

(No Model.)

W. H. WATSON.
FLUE CLEANER.

No. 438,964.

Patented Oct. 21, 1890.

Fig: 1.

Fig: 2.

Fig: 3.

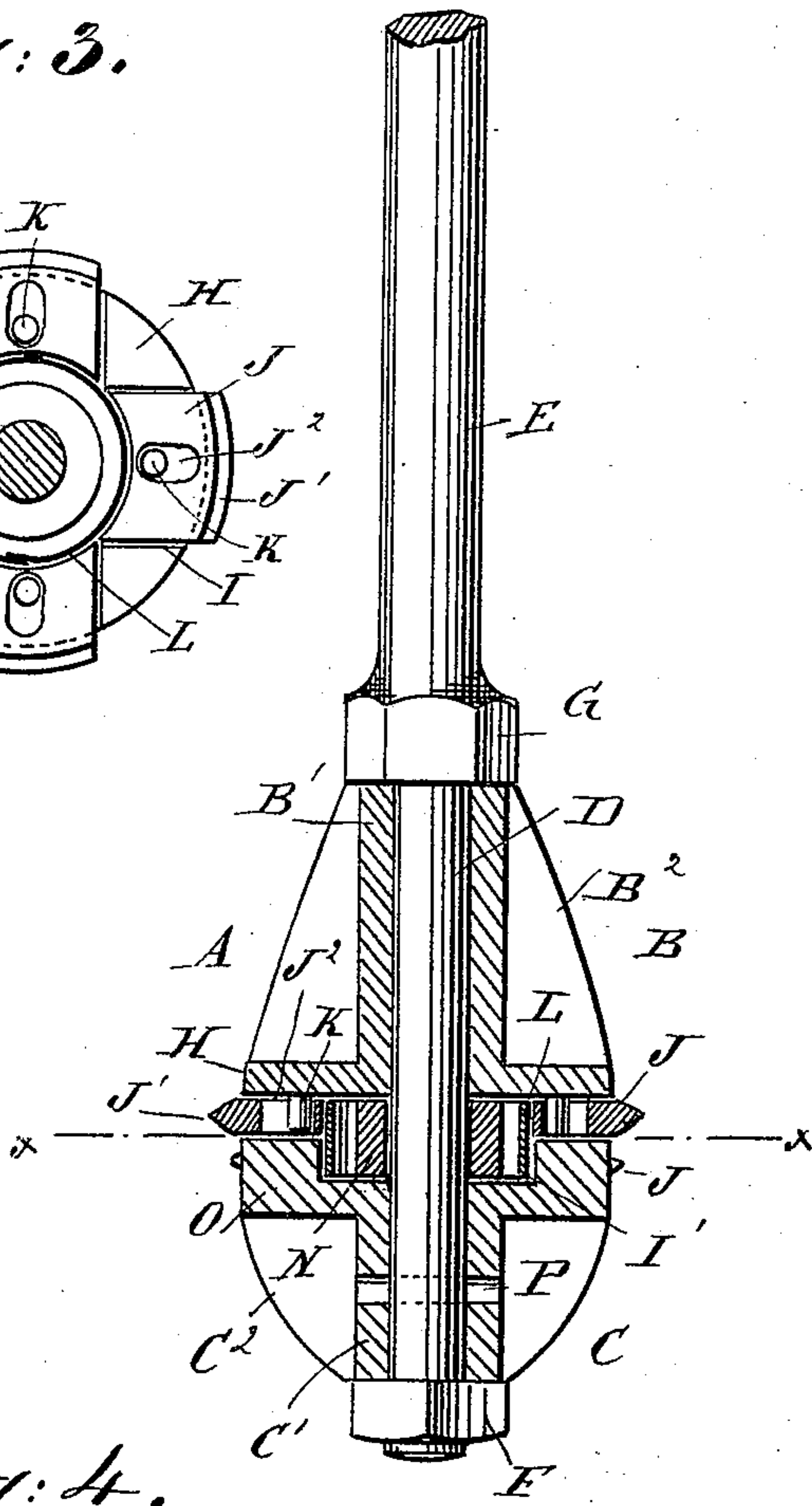
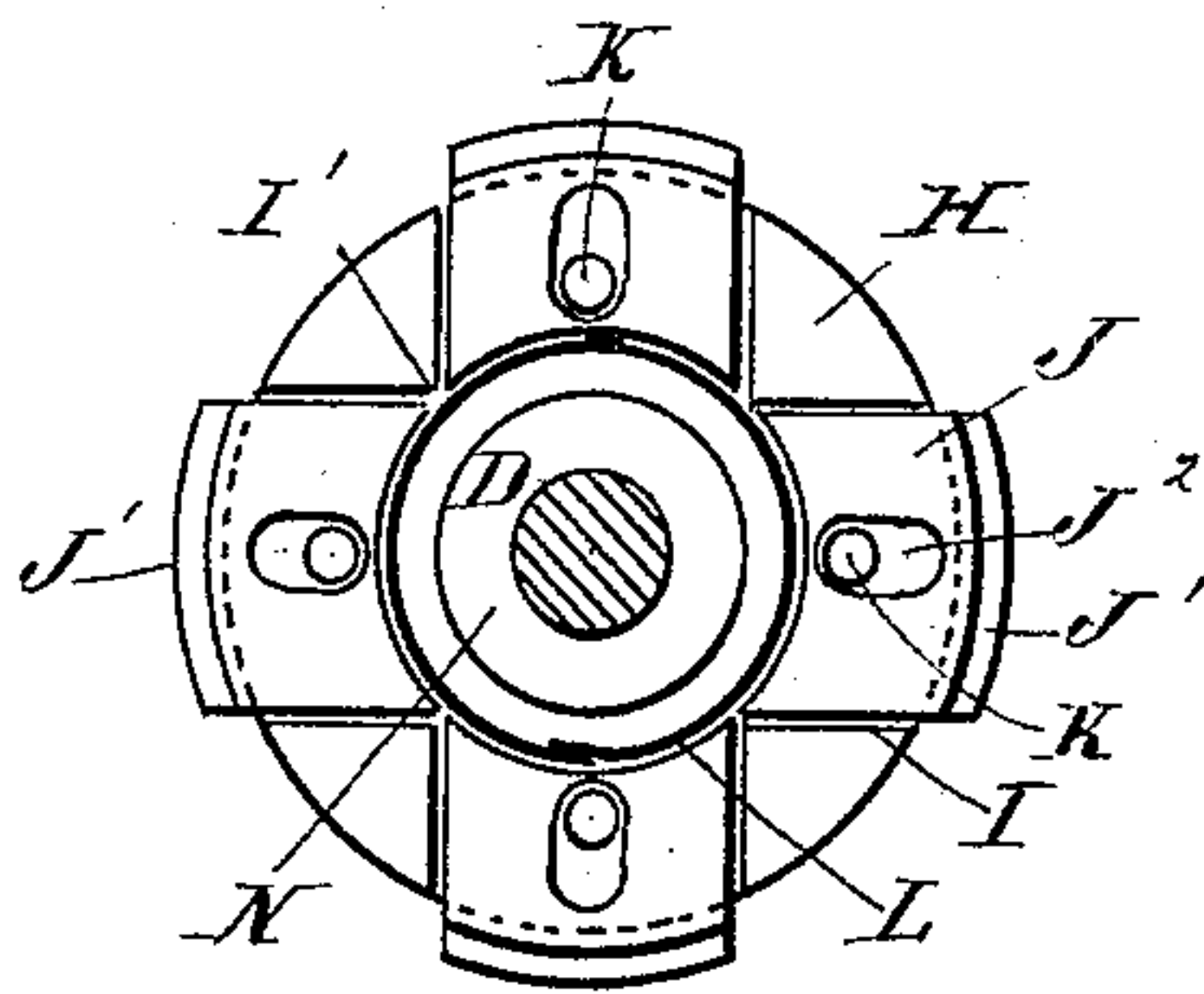
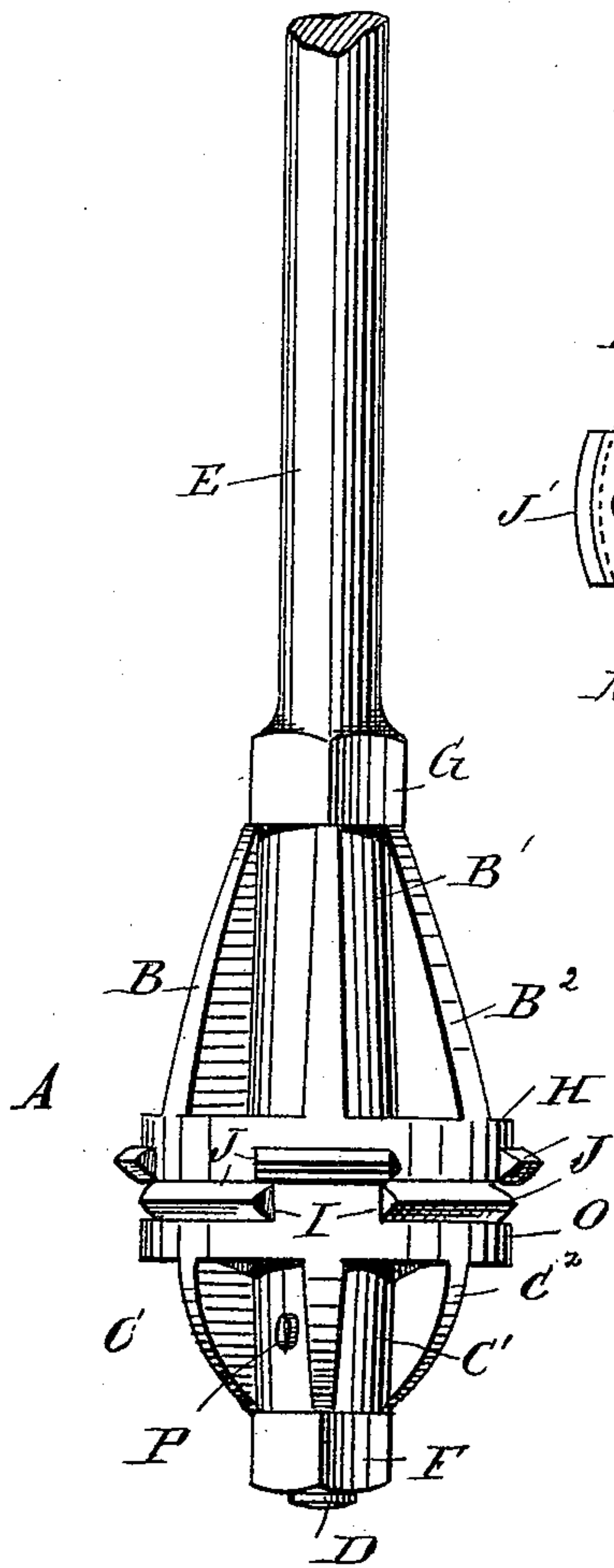
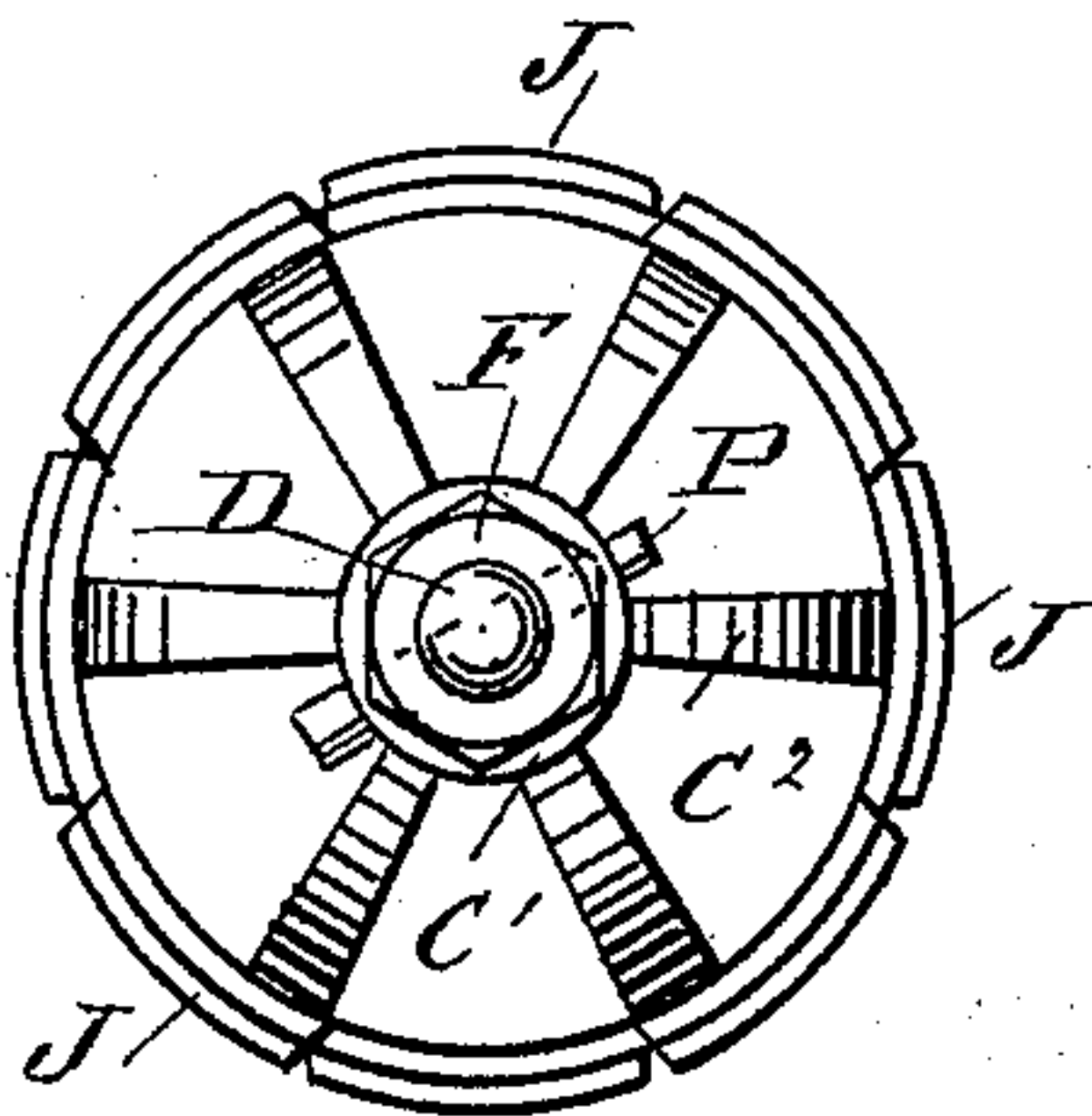


Fig: 4.



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UNITED STATES PATENT OFFICE.

WILLIAM H. WATSON, OF ISLA DE NAOS, UNITED STATES OF COLOMBIA.

FLUE-CLEANER.

SPECIFICATION forming part of Letters Patent No. 438,964, dated October 21, 1890.

Application filed April 18, 1890. Serial No. 348,551. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM H. WATSON, of Isla de Naos, Panama Bay, United States of Colombia, South America, have invented a new and Improved Flue-Cleaner, of which the following is a full, clear, and exact description.

The object of the invention is to provide a new and improved flue-cleaner which is simple and durable in construction, not liable to get out of order, very effective in operation, and readily applied.

The invention consists of a series of radially-arranged spring-pressed cutters.

The invention also consists of certain parts and details and combinations of the same, as will be hereinafter fully described, and then pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a plan view of the improvement. Fig. 2 is a sectional plan view of the same. Fig. 3 is a sectional end elevation of the same on the line $x x$ of Fig. 2, and Fig. 4 is a front end elevation.

The improved flue-cleaner is provided with a casing A, made in two parts B and C, each having a hub B' or C', respectively mounted on a pin D, formed on one end of a handle E, serving to manipulate the tool. The casing A is held in place on the pin D by a nut F, screwing on the outer end of the said pin D, the inner end of the hub B' resting against an offset G, formed on the handle E. On the outer end of the part B of the casing A is formed a cylindrical disk H, in which are formed a series of radial slots I, preferably four in number, as is plainly shown in Fig. 3, and in the said slots are fitted to slide the cutters J, each having a V-shaped segmental cutting-edge J', adapted to engage the scale or other deposit on the inside of the flue or tube to be cleaned.

Each of the cutters J is provided with a radially-extending slot J², through which passes a pin K, secured on the face of the disk H and serving to hold the cutter in place. The inner edge of each cutter is also segmental and rests on a spring L, held in a circular recess I', formed in the disk H, and into which lead the slots I. A loose collar N is held on the pin D

in this recess I' inside of the circular spring L, so as to limit the inward movement of the spring L when it is compressed.

On the outer part C of the casing A is arranged a disk O, which faces the disk H, and is also provided with slots, in which are held to slide cutters J, similar to the cutters in the disk H, and also pressed outward by resting on part of the spring L, which extends for this purpose into the annular recess I', formed in the said disk O.

When these several parts are in place on the pin D, a pin is passed through the hub C' and the rod D, so as to lock the several parts in place. In order to strengthen the disks H and O, ribs B² and C² are formed on the hubs B' and C', respectively, and connected with the said disks, as is plainly shown in the drawings. The sets of cutters J in the two disks H and O are arranged alternately, as plainly illustrated in Figs. 1 and 4, so that the cutting-edges J' of all the cutters almost form a complete circle, as is plainly shown in Fig. 4.

It will be seen that the spring L, pressing simultaneously on all the cutters J, forces the latter outward until the outward movement is arrested by the pins K bearing against the inner ends of the slots J². In this position the cutting-edges J' extend a suitable distance beyond the rims of the disks H and O, so that the tool when introduced into a flue permits of pressing the cutters J slightly inward on one side or the other until the tool is completely inserted in the tube, and by then pressing or shoving the casing and its contents forward and backward in the tube by the handle E the cutters J cut the scale and other deposits adhering to the inside of the tube.

It will be seen that the spring L is completely incased in the casing A, so that it is not readily affected by heat in the tubes or by the heat incident to operating the tool in the flues.

Having thus fully described my invention, I claim as new and desire to secure by Letters Patent—

1. A flue-cleaner consisting of a shank provided with two disks, a narrow space between their adjacent faces, a series of pins on one disk crossing said space, a series of flat cutters having slots through which said pins ex-

tend, and a spring against which the inner ends of said cutters bear, substantially as set forth.

2. A flue cleaner comprising a shank, two
5 disks thereon provided with spaced radial slots in their adjacent faces, the slots in one disk being opposite the plain surfaces lying between the slots of the other disk and a narrow space being formed between the two disks,
10 and flat spring-seated cutters within said slots, whereby the one series of cutters will overlap the side edges of the other series, substantially as set forth.

3. A flue-cleaner consisting of a shank hav-
15 ing two disks provided in their adjacent faces with alternating radial slots and a circular central recess on the slotted face of one of said disks, a circular spring resting in said recess and projecting thereabove behind the slots in
20 the other disk, and the two series of cutters in said slots and resting at their inner ends against said spring, substantially as set forth.

4. A flue-cleaner consisting of the shank having the two disks thereon provided in their adjacent faces with alternating slots and pins
25 crossing the slots, two series of slotted cutters mounted in said slots, with the pins passing through them, and a circular spring against which the inner ends of both series of cutters bear, substantially as set forth.

5. A flue-cleaner consisting of the shank having the two disks thereon provided in their adjacent faces with alternating slots and pins
30 crossing the same, two series of slotted cutters mounted in said alternating slots, with the pins passing through them, a circular spring against which the inner ends of all the cutters bear, and a loose collar within the spring to limit its inward movement, substantially
35 as set forth.

WILLIAM H. WATSON.

Witnesses:

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