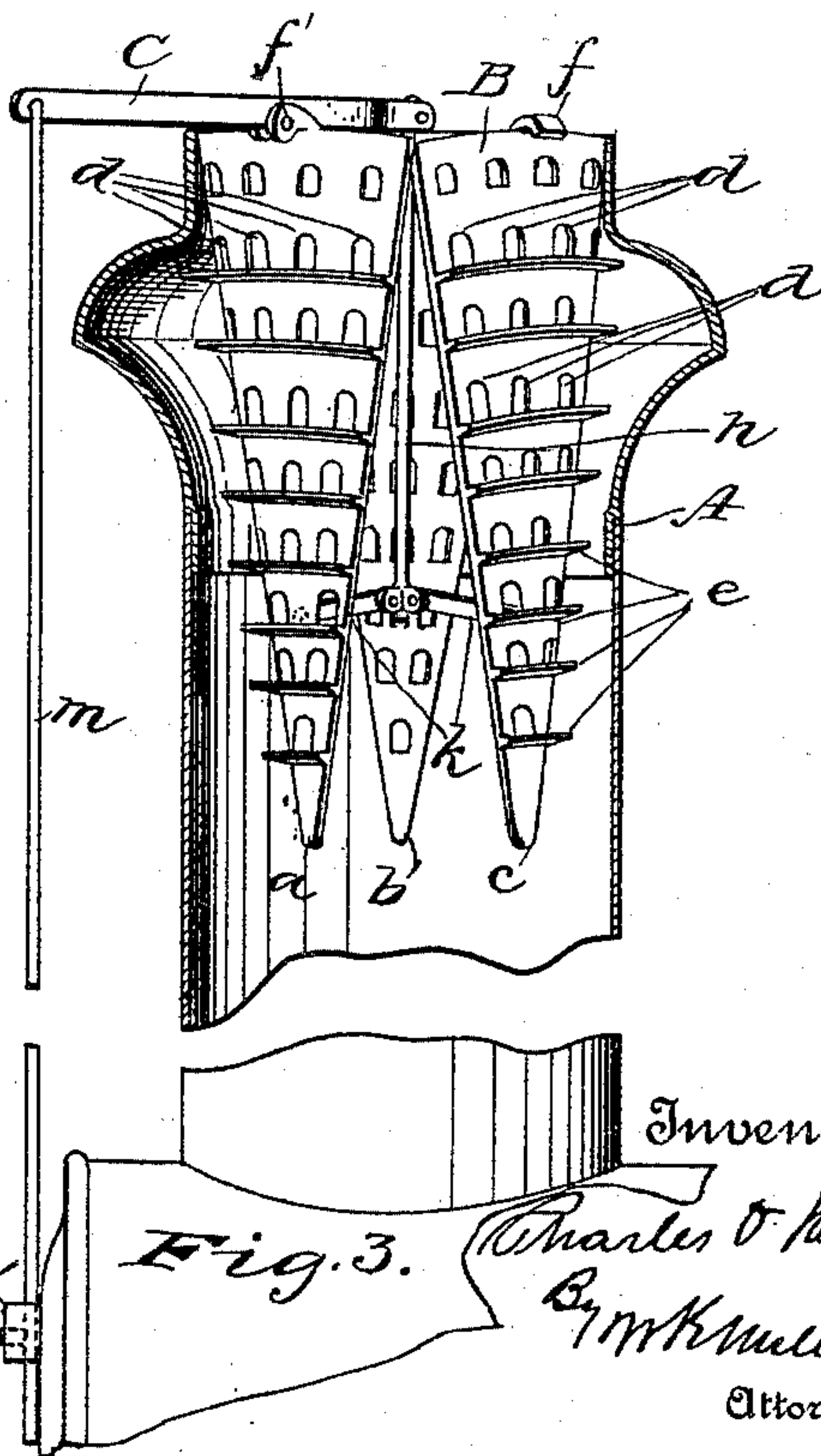
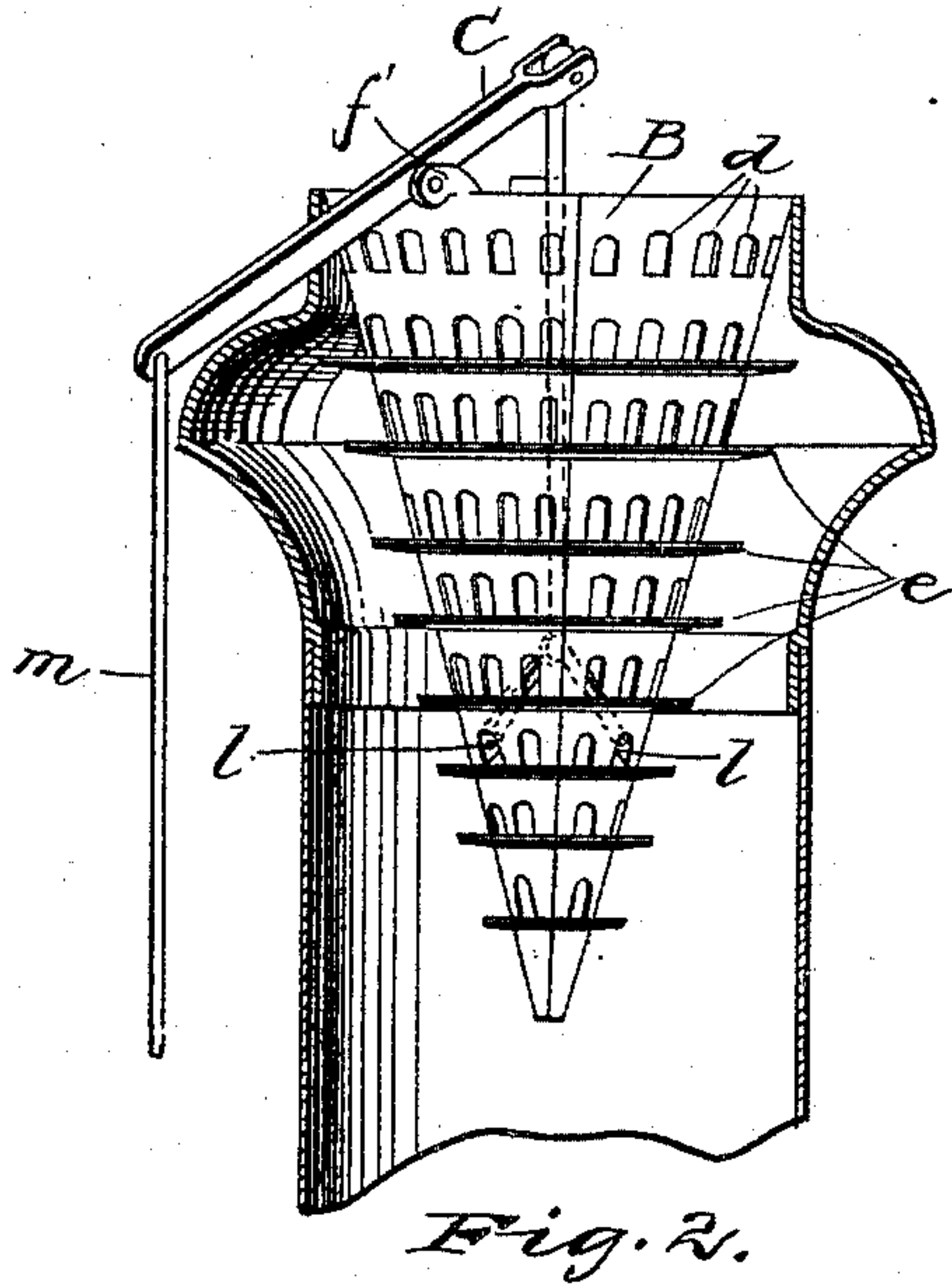
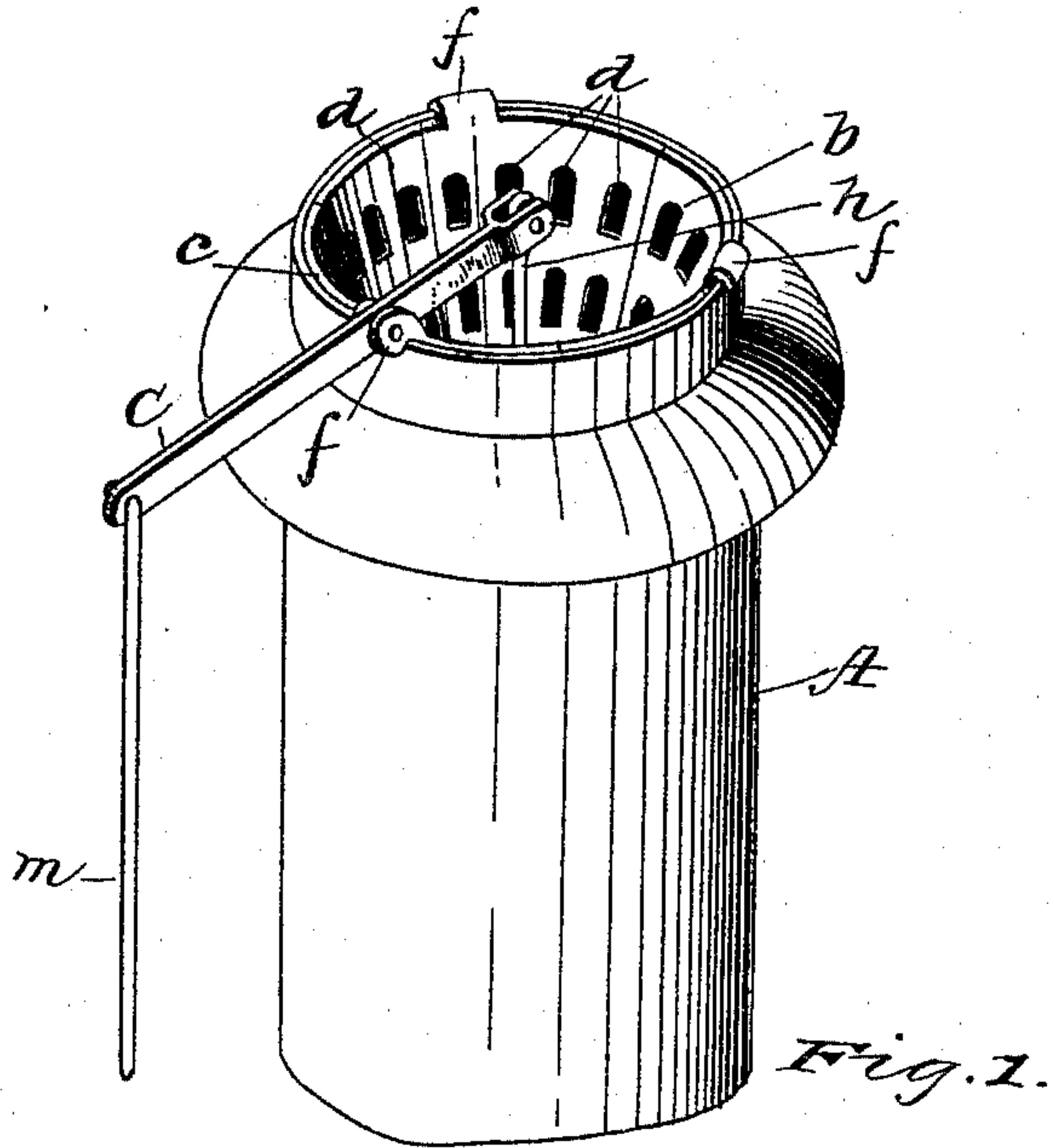


(No Model.)

C. O. HEGGEM.
SPARK ARRESTER.

No. 489,866.

Patented Jan. 10, 1893.



Witnesses
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CHARLES O. HEGGEM, OF MASSILLON, OHIO, ASSIGNOR TO THE RUSSELL & COMPANY, OF SAME PLACE.

SPARK-ARRESTER.

SPECIFICATION forming part of Letters Patent No. 489,866, dated January 10, 1893.

Application filed June 15, 1892. Serial No. 436,876. (No model.)

To all whom it may concern:

Be it known that I, CHARLES O. HEGGEM, a citizen of the United States, and a resident of Massillon, county of Stark, State of Ohio, have
5 invented a new and useful Improvement in Spark-Arresters, of which the following is a full, clear and exact description, reference being had to the accompanying drawings, making part of this specification.

10 My invention relates to improvements in spark arresters, and consists of certain features of construction and combination of parts as will be hereinafter described and pointed out in the claims.

15 Figure 1 of the accompanying drawings is a view in perspective of a smoke stack and spark arrester illustrating my invention. Fig. 2 is a vertical section of smoke stack and side elevation of the spark arrester in closed position. Fig. 3 a similar view of the smoke stack
20 showing the spark arrester in open position.

A, representing the smoke stack, which may be of any of the well known forms, B, the spark arrester in the form of an inverted cone,
25 divided longitudinally into three parts designated as *a*, *b* and *c*; in each of said divisions is provided transverse series of apertures *d* placed in vertical order, between which is provided outwardly projected ledges *e* as shown
30 in Fig. 3. At the upper end portion of each of the divisions, is a hook *ff'* by which the divisions are supported on the rim of the smoke stack. The hook *f'* is divided, and between the prongs is pivoted a lever C, at the
35 inner end of which is pivoted a depending rod *h* at the lower end portion of which is provided links *k* that are connected to lugs *l* on the inside of the divisions *a*, *b* and *c*, and at the outer end of the lever is a depending rod
40 *m*, extending down to a point at the front end of the boiler, where it is passed through an aperture in a projected stud *n* and secured by the thumb screw *o*.

45 When the divisions are brought together as shown in Fig. 2, the essential features of my invention are shown in the form of an inverted cone having a series of annular ledges *e*, and apertures *d* as shown in Fig. 2. The computed area of the apertures *d* should be no

less than the area of the upper end portion of 50 the stack.

In operation to facilitate or relieve the draft from any resistance caused by the presence of the arrester as shown in Fig. 2 at the time of starting the fire, the rod *m* and lever C, 55 may be brought in use by which the cone may be opened as shown in Fig. 3. If preferred, the lever C, may project rearwardly from which a rod or cord may extend to the operator at the rear end of the boiler when used 60 on a portable engine. Sparks in their flight caused by the exhaust of steam in the stack will come in contact with one or more of the annular ledges and thereby be arrested and thrown to the bottom of the stack while the 65 smoke will be free to pass or will be forced by the exhaust through the apertures and out of the stack.

Having thus fully described the nature and operation of my invention, what I claim and 70 desire to secure by Letters Patent is:

1. The combination with a smoke stack of the inverted cone B, supported at the upper end of the stack A, by the hooks *ff'* adapted to swing thereon, said cone divided longitudi- 75 nally and provided with apertures and annular ledges, the lever C, rod *h*, links *k* and means for operating said lever to open or close the cone B, substantially as and for the purpose set forth. 80

2. The combination with a smoke stack of the inverted pendent cone B, having annular ledges *e* and apertures *d* in vertical order and divided longitudinally substantially as de- 85 scribed and for the purpose set forth.

3. The combination with a smoke stack of the inverted pendent cone having apertures and ledges as described hinged at the top of said stack, and divided longitudinally and means for swinging said divisions apart and 90 together, substantially as described and for the purpose set forth.

In testimony whereof I have hereunto set my hand this 7th day of June, A. D. 1892.

CHARLES O. HEGGEM.

Witnesses:

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CHAS. R. MILLER.