

J. FISCHER.  
GAS APPARATUS.

APPLICATION FILED AUG. 26, 1909.

958,245.

Patented May 17, 1910.

2 SHEETS—SHEET 1.

Fig. 1

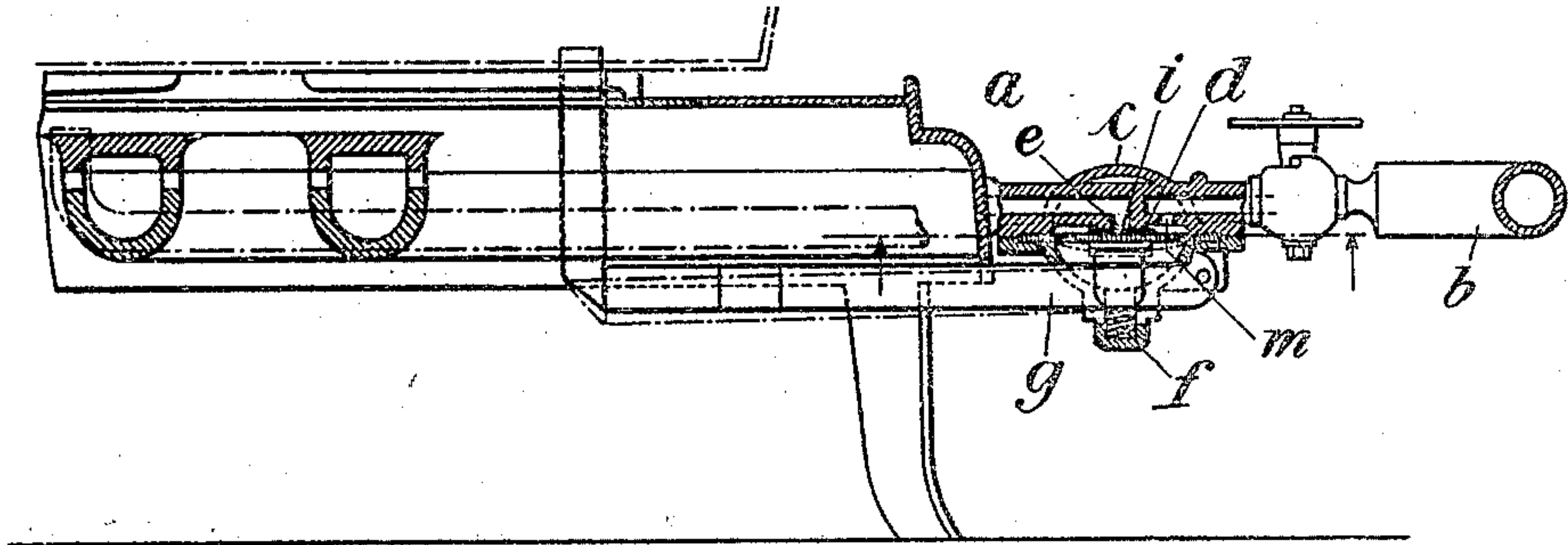


Fig. 2

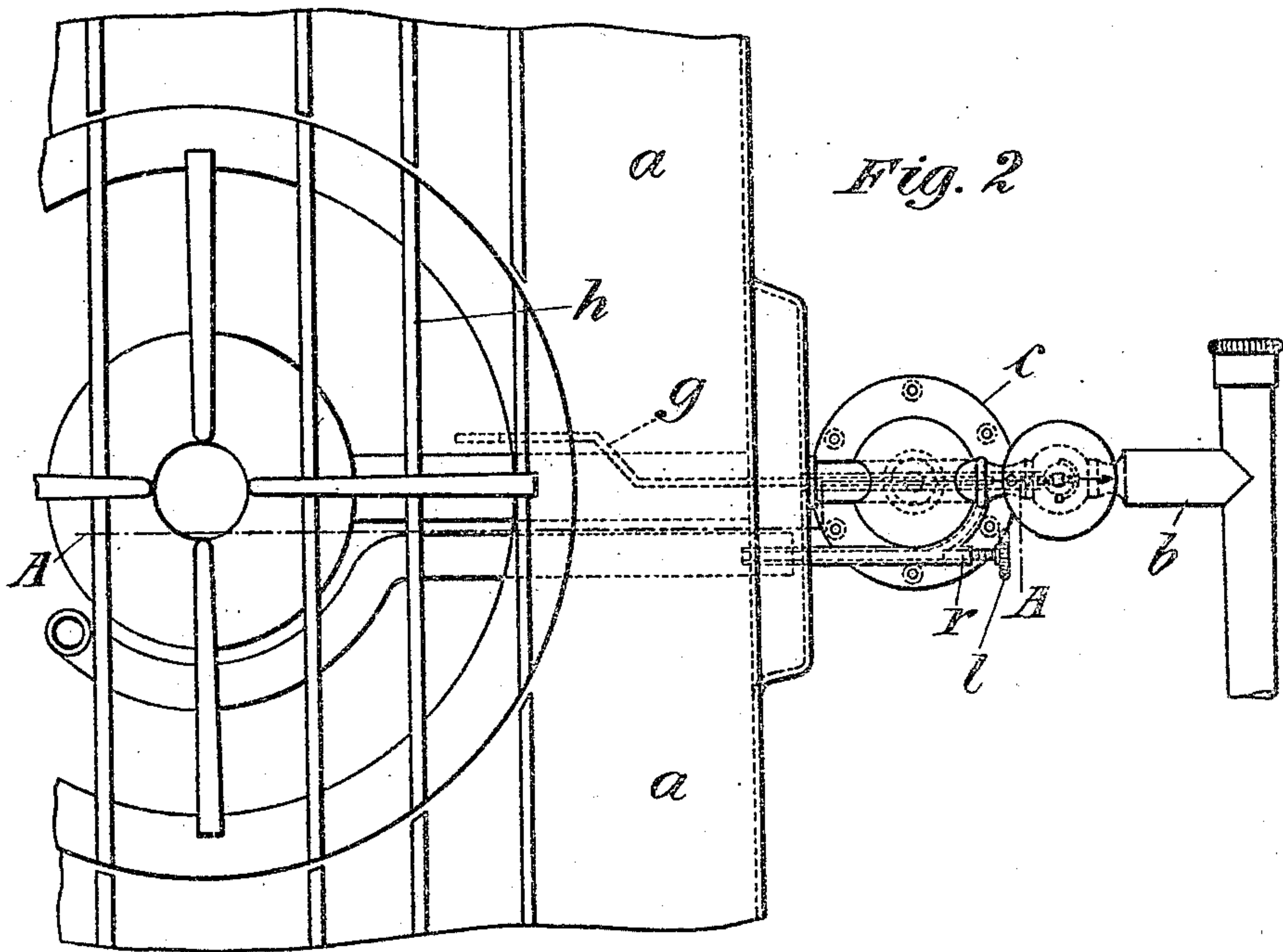
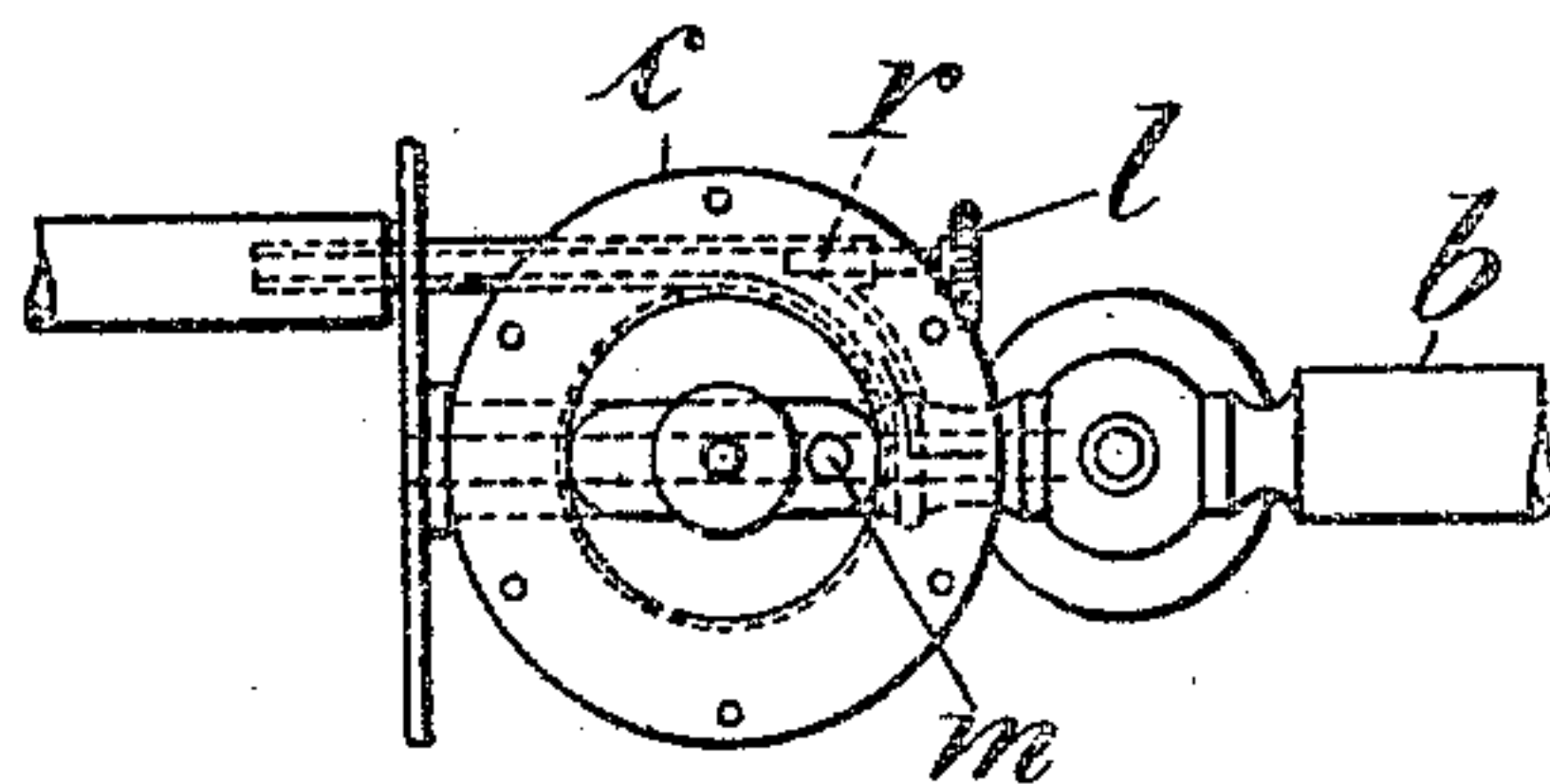


Fig. 3



WITNESSES

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2 SHEETS—SHEET 2.

Fig. 4

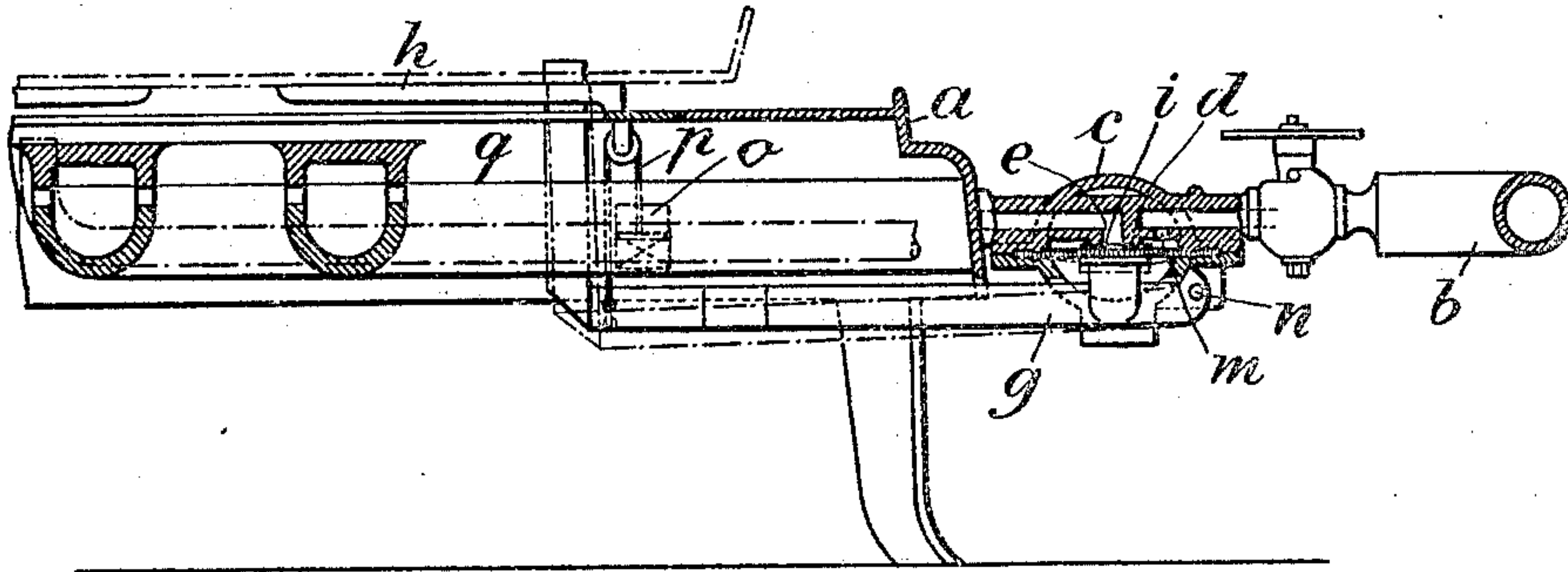
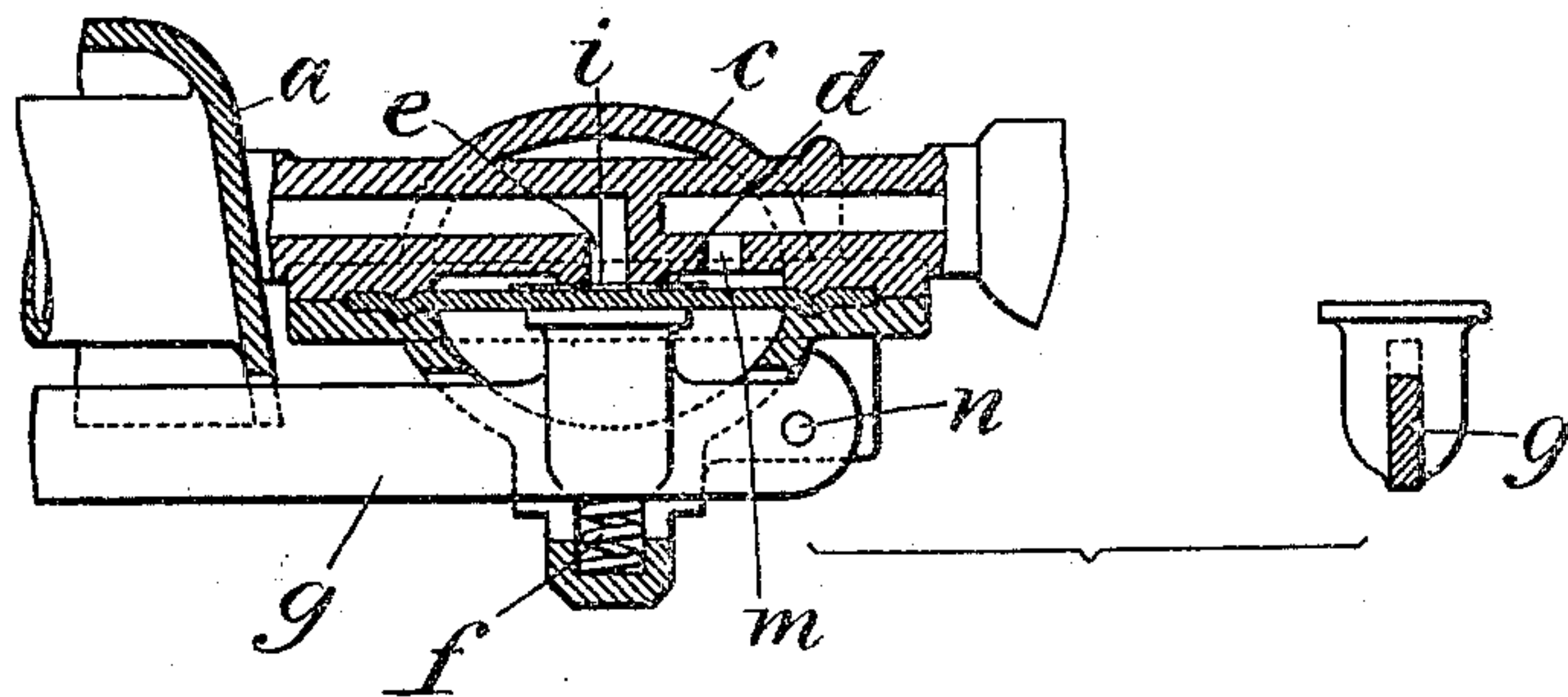


Fig. 5



WITNESSES

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# UNITED STATES PATENT OFFICE.

JAKOB FISCHER, OF ZURICH, SWITZERLAND.

## GAS APPARATUS.

958,245.

Specification of Letters Patent.

Patented May 17, 1910.

Application filed August 26, 1909. Serial No. 514,825.

*To all whom it may concern:*

Be it known that I, JAKOB FISCHER, a citizen of the Republic of Switzerland, residing at Zurich, in the Canton of Zurich, Republic of Switzerland, (whose post-office address is Zurich, Seefeldstrasse No. 114,) have invented certain new and useful Improvements in Gas Apparatus; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

Gas cooking stoves, in which the supply of gas to the burner is interrupted automatically when a cooking utensil is removed and is resumed automatically when the same is replaced, are already known. In such stoves the device for checking the flow of gas comprises either a tap or a sliding valve, both of which devices have the drawback that they soon become leaky owing to heavy wear and to the substances deposited from the gas. In the gas apparatus forming the subject of the present invention, these drawbacks are obviated by the use of a membrane or diaphragm valve for checking the flow of gas, the membrane of same being operated by a lever extending to the grating or grid in the usual way.

The accompanying drawing illustrates one embodiment of the subject of the invention, Figure 1 representing a section along the line A—A of Fig. 2, and Fig. 2 a plan. Fig. 3 is a view from below of the upper part of the casing. Fig. 4 is a sectional view of a modification, and Fig. 5 is an enlarged sectional view of the diaphragm and adjacent parts.

*a* indicates the body of the gas cooking stove and *b* the gas supply pipe. A two-part casing *c* the halves of which grip the edges of a membrane or diaphragm *d*, is positioned in the supply pipe, close to the body of the stove, this membrane covering the inlet orifice *e*, when in the position shown in Fig. 1. The gas supply pipe is in communication at *m* with the upper chamber of the casing, so that this chamber is continuously under pressure of gas, so long as the tap in the gas supply pipe is open. A lever *g*, articulated at *n* on the lower half of the casing and subjected to the pressure of a

spring *f*, presses the membrane against a seat *i* arranged on the upper half of the casing and masking the inlet orifice *e*. The lever *g* extends into the grating *h* and projects above the same when no cooking utensil is on the grating. In this position the supply of gas to the burner is cut off. When a cooking utensil is placed on the grating, the former depresses the lever *g*, thus removing the membrane from its seat and admitting gas from the pipe to the burner, the issuing gas lighting at a pilot flame. From the upper chamber of the casing, which is under pressure of gas, there branches a by-pass *r* that serves to supply a constantly-burning flame, and is adapted to be closed, partly or entirely, by a regulating screw *l*. In the drawing the burner of the by-pass is shown exposed, but it is advisable either to provide it with a shroud, or to arrange it in such a way that the mouth cannot be stopped up by food or the like accidentally escaping from the cooking utensils, and that the light is not liable to be blown out by a draft. When the cooking utensil is taken off the stove, the membrane or diaphragm valve returns to its closing position under the influence of the spring *f*, thus checking the further supply of gas to the burner and causing the heating flame to go out, so that there is no wasteful consumption of gas while the cooking utensil remains away from the stove.

It is advisable to allow the pilot flame to burn, continuously, in which event the apparatus may be used at any time without its being necessary first to turn on the gas tap. Any undesired escape of gas, *e. g.* from a leaky tap, will be consumed at once by the always burning pilot flame. Since, however, as already mentioned, it is usually unnecessary to touch the taps, the latter are therefore not exposed to wear, and consequently the risk of their becoming leaky or being improperly handled is precluded. Even should the pilot flame be extinguished by accident, the amount of gas escaping therefrom is not enough to produce the risk of an explosion. Hence the apparatus is safe in all respects.

The arrangement of the gas checking member as a membrane or diaphragm valve secures the advantage that it can be easily taken apart and cleaned; and even when residual matters are deposited in the same from the gas it still makes a tight joint. In consequence of its large internal space, the



membrane or diaphragm casing acts as a pressure regulator, by partly or wholly equalizing slight fluctuations in the supply of gas, so that both the heating and igniting flames burn uniformly; said casing also protects the membrane or diaphragm from injury and impurities. The extensions and contractions of the casing caused by the fluctuations of temperature are without influence on the sure operation and on the resistance of movement of the membrane; as the resistance is very small, the operation of the membrane is practically independent of the weight of the objects to get heated.

The lever *g* might be pressed against the seat of the membrane by a weight instead of by a spring. This arrangement is shown in Fig. 4 in which the weight *o* is connected to the lever *g* by means of the cord *p* which passes over a roller *q* situated in a bearing fixed on the underside of the body of the gas stove. The by-pass *r* could also branch off directly from the supply pipe.

The invention is applicable not only to gas cooking stoves but also to flat-iron heaters, ironing stoves, gas stoves for special purposes, or apparatus of any kind (not excluding lamps) in which gases are burned for heating purposes.

What I claim is:—

1. A gas cooking stove comprising a support for the receptacle to be heated, a gas

supply pipe, a burner to which the gas supply pipe leads, a diaphragm for closing the gas supply pipe, a lever having one end pivoted to the stove and its other end projecting up above the support for the receptacle, said lever having a portion thereof engaging with the diaphragm to close the gas supply pipe, said diaphragm opening the pipe when the lever is lowered by the receptacle being placed on the stove.

2. A gas cooking stove comprising a burner, a support located above the burner for the receptacle to be heated, a gas supply pipe leading to the burner and having a chamber forming part of said pipe, a diaphragm in said chamber adapted to close said pipe, a lever having one end pivoted to the stove and the other end projecting above the support so as to engage the bottom of the receptacle whereby the lever is lowered to permit the diaphragm to fall to open the supply pipe, and means for normally holding the lever raised and in engagement with the diaphragm to close the pipe, and a pipe for a pilot flame.

In testimony whereof, I have signed my name to this specification in the presence of two subscribing witnesses.

JAKOB FISCHER.

Witnesses:

HERMANN HUBER,  
CARL GUBLER.