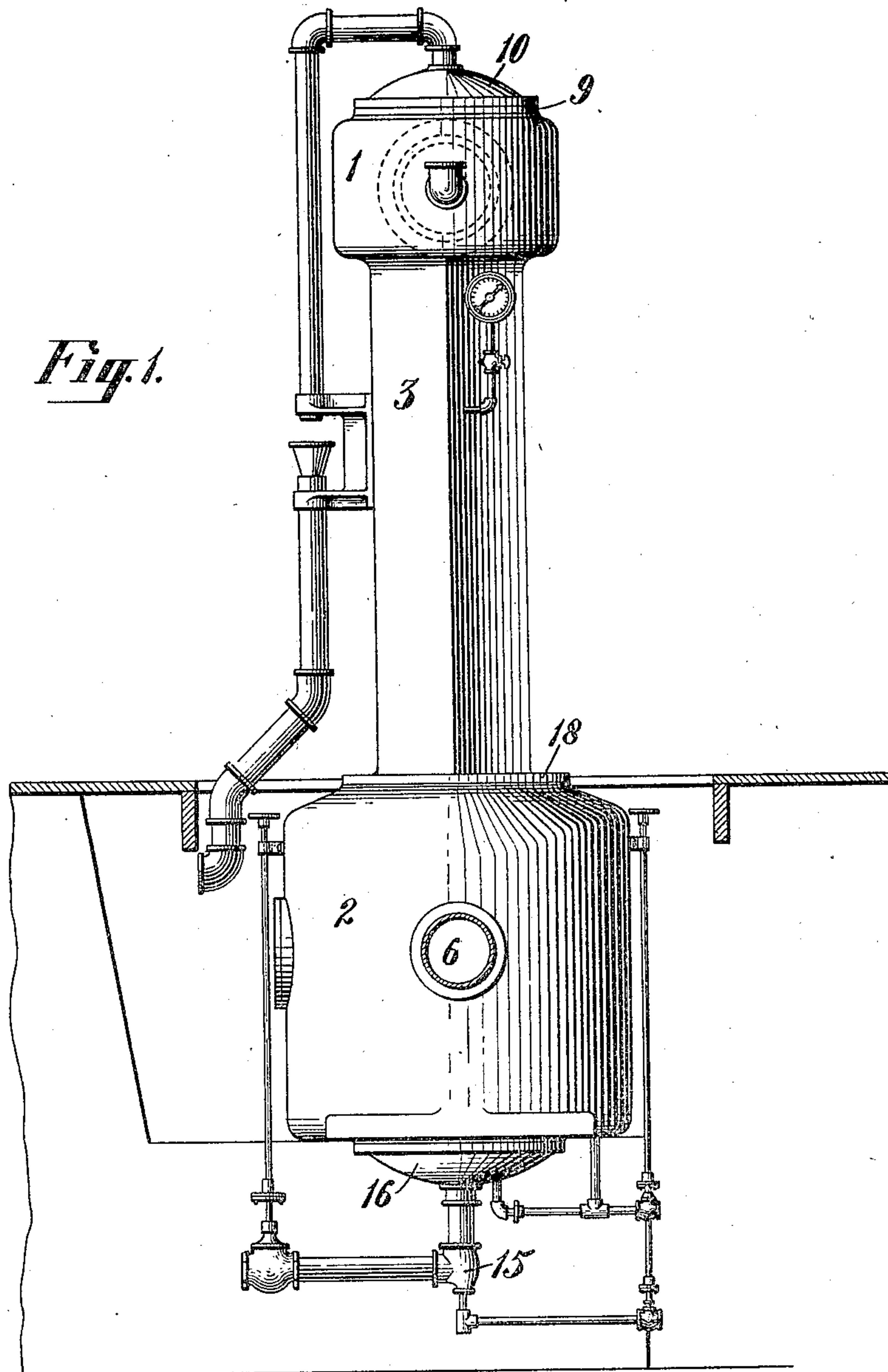


No. 810,670.

PATENTED JAN. 23, 1906.

W. PRELLWITZ.  
COOLER FOR COMPRESSORS.  
APPLICATION FILED APR. 14, 1903.

3 SHEETS—SHEET 1.



*Witnesses:*  
F. J. Hackenberg  
Oscar Pheme

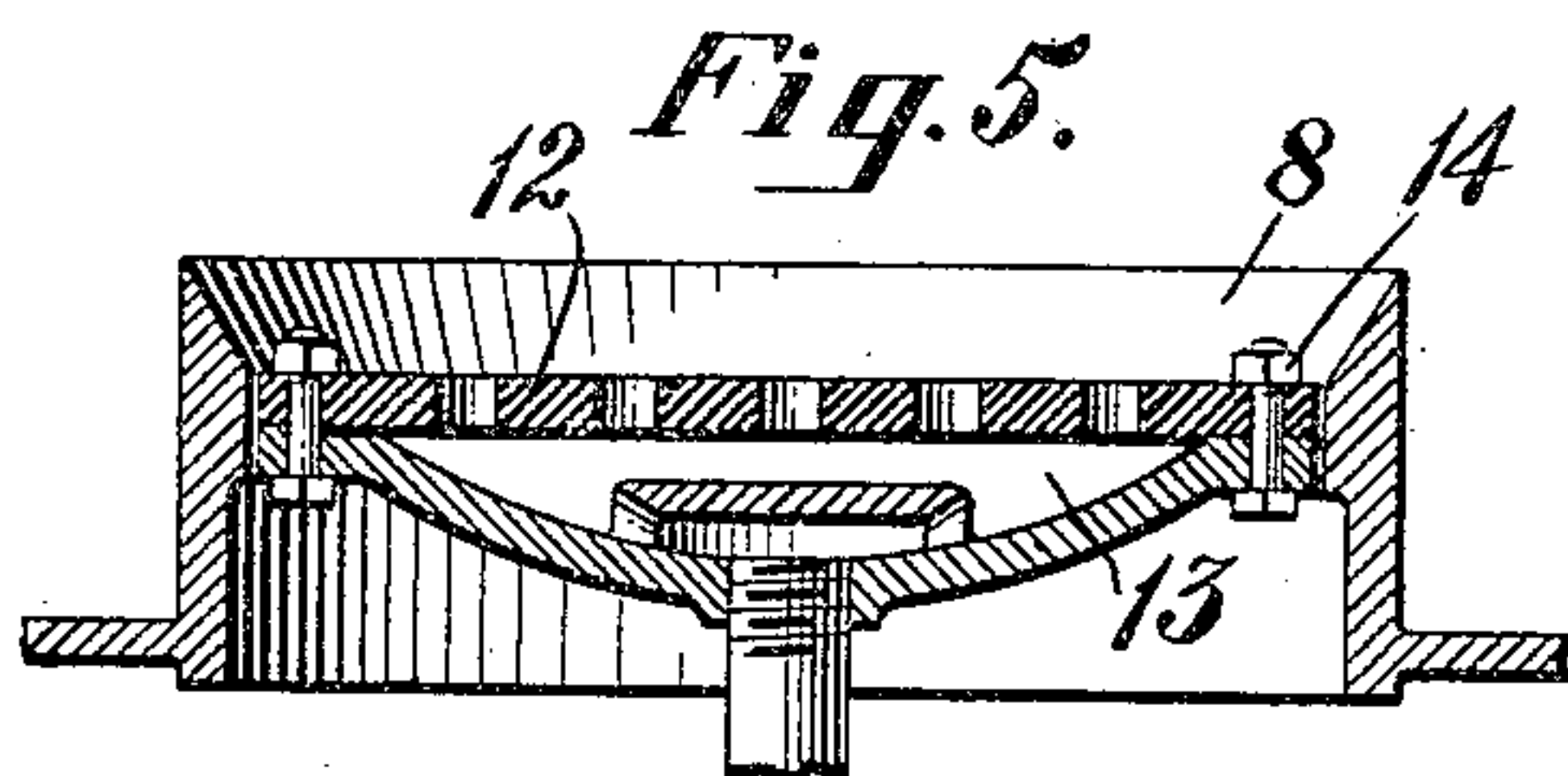
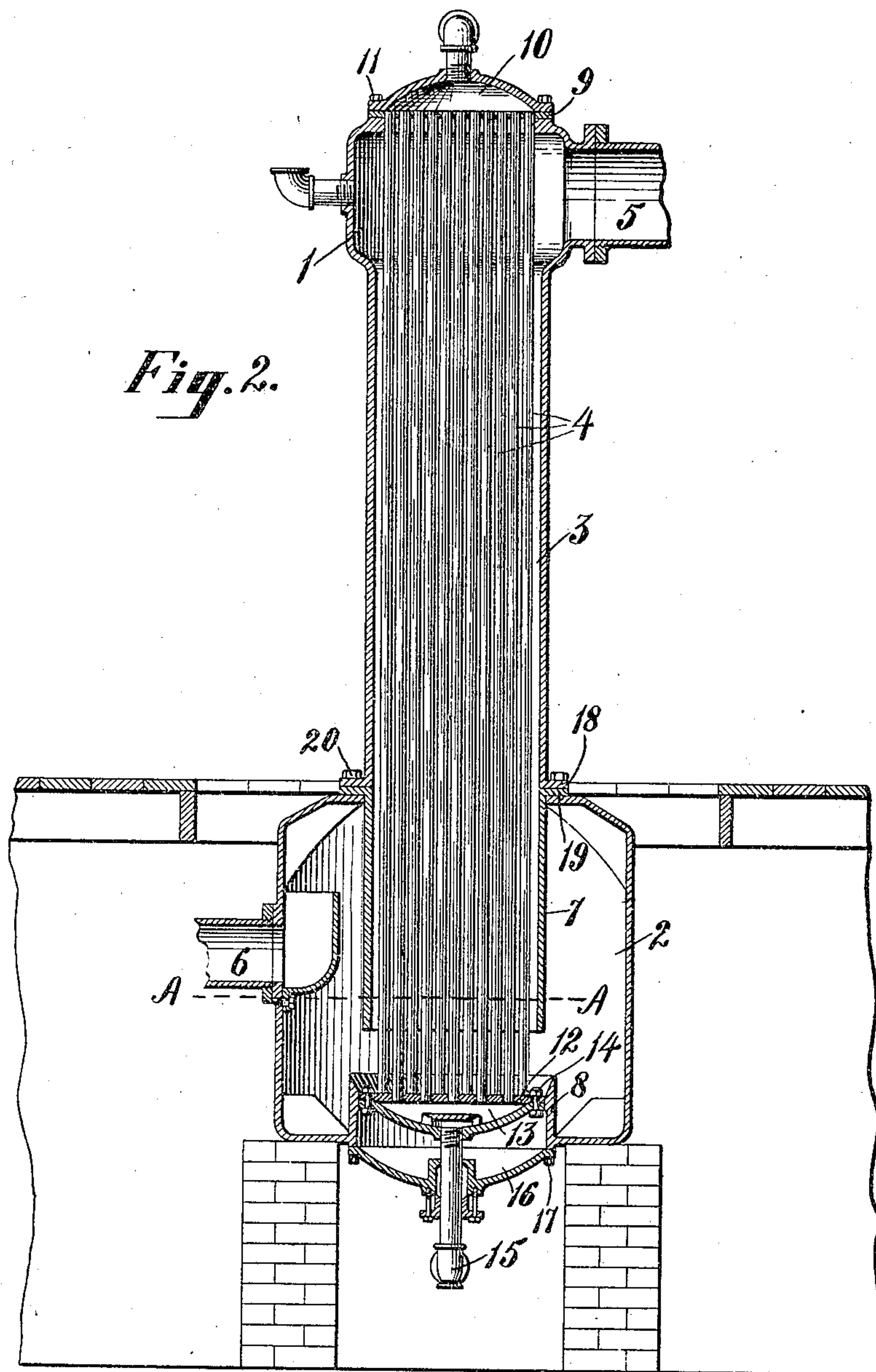
*Inventor:*  
William Prellwitz  
by attorneys  
Brown & Seward

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3 SHEETS—SHEET 2.



*Witnesses:*

*F. D. Hachenberg,  
Henry Thorne*

*Inventor:*

*William Prellwitz  
by attorney  
Thorne & Howard*

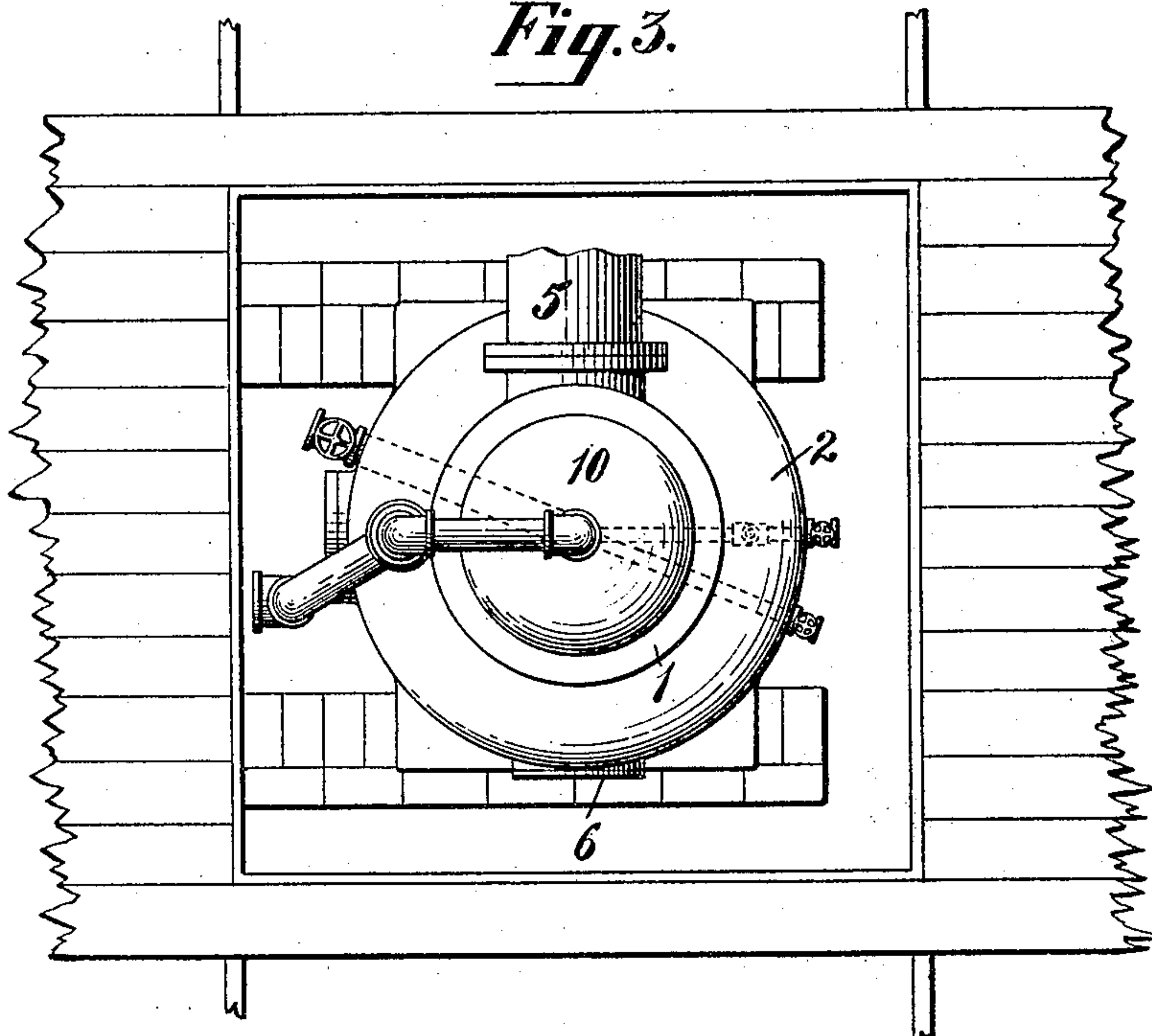
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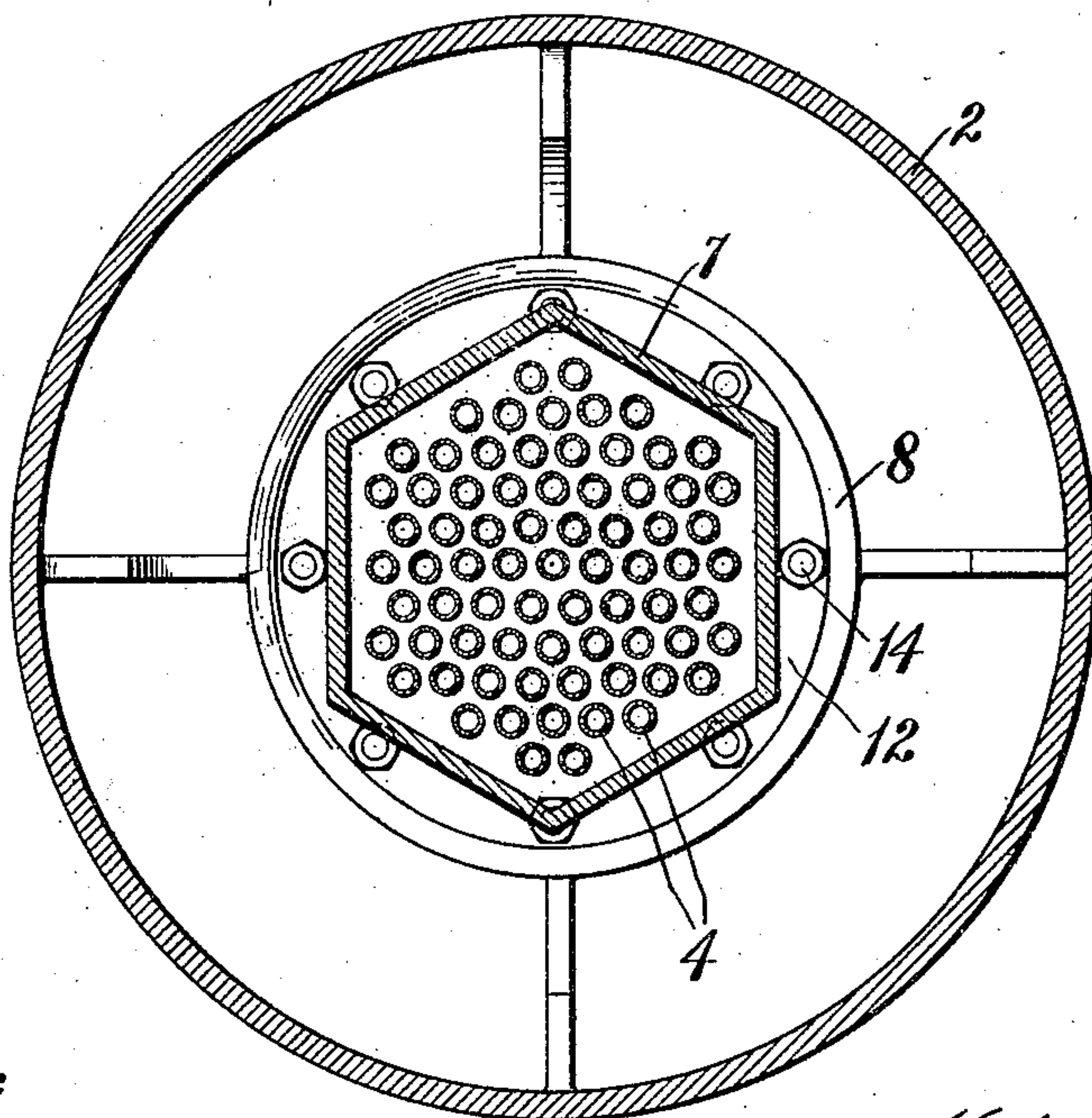
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3 SHEETS—SHEET 3.

*Fig. 3.*



*Fig. 4.*



*Witnesses:*

*F. G. Hachenburg.*  
*Henry Pheme*

*Inventor:*

*William Prellwitz*  
*by attorneys*  
*Brown & Seward*



# UNITED STATES PATENT OFFICE

WILLIAM PRELLWITZ, OF EASTON, PENNSYLVANIA, ASSIGNOR TO THE  
INGERSOLL-SERGEANT DRILL COMPANY, OF NEW YORK, N. Y., A  
CORPORATION OF WEST VIRGINIA.

## COOLER FOR COMPRESSORS.

No. 810,670.

Specification of Letters Patent.

Patented Jan. 23, 1906.

Application filed April 14, 1903. Serial No. 152,582.

*To all whom it may concern:*

Be it known that I, WILLIAM PRELLWITZ, a citizen of the United States, and a resident of Easton, in the county of Northampton and State of Pennsylvania, have invented a new and useful Improvement in Coolers for Compressors, of which the following is a specification.

My invention relates to an improvement in coolers for air or gas compressors, and has for its objects to provide a structure in which the tubes are free to expand and contract under different temperatures, in which access to the tubes may be obtained without taking them out of the cooler, and in which the tubes may be lifted out of the cooler by a comparatively short vertical movement.

A further object is to provide a vertical cooler in which the fluid is permitted to drop as it cools while the water rises as it is heated, thus gaining the best effect of the water.

A practical embodiment of my invention is represented in the accompanying drawings, in which—

Figure 1 represents the cooler in side elevation. Fig. 2 is a vertical central section through the same. Fig. 3 is a top plan view. Fig. 4 is an enlarged horizontal section taken in the plane of the line A A of Fig. 2; and Fig. 5 is an enlarged detail view of the lower tube-plate, water-head, and tubular guide for the same.

The cooler comprises a casing consisting of an upper air or gas inlet head 1, a lower air or gas discharge head 2, an intermediate hexagonal body portion 3, and a plurality of water-tubes 4, extending vertically through the said casing. The head 1 of the casing is provided with an inlet 5 for the air or gas, and the head 2 of the casing is provided with an outlet 6 for the escape of the air or gas after it has been cooled. The hexagonal body portion 3 of the casing is provided with a downward extension 7, projecting into the interior of the chamber of the discharge-head 2. A tubular guide 8 projects upwardly through the bottom of the discharge-head 2.

The stack of water-tubes 4 are permanently secured to a plate 9 at their upper ends, preferably by expanding the tubes into the said plate. This plate rests upon the top of the head 1 of the casing and is surmounted by a water-outlet 10. Suitable bolts 11 serve to secure the water-outlet 10 and the plate 9 to

the head 1 of the casing. The lower ends of the tubes 4 are secured to a plate 12, preferably by expanding the tubes into the said plate. This plate has an easy sliding fit within the tubular guide 8, so as to permit the tubes to expand and contract freely within the said guide. A water-inlet head 13 is secured to the plate 12 by suitable bolts 14 around the periphery of the plate, to which inlet-head 13 leads a suitable inlet-pipe 15.

The bottom of the tubular guide 8 is closed by a bottom plate 16 to prevent the escape of the air or gas which passes by the plate 12. Suitable bolts 17 serve to secure the flange of the plate 16 to the bottom of the tubular guide 8. This guide 8 also serves to steady the tube-plate at this point as well as guides the head in its movements owing to the expansion and contraction of the tubes, thus preventing the vibration of the said tubes.

The body portion 3 may be provided with a flange 18 and the depending portion 7 with a flange 19 for the engagement of bolts 20 for securing the said parts to the top of the lower head 2 of the casing.

It will be seen that by the above construction access to the lower ends of the tubes may be readily gained by removing the bolts 16 and water-head 13 and access to the upper ends of the tubes may be gained by removing the water-exit head 10. When it is desired to remove the tubes, it will be seen that by unbolting the flanges 18 and 19 from the lower head 2 of the casing the said tubes may be removed by a very short vertical movement. This is extremely important in places where the head room is limited.

It is evident that changes might be resorted to in the form, construction, and arrangement of the several parts without departing from the spirit and scope of my invention. Hence I do not wish to limit myself strictly to the structure herein set forth; but

What I claim is—

1. A cooler for compressors comprising a stack of cooling-tubes, a casing therefor having an upper fluid-inlet head, a lower fluid-discharge head, and a connecting body portion extended into the interior of the fluid-discharge head about the portion of the stack of tubes extended therein and removably secured to the discharge-head whereby the air is confined to the stack of tubes within the discharge-

chamber and the cooling-tubes may be removed from the discharge-head by a comparatively short upward movement of the body portion.

- 5 2. A cooler for compressors comprising a stack of tubes, a casing therefor having an upper fluid-inlet head, a lower fluid-discharge head, a connecting body portion extended  
10 fluid-discharge head about the portion of the stack of tubes extended therein and removably secured to the discharge-head and a tu-

bular guide projecting upwardly into the interior of the fluid-discharge head within which guide the lower end of the stack of tubes is fitted to slide. 15

In testimony that I claim the foregoing as my invention I have signed my name, in presence of two witnesses, this 6th day of April, 1903.

WILLIAM PRELLWITZ.

Witnesses:

WARD RAYMOND,  
CHARLES MILLER.