

Specification of Samuel Carson : removing air from chimney and other shafts.

Contributors

Carson, Samuel.

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A.D. 1840 N° 8376.

SPECIFICATION

OF

SAMUEL CARSON.

REMOVING AIR FROM CHIMNEY AND
OTHER SHAFTS.

LONDON:

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1857.





A.D. 1840 N° 8376.

Removing Air from Chimney and other Shafts.

CARSON'S SPECIFICATION.

TO ALL TO WHOM THESE PRESENTS SHALL COME, I, SAMUEL CARSON, of Caroline Street, Coleshill Street, Euston Square, in the County of Middlesex, Gentlemen, send greeting.

WHEREAS Her present most Excellent Majesty Queen Victoria, by Her
5 Letters Patent under the Great Seal of Great Britain, bearing date at Westminster, the Fifth day of February, in the third year of Her reign, did, for Herself, Her heirs and successors, give and grant unto me, the said Samuel Carson, Her especial licence, full power, sole privilege and authority, that I, the said Samuel Carson, my eñors, adñors, and assigns, or such
10 others as I, the said Charles Carson, my eñors, adñors, or assigns, should at any time agree with, and no others, from time to time and at all times during the term of years therein expressed, should and lawfully might make, use, exercise, and vend, within England, Wales, and the Town of Berwick-upon-Tweed, my Invention of "**IMPROVEMENTS IN APPARATUS FOR WITHDRAWING**
15 **AIR OR VAPOUR;**" in which said Letters Patent is contained a proviso that I, the said Samuel Carson, shall cause a particular description of the nature of my said Invention, and in what manner the same is to be performed, to be inrolled in Her said Majesty's High Court of Chancery within six calendar months next and immediately after the date of the said in part recited Letters
20 Patent, as in and by the same, reference being thereunto had, will more fully and at large appear.

NOW KNOW YE, that in compliance with the said proviso, I, the said Samuel Carson, do hereby declare the nature of my said Invention, and the

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manner in which the same is to be performed, are fully described and ascertained in and by the following statement thereof, reference being had to the Drawings hereunto annexed, and to the figures and letters marked thereon, that is to say:—

My Invention relates to certain apparatus for removing air from a chimney 5 or other shaft.

First, by means of drafts induced by means of the outer atmosphere. And, Secondly, by means of steam.

And in order to give the best information in my power, I will proceed to explain the Drawings hereunto annexed, first observing that the same letters 10 of reference are used to indicate the same parts wherever they occur.

DESCRIPTION OF THE DRAWINGS.

Figure 1 is an elevation of an apparatus constructed according to my Invention, intended for a chimney or other shaft for withdrawing air therefrom. Figure 2 is a section of Figure 1, by which the construction and mode of 15 combining the parts will more readily be understood. *a* is the upper part of the shaft or chimney, having suitable bearings affixed therein to receive the axis of the revolving head *b*; the peculiar construction of such head in combination with the upper part of a shaft, or of a chimney, constitutes the Invention. On the outside of the shaft or chimney *a* is formed a vessel for 20 containing water, in order to make a water joint between the shaft and the revolving head. *b*¹ is a tube affixed on the revolving head, and entering into the water produces a closed joint. I would, however, remark that other joints may be used, the object being to obtain as air-tight joint as possible with as little friction as may be. The revolving head is cylindrical into which the 25 tube *b*¹ enters, and the air from the shaft or chimney *a* enters therein, and passes away at the point *b*², which by using a vane *e* is at all times in a position opposite to the direction of the wind, the other end of the cylinder *b* having a cone *b*³ affixed therein, and this cone proceeds beyond the opening into the tube *b*¹, consequently the wind entering into the cone will pass through it 30 and enter into the cylinder *b* at a point beyond the opening into the cylinder *b*¹, through which the air from the chimney or shaft enters; hence it will be evident that the draft produced by the passage of the wind through the cone will, in causing a current through the cylinder *b*, cause the air in the chimney or shaft *a* to be withdrawn. Figures 3 and 4 shew an elevation and section 35 of a similar apparatus to that described in the preceding Figures, the only difference being that the revolving head *b* is not cylindrical, but is made up of two cylinders of different diameters, which are connected together with a

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cone ; in other respects the revolving head acts as the one previously described, and the internal cone b^3 proceeds beyond the opening into the tube b^1 , consequently the wind passing through the cone cannot pass down the shaft or chimney, but must be a means of producing a considerable draft through the revolving head, and thereby withdraw the air from the chimney or shaft a .
 5 Figures 5 and 6 shew a section and an elevation of another arrangement of apparatus, differing from those just described inasmuch as the revolving head in place of running from end to end in a horizontal direction, the open end into the atmosphere is turned upwards, and such is the case with regard to
 10 the cone b^3 , and the parts are so arranged that the wind in passing through the cone b shall not be liable to blow down the chimney, but be the means of creating a draft through the revolving head in order to withdraw the air from the shaft or chimney.

I will now proceed to describe the second part of my Invention. Figure 7
 15 shows the section of an apparatus constructed according to this part of my Invention. c is a pipe leading to a chimney or shaft or other place from which it is desirable to withdraw air. This pipe c enters into a vessel or chamber d , which enters into a pipe for carrying away the air in any direction desired. e is a steam pipe through which steam is to be constantly flowing,
 20 and it will be seen that the steam pipe passes beyond the opening of the pipe c , consequently the passage of the steam through it will so act as to produce a draft or current in a direction through the vessel d , into the pipe e^1 , hence the air from the pipe c will constantly rush forward with the steam.

Figure 8 shows another apparatus constructed according to my Invention,
 25 and is to be worked by a vacuum produced by the condensation of steam. f is a shaft or pipe in connection with a mine, a house, or other place from which it is desired to withdraw air. On the upper part is applied a valve opening upwards. g is a vessel into which the pipe f^1 enters, consequently any air which passes from the pipe or way f will flow through f^1 into the
 30 vessel g , and when steam is admitted into the vessel g the air therein will be driven out at the opening and valves h . This vessel is supplied with two pipes, one by which steam is allowed to flow into the vessel g . I prefer to use high pressure steam, and to cut it off at such a position that in expanding it will fill the vessel g with atmospheric steam ; but I do not confine myself thereto.
 35 The other of two pipes leads to a condenser, and there are stopcocks on the steam pipe and the pipe which leads to the condenser, which cocks are to be alternately opened and shut. Thus, supposing steam has been allowed to flow into the vessel g , and was closed, the cock on the pipe leading to the condenser would be opened, by which the steam would rush away and be

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condensed, and there would be a vacuum produced in the vessel *g*; but that the valve on the passage opens and air flows into and fills the vessel *g*, the cock on the pipe to the condenser would then be closed, and the cock on the steam pipe would be opened, by which steam would again flow into the vessel *g*, and drive out the air therefrom by the air valve, and by this arrangement a very cheap apparatus for using steam as a means of withdrawing air will be obtained.

Having thus described the nature of my Invention, I would remark that I am aware that revolving heads with cones have been applied to chimnies in order to improve the draft thereof, but in such cases the cones have not been made of such a length as to pass beyond the opening into the chimney or shaft, hence the same has been of little use owing to the wind when it has passed through the cone being by such arrangement enabled readily to blow down the chimney or shaft, in place of being the means of creating a draft at a point beyond the opening into the chimney or shaft, as is the case with my apparatus; and, I would have it understood that what I claim is,—

The mode of constructing apparatus for withdrawing air from a chimney or shaft, as described in respect to Figures 1, 2, 3, 4, 5, and 6.

Secondly, I claim the apparatus described in Figure 7 for withdrawing air by means of steam.

And lastly, I claim the mode of constructing apparatus to be worked by steam and condensation, as described in respect to Figure 8.

In witness whereof, I, the said Charles Carson, have hereunto set my hand and seal, this Fifth day of August, in the year of our Lord One thousand eight hundred and forty.

SAM^L CARSON. (L.S.)

AND BE IT REMEMBERED, that on the Fifth day of August, in the year of our Lord 1840, the aforesaid Samuel Carson came before our said Lady the Queen in Her Chancery, and acknowledged the Specification aforesaid, and all and every thing therein contained and specified, in form above written. And also the Specification aforesaid was stamped according to the tenor of the Statute made for that purpose.

Inrolled the Fifth day of August, in the year of our Lord One thousand eight hundred and forty.

BROUGHAM.

LONDON:

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Printers to the Queen's most Excellent Majesty. 1857.

FIG. 2.

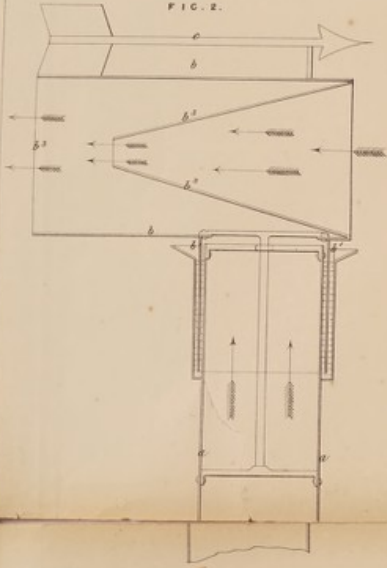


FIG. 4.

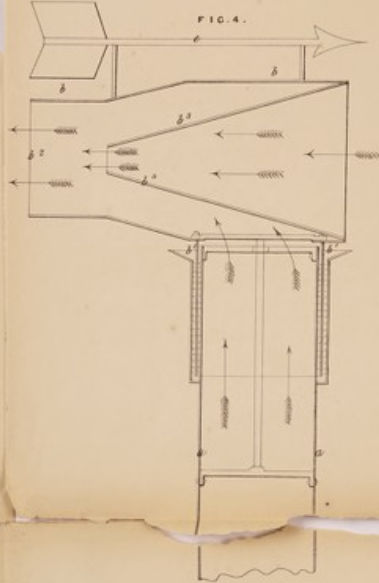


FIG. 5.

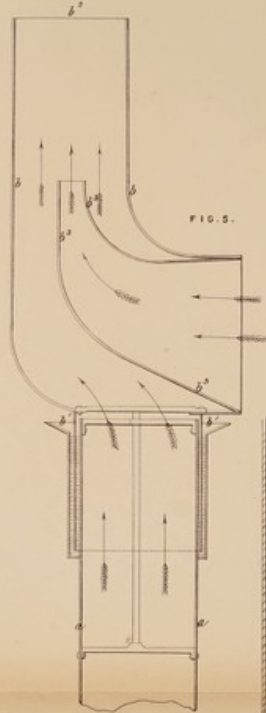


FIG. 7.

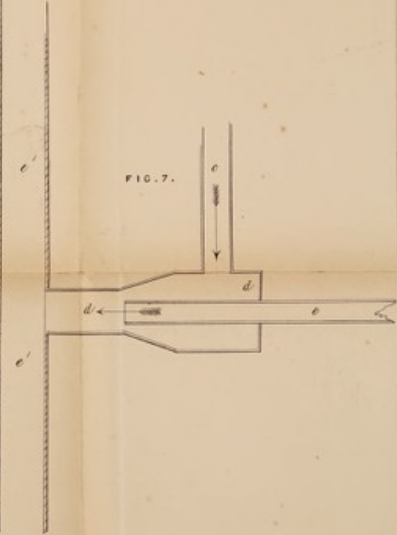


FIG. 1.

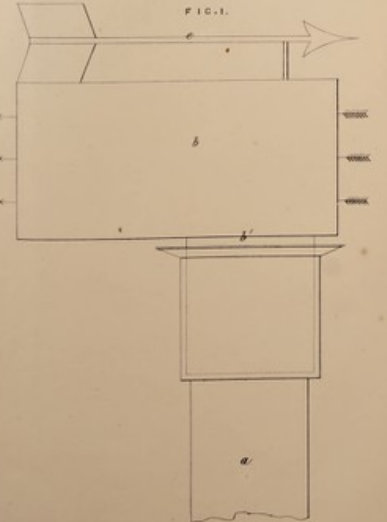


FIG. 3.

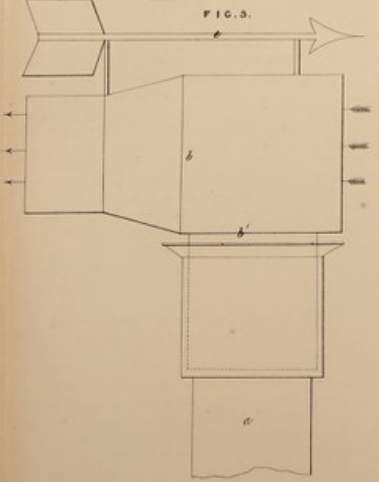
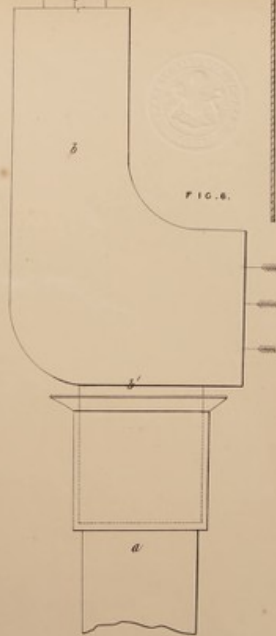
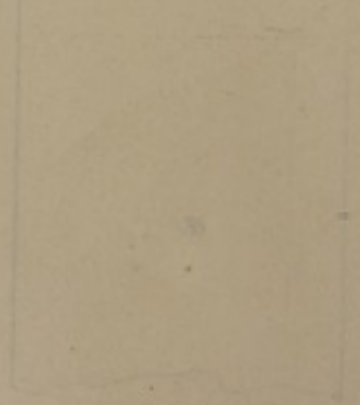
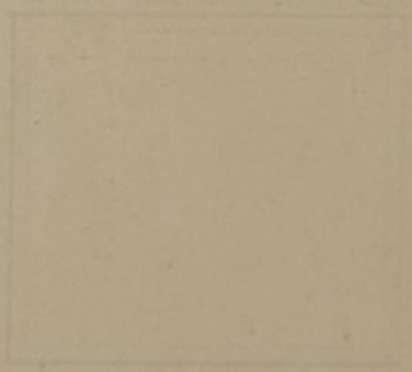
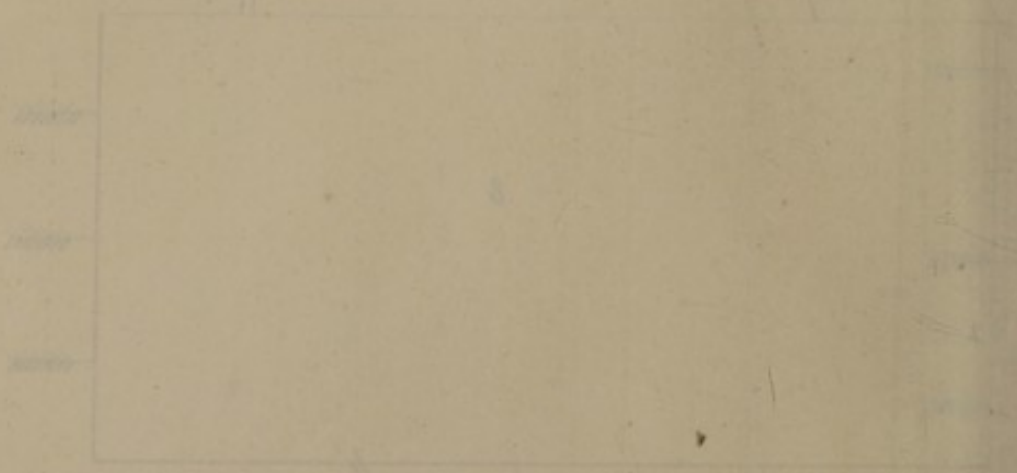
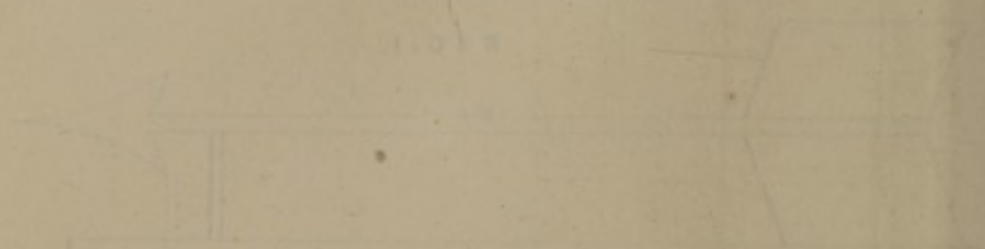
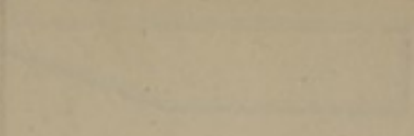


FIG. 6.



The enrolled drawing is colored.



The original drawing is shown

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FIG. 8.

