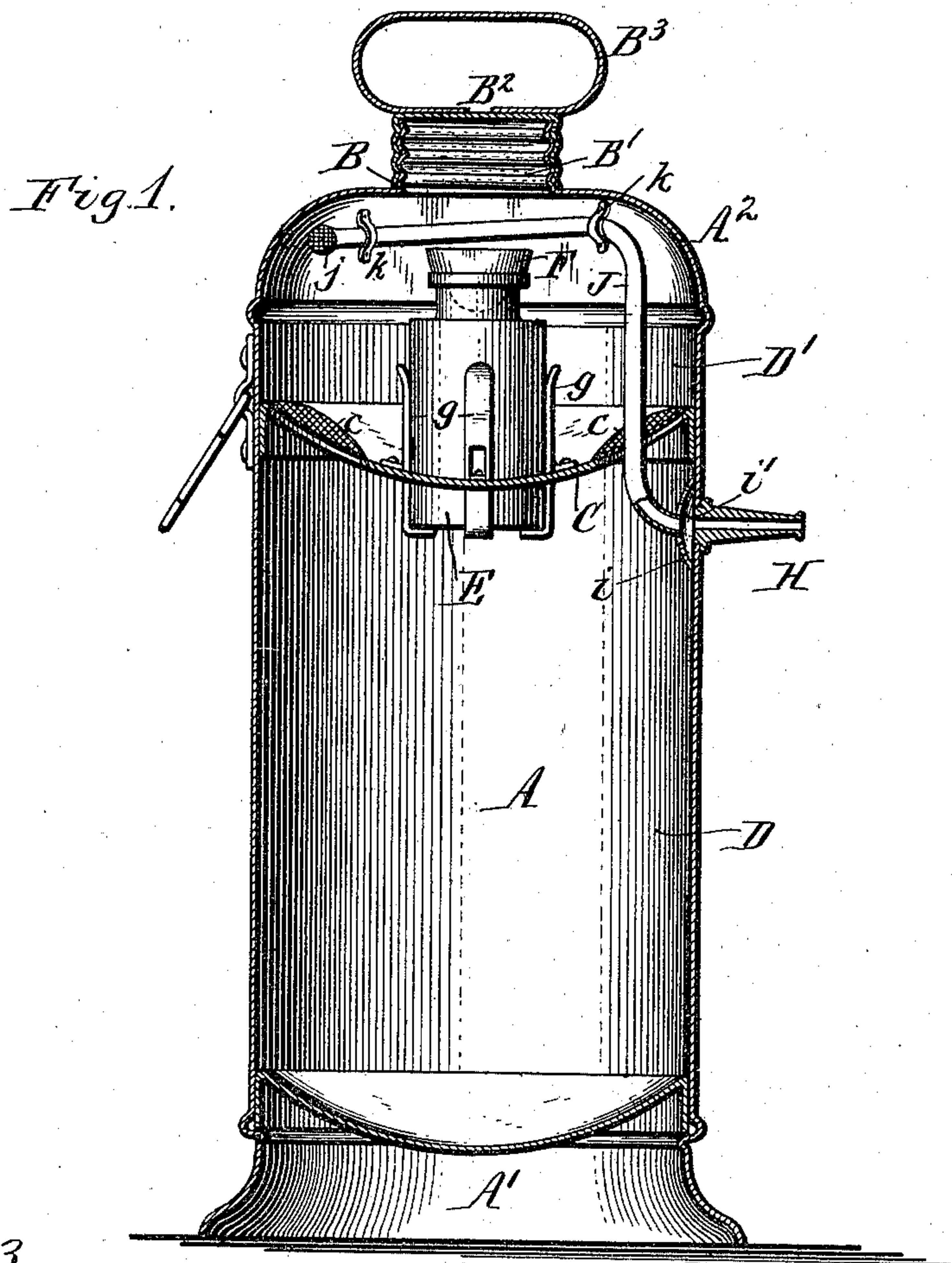


(No Model.)

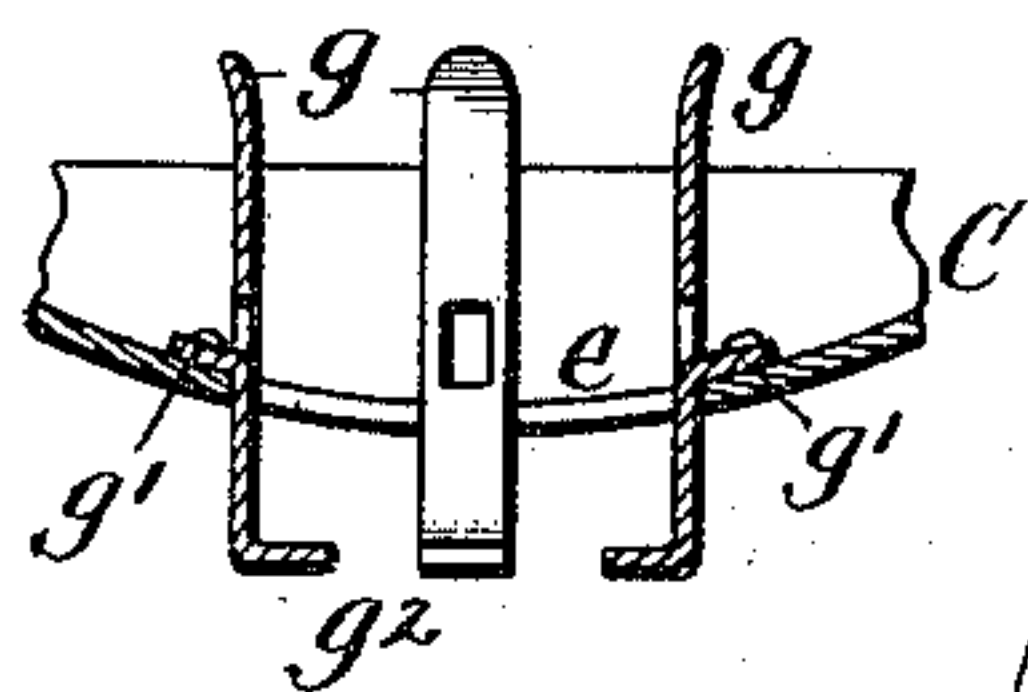
G. P. LYND, Jr.  
FIRE EXTINGUISHER.

No. 566,461.

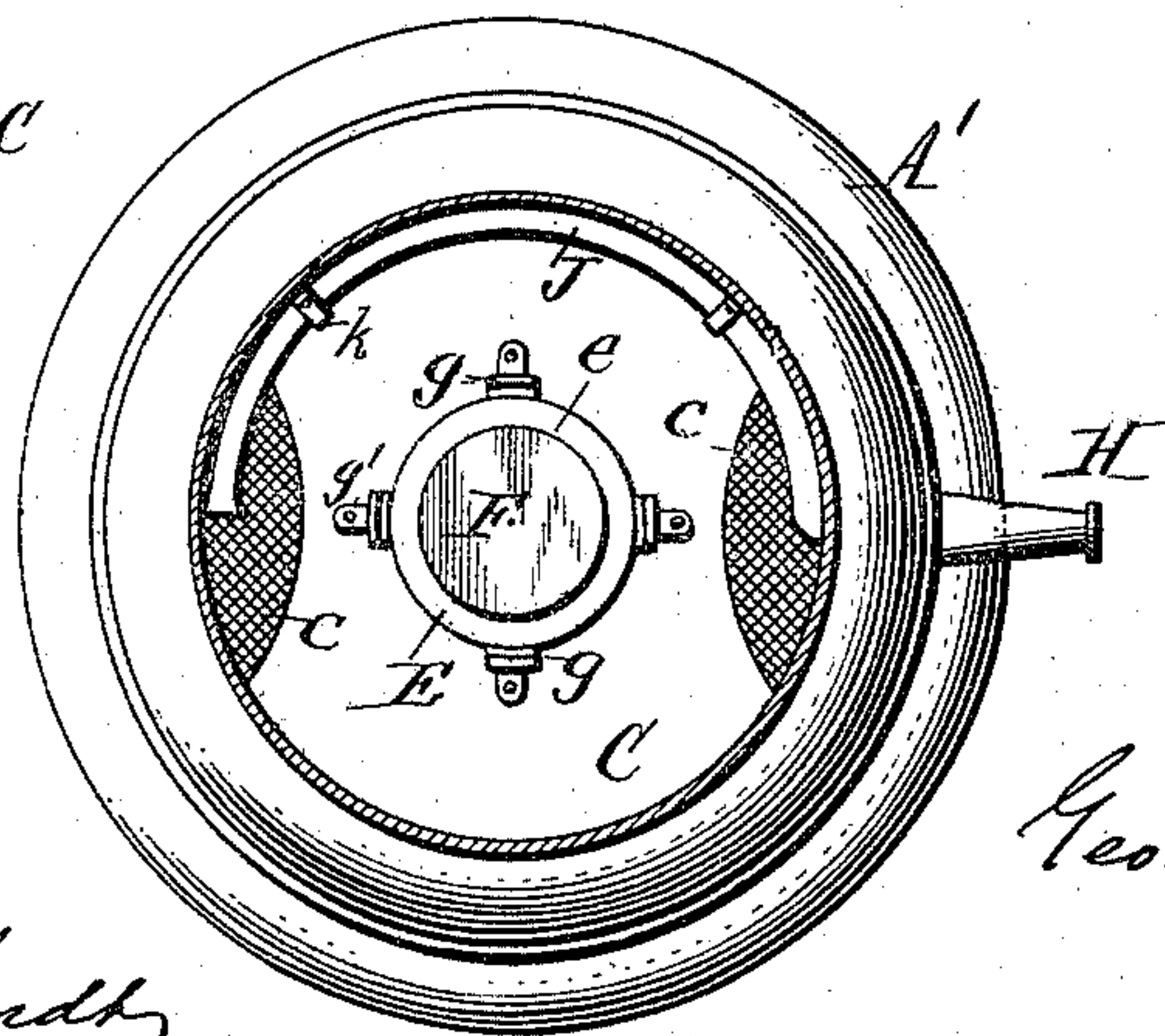
Patented Aug. 25, 1896.



*Fig. 3.*



*Fig. 2.*



WITNESSES:

Chas. F. Burkhardt  
Henry L. Deck.

Geo. P. Lyndol Jr.  
INVENTOR.

By Wilhelm Horned.

ATTORNEYS.



# UNITED STATES PATENT OFFICE.

GEORGE P. LYND, JR., OF BUFFALO, NEW YORK, ASSIGNOR TO THE BUFFALO CHEMICAL FIRE EXTINGUISHER COMPANY, OF SAME PLACE.

## FIRE-EXTINGUISHER.

SPECIFICATION forming part of Letters Patent No. 566,461, dated August 25, 1896.

Application filed November 11, 1895. Serial No. 568,543. (No model.)

*To all whom it may concern:*

Be it known that I, GEORGE P. LYND, Jr., a citizen of the United States, residing at Buffalo, in the county of Erie and State of New York, have invented a new and useful Improvement in Fire-Extinguishers, of which the following is a specification.

This invention relates to portable or hand fire-extinguishers, and more especially to extinguishers which are provided with a chamber adapted to contain a dry chemical, and in which the acid bottle or vessel is provided with a loose stopper which drops from the mouth of the bottle upon inverting the extinguisher, allowing the acid to escape and mingle with the liquid contents of the extinguisher.

One of the objects of my invention is to so construct the extinguisher as to avoid the immediate expulsion of the dry chemical with the liquid upon inverting the extinguisher.

The invention has the further objects to reliably retain the acid-bottle in its seat, while at the same time permitting its ready removal for refilling it, and to provide simple means for insuring the discharge of practically the entire liquid contents of the extinguisher.

In the accompanying drawings, Figure 1 is a sectional elevation of my improved fire-extinguisher. Fig. 2 is a horizontal section thereof in line 2 2, Fig. 1. Fig. 3 is a fragmentary central section of the diaphragm and the clasps of the acid-bottle with the latter omitted.

Like letters of reference refer to like parts in the several figures.

A is the body of the extinguisher, which is preferably cylindrical and provided with a suitable base A' and a dome-shaped top A<sup>2</sup>. The latter is provided with a central filling-opening B, surrounded by a projecting screw collar or neck B', to which is applied a screw-threaded cap B<sup>2</sup>. To this cap is secured a suitable handle B<sup>3</sup>.

C is a diaphragm arranged in the upper portion of the body or receptacle A and dividing the same into a lower liquid-chamber D, adapted to contain salt brine or any other suitable fire-extinguishing liquid, and an upper chamber D', adapted to contain a quan-

tity of dry chemical, such as bicarbonate of soda. This diaphragm is provided with perforated or reticulated portions c, preferably of wire-gauze, whereby the two chambers are placed in communication with each other.

E is the acid bottle or vessel, which is arranged in a central opening e, formed in the diaphragm and which is provided with a loose stopper F, constructed of lead or other heavy material, so as to readily drop from the mouth of the bottle upon inverting the extinguisher. The acid-bottle is removably held in place in the diaphragm by upright elastic arms or clasps g, arranged equidistant in the opening of the diaphragm and secured at the edge of said opening by lips or ears g', arranged on the outer sides of the arms and soldered or riveted to the diaphragm. These arms may, however, be secured to the diaphragm by other suitable means. The arms or clasps preferably extend above and below the diaphragm and are provided at their lower ends with inwardly-extending lips g<sup>2</sup>, upon which the acid-bottle rests. The portions of the elastic arms above the diaphragm yieldingly grasp the acid-bottle and hold the same sufficiently tight to prevent its slipping out of its socket and following the loose stopper when inverting the extinguisher, while at the same time permitting the removal of the bottle by a slight effort when it is desired to refill the same. The upper ends of the clasps are bent outward, as shown, to facilitate the insertion of the acid-bottle in the socket formed by the clasps.

H is the discharge spout or nozzle of the extinguisher, which is connected with the lower or liquid chamber D thereof. The inner end of this nozzle is covered by a concave strainer or perforated plate i, which forms a discharge-chamber i' on the inner side of the chamber D, the expelled liquid passing from the main chamber D into the discharge-chamber i' through the perforations of the plate i and from the discharge-chamber through the nozzle H.

J is a discharge-pipe extending from the extreme top of the upper chamber D' of the extinguisher to the discharge-chamber i, whereby practically all of the liquid is expelled from the extinguisher upon inverting



it. The inlet end of this discharge-pipe is preferably located on the side of the extinguisher opposite the discharge-nozzle H, and is covered by a strainer *j* for preventing the  
 5 expulsion of the chemical salt with the liquid. The pipe J extends through the diaphragm C, and is secured to the inner wall of the extinguisher by straps *k* or other suitable fastenings.

10 In using the extinguisher the same is inverted in the usual manner, which causes the stopper of the acid-bottle to fall from the mouth thereof, thus allowing the acid to escape from the bottle and commingle with the  
 15 liquid entering the dry chemical chamber D' through the perforations of the diaphragm C, thereby generating the gas which expels the liquid contents of the extinguisher through the discharge-nozzle H. The greater portion  
 20 of the liquid is discharged directly through the perforations of the strainer-plate *i*. In the absence of the discharge-pipe J the liquid contents would be expelled only to about the level of the discharge-nozzle. By providing  
 25 this pipe the liquid below the nozzle is discharged as well, thus practically expelling the entire contents of the extinguisher and obtaining the full benefit of its capacity.

The dry chemical in the upper chamber D' causes a prompt generation of the expansive  
 30 gas upon inverting the extinguisher and renders the same instantaneous in its action, while providing at all times a supply of active and reliable material ready to be acted on by  
 35 the acid.

By arranging the discharge-nozzle below the diaphragm C of the extinguisher the expulsion of the dry chemical with the liquid is effectually prevented, and by providing an  
 40 outlet *i'* for the liquid separate from the auxiliary discharge provided by the pipe J the entire contents are rapidly expelled without restraint.

I claim as my invention—

1. In a fire-extinguisher, the combination 45 with a receptacle adapted to contain a suitable extinguishing liquid and having a discharge-nozzle, of a perforated diaphragm arranged in the upper portion of said receptacle and provided with an opening, upright arms 50 or clasps secured in said opening and provided at their lower ends with inwardly-turned lips, and an acid-bottle seated upon said lips and yieldingly held in place by said arms or clasps, substantially as set forth. 55

2. In a fire-extinguisher, the combination with a receptacle having a perforated diaphragm whereby it is divided into upper and lower chambers, of an acid vessel arranged in the upper chamber of the receptacle, a 60 discharge-nozzle connected with the lower chamber thereof, and a discharge-pipe connected with said nozzle and having its inlet arranged in the top of the upper chamber, substantially as set forth. 65

3. In a fire-extinguisher, the combination with a receptacle having a perforated diaphragm whereby it is divided into upper and lower chambers, of an acid vessel arranged in the upper chamber of the receptacle, a dis- 70 charge-nozzle connected with the lower chamber thereof, a concave perforated plate covering the inner end of said nozzle and forming a discharge-chamber, and a discharge-pipe leading from the top of said upper cham- 75 ber to said discharge-chamber, whereby the greater portion of the liquid contents of the extinguisher is expelled directly through said discharge-chamber and the remainder through said discharge-pipe, substantially as 80 set forth.

Witness my hand this 1st day of November, 1895.

GEORGE P. LYND, JR.

Witnesses:

J. B. PENBORTHY,  
 CARL F. GEYER.