

(No Model.)

J. E. CRANE.
BEE SMOKER.

No. 535,677.

Patented Mar. 12, 1895.

Fig. 1.

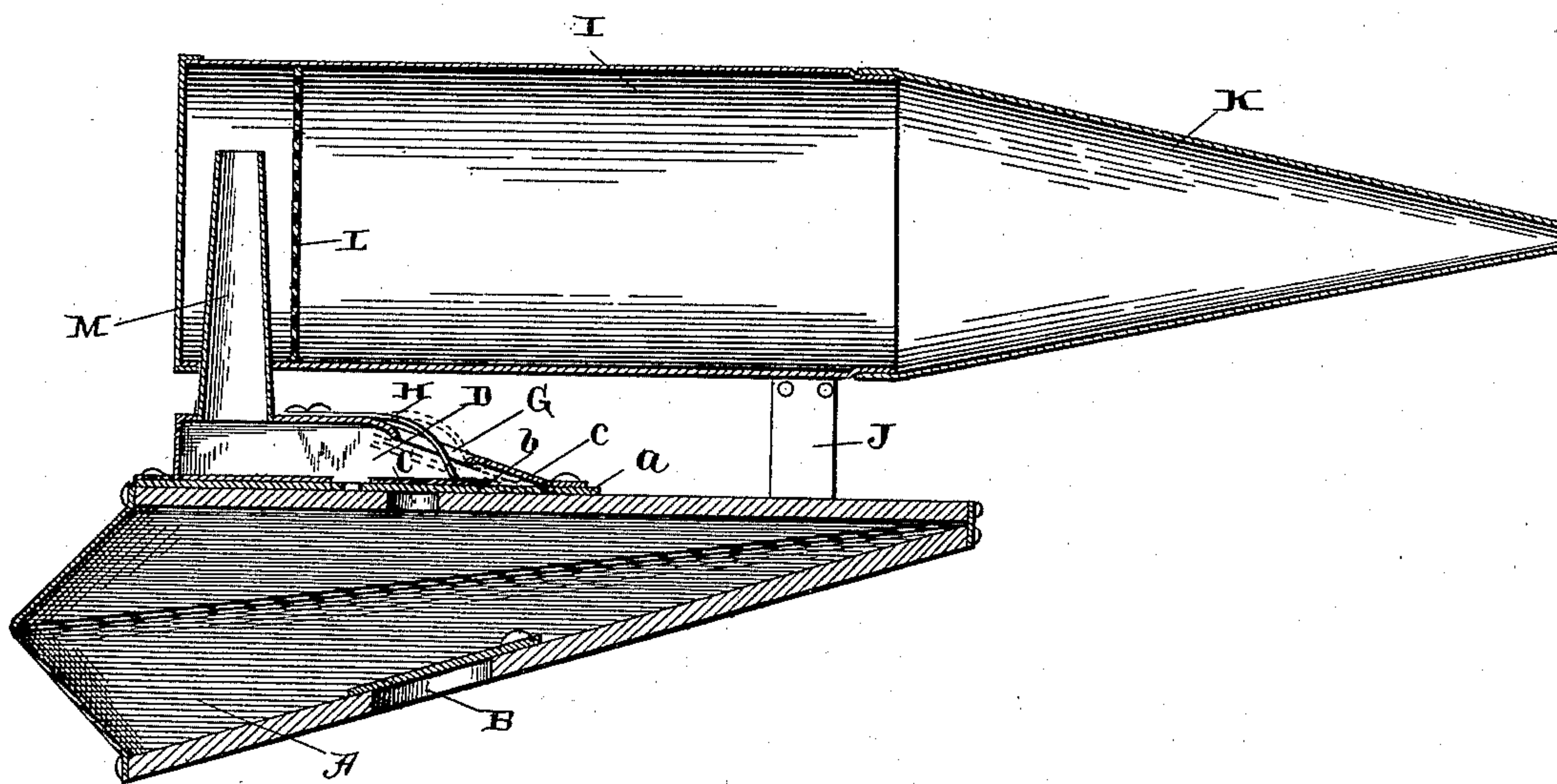
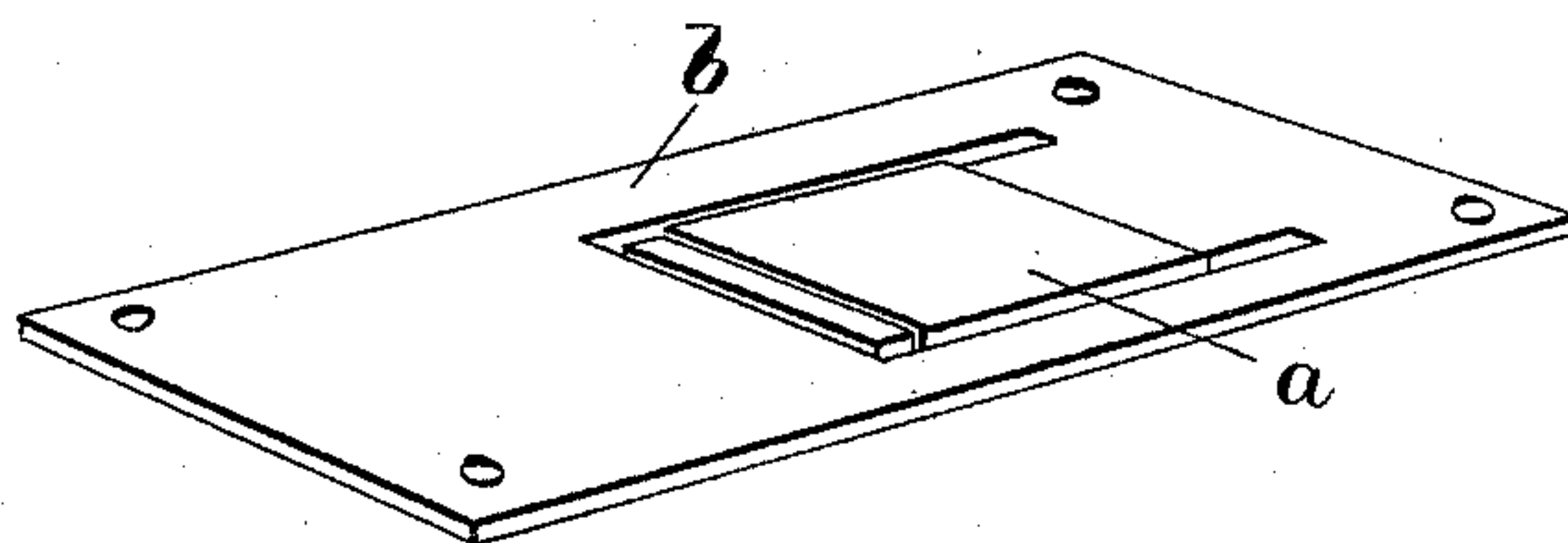


Fig. 2.



WITNESSES—
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JAMES ERVIN CRANE, OF MIDDLEBURY, VERMONT.

BEE-SMOKER.

SPECIFICATION forming part of Letters Patent No. 535,677, dated March 12, 1895.

Application filed April 21, 1894. Serial No. 508,534. (No model.)

To all whom it may concern:

Be it known that I, JAMES ERVIN CRANE, a citizen of the United States, residing at Middlebury, in the county of Addison and State of Vermont, have invented certain new and useful Improvements in Bee-Smokers; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in bellows smokers, and it consists in the construction and arrangement of parts which will be fully described hereinafter and particularly referred to in the specification.

My invention is designed to overcome the more serious practical objections to the bellows smokers as now constructed and in use. These are particularly the liability of the passage which connects the bellows with the flue barrel becoming clogged with creosote or ashes; the danger of sparks and smoke being drawn back into the bellows, thereby sticking it or burning the leather, and the disarrangement or breaking of the essential parts by reason of their exposed position or complicated construction.

In the accompanying drawings:—Figure 1 is a longitudinal vertical sectional view through the center of my invention, showing the same complete. Fig. 2 is a detached perspective view of the packing between the air chamber and the top of the bellows showing the valve formed as a part thereof.

A indicates a bellows of the usual construction, which is provided at its bottom with an inlet valved opening B, and with a perforation C in its upper wall.

D is an air chamber attached to the outer side of the upper wall of the bellows, directly over the outlet perforation C. Placed between this air chamber and the said upper wall of the bellows is a packing *a*, preferably of leather, and this packing has the projecting lip *b*, to form a valve, which is over the outlet perforation of the outer wall of the bellows. The inner end wall *c*, of this air chamber is preferably formed upon an incline as illustrated, and is provided with an opening G, which is adapted to be closed by the said

valve *b*, and the said valve is normally held inward over the outlet opening C, of the bellows by means of a light spring H.

The smoker I, is supported upon the upper wall of the bellows by means of suitable legs J, and is provided with a nozzle end K, and grate L as usual, the said grate holding the material to be burned within the smoker, all of which are well understood by those versed in the art. In rear of the said grate L the smoker is provided with an opening which receives the tube M, that projects from the air chamber as clearly illustrated in Fig. 1.

In operation the air in being forced from the bellows enters the air chamber through the outlet opening C of the bellows, and forces the valve *b*, against the opening G, closing it, which directs the whole blast of air through the tube M into the smoker. When the bellows is being operated for another blast, the valve *b*, instantly closes the outlet opening C, so that no smoke or sparks are drawn into the bellows, for there can be no back draft caused by the filling of the bellows as will be clearly understood, while at the same time air is admitted through the opening G, into the air chamber and through the smoker for supporting combustion, which is also clearly understood from the drawings.

Attention is directed to the tube M, which extends up into the fire chamber sufficiently far to prevent the dropping of any portion of the burning material into the air chamber and upon the wall of the bellows. Owing to this construction, I am enabled to deliver a very strong and substantially a continuous blast of air by inclosing the air flue which connects the bellows with the fire barrel or smoker proper until it reaches the upper portion of the grate, and then closing the opening G by means of a valve, thus directing all the air from the bellows directly into the barrel in a steady and powerful blast. During the filling of the bellows the spring tightly closes the outlet opening of the bellows, which prevents the drawing back of smoke or sparks into the bellows, while at the same time sufficient air to maintain combustion in the fire barrel is received through the exterior opening of the air chamber. The edges of this opening G, being turned inward, the least pos-

sible surface for the collection of creosote is furnished, thus avoiding the liability of the valve to stick.

5 The construction of the several parts is simple. Their operation is direct and effective, and their relative positions such that the portions most liable to injury are fully protected.

10 Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

15 1. A smoker comprising an air forcer, a smoke or fire chamber, an air chamber between the air forcer and said fire chamber, and a tube having one end connected with the air chamber and the opposite end extending through one side of and to a point near the opposite side of the fire chamber, for the purpose described.

20 2. A smoker comprising an air forcer, a smoke or fire chamber, an air chamber situated between the fire chamber and the air

forcer, the air forcer communicating with the air chamber, the air chamber having an opening communicating with the outside atmosphere, and a valve situated between the said communications and adapted to alternately open and close each, substantially as set forth. 25

3. A smoker comprising an air forcer, a fire or smoke chamber, an air chamber situated between the fire chamber and the air forcer and connecting them, the air chamber having an exterior communication and the air forcer an interior communication with the air chamber, a valve adapted to close alternately each communication, and a spring holding the said valve normally over the interior opening, substantially as specified. 30 35

In testimony whereof I affix my signature in presence of two witnesses.

JAMES ERVIN CRANE.

Witnesses:

M. A. BROOKS,
PHIL. E. CRANE.