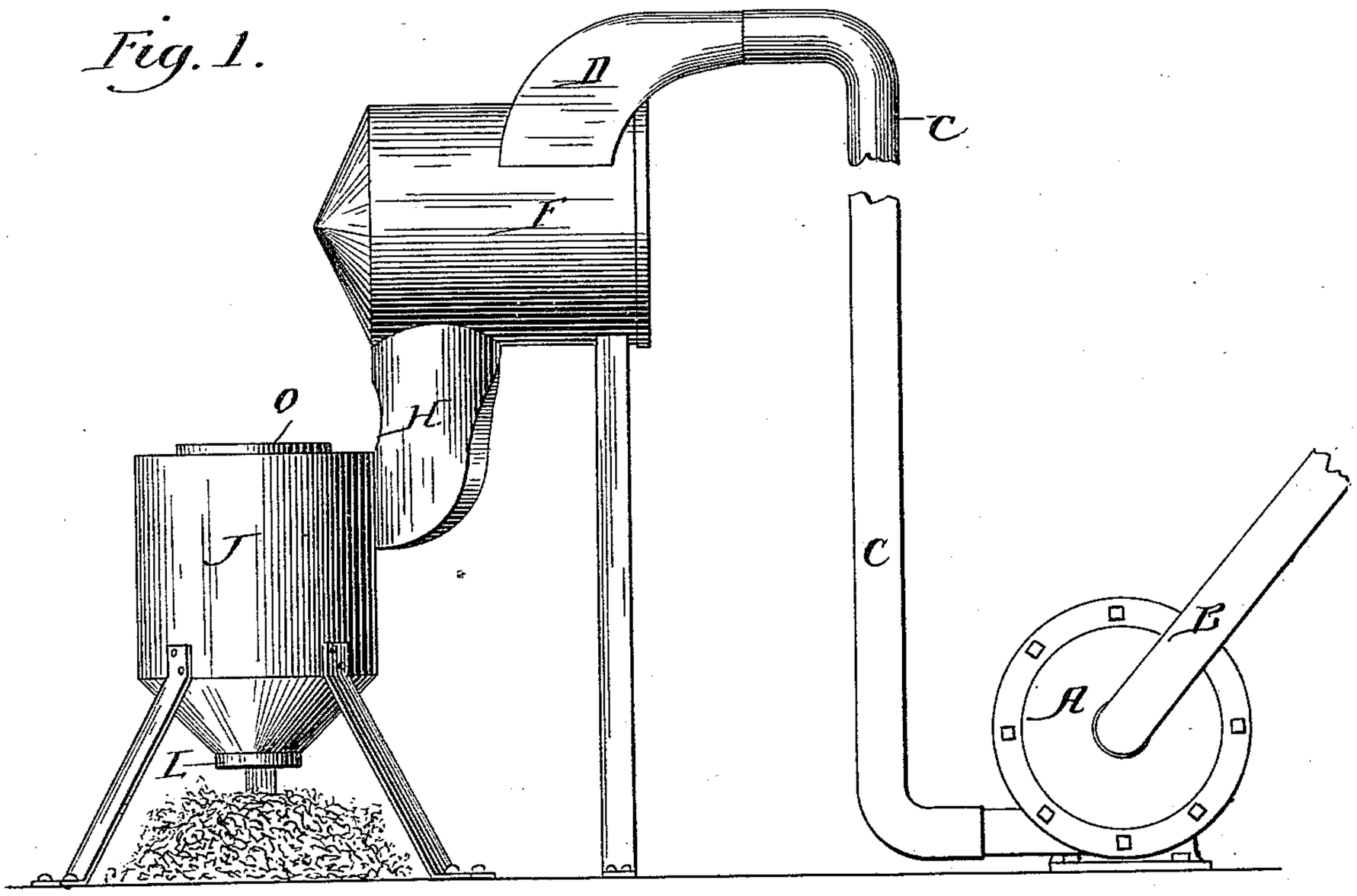
(No Model.)

J. E. & O. M. JOHNSON.

DUST COLLECTOR.

No. 420,072. Patented Jan. 28, 1890.

Fig. 1.



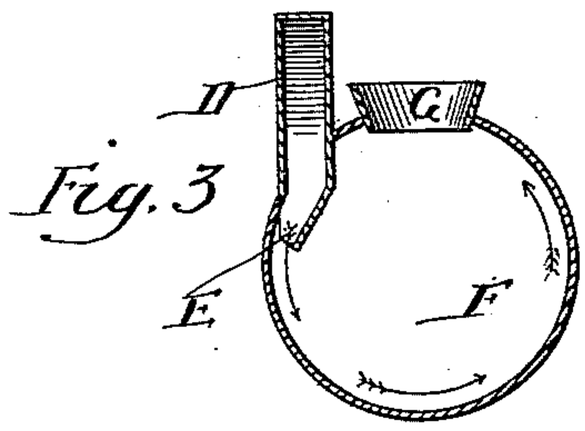


Fig. 3

Fig. 2.

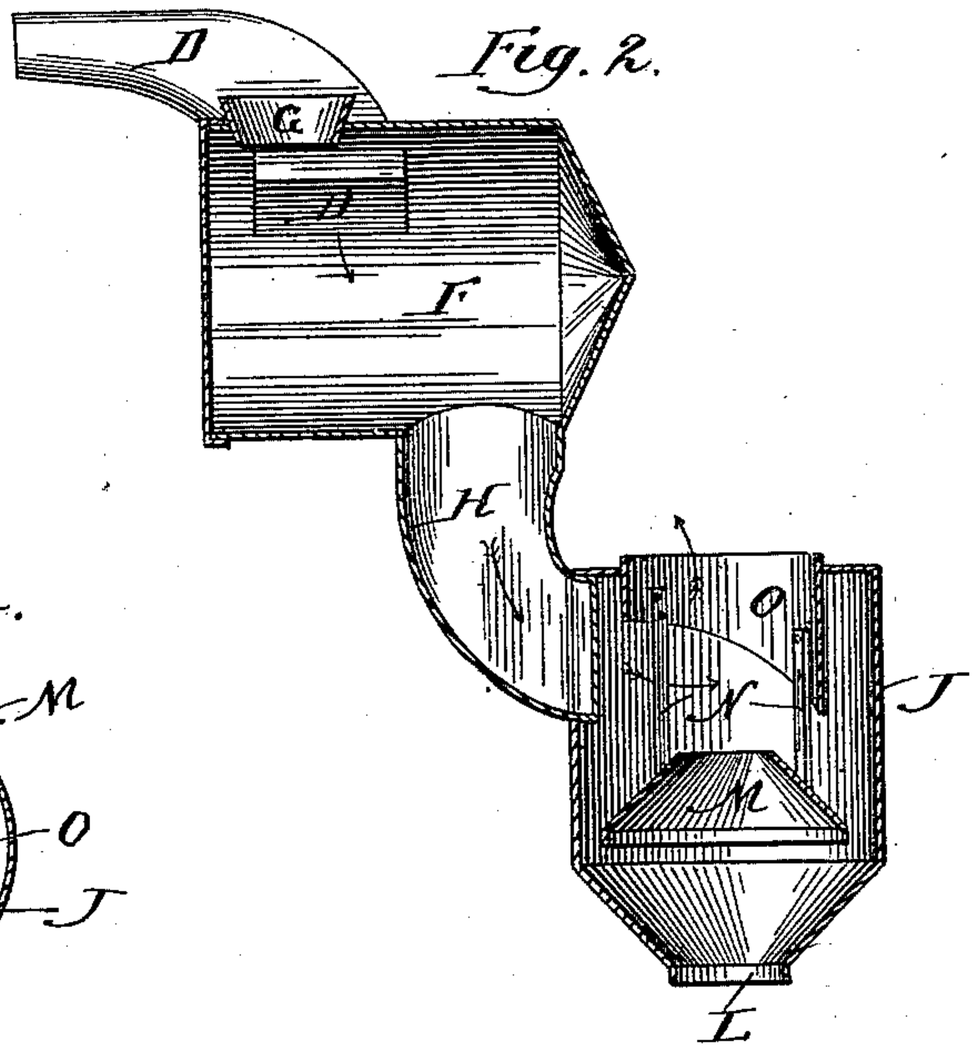
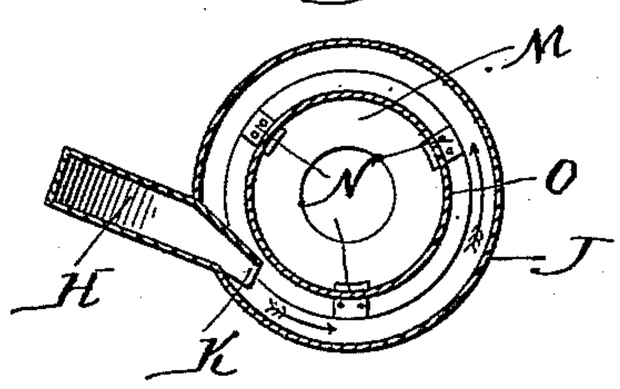


Fig. 4.



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UNITED STATES PATENT OFFICE.

JOHN E. JOHNSON AND OLAF M. JOHNSON, OF CHICAGO, ILLINOIS.

DUST-COLLECTOR.

SPECIFICATION forming part of Letters Patent No. 420,072, dated January 28, 1890.

Application filed October 23, 1889. Serial No. 327,915. (No model.)

To all whom it may concern:

Be it known that we, JOHN E. JOHNSON and OLAF M. JOHNSON, citizens of the United States, and residents of Chicago, county of Cook, and State of Illinois, have invented a new and useful Improvement in Dust-Collectors, of which the following is a specification.

Our invention relates to devices for conducting shavings and the like from the place where made to the furnace where consumed.

Our improvement is illustrated in the accompanying drawings, wherein—

Figure 1 is a side view of the apparatus. Fig. 2 is a vertical section. Fig. 3 is a cross-section of the receiver. Fig. 4 is a cross-section of the discharger.

Like parts are indicated by the same letter in all the figures.

A is a fan, to which leads the pipe B and from which leads the pipe C, terminating in the head D, which is provided with the mouth E, opening into the receiver F, so as to discharge tangentially therein.

G is a safety-aperture in the top of the receiver F. From the bottom of the receiver leads the pipe H for the discharge-chamber J, said pipe having the mouth K, so as to discharge tangentially into the discharge-chamber J.

L is a discharge-aperture; M, a deflector suspended by the straps N from the spirally-shaped curved shield O.

The use and operation of our invention are as follows: The shavings by the operation of the fan A are drawn through the pipe C into the receiver F by a current of air which traverses the same, as indicated by the arrows. The pressure of air within the chamber F is relieved by the safety-aperture G, while the shavings pass by gravity and the much-reduced air-current through the pipe H into the discharge-chamber J, passing around the same back of the shield O, as indicated by the arrows. The air-pressure is again relieved by the escape-aperture in the chamber J, while the shavings flow gently onto the deflector M and thence through the aperture L.

The shavings are forced into the receiving-chamber tangentially, so as to create a sort of whirlpool within such receiver, and thus to prevent the passage of the body of air with the shavings bodily out of such receiving-chamber.

We claim as new and desire to secure by Letters Patent—

In a dust-collector, the combination of a cylindrical horizontal receiver having a tangential opening at one side, a safety-opening on its upper side, and a discharge-opening on its lower side, in combination with connecting-pipes, a blast device to force the shavings into such receiver, and a discharge-chamber consisting of an erect cylinder, a pipe discharging therein tangentially from the receiving-chamber, and openings, one in in the upper end of such discharge-chamber to relieve the pressure of air, the other in the lower end to discharge the shavings, substantially as shown and described.

Dated this 12th day of October, 1889.

JOHN E. JOHNSON.
OLAF M. JOHNSON.

Witnesses:
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