

(No Model.)

G. A. ANDERSON.
SPARK ARRESTER.

No. 555,297.

Patented Feb. 25, 1896.

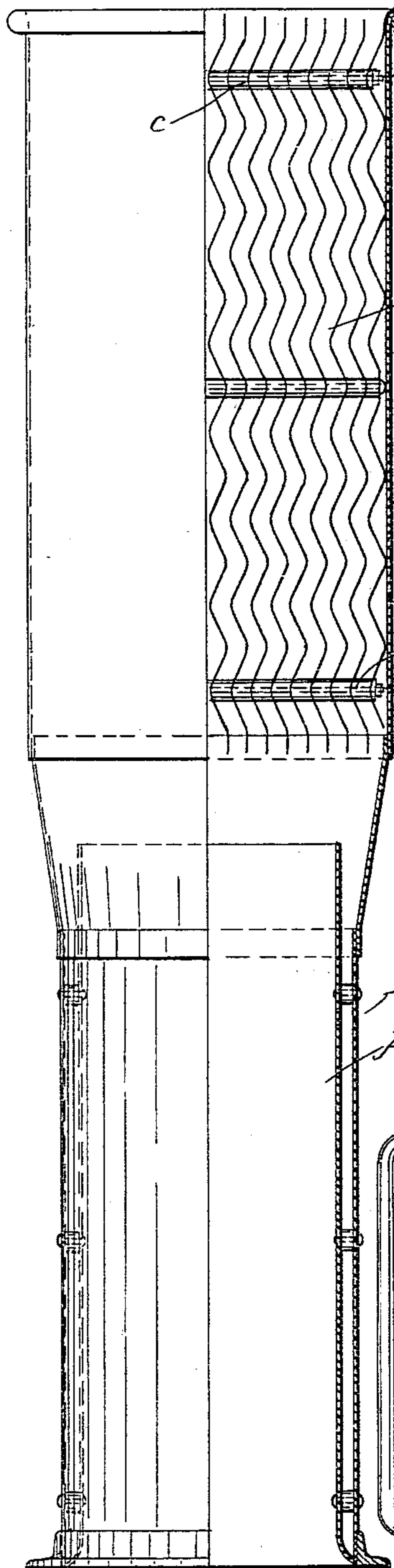


FIG. 1.

FIG. 4.

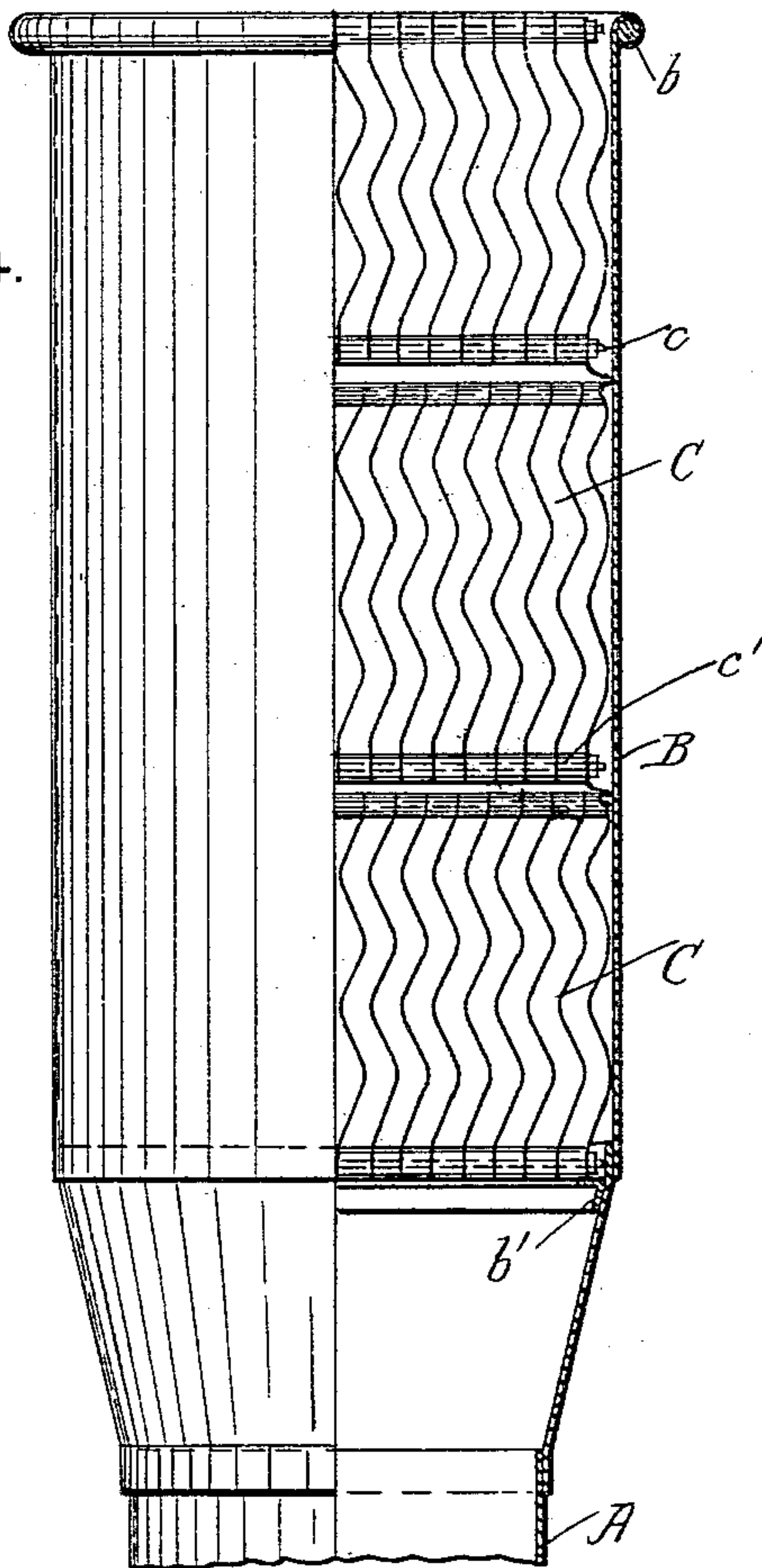


FIG. 2.

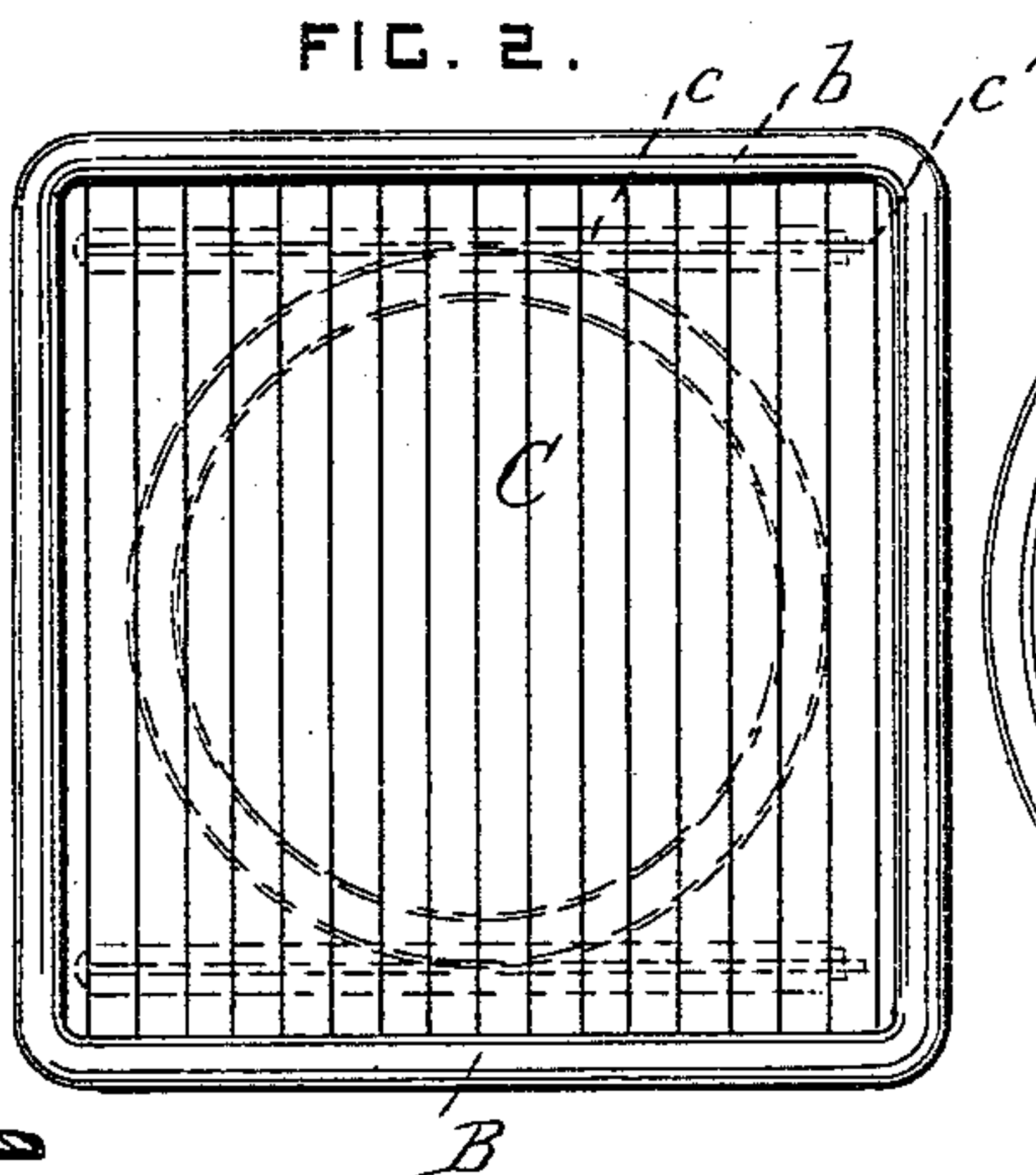
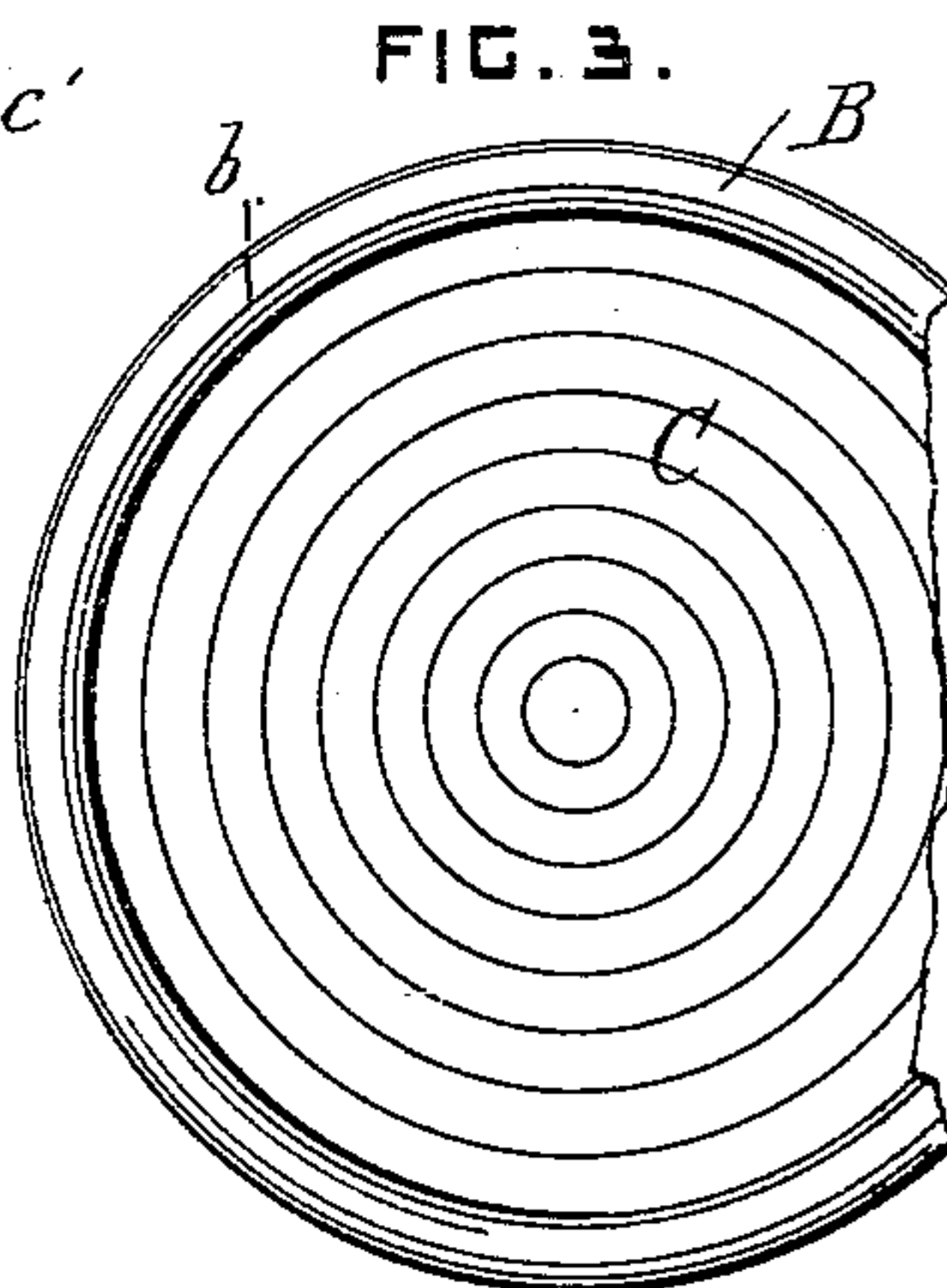


FIG. 3.



Witnesses
George H. Bliss
J. W. Foster

Inventor
Gustaf A. Anderson
By Attorney *Herbert W. Jenner.*

UNITED STATES PATENT OFFICE.

GUSTAF ARVID ANDERSON, OF WAYNESBOROUGH, PENNSYLVANIA,
ASSIGNOR TO THE GEISER MANUFACTURING COMPANY, OF SAME
PLACE.

SPARK-ARRESTER.

SPECIFICATION forming part of Letters Patent No. 555,297, dated February 25, 1896.

Application filed September 3, 1895. Serial No. 561,257. (No model.)

To all whom it may concern:

Be it known that I, GUSTAF ARVID ANDERSON, a subject of the King of Sweden and Norway, residing at Waynesborough, in the county of Franklin and State of Pennsylvania, have invented certain new and useful Improvements in Spark-Arresters; 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.

This invention relates to spark-arresters for steam-boiler furnaces; and it consists in the novel construction and combination of the parts hereinafter fully described and claimed.

In the drawings, Figure 1 is a front view of a spark-arrester, partly in section. Fig. 2 is a plan view of the same. Fig. 3 is a plan view showing a modification. Fig. 4 is a front view, partly in section, and also shows a modification of the spark-arrester.

A is the smoke-stack of a boiler of any approved construction, and B is the outer case of the spark-arrester. This case may be circular and cylindrical, as shown in Fig. 4, square, as shown in Figs. 1 and 2, or of any other approved configuration. The case B may be secured direct to the smoke-stack, as shown in Fig. 4, or it may be secured to a casing B', surrounding the smoke-stack, as shown in Fig. 1. The casing B', when used, hides the smoke-stack and presents a better appearance, as the paint or other finish does not become burned off its surface.

The means for preventing large sparks and red-hot cinders from flying out of the chimney and setting fire to straw-stacks or other inflammable material in the vicinity consists of a bundle C of vertically-arranged corrugated plates supported in the casing B. The bundle may be supported in any approved manner, as by hooking the top plates over the ring b, which reinforces the top of the casing, or by an angle-iron b' in the lower part of the casing, as shown in Fig. 4. The general direction of the plates or laminae of the bundle is vertical or substantially vertical, and the corrugations are similar and opposite each other. By this means a plurality of zigzag passages is

formed through the bundle. These passages are continuous in an upward direction and never lead or force the products of combustion in a reverse or downward direction. The plates are kept at the proper distance apart by washers c and rivets or bolts c'. The plates may be straight horizontally, or they may be cylindrical, spiral, or of any other approved form.

In the modification shown in Fig. 4 three short bundles are used and are supported one above the other in the smoke-stack. These bundles are readily removed for the purpose of cleaning them, and their number can be varied according to the requirements of the fuel burned in the furnace. The sparks and red-hot cinders are propelled against the corrugations of the bundle of plates and rebound from side to side as they pass upward through the bundle. The sparks and cinders become pulverized and quenched by attrition against the corrugated plates and are driven out of the top of the smoke-stack in a harmless condition.

What I claim is—

1. In a spark-arrester, the combination, with an outer case, of a bundle of corrugated plates arranged vertically in the said case and having vertical zigzag passages between the plates, substantially as set forth.

2. In a spark-arrester, the combination, with an outer case, of a bundle of corrugated plates arranged vertically in the said case, the corrugations of the said plates being opposite each other, and distance-pieces holding the said plates apart, substantially as set forth.

3. In a spark-arrester, the combination, with an outer case, of a series of similar and removable bundles supported one above the other in the case, each said bundle comprising corrugated plates arranged vertically and having zigzag passages between them, substantially as set forth.

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

GUSTAF ARVID ANDERSON.

Witnesses:

J. A. MIDDOWER,
DANIEL S. BEARD.