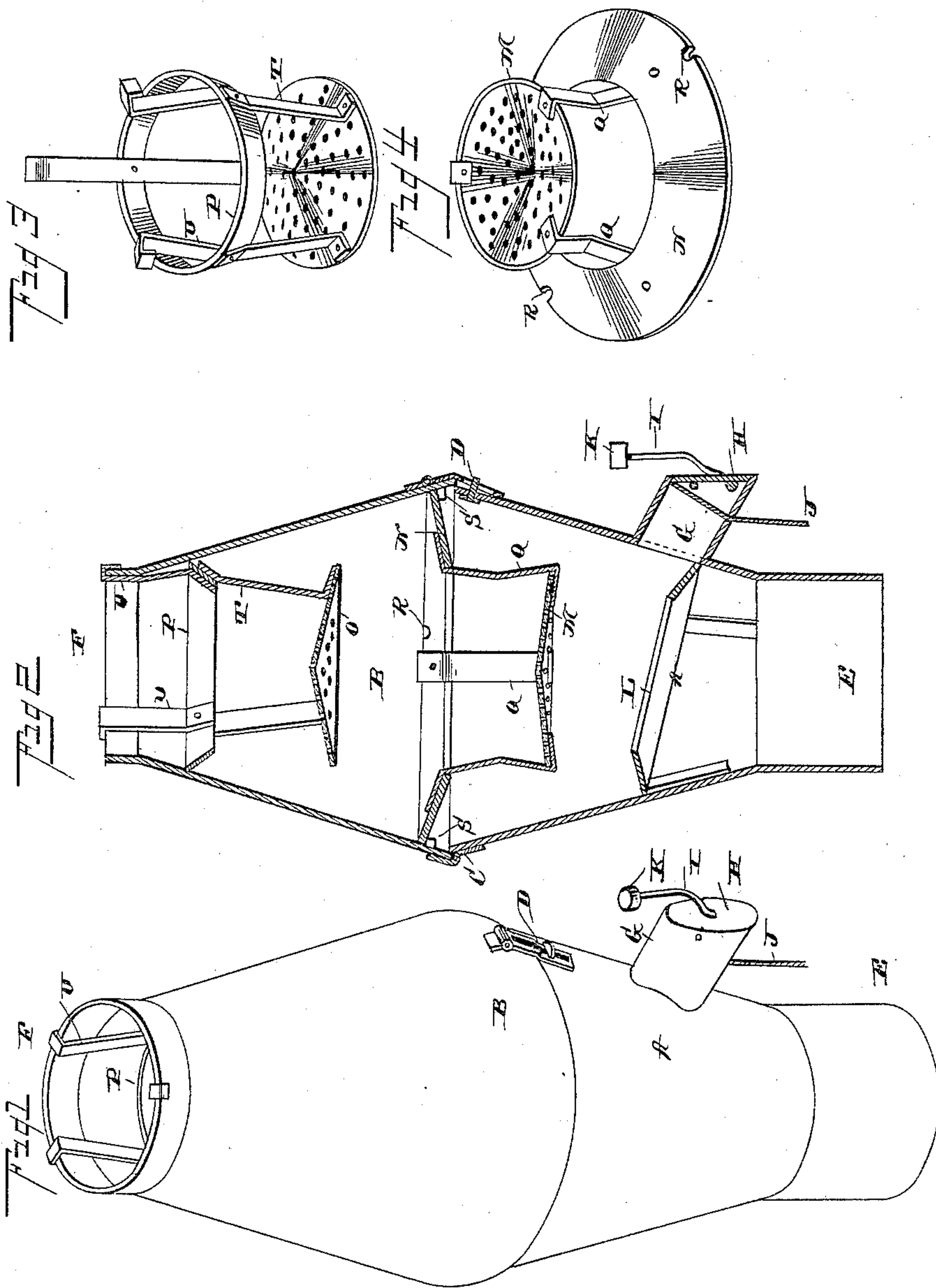


(No Model.)

J. Q. DONNALD.
SPARK ARRESTER.

No. 411,327.

Patented Sept. 17, 1889.



Witnesses

John Smilie
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By his Attorneys,

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UNITED STATES PATENT OFFICE.

JOHN QUITMAN DONNARD, OF HARTWELL, GEORGIA.

SPARK-ARRESTER.

SPECIFICATION forming part of Letters Patent No. 411,327, dated September 17, 1889.

Application filed June 14, 1889. Serial No. 314,184. (No model.)

To all whom it may concern.

Be it known that I, JOHN QUITMAN DONNARD, a citizen of the United States, residing at Hartwell, in the county of Hart and State of Georgia, have invented a new and useful Spark-Arrester, of which the following is a specification.

My invention relates to improvements in spark-arresters; and it consists in certain novel features hereinafter described and claimed.

In the accompanying drawings, Figure 1 is a perspective view of my improved spark-arrester. Fig. 2 is a vertical section of the same. Figs. 3 and 4 are detail perspective views of the deflecting or arresting plates, the lower one being inverted.

My improved spark-arrester is constructed in two sections A B, which are substantially conical in form and are connected together at their bases by a hinge C and a latch D of any desired construction. The lower section or member A is provided with a cylindrical extension E, which is adapted to fit over the end of the smoke-pipe, and the upper member B is provided with a cylindrical collar F, through which the smoke escapes, as will be readily understood.

The member A is provided near its lower end with a cinder-discharging spout G, which extends downward and outward from its side, and the said cinder-discharging spout is provided at its end with a door H, which is weighted at its lower end, so as to be normally closed, and is provided with an upwardly and inwardly extending arm I, to which a cord J is secured, the said cord extending downward, so as to be within convenient reach of the operator. By drawing downward on this cord the door will be raised so as to allow the cinders to escape, and the end of the arm I is provided with an elastic buffer K, which will be forced against the side of the casing of the device when the door is raised, and thereby caused to shake the said casing so as to loosen the cinders and soot and cause the same to fall out through the spout G. The door will be closed by its own weight by releasing the cord. The cinders and soot will be directed into the spout G by an annular plate L, secured within the

casing of the device adjacent to the said spout, as shown in Fig. 2.

Within the upper member B, I provide the deflecting or arresting plates M N O P, as shown. The plate M is substantially conical and is perforated, and is supported by means of the arms Q, which have their lower ends secured to the said deflecting-plate M and their upper ends secured to the inner edge of the plate N. The plate M is considerably less in diameter than the casing, so as to leave an annular space between itself and the casing, and thereby maintain the draft, and the plate N is of proper external diameter to fit snugly within the casing, and is provided in its edge with the notches R, adapted to clear the studs S on the inner side of the casing when securing the plate in position. The plate O is arranged directly over the central opening in the plate N and is similar in construction to the plate M. The said plate O is secured to the plate P by the arms T, which are similar in construction to the arms Q, and the said plate P is supported within the casing by means of the spring-arms U, which extend upward through the casing and engage the upper edge of the collar F, as clearly shown.

From the foregoing description, taken in connection with the accompanying drawings, the operation and advantages of my device will, it is thought, be understood. The products of combustion pass from the smoke-stack up through the spark-arrester, and the smoke will be allowed to pass therethrough and escape from the upper end of the same. The sparks, however, will be arrested in their movements and caused to fall back to the lower end of the device by the arresting or deflecting plates and will accumulate within the discharge-spout G until allowed to escape therefrom in the manner described. When it is desired to clean the device or to repair the deflecting-plates, the upper member is swung over on the lower member. The plate N is then partially rotated, so as to bring the notches R into alignment with the studs S, when the said plate and the plate M can be easily lifted out. The plates O P can be removed by disengaging the spring-arms U from the collar F and then simply lifting the

plates from the casing. In inserting the plates into the casing the plates O P are pushed through the casing until the spring-arms Q automatically engage the collar F, 5 and the plates N M are then inserted and pushed past the studs, after which they are partially rotated so as to be supported by the studs.

My device is very simple and efficient and 10 its advantages are thought to be obvious.

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

1. The combination, with the casing, of the 15 deflecting-plate P, the plate O, supported by said plate P, and the spring-arms U, rising from the said plate P and adapted to engage the upper end of the casing, as set forth.

2. The combination of the casing having

the studs S, the plate N, having notches R in 20 its edge adapted to clear said studs, and the plate M, supported by the said plate N, as set forth.

3. The combination of the casing having a discharge-spout near its lower end, the 25 weighted door in said discharge-spout, the arm rising from said door, the elastic buffer on the end of the said arm, and the cord secured to and extending downward from the door, as set forth.

In testimony that I claim the foregoing as 30 my own I have hereto affixed my signature in presence of two witnesses.

JOHN QUITMAN DONNARD.

Witnesses:

W. Y. HOLLAND,
S. W. PEEK.