

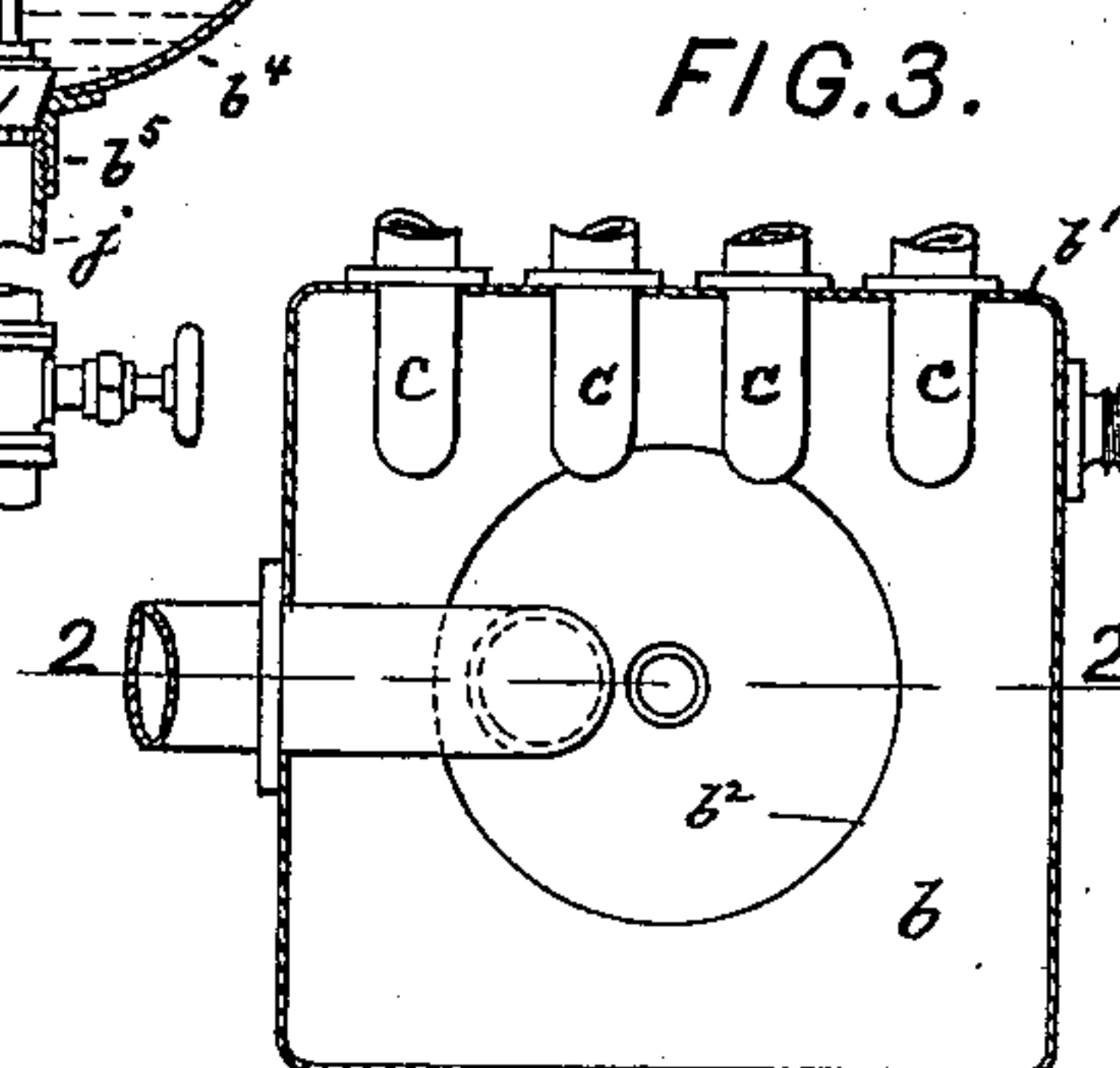
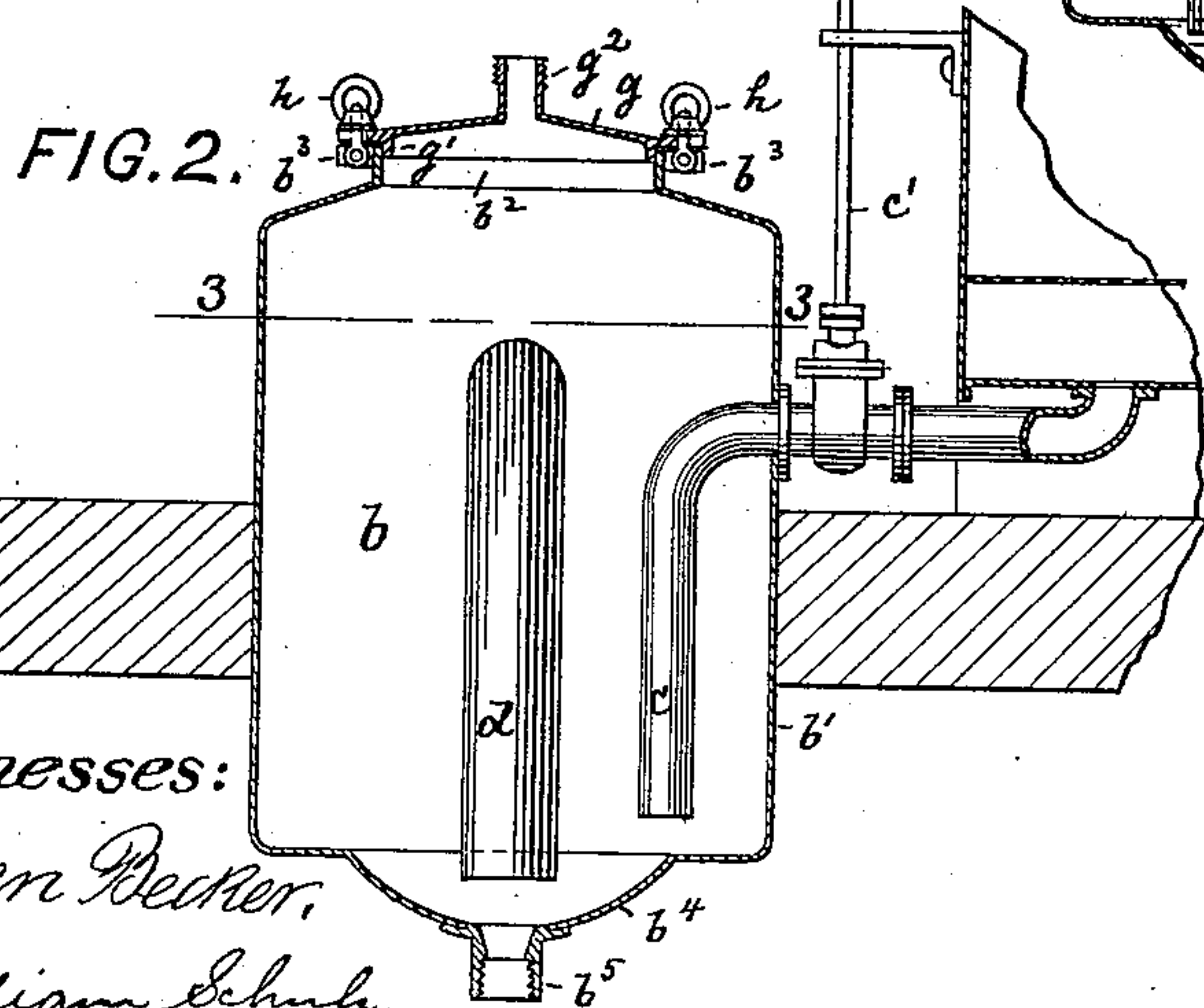
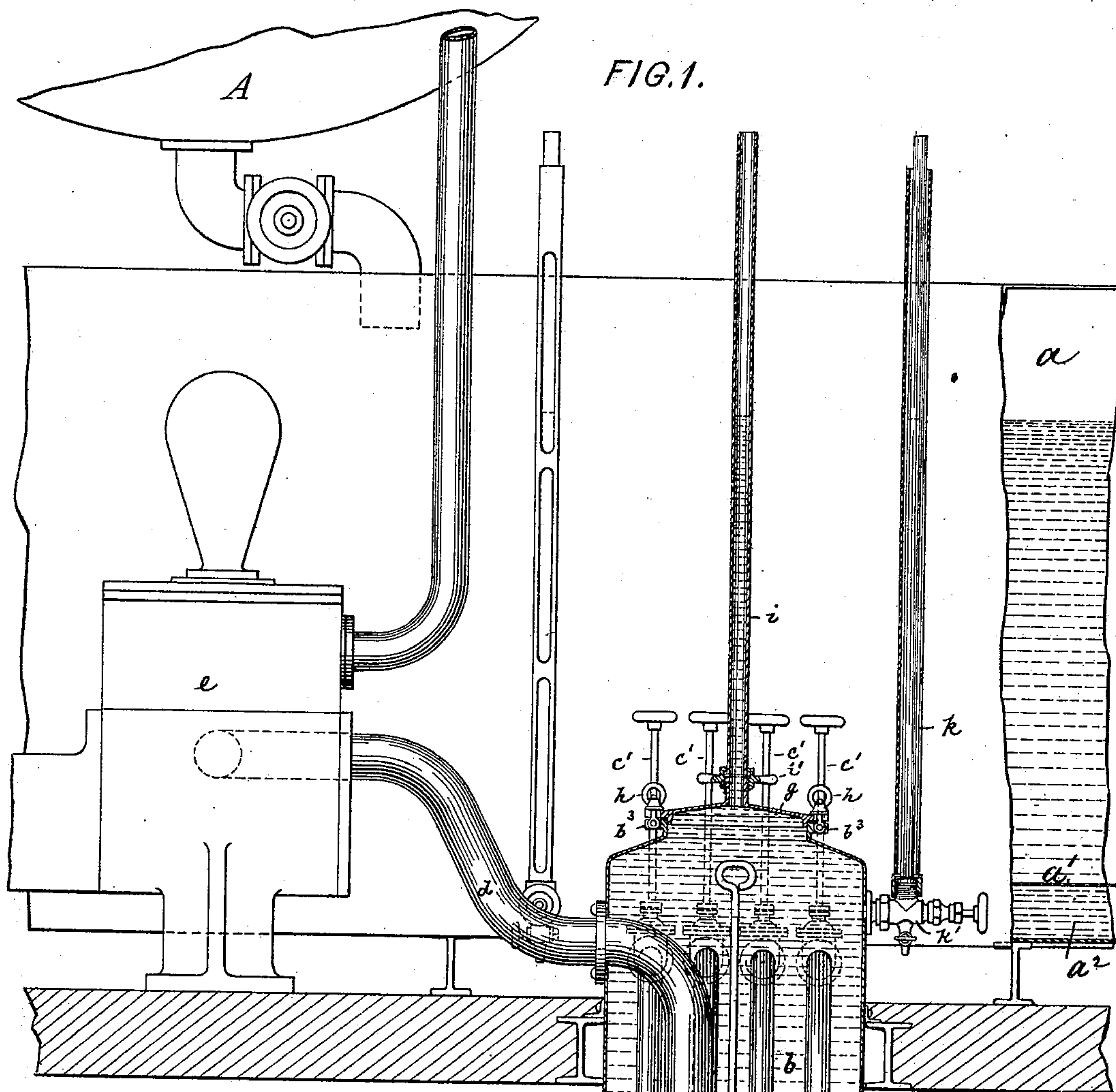
No. 639,761.

Patented Dec. 26, 1899.

F. ORTH & F. SCHIMPER.  
UNDERBACK.

(Application filed Oct. 4, 1899.)

(No Model.)



Witnesses:

John Becker,  
William Schulz.

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Frederick Schimper  
per Roeder & Briesen  
Attorneys.



# UNITED STATES PATENT OFFICE.

FREDERICK ORTH, OF NEW YORK, N. Y., AND FREDERICK SCHIMPER, OF UNION, HUDSON COUNTY, NEW JERSEY.

## UNDERBACK.

SPECIFICATION forming part of Letters Patent No. 639,761, dated December 26, 1899.

Application filed October 4, 1899. Serial No. 732,454. (No model.)

*To all whom it may concern:*

Be it known that we, FREDERICK ORTH, a resident of New York city, New York, and FREDERICK SCHIMPER, a resident of Union, Hudson county, New Jersey, citizens of the United States, have invented certain new and useful Improvements in Underbacks, of which the following is a specification.

This invention relates to an improved construction of the underback, a vessel into which the unfermented beer flows from the hop-back to be conveyed by the pump to the surface cooler. Heretofore this underback was made in the form of a small open vessel which required constant watching and attendance to prevent an overflow and to regulate the ratio between inflow and outflow. If in spite of precautions an overflow would take place, the employees would be apt to become scalded, and the shutting of the cocks would be accompanied with considerable difficulty. By our construction all the above objections are overcome, and after the cocks have been opened and the pump started the beer will be delivered without liability of running over and without requiring any attention whatever.

In the accompanying drawings, Figure 1 is vertical section of our improved underback; Fig. 2, a vertical section at right angles to Fig. 1 on line 2 2, Fig. 3; and Fig. 3, a horizontal section on line 3 3, Fig. 2.

The letter *a* represents the hop-back, a large tank beneath the copper A and having a perforated false bottom *a'* to strain off the unfermented beer into a lower chamber *a''*. From this chamber the beer is discharged into the underback *b*, through a number of cocks *c*, placed in close proximity and controlled by valves *c'*. This underback is a small vessel sunk beneath the bottom of the hop-back, and the nozzles of the cocks *c* enter through its perforated side *b'* and extend to near the bottom *b''*. The single outlet-pipe *d* extends farther down toward the bottom *b''* and discharges the beer into a surface cooler (not shown) by the action of a pump *e*.

At the top the underback is provided with a neck *b''*, having a surrounding flange *b'''*. Upon this flange sits a cover *g*, having a downwardly-extending flange *g'*, that fits into the neck *b''*. Eyebolts *h*, pivoted to flange *b'''*

and adapted to engage notches in the edges of cover *g*, serve to tightly clamp the latter to its seat. The cover *g* is perforated and provided with a nipple *g''*, to which a vent-tube *i* may be removably secured by means of nut *i'*.

The bottom *b''* of the underback is bulged and is by nipple *b'''* connected to a drain-pipe *j*, which is normally closed by a plug-valve *j'*. This valve is raised when the underback is to be washed, the rinsing-water being by the bulged bottom conducted to the drain. A gage *k*, communicating with the interior of the underback by valve-controlled coupling *k'*, permits the level of the liquid in the underback to be observed.

When the hop-back has been filled from the copper and its contents are to be pumped into the surface cooler, the cover *g* is bolted upon the underback, and the valves *c'* are opened. The unfermented beer will now flow into the underback, from which it is drawn by the pump and discharged into the cooler. Should the pump work too slowly, an overflow will not take place, but the liquid will rise in vent *i* to the level of the liquid in hop-back *a*. Should the pump, on the other hand, work too quickly, air will be drawn into the underback through vent *i* and no liquid will be sucked through the cocks *c*, which would tend to clog the perforated bottom *a'* with hops. Thus the transfer of the beer from the hop-back to the cooler will be effected in a regular and proper manner and without requiring constant attention, as heretofore.

What we claim is—

The combination of a hop-back with an underback, cocks extending from the hop-back into the underback, a cover, means for locking the cover to the underback, a pump adapted to withdraw the liquid from the underback, a gage within which the liquid will rise from the underback when the pump works too slowly, and a vent through which air will be drawn into the underback when the pump works too quickly, substantially as specified.

Signed by us at New York city, New York, this 3d day of October, 1899.

FREDERICK ORTH.

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Witnesses:

F. V. BRIESEN,

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