

(No Model.)

F. L. McGAHAN.

FLUE CLEANER.

No. 313,509.

Patented Mar. 10, 1885.

Fig. 2.

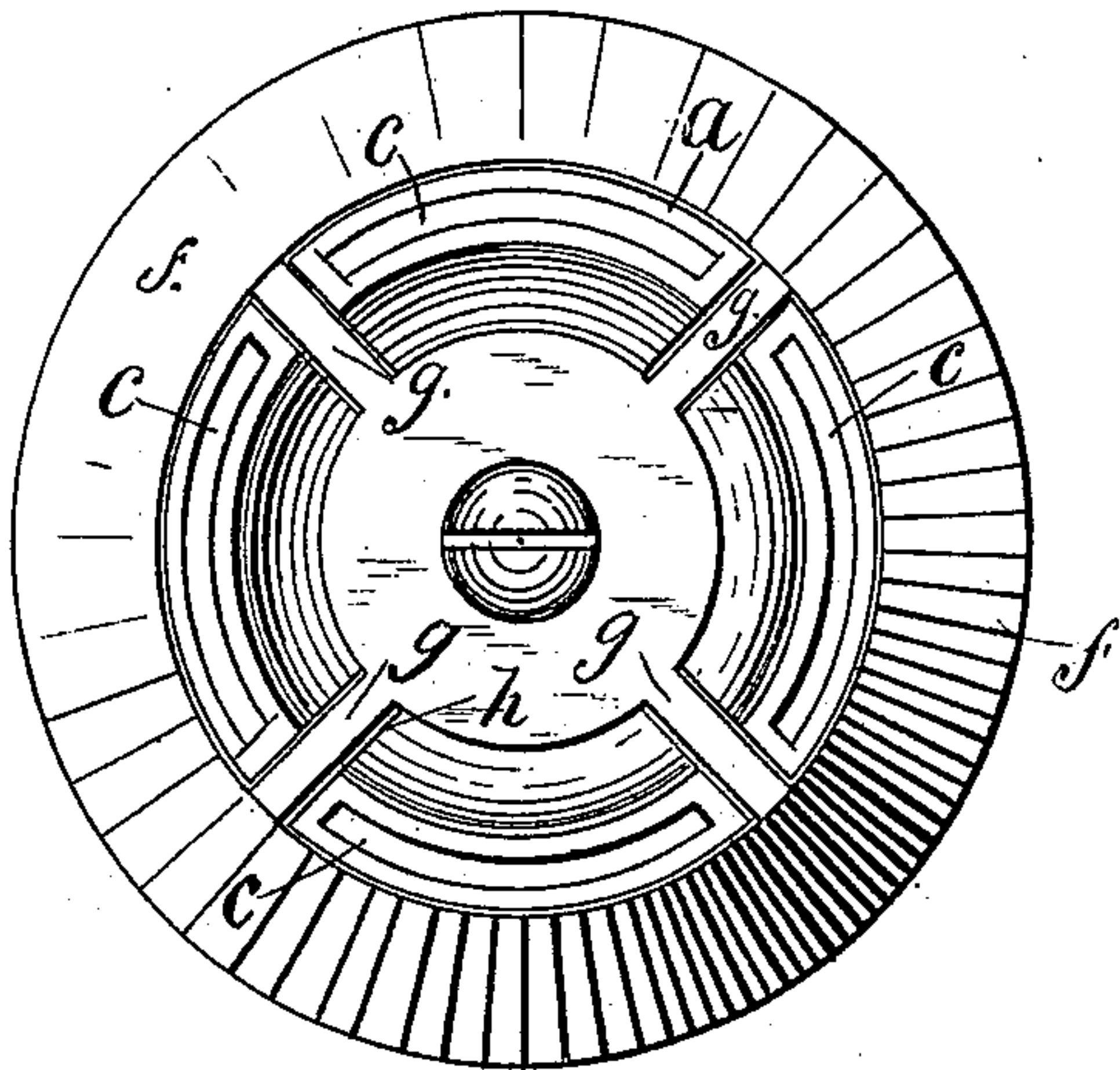


Fig. 3.

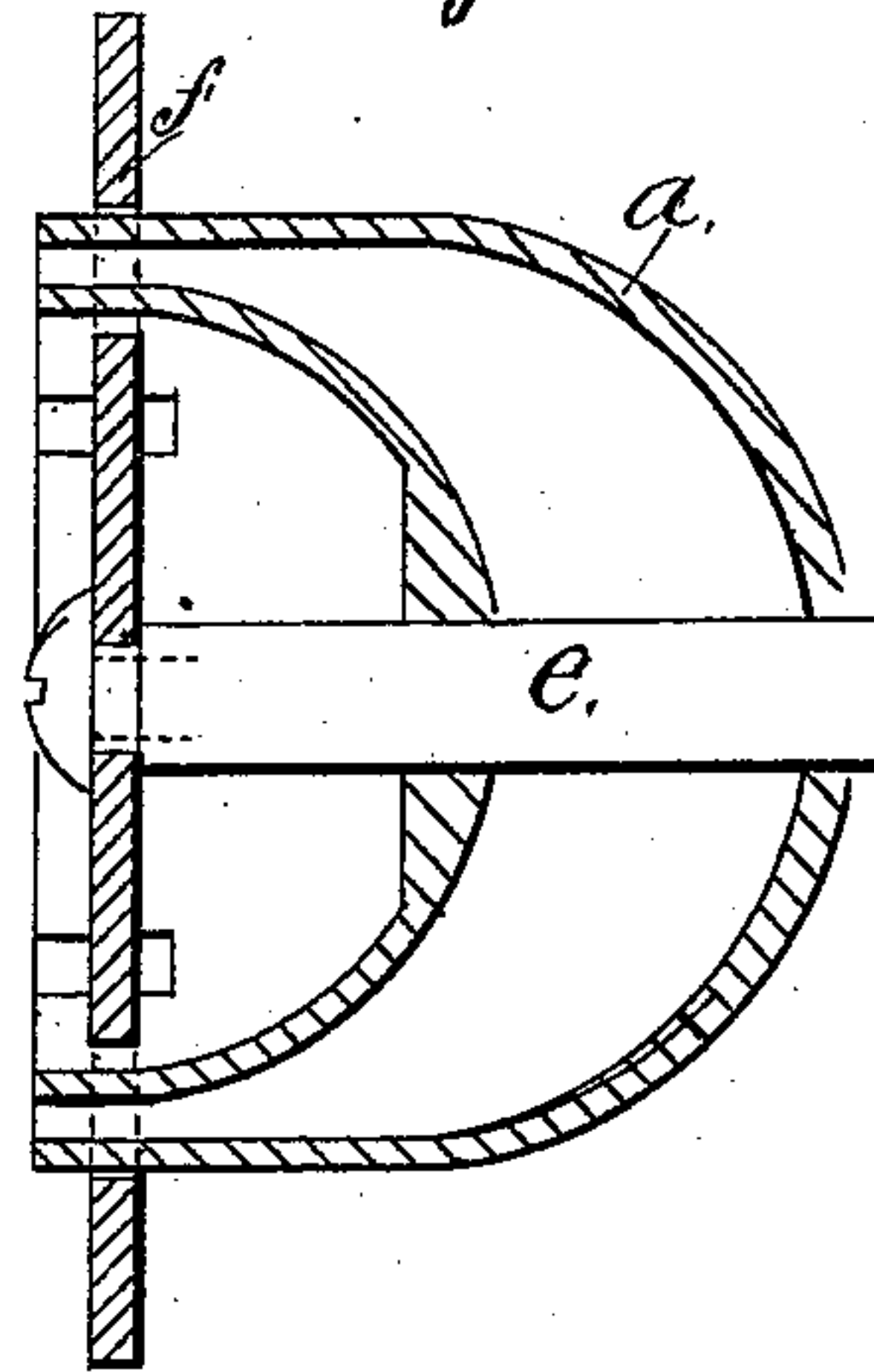
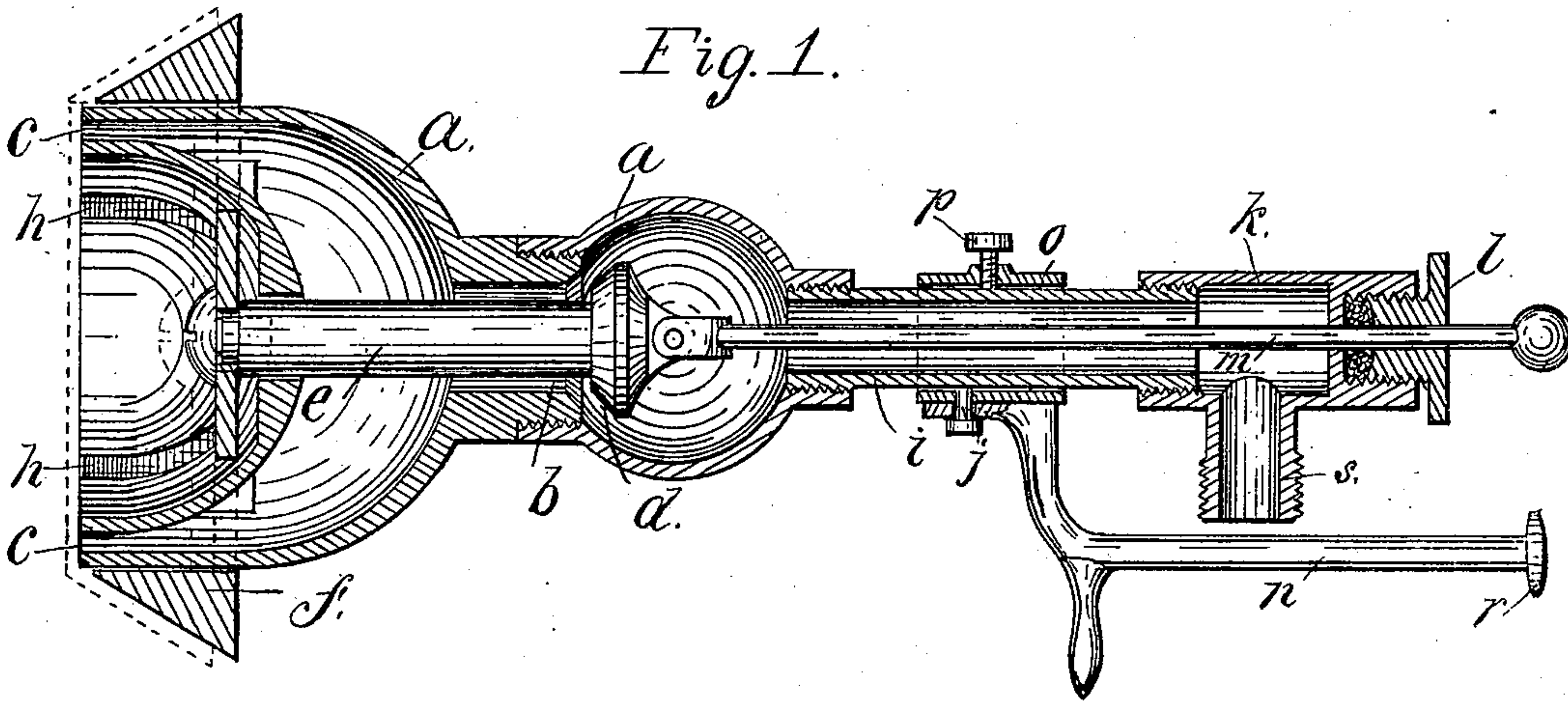


Fig. 1.



WITNESSES:

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UNITED STATES PATENT OFFICE.

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FLUE-CLEANER.

SPECIFICATION forming part of Letters Patent No. 313,509, dated March 10, 1885.

- Application filed May 23, 1884. (No model.)

To all whom it may concern:

Be it known that I, FRED L. McGAHAN, a citizen of the United States, residing at Indianapolis, in the county of Marion and State of Indiana, have invented a new and useful Improved Flue-Cleaner, of which the following is a specification.

My invention relates to an improved flue-cleaner of that class which operate by directing a jet of steam through the flue.

The objects of my improvement are to discharge the steam-jet with sudden force through the flue, and to automatically shut off the flow of steam while changing the cleaner from one flue to another.

The accompanying drawings illustrate my invention.

Figure 1 represents a longitudinal section of my device; Fig. 2, an elevation of the discharging end. Fig. 3 is a section of a modified form of the flue-plate.

a is a hollow cylindrical discharge-jet having its interior divided into two chambers communicating with each other through a central opening, *b*, closed by the valve *d*.

c c are annular discharge-openings near the periphery of *a*, and communicating with its interior. Valve *d* has a stem, *e*, extending forward through the forward end of *a*.

f is an annular plate having central arms, *g g*, which pass through the walls of *a* in slots *h* between the openings *c*, and connect said plate *f* with the end of valve-stem *e*. Plate *f* may have a conical surface, as shown in Fig. 1, or flat, as shown in Fig. 3.

i is a tube screwed into the jet *a*, forming a hollow handle for the implement.

k is a T-coupling having its outer end closed by a stuffing-box, *l*.

m is a rod having one end connected with valve *d*, and extending through pipe *i* and stuffing-box *l*, terminating in a knob or handle.

n is a handle connected by a swivel-joint, *j*, to a sleeve, *o*, which slides over pipe *j*, and is adjustably secured thereon by a set-screw, *p*. Handle *n* terminates in a broad surface, *r*, adapted to be pushed against by the body of the operator.

s is the steam-inlet, to which a hose or steam-pipe provided with a flexible coupling is in use attached.

In operation, the cleaner having been connected with a steam-supply and the ends of the boiler-flues exposed, steam is admitted to

the cleaner through inlet *s*. Valve *d* is kept from closing by the operator pulling outward on rod *m* until all condense-water is blown out through the openings *c*. When rod *m* is released, the steam-pressure against valve *d* at once closes it and the flow of steam is cut off. The enlarged end of jet *a*, having the openings *c*, is then inserted in the open end of one of the flues, and the opening closed by plate *f*, which rests against the end of the flue. The operator now gives a sharp push against the rear end of the implement, or against handle *n*, and the implement moves slightly further into the flue, while plate *f*, held stationary by the end of the flue, operates through stem *e* to open valve *d*, and the steam rushes suddenly and forcibly through the annular openings *c* and along the interior walls of the flue, blowing out all soot and ashes. As soon as the operator ceases to push against the implement, the valve is automatically closed by the pressure of steam behind it, and the flow of steam thereby stopped while the cleaner is moved to another flue.

Heretofore in this class of cleaners the steam-valve has been located in the supply-pipe, and the jet of steam has not been cut off by the removal of the device from the flue.

I claim as my invention—

1. A flue-cleaner consisting of the following elements, namely: a tube having an inlet for steam, a hollow discharge-jet secured to one end of said tube, a plate adapted to cover the open end of a flue and to slide over the exterior of said jet, and a valve seated within said discharge-jet and connected with said plate, all combined substantially as and for the purpose specified.

2. In a flue-cleaner, the combination of discharge-jet *a*, having annular openings *c*, valve *d*, and plate *f*, substantially as specified.

3. In a flue-cleaner, the combination, with discharge-jet *a*, tube *i*, and valve *d*, of stuffing-box *l* and rod *m*, whereby said valve is operated in the manner and for the purpose set forth.

4. In a flue-cleaner, the combination, with tube *i* and jet *a*, of sleeve *o*, having a handle, *n*, arranged as described, substantially as and for the purpose specified.

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Witnesses:

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