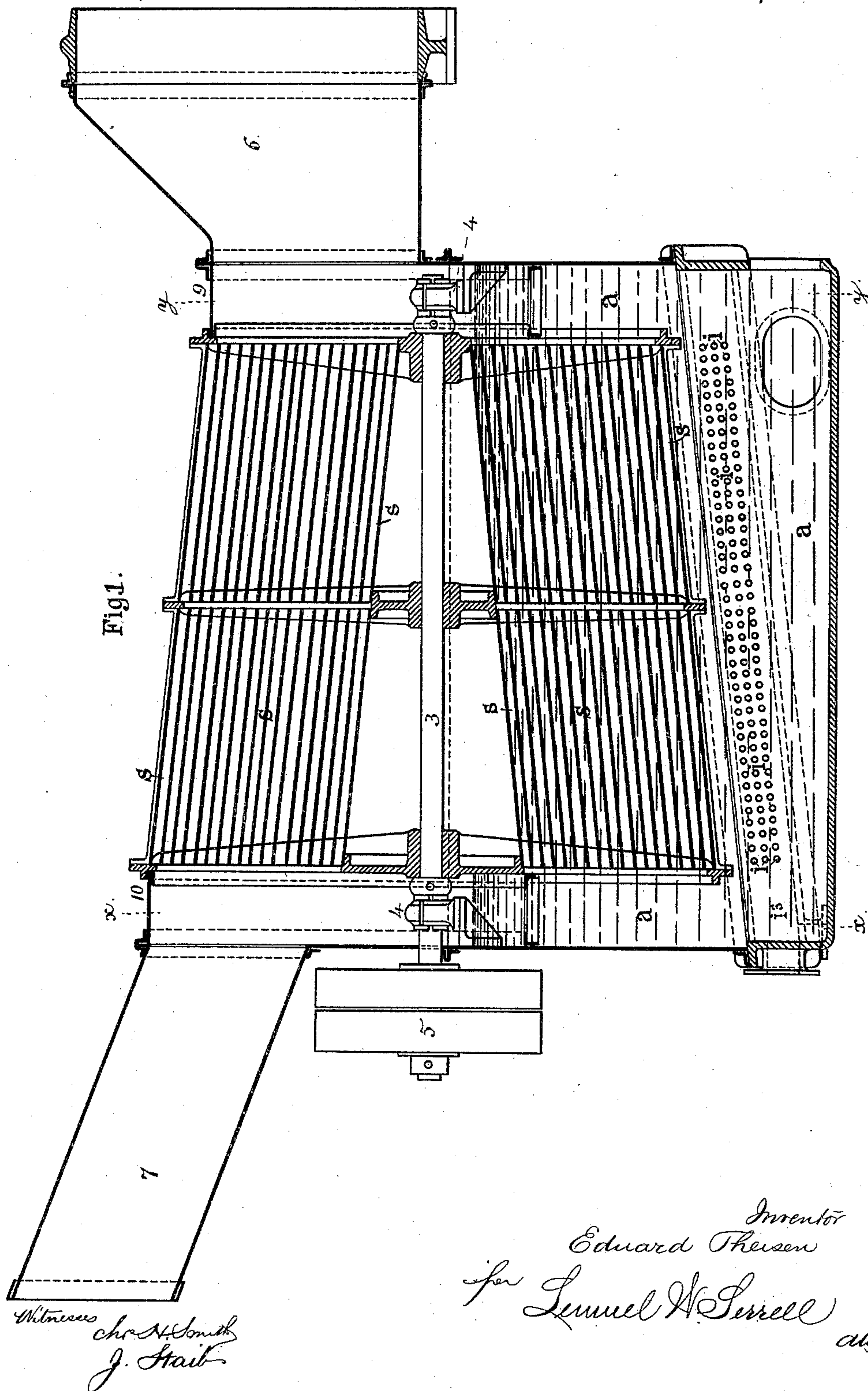
3 Sheets—Sheet 1.

E. THEISEN.

APPARATUS FOR CONDENSING AND COOLING PURPOSES.

No. 443,015.

Patented Dec. 16, 1890.



Inventor  
Edward Theisen  
for Lemuel H. Merrill atty

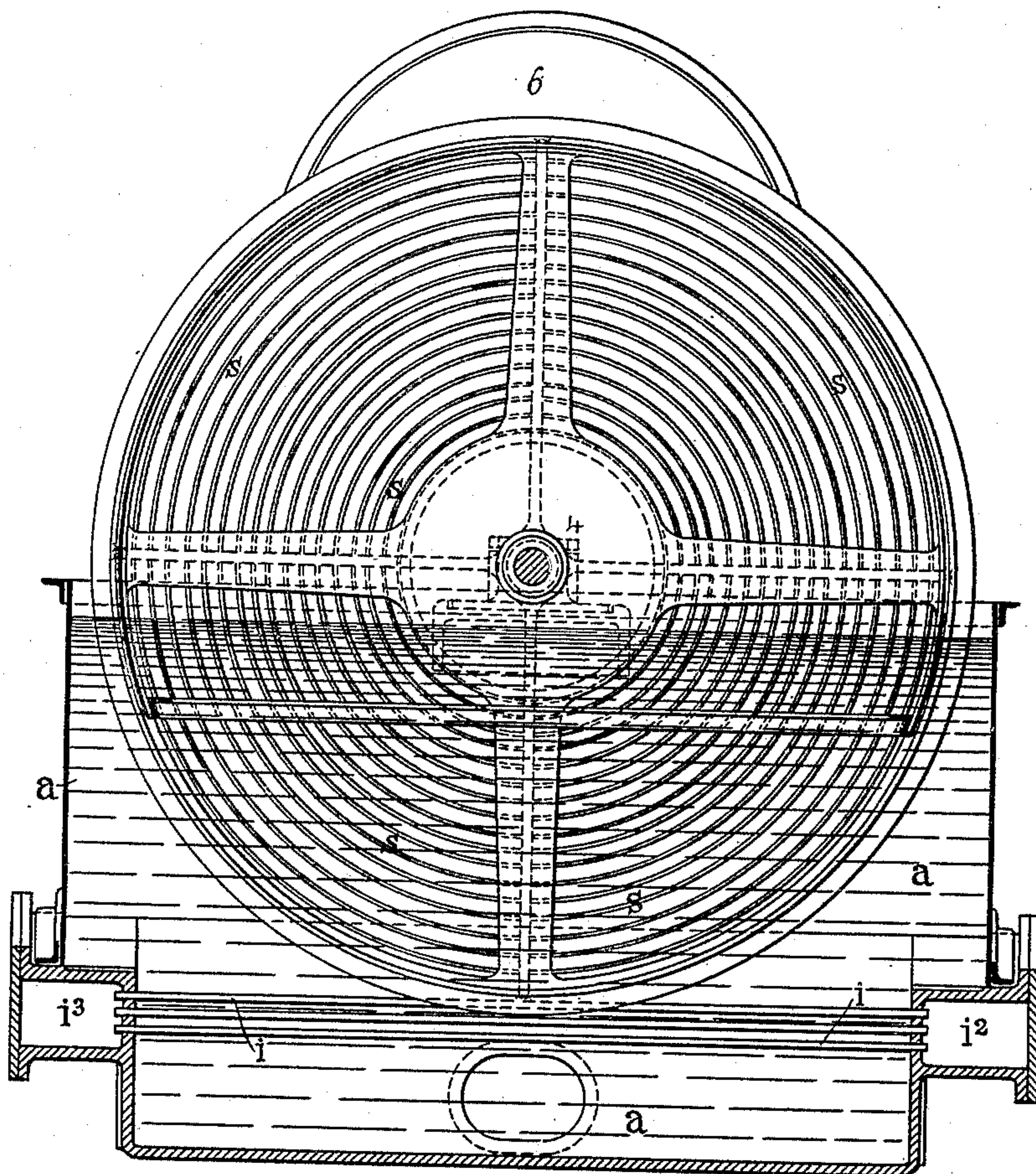
Witnesses  
Charles H. Smith  
J. Strait

(No Model.)

3 Sheets—Sheet 2.

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Fig. 2.



Witnesses

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Inventor

Edvard Theisen  
per Lemuel H. Serrell  
att'y

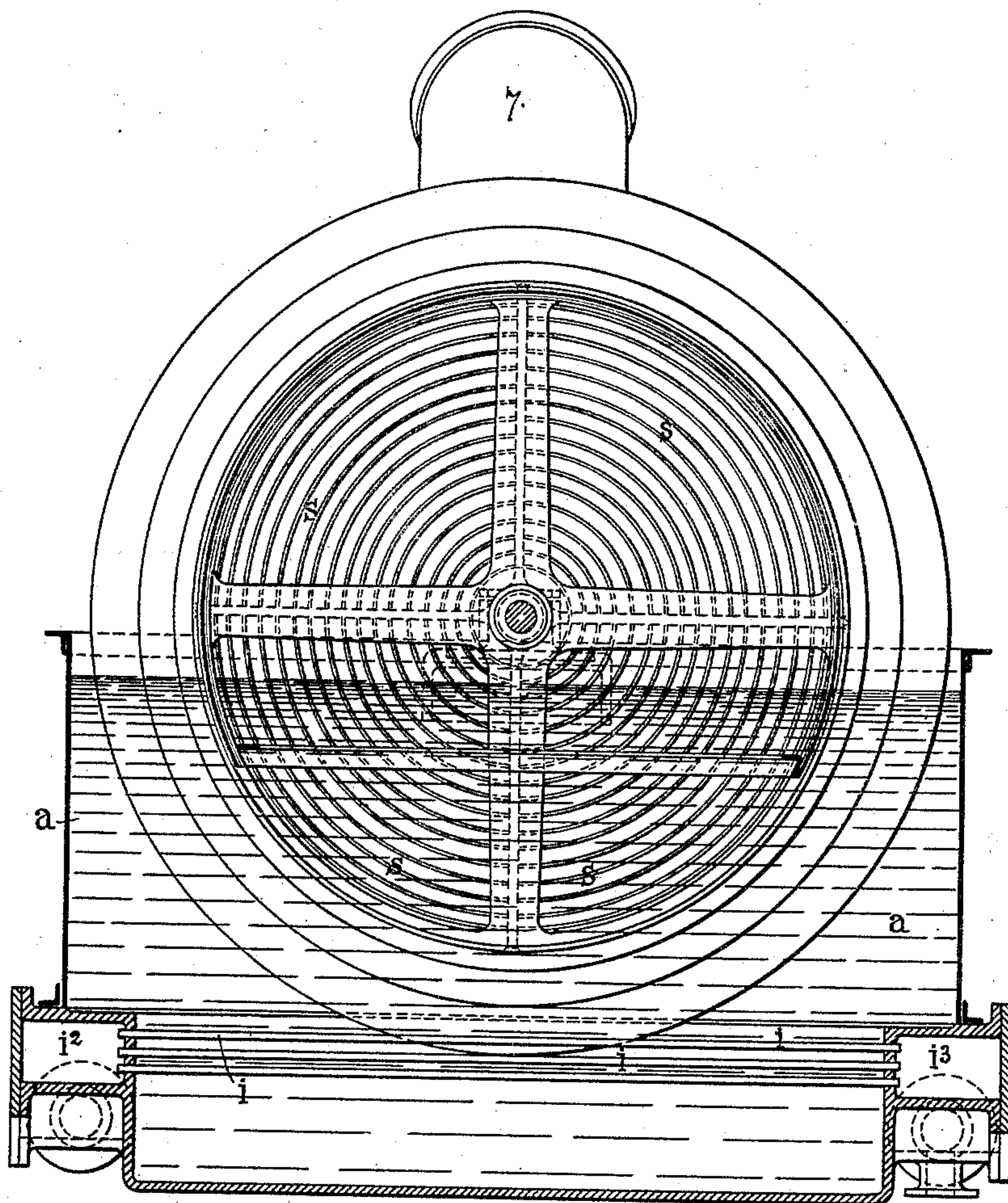


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Fig. 3.



Witnesses

Chas. N. Smith  
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Eduard Theisen  
per Lemuel W. Serrell

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# UNITED STATES PATENT OFFICE.

EDWARD THEISEN, OF COLOGNE, GERMANY.

## APPARATUS FOR CONDENSING AND COOLING PURPOSES.

SPECIFICATION forming part of Letters Patent No. 443,015, dated December 16, 1890.

Application filed January 3, 1888. Serial No. 259,694. (No model.)

*To all whom it may concern:*

Be it known that I, EDWARD THEISEN, of Cologne, in the Kingdom of Prussia, German Empire, have invented an Improvement in

5 Apparatus for Condensing and Cooling Purposes, of which the following is a specification.

This invention is a modification of the devices shown in Letters Patent No. 363,094, granted to me May 17, 1887; and such inven-

10 tion consists in the combination of devices hereinafter set forth.

In the drawings, Figure 1 is a vertical longitudinal section of the apparatus. Fig. 2 is a cross-section at the line  $x x$ , and Fig. 3 is a

15 cross-section at the line  $y y$ .

The vessel  $a$  is of suitable size and shape, and it is to contain the cooling-liquid. In the lower part of such vessel there are chambers or passages, through which vapors or gases to

20 be cooled or condensed are passed. I have represented ranges of pipes  $i$  opening at their ends into the respective chambers  $i^2$  and  $i^3$ .

The fluids or gases to be cooled are supplied to the chamber  $i^2$  and pass through the pipes

25  $i$  and away by the chamber  $i^3$ . The heat passing off from the pipes  $i$  warms the liquid in the vessel  $a$ , and in order to cool such liquid and maintain the same at a normal or nearly

30 normal temperature I make use of concentric truncated cones  $S$ , and the same are connected to and revolved by a central shaft 3, supported in suitable bearings 4 and driven by a band

to the pulleys 5 or otherwise, and a current of air is allowed to pass into and through the

35 truncated cones, and such air is supplied by the hood 6 at one end and taken off by the

flue 7 at the other end, preferably to a chimney, so as to maintain a rapid circulation of air through the truncated cones.

In Fig. 1 a stationary semicircular case 9 is

40 represented at the end of the concentric truncated cones and connected with the hood 6 and a similar semicircular case 10 at the other

end of the truncated cones connected with the

45 flue 7. It is now to be understood that as the truncated cones  $S$  revolve the liquid in the vessel  $a$  is agitated and caused to circulate

through the truncated cones, and these cones and the liquid adhering to their surfaces are

50 cooled by the passing current of air, so as to maintain the cones and the liquid at a normal

temperature, or nearly so, in order that the liquid in the vessel  $a$  may act with uniformity

in cooling the fluids within the pipes or chambers in the lower part of said vessel  $a$ .

55 I claim as my invention—

The combination, with a vessel for containing the cooling-liquid, of pipes or hollow bodies

within such cooling-liquid and through which the fluid to be cooled passes, and a group of

60 concentric truncated cones and a shaft for supporting and revolving the same in the cooling-liquid, and means for directing a current

of air through between the hollow concentric truncated cones, substantially as set forth.

65 In testimony that I claim the foregoing as my invention I have signed my name in presence of two subscribing witnesses.

EDWARD THEISEN.

Witnesses:

WILHELM WIESENHÜTTER,

MARTIN KÖRNER.



It is hereby certified that the name of the patentee in Letters Patent No. 443,015, granted December 16, 1890, for an improvement in "Apparatus for Condensing and Cooling Purposes," was erroneously written and printed "Edward Theisen;" that said name should have been written and printed *Eduard Theisen*; and that said Letters Patent should be read with this correction therein that the same may conform to the record of the case in the Patent Office.

Signed, countersigned, and sealed this 23d day of December, A. D. 1890.

[SEAL.]

CYRUS BUSSEY,  
*Assistant Secretary of the Interior.*

Countersigned:

C. E. MITCHELL,  
*Commissioner of Patents.*