J. A. HODEL.

VENTILATOR.

APPLICATION FILED JAN. 4, 1913.

1,098,948.

Patented June 2, 1914.

2 SHEETS—SHEET 1.

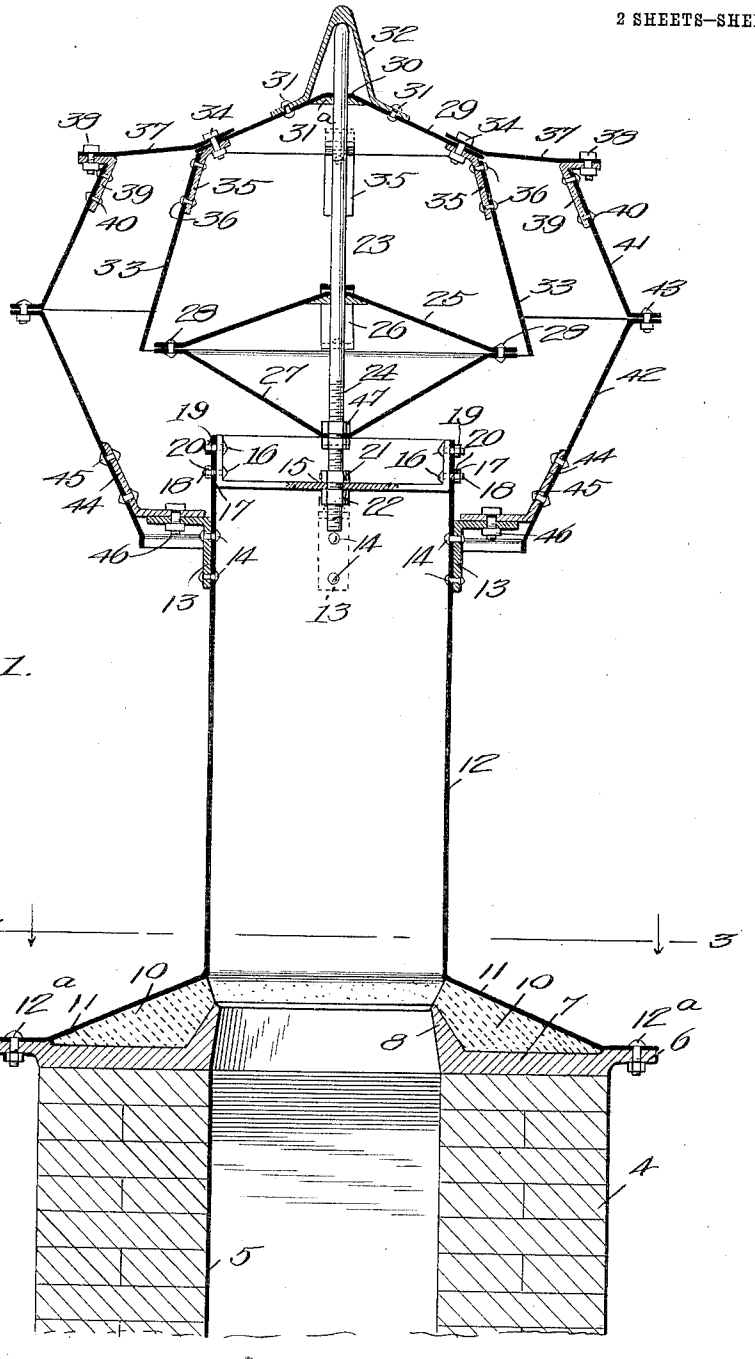

Fig. 1.

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2 SHEETS—SHEET 2.

Fig. 2.

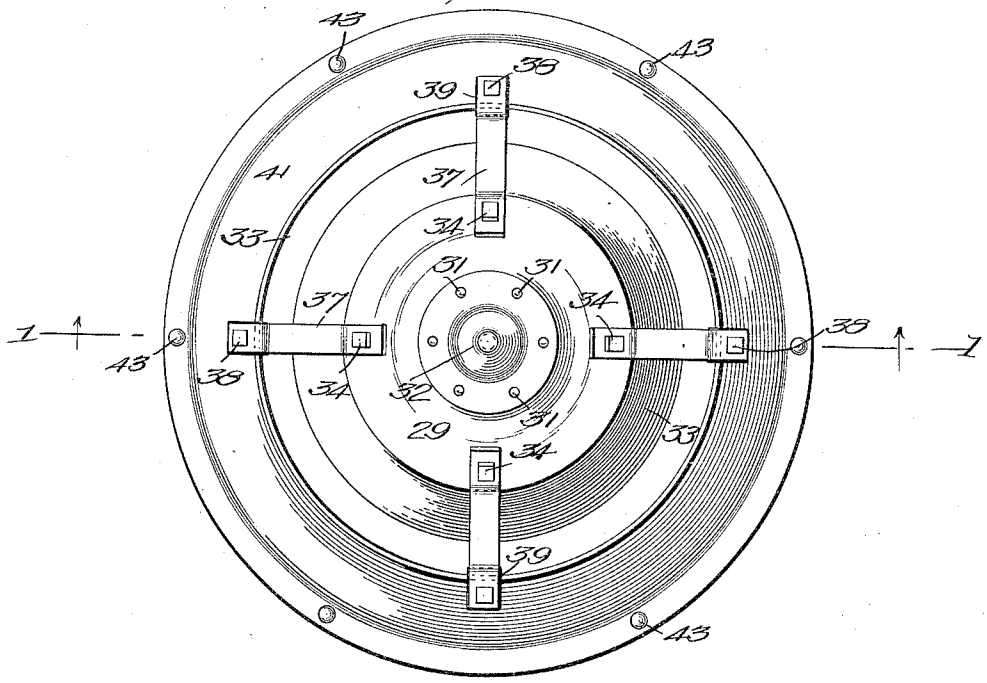
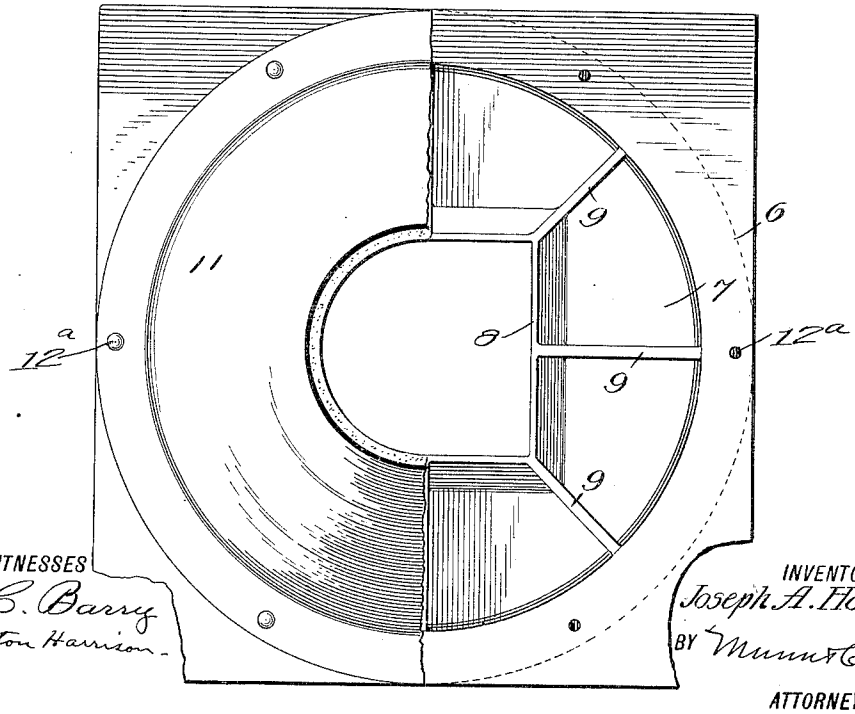


Fig. 3.



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VENTILATOR.

1,098,948. Specification of Letters Patent. Patented June 2, 1914.

Application filed January 4, 1913. Serial No. 740,140.

To all whom it may concern:

Be it known that I, JOSEPH A. HODEL, a citizen of the United States, and a resident of Philadelphia, in the county of Philadelphia and State of Pennsylvania, have made certain new and useful Improvements in Ventilators, of which the following is a specification.

My invention relates to ventilators of the type used upon the tops of chimneys, flues and the like for the double purpose of preventing entrance of rain water into the chimney and of affording ready means for the escape of smoke from the chimney, while at the same time adding an ornamental appearance to the chimney top.

Reference is made to the accompanying drawing forming part of this specification, and in which like letters indicate like parts.

Figure 1 is a vertical section on the line 1—1 of Fig. 2, looking in the direction of the arrow, and showing my improved ventilator complete, Fig. 2 is a plan view of the mechanism shown in Fig. 1, and Fig. 3 is a view partly in plan and partly in section on the line 3—3 of Fig. 1, looking in the direction of the arrow.

A chimney 4 is provided with an opening 5 through which the smoke and gases pass upwardly in order to make their escape. Resting upon the chimney and serving as a chimney cap is a metallic plate 6, which in this instance has a square outline. This plate 6 is provided with a number of webs 7, each web provided with an inner edge 8 of tapering thickness. Separating the webs 7 are ribs 9 integral with the plate 6, these ribs radiating from the vertical axis of the chimney opening 5. The inner edge 8 of the plate 6 is, in this instance, square in its general outline.

A filling 10 which may be of concrete, cement, or mortar is spread upon the webs 7, so as to cover the tops of the ribs 9, and thus present a frusto-conical surface. Fitted upon this frusto-conical surface is a metallic member 11 having the general form of a cone frustum and secured by aid of bolts 12 to the outer edge of the plate 6. Secured to the frusto-conical member 11 and extending upwardly therefrom is a flue section 12 of metal having the form of a cylinder.

Mounted upon the flue section 12 are four metallic brackets 13, each being of substantially L-shape and secured to the flue section by aid of fastenings 14. A spider ring 15 is mounted upon a number of bolts 16 which are radially disposed and extend through holes 17 in the upper portion of the flue section 12. The outer ends 18 of the bolts 16 are screw threaded and fitted with nuts 19, 20. The spider ring 15 and bolts 16 with their accompanying parts together constitute a spider, which is used for supporting other parts as hereinafter described. Extending through the spider ring 15 and secured thereto by aid of nuts 21, 22 is a rod 23 provided adjacent its lower end with a thread 24. A pair of crossed metallic strips 25, 26, together with the ring 15 constitute a spider, which is connected at its outer ends with a member 27 having the form of an inverted cone. Fastenings 28, in this instance bolts, are employed for securing the outer ends of the spider to the outer edges of the cone frustum first mentioned.

A plate 29 is provided with a central opening 30 through which the rod 23 extends. The plate 29 is further provided with an eye 31^a, which forms a bearing for the rod 23. Mounted upon the plate 29 and secured thereto by aid of bolts 31 is a boss 32 made of metal, formed hollow and having generally the shape of a cone. The boss 32 may be taken off by loosening the bolts 31. Secured to the plate 29 by aid of bolts 34 are straps 35, and secured to these straps by aid of bolts 36 is a metallic member 33 having generally a frusto-conical form. This metallic member and the plate 29 together constitute a boss which I conveniently designate as a cap. Secured to the plate 29 by the bolts 34, and extending radially outward, are four legs 37. These legs are secured at their outer ends by means of bolts 38 to a number of straps 39, these straps being in turn secured by bolts 40 to a frusto-conical metallic member 41. This frusto-conical metallic member is connected to another metallic member 42 somewhat similar to it in form and connected with it by aid of bolts 43. The frusto-conical member 42 is provided with feet 44 secured to it internally by rivets 45. The feet 44 are adapted for engagement with the brackets 43 and may be secured thereto by aid of bolts 46. The frusto-conical members 41, 42 together form a part which I conveniently

designate as a hood. This hood may be readily detached from its mountings and taken down by merely taking out the bolts 46. When the hood is replaced in position it is again secured by the bolts 46.

By loosening the nuts 21, 22 and turning the rod 23, this rod together with members carried by it may be loosened from the spider ring 15. In order to remove the rod and parts carried by it I loosen the bolts 38. This enables the plate 29 and frusto-conical member 33, together with parts carried thereby, to be removed with the rod 23.

The legs 37 may be loosened at either their inner ends or their outer ends as desired. Ordinarily their outer ends alone are loosened by removing the bolts 38 for the purpose of removing the cap consisting of the plate 29 and frusto-conical member 33. If, however, for any reason it be desired to allow the feet 37 to remain connected with the frusto-conical member 41, the bolts 34 may be loosened and the feet 37 swung slightly upon the bolts 38 as centers. This allows the cap, consisting of the plate 29 and frusto-conical member 33, together with parts carried thereby, to be readily removed. By allowing the nuts 21, 22 to remain undisturbed as indicated in Fig. 1, and loosening the bolts 34 so that the leg 37 may be swung slightly upon the bolts 38 as centers the plate 29 may be removed bodily without disturbing any other part. This allows the operator to insert his hand into the frusto-conical member 33 for the purpose of adjusting the conical member 25 should this be desirable at any time.

The conical member 27 is engaged by two nuts 47, which are mounted upon the threaded portion 24 of the rod 23. By turning the nuts 47, the conical member 27 with its legs 25 is moved upwardly or downwardly in relation to the frusto-conical member 33, and thus adjusted properly in relation to the latter.

As will be readily seen from the foregoing description the rod 23 coincides with the axis of the chimney and is adjustable relatively to the spider ring 15 whereby the rod is supported. The conical member 27 with its legs 25 is adjustable relatively to the pipe section 12 and to the spider ring 15. The cap consisting of the plate 29 and the frusto-conical member 33 is adjustable bodily in relation to the conical member 27 and to the upper end of the pipe section 12. The hood consisting of the frusto-conical members 41, 42 is adjustable relatively to the pipe section 12, but may be removed bodily therefrom.

As the smoke passes upwardly through the opening 5 in the chimney and through the pipe section 12, it strikes the lower face of the conical member 27 and is deflected outwardly from the axial center thereof. The smoke now encounters the lower edge of the frusto-conical member 33, and because of this fact is deflected slightly downward. After passing the lower edge of the frusto-conical member 33 the smoke, in the absence of a wind, passes upwardly and escapes from the annular space between the frusto-conical members 33 and 41. Should the wind be blowing at any angle the smoke is free to make its escape either in the manner just stated or at the bottom of the hood, that is to say between the outer ends of the brackets 13.

The rain in falling upon the plate 29 runs down upon the frusto-conical member 33 and escapes downwardly from the bottom edge of the latter but cannot get into the pipe section 12 or into the chimney. All rain water entering the device readily makes its escape at the bottom of the hood.

I find that there is much advantage in the adjustability in this device. For instance by drawing the conical member 27 well up within the frusto-conical member 33 the smoke in making its escape is more thoroughly baffled by the lower edge of the frusto-conical member 23, and has a tendency to curl downwardly, a considerable proportion of the smoke making its escape at the bottom of the hood. This would seem to be a matter of small consequence, but I find that where the wind strikes the device from a variety of independent angles, as is often the case where the device is used in a crowded city, the adjustment of the cone enables the wind to blow freely through the ventilator in almost any direction and yet does not interfere with the chimney draft or carry rain water into the chimney. In other words, I find that by carefully adjusting the relative altitudes of the various adjustable parts above mentioned I can find a point where the draft through the ventilator is always strong, notwithstanding the various angles at which the wind may strike the device and independently of whether rain is falling or not.

The operation of my device will be readily understood from the foregoing description. The parts being assembled and arranged the ventilator is simply mounted upon the top of a chimney and used as above described. Any rain water passing into the ventilator readily flows out and drops upon the conical surface 11 at the base of the ventilator. The rain water is thus prevented from getting into the chimney.

Having thus described my invention what I claim as new and desire to secure by Letters Patent is as follows:

In a ventilator, the combination of a flue section, a spider mounted therein, a rod provided with a threaded portion extending through said spider and supported thereby, nuts engaging said threaded portion of said

rod and placed upon opposite sides of said spider, said nuts being revoluble for the purpose of adjusting said rod relatively to said spider, a baffle member mounted upon said rod, a cap encircling said rod, and gracing the same at the upper end thereof, said cap being adjustable by the adjustment of said rod, legs secured to said cap and extending radially outward therefrom, a cowl connected with the outer ends of said legs, said cowl encircling said cap and the adjacent end of said flue section, and connections from said flue section to the adjacent inner surface of said cowl.

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