

(No Model.)

A. W. KERSHAW.

APPARATUS FOR VENTILATING BUILDINGS AND CHIMNEY STACKS.

No. 281,082.

Patented July 10, 1883.

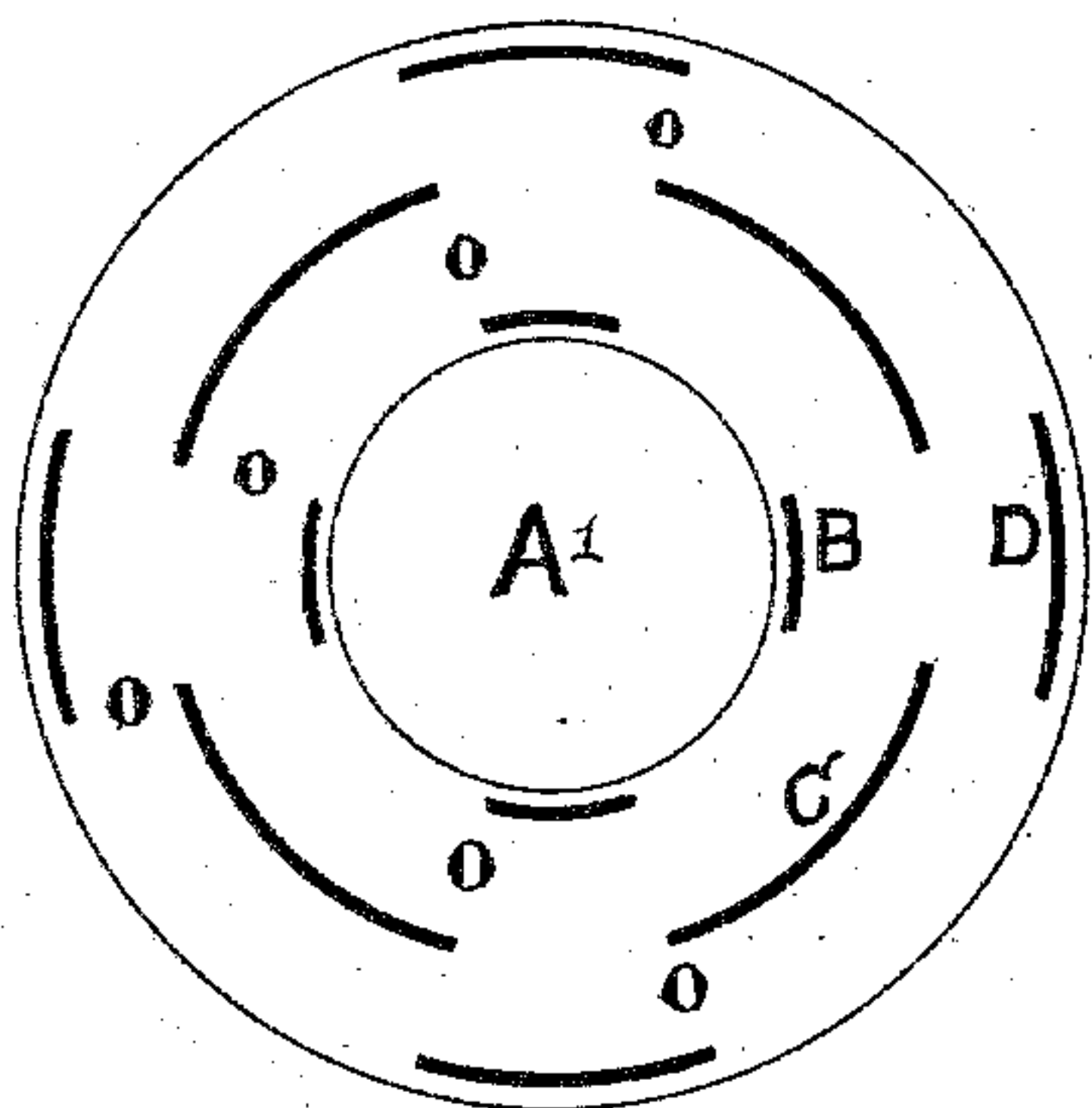
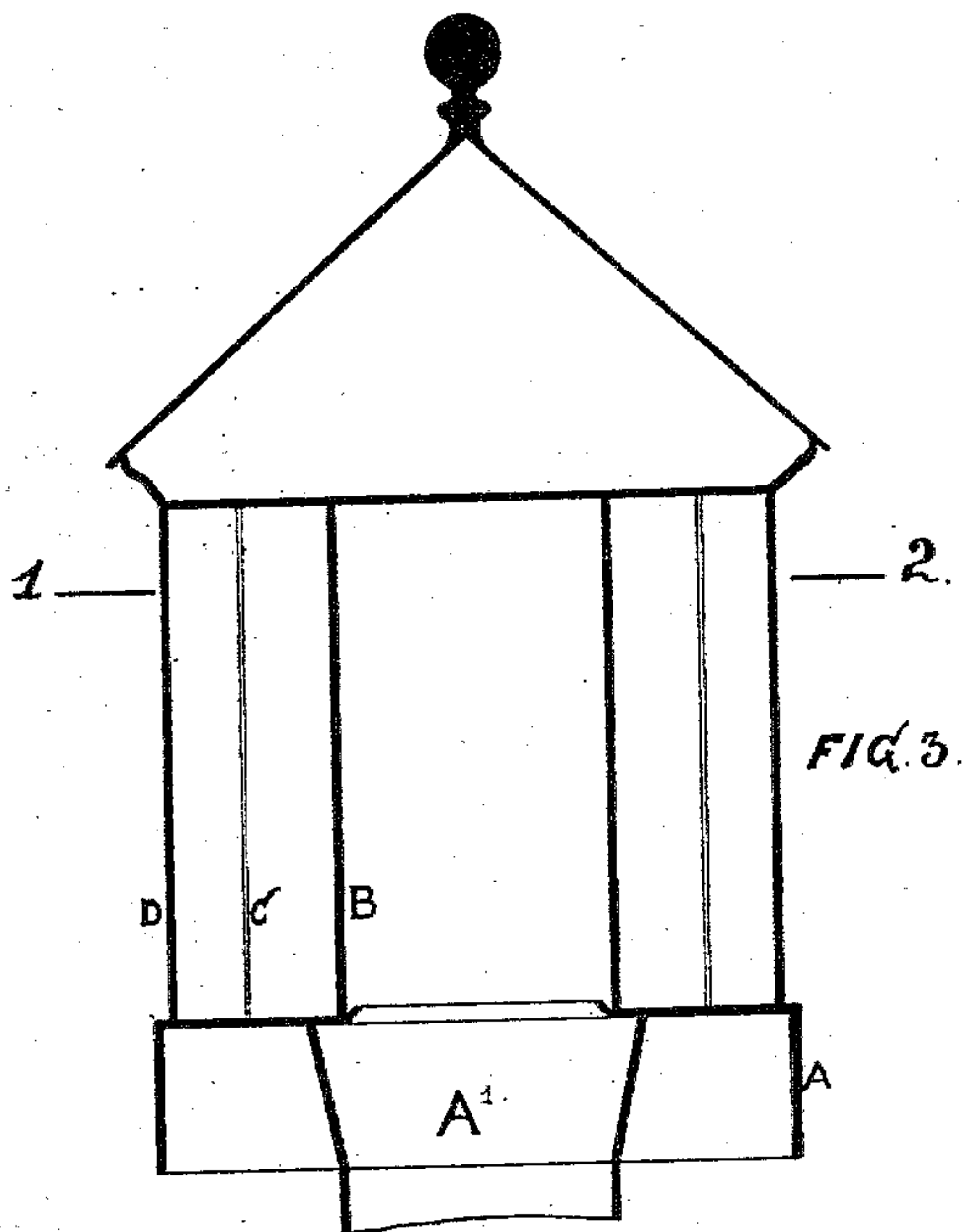
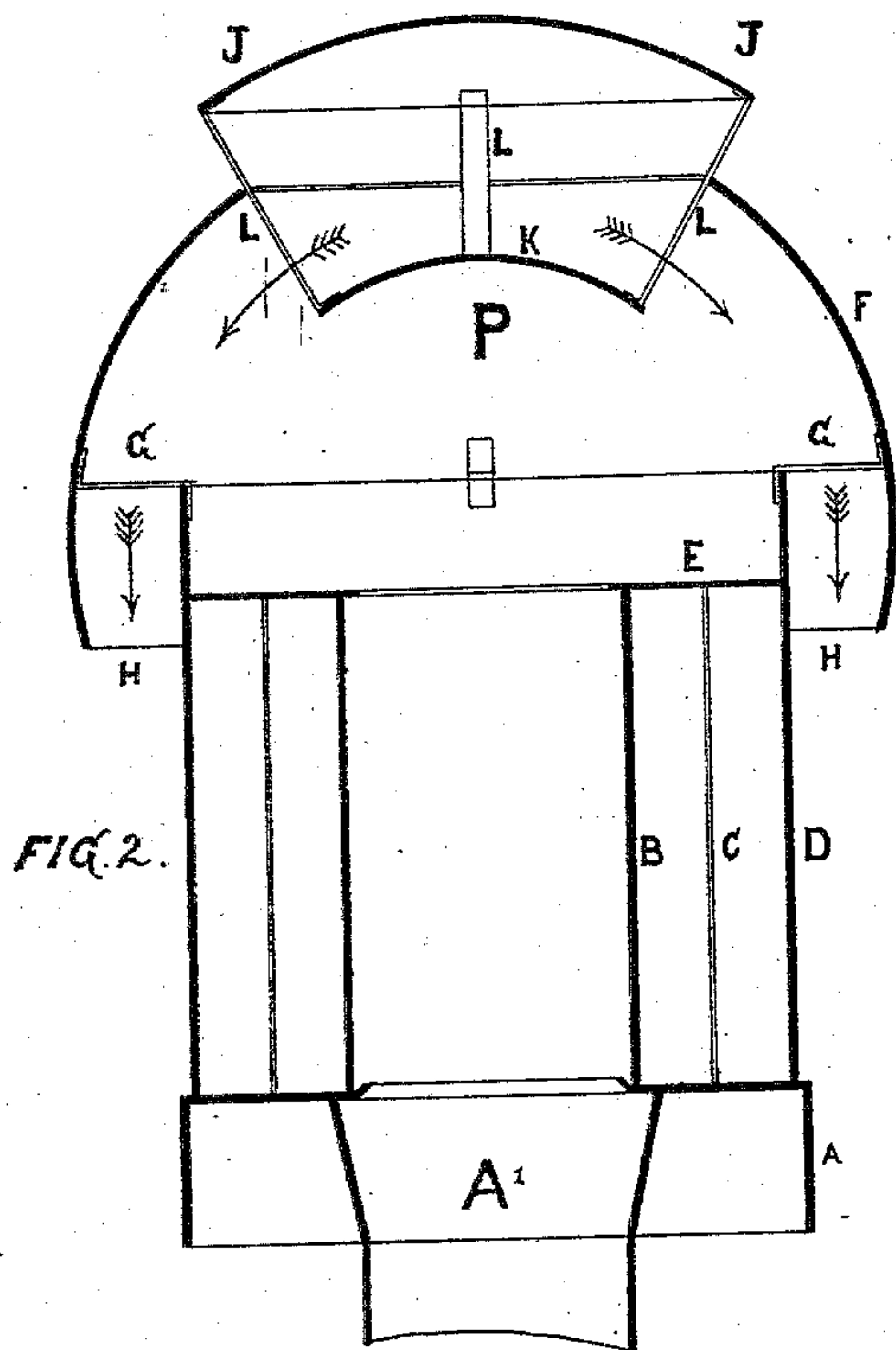


FIG. 1.

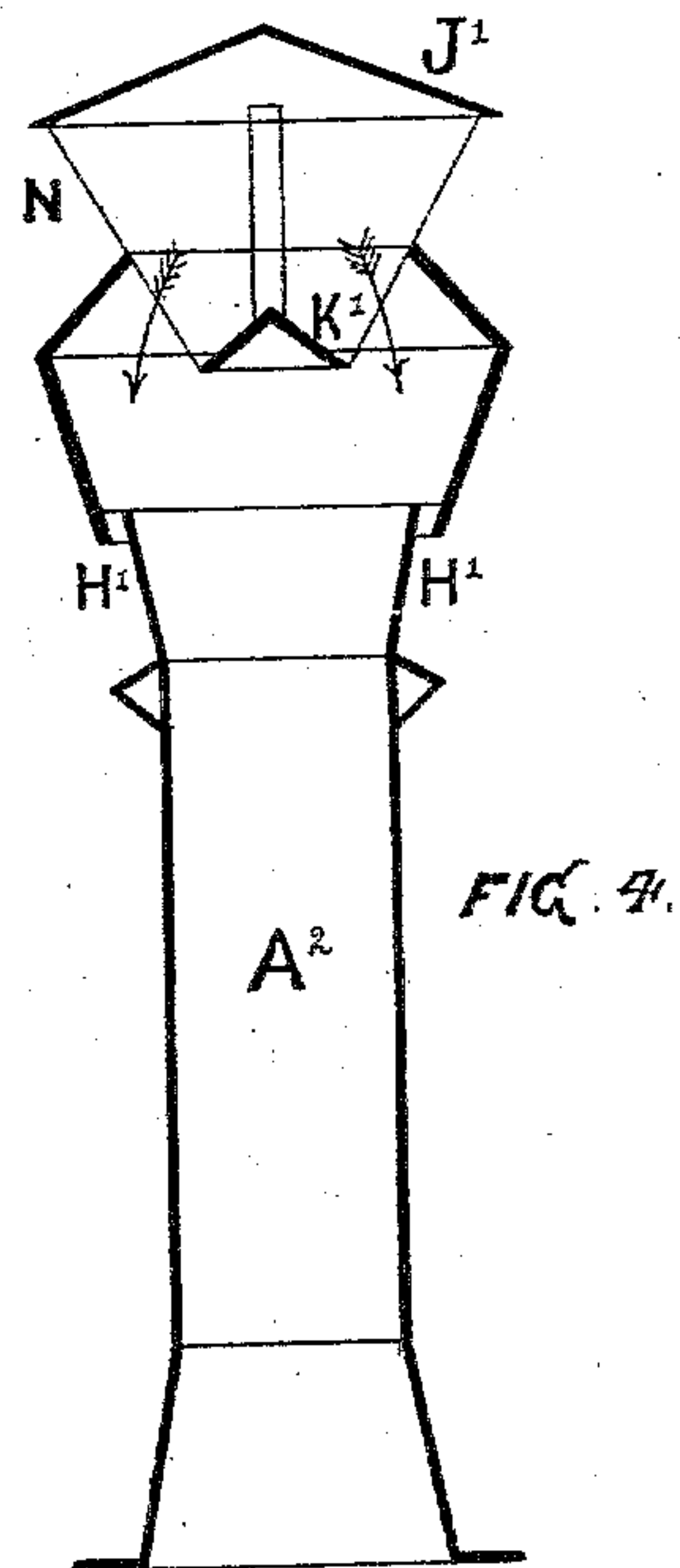


FIG. 4.

Witnesses:
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UNITED STATES PATENT OFFICE.

ARNOLD W. KERSHAW, OF LANCASTER, COUNTY OF LANCASTER, ENGLAND.

APPARATUS FOR VENTILATING BUILDINGS AND CHIMNEY-STACKS.

SPECIFICATION forming part of Letters Patent No. 281,082, dated July 10, 1883.

Application filed January 2, 1883. (No model.) Patented in England May 5, 1882, No. 2,116.

To all whom it may concern:

Be it known that I, ARNOLD WRIGHT KERSHAW, a subject of the Queen of Great Britain and Ireland, and residing at Lancaster, in the county of Lancaster, England, have invented certain Improvements in Apparatus for Ventilating Buildings and Chimney-Stacks, (for which I have obtained a patent in Great Britain, dated May 5, 1882, No. 2,116,) of which the following is a specification.

The object of my invention is to obtain more efficient ventilation of buildings and chimney-stacks by means of ventilators requiring no mechanical motion, so constructed that the rain-water cannot be driven into the upcast tube; and it consists in arranging the ventilator with a series of deflectors which may be arranged perpendicularly, thereby forming the sides of the ventilator, one series of deflectors being opposite to the openings in the next series of deflectors, by which arrangement the wind is prevented acting direct upon the upcast tube; or the top of the ventilator may be formed circular or angular, and obtain the same result by constructing the deflectors curved or angular and placing them immediately above the upcast tube, so that in whichever way the wind is blowing the deflectors will prevent down-draft in the upcast tube.

In the accompanying drawings, Figure 1 represents a sectional plan of Fig. 3 through line 1 2. Fig. 2 is a vertical section of a modification. Fig. 3 is a vertical section of the ventilator shown in Fig. 1, and Fig. 4 is a vertical section of another modification.

The ventilators may be constructed of sheet-zinc or other metal, soldered, riveted, or otherwise fitted together, and may be formed in section circular, rectangular, or other well-known shape. Fig. 1 is of circular form, arranged with four deflectors in a rim or circle; but more or less in number may be fitted, the number being regulated by the diameter of the ventilator. The outer circle, A, is the base of the ventilator, to which the vertical deflectors B, C, and D are attached, the series C being placed opposite to the openings between the deflectors in the series B and D. The top of each series of deflectors is attached to the plate E, and the upcast tube communicating with the building is indicated

by A'. The wind, impinging in any direction against the deflectors, on passing through the openings O creates a partial vacuum in the upcast tube A', thereby promoting the up-current through the said tube, exhausting the air from below, and more effectually ventilating the building.

Fig. 2 represents a vertical section through the center of a circular ventilator adapted for a large building, and fitted with a dome-top, F, which is attached to the vertical deflectors D by supports G, thereby leaving an open space all round the ventilator at H. An opening is formed through the top of the dome, above which is fixed a curved cover, J, of larger diameter than the opening, and below the said opening, inside the dome, is another curved cover or deflector, K, of less diameter than J, but larger than the upcast tube A'. These curved covers or deflectors are attached together by straps L, which are also secured to the dome F. The wind blowing against the ventilator passes through the opening between the cover or deflector J and dome F, and, impinging upon the deflector K, is diverted in the direction of the arrows through the opening H, carrying the foul air with it from the space P, and thereby assisting to cause a partial vacuum in the upcast tube A', communicating with the building.

Fig. 4 is a vertical sectional elevation through the center of a ventilator suitable for the ventilation of chimneys and soil-pipes, and is fitted with an expanded top of angular form, the covers or deflectors J' and K' being supported in the same manner as in Fig. 2, and the wind, blowing in whatever direction through the opening N, is diverted by the deflector K' in the direction of the arrows, and, passing out through opening H' around the ventilator, exhausts the foul air or smoke from the chimney-flue or soil-pipe A².

What I claim as my invention is—

1. A ventilator having vertical plates B C D, arranged in sets, the plates of one set being arranged opposite the spaces between the plates of the adjoining set, substantially as set forth.

2. The combination of the sets of vertical plates B C D of a ventilator with cover-plates F J K, substantially as and for the purpose described.

3. The combination of a chimney-flue casing with a ventilator having a cover, F, with an open top, a large plate, J, above the opening, and a smaller plate, K, below the same
5 within the cover, and having openings H between the cover and flue-casing, substantially as set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

ARNOLD W. KERSHAW.

Witnesses:

JOHN GILL,

EDWARD CRITCHLEY.