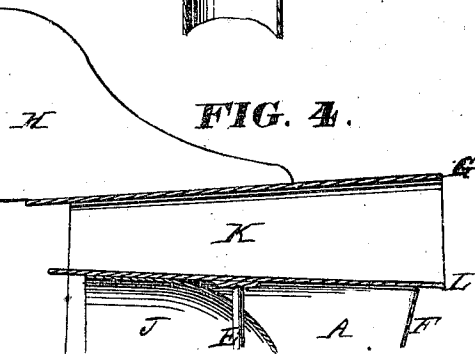
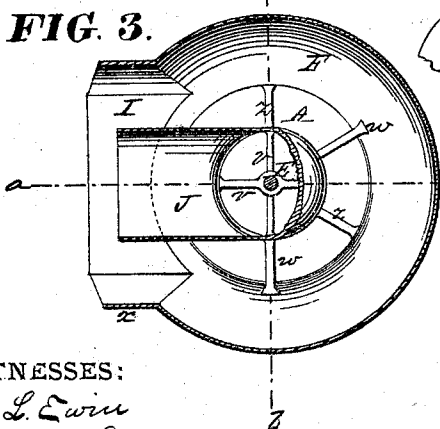
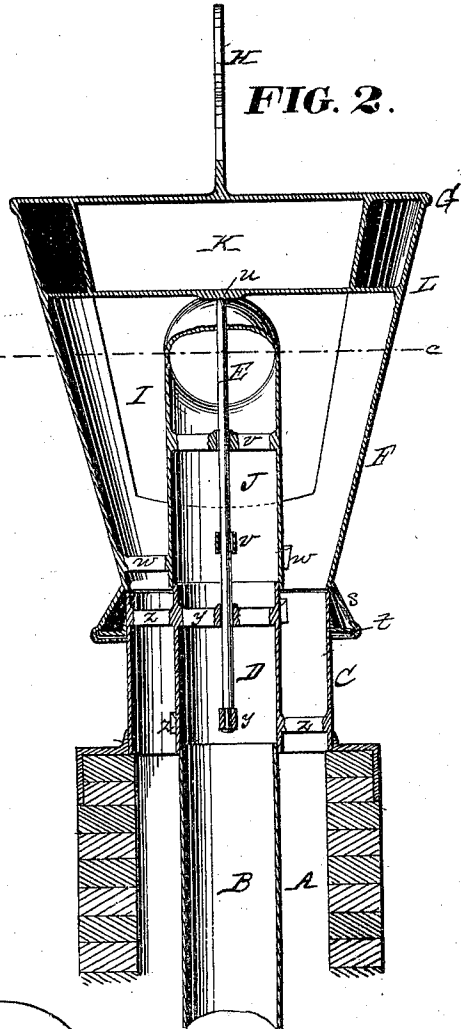
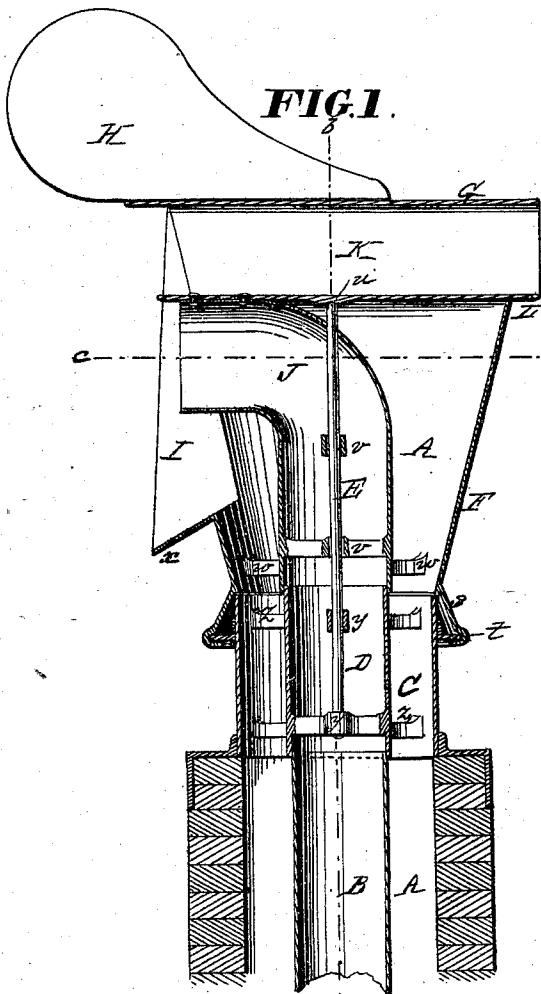


C. L. GARFIELD.
Revolving Chimney-Tops.

No. 142,225.

Patented August 26, 1873.



WITNESSES:

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UNITED STATES PATENT OFFICE

CHARLES L. GARFIELD, OF ALBANY, NEW YORK.

IMPROVEMENT IN REVOLVING CHIMNEY-TOPS.

Specification forming part of Letters Patent No. 142,225, dated August 26, 1873; application filed May 8, 1873.

To all whom it may concern:

Be it known that I, CHARLES L. GARFIELD, of the city and county of Albany and State of New York, have invented a certain Revolving Chimney-Top, of which the following is a specification:

The primary object of this invention is to provide an efficient means for ventilating houses in connection with the smoke flues and cowls; and this part of the invention consists in the combination, with an outlet for smoke in the direction of the wind, of an air-passage opening in the same direction, and communicating at bottom with a pipe in the smoke-flue arranged to carry off foul air from one or more rooms of the house. The invention also consists in a horizontal wind-passage, to increase the draft; also, in means for swiveling the revolving top proper to its base, so as to preclude its being blown off. The invention is applicable, in part, to revolving caps used only for ventilating purposes and to chimney-cowls without the ventilating provision.

Figure 1 is a vertical longitudinal section of a revolving chimney-top, illustrating this invention. Fig. 2 is a vertical transverse section of the same. Fig. 3 is a horizontal section on the line *cc*, Figs. 1 and 2. The lines *a*, Fig. 3, and *b*, Figs. 1 and 2, indicate, respectively, the planes of Figs. 1 and 2. Fig. 4 is a vertical longitudinal section of the upper portion of a top, illustrating a modification.

In carrying out this invention, the flue *A*, to which a top is to be applied, is furnished throughout its length, or a portion thereof, with a central air-pipe, *B*, which may be of sheet metal. Properly arranged registers in one or more rooms open into this pipe for the discharge of foul air. A circular metallic collar, *C*, is anchored on the summit of the chimney, and supports concentrically an extension, *D*, of the air-pipe *B* by stays *z*, the collar proper being of sufficient size to embrace the area of the smoke-flue *A*. A pair of cross-bars, *y*, or their equivalent, within the tube *D*, supports a vertical spindle, *E*. The revolving top proper consists of an upwardly-flaring shell, *F*, conformed at bottom to the base-collar *C*, and having a flat closed top, *G*, furnished with a vane, *H*. Beneath the projecting end of the vane a large orifice, *I*, is formed, and provided

with outwardly-flaring lips *x*. The shapes of this outer shell *F* of the vane *H* and of the orifice *I* obviously admit of considerable modification. Supported within the shell *F* by stays *w* is an air-tube, *J*, corresponding with the tube *D* of the base-collar, and bent to discharge centrally through the orifice *I*. A horizontal, or nearly horizontal, broad passage, *K*, is formed immediately beneath the top plate by a partition, *L*, for the forcible discharge of wind through the upper part of the orifice *I*, to increase the draft. The partition *L* may be parallel with the top plate *G*, as illustrated in Fig. 1, or, preferably, the top plate and partition, or either of them, may be inclined more or less, as illustrated in Fig. 4, to contract the wind-outlet. The air-tube *J* is perforated centrally at top and provided at bottom with perforated cross-bars *v* to receive the spindle *E*, and the partition *L* is furnished with a bearing, *u*, to rest thereon. To attach the top to the base-collar, so as to preclude its being blown off, the latter is provided with a circumferential flange, *t*, near its top, and a divided ring, *s*, adapted to embrace the flange *t*, in the manner illustrated in Figs. 1 and 2, is attached to the top at its lower edge, so as to form a swivel-joint.

The flange *t* and ring *s* may be cast and attached by rivets. In the details of the device any approved mechanical construction may be adopted. The top may be made in light castings of iron or any suitable metal, as well as of the sheet metals commonly employed. The spindle may preferably be attached to the revolving top and work in a hard-metal step in the base.

Under ordinary circumstances the top or cowl will be supported by and revolve on the spindle *E*, and there will be no friction at the swivel-joint *s t*. When the weight of the top is overcome by the wind this joint precludes displacement without arresting the rotation. The orifice *I* is retained by the vane *H* in the direction of the wind, and the wind-passage *K* forms an increased draft therein. This not only insures a proper discharge of the smoke under all circumstances, but serves to exhaust or draw off foul air through the air-tubes *J D* and pipe *B*, so as to constitute an effective ventilating apparatus.

The improved revolving top is applicable

to ventilating shafts and orifices as well as to chimneys, and it may be employed as a chimney-cowl without the ventilating provision.

The device may be used on steamboats, ships, and vessels generally, and for mines, as well as for manufactories, churches, and other buildings.

Revolving tops employed solely for ventilating purposes are well known to be old. In the combination of passages herein described the heat within the smoke-passage is utilized, to facilitate and increase the discharge of vitiated air, by rarefying the same.

The flat form of the air-passage and the discharge of wind through the upper part of the escape-orifice are not broadly claimed. The wind-passage forming a part of the present invention is arranged so as to be in effective position and of sufficient capacity, and yet to leave the entire width of the top, for any required height, unobstructed, for the flue passage or passages.

The following is claimed as new:

1. The combination, in a revolving chimney-

top, of a smoke-passage, A, and an air-passage, J, for ventilating purposes, discharging in the direction of the wind, substantially as herein described.

2. The flat wind-passage K, extending in width across the revolving top in its upper part, so as to leave unobstructed the entire width of the top for one or more flue-passages discharging beneath the same, as herein set forth.

3. The combination, in a revolving chimney-top, of a smoke-passage, A, an air-passage, J, a wind-passage, K, and a discharge-orifice, I, common to all, substantially as herein shown and described.

4. The swivel-joint *s t*, formed and arranged substantially as set forth, in combination with the base-collar C, spindle E, and the revolving top proper, for the purpose specified.

CHS. L. GARFIELD.

Witnesses:

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