

No. 641,549.

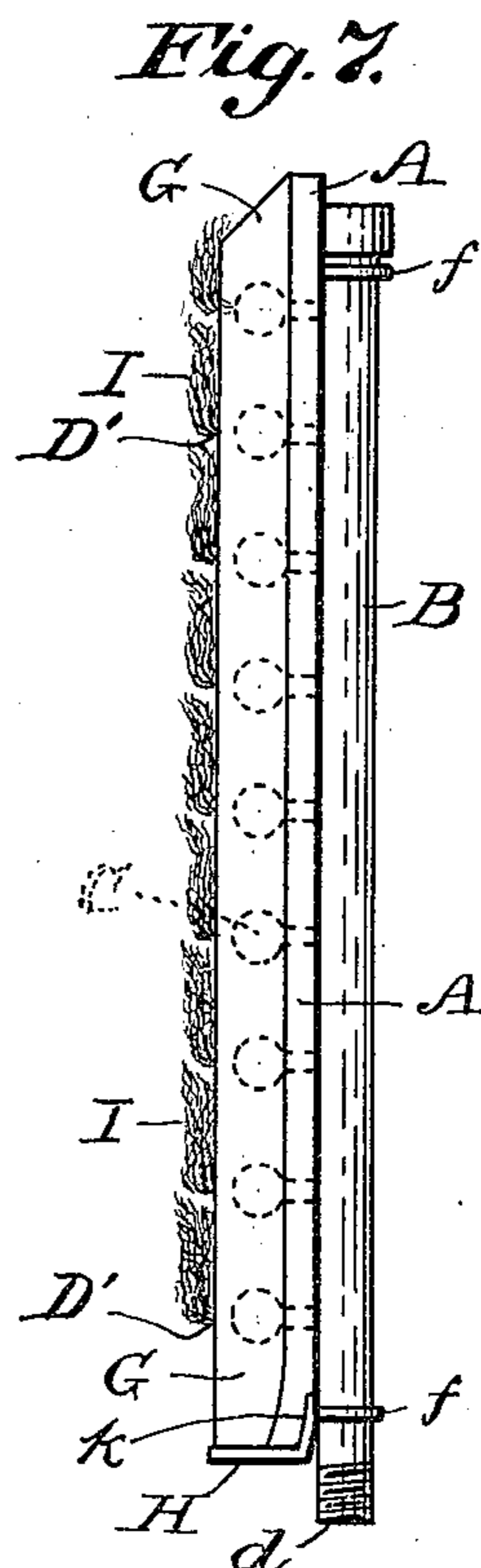
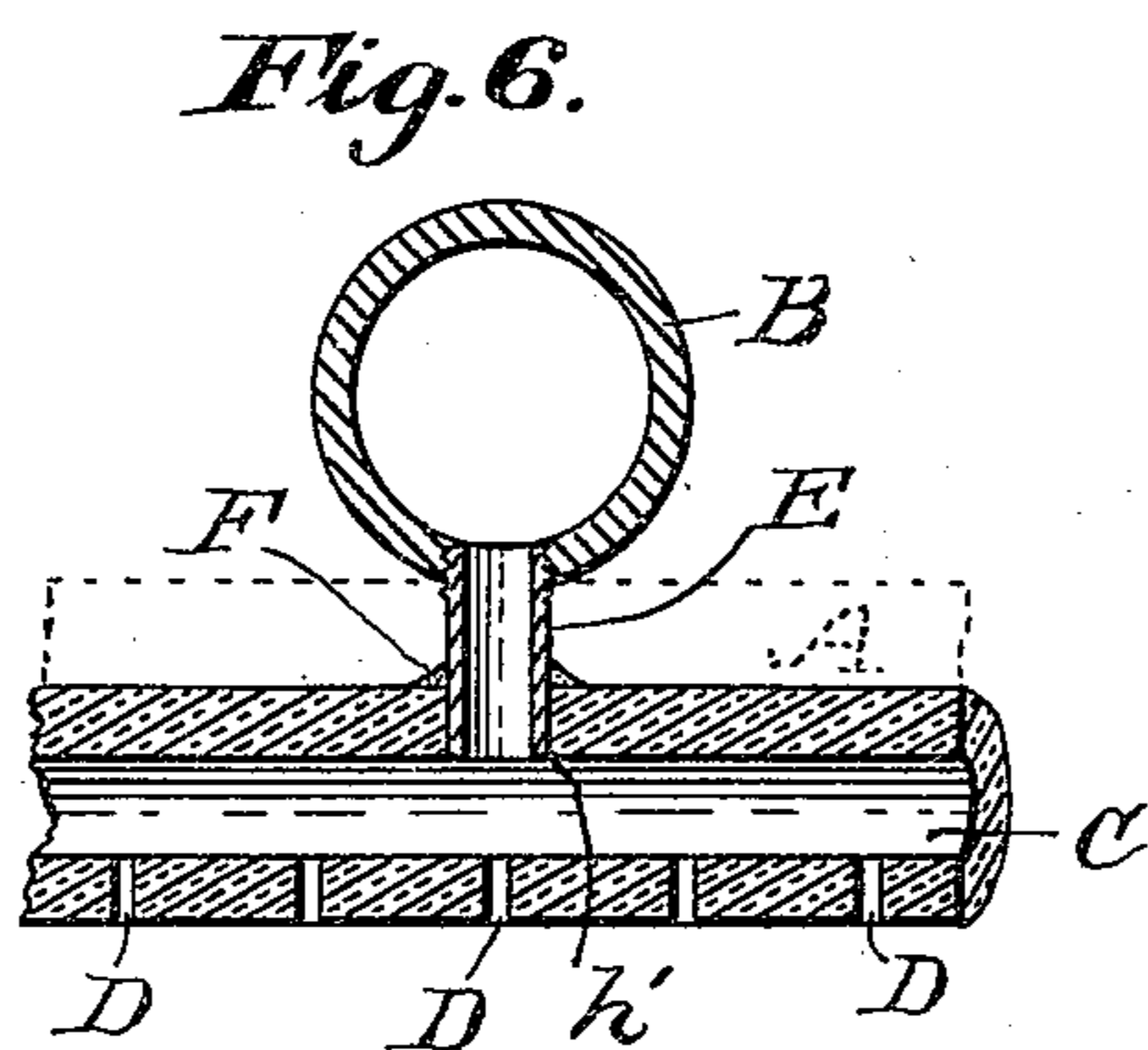
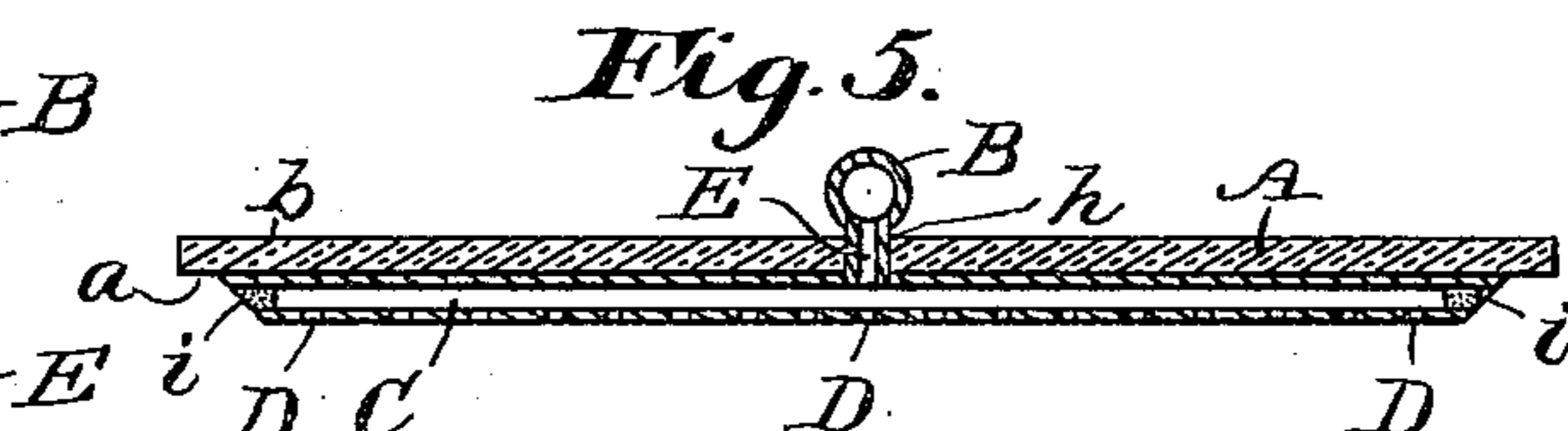
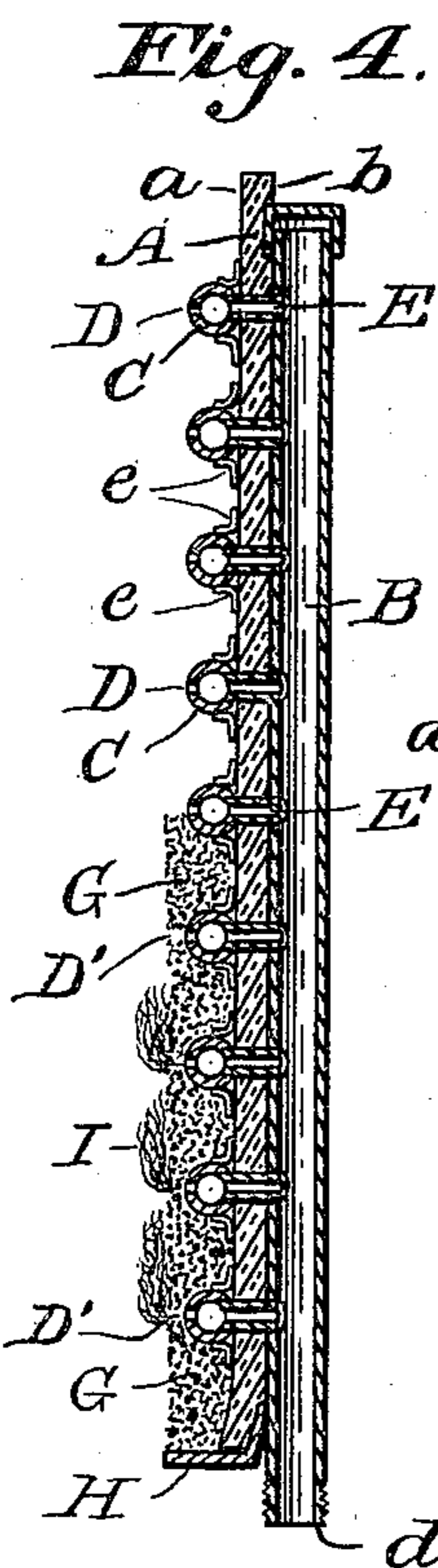
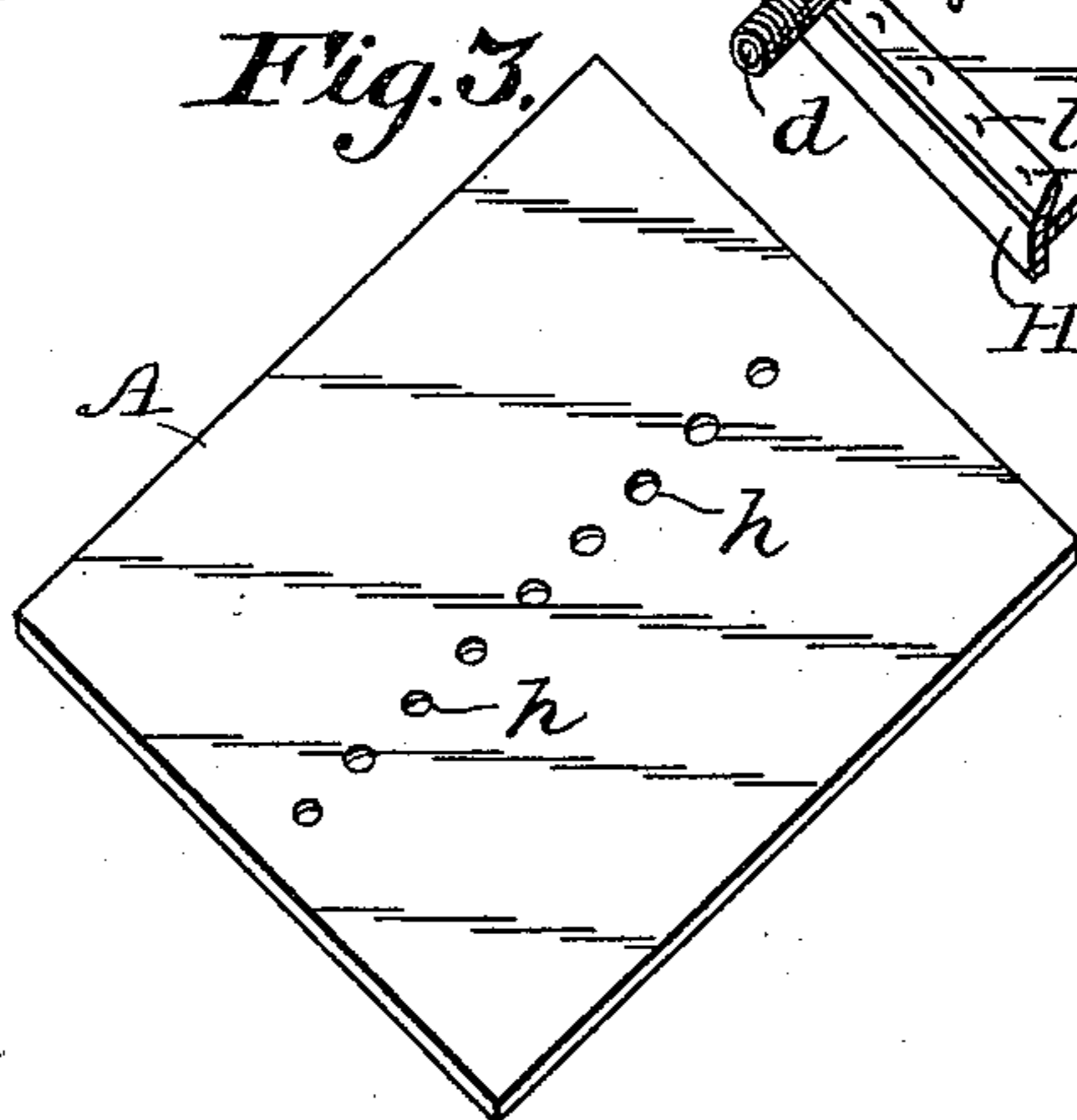
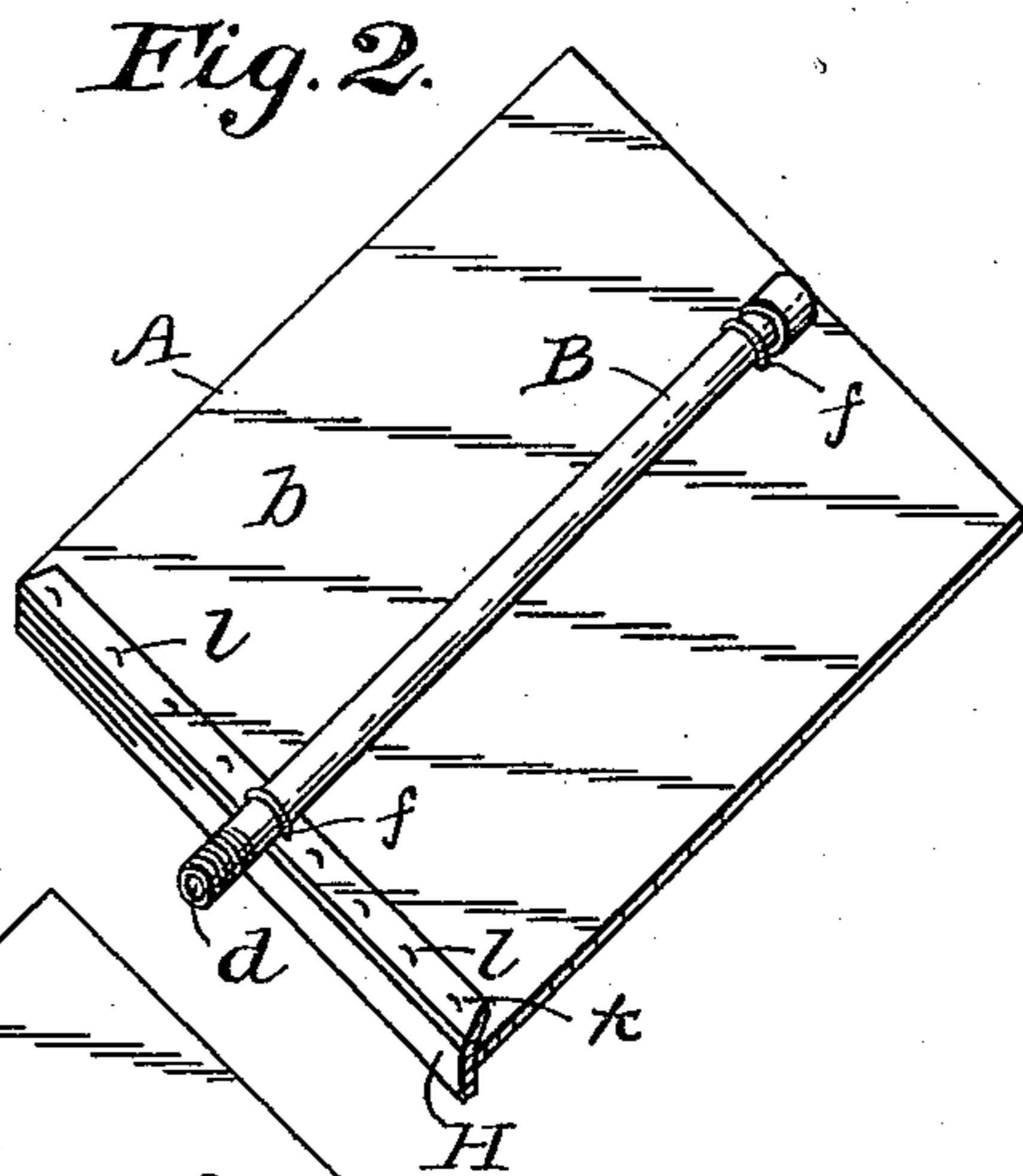
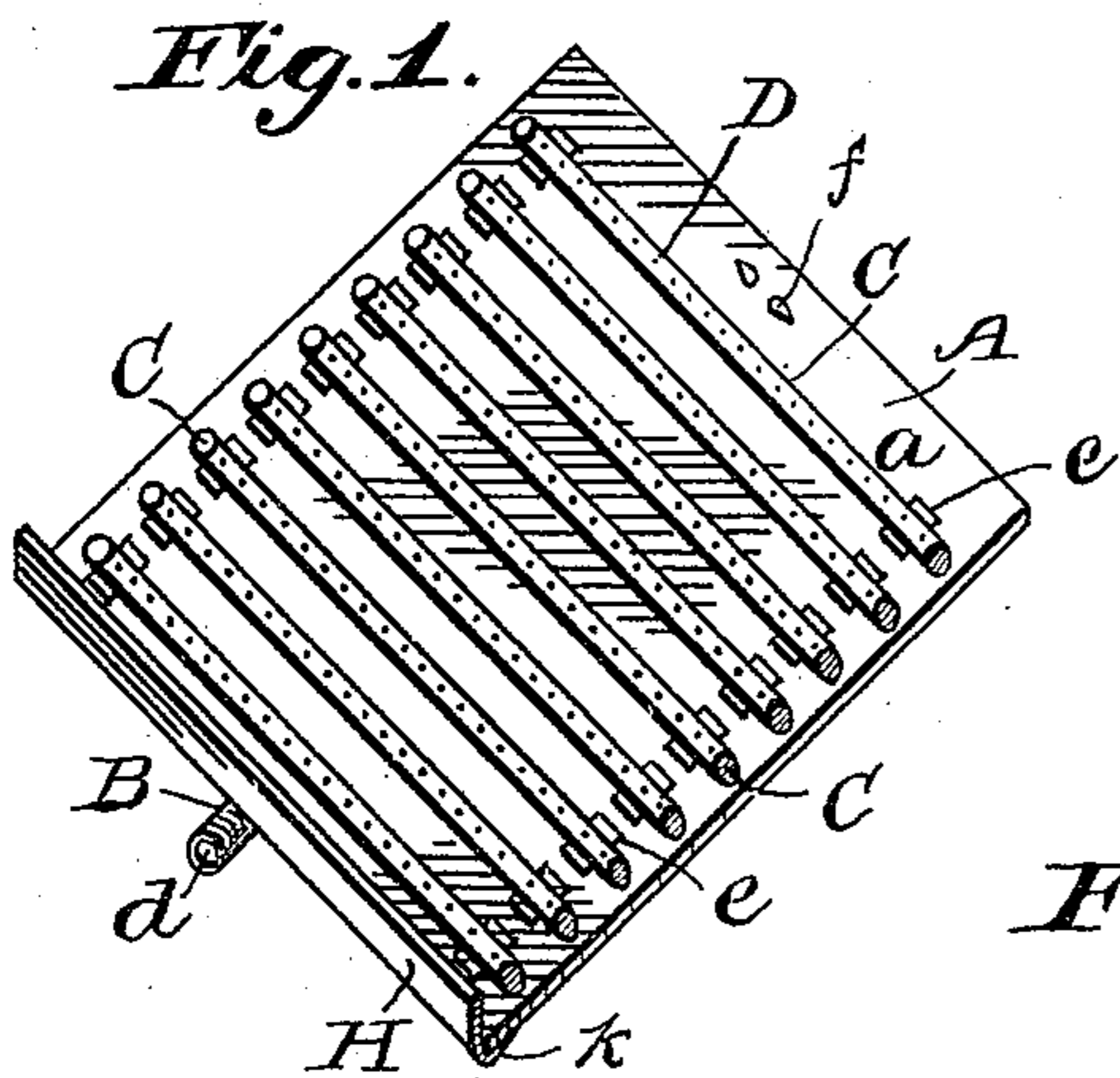
Patented Jan. 16, 1900.

T. E. ROSS & N. B. VOLZ.

GAS BURNER.

(Application filed Aug. 23, 1899.)

(No Model.)



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# UNITED STATES PATENT OFFICE.

THOMAS E. ROSS AND NICHOLAUS B. VOLZ, OF INDIANAPOLIS, INDIANA.

## GAS-BURNER.

SPECIFICATION forming part of Letters Patent No. 641,549, dated January 16, 1900.

Application filed August 23, 1899. Serial No. 728,164. (No model.)

*To all whom it may concern:*

Be it known that we, THOMAS E. ROSS and NICHOLAUS B. VOLZ, citizens of the United States, residing at Indianapolis, in the county of Marion and State of Indiana, have invented certain new and useful Improvements in Gas-Burners; and we do 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 the letters of reference marked thereon, which form a part of this specification.

Our invention relates to the class of gas-burners employed for burning either artificial or natural gas for heating in open-front stoves and in fireplaces; and it consists in a burner composed of non-combustible fibrous material constructed in a new and novel manner and form, whereby warping is prevented and whereby the gas is utilized most economically and effectively at low pressure; and the invention consists, further, in the parts and combination and arrangement of parts hereinafter described, and pointed out in the claims.

Referring to the drawings, Figure 1 represents a perspective view showing particularly the front of the foundation and distributing-pipes; Fig. 2, a perspective view showing the back of the foundation and the supply-pipe; Fig. 3, a perspective view of the foundation of the burner; Fig. 4, a central vertical sectional view taken transversely of the distributing-pipes; Fig. 5, a horizontal sectional view central through one of the distributing-pipes; Fig. 6, a fragmentary enlarged view similar to Fig. 5, and Fig. 7 a side elevation of the complete burner.

Similar letters of reference in the several figures of the drawings designate similar parts.

In practically carrying out our invention we employ fibrous material that is not affected injuriously by heat, such as asbestos in its various forms, so as to provide against warping of the parts thereof which are subject to contact with the fire or with the direct heat therefrom. A foundation A is formed of suitable dimensions and preferably rectangular in shape and of sufficient thickness to support the distributing and burner pipes C

and tufting G and is suitably made of sheet-asbestos. It is provided with a suitable number of circular apertures *h*, through which the nipples E project from the supply-pipe B, which extends at the back *b* of the foundation, centrally from bottom to top or nearly thereto, the pipe B being closed at the top and attached to the foundation in a suitable manner, as by means of staples *f*. The bottom and inlet are indicated by *d* and may be suitably connected to a main supply-pipe, preferably with a mixer and a stop-valve, as is usual. At the bottom of the foundation is a bracket H of suitable design, preferably having a flange *k* turned up at the back of the foundation and secured thereto by clench-staples *l*, the function of the bracket being to support the tufting at the bottom.

The supply-pipe B is provided with a suitable number of pipe-nipples E, set in line and projecting from one side to a uniform distance, so as to extend slightly through the apertures *h* with which they register, so as to form separate ducts between the pipe B and the several distributing-pipes C. The pipe B and nipples E may be metallic, as they are not exposed to an injurious degree of heat.

The distributing-pipes C are tubular and are suitably made of sheet-asbestos laminated and glued together by means of asbestos glue, or they may be molded from asbestos wool, and each has a central aperture *h'* at one side adapted to be pierced by the projecting end of a nipple, and at the opposite side or front is a row of closely-spaced minute apertures D, through which the gas is emitted in small jets and with a gentle force. These pipes C are essentially the burners and are set horizontally on the front *a* of the foundation A and are secured thereto by means of small cleats *e*, formed of strips of sheet-asbestos and attached by means of asbestos glue. A packing F, of asbestos, is placed around the nipples E against the back of the pipes C to form a tight joint, although a slight leak could not be fatal in this type of burner. The ends of the tubes forming the pipes C have asbestos plugs *i*.

The front *a* is entirely covered, including the distributing-pipes C, with a somewhat thick layer of tufting G, composed of asbestos wool loosely piled and secured by

means of asbestos glue, so that the gas emerging from the orifices or the apertures D escapes to the surface, as at D', through the loose fibrous substance, and when aflame  
 5 spreads, as at I, substantially over the whole front surface of the tufting, thus throwing off the greatest amount of heat with the consumption of the least amount of gas, which is particularly advantageous in the use of natu-  
 10 ral gas when at a low pressure, as is usual in the winter season.

In setting the burner for use it is preferable that it be approximately perpendicular, as shown in Fig. 7, but it may also incline  
 15 somewhat, so as to lean at the top either forward or backward. It is light in weight, cheaply constructed, and practically indestructible in proper use, and therefore economical.

20 Having thus described our invention, what we claim, and desire to secure by Letters Patent, is—

1. A gas-burner consisting of a foundation composed of fibrous material whereby warping is prevented, a series of distributing-pipes  
 25 secured horizontally at the front of the foundation and composed of fibrous material, and a supply-pipe at the back of the foundation provided with a series of nipples extending  
 30 through perforations in the foundation and connected to the distributing-pipes.

2. A gas-burner consisting of a vertical supply-pipe provided with nipples projecting at a right angle from one side thereof, a foundation  
 35 secured to the supply-pipe and composed of fibrous non-combustible material whereby the foundation and the supply-pipe are prevented from warping by heat and provided with a series of perforations registering with  
 40 the nipples projecting from the supply-pipe, distributing-pipes composed of non-combustible fibrous material secured horizontally at the opposite side of the foundation and connected to the nipples projecting from the supply-  
 45 pipe whereby warping of the distributing-pipes by the heat is prevented, the distributing-pipes being supplied with perforations for the escape of gaseous fluid.

3. A gas-burner consisting of a perforated

foundation composed of fibrous material 50 whereby warping is prevented, a series of distributing-pipes secured horizontally at the front of the foundation and composed of fibrous material and having perforations at the front sides thereof, a vertical supply-pipe 55 attached to the back of the foundation and provided with nipples extending through the perforated foundation and into the distributing-pipes at the rear thereof, and a layer of fibrous material cemented to the front of the 60 foundation between the distributing-pipes.

4. A gas-burner comprising a supply-pipe, a substantially rectangular perforated foundation composed of fibrous material whereby warping is prevented and situate at the front 65 of the supply-pipe, nipples attached to the supply-pipe and extending through the perforations in the foundation, and perforated distributing-pipes at the front of the foundation and connected to the nipples extending 70 therethrough.

5. A gas-burner having a supply-pipe and a foundation at the front of the supply-pipe and provided with distributing-pipes at the front of the foundation and composed of laminated fibrous material glued together where- 75 by warping and erosion are prevented, and communicating with the supply-pipe.

6. In a gas-burner, the combination of the foundation provided with a central row of 80 perforations, the supply-pipe secured to the back of the foundation and provided with a series of pipe-nipples projecting through said perforations, the distributing-pipes secured to the front of the foundation and provided 85 each with minute perforations at one side and at the opposite side thereof with a perforation in which is entered one of said pipe-nipples, and the layer of fibrous substance covering the front of the foundation and the unat- 90 tached portions of the distributing-pipes.

In testimony whereof we affix our signatures in presence of two witnesses.

THOMAS E. ROSS.

NICHOLAUS B. VOLZ.

Witnesses:

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