

J. HELLER.
ALCOHOL STOVE.

No. 500,765.

Patented July 4, 1893.

Fig. 1.

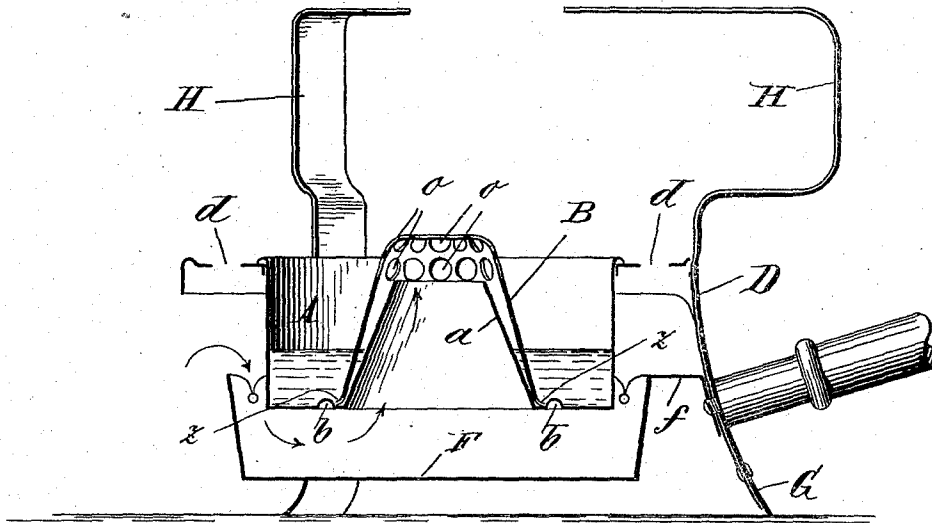
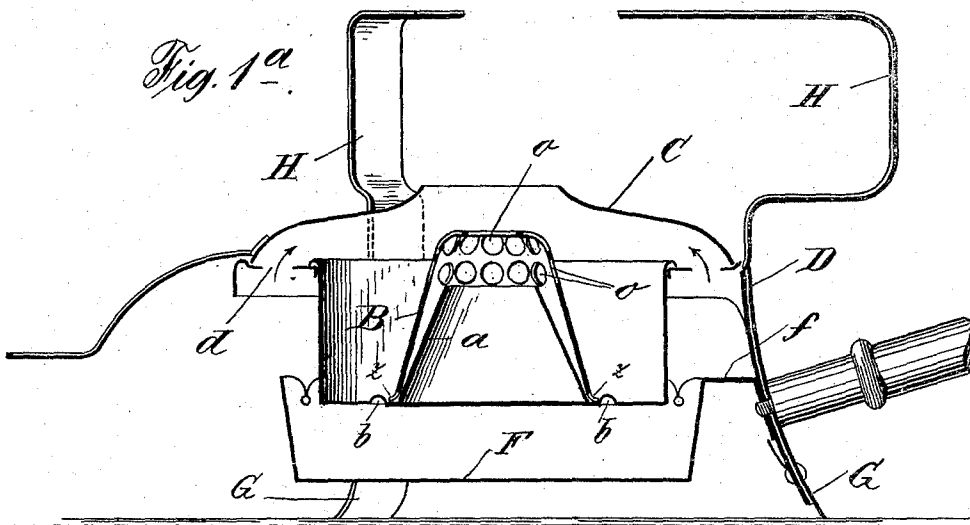


Fig. 1^a.



Witnesses:

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E. H. Sturtevant

Inventor:
Julius Heller

By

Richard A. [Signature]
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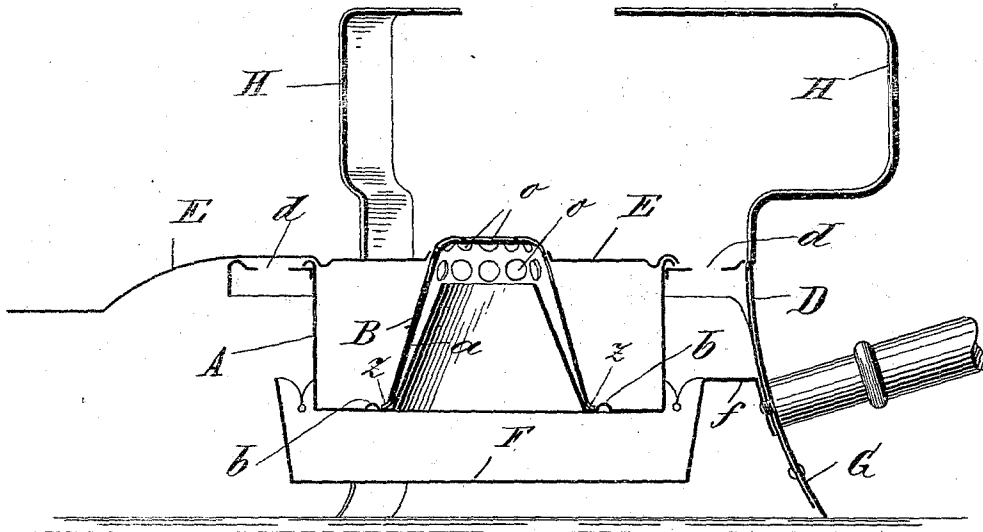
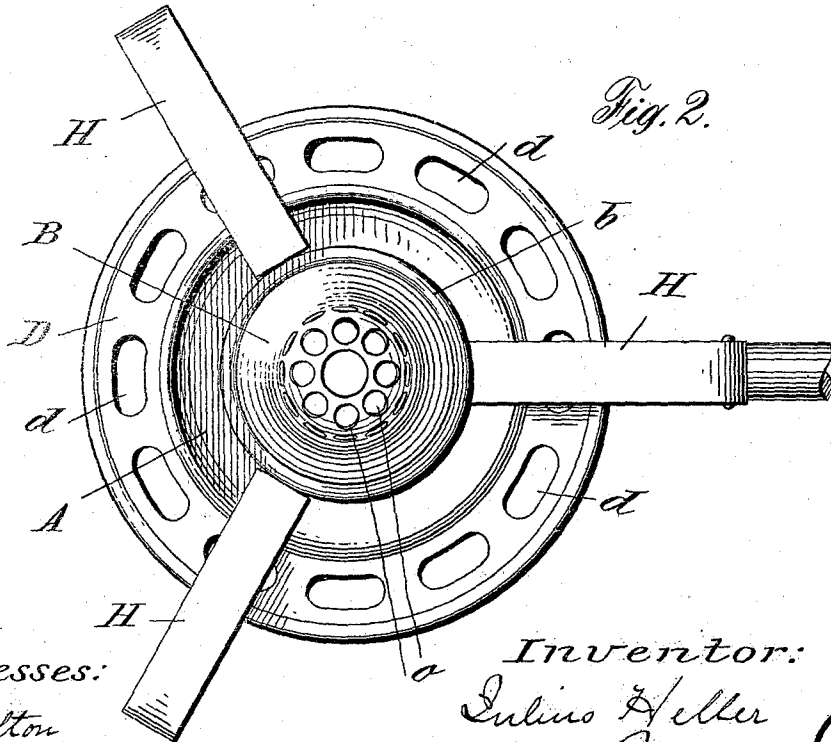


Fig. 2.



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Fig. 3.

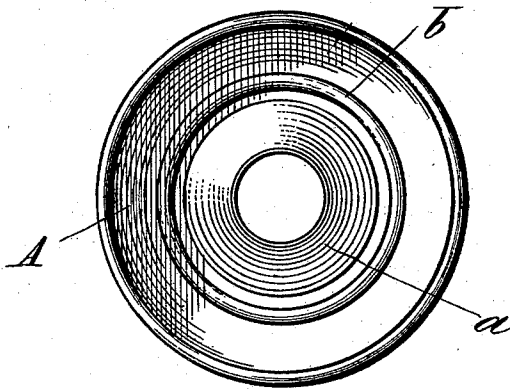


Fig. 4.

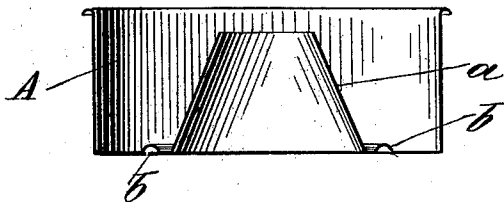


Fig. 5.

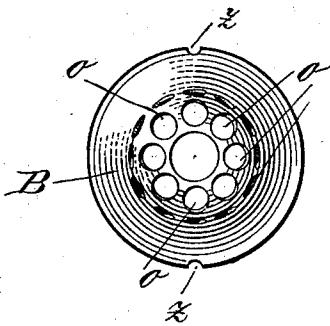
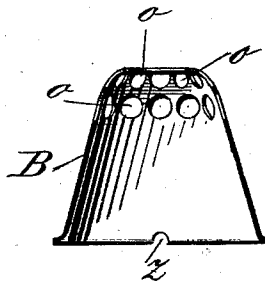


Fig. 6.



Witnesses:

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UNITED STATES PATENT OFFICE.

JULIUS HELLER, OF TEPLITZ, AUSTRIA-HUNGARY.

ALCOHOL-STOVE.

SPECIFICATION forming part of Letters Patent No. 500,765, dated July 4, 1893.

Application filed January 21, 1893. Serial No. 459,228. (No model.) Patented in England December 10, 1891, No. 21,648, and in Germany September 17, 1891, No. 66,104.

To all whom it may concern:

Be it known that I, JULIUS HELLER, manufacturer, a subject of the Emperor of Austria-Hungary, residing at the city of Teplitz, Bohemia, Austro-Hungarian Empire, have invented certain new and useful Improvements in Alcohol-Boilers, of which the following is a specification.

This invention has been patented in Great Britain, December 10, 1891, No. 21,648, and in Germany, September 17, 1891, No. 66,104.

The subject matter of the present invention consists of an improved alcohol cooking stove, in which the alcohol volatilizes before its ignition, fresh air being conducted to it, while the apparatus is easily accessible to all its parts whereby it may be thoroughly cleaned at any time. Moreover, the heating flame is concentrated in the middle of the vessel by a cap of a peculiar shape which is put upon it and a pure blue flame of an intense calorific power is produced, the sooting of the cooking vessel being avoided.

In the annexed drawings: Figure 1, shows a section of my new alcohol cooking stove, ready to be lighted. Fig. 1^a is a similar section with the peculiarly shaped cap which is intended for the concentrating of the flame in the middle of the cooking vessel and for the purpose of producing a pure blue flame of an intense heating power. Fig. 1^b shows a section of my new alcohol cooking stove, covered with a lid in order to have a smaller flame. Fig. 2, is a plan view of the stove. Fig. 3, is a plan of the part A and cone *a*. Fig. 4, is a section of the part A and cone, and Figs. 5 and 6, are detail views of the cone B.

The receiver A, Fig. 1, is made of one piece of sheet metal with a hollow cone *a*, truncated at its upper end and with arched walls projecting from its center into the interior part of the same, Figs. 3 and 4. At the base of the cone *a*, is an annular ledge or bead *b*, which supports the hollow cone B, Figs. 5 and 6, of stamped sheet metal which is rounded off and provided with holes at the top in such a manner that said cone B, which is placed over the open hollow cone *a*, Fig. 1, centers on the inside part of the bead *b*. When alcohol is poured into the receiver A, it flows through open spaces *z*, at the base of the hollow cone B, Fig. 5, into the interior chamber between

the two cones B and *a*, which it will fill up to a point as high as that of the alcohol in A. When the alcohol is lighted the flame will heat the cone B; the alcohol of the annular chamber volatilizes, and the vapors escape through the openings *o* of the cone B where they are ignited by the flame. During this process there is a rarefaction of the air over the cone *a*, caused by the flame and as the cone *a* is heated, at the same time there is a continuous current of air streaming from below through the cone *a* to the cupola of the cone B, where it mixes with the developed alcohol vapors and produces a very hot flame. When the volatilizing of the material has begun, being shown by a high rising blue flame and a seething noise, a cap C is put upon the receiver A slightly arched in its middle where an opening is made, Fig. 1^a. This cap C, concentrates the flame to the center of the cooking vessel, which flame can only issue outside from that point, along the vessel, producing a pure blue flame of an intense calorific power while atmospheric air at a very high degree of temperature streams to the flame through air inlets *d*, disposed upon the edge of the post D, covered by the cap, and along the inside walls of the cap C. As the complete combustion of the alcohol is thus made possible the sooting of the cooking vessel is avoided. If it is desired to have a smaller flame the cap C, must be taken off and a flat lid E, Fig. 1^b, with a smaller opening is substituted. By doing this the combustion of the alcohol inside of the receiver A, I mean the alcohol that surrounds the cone B, is stopped; consequently there is only the alcohol gas generated inside of the cone B, that burns; that gas is continually generated by the heat produced by the combustion. The flame is now considerably smaller as part of the openings *o* in the cupola of the cone B are closed or rather covered by the lid E and the stove as thus arranged serves to keep things warm.

When the stove is to be put out of work, it is sufficient to blow out the heating flame from the side. If it is necessary to put out of work the stove at the time it is used for cooking, Fig. 1^a, it is necessary to put on the lid which is employed for the lowering of the flame, after having removed the cap C, as it is not safe to stop the flame by choking it on

account of the continually generating easily inflammable alcohol gas generated by the over heated walls of the stove. In order to increase still the heating warmth, but at the same time in order to diminish as much as possible the volatilizing of the alcohol in the space round the cone B and to prevent the frame upon which the apparatus rests from being heated, the receiver A is surrounded by the vessel F. That vessel F carries at its circumference the holders *f*, which are riveted to the feet of the tripod that carries the cooking vessel and reinforce it so that the same can be manufactured of very thin sheet metal, while possessing the required strength to carry the cooking vessel. The cooking vessel is also provided with a series of supports H riveted to the tripod. One of the upper parts of the tripod is provided with an edge bent inside and open worked, used for the support of alcohol receiver A, which rests upon the tripod by means of its bent outside edge or flange.

I claim—

1. An alcohol cooking stove consisting of a

receiver A provided with a hollow cone *a*, projecting into the interior part of the same a hollow cone B fitting over the first with openings *o* at its upper end, substantially as described.

2. In an alcohol cooking stove, a vessel F, a receiver within the same with an air space between, a cone *a* and a perforated cone B over the same, substantially as described.

3. In an alcohol cooking stove having a burner, a dome shaped covering cap C provided with an opening for the passage of the heating flame and the air inlets *d*, substantially as described.

4. In combination, the receiver A having the cone *a*, the perforated removable cone B and a concentrating plate having a central opening adapted to be placed above the burner, substantially as described.

In witness whereof I have hereunto set my hand in presence of two witnesses.

JULIUS HELLER.

Witnesses:

L. A. EDWARDS,
W. HAUPT.