

(No Model.)

J. WATSON.  
CHIMNEY TOP.

No. 567,775.

Patented Sept. 15, 1896.

Fig. 2.

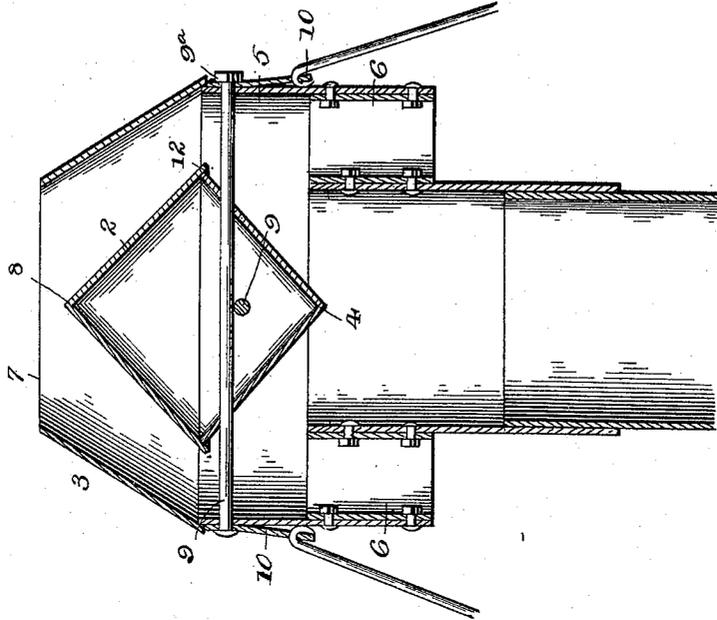
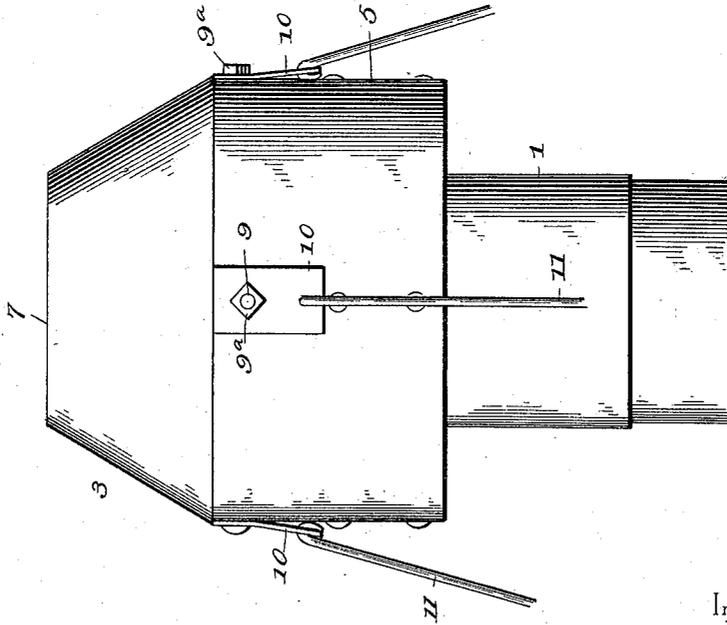


Fig. 1.



Inventor

James Watson,

Witnesses

Chas. A. Ford.  
*[Signature]*

By his Attorneys.

*[Signature]*

# UNITED STATES PATENT OFFICE.

JAMES WATSON, OF MARINETTE, WISCONSIN.

## CHIMNEY-TOP.

SPECIFICATION forming part of Letters Patent No. 567,775, dated September 15, 1896.

Application filed February 7, 1895. Serial No. 537,641. (No model.)

*To all whom it may concern:*

Be it known that I, JAMES WATSON, a citizen of the United States, residing at Marinette, in the county of Marinette and State of Wisconsin, have invented a new and useful Chimney-Top, of which the following is a specification.

My invention relates to chimney tops or cowls; and the object in view is to provide a device of the class named which may be used in connection with either tall or short chimneys, and which will prevent a downdraft without interfering with the upward draft, and, furthermore, to provide a construction whereby the draft is materially increased by the wind, irrespective of its direction and the angle at which it strikes the top.

Further objects and advantages of this invention will appear in the following description, and the novel features thereof will be particularly pointed out in the appended claim.

In the drawings, Figure 1 is a side view of a chimney-top constructed in accordance with my invention. Fig. 2 is a vertical section of the same.

Similar numerals of reference indicate corresponding parts in both figures of the drawings.

The top may be of any desired cross-sectional shape to suit the construction and shape of the chimney to which it is to be applied; but in the construction illustrated the same is made circular in cross-section, 1 designating a sleeve which is fitted upon the upper end of a chimney, 2 a double conical deflector arranged above the upper end of said sleeve in coaxial alinement therewith, and 3 an inclosing jacket which surrounds the upper end of the sleeve and extends above the upper apex of the deflector.

The sleeve is cylindrical or parallel-sided, and corresponds, approximately, in cross-sectional area with the chimney to which it is applied; but the base of the double conical deflector, or that portion of such deflector which is of the greatest diameter, slightly exceeds the sleeve in diameter, the lower apex 4 of the deflector being arranged within, and slightly below, the plane of the upper end of the sleeve. The lower portion of the sur-

rounding jacket 3 is parallel-sided, as shown at 5, said jacket being supported by the sleeve through the interposed braces 6, which extend radially from the sleeve and are bolted at their extremities to the parts which they serve to connect. The upper portion of the jacket is trunco-conical in construction, the sides converging from the diameter of the lower portion 5 to the outlet 7, which is approximately equal in area with the sleeve 1. The plane of this outlet-opening is slightly above the upper apex 8 of the double conical deflector. The deflector is supported in the jacket by means of the transverse intersecting rods 9, which pass through suitable perforations in the lower portion of the deflector and similar perforations in the jacket, the extremities thereof being engaged by nuts 9<sup>a</sup>. Loops 10 for the attachment of guy-wires 11 are held in place by the nuts 9<sup>a</sup>.

From the above description it will be seen that wind which may enter the outlet-opening in the top of the jacket is carried down between the upper conical surface of the deflector and the trunco-conical upper portion of the jacket, and is carried beyond the upper end of the sleeve, whereby, instead of producing a downward or opposing upward draft in the flue, it has the effect of producing a certain amount of suction, which, to that extent, increases the upward draft of the flue. The inverted conical lower portion of the double deflector provides for guiding the products of combustion into the annular passage surrounding the deflector without causing such friction with the opposed surfaces as to interfere with the draft or the proper escape of the smoke and other products. This effect of causing an upward draft in the chimney is produced irrespective of the angle at which the wind approaches and strikes the chimney-top, and even when deflected by contiguous objects to follow a downward path the construction of the top produces an upward suction.

The area of the opening at the top of the jacket is equal to the area of the opening in the sleeve 1 or the pipe to which said sleeve is attached, and is also equal to the annular opening at the bottom of the jacket around the exterior surface of said sleeve, and hence

when the wind is light and does not interfere with the ordinary draft of the chimney the double cone forms no obstruction to the escape of the products of combustion, and when there is a wind which strikes the side of the jacket or the top thereof at any inclination it produces a downdraft through the jacket, and hence causes a partial vacuum, and, therefore, suction at the upper end of the sleeve. Hence the greater the velocity of the wind the more rapid will be the downdraft through the jacket, and hence the more efficient the updraft of the chimney. The conical upper portion of the jacket terminates abruptly without a flared collar or ring, in order to catch the wind striking the side of the jacket and force it down around the double deflector, inasmuch as it is not only desirable to prevent downdraft in the chimney, but to produce as great a downdraft in the jacket as possible, in order to cause a forced updraft in the chimney, and by forming the lower portion of the jacket with parallel or vertical sides and extending the upper conical surface of the double deflector slightly beyond the sides of the sleeve the possibility of downdraft in the chimney is avoided. The air cannot enter the opening at the top of the jacket more rapidly than it will pass out at the bottom, and hence back pressure, which might produce downdraft in the chimney, is prevented. Both the upper and lower portions of the deflector have their sides arranged at angles of approximately forty-five degrees to the axis of the sleeve, as shown clearly in Fig. 2, to cause downward currents, leaving the upper surface of the deflector, and upward currents, leaving the lower surface thereof, to strike the surface of the jacket with as small a percentage of opposition as possible.

In order to prevent moisture from dripping from the periphery of the deflector into the

sleeve, said periphery is provided with a depending drip-flange 12.

Various changes in the form, proportion, and the minor details of construction may be resorted to without departing from the spirit or sacrificing any of the advantages of this invention.

Having described my invention, what I claim is—

In a chimney-top, the combination of a uniformly-cylindrical sleeve 1, a double conical deflector 2 arranged in coaxial alinement with the sleeve, and a jacket 3 inclosing the deflector and the upper end of the sleeve and comprising an upper trunco-conical upwardly-tapered portion terminating in an abrupt edge above the upper apex of the deflector and forming an opening of which the area is coextensive with the cross-sectional area of the sleeve, and a lower cylindrical or parallel-sided portion extending below the upper edge of the sleeve to form an annular outlet-passage which is equal in area with the opening at the top of the jacket, whereby all of the air admitted at the top of the jacket is forced downwardly therethrough and discharged through the annular passage around the sleeve to produce a vacuum or suction at the mouth of the sleeve and a consequent updraft in the chimney, the major horizontal area of the deflector being greater than that of the sleeve, and its lower apex being arranged to extend into and slightly below the plane of the upper end of the sleeve, substantially as specified.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

JAMES WATSON.

Witnesses:

GEO. W. THORNE,  
G. E. THORNE.