

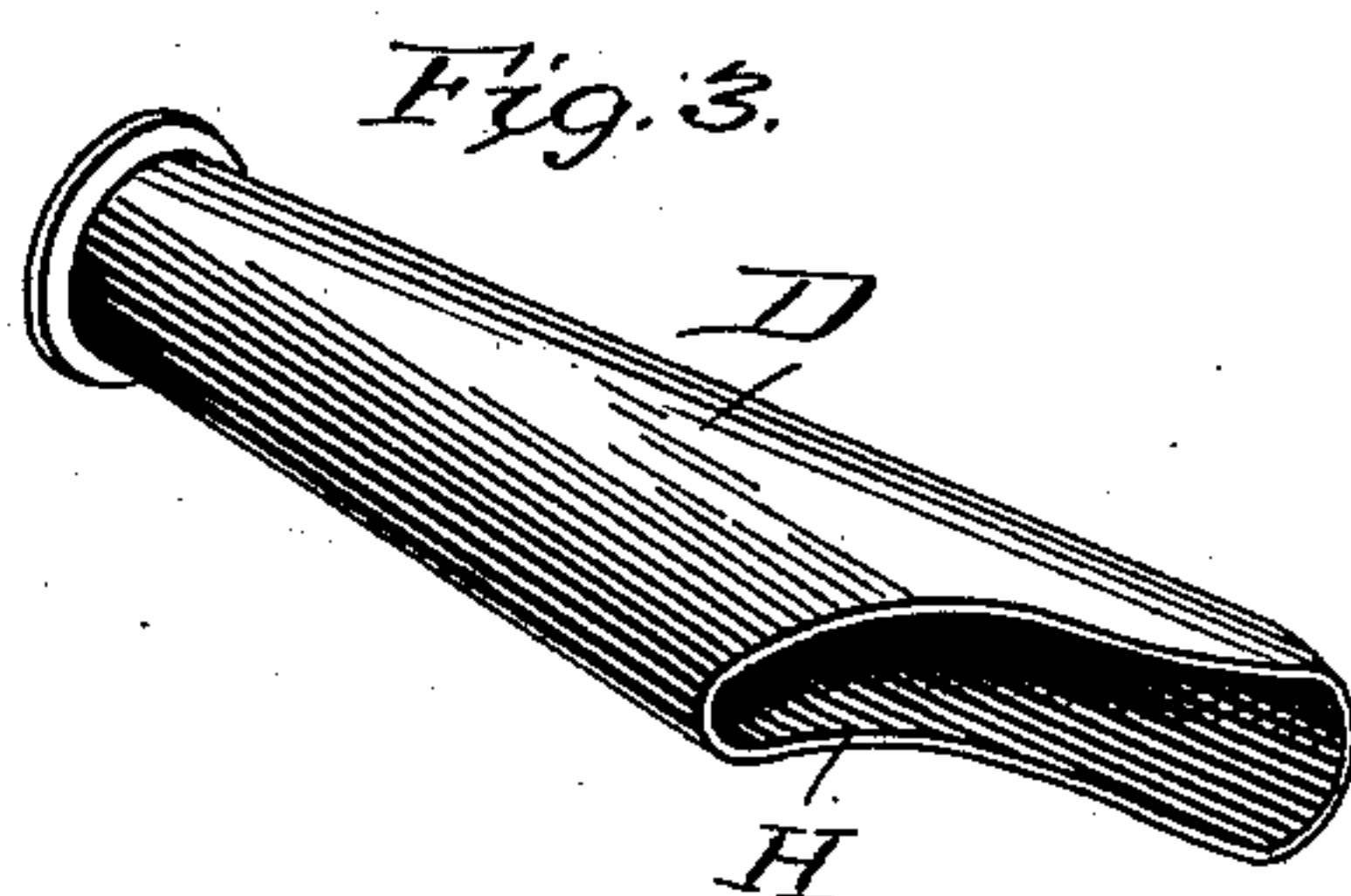
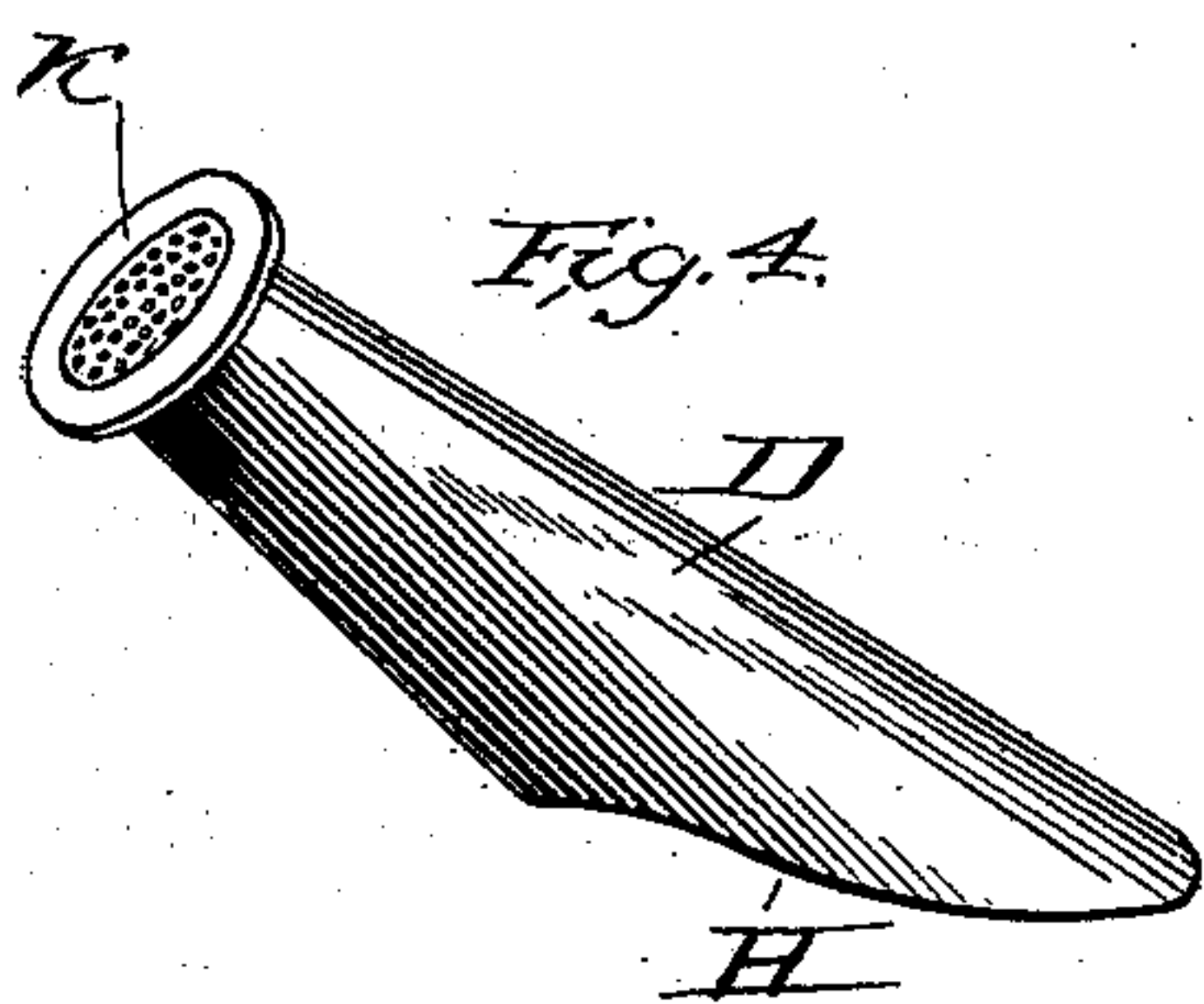
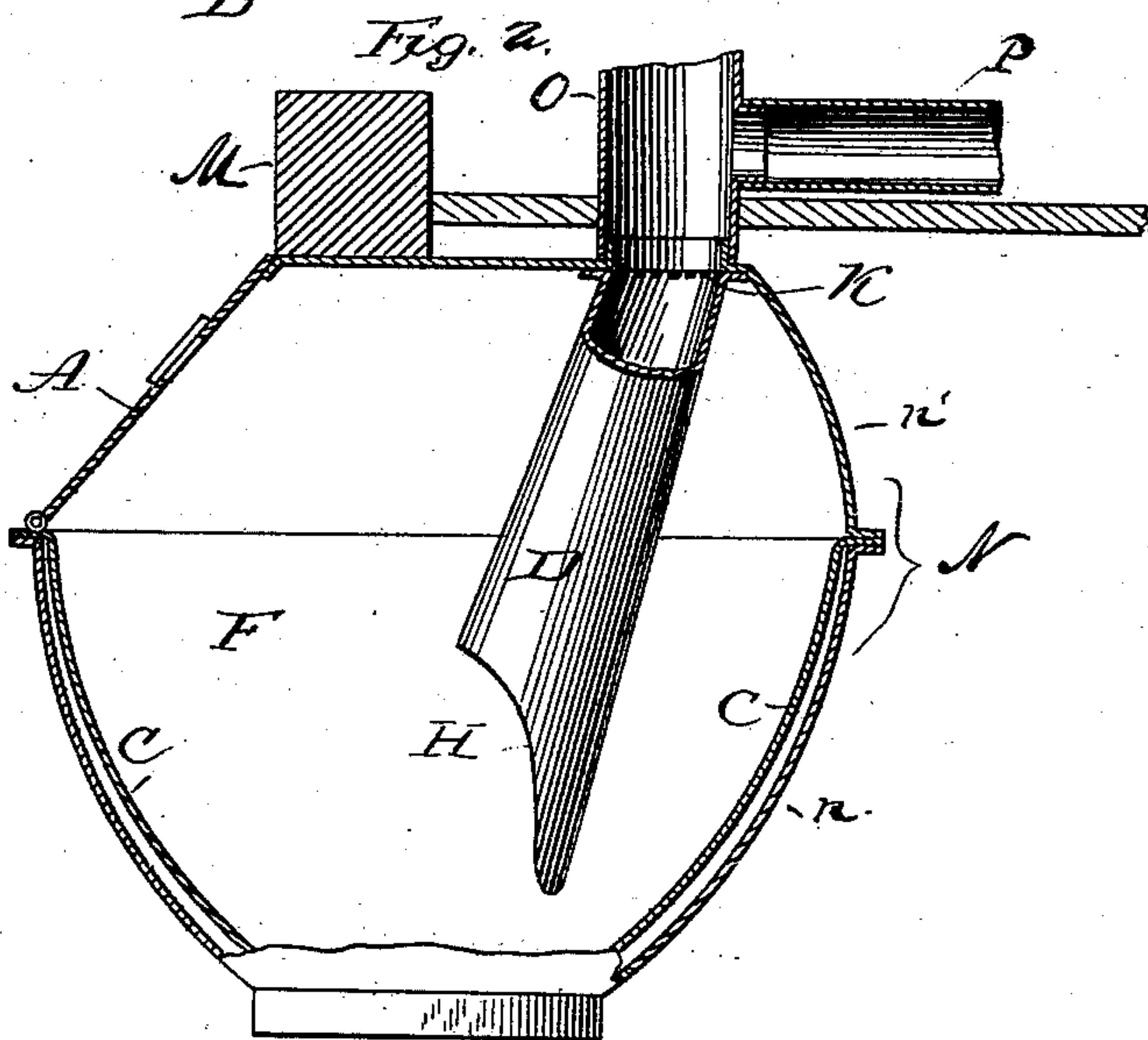
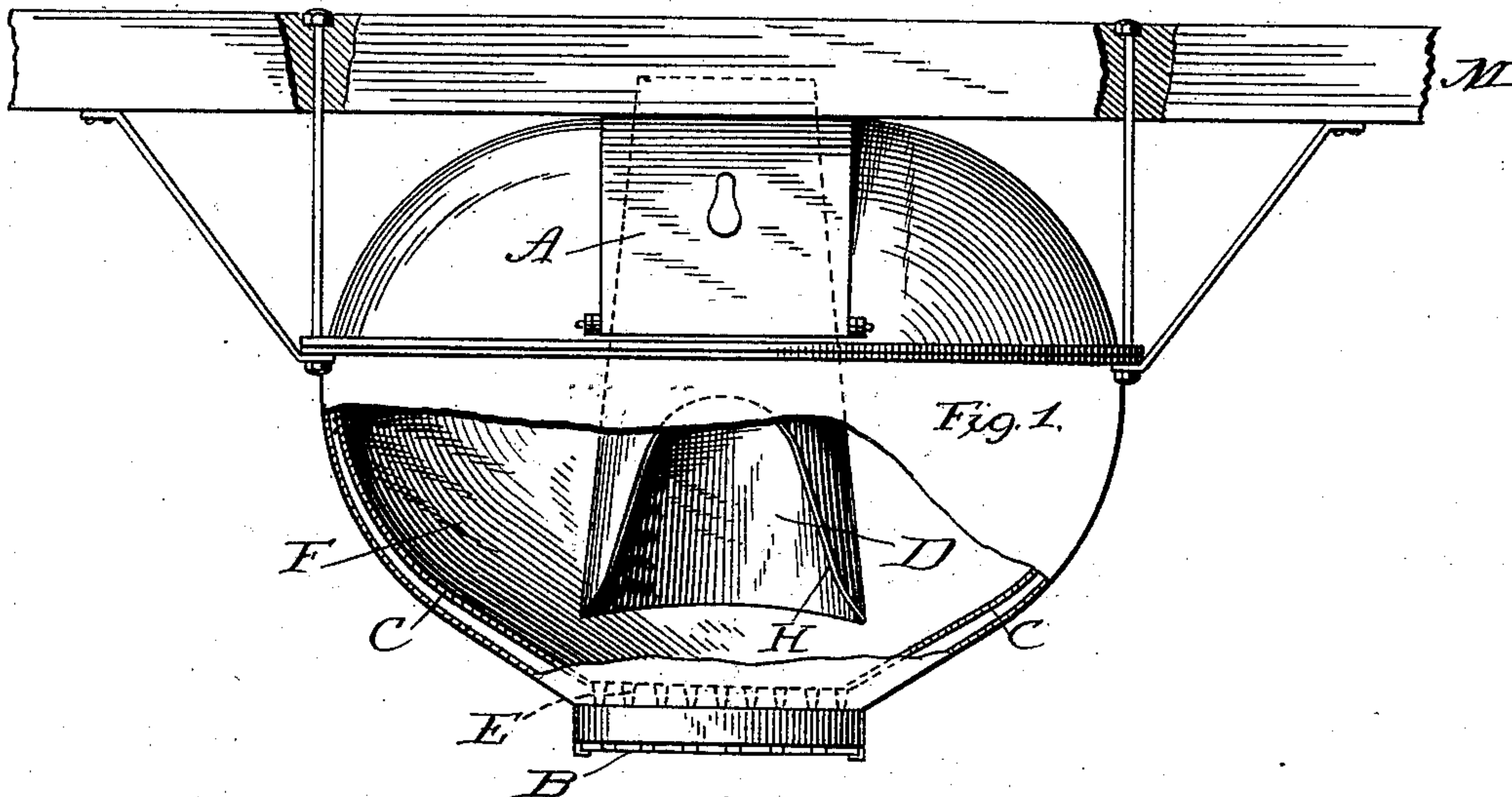
(No Model.)

H. G. WILSON & J. NOBLE.

CAR HEATING FURNACE.

No. 376,463.

Patented Jan. 17, 1888.



Attest:  
Haller Malden  
J. L. Middleton

Inventors  
Hiram G. Wilson  
Jay Noble  
by Ellis Spear  
Atty.



# UNITED STATES PATENT OFFICE.

HIRAM G. WILSON AND JAY NOBLE, OF ST. LOUIS, MISSOURI, ASSIGNORS,  
BY DIRECT AND MESNE ASSIGNMENTS, TO THE WILSON CAR WARMING  
AND VENTILATING COMPANY, OF EAST ST. LOUIS, ILLINOIS.

## CAR-HEATING FURNACE.

SPECIFICATION forming part of Letters Patent No. 376,463, dated January 17, 1888.

Application filed December 17, 1886. Serial No. 231,867. (No model.)

*To all whom it may concern:*

Be it known that we, HIRAM G. WILSON and JAY NOBLE, of St. Louis, in the State of Missouri, have invented a new and useful Improvement in Car-Heating Furnaces; and we do hereby declare that the following is a full, clear, and exact description of the same.

Our invention relates to improvements in furnaces for heating or warming cars and other compartments; and the object of our improvement is to provide a stove or furnace which shall automatically regulate the amount of fuel to be used in combustion and furnish a magazine or reservoir for such fuel, which is adapted to be placed underneath the car, and to direct the products of combustion through heating pipes or spaces in the car.

In the accompanying drawings, Figure 1 is a front view of the furnace hung on or attached to the car. Fig. 2 is an end view of the furnace. Fig. 3 shows a perspective view of the smoke-pipe extension. Fig. 4 illustrates the said extension with the safety-shield.

In the drawings, M represents a part of the sill of the car, and *m* a part of the outer or lower floor-covering. The stove N, attached to this beam, is conveniently made in an approximately spherical shape and of two parts, *n* the lower, and *n'* the upper, both having outwardly-turned flanges by which they are united. The lower part has a lining, C, between which and the outer shell may be placed asbestos or any other suitable non-conducting material. The shape of the stove is not material, except that the walls of the lower part should incline, to cause the fuel to fall by gravity and tend toward the grate B, placed at the center of the bottom. This grate may have a sliding valve underneath to regulate or close the draft. In the upper part is a door, A, for introducing the fuel; also, in the upper part is attached a smoke-flue, O, having a branch, P, in any direction, to carry off the products of combustion and distribute heat therefrom. Registering with the flue O is an extension, D, attached and projecting into the stove toward the grate, with the lower open end directly over the grate, or approximately so. As the flue is eccentric to the stove, the pipe-extension D is inclined and has its lower end

cut away on one side, or obliquely, as shown at H, allowing the fuel to feed more readily to the lower end of the extension. The draft is through the grate and directly into the extension and flue, and the combustion is therefore about the said lower end only, and as the fuel is consumed and the ashes shake through the grate the fuel above is fed down automatically to the burning-point. The stove therefore acts as a fire pot and magazine. In the flue, preferably at its junction with the extension D, is placed a safety grate or plate, perforated to allow the passage of the products of combustion, but preventing the incandescent fuel from entering the car in case of accident. For ordinary street-cars and the like not liable to overturning, this would not be necessary.

We have found the inclined form of the lower end of the extension-flue to be better, but do not limit ourselves to it; nor do we limit ourselves to the particular form of the stove, except in respect to the inclined sides in the described relation to the grate, as heretofore explained.

We are aware that it is not broadly new to extend a flue down to a point over the grate, that being shown in the patent of Nimmo, No. 59,057, and we do not broadly claim such a flue-extension, but limit ourselves to the combination of the flue and stove having the inclined sides.

We claim as our invention—

1. A stove for heating cars and other compartments, having a grate in its bottom and the walls of the lower part inclining to the grate, and a door, A, for introducing the fuel, in combination with a flue, as O, to carry the products of combustion and distribute the heat, and a pipe-extension, as D, having its lower end open and directly over the grate, substantially as described.

2. In combination with the floor of a car or other compartments, a stove attached thereto underneath, having a door for the admission of fuel, and a grate in its bottom with an opening to the outer air, and with inclined sides about the grate, and a flue-extension from the smoke-flue extending downward to a point over the grate, substantially as described.

3. In combination with the floor of a car or

other compartments, a stove attached thereto underneath, having a door for the admission of fuel, and a grate in its bottom with an opening outward, and with inclined sides about the  
5 grate, and a flue-extension from the smoke-flue to a point over the grate, said extension having its lower end formed with an oblique end, substantially as described.

4. In combination with the floor of a car or  
10 other compartments, a stove attached thereto underneath, having a door for the admission of fuel, and a grate in its bottom with an open-

ing outward, and with inclined sides about the grate, and a flue-extension from the smoke-flue to a point over the grate, and a safety- 15 grate in the flue, substantially as described.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

HIRAM G. WILSON.

JAY NOBLE.

Witnesses:

WALTER C. CARR,

LA RINA A. WILSON.