(No Model.) 2 Sheets—Sheet 1.

C. POTTER.

VENTILATOR FOR HATS.

No. 386,930. Patented July 31, 1888.

Fig. 1

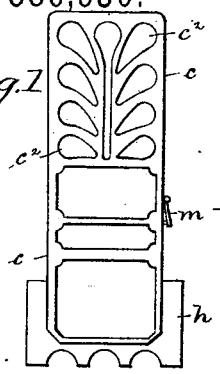


Fig. 3

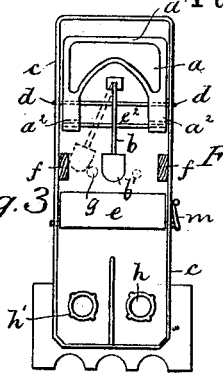


Fig. 8.

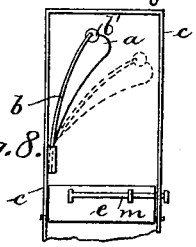


Fig. 9.

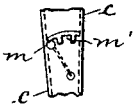


Fig. 13.

Fig. 12.

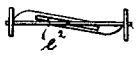


Fig. 2

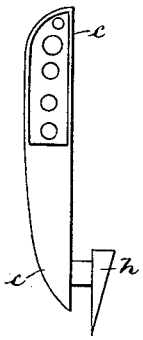


Fig. 4.

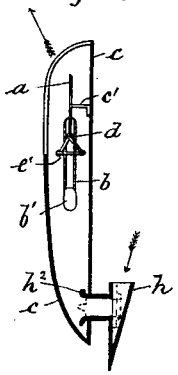


Fig. 10.

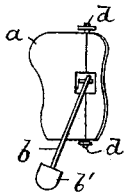


Fig. 11.

Fig. 6

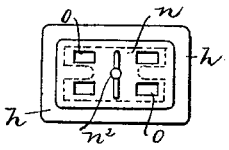


Fig. 7.

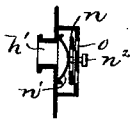
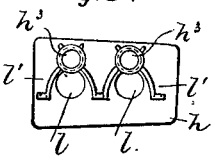


Fig. 5.



Witnesses.
Thomas Dunkerley
S. A. Foulkes.

Inventor.
Charles Potter.
by Ferdinand Bischhardt.
Attorney.

(No Model.) 2 Sheets—Sheet 2.

C. POTTER.

VENTILATOR FOR HATS.

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Fig. 18.

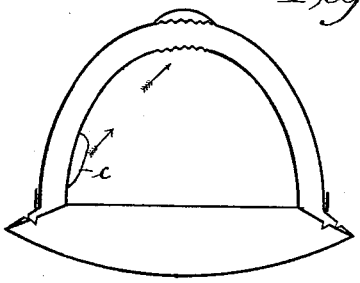


Fig. 19.

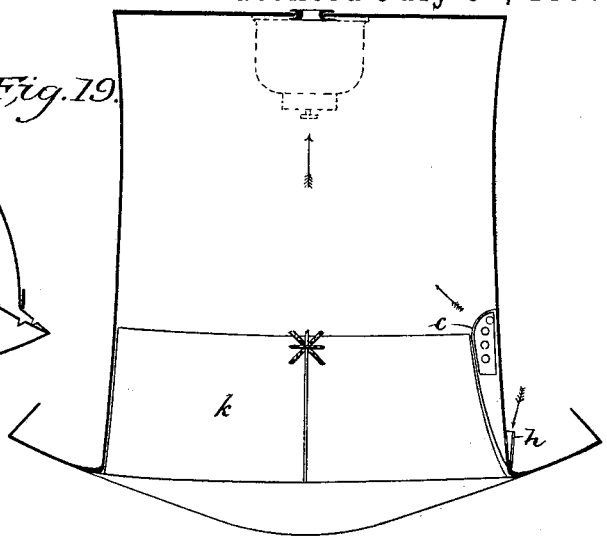


Fig. 14.

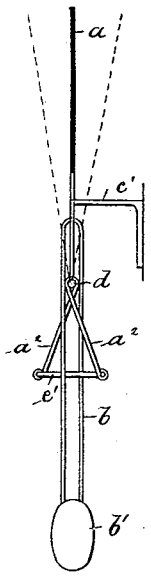


Fig. 15.

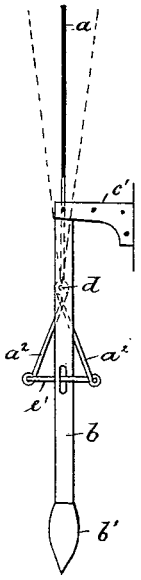


Fig. 16.

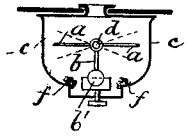


Fig. 17.

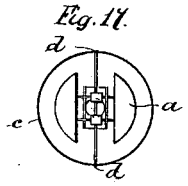
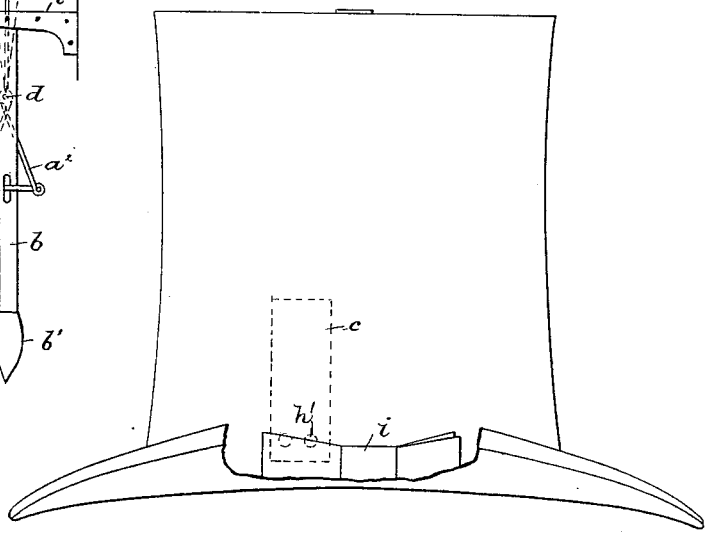


Fig. 20.



Witnesses.
Thomas Dunkerley
F. A. Foulkes.

Inventor.
Charles Potter
by: Ferdinand Bischoff
Attorney.

UNITED STATES PATENT OFFICE.

CHARLES POTTER, OF STOCKPORT, COUNTY OF CHESTER, ENGLAND.

VENTILATOR FOR HATS.

SPECIFICATION forming part of Letters Patent No. 386,930, dated July 31, 1888.

Application filed November 8, 1886. Serial No. 218,353. (No model.) Patented in England, January 12, 1886, No. 473.

To all whom it may concern:

Be it known that I, CHARLES POTTER, a subject of the Queen of Great Britain, residing at Stockport, in the county of Chester, Kingdom of Great Britain, have invented new and useful Improvements in Ventilators for Hats or other Head-Coverings, (for which I have obtained a patent in Great Britain No. 473, January 12, 1886,) of which the following is a specification.

My invention relates to ventilators for hats or other head-coverings in which a fan is employed, which causes fresh air to enter the hats or other head-coverings, and has for its object to actuate such fan by means of a rigid or spring pendulum set going by reason of the constant movements of the head. I attain this object by the mechanism illustrated in the accompanying two sheets of drawings, in which—

Figure 1, Sheet I, is a front view, Fig. 2 a side view, Fig. 3 a sectional front view, and Fig. 4 a sectional side view, of the ventilator complete. Fig. 5 is a sectional front view, Fig. 6 a front view, and Fig. 7 a cross-section, of the air-inlet. Figs. 8 and 9 are a sectional front and a side view, and Figs. 10, 11, and 12 front view and plans, respectively, of modification of my invention. Fig. 13 is a side view of the spring-peg. Figs. 14 and 15, Sheet II, are enlarged detached side views of the pendulum mechanism. Figs. 16 and 17 are side view and plan in section of modification; Figs. 18 and 19, cross sections of helmet and hat respectively; and Fig. 20, a side elevation of the latter, showing the application of my invention.

Similar letters refer to similar parts throughout the several views.

a is the fan, *b* the pendulum, and *c* the casing; *e*, the valve, and *h* the air-inlet.

The fan *a* may be in direct or indirect connection with the pendulum *b*, which latter, owing to the constant movements of the head, is self-actingly actuated and causes a current of fresh air to enter the hat or other head-covering.

The fan *a* may be arranged either vertically or horizontally and of any desired shape, preferably wing-shaped, (see Figs. 3, 4, 8, 14, 16, and 17,) or angular, as shown in Figs. 10 and 11.

The fan *a* consists of a thin light frame, *a'*, of suitable metal, which is filled up with paper and arranged to oscillate in a frame or casing, *c*, of suitable material vertically or horizontally between two centers or on a spindle, *d*.

When the fan *a* is intended to be actuated indirectly from the pendulum *b*, (see Figs. 3, 4, 14, and 15,) the same is provided below the spindle *d* with two arms, a^2, which carry a rod, *e'*, fixed diagonally to the spindle *d;* or, instead of the diagonal rod *e'*, a bridge with a slot, e^2, may be formed between the two arms a^2, (see Fig. 13.) through which the pendulum *b* passes. The latter is suspended from the bracket *c'*, fixed to the frame or casing *c*, and provided with a weight, *b'*, and may be made of wire, as shown in Figs. 3, 4, and 14, or of a flat spring, as shown in Fig. 15, and employed either so as to permit the weight *b'* to swing above or below the suspended or fixed end of the pendulum *b*.

When using a flat spring for the pendulum *b*, the same is riveted to the bracket *c'* and facilitates the working of the same with little friction on the diagonal rod *e'* in any desired position. (See Fig. 15.)

To make the pendulum *b* noiseless, I employ on the sides of the frame or casing *c*, where the same strikes it, buffers *f*, (see Figs. 3 and 16,) of suitable material—such as woven felt or india-rubber—and in order to stop the same from moving, if found necessary, a spring-peg, *g'*, (see Figs. 3 and 13,) may be put into holes *g*, provided in the frame or casing *c*, which retains the pendulum *b* in the position indicated by dotted lines.

The frame or casing *c* (see Figs. 1, 2, 3, and 4) is fixed to the hat or other head-covering in connection with an air-inlet, *h*, which consists of two sides and hollow studs, *h'*, in the following manner:

Underneath the front portion of the bow *i* (see Figs. 19 and 20) of the hat-band two holes are pierced through the body of the hat corresponding in size and distance to the hollow studs *h'* of the inlet *h*, (see Figs. 3 and 4,) for the reception of the latter. When in position, the hollow studs *h'* project a little inside the hat underneath the leather band *k* and permit the air to enter the frame or casing *c*, as well

as the fixing of the latter to the hat or other head-covering by passing the hollow studs h' through corresponding holes formed in the frame or casing c, and by bending over of the lips h^2, formed on the ends of the studs h'. This manner of fixing may also be performed self-actingly (see Figs. 4 and 5) by forming in the back part of the inlet h, which in this case is bent a little so as to contain spring-power oblong holes l (see Fig. 5) instead of hollow studs h', and by employing on each side of the holes l spring-clips l', which engage hollow studs h', provided with a flange, h^3, respectively, which hollow studs h' in this case are formed on the frame or casing c. The holes l are wider at the bottom, in order to let the flanges h^3 pass through, than they are at the top, where they correspond with the diameter of the hollow studs h', and the latter are held in position by means of the spring-clips l'.

The amount of air to be admitted into the hat or other head-covering through the inlet h can be regulated by means of a valve, e, employed inside the frame or casing c, which may be set and retained in any desired position by means of a spring-handle, m, attached thereto and pressing against the outside of the frame or casing c, (see Figs. 1 and 3,) or, as shown in Figs. 8 and 9, entering notches m'. In the latter case the spring-handle consists of a flat spring one end of which is suitably fastened to the valve e and the other end passing through a radial slot formed in the frame or casing c, and being furnished with a knob. The said radial slot is formed with a suitable number of notches, m', which the spring-handle m enters, thus retaining the valve e in the desired position. For head coverings such as helmets it will be found more convenient to effect the regulation of the ingoing air from the outside of the same. For this purpose the inlet h is fixed at a convenient part outside the helmet, and furnished inside with a slide, n, (see Figs. 6 and 7.) which, by means of a spring, n', is pressed against the front of the air-inlet h, in which latter are formed openings o.

The slide n may be slid backward and upward and downward to cover or uncover the opening o by means of a knob, n^2, connected to the spring n' and slide n. The back part of the inlet h is also provided with hollow studs h', which facilitate the entrance of the air into and fixing of the inlet h to the frame or casing c and helmet or other head-covering in the manner as already described.

The upper portion of the casing c is formed with openings c^2, which permit the air in the casing c to enter into the hat or other head-covering.

Instead of actuating the fan a indirectly by the pendulum b, as described, the latter may be actuated direct and constitute a part of the fan a. This is done by attaching the fan a to a flat spring serving as a pendulum, b, and suitably fixing one end thereof to the side of the frame or casing c in such a manner that the other end or weight b' of the pendulum b will swing or vibrate above the fixed end of the same (see Fig. 8) on the slightest movement of the head taking place.

Figs. 16 and 17 show how a rigid pendulum, b, may be used to give motion directly to the fan a by forming the latter wing-like on each side of the spindle d, oscillating in the casing c, and fixing or forming the pendulum b on the spindle d at a right angle to the latter and fan a. This construction of ventilator is employed at the top of the hat, as shown in dotted lines in Fig. 19.

I am aware that prior to my invention automatic means for ventilating hats have been used. I therefore do not claim such means, broadly; but

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

1. In a ventilator for hats or other head-coverings, the fan a, capable of oscillating in or on a frame, c, in combination with a rigid pendulum, b, which is set going by reason of the constant movement of the head, and imparts an oscillating motion to the fan a through the medium of the diagonal spindle e', attached below its center of oscillation, all substantially as set forth.

2. In a ventilator for hats or other head-coverings, the combination of a fan, a, capable of vibrating on a frame, c, provided with a spring-pendulum, b, which imparts a vibrating motion to the fan a by reason of the constant movement of the head, all substantially as set forth.

Manchester, Lancaster, England.

CHARLES POTTER.

In presence of—

FERDINAND BOPHARDT,

THOMAS A. FOULKES.