

W. CHAUSSE.
VAPOR BURNER.
APPLICATION FILED OCT. 31, 1908.

933,823.

Patented Sept. 14, 1909.

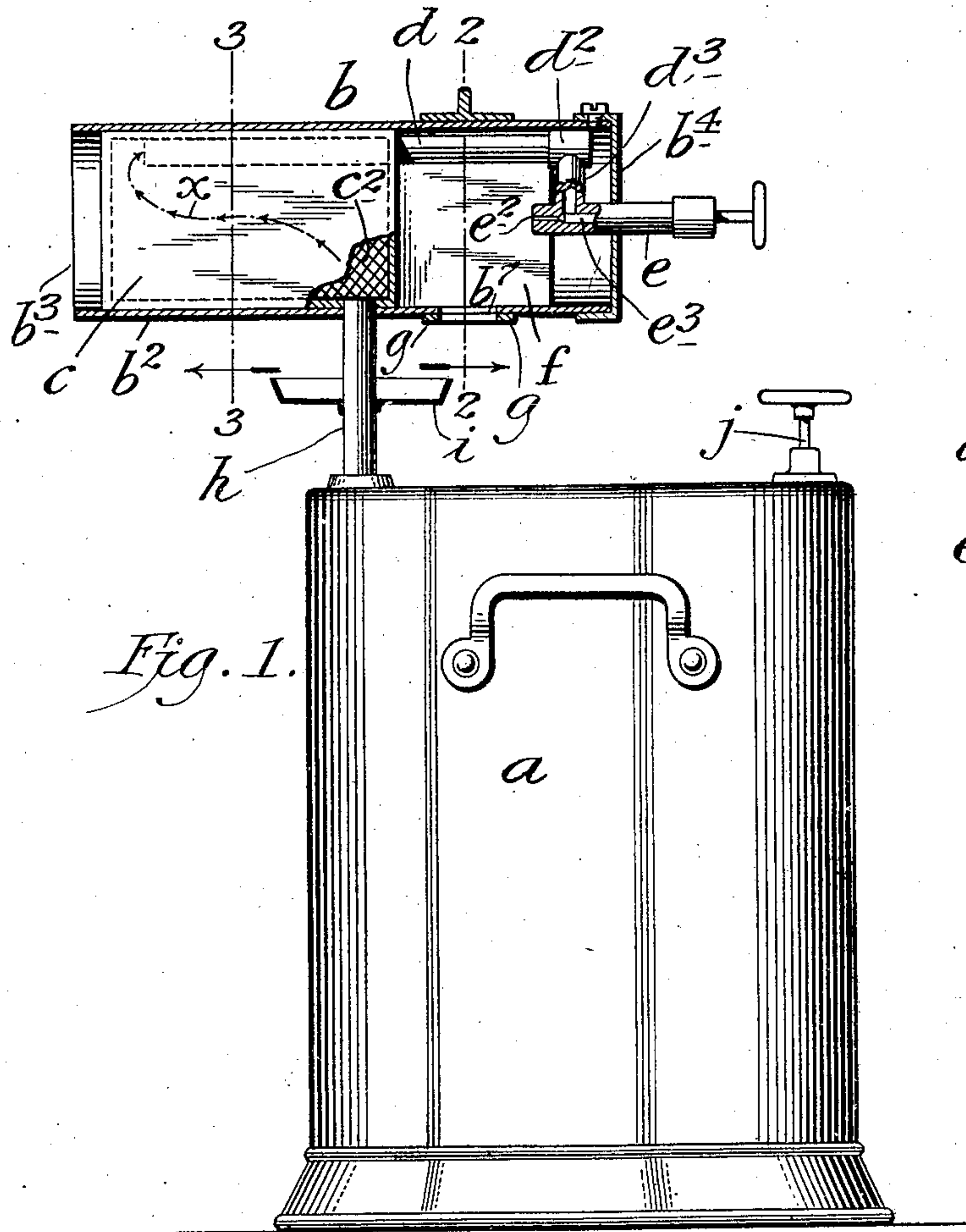


Fig. 1.

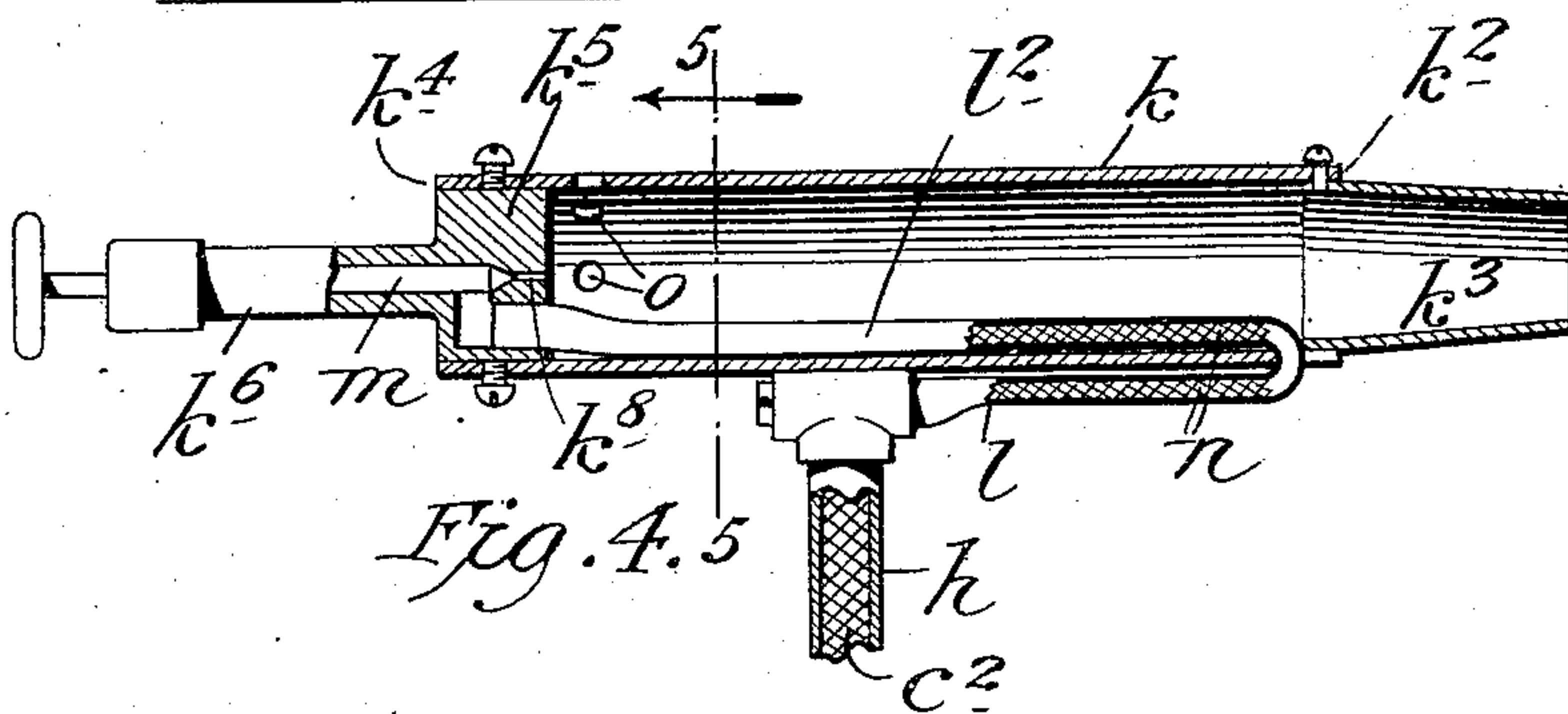
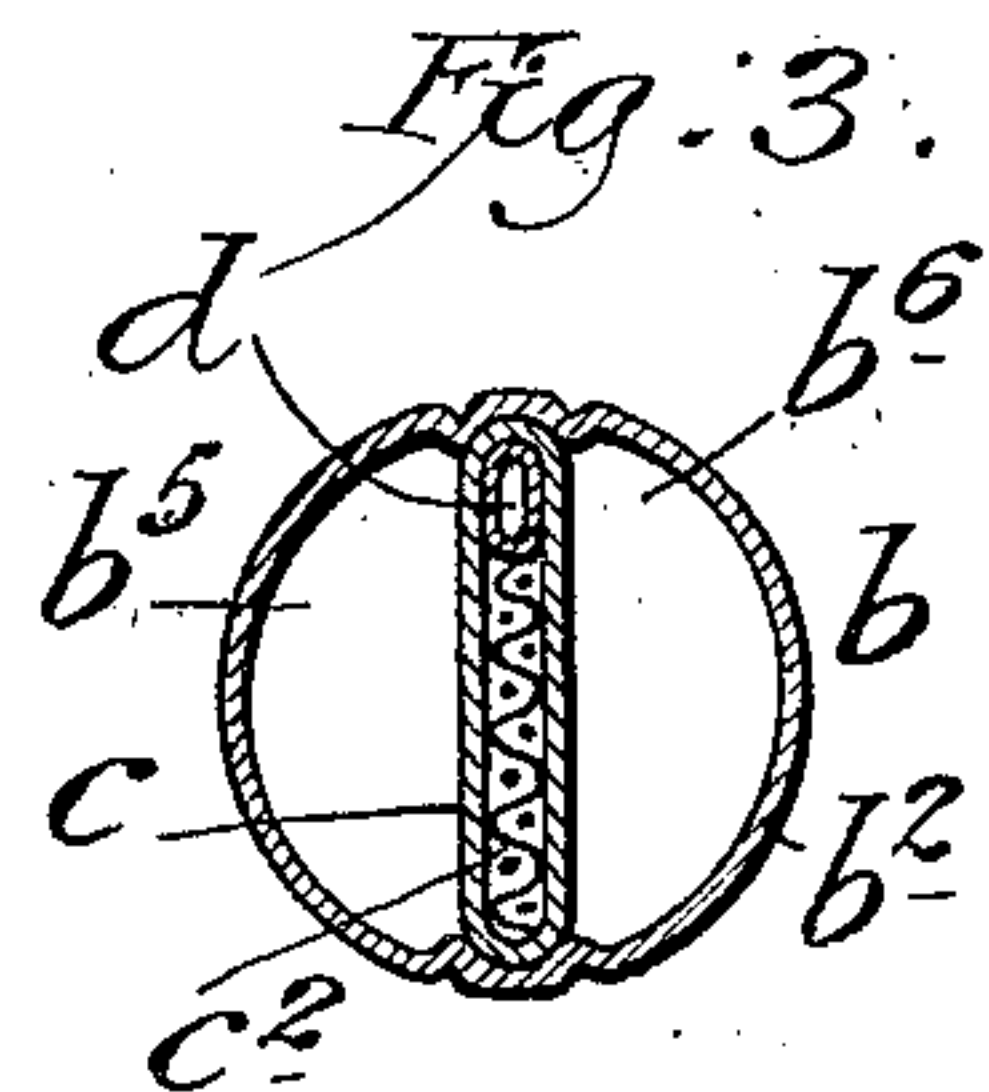
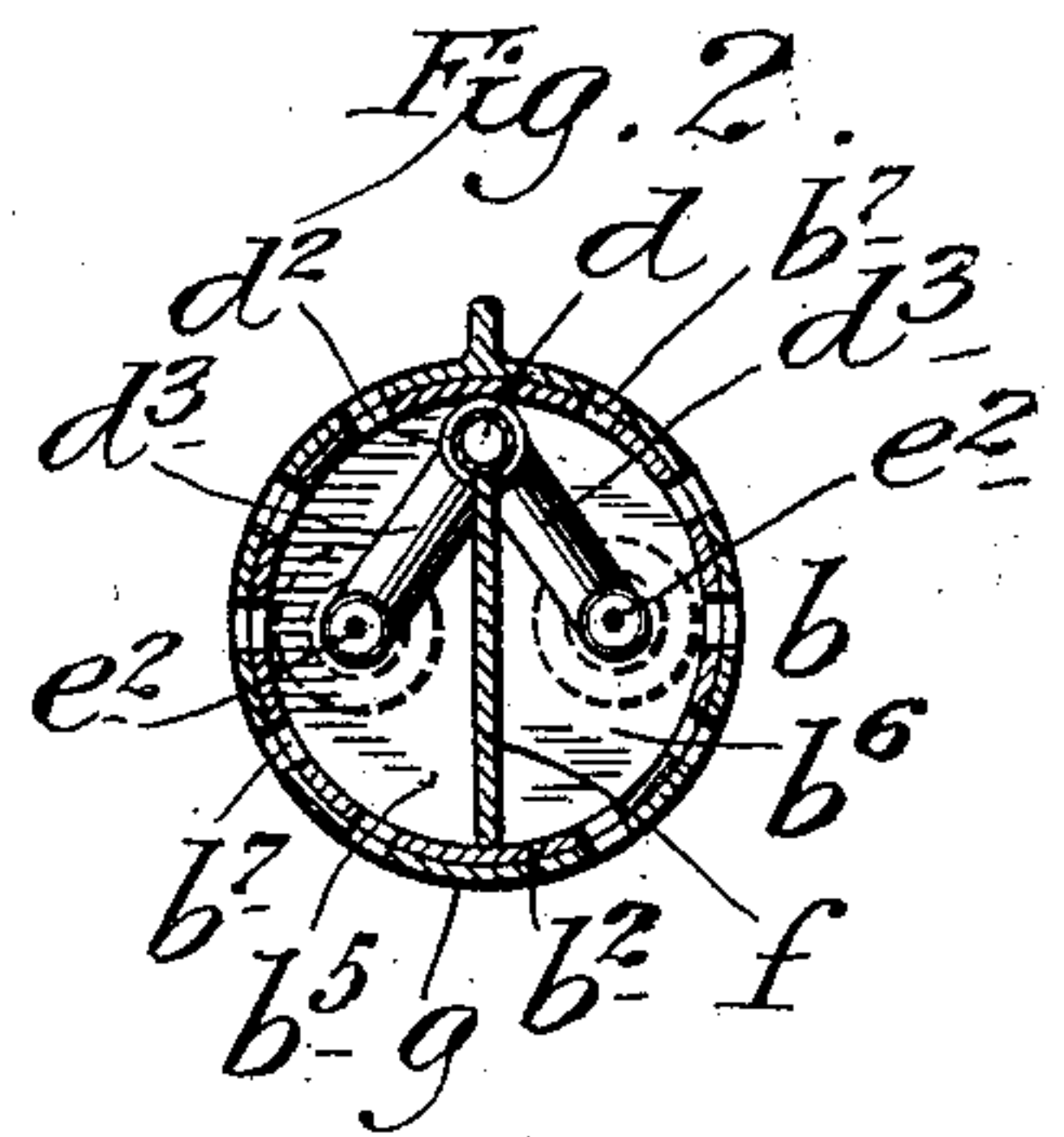


Fig. 4.

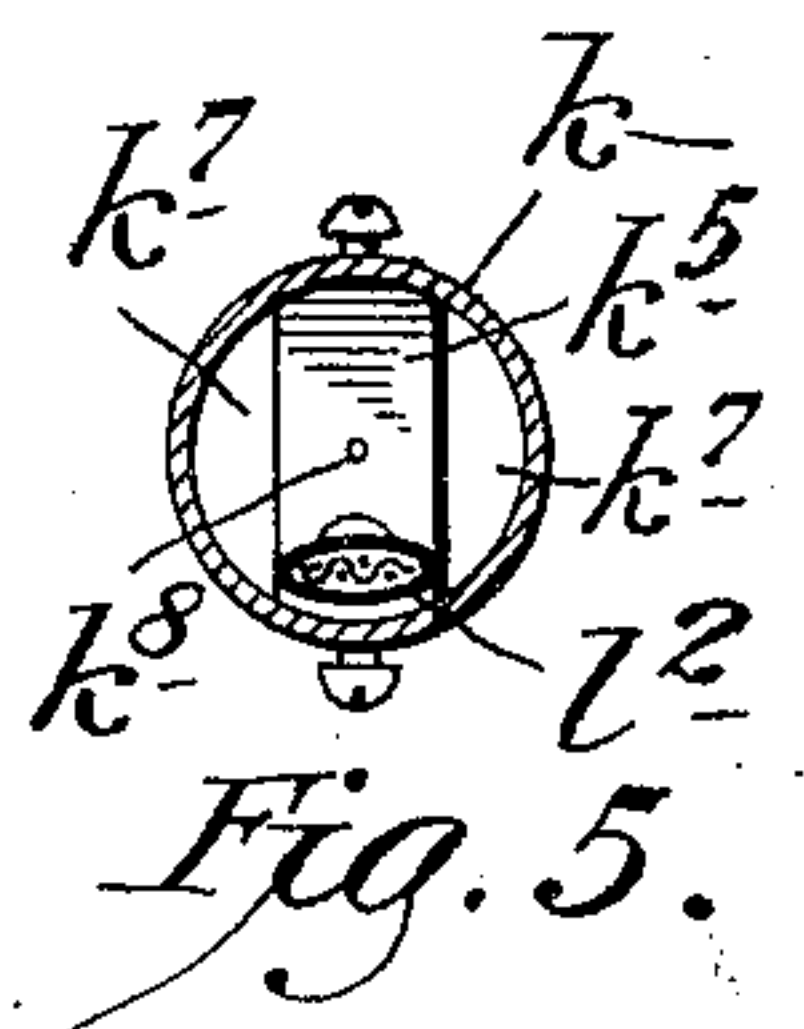


Fig. 5.

WITNESSES,

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VAPOR-BURNER.

933,823.

Specification of Letters Patent. Patented Sept. 14, 1909.

Application filed October 31, 1908. Serial No. 460,477.

To all whom it may concern:

Be it known that I, WILFRID CHAUSSE, a citizen of the United States, and residing at Long Island City, in the county of Queens and State of New York, have invented certain new and useful Improvements in Vapor-Burners, of which the following is a specification, such as will enable those skilled in the art to which it appertains to make and use the same.

This invention relates to vapor burners, torches and other devices of this class which burn hydro-carbons; and the object thereof is to provide an improved burner or torch of this class which may be used as a paint burner, as a heater for soldering irons and other articles, and for similar purposes, and which may also be used as an illuminating burner or lamp; and with this and other objects in view the invention consists in a device of the class specified constructed as hereinafter described and claimed.

The invention is fully disclosed in the following specification, of which the accompanying drawing forms a part, in which the separate parts of my improvement are designated by suitable reference characters in each of the views, and in which:—

Figure 1 is a side elevation of one form of my improved vapor burner or torch, part of the construction being in section, Fig. 2 a transverse section on the line 2—2 of Fig. 1, Fig. 3 a similar section on the line 3—3 of Fig. 1, Fig. 4 a view similar to Fig. 1, but showing a modification and only a part of the device, and;—Fig. 5 a section on the line 5—5 of Fig. 4.

In the practice of my invention, I provide a can or receptacle *a* of the usual or any preferred form and construction and designed to hold the hydro-carbons to be burned and with which the burner *b* is connected. The burner *b* as shown in Figs. 1 to 3 inclusive comprises a tube *b*² open at one end as shown at *b*³ and closed at the other as shown at *b*⁴.

Within the open end portion of the tube *b*² and extending longitudinally thereof and preferably through more than one-half thereof and forming a longitudinal partition therein is a casing *c* which is oblong in cross section as clearly shown in Fig. 3 and which divides the said part of the tube *b*² into two longitudinal flues or passages *b*⁵

and *b*⁶, and within the casing *c* is placed wire mesh or gauze *c*², and the interior of said casing *c* in which the wire mesh or gauze is placed forms a vaporizing and super-heating chamber.

Placed in the top portion of the casing *c* is a longitudinal tube *d*, the end of which adjacent to the open end *b*³ of the tube *b*² is open, and the tube *d* extends through the inner end of the casing *c* and ranges longitudinally of the top portion of the tube *b*² and adjacent to the closed end *b*⁴ of said tube *b*² the tube *d* is provided with a coupling head *d*² having two extensions *d*³ which range downwardly and outwardly and with each of which is connected a needle valve device *e*. The needle valve devices *e* pass through the closed end *b*⁴ of the tube *b*² and range longitudinally and centrally of the flues or passages *b*⁵ and *b*⁶ in the main tube *b*² of the burner, and said needle valve devices are provided at their inner ends with ports *e*² which are controlled by needle valves *e*³ in the usual manner.

In the closed end portion of the main tube *b*² of the burner, is placed a partition *f* which corresponds in position with the casing *c* and forms an extension thereof, and the partition *f* divides the closed end portion of the tube *b*² of the burner into flues or passages which form an extension of the flues or passages *b*⁵ and *b*⁶.

The closed end portion of the main tube *b*² of the burner is provided with annularly arranged ports or passages *b*⁷, and placed on said tube *b*² is a band *g* having corresponding ports or passages, and this construction forms an air register device by which air may be admitted to the flues or passages *b*⁵ and *b*⁶ in any desired quantity, and by which the said admission of air may be entirely cut off whenever desired.

The burner proper is connected with the can *a* by a tube *h* which is also filled with wire or similar material *c*² and extends through the tube *b*² of the burner and into the inner end portion of the casing *c* which forms the vaporizing and super-heating chamber, and the tube *h* is preferably provided with a small pan or receptacle *i* in which, in practice, is placed a small amount of liquid hydro-carbon which is ignited and the heat of which will generate a sufficient amount of vapor to start the burner and in

lighting the burner proper a match or other igniter is applied to the open end of the tube b^2 .

In the operation of this device the vapor passes into the inner end of the casing c which forms a generator and super-heater and through said casing as indicated by the arrows x and longitudinally of said casing and into the open end of the tube d through which it passes to the needle valve devices e by which it is discharged into the flues or passages b^5 and b^6 , from which it is discharged at the open end of the tube b^2 . It will be understood that in this operation the casing c and the wire mesh or gauze therein are highly heated, and this heats the vapor to the requisite degree and the wire mesh or gauze in the casing c also serves as a strainer and prevents any foreign substances in the hydro-carbon from passing into the tube d .

When it is desired to use the device as a paint burner or breamer and for any purpose in which a high degree of heat without illumination is desired the band g is turned so as to admit the requisite amount of air to the flues or passages b^5 and b^6 , but when it is desired to use the device as an illuminator, said band is turned so as to cut off the flow of air into said flues or passages.

In practice, the can a may be provided especially when a large device of this class is required with an air pump j , but said pump forms no part of this invention.

In the construction shown in Figs. 4 and 5 I employ a burner which comprises a tube k , the end k^2 of which is open and preferably provided with a discharge nozzle k^3 , and connected with the tube k is a tube l which ranges longitudinally of the bottom of the tube k and in the direction of the end k^2 thereof and passes upwardly through the bottom of the tube k into the interior thereof, and then extends longitudinally of the bottom of said tube k and within said tube to the end k^4 thereof where it connects with the head k^5 of a needle valve device k^6 . The head k^5 of the needle valve device k^6 ranges diametrically of the end k^4 of the tube k , and the end k^4 of the tube k is open at each side thereof as shown at k^7 in Fig. 5, and the part l^2 of the tube l communicates with the interior of the head k^5 of the needle valve device k^6 , and said head is provided with a port or passage k^8 through which, in the operation of the burner, vapor is discharged into the tube k and said needle valve device k^6 is controlled by a needle valve m in the usual manner. The tube k and the tube l and that part thereof within the tube k of the burner are filled with wire gauze or similar material as shown at c^2 , and that part of the tube k adjacent to the head k^5 of the needle valve device is provided with annularly arranged ports or passages o designed to admit air to said tube. This form

of construction is intended for use only as a torch, or as a paint breamer or burner or for other purposes where a high degree of heat is desired. The tube k may also be provided with a pan i as shown in Fig. 1 if desired, and in the operation of this form of construction the vapor passes through the tube h into the tube l and through the part l^2 of the tube l within the tube k and longitudinally of said tube k into the head k^5 of the needle valve device k^6 , from which it is discharged into the tube k , from which it flows through the nozzle k^3 or through the open end k^2 of the tube k where it is ignited in the usual manner. In this operation the vapor is highly heated in the tube l^2 which forms a generator or super-heater, and the requisite amount of vapor is continually discharged into the tube k as long as the device is in use.

The construction shown in Figs. 4 and 5 of the accompanying drawing is not claimed in this case but together with other features of construction is made the subject of another application filed by me on the 3rd day of August, 1909, Serial No. 511,013.

Having fully described my invention, what I claim as new and desire to secure by Letters Patent, is;—

1. A vapor burner comprising a tube having a discharge at one end and a needle valve device at the opposite end, a vapor generator and super-heater placed in and ranging longitudinally of the discharge end portion of said tube and dividing the same into separate flues or passages, means for supplying hydro-carbon to the inner end portion of the vapor generator and super-heater, a tube extending longitudinally through said vapor generator and super-heater and connected with the needle valve device, said needle valve device being provided with two needle valve members adapted to discharge vapor into both of said flues or passages.

2. A vapor burner comprising a tube having a discharge at one end and a needle valve device at the opposite end, a vapor generator and super-heater placed in and ranging longitudinally of the discharge end portion of said tube and dividing the same into separate flues or passages, means for supplying hydro-carbon to the inner end portion of the vapor generator and super-heater, a tube extending longitudinally through said vapor generator and super-heater and connected with the needle valve device, said needle valve device being provided with two needle valve members each adapted to discharge vapor into one of said flues or passages, the end portion of said tube in which the needle valve device is placed being also provided with a partition forming a continuation of the vapor generator and super-heater.

3. A vapor burner comprising a tube hav-

ing a discharge at one end and a needle valve device at the opposite end, a vapor generator and super-heater placed in and ranging longitudinally of the discharge end portion
5 of said tube and dividing the same into separate flues or passages, means for supplying hydro-carbon to the inner end portion of the vapor generator and super-heater, a tube extending longitudinally through said vapor
10 generator and super-heater and connected with the needle valve device, said needle valve device being provided with two needle valve members each adapted to discharge vapor into one of said flues or passages, the

end portion of said tube in which the needle valve device is placed being also provided with a partition forming a continuation of the vapor generator and super-heater, and said end portion of said tube being also provided with an air register. 15 20

In testimony that I claim the foregoing as my invention I have signed my name in presence of the subscribing witnesses this 29th day of October, 1908.

WILFRID CHAUSSÉ.

Witnesses:

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