

(No Model.)

3 Sheets—Sheet 1.

C. W. CARLL.

CHIMNEY CAP.

No. 317,294.

Patented May 5, 1885.

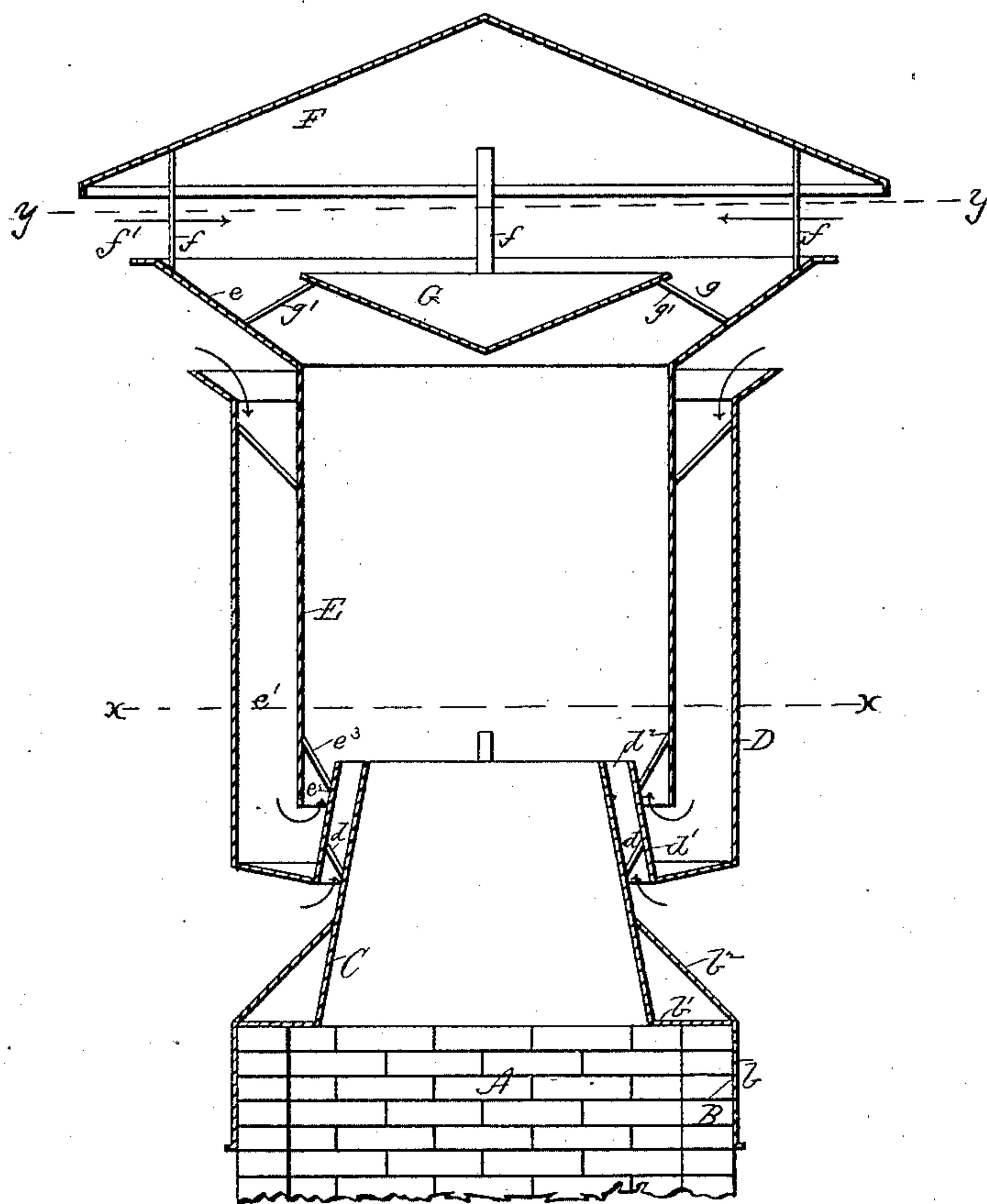


Fig. 1

WITNESSES:

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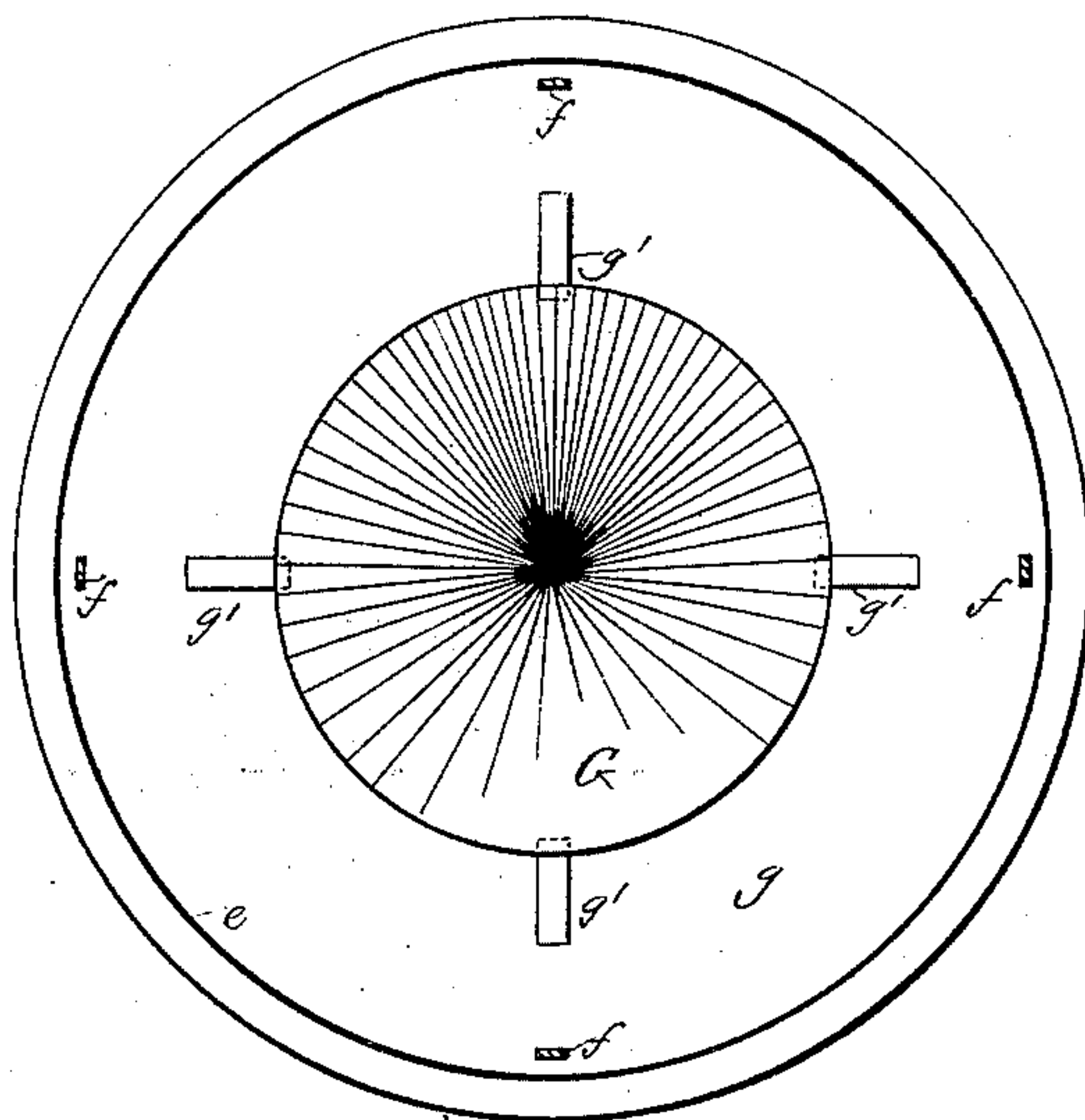


Fig. 3

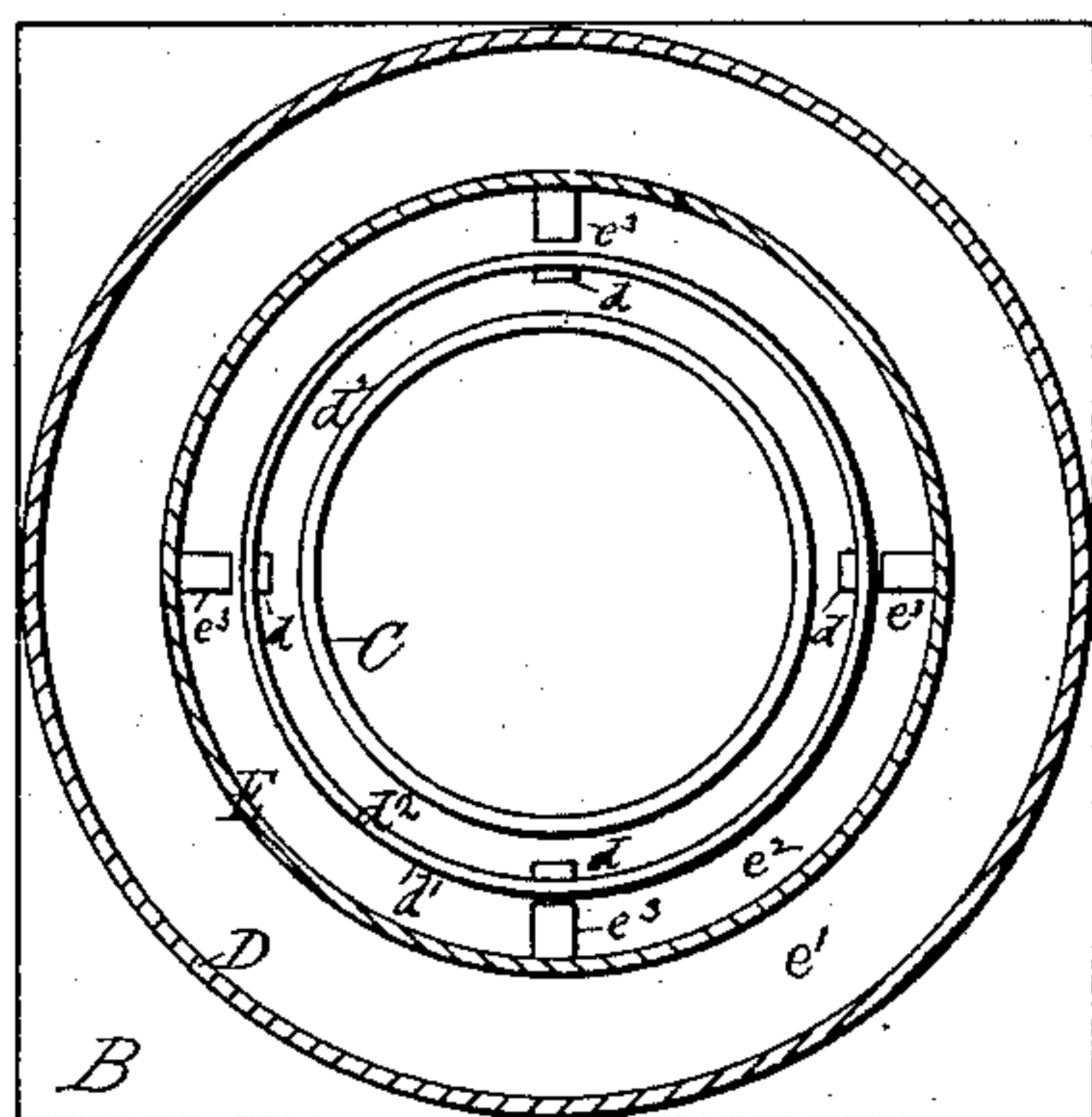


Fig. 2

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(No Model.)

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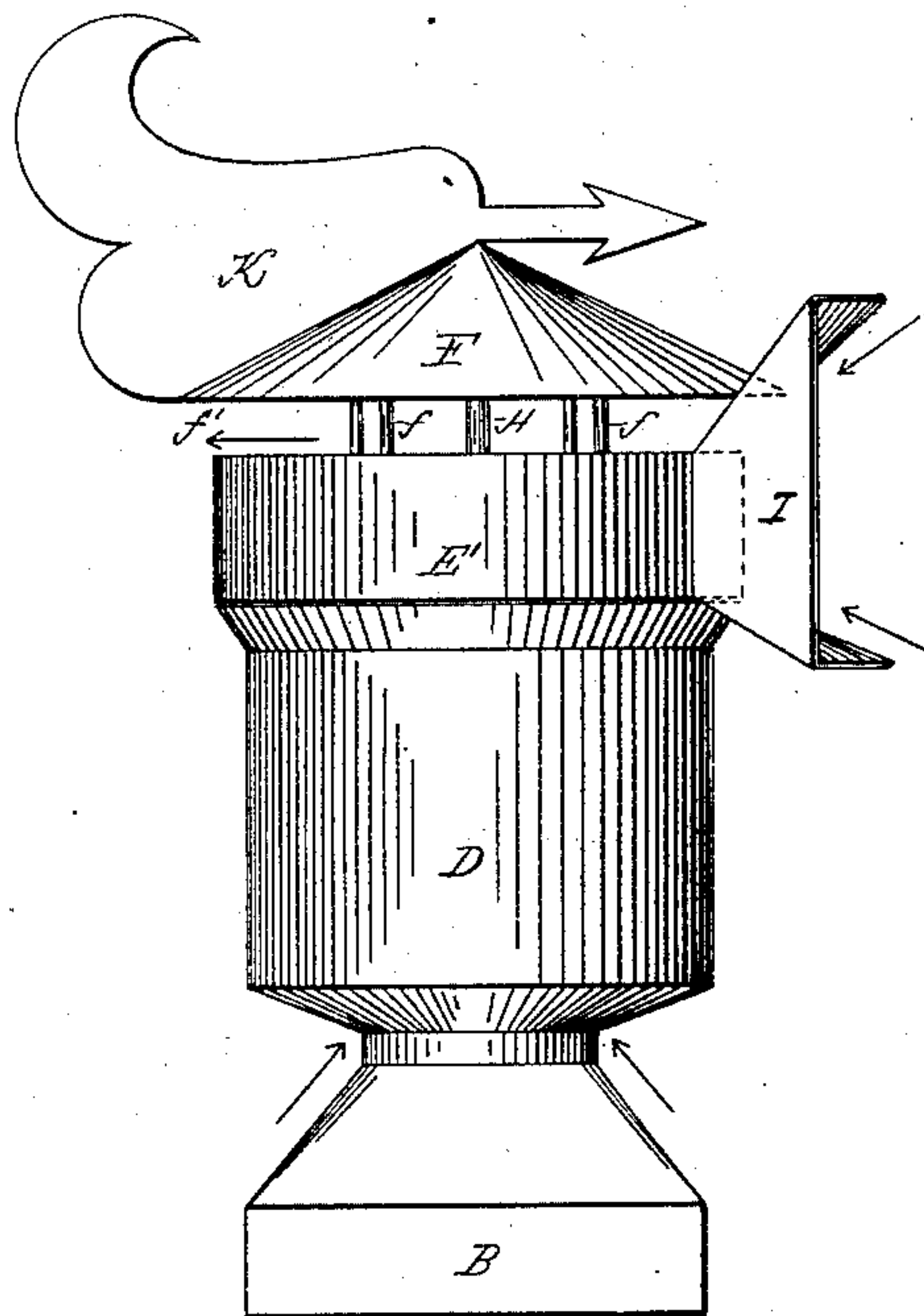


Fig 4

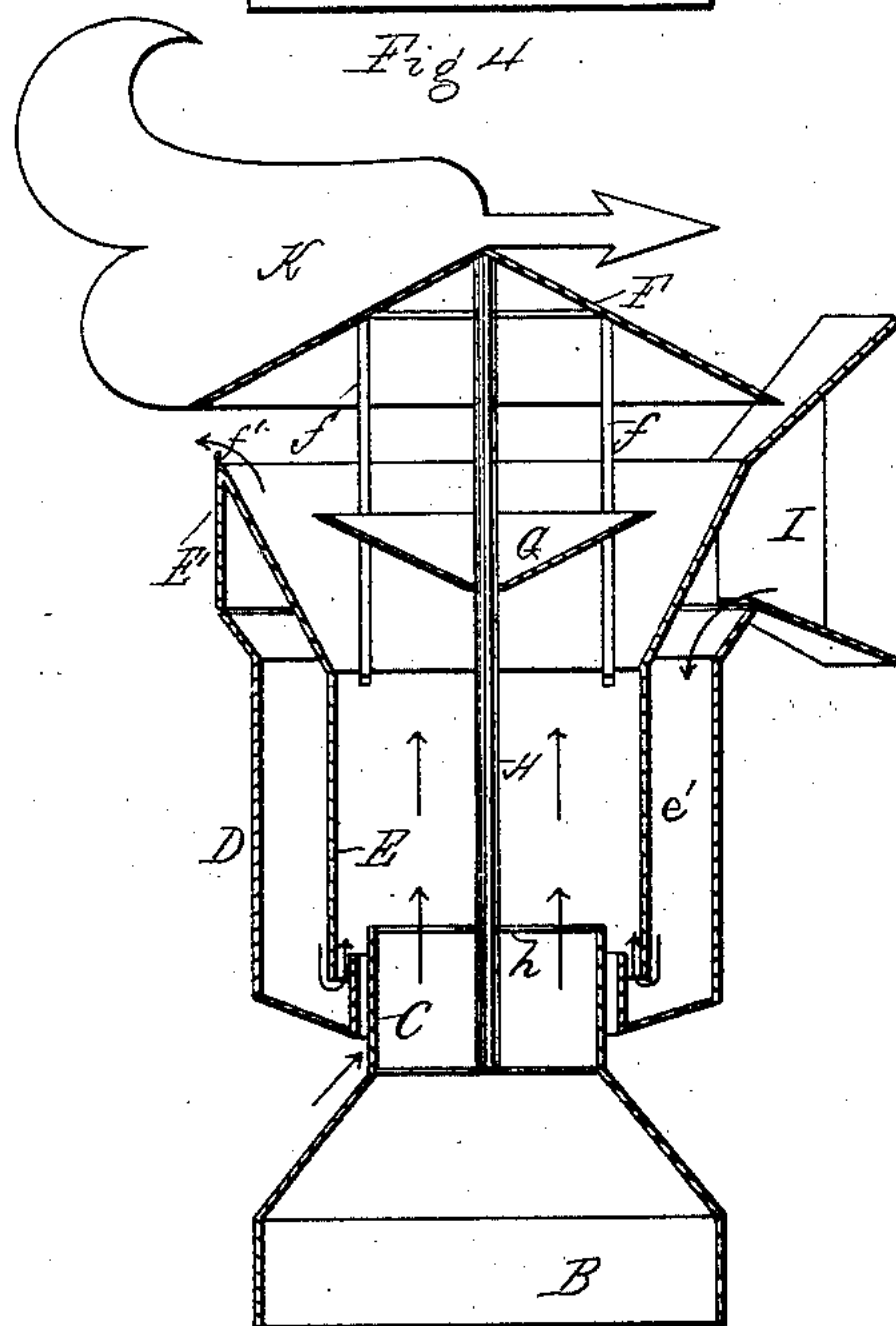


Fig 5

WITNESSES:

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# UNITED STATES PATENT OFFICE.

CHARLES W. CARLL, OF CAMDEN, NEW JERSEY.

## CHIMNEY-CAP.

SPECIFICATION forming part of Letters Patent No. 317,294, dated May 5, 1885.

Application filed October 25, 1884. (No model.)

*To all whom it may concern:*

Be it known that I, CHARLES W. CARLL, a citizen of the United States, residing at the city of Camden, Camden county, in the State of New Jersey, have invented certain new and useful Improvements in Chimney-Caps; and I do hereby declare the following to be a full, clear, and exact description of the invention, reference being had to the accompanying drawings, which form a part of this specification, in which—

Figure 1 is a vertical section. Fig. 2 is a horizontal section on line  $xx$ , Fig. 1. Fig. 3 is a horizontal section on line  $yy$ , Fig. 1. Fig. 4 is a side elevation of modification, and Fig. 5 is a vertical section of Fig. 4.

My invention has for its object to provide a chimney-cap which will prevent overhead currents of air from entering the chimney by blowing down the same, and which will operate to cause cross-currents to produce an upward draft in the chimney, and thereby aid the escape of smoke therefrom.

My improvements consist in the peculiar construction and combination of parts hereinafter fully set forth, having reference particularly to the following points: first, to the combination, with a central smoke-pipe, of two external jackets or cylinders having air-inlets, whereby cross-currents of wind will be caused to enter the cap and ascend therein, mingling with the smoke and facilitating the escape of the latter; second, to the combination, with a smoke-pipe and a top therefor having a smoke-outlet between said pipe and top, of a conical deflector operating to prevent cross-currents of wind which enter through said smoke-outlet from descending through the smoke-pipe; third, to the combination, with the smoke-pipe of a chimney-cap, of a revolving top having an air-inlet to windward, and a vane, whereby the said top will cause cross-winds to enter the cap and promote the draft in the chimney and the escape of smoke therefrom; fourth, to certain details of construction and combination, as hereinafter fully set forth and specifically claimed.

Referring to the accompanying drawings, A represents a chimney with my improved cap and ventilator applied thereto.

B is the base of the cap, which is designed

to be made of sheet metal, and of any suitable shape in cross-section, such as round, oval, square, or octagonal. The flange  $b$  of the base B fits outside of the chimney, while the ledge  $b'$  rests on the top thereof. An inclined shed,  $b^2$ , is also provided to throw off moisture, and also to give an initial upward deflection to cross-winds.

Projecting from the base B, and braced by the shed  $b^2$ , is a central smoke-pipe, C, which may be either of uniform diameter throughout or be made tapering, as shown.

D represents an external pipe or jacket surrounding the smoke-pipe C, and held in position by arms  $d$ , connecting it with said pipe C, or in any other suitable manner. Said pipe D has an upturned internal flange,  $d'$ , which stands out some distance from the pipe C, forming an annular passage,  $d^2$ , for the admission of air-currents which strike against the shed  $b^2$ , or the exposed part of the smoke-pipe C.

E represents another pipe or jacket, which is mainly cylindrical, and has a flaring or funnel-shaped top,  $e$ . The lower part of the said pipe E is of less diameter than the body of the pipe D, and fits within the latter, so as to leave annular air-inlets  $e'e^2$ , as shown. Said pipe  $e$  may be supported by feet or by cross-arms  $e^3$ , resting on the pipe D, in any suitable manner.

Surmounting the pipe E is a conical top, F, which is of greater diameter at its base than the upper end of the funnel-mouth of pipe E, and is supported over the same by means of vertical rods or posts  $f$ , or in any suitable manner, so as to leave an annular smoke-escape opening,  $f'$ , between the edges of said pipe E and said top F.

Fitting in the funnel-mouth of pipe E is an inverted cone, G, whose upper edge is below the plane of the upper edge of said funnel-mouth, an annular smoke-passage,  $g$ , being left between these two parts, as shown. Said cone is supported on arms  $g'$ , resting on or connected with pipe E. The purpose of this cone is to prevent cross-currents of wind which enter through the smoke-outlet  $f'$  from descending into the smoke-pipe C, and it operates as a deflector to that end.

The operation is obvious: Smoke from the



chimney A, rising through pipe C, passes outwardly through opening  $f'$ . Cross-currents of wind entering through the passages  $d e'$  are deflected and directed upwardly and over pipe C, inducing or promoting draft therein and facilitating the escape of smoke through the opening  $f'$ . Cross-currents of wind entering at  $f'$  are prevented by the cone G from descending into the smoke-pipe C, and instead thereof blow straight across and escape on the side of the cap opposite to that on which they enter. Downward currents are prevented by the top F from directly entering the cap, and if they enter through the passage  $e'$  they are deflected upwardly, and so promote rather than hinder the draft of the chimney.

In Figs. 4 and 5 I have shown a modification wherein is provided a revolving top for the smoke-cap. In this modification the parts B C D are made as already described, and being fixed in position are rigid, while the parts E and F are connected to each other and arranged to revolve on a central spindle, H, which rests on a cross-bar,  $h$ , on top of the smoke-pipe C, and passes through the cone G, having a bearing for its upper end in the top F. The funnel-mouth of pipe E is made with a petticoat-flange,  $E'$ , which comes down to the upper edge of pipe D, though it does not contact therewith. A segment of about one-quarter of the flange  $E'$  is cut away or dispensed with, leaving an opening, to which is applied a funnel or hopper, I, which is intended not for the escape of smoke, but as an air-inlet. A vane, K, with its point to the funnel I and its tail or fan on the opposite side causes the revolving top to turn freely and present its funnel-mouth I to windward, the air-currents which enter the same, descending through the space  $e'$ , being then deflected upwardly and permitted to escape with the smoke through the opening  $f'$ . When the revolving

top is employed, the cone G may, if desired, be dispensed with, or it may be retained, as its retention does not produce any harmful result. 45

What I claim as my invention is as follows:

1. In a chimney-cap, the combination, with a central smoke-stack, of two surrounding pipes, D E, forming two annular air-inlets, both external to said pipe C, the air-inlet to pipe D being at the upper end thereof, said pipe D having at its base an upturned flange which embraces the lower edge of the pipe C, as shown, such flange being separated from the pipe C by an annular air-inlet arranged to admit air below the pipes D E, all substantially as and for the purpose described. 55

2. In a chimney-cap, the combination of a base, B, central smoke-pipe, C, external surrounding pipes, D and E, with inlets  $d^2 e^2$  at the lower ends of the pipes D and E, cap F, and inverted cone G, said parts being constructed and combined for operation substantially as shown and described. 60 65

3. In a chimney-cap, the combination, with pipes C and D, rigidly secured to each other, of pipe E and top F, said pipe E having a petticoat-flange,  $E'$ , with funnel-mouth I, and extending down within the pipe D to surround the pipe C, and said top having a vane, K, the parts being connected, as described, through the medium of a spindle, H, and forming a chimney-cap with a revolving top, having an air-inlet to windward, substantially as shown and described. 70 75

In testimony that I claim the foregoing I have hereunto set my hand this 22d day of October, 1884.

CHAS. W. CARLL.

Witnesses:

LISLE STOKES,  
M. D. CONNOLLY.