

No. 754,955.

PATENTED MAR. 15, 1904.

A. LEMKE.
ROTARY MOTOR FOR FLUE CLEANERS.

APPLICATION FILED MAY 28, 1903.

NO MODEL.

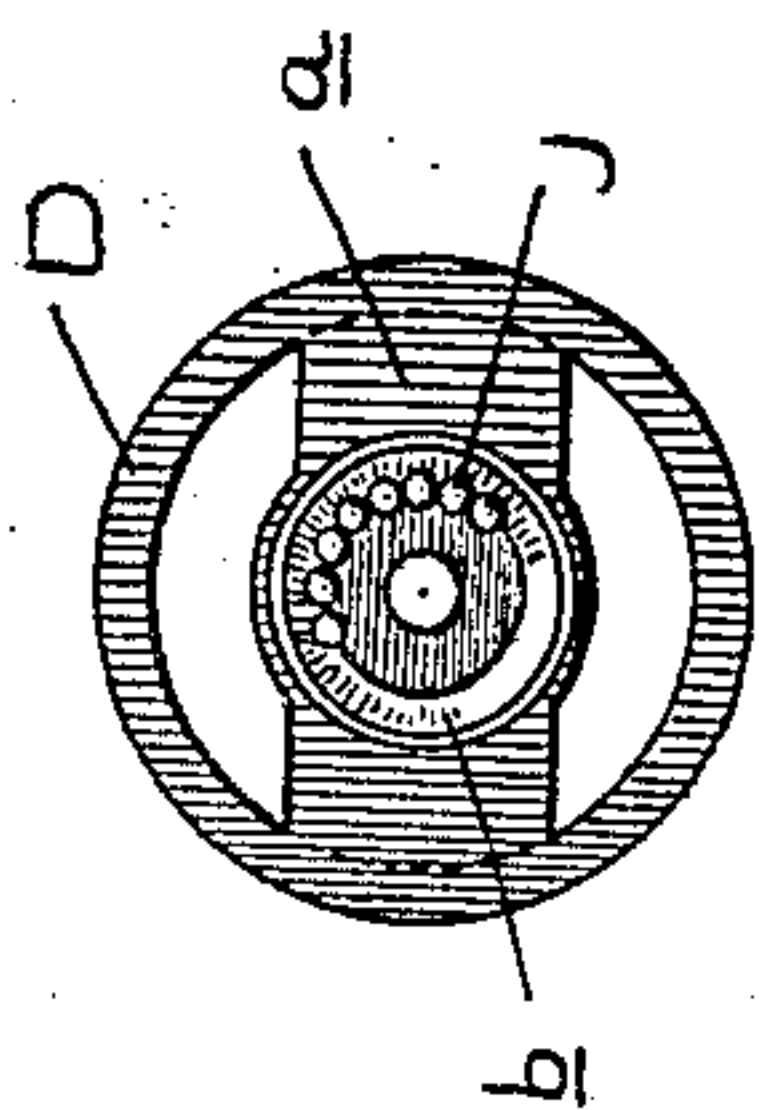


FIG. 2.

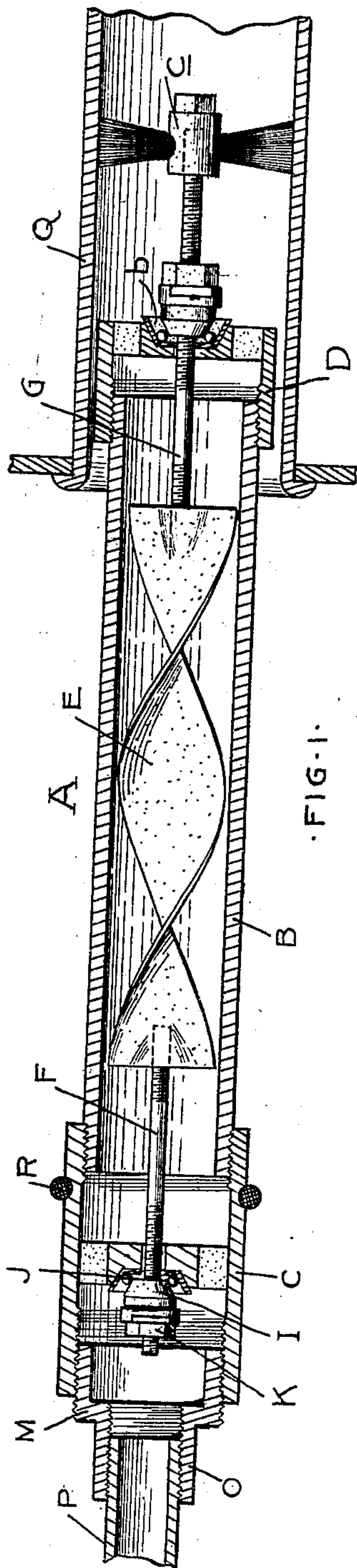


FIG. 1.

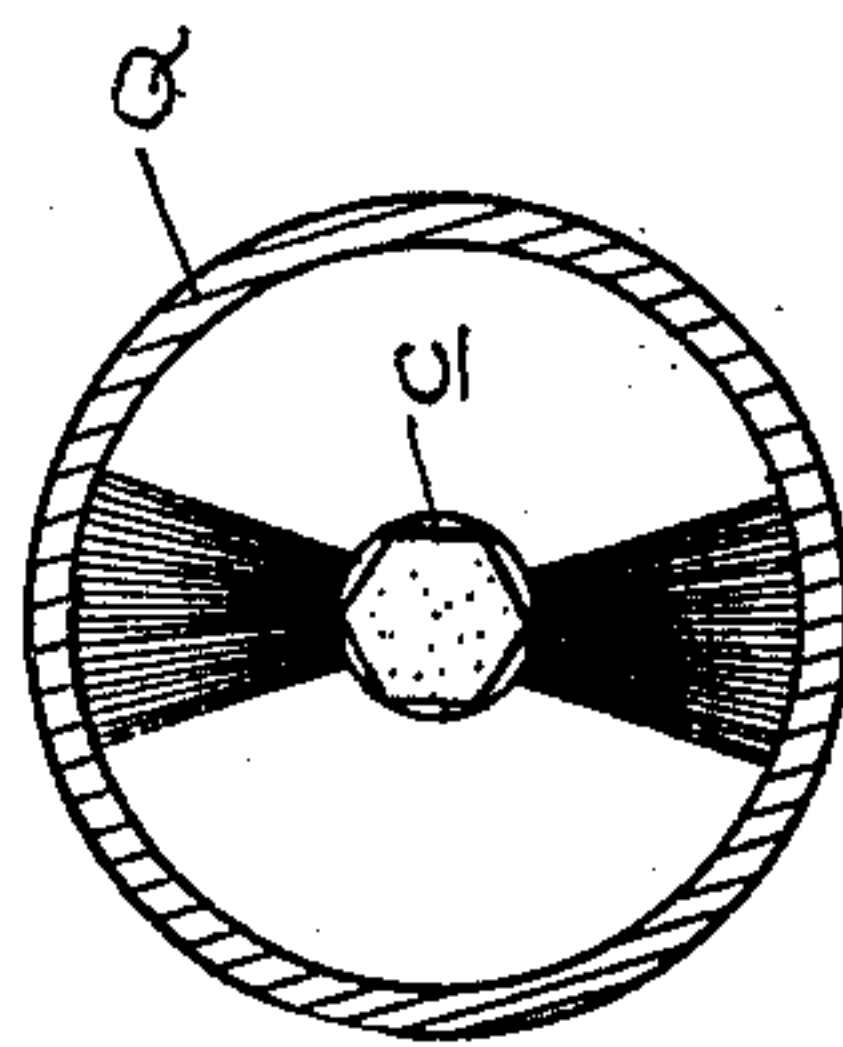


FIG. 3.

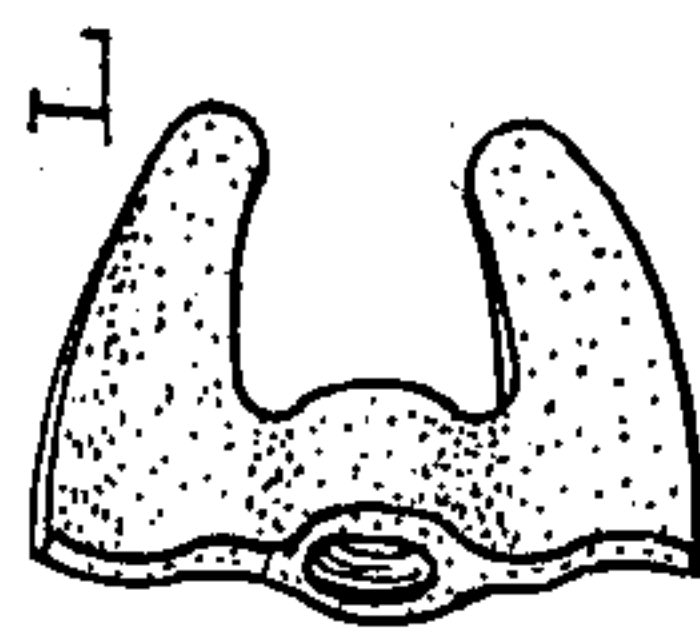


FIG. 4.

WITNESSES

Geo. H. Green
James P. Barry

BY

INVENTOR

AUGUST LEMKE.

James Whittemore
ATT'Y.

UNITED STATES PATENT OFFICE.

AUGUST LEMKE, OF DETROIT, MICHIGAN.

ROTARY MOTOR FOR FLUE-CLEANERS.

SPECIFICATION forming part of Letters Patent No. 754,955, dated March 15, 1904.

Application filed May 26, 1903. Serial No. 158,827. (No model.)

To all whom it may concern:

Be it known that I, AUGUST LEMKE, a citizen of the United States, residing at Detroit, in the county of Wayne and State of Michigan, have
 5 invented certain new and useful Improvements in Rotary Motors for Flue-Cleaners, of which the following is a specification, reference being had therein to the accompanying drawings.

10 The invention relates to improvements in rotary motors for flue-cleaners; and it consists in the novel and simple construction of an implement of this type and in the peculiar arrangement and combination of its parts, as
 15 will be hereinafter set forth.

In the drawings illustrating my invention, Figure 1 is a vertical central section through the cleaner, showing the same applied to a boiler tube or flue. Fig. 2 is an end view of
 20 the sleeve forming part of the cleaner-casing. Fig. 3 is an end view of the flue-cleaner. Fig. 4 is a view in perspective showing one of the cleaning devices as attached to the tool.

In construction the device comprises a casing A, consisting of a tube B, threaded exteriorly at each end and carrying the sleeves C
 25 and D. Each sleeve, as shown, is preferably provided with a cross member or bar, as *a*, centrally apertured and recessed about the
 30 aperture to receive a detachable ball-race *b*.

Housed within the casing described is a rotary body E, preferably a spiral, provided at its ends with extensions or stems F and G, which extend through the apertures in the
 35 cross-bars *a* of the sleeves.

I represents cones which are threaded upon the extensions, and J represents a series of balls within the raceways described, against which the cones contact to form ball-bearings for the
 40 spiral. Each cone after being properly adjusted is locked in position by means of a lock-nut, as K.

The stem G, as shown, projects a considerable distance beyond the inclosing casing and
 45 is adapted to carry thereon a suitable cleaning device for the flue. I have shown in Fig. 1 a wire brush upon the stem, the brush-head *c* being recessed and internally threaded to engage the stem. If desired, however, any
 50 other type of cleaning device—as, for instance,

a cutter L, having a head similar to the brush-head—may be employed according to the work that is required to be done in cleansing.

At its inner end the inclosing casing is provided with a bushing M, threaded exteriorly 55 to engage a corresponding interior thread upon the sleeve C. This bushing in turn carries a tubular extension Q, in which a suitable nozzle P of a steam-supply pipe may be inserted.

In practice the flue-cleaner is inserted with- 60 in the flue, such as Q, to be cleaned, and a hose being attached to the opposite end in the manner described the steam passing through the casing actuates the spiral, causing the brush to rotate. The cleaner is then forced 65 from end to end of the flue by the operator. In cases where the flues are cleaned daily a brush is sufficient to remove the coating, and the steam passing through the casing in addition to actuating the spiral forces the soot or 70 other material that has been deposited upon the flue out through the end.

Where scale has been formed in the tube, the cutter L may be used in place of the brush, and after the scale has been removed the brush 75 may be subsequently employed.

In constructing the casing in which the spiral is housed it is preferably, though not necessarily, made of considerably less diameter than the flue. In this instance an annular 80 packing-ring R is preferably employed, covering the space between the flue and the implement, and thus preventing the steam and deposit within the tube from being blown backward on the operator. 85

From the construction of device as set forth it will be obvious that the parts may be easily and readily assembled and the entire device constructed at small cost. It will be further noted that by having the cleaning device 90 detachably connected to the implement the latter may be used for cleaning the flue regardless of its condition—that is, whether merely soot or flaky deposit is to be removed or whether scale is to be cut. 95

What I claim as my invention is—

1. In a rotary motor for flue-cleaners, the combination with a casing having detachable sleeve-sections at opposite ends, transverse members carried by the sleeves provided each 100

with bearings, of a rotary member within the casing having end extensions projecting through the transverse members, complementary bearing members on the extensions in operative relation to the bearing members on the transverse members, and a connection for introducing a fluid into the casing.

2. In a rotary motor for flue-cleaners, the combination with an elongated casing, a spirally-formed member within the casing having end extensions, bearing members carried by the opposite ends of the casing, bearing members carried by the extensions in operative relation to said other bearing members, and means for adjusting the said bearing members relative to each other in a direction longitudinal to the casing.

3. In a rotary motor for flue-cleaners, the combination with a casing consisting of a tube having detachable sleeve-sections at its ends, transverse members carried by the sleeves provided with raceways formed therein, a spiral housed within the casing having end extensions projecting through the transverse members, cones adjustably arranged upon the extensions in operative relation to the raceways, and antifriction devices within said raceways.

4. In a rotary motor for flue-cleaners, the combination with a cylindrical casing, of a spirally-arranged blade within the casing having stem extensions at opposite ends, supporting-bearings carried by the casing, bearings

carried by the stem extensions, and adjustable longitudinal thereof, and means for locking the bearings in adjusted position.

5. In a rotary motor for flue-cleaners, the combination with an elongated tubular casing, of a rotary member within the casing having extensions at opposite ends, antifriction-bearings for the extensions, and means for adjusting the members of the bearings independently of each other.

6. In a rotary motor for flue-cleaners, the combination with an elongated casing, of a spirally-formed blade within the casing, stem extensions on opposite ends of the blade, bearings for the stems comprising raceways, and means for adjusting the bearings at opposite ends longitudinally.

7. In a rotary motor for flue-cleaners, the combination with a metallic casing having detachable and adjustable sleeve-sections at its opposite ends, transverse bars carried by the sleeves, provided each with a central opening, of a rotary spiral within the casing having end extensions projecting through the openings in the transverse bars, and a connection for introducing the fluid into the casing.

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

AUGUST LEMKE.

Witnesses:

H. C. SMITH,
JAS. P. BARRY.