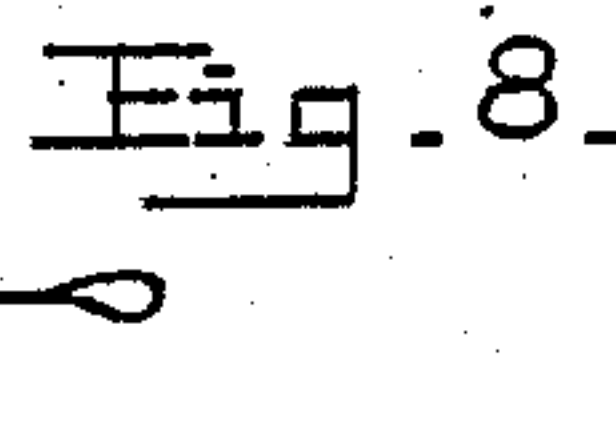
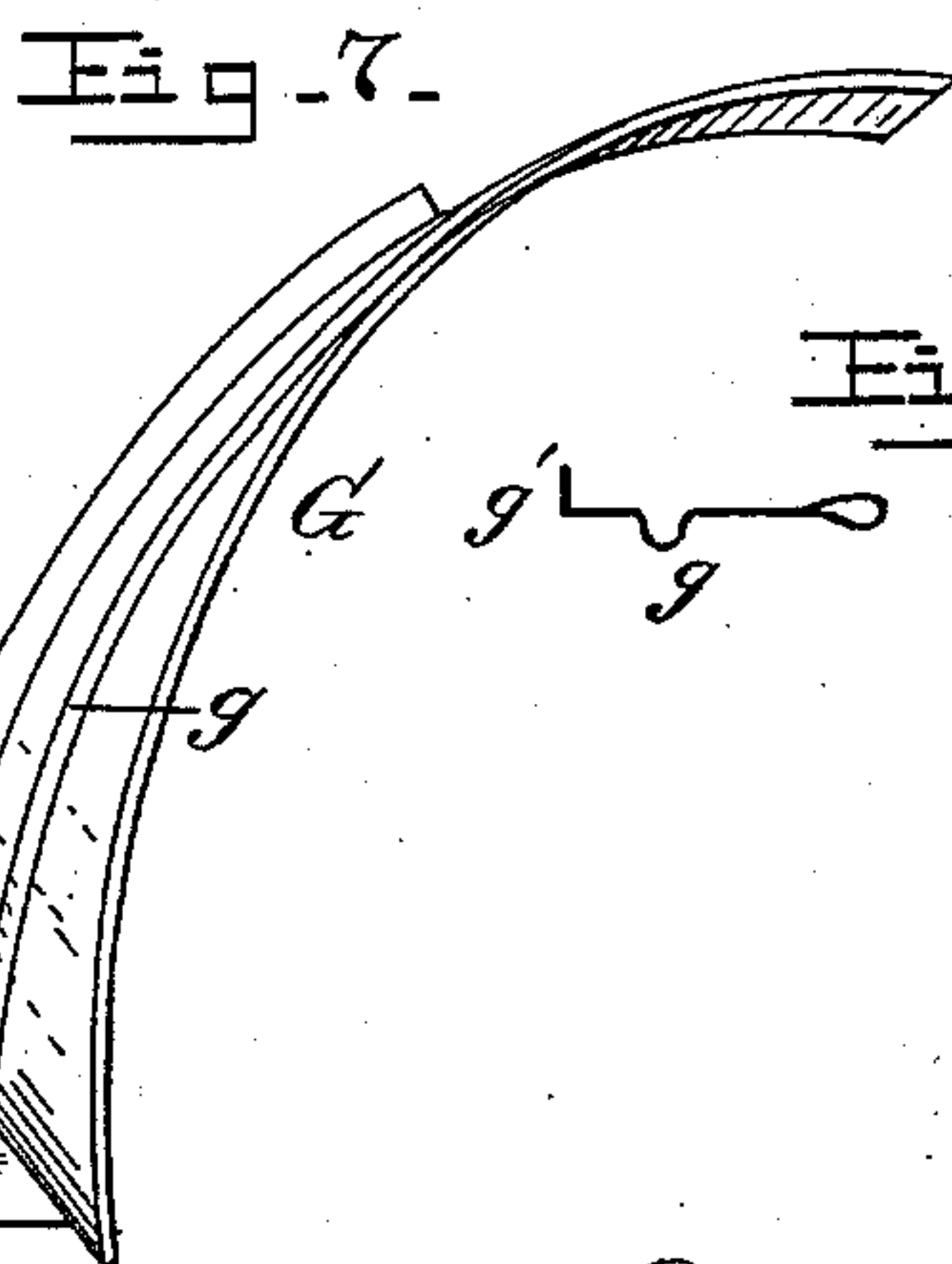
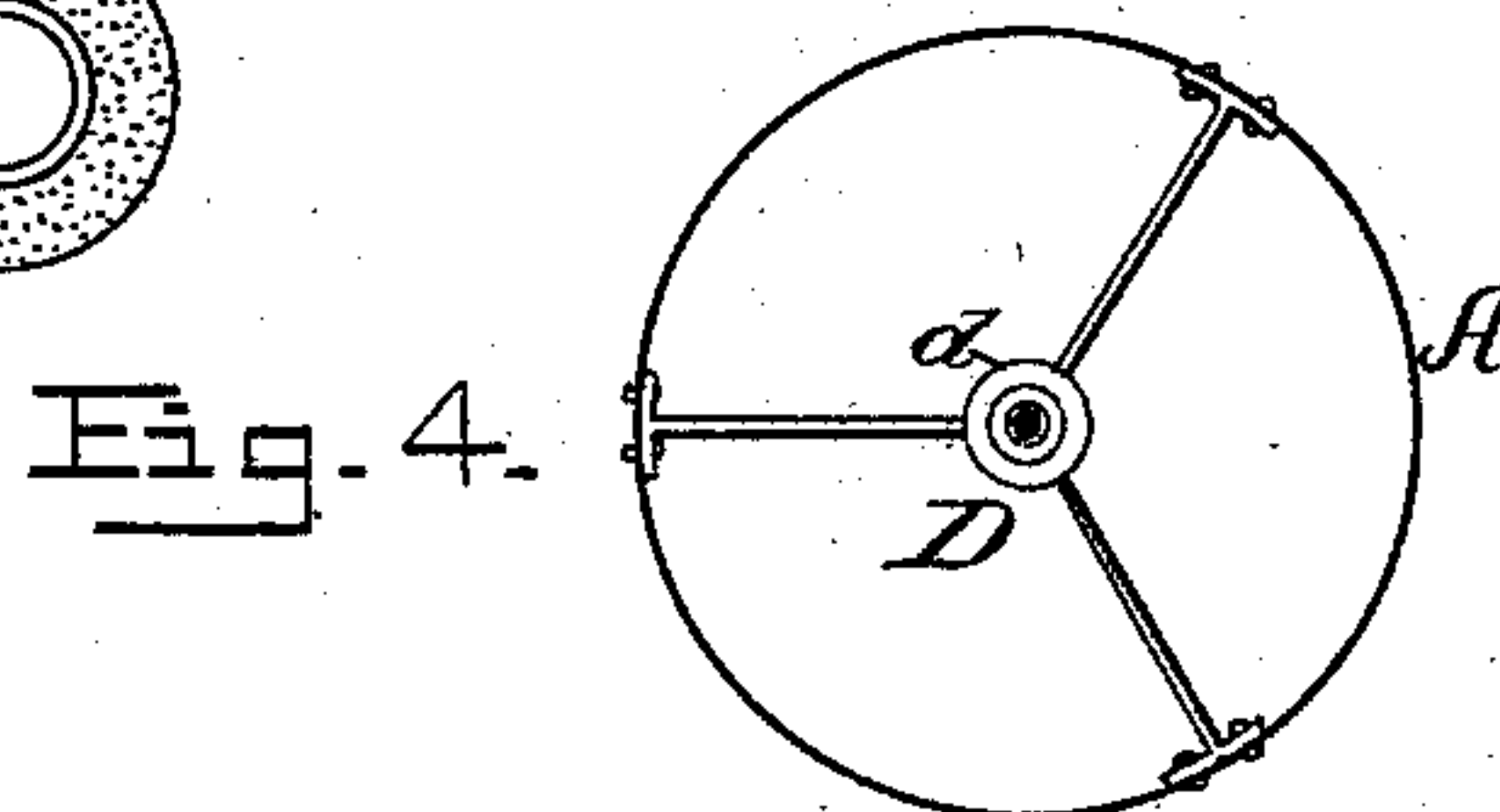
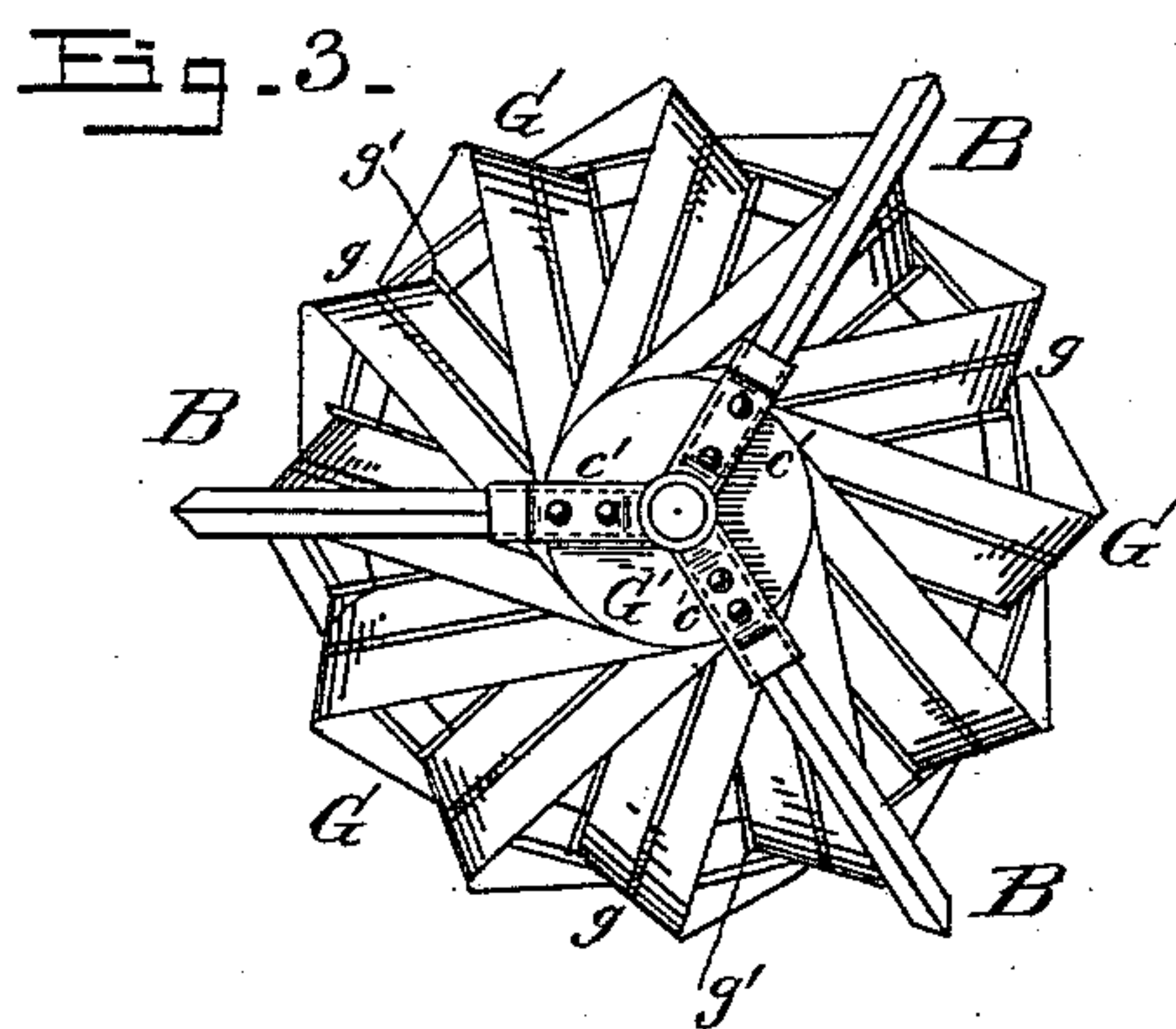
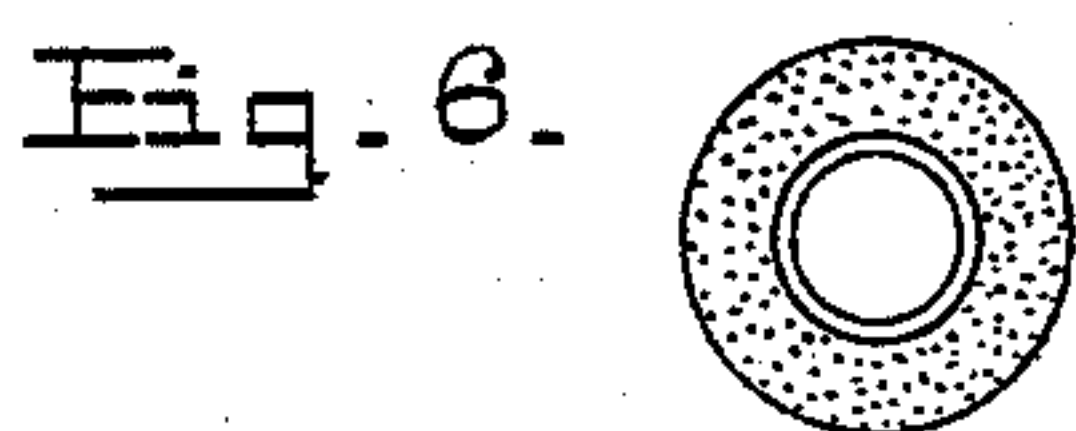
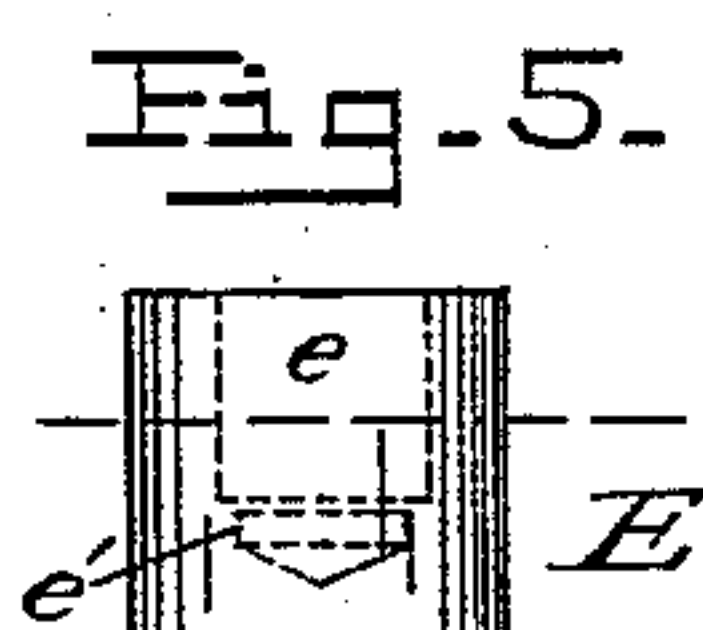
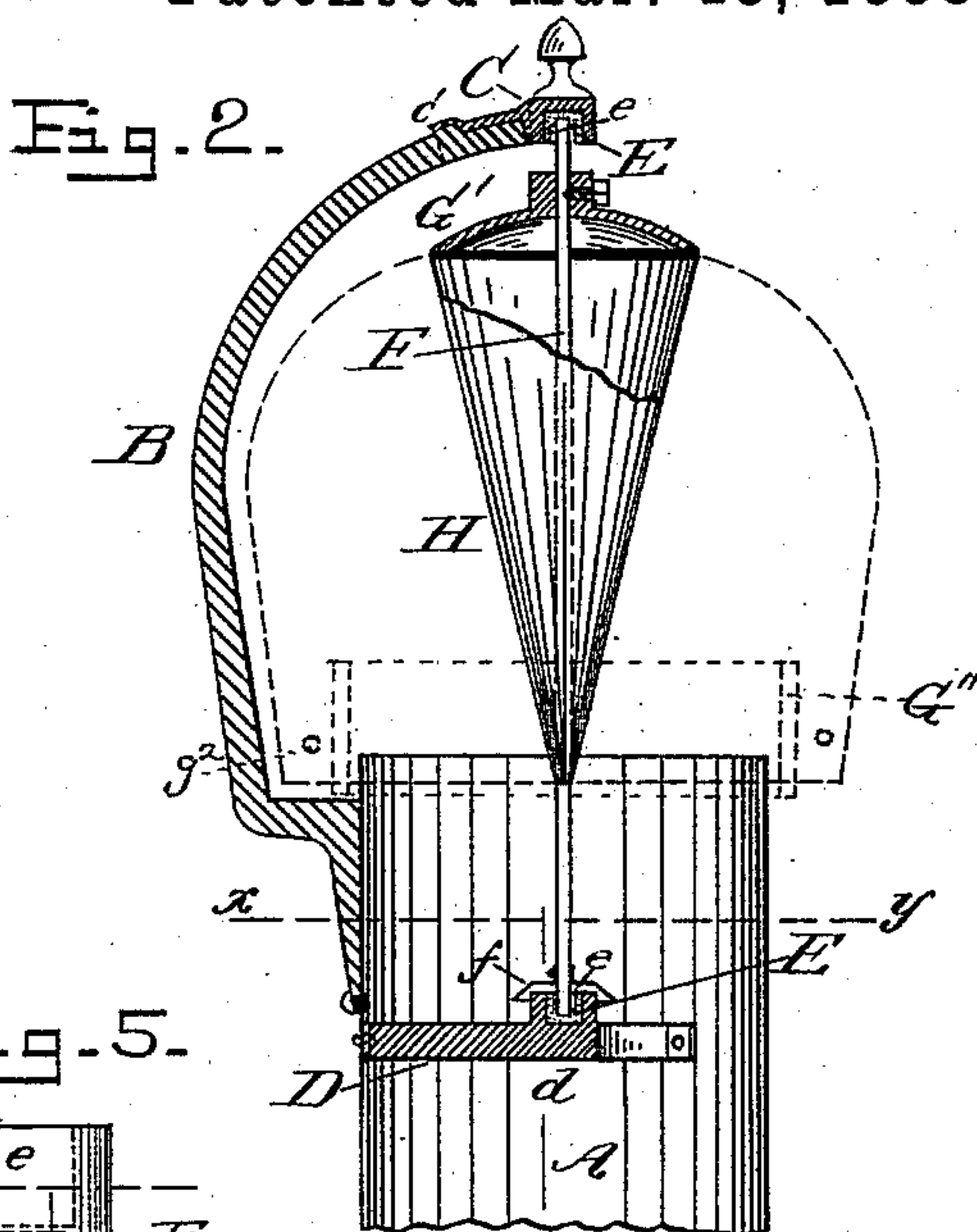
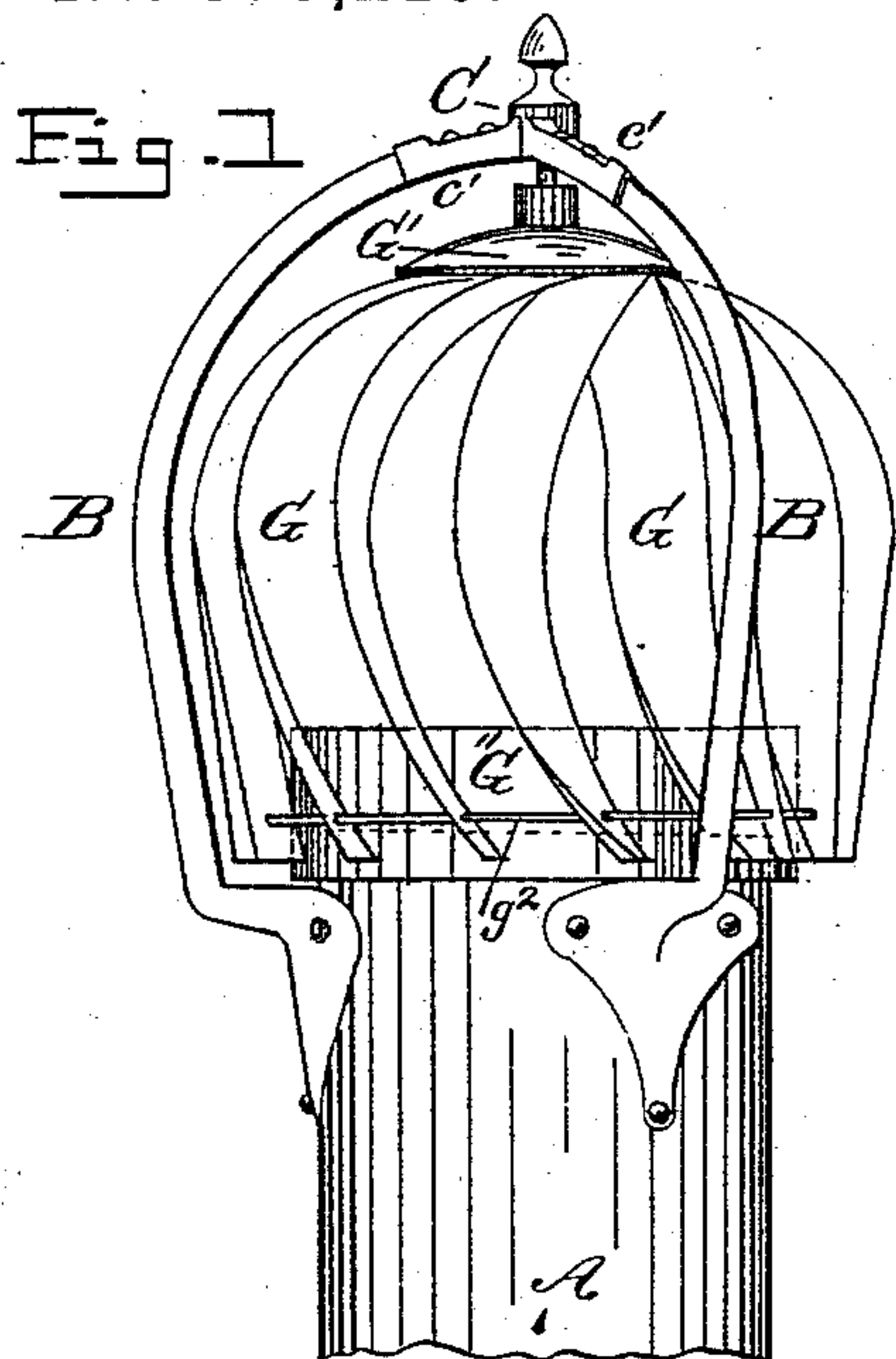


(No Model.)

J. GOETTEL.
CHIMNEY COWL.

No. 379,216.

Patented Mar. 13, 1888.



Witnesses.

Frank Mattingly
E. B. Wright.

Inventor.

John Goettel,
By his Attorneys
Whittelsey Wright.

UNITED STATES PATENT OFFICE.

JOHN GOETTEL, OF BOSTON, ASSIGNOR OF THREE-FOURTHS TO LESLIE LUCAS DIXON, OF SOMERVILLE, GEORGE W. SQUIRE, OF CAMBRIDGE, AND JAMES THOMAS LIPSETT, OF BOSTON, MASSACHUSETTS.

CHIMNEY-COWL.

SPECIFICATION forming part of Letters Patent No. 379,216, dated March 13, 1888.

Application filed December 19, 1887. Serial No. 258,276. (No model.)

To all whom it may concern:

Be it known that I, JOHN GOETTEL, a citizen of the United States, residing at Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Chimney-Cowls; and I 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 and figures of reference marked thereon, which form a part of this specification.

My invention relates to chimney cowls or ventilators, and more especially to that class in which the wind sets in motion a rotating fan, thereby increasing the upward draft of smoke and gases in the chimney, or of air in the ventilating-flue.

Heretofore it has been found that the pyro-lignic and other acids in the smoke and gas escaping from a chimney are very destructive to cowls of this class, attacking the bearings of the shaft and the joints of the structure and soon rendering the cowl inoperative and useless. It has also been a matter of care and trouble to keep the running parts properly lubricated, sometimes necessitating considerable expense when the cowl is located on a high chimney, where it is not easily accessible, except by means of scaffolds. Again, the cross-bars which unite the base of the revolving hood-shaped fan with the shaft have been found to become entangled with pieces of paper and the like by reason of their swift revolution across the path of whatever is escaping from the flue. Furthermore, the vanes of the fan have not heretofore been suitably shaped to prevent rain or melting snow or ice from trickling down inside of the cowl and rusting it.

The object of my invention is to make the bearings of such materials as to be non-corrodible by acids in the smoke or by water entering the cowl and to render them independent of lubrication, to dispense with the cross-bars at the base of the revolving fan, and to so construct the vanes of the fan as to conduct all moisture falling upon them to the outside of the cowl.

In the accompanying drawings, Figure 1 is

a side elevation of my improved cowl. Fig. 2 is a longitudinal section. Fig. 3 is a plan. Fig. 4 is a cross section on line $x y$, Fig. 2. Figs. 5 and 6 are views of my glass bearing. Fig. 7 is an enlarged view of one of the vanes of the fan, Fig. 8 being a cross-section thereof.

The same parts are indicated by the same reference-letters in all the figures.

Let A represent the upper portion of a chimney or a ventilating-flue. Attached to this are curved standards B, which are united at their upper ends by a cap, C, provided with arms c , to which the standards B are secured. The cap C lies in the axis of the flue A. Within the flue, and a short distance below its upper end, is fixed a two or a three armed cross-bar, D, having at its center a block, d . In the cap C and in the block d are inserted glass bearings E, consisting of a cylindrical block of glass with a cylindrical central socket, e , at the bottom of which is a smaller central socket, e' , having a coned bottom. Seated in these bearings is the shaft F, having pivots at each end which fit the small sockets e' in the bearings and hold the shaft centrally therein. By this arrangement there is practically no friction between the sides of the shaft and the walls of the bearing, the contact being only at the end of the shaft. The coned socket keeps the shaft always in line, even when worn.

By using glass bearings no lubrication is required, and the glass, not being attacked by the acids in the smoke, will last indefinitely. In order to prevent the entrance of soot and cinders into the lower bearing, a flanged collar, f , is secured to the shaft just above the bearing.

The fan is composed of curved vanes G, springing from a center plate, G' , secured to the upper part of the shaft. The inner edges of the lower ends of the vanes are united to a ring, G'' , which surrounds the upper end of the flue A. The outer edges of the vanes are retained in position by a wire, g , passed through the vanes at a little distance from the ring G'' . The usual construction is to steady this ring by cross-bars fastened to the shaft. In order to dispense with these bars and avoid obstructing the flue, I employ an inverted cone, H, surrounding the shaft F and firmly secured thereto, its base being attached to the vanes at

a little distance from the center plate, G', and concentric therewith. This cone gives the fan sufficient stiffness to resist lateral strains and assists to deflect the escaping smoke and gases to the open sides of the fan. To further stiffen the fan each vane is formed with a longitudinal bead or gutter, *g*. Its outer edge is doubled over and its inner edge is provided with an upturned flange, *g'*. The gutter *g* and the flange *g'* also serve to conduct all moisture to the lower end of the vane, where it drips from the edge of the ring G'' without entering the cowl and getting into the flue or upon the working parts.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. A rotating chimney-cowl provided with a shaft having an inverted cone secured thereto, and a series of vanes attached at their upper ends to said cone and united at their lower ends to a ring which is not connected with the shaft, substantially as described.

2. A chimney-cowl consisting of the standards B, the cap C, uniting the standards, the cross-bar D, the glass bearings E, inserted in said cap and cross-bar and having the two concentric sockets *e* and *e'*, the shaft F, having the flanged collar *f* and the inverted cone H, the vanes G, attached to the base of said cone, and the ring G'', uniting the ends of the vanes and unconnected with the shaft F, substantially as described.

3. A rotating chimney-cowl having a series of curved vanes, G, each of which is provided with a gutter, *g*, and a flange, *g'*, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

JOHN GOETTEL.

Witnesses:

SCHUYLER DURYEE,
CHARLES P. LINCOLN.