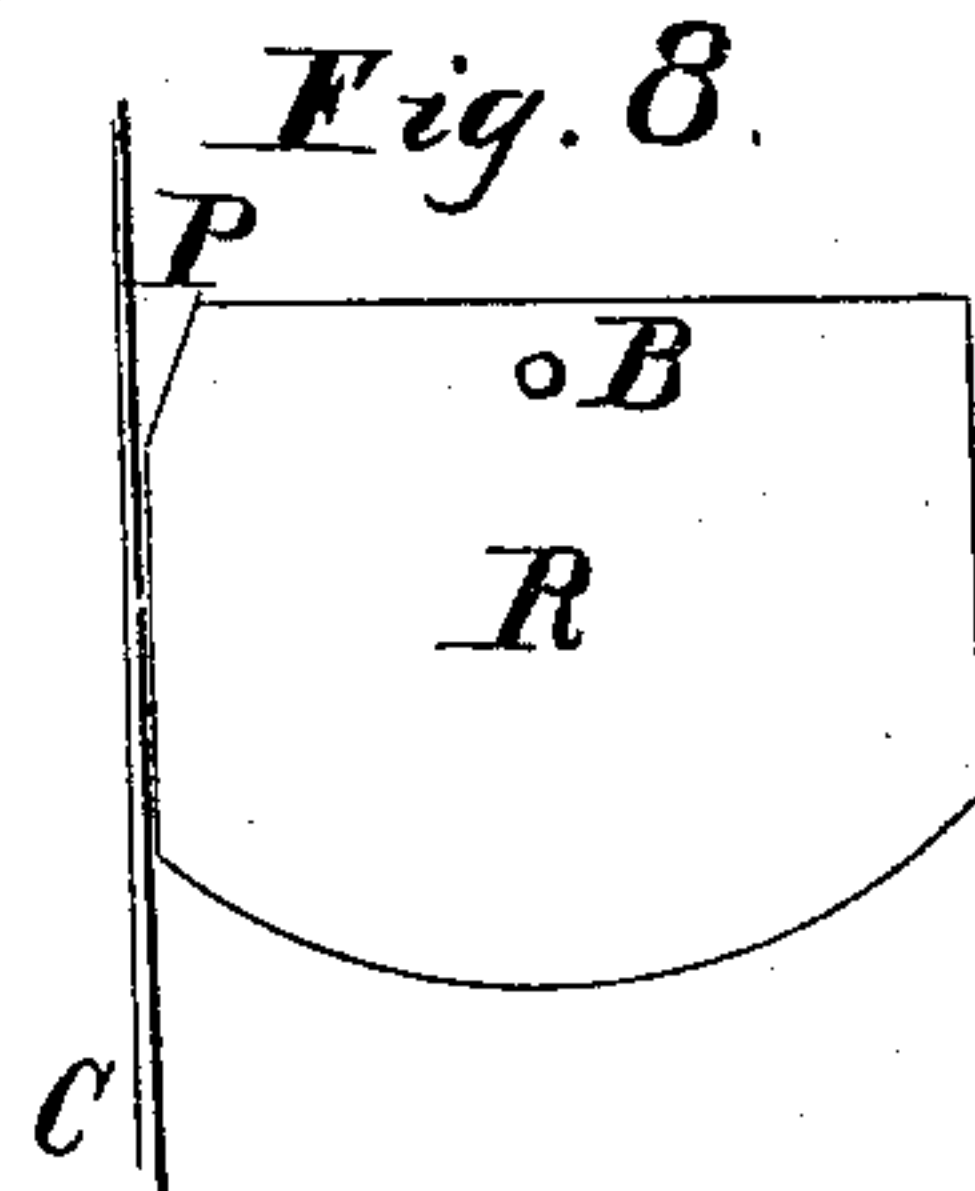
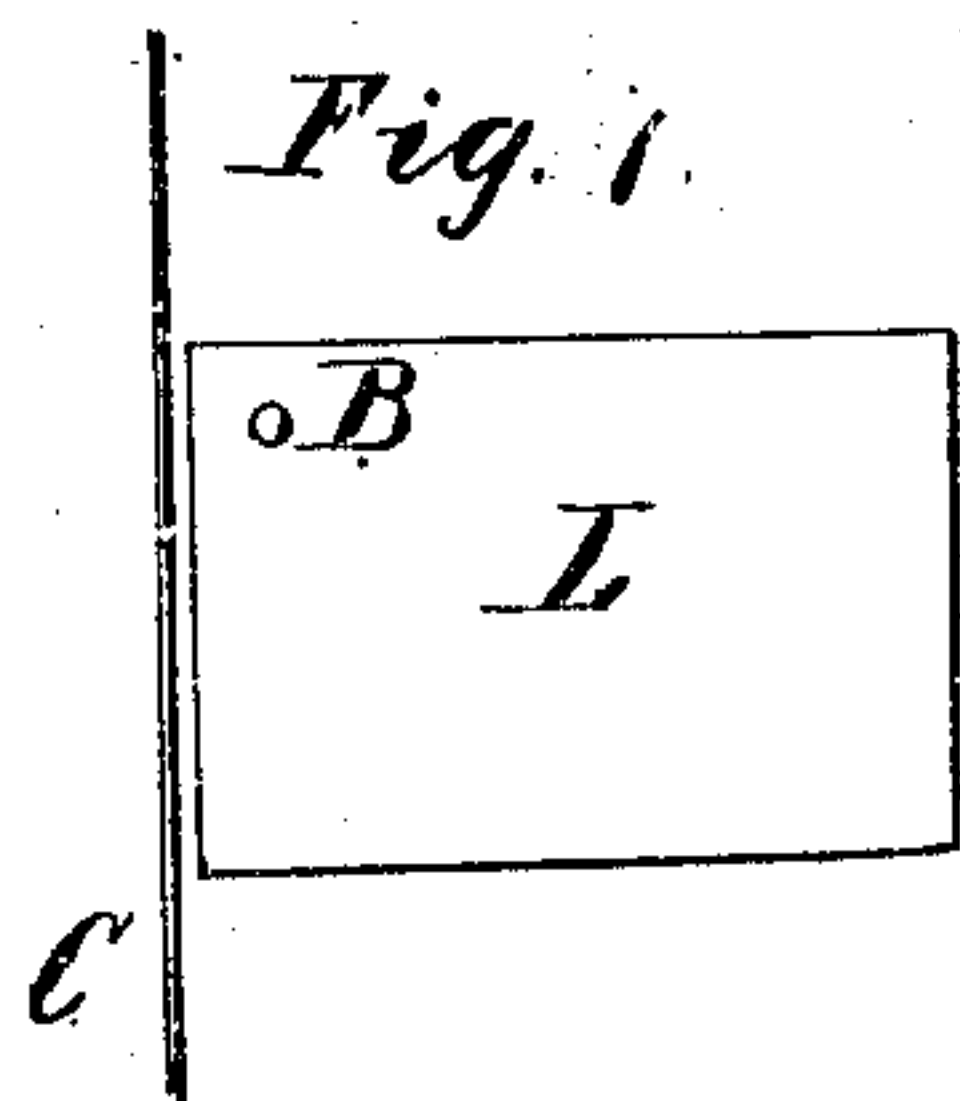
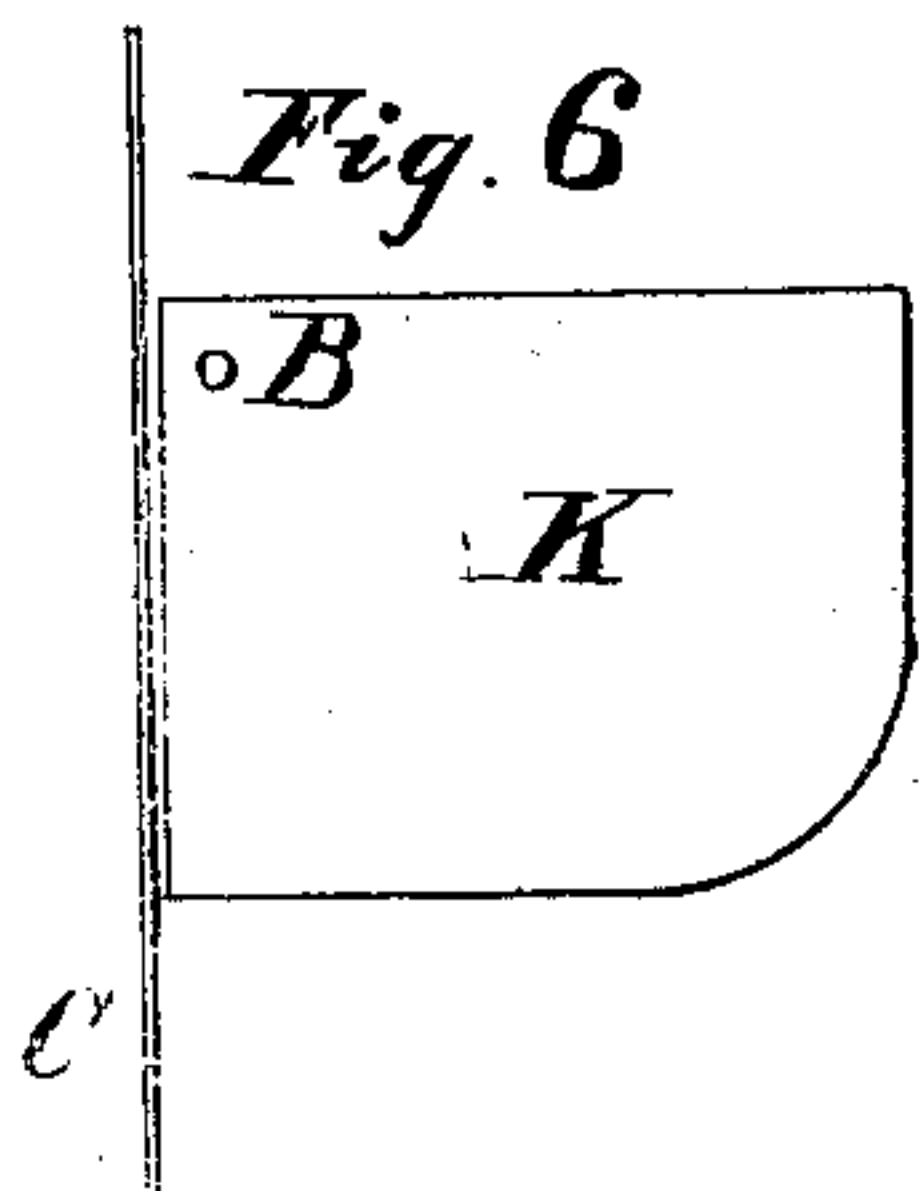
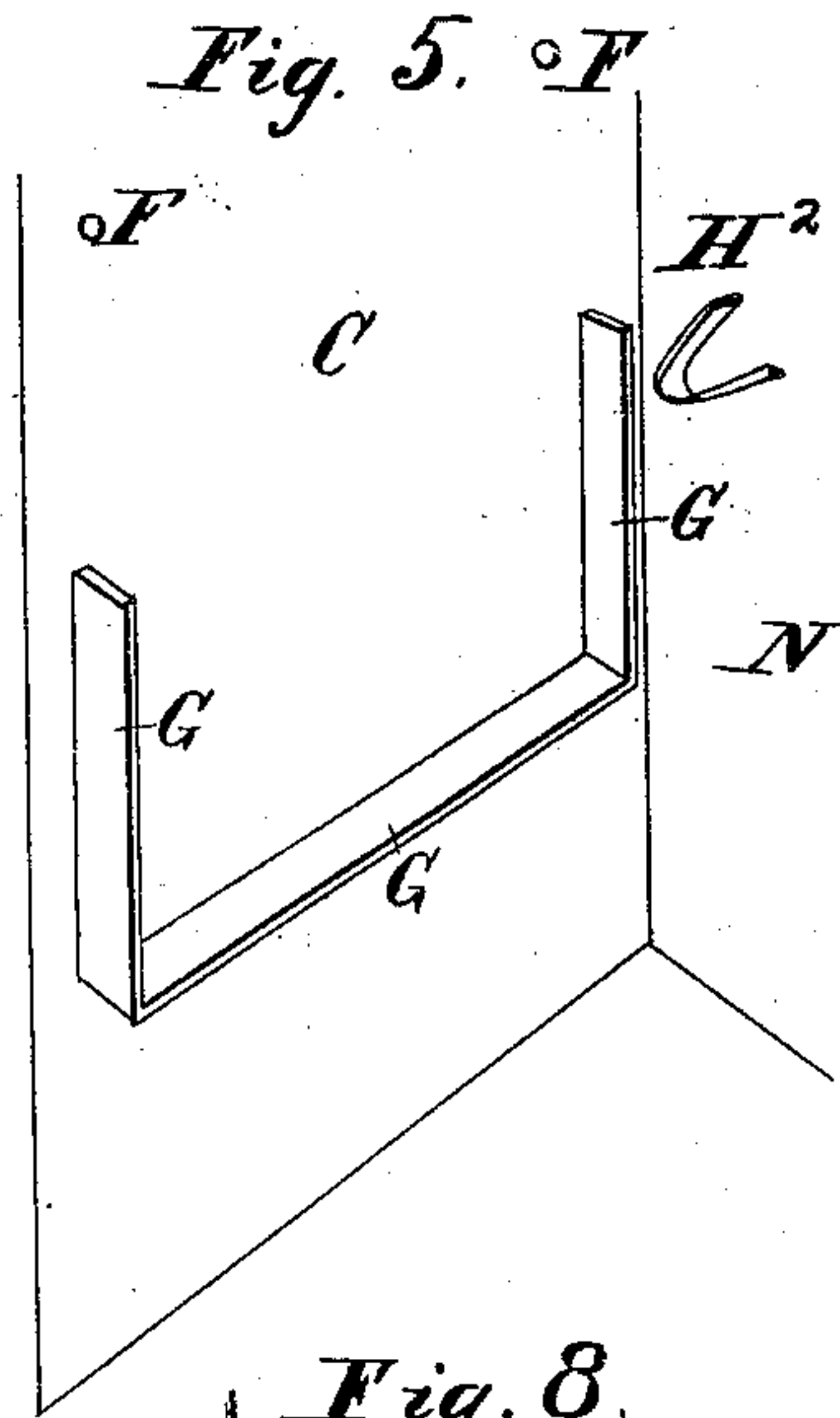
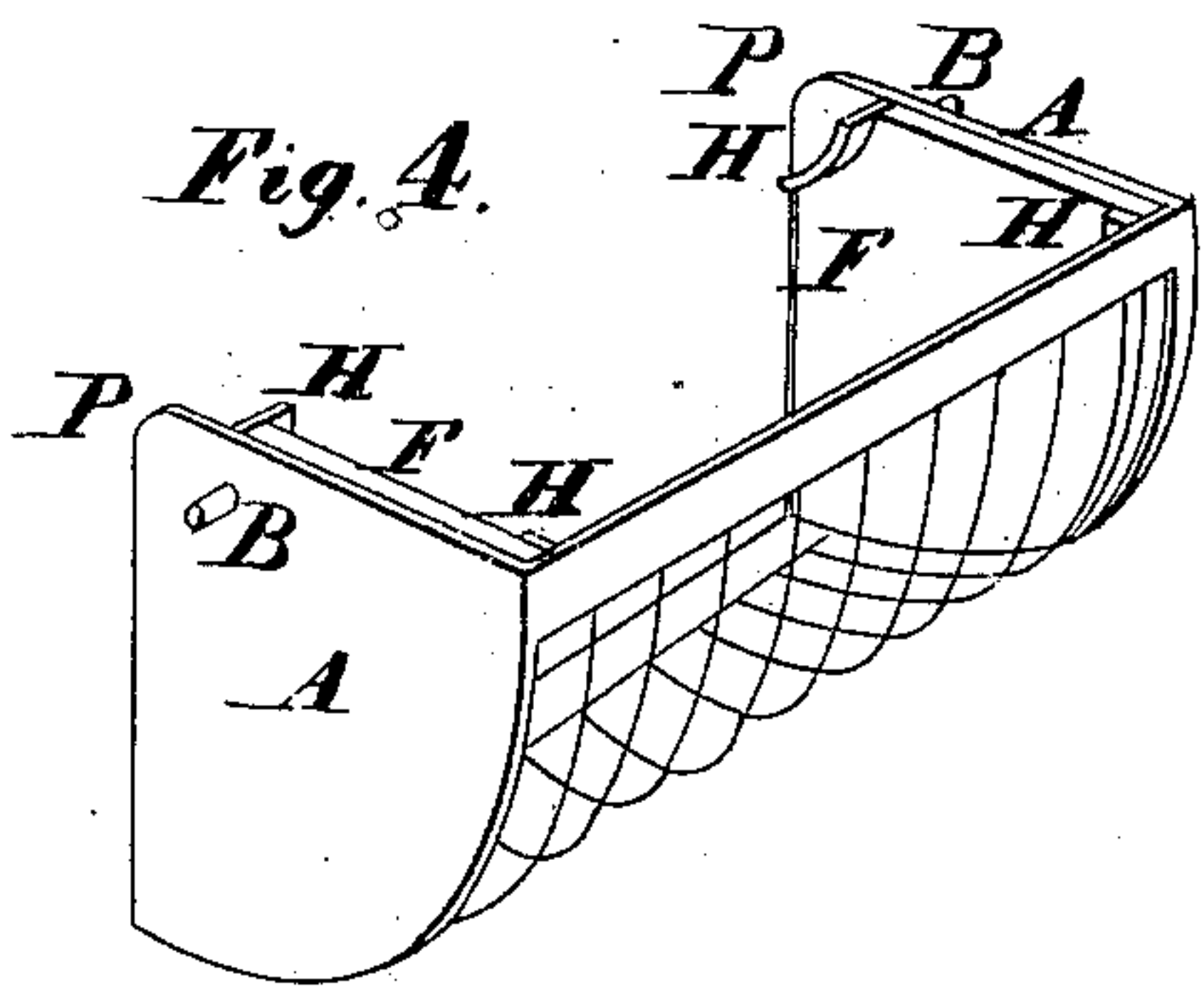
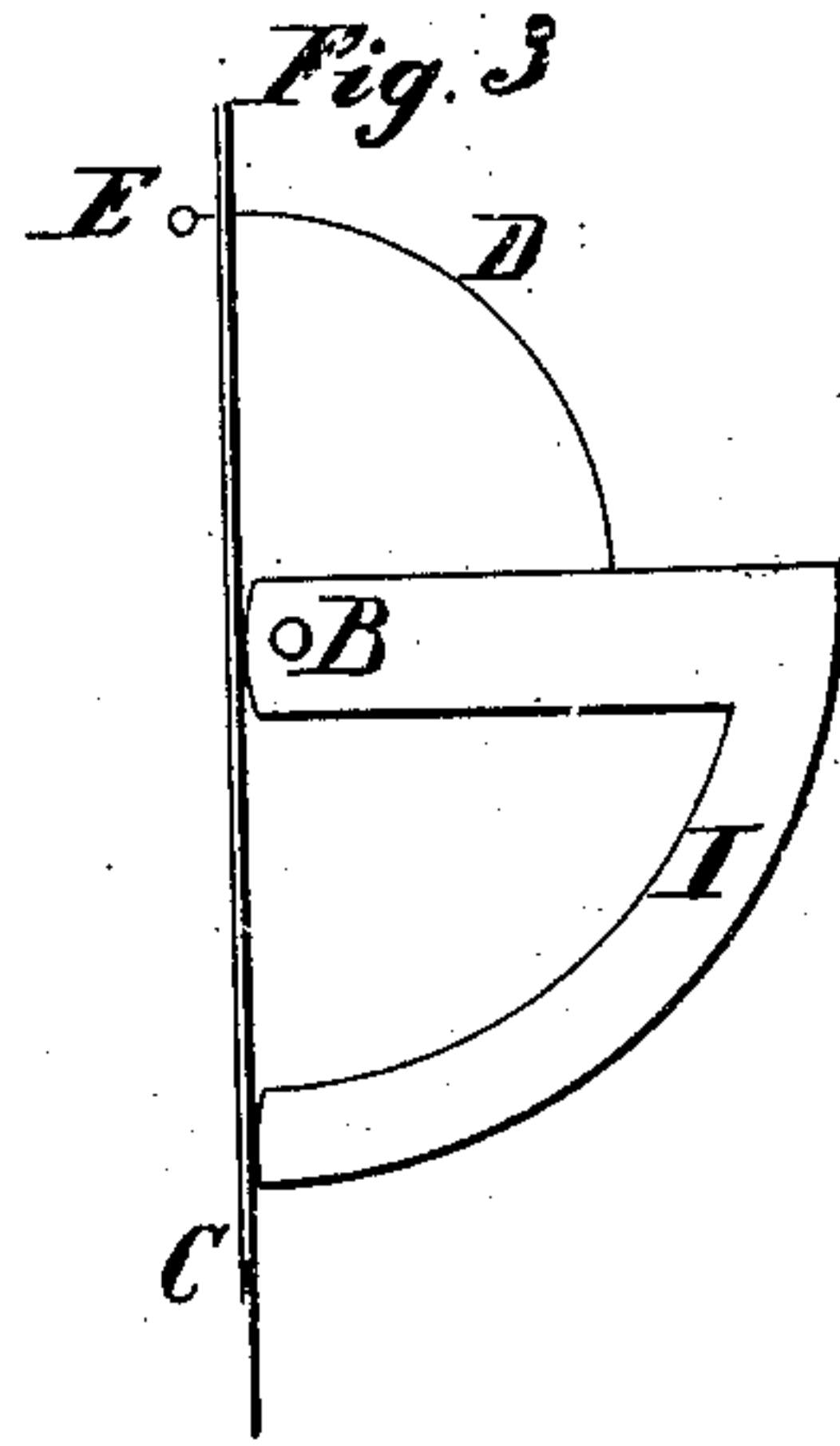
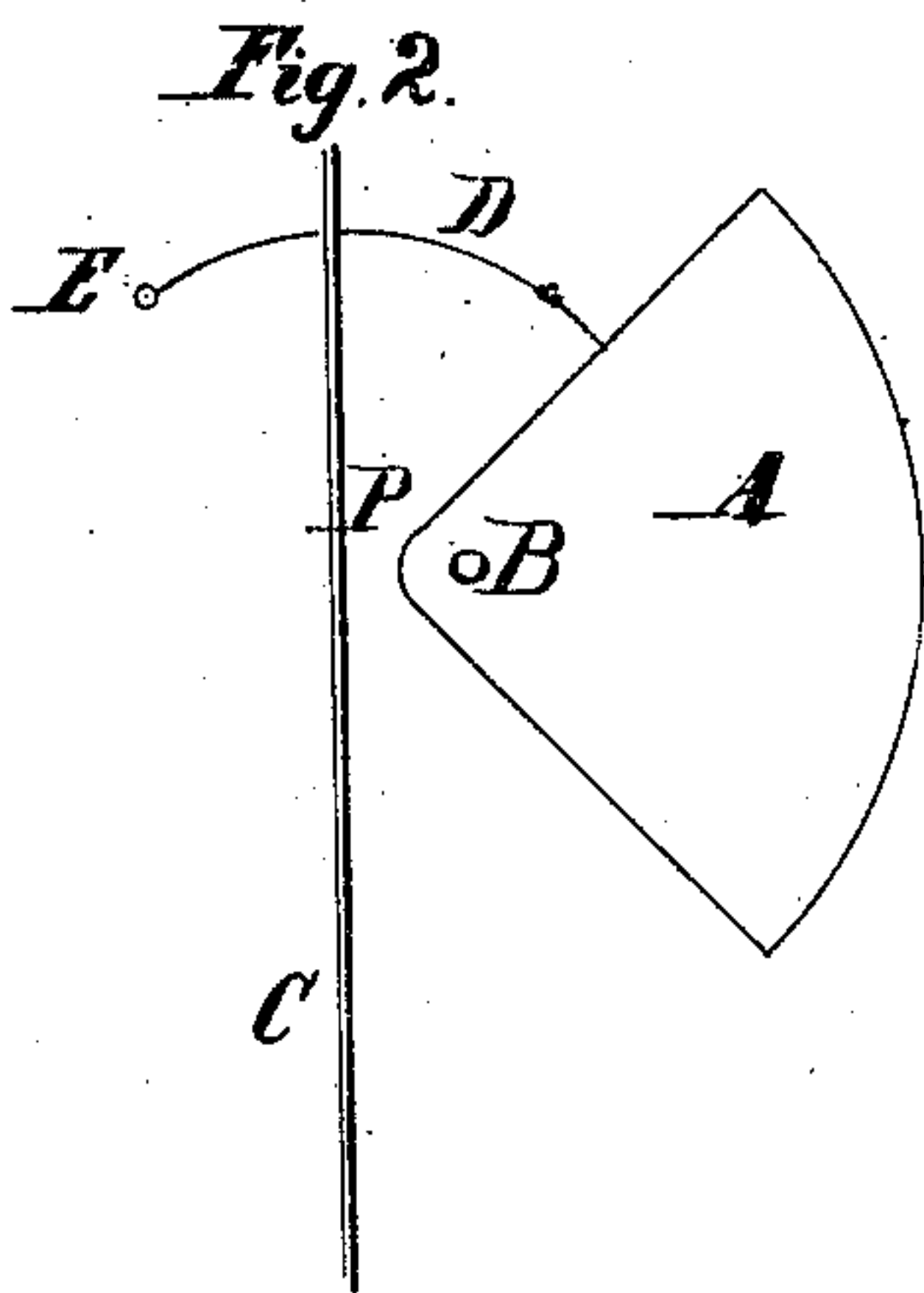
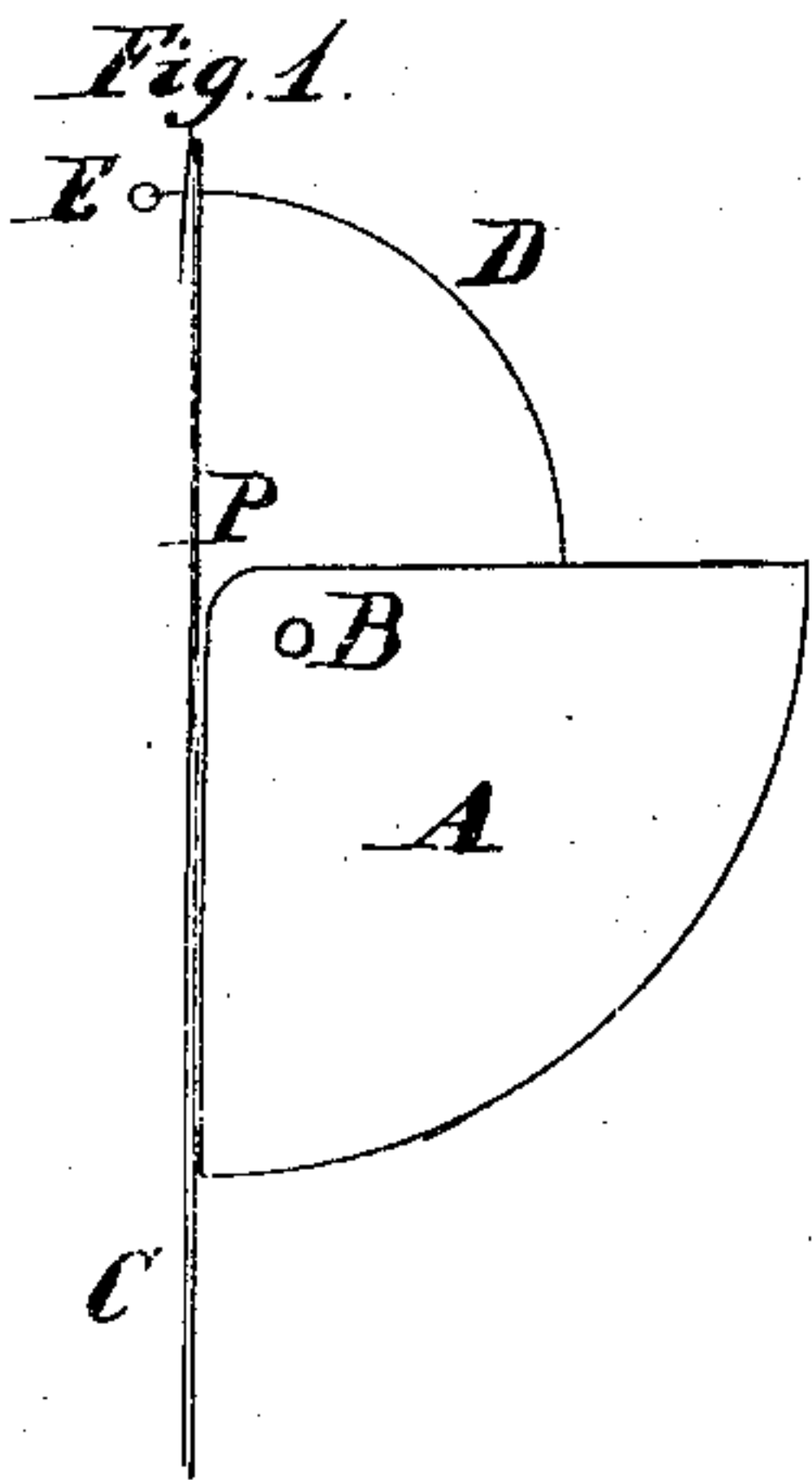


G. H. THATCHER.
GRATE.

No. 8,277.

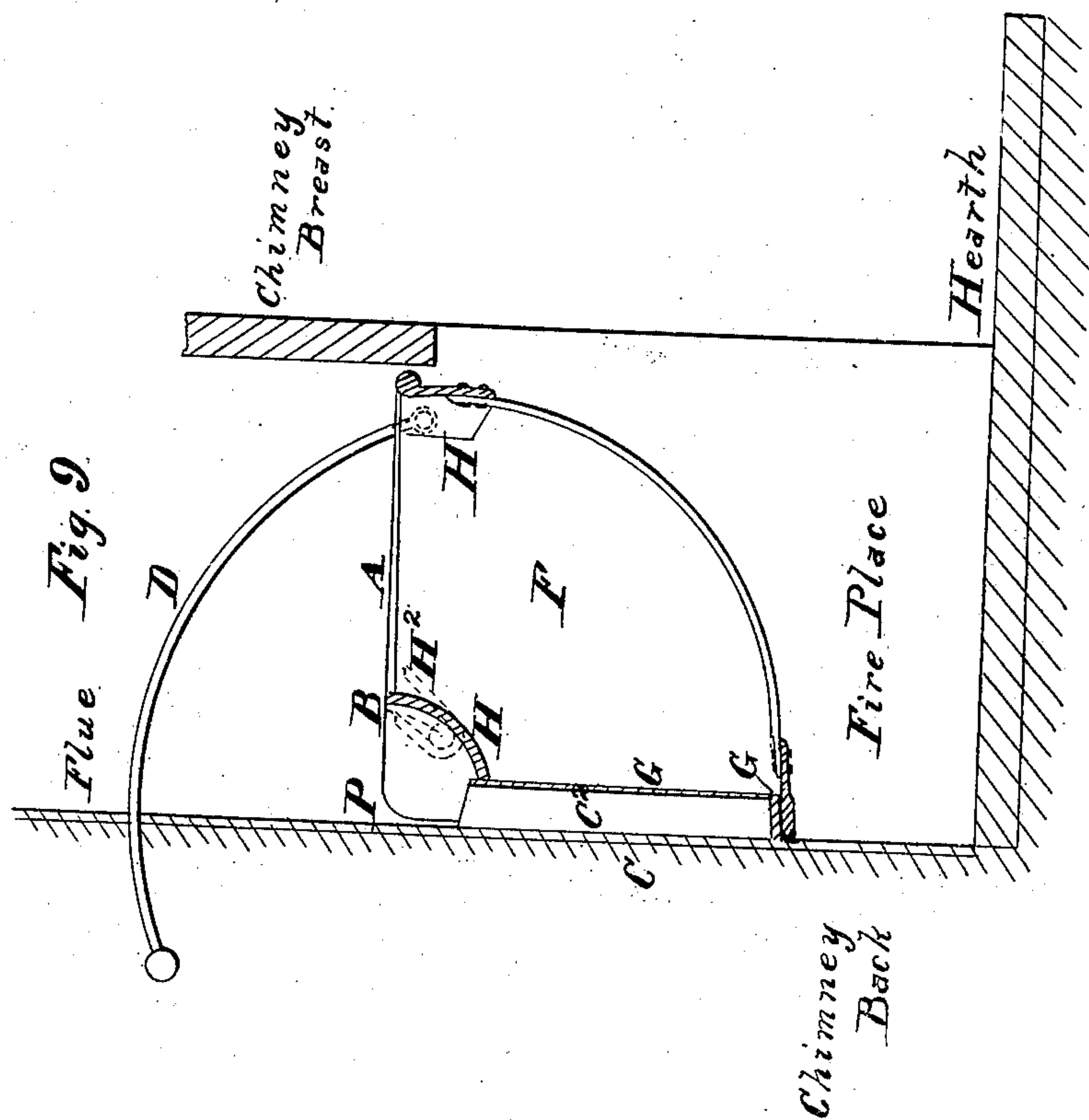
Patented Aug. 5, 1851.



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UNITED STATES PATENT OFFICE.

GEO. H. THATCHER, OF ALBANY, NEW YORK.

QUADRANT HINGED GRATE.

Specification of Letters Patent No. 8,277, dated August 5, 1851.

To all whom it may concern:

Be it known that I, GEORGE H. THATCHER, of the city and county of Albany, in the State of New York, have invented a new and useful Grate for Holding Coal and other Fuel in a Stove or other Apparatus for Burning the Same, which I denominate "The Quadrant Turning Grate"; and I do declare that the following is a full and exact description thereof, reference being had to the annexed drawings, making part of this specification.

In the drawing the same letters designate the same parts in all the figures.

A in Figures 1, 2 and 4 is the end of the grate and is the shape of a quadrant.

B is a pivot on which the grate turns, placed near the center of the same there being a pivot similarly placed at the other end of the grate.

C is the back plate of the stove or fire place, a sectional view only being given, in Fig. 5.

D is a bent rod attached rather loosely to the end-plate A of the grate and passing through a hole in the back-plate C and terminating in a knob or handle E, such a rod is fastened to each end plate of the grate by which it is operated to discharge its contents; and F, F', represent the holes through which these rods pass.

Fig. 4, is a perspective view of the grate shaped like the quarter of a cylinder.

In Fig. 5, N is one of the side plates of the stove or jamb of the fire place and H is a socket in which the pivot B fits and upon which it turns which is fastened to the end of the grate.

G, G, G is a projecting flange to guard plate fitting within the grate and fastened to the back plate C, of the stove or wall of the fire place. It consists of one horizontal and two upright pieces as seen in the drawing and is of such a size and so placed on the back plate that the grate fits closely under it, when in the position represented in Fig. 1. The pivots B, it will be seen are placed nearly or quite in a line with the axis of the cylinder of which the grate is one quarter, and the grate therefore turns nearly or quite on this axis. The corners of the end plates are rounded off slightly as at P to prevent any obstruction to the turning of the grate.

Fig. 3 represents a variation in the shape

of the end plate of the grate—the grate itself remaining the same.

Figs. 6 and 7 are variations in the shape of the end plate and of the grate, of which it is evident there may be a great number.

Fig. 8 represents an other variation in the shape of the grate; this figure like all the figures except 4 and 5 being a view of the end-plate.

In Fig. 8 the bottom of the grate is made like a section of a cylinder having its axis perpendicularly above the middle of such section and having the pivots on which it revolves (of which B is one) in a line or nearly in a line with said axis. In the former figures, as will be seen, the pivots (forming the axis of motion) are placed near to the back plate of the stove.

To protect the end-plates A of the grate from the heat, firebrick F of a convenient shape are used. The back plate C of the stove may also be protected by firebrick c^2 , Fig. 9, resting on the flange or guard G, G, G above described. The fire brick F of the end plates A are secured by means of plates or flanges, H and serves as a lining F which prevents the end plates from warping.

Fig. 9, represents a transverse section of the grate showing its position with the guard plate G, as applied to an ordinary fire place.

The operation of the grate is as follows: Being supported solely by the pivots above described one of which is seen at B, the grate assumes by its own weight the position shown in Fig. 1, and in Fig. 4, resting against the back plate of the stove. This is its position when in use. The flange G, G, G Fig. 5, prevents the coal or other fuel from dropping between the grate and the back plate and from gradually pressing the grate away from the back plate, as if with a wedge. This is the object of that flange. When it is desired to dump or clear the grate, it is raised up into the position shown in Fig. 2. This is done either by pulling the knob E which projects from the back of the stove or by raising the grate with a poker from the front. In this position all the fuel in the grate falls out, and the grate is then dropped down to its former position.

The advantages of this grate are 1st that it is dumped or cleared with great ease as is manifest from the description; 2d that the coal or other fuel falls to the back side of

the hearth or ash-pit; and 3d that when the fuel has fallen out the grate is not in the midst of the cinders but is raised above them and can be dropped to its place without difficulty.

It is evident that the pivots on which the grate turns may fit into sockets H^2 , as seen in Fig. 5, or into holes in the side plates; or the pivots may be in the plates and the holes in the ends of the grate.

This grate is particularly applicable to stoves though it may be used elsewhere; and one of its advantages is peculiar to its use in a stove; which is that it may be dumped or cleared without opening any door in the stove.

Having thus described my improvement in the quadrant turning grate. I wish it to be understood that I do not claim a grate turning upon pivots projecting from its upper front corners in such a manner, that when it is desired to discharge its contents, the lower rear portion will be made to recede from the back wall while the front portion of the grate will project frontward beyond the breast of the chimney—and the contents discharged therefrom upon the hearth, but,

What I do claim as new and of my own invention and desire to secure by Letters Patent, is—

1. Suspending the quadrant grate by pivots B projecting from the ends thereof near

the center of the circle of the grate, in such a manner that when it shall be desired to discharge the contents from the grate, its rear and lower portion will be made to recede from the back wall C and rise in the throat of the chimney, and thus the contents will be discharged into the rear portion of the fire place and the dust carried directly up the chimney, and the grate moving outward without having to drag through the accumulated coal, ashes, &c., in the fire place as described.

2. I also claim the combination of the guard plate G with the quadrant grate—said guard plate projecting from the back of the fire place horizontally above the lower rear edge of the grate, and vertically within the ends of the same, for the double purpose of forming a support for the fire brick, or back of the grate, and protecting the inner edges of the bottom and ends of the grate, and preventing it from being opened by the lumps of coal that would otherwise fall between its edges and back wall and force the grate open as described.

In testimony whereof I have hereunto signed my name before two subscribing witnesses.

GEO. H. THATCHER.

Witnesses:

WM. P. ELLIOT,
A. E. H. JOHNSON.