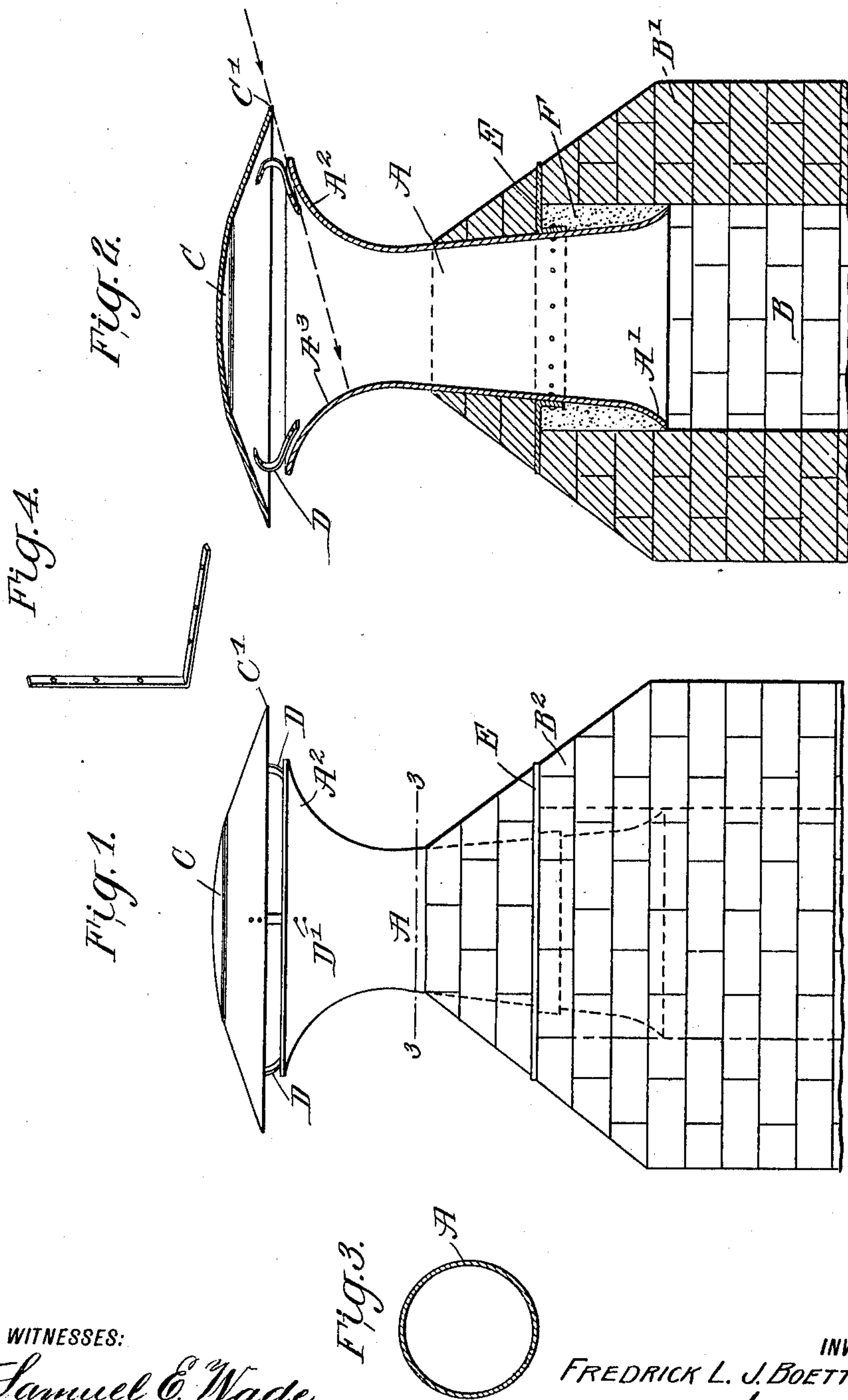


F. L. J. BOETTCHER.
CHIMNEY TOP.
APPLICATION FILED FEB. 5, 1910.

991,941.

Patented May 9, 1911.



WITNESSES:
Samuel C. Wade.
Perry B. Surpin

INVENTOR
FREDRICK L. J. BOETTCHER
BY *Wm. C. Co.*
ATTORNEYS

UNITED STATES PATENT OFFICE.

FREDRICK L. J. BOETTCHER, OF WASHINGTON, DISTRICT OF COLUMBIA.

CHIMNEY-TOP.

991,941.

Specification of Letters Patent.

Patented May 9, 1911.

Application filed February 5, 1910. Serial No. 542,230.

To all whom it may concern:

Be it known that I, FREDRICK L. J. BOETTCHER, a citizen of the United States, and a resident of Washington, in the District of Columbia, have invented certain new and useful Improvements in Chimney-Tops, of which the following is a specification.

This invention is an improvement in chimney tops having for an object to provide simple means whereby to promote and facilitate the escape of smoke in all kinds of wind and weather, thus initiating and enhancing the natural draft incident to the rise of heated air, also to provide means for preventing the striking back of the smoke down the chimney; and the invention consists in certain novel constructions and combinations of parts as will be hereinafter described and claimed:

In the drawing Figure 1 is a side view and Fig. 2 is a vertical longitudinal section of a chimney top embodying my invention and Fig. 3 is a cross section on about the line 3—3 of Fig. 1 and Fig. 4 shows a different form of supporting device from that illustrated in Figs. 1 and 2.

In the construction shown, the top comprises a body A, whose lower end is flared outwardly at A' in trumpet like form and is adapted to fit at its lower outer edge against the wall of the chimney flue B, while the upper end of the body A flares outwardly in trumpet form at A² and is preferably formed with a greater flare than the lower end of the body so that the said upper end A² will be of greater diameter than the lower end of the body, thus increasing the area of the exit end of the body and affording an outwardly flaring surface at A³ within the said trumpet like end A² of the body to render easier the arrangement of parts in such manner as to prevent wind currents from blowing down the body A when the cover is applied, as shown in Figs. 1 and 2.

The cover C is supported by the straps D from the body A and I usually employ three straps D and rivet them in the manufacture of the device to the cover C and then rivet the straps at D' to the body A after the latter has been adjusted to the chimney top. In forming the cover C, it is usually rounded at the center and presents a concave form at its lower end for impingement by the heated air and smoke as it rises from the body A and the outer edges of the cover C tip downward and are in such relation to

the upper end of the body A that lateral draft from any direction outside the top and passing between the upper end of the body A and the edge C' of the cover C will not blow down the body A but will strike an outwardly flared surface at A³ within the trumpet like upper end of the body A and thus be directed upwardly and out of the top at a point diametrically opposite the entrance of the currents as indicated in Fig. 2 of the drawing so the wind will not at any time blow down the top A of the chimney to produce a smoky chimney. In securing this result, the area of exit between the upper end of the body A and the cover should be no less than twice the interior area of the neck or body or more than three times the same, and the said space must therefore be comparatively narrow in order that the draft will not strike within the surface A below the outwardly flared part thereof.

From the description before given, it will be noticed that the body A is comparatively contracted at its middle portion and flares outwardly toward its lower end to freely receive the smoke and flares outwardly in the trumpet like expansion at its upper end to facilitate the discharge of the smoke and to secure the outward discharge of any wind currents that may enter between the top and the cover. The contraction at the middle portion of the body condenses the smoke at such point and delivers it to the upper trumpet like portion whence it may be discharged below the cover as will be understood from the foregoing description.

The body A is provided above its lower trumpet like portion with a lateral annular flange E which rests upon the chimney B' and forms below it and between the said flange and the lower end of the body A a recess within the flue B and receiving cement F by which the top may be securely held in position.

In placing the top A upon a chimney, some of the top layer of bricks B² may be omitted, enough being left to support the flange E and then after the cement F has been supplied to the recess surrounding the lower end of the body within the flue B the bricks may be supplied below the flange E to form the top course of the chimney and properly secured in place by mortar, cement or otherwise, as desired. The connection of the body with the chimney is thus facilitated by the trumpet like form at the lower end of the

body in connection with means shown as the flange E for resting upon the chimney and holding the top from downward displacement.

5 The invention is simple, easily constructed and applied to a chimney and efficiently serves the purpose for which it is designed.

Instead of the flange E, three angle irons such as shown in Fig. 4 may be employed
10 to form a means for supporting the top from the chimney.

As best shown in Fig. 2, brick work is disposed above the flange or the angle irons and inclines inwardly to the body of the
15 chimney.

It will be noticed that the outer edge of the cover is practically above, and is in close proximity to the outer edge of the outwardly flared portion of the body; also that
20 such outer edge of the cover is in the direction of the flare of the upper portion of the body in such manner as to increase the suction-like effect resulting from the special relation of the cover and the flared edge of
25 the body. It will further be noticed that the cover has a rounded crown portion and an edge or rim portion which is formed flat or on a straight line in cross section. This results in decreasing the resistance to the
30 air striking laterally from any side, as well as decreasing the tendency of the air to rise from the upper side of the cover at the center thereof, and permits the air to pass over the crown of the cover and down the opposite
35 sloping side. At the same time the under side of the cover with the rounded central portion and the straight edge portion aids in preventing the air currents from being deflected downwardly into the body of the
40 chimney.

The cover being substantially above the body portion, occupies such a relation to the

outwardly flaring edge of the body as to permit the passage of air transversely below the cover and over the body and if such air
45 should be directed downwardly into the body it will not strike below the outwardly flaring body portion but will be directed upwardly thereby.

The physical laws involved in the operation of the device are that a current obstructed will take the course of the least resistance and that the angle of reflection is equal to the angle of incidence.

I claim:

A chimney top comprising a body portion having its upper end flared outwardly in trumpet-like form and having on its inner side an outwardly flared surface and a cover
60 secured upon the body and having a rounded or curved central portion, and an edge or rim portion which is formed flat or on a straight line in cross section, the said cover being secured upon the body and practically
65 above the said body with the outer edge of the cover in close proximity to the outer edge of the outwardly flared portion of the body and in the direction of the flare of such edge of the body with the outer edge of the cover
70 disposed in such relation to the upper outer edge of the body portion that draft entering between said edges cannot strike the inner flared surface of the body at a point below
75 that at which the outward flare of the body begins and the cover being practically above the body portion whereby to permit the passage of air transversely below the cover and over the body, all substantially as and for the purposes set forth.

FREDRICK L. J. BOETTCHER.

Witnesses:

SOLON C. KEMON,
PERRY B. TURPIN.