

No. 691,832.

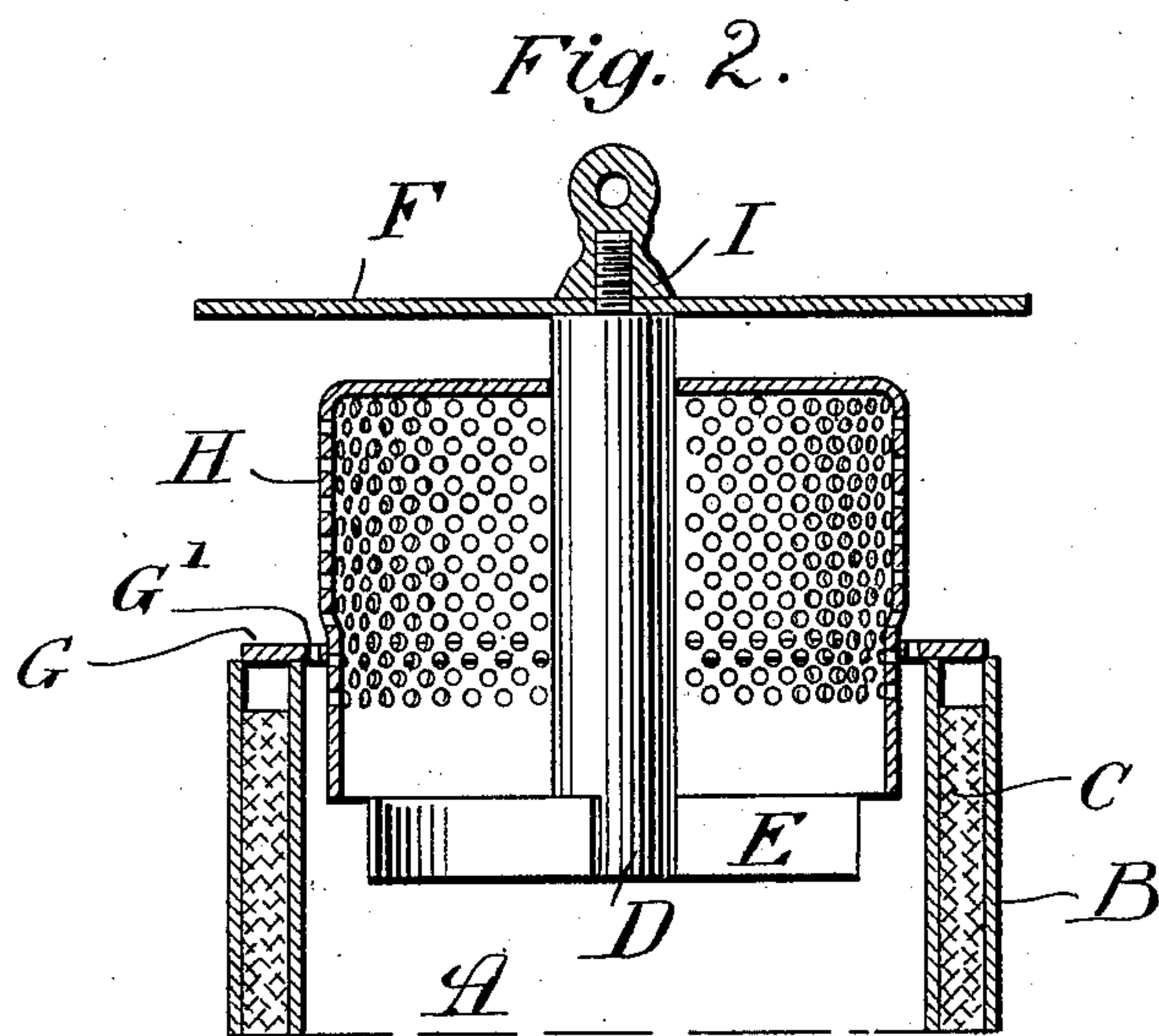
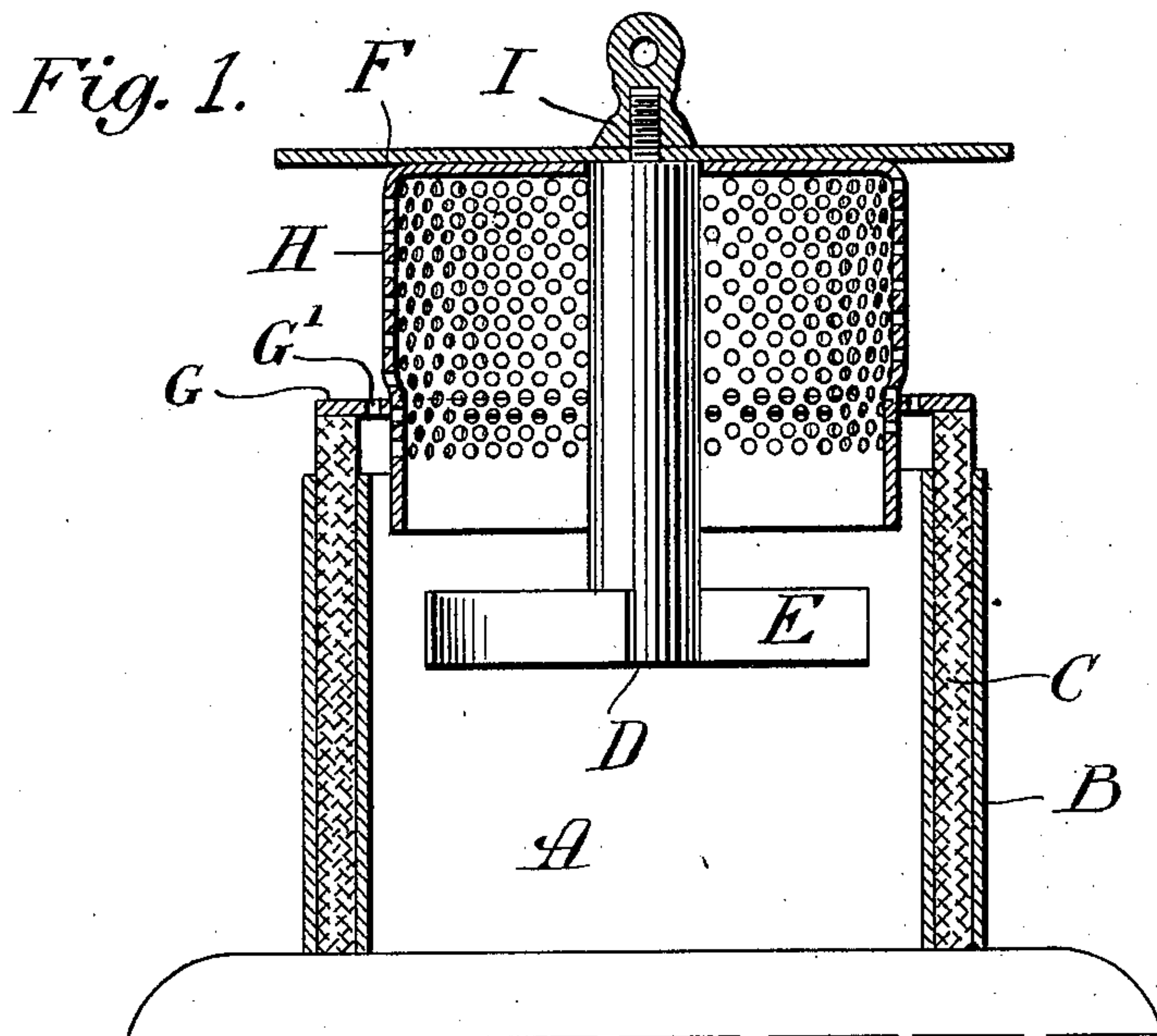
Patented Jan. 28, 1902.

F. T. WILLIAMS.  
OIL LAMP BURNER.

(Application filed Feb. 14, 1901.)

(No Model.)

2 Sheets—Sheet I.



WITNESSES:

*George P. Hackley*  
*Robt. S. Allen*

INVENTOR

*Frank T. Williams.*

BY

*Reinichee*  
ATTORNEY

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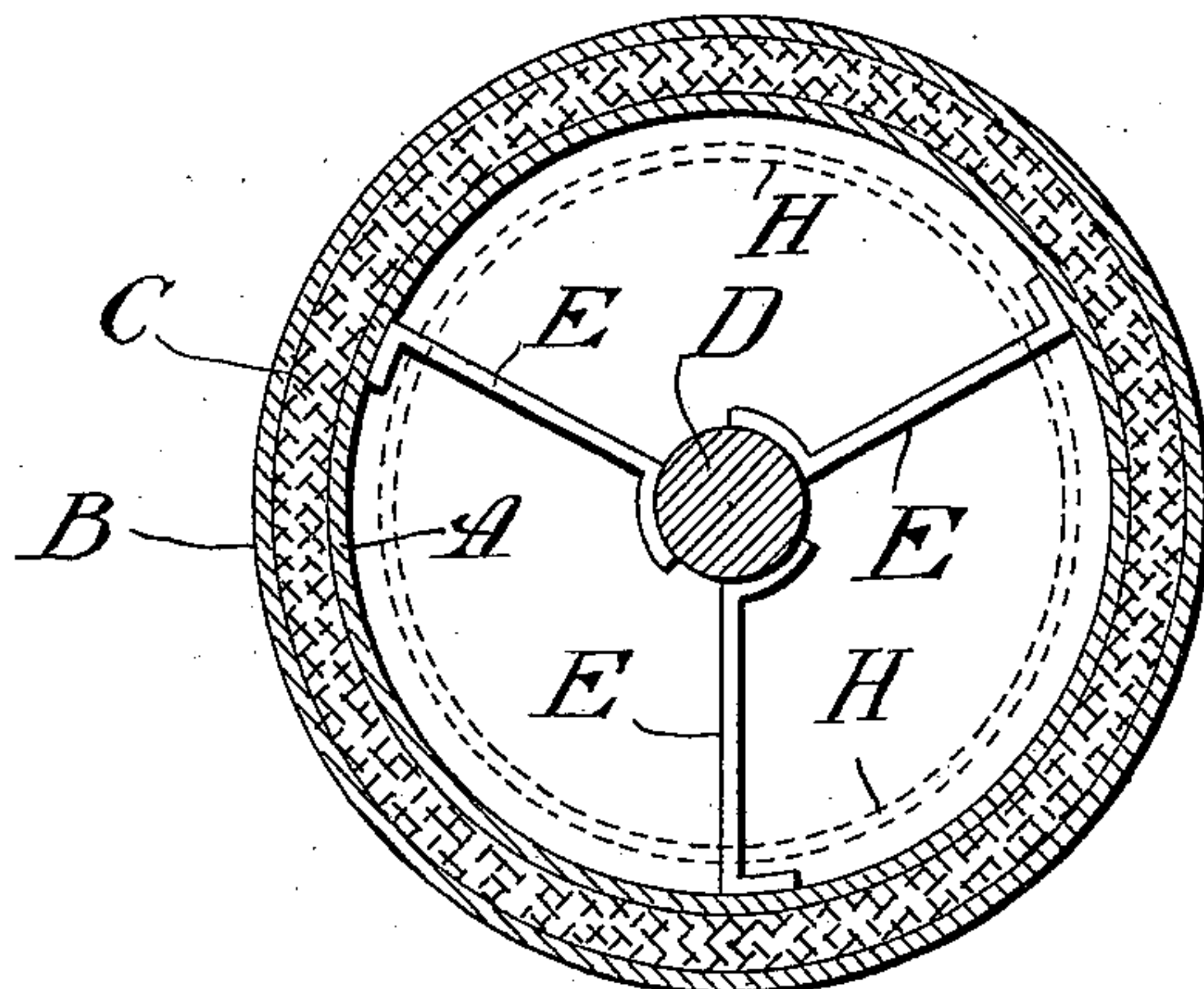
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*Fig. 3.*



WITNESSES:

*W. I. Hackley*  
*R. S. Allen*

INVENTOR

*Frank T. Williams.*

BY

*R. M. Mitchell*  
ATTORNEY



# UNITED STATES PATENT OFFICE.

FRANK THEODORE WILLIAMS, OF MERIDEN, CONNECTICUT, ASSIGNOR TO  
EDWARD MILLER & COMPANY, OF MERIDEN, CONNECTICUT, A CORPO-  
RATION OF CONNECTICUT.

## OIL-LAMP BURNER.

SPECIFICATION forming part of Letters Patent No. 691,832, dated January 28, 1902.

Application filed February 14, 1901. Serial No. 47,291. (No model.)

*To all whom it may concern:*

Be it known that I, FRANK THEODORE WILLIAMS, a citizen of the United States, residing at Meriden, county of New Haven, State of Connecticut, have invented certain new and useful Improvements in Oil-Lamp Burners, of which the following is a full, clear, and exact description.

My invention relates to burners for oil-lamps, particularly of the central-draft type.

The chief object of my invention is to provide a burner construction wherein the gas and air are mixed uniformly and in the most effective proportions, so that when the lamp is lighted the flame will be steady and of practically uniform height entirely around the burner. Incidentally the construction also is such that the wick cannot be raised to an unnecessary or dangerous height. In addition to the foregoing features the construction is such that the user can quickly extinguish the flame. All of these objects I attain by the use of a device which, as will be hereinafter seen, is of a simple, effective, and durable construction and which may be readily taken apart to clean.

In the drawings, Figure 1 is a vertical section of my improved burner, showing the parts in one position. Fig. 2 is a similar view showing the parts in another position. Fig. 3 is a cross-section of the burner when the parts are in the position indicated in Fig. 1, the said section being taken upon a plane just below the lower end of the cone hereinafter referred to.

A is an inner wick-tube. B is an outer wick-tube. C is a wick located in the passage between said tubes A and B and capable of being raised or lowered by means of the ordinary well-known wick-lift device. (Not shown.)

D is a rod or spreader support located, preferably, in the center of the inner wick-tube A and mounted in any well-known manner—for example, by means of the bridge or frame E, which may span the inner tube A. In the drawings, particularly as shown in Fig. 3, the bridge or frame E is shown in place and may be held by any suitable means—for ex-

ample, solder, rivets, or the like. Manifestly the method of attaching the particular formation of the bridge or frame E is entirely immaterial.

F is a spreader in the form of a plate mounted upon the upper end of the center rod D and preferably overstanding the wick-tubes A and B, although considerably above the same.

G is a ring resting upon the upper end of the wick when the end of said wick is raised out of the tubes A and B. G' represents perforations formed in said ring G adjacent the inner side of the wick, that portion of the ring which rests against the top of the wick being preferably imperforate.

H is a perforated member which will be referred to as a "cone," one of the functions of which is that of a strainer to permit air to be supplied uniformly to the inside of the flame.

The rod D passes through the top of said cone, which is preferably free to move up and down upon said rod D, but independently thereof. The diameter of the cone at its lower end is preferably contracted to a considerably less diameter than the diameter of the inner wick-tube A, so that when in the position shown in Fig. 1, an air-passage is formed between said cone H and the wick-tube A, through which passage a supply of air is conducted to the root of the flame at the inner side of the wick. The perforations in the side of the cone H may extend down to a point below the plane of the ring G. Consequently the air-supply to the root of the flame at the inner side of the wick may be supplemented. The function of the perforations G' in said ring is to form a passage for the products of combustion which rise from the inner side of the wick. The outer side of the wick (when the parts are in the position indicated in Fig. 1) being exposed, permits the generation of a gas, which when it rises mingles with the gas arising from the inner side of the wick, so that a large and steady flame will be produced. The ring G serves to protect the upper end of the wick C, so that the inner and the outer sides only of said wick are charred by the action of the



flame. As a consequence of lowering the wick into the tubes A and B the charred portions are rubbed off, and so to a very large degree the wick is self-trimmed.

5 In operation the wick is raised to the position shown in Fig. 1. The lifting of the wick raises the ring G. The cone H acts as a spacer between the spreader F and the ring G, so that the elevating of the ring (and consequently the wick) is checked at a desirable limiting-point. In practice a means may be provided that may be so adjusted as to height that the movable part or parts may be checked at a point where the wick will be exposed sufficient only to produce a flame of the desired size. By having the top of the cone H substantially flat the upper end of the wick is checked at a height which is substantially uniform all around the burner. Consequently the flame will be of substantially the same size entirely around. By properly fitting the parts the rod D acts as a centering-rod for the cone H, so that when the lamp is lighted the air-space between the inner wick-tube and the lower end of said cone H will be of substantially uniform size, a feature of advantage in that it permits a uniform supply of air to be fed to the root of the flame. When it is desired to extinguish the lamp, the wick is lowered, whereupon the ring G falls by gravity until it substantially closes the space between the wick-tubes A and B. The wick C being independent of the ring may be lowered to such an extent that its upper end is well below the upper end of the wick-tubes, so that any remnant of the flame or fire is quickly smothered or extinguished.

The spreader F may be held on the rod D in any suitable manner—for example, by a fastener I, which latter may be the stop device to check the upward movement of the movable parts. The spreader is preferably stationary.

What I claim is—

45 1. In a central-draft burner in combination, means forming a wick-passage, a vertically-movable ring located over said wick-passage, a perforated cone projecting above said ring, and an independent spreader-plate located above said cone.

2. In a central-draft burner, the combination of an inner and an outer wick-tube, a spreader-plate stationary with relation thereto, a perforated cone movable with relation to said spreader-plate and said tube, a vertically-movable ring located over said wick-tubes, said ring carrying said cone, and a space left between said cone and the inner wick-tube forming an air-passage to the inner side of said wick.

3. In a lamp, the combination, wick-tubes, a vertically-movable wick-protecting ring, a spreader occupying a fixed relation to said wick-tubes and located above the wick-protecting ring, a perforated cone intermediate

of said spreader and said ring and arranged to check the upward movement of said ring.

4. The combination, wick-tubes, a stationary spreader, a vertically-movable wick-protecting ring and a perforated cone movable with said ring and intermediate of said ring and spreader, and passages for permitting the escape of gas generated at the inner side of said wick.

5. In a central-draft burner, the combination, wick-tubes, a vertically-movable wick-protecting ring supporting a perforated cone, the perforations in said cone extending below the plane of said ring, and a flame-spreader independent of said ring and cone and located above the same.

6. In a burner the combination, of an inner and an outer wick-tube forming a wick-space between them, of a perforated cone movable vertically and having an air-passage formed between it and said inner wick-tube, a wick-protecting ring movable by said wick, said ring supporting said perforated cone, with a plate forming a spreader and a stop for said cone and ring to limit the upward excursion of said parts.

7. The combination, wick-tubes, a stationary spreader, a vertically-movable wick-protecting ring adapted to rest upon the upper end of a wick and a perforated cone intermediate of said ring and spreader, and passages for permitting the escape of gas generated at the inner side of said wick, and an air-passage leading from the space within the central tube to the inner side of the wick and below said ring.

8. The combination, wick-tubes, a stationary spreader, a vertically-movable wick-protecting ring and a perforated cone movable with said ring and intermediate of said ring and spreader, and passages for permitting the escape of gas generated at the inner side of said wick, and an annular air-passage between said lower end of said cone and the inner side of the inner wick-tube leading to the inner side of the wick below said ring.

9. In a burner in combination, an inner and an outer wick-tube forming a wick-space between them, a vertically-movable wick-protecting ring located above said wick-tubes and over the wick-space, a perforated cone carried by said wick-protecting ring and movable therewith, a gas-passage between that portion of the ring which is adapted to rest upon the wick and the said cone, and a stationary spreader-plate fixed in the path of movement of said cone to act as a stop therefor.

Signed at Meriden, Connecticut, this 4th day of February, 1901.

FRANK THEODORE WILLIAMS.

Witnesses:

CLAUDE V. SUTLIFFE,  
C. B. MILLER.