

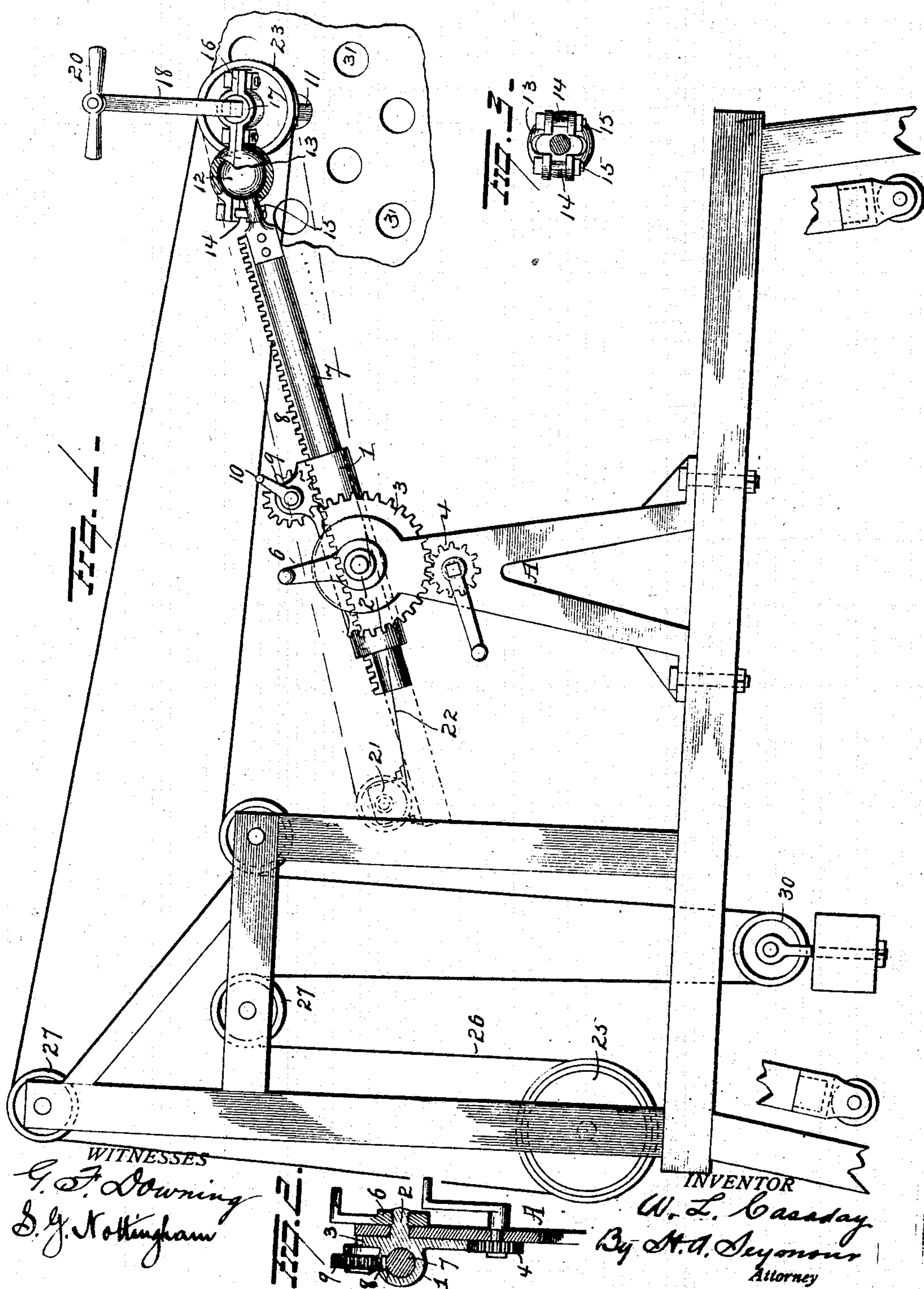
**No. 615,428.**

W. L. CASADAY.  
FLUE CLEANING APPARATUS.

**Patented Dec. 6. 1898.**

(No Model.)

(Application filed Feb. 16, 1898.)





# UNITED STATES PATENT OFFICE.

WILLIAM L. CASADAY, OF SOUTH BEND, INDIANA.

## FLUE-CLEANING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 615,428, dated December 6, 1898.

Application filed February 16, 1898. Serial No. 870,566. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM L. CASADAY, of South Bend, in the county of St. Joseph and State of Indiana, have invented certain new and useful Improvements in Flue-Cleaning Apparatus; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to an improvement in flue-cleaning apparatus, the objects being to provide means for the support of a flue-cleaner which will admit of universal movement and which can be manipulated with perfect ease by a single operative, if need be; and with these objects in view the invention consists in certain novel features of construction and combinations of parts, which will be hereinafter described, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a view in side elevation of my improved apparatus. Figs. 2 and 3 are details.

A represents a stand or framework upon which the various parts of the apparatus are supported. In the upper end of this stand or framework a box 1 is pivotally supported by means of trunnions 2 2. Connected with this box or one of the trunnions is the toothed segment 3, and a pinion 4, adjacent to this segment, is provided as a convenient means for tilting the box when required. A crank 5 is employed for turning the pinion, and a handle-nut 6, screwed on one of the trunnions 2, is turned to lock the box at the proper inclination relative to the tube to be operated upon. A beam 7 has sliding connection with the box 1, which affords it pivotal support. This beam has rack or other teeth 8 running substantially its entire length, and a toothed wheel 9, supported in the box, affords a means for reciprocating this beam, a crank 10 being connected with the toothed wheel for turning it.

The flue-cleaner 11 is supported by one end of the beam 7. Any approved connection might be used for connecting the flue-cleaner to the beam, and as it is desirable to swing the flue-cleaner into various inclinations to

accommodate its position to the horizontal, vertical, or inclined position of the flues or tubes a species of universal joint has been found most desirable as a means of connecting the flue-cleaner to the beam. One means of accomplishing this end is that shown in the drawings, in which the outer end of the beam is equipped with a ball 12. Embracing this is a socket 13. This socket is open at its inner side, and bolts 14 14 extend through it for tightening it on the ball to give the required tension, which of course can be regulated at any time by turning the nuts 15 15 on the ends of the bolts. A journal-box 16 is secured to the socket-piece 13, and in this box 16 the babbitt 17 is journaled. The angular shank 18 of the flue-cleaner has sliding connection with this babbitt, whereby to run the flue-cleaner in and out of the flues, and to effect this sliding motion of the flue-cleaner it is provided at its outer end with a handle 20, with which the angular shank has a swiveled connection, so that it may be held and manipulated at any time while the flue-cleaner is rotating.

As a means of driving the cleaner various kinds of motive power might be adopted. For instance, an electric motor 21 may be mounted on the beam 7 on the opposite side of its support from the cleaner, in which construction it would also serve as a counterbalance for the weight of the latter. From this motor a belt 22 extends to the pulley or sheave 23 on the flue-cleaner for imparting rotary motion thereto. Another means is also shown for imparting motion to the flue-cleaner, and it consists in the counter or drive shaft 25 and the drive-belt 26. This belt passes over sheaves 27 27 and around the drive-pulley 23, a tension device 30 being employed to take up the slack.

From the foregoing it will be seen that by grasping the handle 20 in the hand and manipulating the cranks 5 and 10 the flue-cleaner may be shifted with ease to any of the several positions necessary for its entrance into the flues 30 30 of the boiler, while operating on any one flue the beam is locked by the handle-nut 6, so that there is no danger of accidental movement of the parts from their



working position. When the operation of cleaning the flues is completed, the flue-cleaner may be pushed aside out of the way.

Minor variations might be made without materially departing from the spirit and scope of my invention, and hence I do not wish to limit myself to the exact construction herein set forth; but,

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

1. The combination with a support and a sleeve pivotally mounted between its ends on said support, of a beam mounted to slide in said sleeve, a journal-box adjustably connected with said beam and a flue-cleaner mounted to slide through said journal-box, substantially as set forth.

2. The combination with a support and a sleeve pivotally mounted between its ends on said support, of a beam mounted to slide through said sleeve, means for turning the sleeve on its fulcrum, means for sliding the beam longitudinally, a journal-box adjustably attached to the beam, a flue-cleaner mounted to slide through said journal-box, a motor and gearing between the motor and flue-cleaner for rotating the latter, substantially as set forth.

3. The combination with a support and a beam having a pivotal and a sliding connection with said support, of a journal-box adjustably connected with said beam, a flue-cleaner mounted to slide through said jour-

nal-box, a motor, and gearing between said motor and flue-cleaner for rotating the latter, substantially as set forth.

4. The combination with a support and a beam having a pivotal and a sliding connection therewith, of a ball on the end of said beam, a clamp embracing said ball, a journal-box carried by said clamp, a flue-cleaner mounted to slide through said journal-box and means for rotating said flue-cleaner, substantially as set forth.

5. In a flue-cleaning apparatus, the combination with a framework, of a beam having a pivotal and a sliding support on said framework, a journal-box adjustably supported by said beam, a flue-cleaner mounted to slide through said journal-box, a pulley connected with said flue-cleaner, a driving-wheel mounted in the framework, a belt passing over said driving-wheel and pulley and of greater length than is necessary to pass from one to the other and a weighted pulley about which said belt passes, whereby the beam and flue-cleaner can be moved from one position to another without being disconnected from or interfere with the driving means, substantially as set forth.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

WILLIAM L. CASADAY.

Witnesses:

VERNON E. HODGES,  
A. W. BRIGHT.