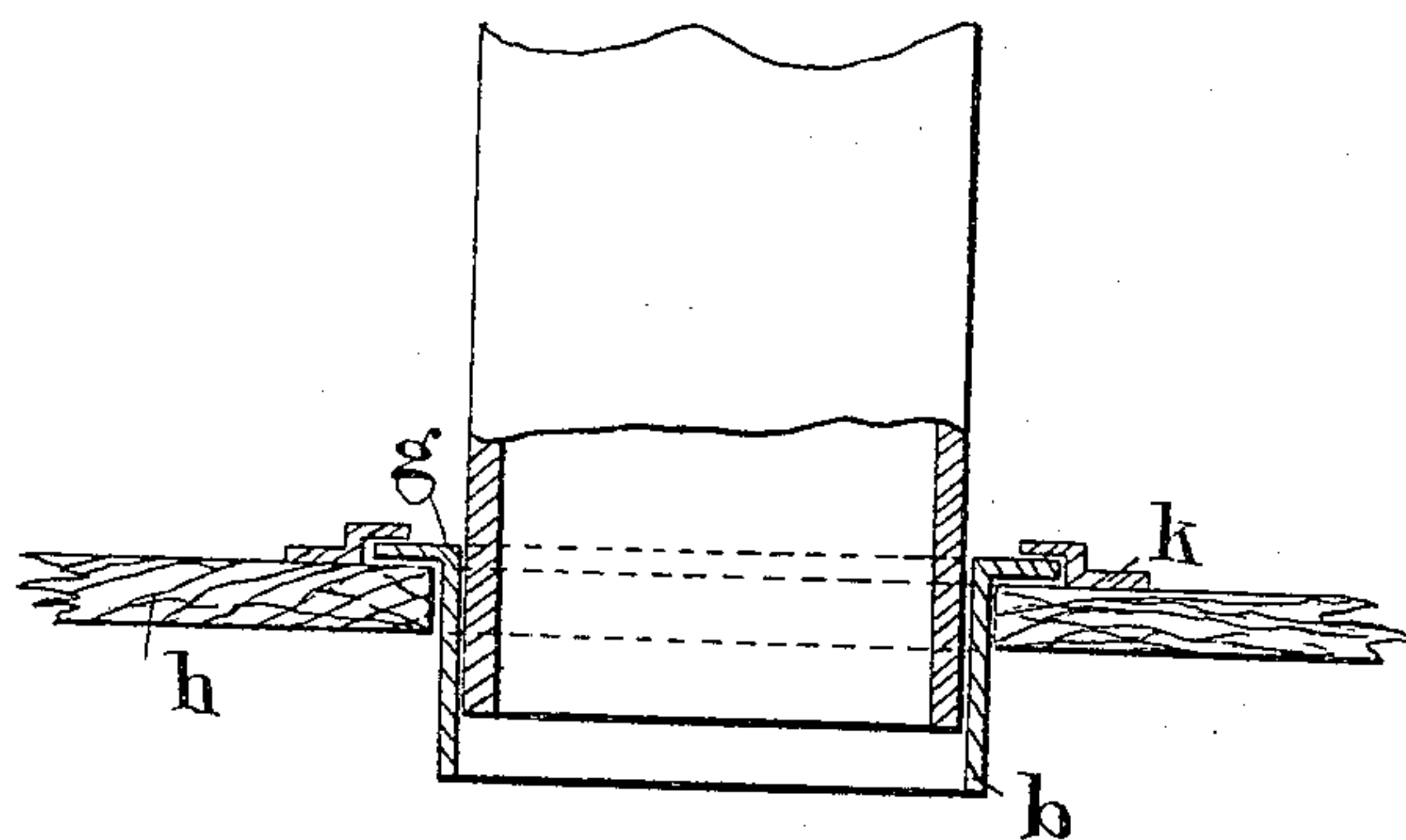
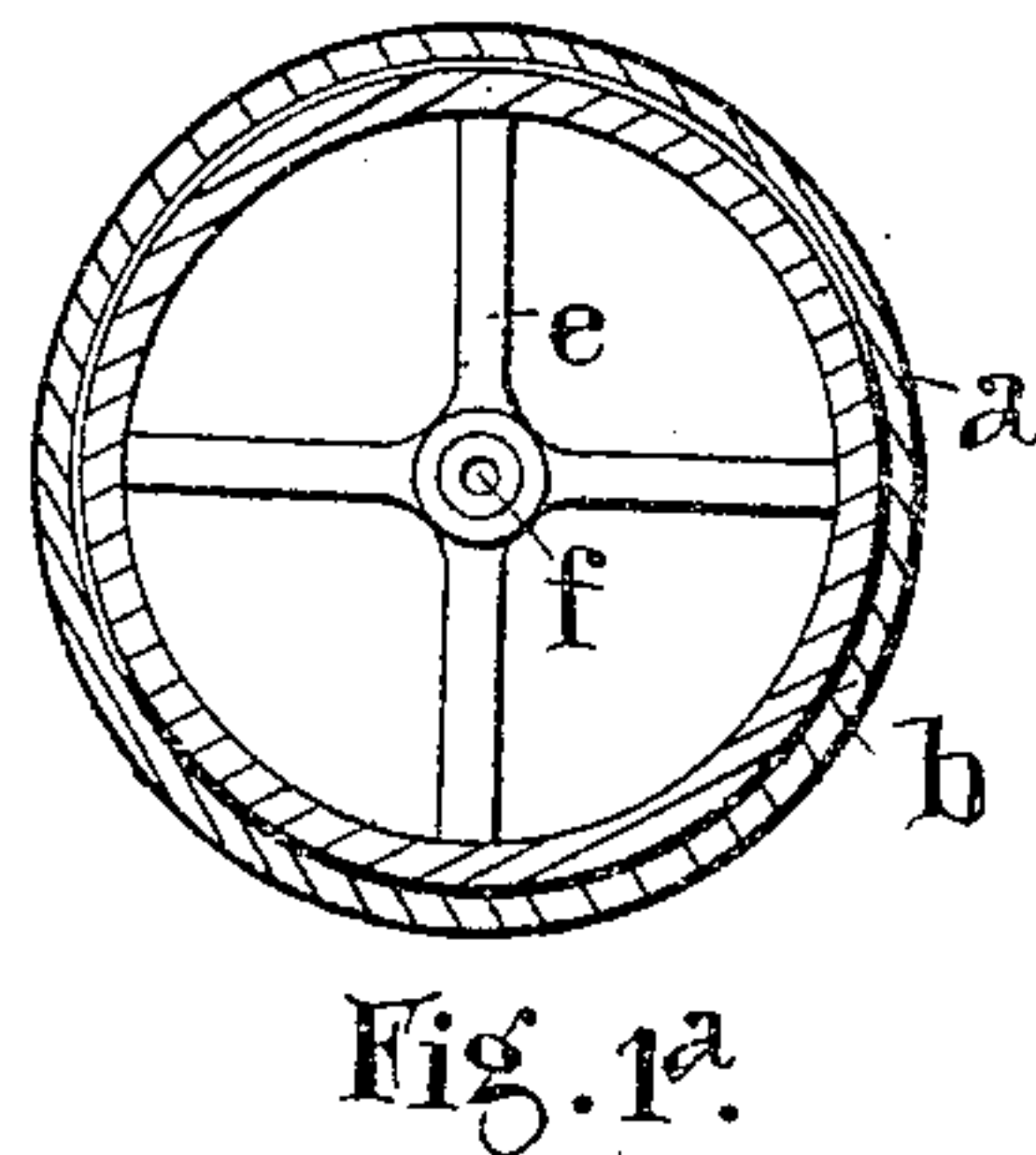
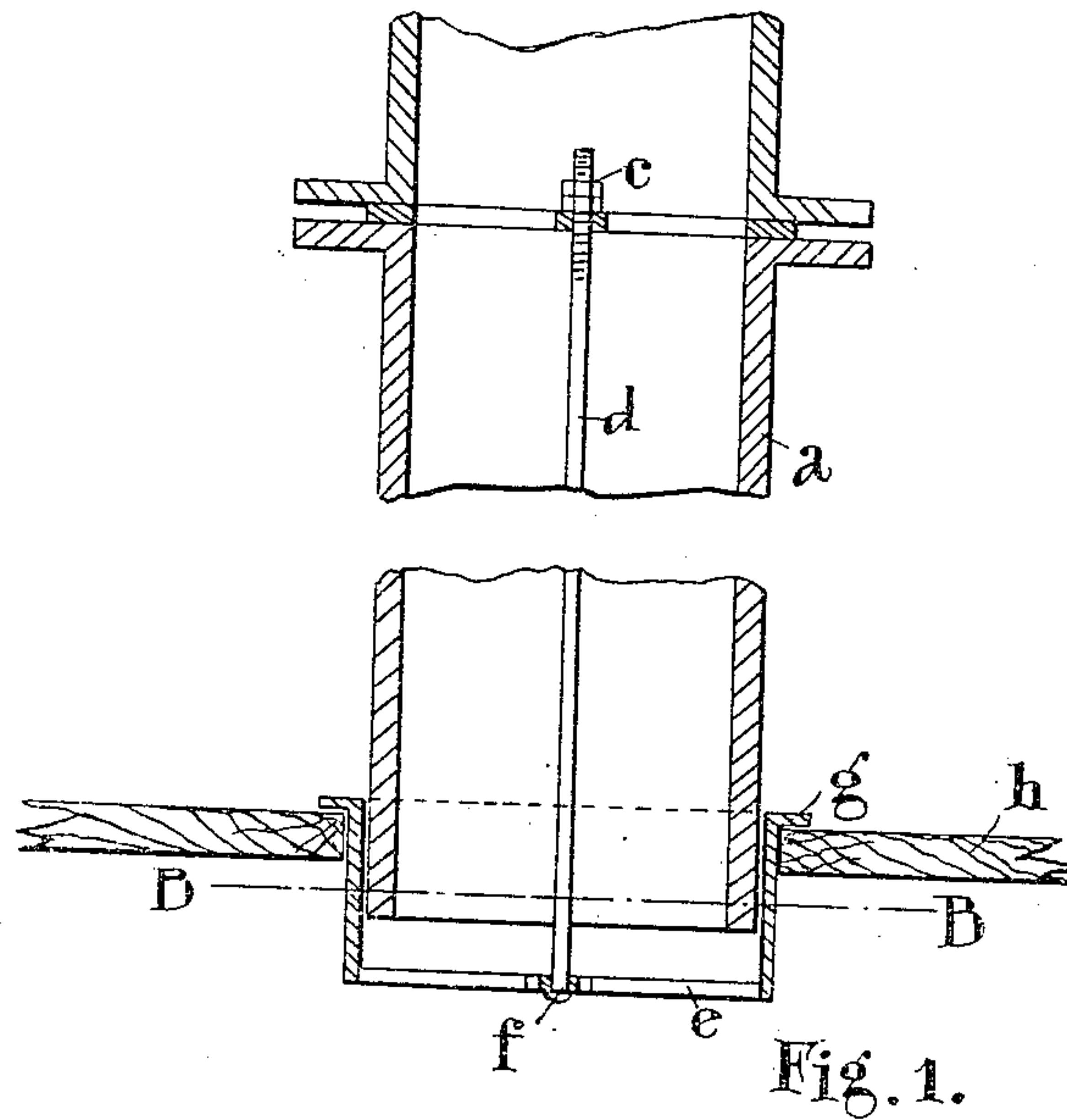


958,518.

S. MEUNIER.
HYDRAULIC GAS MAIN.
APPLICATION FILED AUG. 9, 1909.

Patented May 17, 1910.
3 SHEETS—SHEET 1.



Attest
Edward L. Tolson
Edward H. Sarton

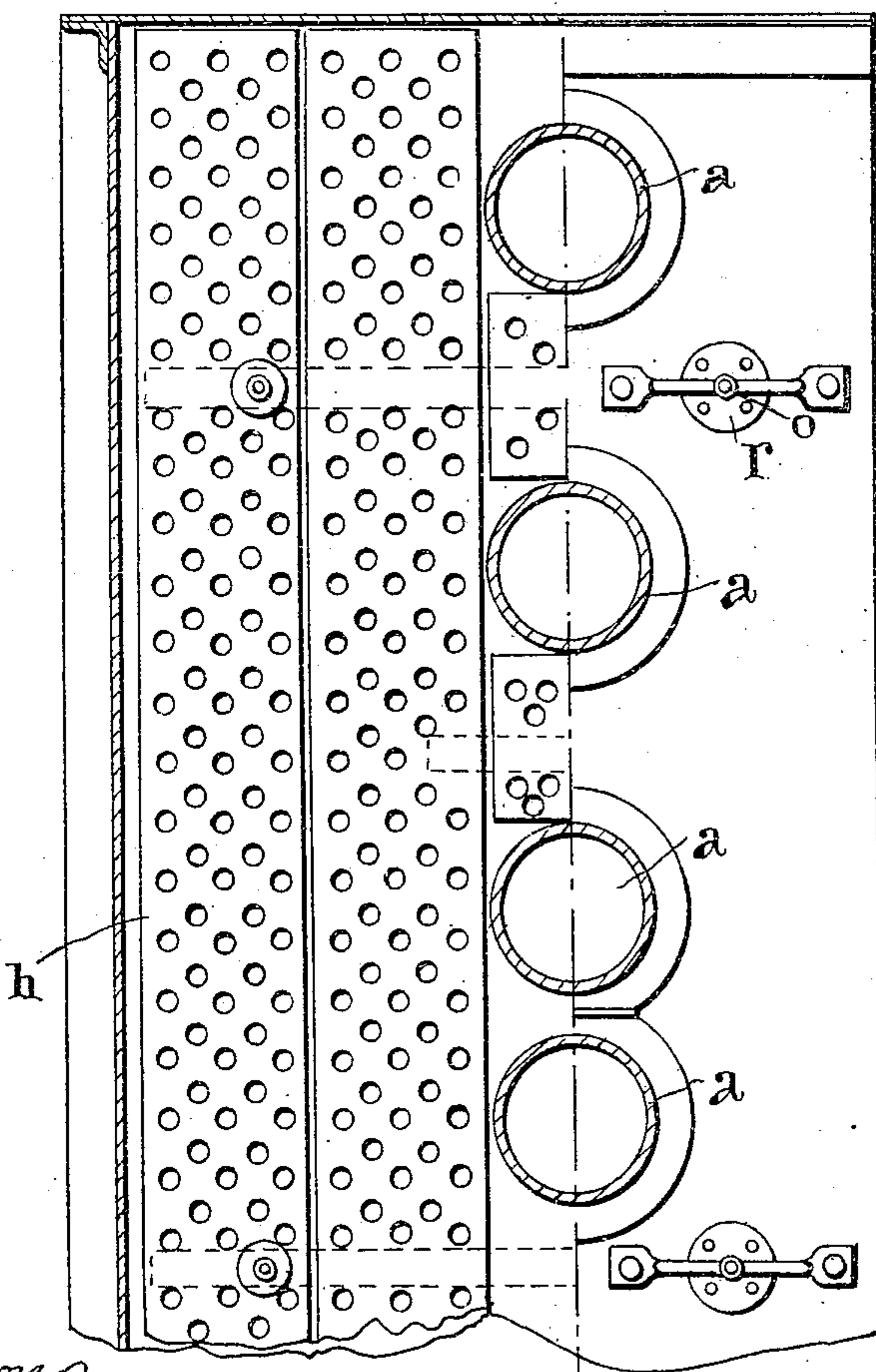
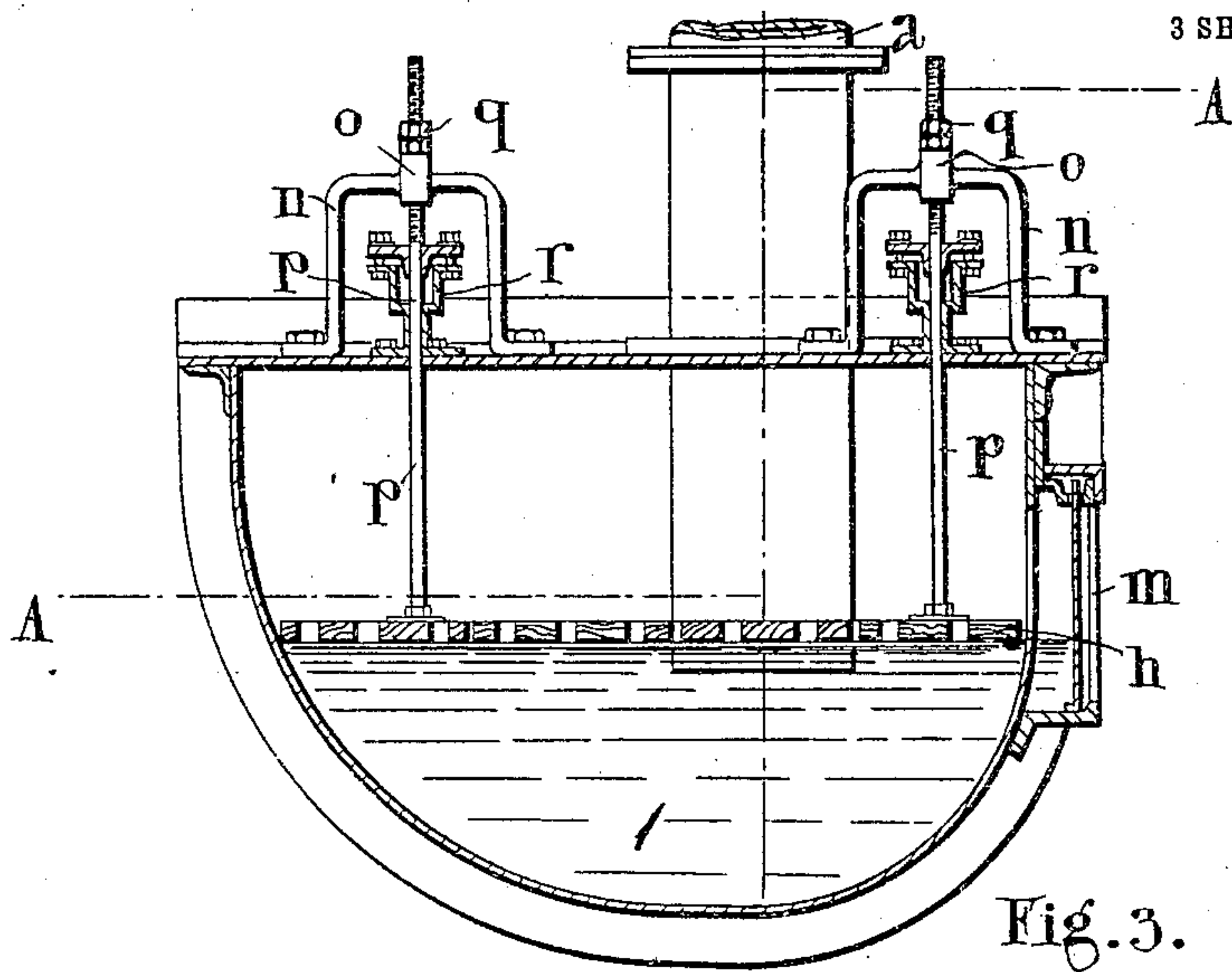
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3 SHEETS—SHEET 2.



Attest:
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Fig. 3^a

By Spear Middleton, Donaldson Spear
Attys

Inventor:

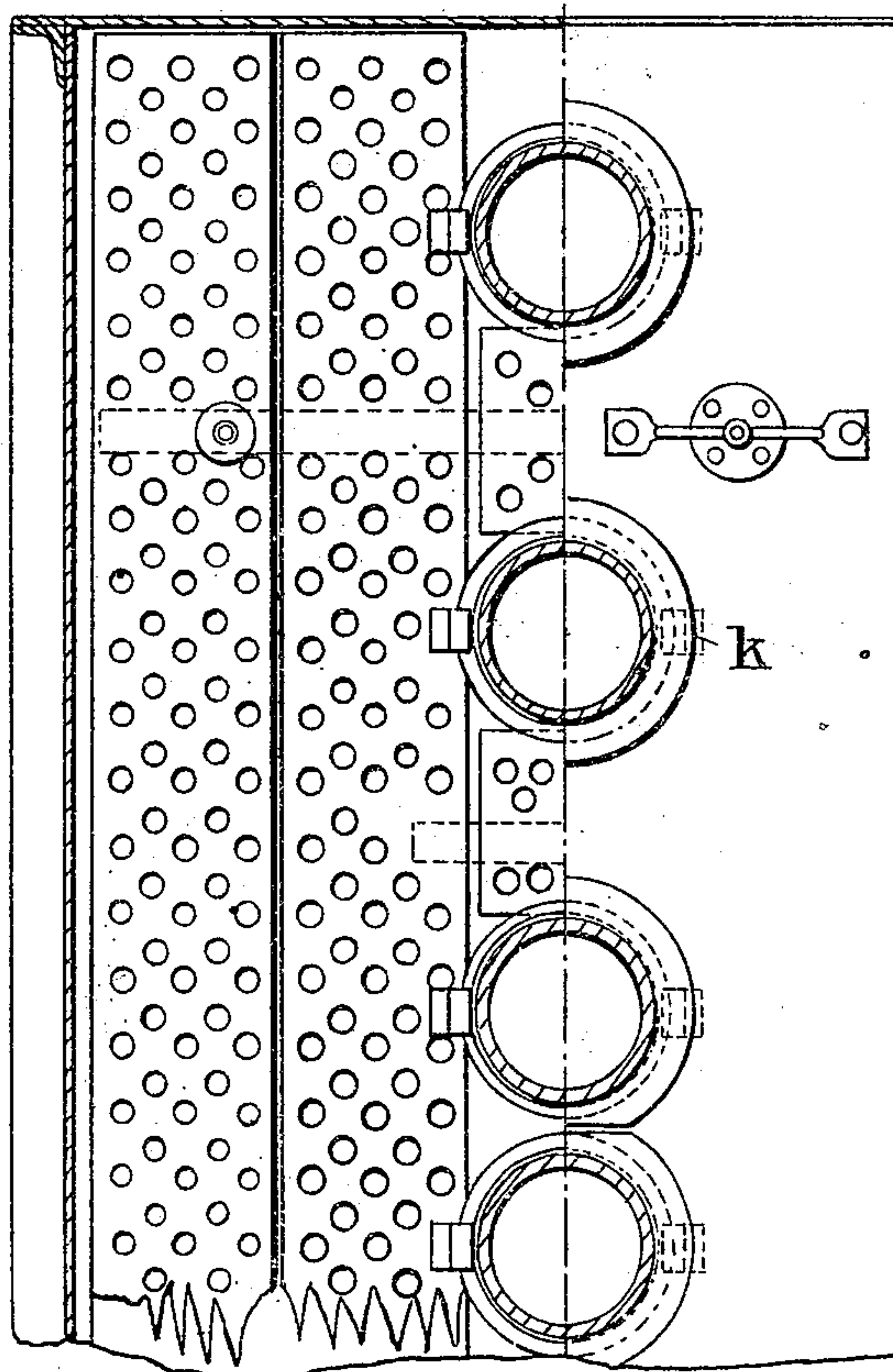
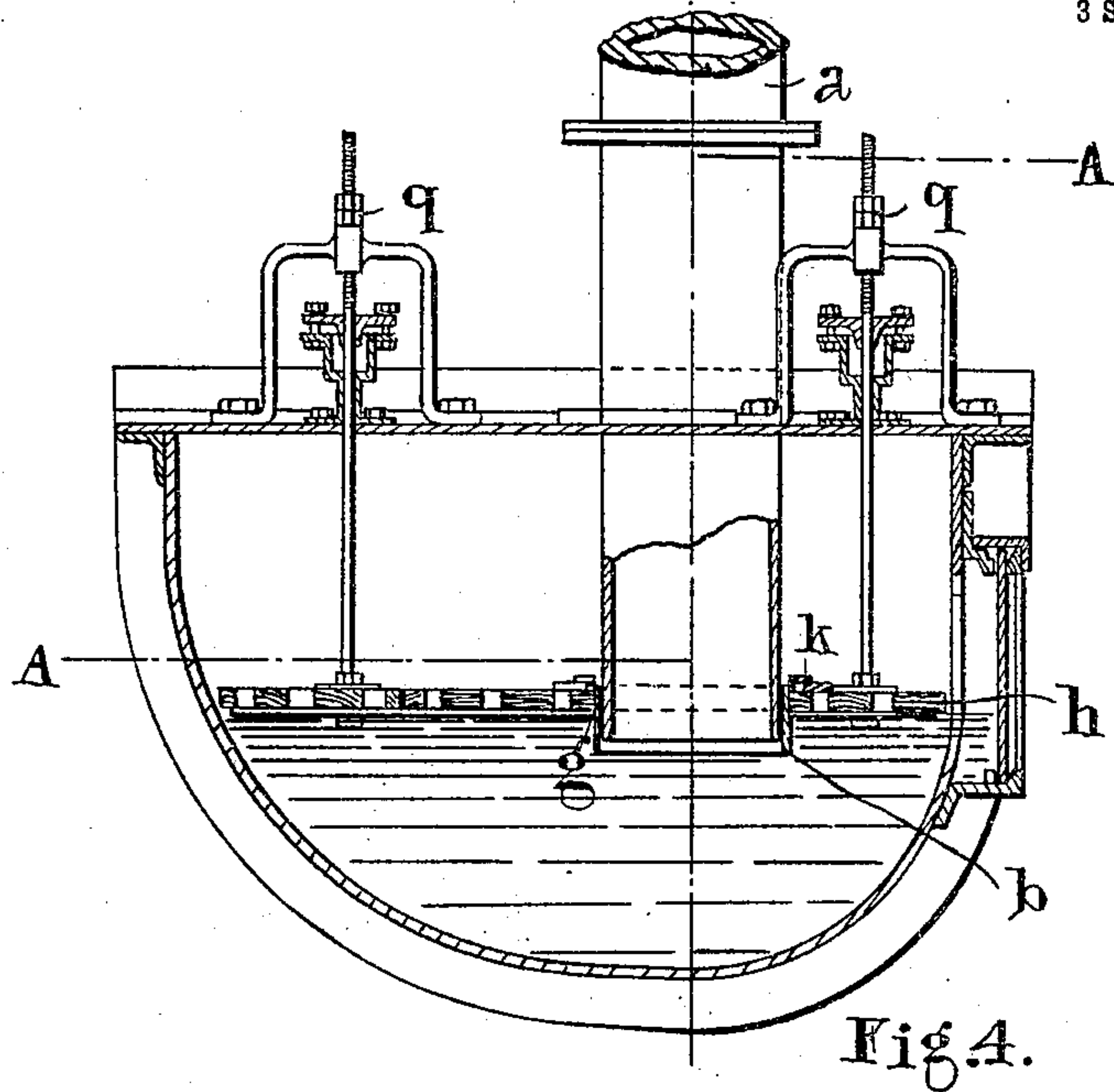
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958,518.

Patented May 17, 1910.

3 SHEETS—SHEET 3.



Attest:

Edw. A. Tolson
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Fig. 4a.

By *Spears Modeler* *Donaldson* *Spears*
attys.

Inventor:

Stanislas Meunier,

UNITED STATES PATENT OFFICE.

STANISLASS MEUNIER, OF HEATON-CHAPEL, ENGLAND.

HYDRAULIC GAS-MAIN.

958,518.

Specification of Letters Patent.

Patented May 17, 1910.

Application filed August 9, 1909. Serial No. 511,972.

To all whom it may concern:

Be it known that I, STANISLASS MEUNIER, a subject of the King of Great Britain and Ireland, and residing at Melrose, Broomfield Road, Heaton-Chapel, in the county of Lancaster, England, have invented certain new and useful Improvements in Hydraulic Gas-Mains, of which the following is a specification.

10 This invention relates to the production of gas by the distillation of coal in gas retorts, and the collection of the gas by means of a hydraulic main, and the usual scrubbers for delivery into a gas holder.

15 It has been found in practice that the gas on distribution frequently deposits naphthalene, and this introduces considerable difficulties in the distribution system in town supplies, rendering it necessary to have the various distributing pipes cleaned out at more or less frequent intervals, and is liable to give more trouble at one time of the year than at another. Many proposals have been made to get over this difficulty by treating the gas after manufacture with various hydrocarbon liquids. Now I have found that by very simple means applied in the hydraulic main, I am able to obtain and use owing to the relative absence of fluctuation a gas pressure very closely approximating to atmospheric and to obtain an increase in the quantity of gas as contrasted with that obtained in other systems using ordinary hydraulic mains while in most cases a gas of such quality is obtained that naphthalene practically does not deposit in the mains and an increase in both its illuminating and heating value results, the particular coal gasified to a certain extent determining the precise improvement obtainable. Further I find that the liquid in the hydraulic main becomes much richer in ammonia and this enables the scrubbing plant for a given quantity of coal gasified to be reduced.

45 The invention consists in providing means, such as floats or baffle plates, in the hydraulic main, which are adapted to give free egress of the gas, while maintaining a much more definite liquid level in the main than exists at present, and insuring the maintenance of a more even pressure of gas in the retort and a much more thorough contact of the gas with the liquids in the hydraulic

main, whereby a more effective removal of impurities from one crude gas is carried out while it is still hot. 55

My invention further consists in providing suitable floats or baffle plates in the hydraulic main, carrying dip pipe sleeves in such a way that the dip pipe seal can be either mechanically or automatically controlled. Where adjustable floats or baffles are used they are preferably adapted for adjustment in sections. 60

In carrying this invention into effect, in one form, I provide floats in the hydraulic main. These may be boards which will float in the hydraulic main liquor. These boards substantially cover the liquid surface in the hydraulic main, except for the required spaces through which the gases find exit after coming in contact with the hydraulic main liquor. Instead of employing floats, which in the case of wooden or like absorbent floats if allowed to remain unchanged for a lengthy period become saturated with main liquor and sink, baffle plates may be used, which may or may not be capable of floating, but are fixed preferably at an adjustable level, by bolts or screws. The adjusting devices should be so constructed that they can be operated from outside the hydraulic main during distillation, whether floats or baffle plates be used. 65 70 75 80

It will be understood that the adjustments of the apparatus may be either as regards the depth of seal or as regards the extent to which the floats or baffle plates are immersed in the liquid and consequently as regards the height of the liquid column in the gas exit spaces of the baffle plates or floats or as regards both. This adjustment in the case of floats may be by means of rods or the like passing through stuffing boxes upon the upper cover of the main bearing upon the upper surface of the float and capable of adjustment or by like suitable means which limit the upward movement of the float. In some cases I apply sleeve pieces, preferably supported from the baffle plates or floats, which slide on the dip pipes, and enable the dip seal to be adjusted either automatically or by hand the former method being however preferable. I prefer to employ one set of baffles or floats for each bed of the retorts, so that close ad- 85 90 95 100 105

justment may be maintained notwithstanding differences in the rate of distillation from different sets of retorts.

Referring to the accompanying drawings which show by way of example various modifications of the apparatus according to the present invention, Figures 1 and 1^a represent respectively the sectional elevation and sectional plan on line B B of a form of the present invention in which floats and mechanically adjustable dip pipe sleeves are employed. Fig. 2 indicates the sectional elevation of a form employing floats and automatically adjustable dip pipe sleeves. Fig. 3 represents the sectional elevation of a hydraulic main provided with mechanically adjustable baffles according to the present invention a sectional plan on line A—A of same being shown in Fig. 3^a. Fig. 4 represents in sectional elevation a hydraulic main provided with mechanically adjustable baffles and dip pipe sleeves according to the present invention. Fig. 4^a represents a sectional plan on the line A—A of same.

Referring to Figs. 1 and 1^a *a* represents the dip pipe provided with a sleeve pipe *b* adjustable with respect to the dip pipe by means of a nut *c* coacting with a projection within the dip pipe and with a rod *d* connected to the sleeve pipes *b* by the four radial arms *e* and boss *f*. The sleeve pipe has a flange *g* on its upper edge limiting the upward movement of the float.

This apparatus provides means whereby the seal in the hydraulic main may be adjusted by hand as desired, the float *h* being free to move with such variation of water level as may occur.

In Fig. 2 is shown a modification whereby a constant depth of seal is automatically insured and consists in providing a float *h* with a sleeve *b* having a flange *g* on its upper edge clamped between the float *h* and the clamping flange *k* and sliding over the dip pipe *a*, its position automatically adjusting itself to the variations in the liquid level in the main.

In Figs. 3 and 3^a *l* represents the hydraulic main provided with a gage *m* to show the level or fluctuation of the liquor in the hydraulic, a dip pipe *a*, and having upon its upper cover supports *n* through the bosses *o* of which pass rods *p* having their upper ends screw threaded and provided with adjusting nuts *q*, these rods passing also through stuffing boxes *r* and supporting on their lower end the baffle plates *h* provided with suitable perforations. This device allows of adjustment of the baffle plates within the hydraulic main during distillation from the outside.

Figs. 4 and 4^a show a device similar to that shown in the previous drawing, means being provided for the alteration of the seal

coincidently with the alteration of the position of the baffles, these means consisting in a sleeve *b* clamped to the baffle *h* by a clamping flange *k* fixed to the baffle and coacting with a flange *g* on the upper end of the sleeve *b* which latter slides freely from the lower end of the dip pipe *a*. By this means any alteration of the position of the baffle *h* by the nuts *q* results in a corresponding movement of the lower end of the sleeve.

A suitable thickness for the floats or the like is about one inch and the holes provided may be made of about one inch in diameter.

The baffles are preferably adjusted so that the lower surface is at the liquid level.

With the application of this invention to a retort bench in a gas manufacturing system using a hydraulic main I have found for example an increase in the make per ton by from 10 to 12 per cent., while the gases produced did not deposit naphthalene in the distributing system.

Having now described my invention what I claim as new and desire to secure by Letters Patent is:—

1. In the manufacture of gas, in combination, a hydraulic main, a dip pipe projecting into said main, and a perforate baffle disposed in contact with and covering the liquid surface in said main, as set forth.

2. In the manufacture of gas, in combination, a hydraulic main, a dip pipe projecting into said main, and a perforate floating baffle disposed in contact with and covering the liquid surface in said main, as set forth.

3. In the manufacture of gas, in combination, a hydraulic main, a dip pipe projecting into said main, and a perforate adjustable baffle disposed in contact with and covering the liquid surface in said main, as set forth.

4. In the manufacture of gas, in combination, a hydraulic main, a dip pipe projecting into said main, and a perforate adjustable floating baffle disposed in contact with and covering the liquid surface in said main, as set forth.

5. In the manufacture of gas, in combination, a hydraulic main, a dip pipe, an adjustable sleeve on said dip pipe, and a perforate baffle disposed in contact with and covering the liquid surface in said main, as set forth.

6. In the manufacture of gas, in combination, a hydraulic main, and a liquid surface oscillation damping device disposed in contact with and covering the liquid surface in said main, as set forth.

7. In the manufacture of gas, in combination, a hydraulic main, a dip pipe, having its orifice below the liquor in said main, and a baffle disposed at the surface of said liquor, and perforated by a plurality of gas

exits in a vertical plane, said baffles covering the liquid surface, as set forth.

5 8. In the manufacture of gas, in combination, a hydraulic main, a dip pipe having its orifice below the liquor in said main, and a floating baffle in the same perforated by a plurality of gas exits in a vertical plane, said baffles covering liquid surface, as set forth.

10 9. In the manufacture of gas, in combination, a hydraulic main, a dip pipe having its orifice below the liquor in said main and an adjustable baffle disposed at the surface of said liquor and perforated by a plurality
15 of gas exits in a vertical plane, said baffles covering the liquid surface, as set forth.

10. In the manufacture of gas in combination, a hydraulic main, a dip pipe having its orifice below the liquor in said main, and

an adjustable floating baffle in the same, perforated by a plurality of gas exits in a vertical plane, said baffles covering the liquid surface, as set forth. 20

11. In the manufacture of gas, in combination, a hydraulic main, a dip pipe having
25 its orifice below the liquor in said main, an adjustable sleeve on said dip pipe, and a baffle disposed at the surface of said liquor, and perforated by a plurality of gas exits in a vertical plane, said baffles covering the
30 liquid surface as set forth.

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

STANISLASS MEUNIER.

Witnesses:

ERNOLD SIMPSON MOSELEY,
MALCOLM SMETHURST.