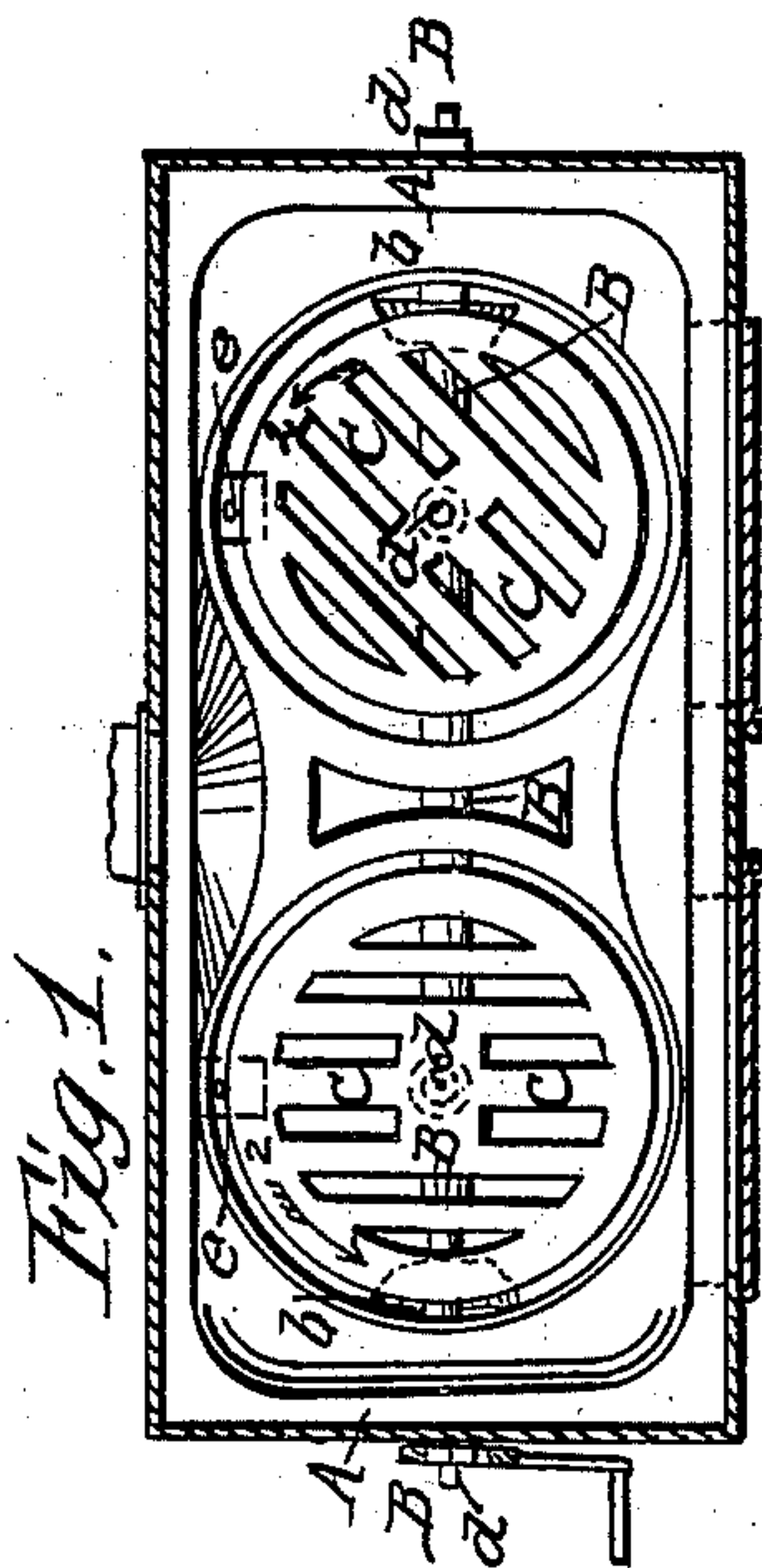
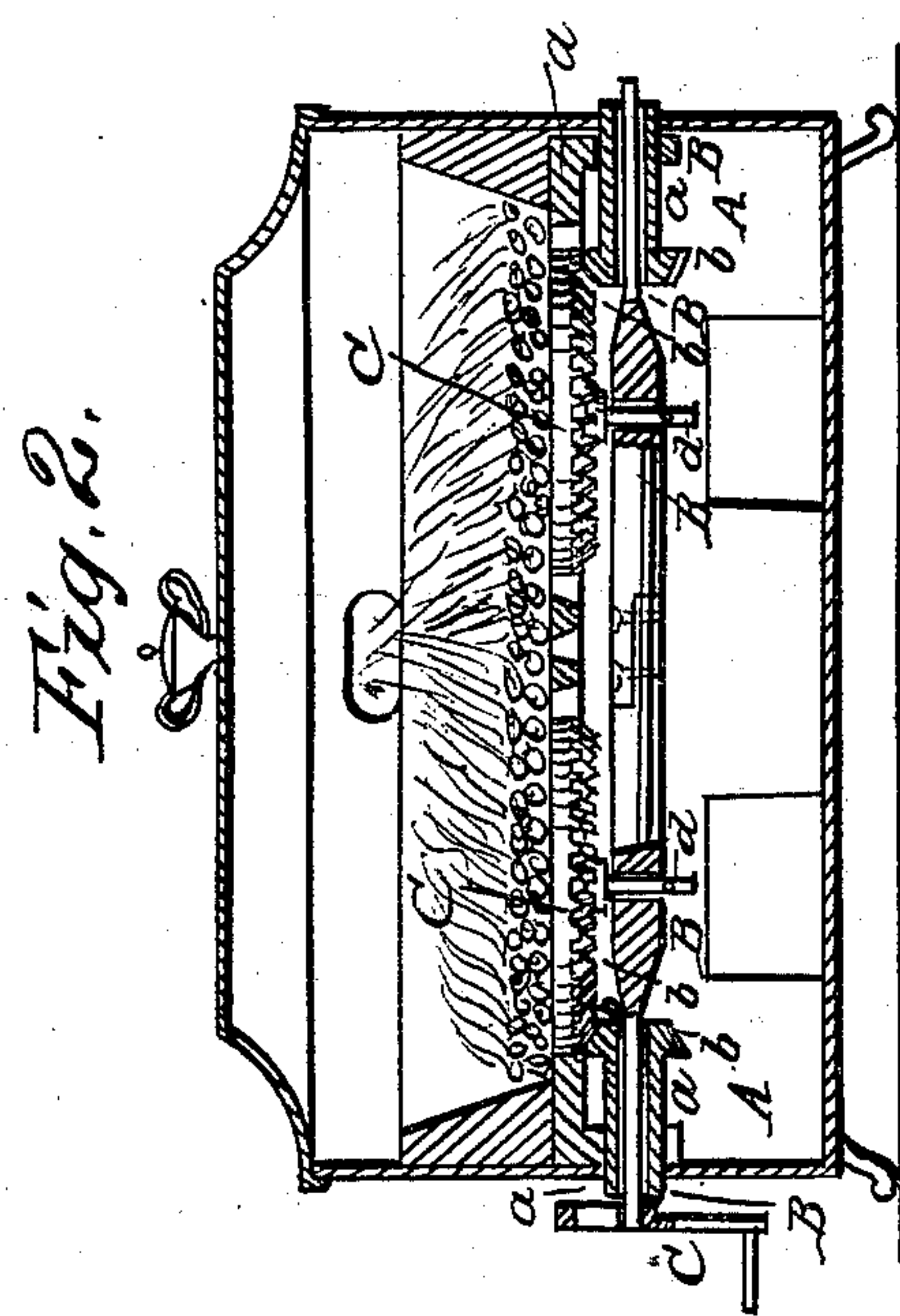
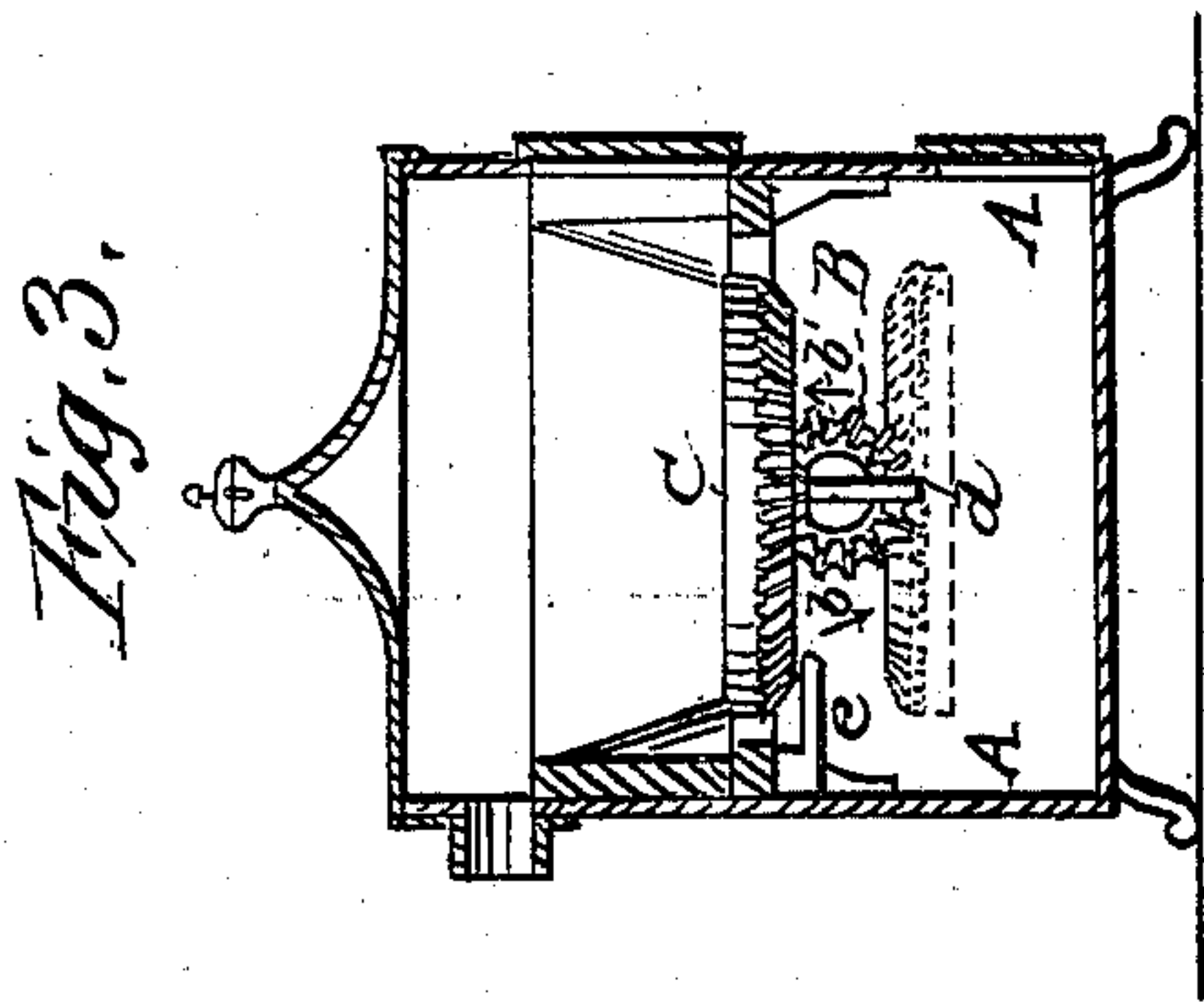


A. J. MAGOON.

Stove Grate.

No. 80,645.

Patented Aug. 4, 1868.



Witnesses,
H. C. Ashkett
J. A. Morgan

Inventor:
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United States Patent Office.

A. J. MAGOON, OF PROVIDENCE, RHODE ISLAND.

Letters Patent No. 80,645, dated August 4, 1868.

IMPROVEMENT IN STOVE-GRATES.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, A. J. MAGOON, of Providence, in the county of Providence, and State of Rhode Island, have invented a new and useful Improvement in Grates for Stoves and Furnaces; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification.

Figure 1 represents a plan or top view of my improved grate.

Figure 2 is a vertical longitudinal section of the same.

Figure 3 is a vertical transverse section of the same.

Similar letters of reference indicate corresponding parts.

This invention relates to a new grate for stoves, ranges, and furnaces, which is so arranged that it can, at the same time, serve as a grate and ash-sifter.

The grate is of circular form, and is at its centre, by a vertical pin, pivoted to a horizontal shaft. On one side the grate is supported by a fixed lug, so that it cannot be dumped on that side. If, by suitable gearing-connection, the grate is revolved around its vertical axis in one direction, it will simply obtain the said motion, and will cause the coal held on it to be thoroughly stirred and sifted, but if revolved in the opposite direction it will not be held by the lug, and will swing around the horizontal axle and be dumped.

A, in the drawing, represents the fire-box of a stove or furnace. In the same is arranged a horizontal spindle, B, which is with both ends hung in tubular shafts, *a a*, which have their bearings in the opposite ends of the fire-box. Two such hollow shafts *a* are required, only, if two circular grates are employed, as shown. Only one is needed if one circular grate is used, as in cylindrical or small stoves. The spindle B can turn loose in the shafts *a*, and the latter can turn independent of the spindle.

The end or ends of the spindle project outside of the hollow shafts, as shown, so as to allow a crank to be applied to the projecting end of the spindle, as in fig. 2, which end is made polygonal, or otherwise suited to be grasped by the crank. The crank can also be applied to the outer end of the shaft *a*, as in fig. 1. On each hollow shaft *a* is mounted a bevel-pinion, *b*, as shown.

C represents the grate. The same is of circular shape, as is clearly shown in fig. 1, and has bevelled teeth on its under side, which mesh into the pinion *b*, as shown. From the centre of the grate C projects downward a pin, *d*, which is fitted through an eye in the spindle B, and which forms the vertical axle of the grate.

e represents a stud or lug, projecting from one side of the fire-box, to support the grate, as is clearly shown in figs. 1 and 3.

When, by means of the crank, the shaft *a* is turned in the direction of the arrow 1, fig. 3, it will, by means of the pinion *b*, carry the grate around with it in the direction of the arrow 2, in fig. 1, and will, as the grate is simply balanced on the spindle, tend to throw it over to that side on which the lug *e* is arranged. The lug *e*, however, supports the grate, and the same can therefore be turned in the aforesaid direction without danger of its being dumped.

When the grate is thus revolved around its vertical axis, it will be an excellent ash-sifter, as by the rotary motion all the coal and ashes resting on the grate will be stirred, and the ashes will be caused to fall through, while the coal will remain on the grate.

If the shaft *a*, however, is turned in the opposite direction, so as to revolve the grate in a direction opposite to that indicated by the arrows 2, the friction of the gearing will carry the grate away from the support *e*, and will cause the same to lose its balance, and to turn over, as shown by red lines in fig. 3, and to thus dump the coal. By putting the crank directly on the spindle, the grate may be dumped without reference to the gearing.

The grate can be brought up again either by directly turning the spindle or by the friction of the gears, if the shaft *a* is turned in the direction of the arrow 1.

If one grate is used, the aforesaid description will be correct; but if two grates are fitted into the same

spindle B, as in figs. 1 and 2, there must be a separate shaft, *a*, pinion *b*, and support *e*, for each grate, so that each grate may be sifted separately, while they can only be dumped simultaneously.

I claim as new, and desire to secure by Letters Patent—

The combination and arrangement of the revolving grates C C, horizontal shaft B, lugs *e e*, tubular shafts *a a*, and bevelled pinions *b b*, all operating as described, whereby the grates are revolved separately and dumped simultaneously, as set forth and shown.

The above specification of my invention signed by me, this 27th day of March, 1868.

A. J. MAGOON.

Witnesses:

WM. F. McNAMARA,

A. F. ROBERTS.