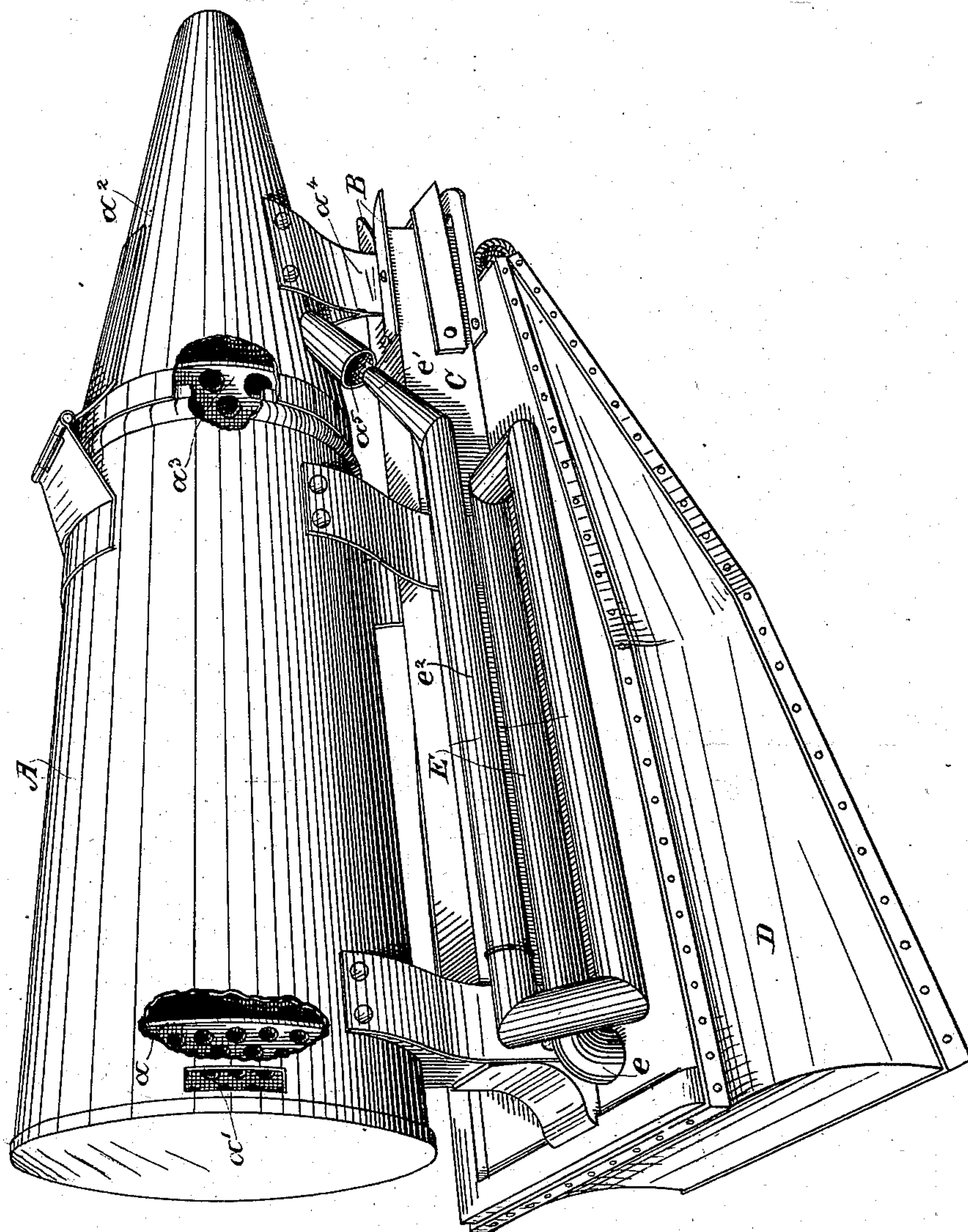


(No Model.)

C. F. STREET & W. GARRETT.  
BEE SMOKER.

No. 559,546.

Patented May 5, 1896.



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# UNITED STATES PATENT OFFICE.

CHARLES FRANK STREET, OF SAN MATEO, CALIFORNIA, AND WILLIAM GARRETT, OF BRIAGOLONG, VICTORIA.

## BEE-SMOKER.

SPECIFICATION forming part of Letters Patent No. 559,546, dated May 5, 1896.

Application filed January 11, 1896. Serial No. 575,099. (No model.)

*To all whom it may concern:*

Be it known that we, CHARLES FRANK STREET, residing at San Mateo, county of San Mateo, State of California, and WILLIAM GARRETT, residing at Briagolong, Victoria, citizens of England, have invented an Improvement in Bee-Smokers; and we hereby declare the following to be a full, clear, and exact description of the same.

Our invention relates to that class of bee-smokers in which are employed a smoke-generating chamber, a bellows or other source of air, and a connection between said bellows and the smoke-generating chamber, whereby air is forced therein and a current or flow of smoke is caused to issue from the smoke-generating chamber.

Our invention consists in an improvement relating to the disposition and comparative length of the connecting pipe or tube between the bellows and the smoke-generating chamber, the object of which is to guard against the passage of smoke and matters, such as creosote, which the smoke carries into the air-pipe and bellows, tending to clog said pipe and to injure the bellows; and it also consists in a novel open connection between said connecting tube or pipe and the smoke-generating chamber, which will further insure the object and result above mentioned.

Referring to the accompanying drawing, the figure is a perspective view of our bee-smoker.

A is the smoke-generating chamber, consisting of a suitable casing having within it a grate  $a$ , and means, such as the hole or aperture  $a'$ , for lighting the fuel, and a hinged funnel-cap  $a^2$ , provided in its base with a perforated retaining-diaphragm  $a^3$ , said funnel-cap having a lug  $a^4$ , engaging a suitable catch B, whereby the cap is retained in place and may be released to be thrown backwardly to afford access to the chamber and to permit the cleaning out, by boiling, of the perforated diaphragm, thus cleansing the parts.

C is a frame-bar to which the smoke-generating chamber is attached, and to said bar is likewise attached the bellows D.

In bee-smokers one of the essentials is the production of a cold smoke in contradistinction to hot vapors, as, unlike the use of ani-

mal-exterminators, it is not the intention to injure the bees, but simply to render them temporarily harmless, and to this end it is necessary to treat them with cold smoke. For this purpose in bee-smokers the air connection from the bellows or other source of air is made with the smoke-generating chamber at a point in advance of the ignited fuel, so that the smoke which is drawn out by the inrushing air is cooled by said air, which, by not passing through the fire, is itself cold. The practice in bee-smokers of this kind is to make the connecting-tube direct from the bellows to the point of entrance into the smoke-generating chamber, and as these parts are in close proximity the connecting tube or pipe is usually a short one, and the connection being, as before stated, direct, a very serious difficulty has arisen, due to the passage of smoke through said communicating pipe into the bellows, and the creosote and other matters which the smoke carries soon clog the connecting-pipe and also injure the bellows. Our first improvement consists in avoiding this difficulty by making the air communication between the bellows and the smoke-generating chamber an indirect one. This is best done by making the pipe of considerable length, the best form of this being that here shown, which consists in the pipe E with one or more return-bends extending substantially the length of the bellows.

The pipe which we have here shown has three folds, returning upon itself twice, said pipe issuing from the bellows at the point  $e$ , thence extending forwardly and back again upon itself to the rear, and thence forwardly again to the point at which it is intended to deliver the air through its nozzle  $e'$ . Thus a comparatively long pipe is obtained so disposed and directed as to make it improbable, if not impossible, for the smoke or any of the extraneous matters which it carries to clog said pipe or to find its way into the bellows. To further improve this result, we prefer to make the delivery-section  $e^2$  of the pipe removable from the main body, so that it may be taken off and its nozzle  $e'$  cleaned.

In order to absolutely insure against the return passage of smoke and extraneous matters which it bears, we do not make the con-



nection between the pipe or tube E and the smoke-generating chamber a close one, but of an open character of the style of the Bunsen burner. For this purpose we have a small  
 5 inlet  $a^5$  on the side of the funnel-cap of the smoke-generating chamber, and we have the nozzle  $e'$  of the connecting-tube approach this inlet, but fully separated therefrom, as shown, so that while the current of air will pass into  
 10 the inlet the smoke, creosote, &c., will drop out of said inlet and not into the nozzle  $e'$ .

Having thus described our invention, what we claim as new, and desire to secure by Letters Patent, is—

15 1. A bee-smoker consisting of a smoke-generating chamber, a bellows or other source of air, and a pipe or tube leading from one end of the bellows and returned upon itself and communicating with the forward end of the  
 20 smoke-generating chamber.

2. A bee-smoker consisting of a smoke-generating chamber, a bellows or other source of air, and a pipe or tube issuing from the bellows and returned upon itself, and having its  
 25 discharge end entirely separated from and clear of the inlet into the forward end of the smoke-generating chamber into which it delivers its air.

3. A bee-smoker consisting of a smoke-generating chamber, a bellows or other source of  
 30 air, and a pipe or tube issuing from one end of the bellows and returned upon itself, with its discharge end separated from and free of the inlet at the other end of the smoke-generating chamber into which it delivers its air. 35

4. A bee-smoker consisting of a smoke-generating chamber having near its discharge end an inlet for the air, a bellows or other source of air, and a pipe issuing from the bellows near that end opposite to the end of the smoke-  
 40 generating chamber in which the air-inlet is located and returned upon itself and having its discharge-section removable, with its discharge end separated from and clear of the  
 45 air-inlet into the smoke-generating chamber.

In witness whereof we have hereunto set our hands.

CHARLES FRANK STREET.  
 WILLIAM GARRETT.

Witnesses to Street's signature:

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Witnesses to Garrett's signature:

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