(No Model.)

J. M. BUCKLEY.

SPARK ARRESTER.

No. 349,337. Patented Sept. 21, 1886.

Fig. 1.

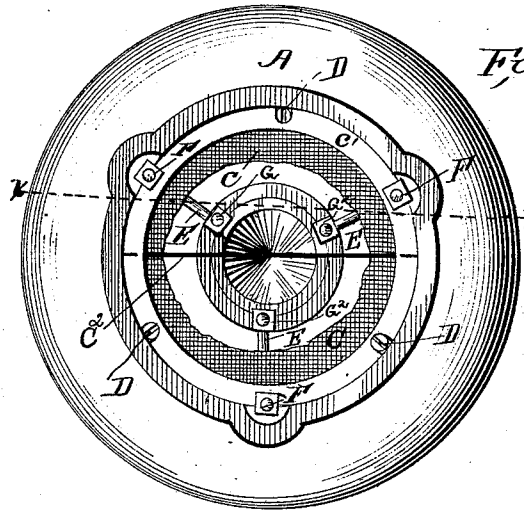


Fig. 2.

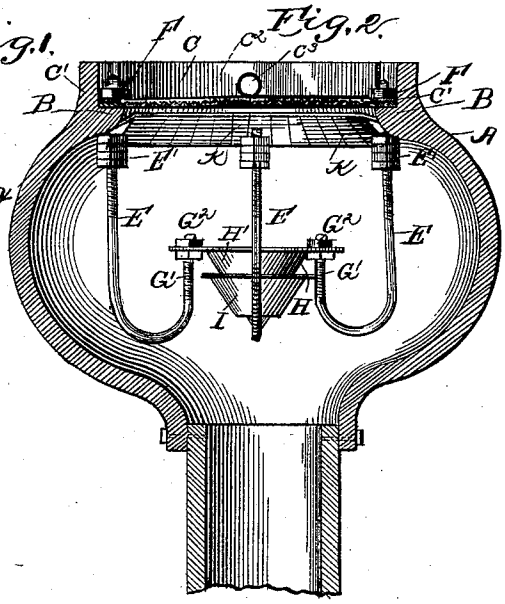


Fig. 3.

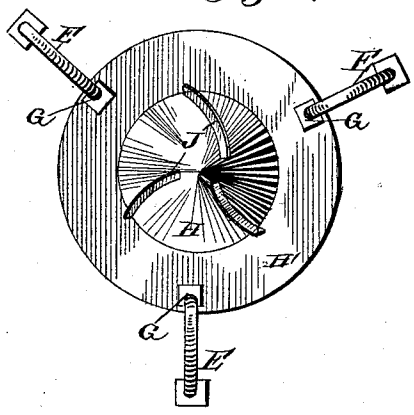


Fig. 4.

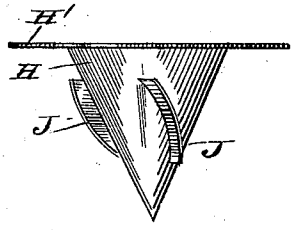


Fig. 7.

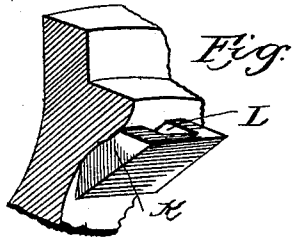
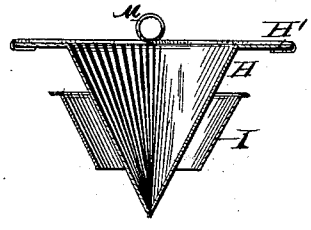


Fig. 5.



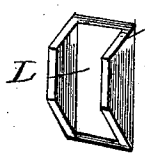


Fig. 6.

Witnesses;
L. C. Lawie
G. P. Kramer.

Inventor;
Jeremiah M. Buckley
By R. S. V. N. Lacey
Atty

N. PETERS, Photo-Lithographer, Washington, D. C.

UNITED STATES PATENT OFFICE.

JEREMIAH M. BUCKLEY, OF SIOUX CITY, IOWA.

SPARK-ARRESTER.

SPECIFICATION forming part of Letters Patent No. 349,337, dated September 21, 1886.

Application filed June 9, 1886. Serial No. 204,687. (No model.)

To all whom it may concern:

Be it known that I, JEREMIAH M. BUCKLEY, a citizen of the United States, residing at Sioux City, in the county of Woodbury and State of Iowa, have invented certain new and useful Improvements in Spark-Arresters; and I do 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, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

My invention consists in an improved spark-arrester, which will be hereinafter fully described and claimed.

Referring to the accompanying drawings, Figure 1 is a top plan view of my invention with the central portion of the wire screen broken away. Fig. 2 is a vertical sectional view of the same, the deflector being shown in side elevation. Fig. 3 is an inverted plan view of the deflector with the outer shell removed. Fig. 4 is a side elevation of the same. Fig. 5 is a central vertical sectional view of the conical deflector and its outer shell; and Fig. 6 is an enlarged perspective detail view of one of the casings K, arranged near the mouth of the shell, and forming a port on the lower side of the annular shoulder. Fig. 7 is a detail view.

The same letters of reference indicate corresponding parts in all the figures.

Referring to the several parts by letter, A represents the casing of my improved spark-arrester, which, as shown, is formed nearly globular, and which is secured by bolts or rivets upon the top of the pipe through which the smoke, sparks, and steam escape from the engine. This casing is formed in one piece, and is provided, at a suitable distance from the top of its escape-opening, with an annular shoulder, B, formed on the inside of the casing with the flat upper side, as shown. Upon this flat shoulder rests and is supported the wire screen C, which is circular in form and provided with the annular metal rim-piece C′, which strengthens it, and this screen is held in position on the annular shoulder B by the keys D, being also provided with the light rod C^2, extending across it and having the eye or ring C^3, by means of which the screen may be readily removed, when desired, for cleaning and repair. Through the annular shoulder B extend the upper screw-threaded ends of three (or more) brace-rods, E, which are formed with the solid collars E′, which bear against the lower side of the annular shoulder, while upon the upper ends of these rods are screwed the nuts or keys F, which thus hold the brace-rods firmly in position. The lower ends of these rods are curved inwardly and then upwardly, as clearly shown in Fig. 2 of the drawings, and are formed at these lower ends with the solid collars G, and the screw-threaded ends G′, rising above the said collars, on which are screwed the binding-nuts G^2.

H indicates the inner cone of the spark-arrester, which is formed at its upper end with the annular flange H′, through which the screw-threaded lower ends of the brace-rods pass, the flange resting on the collars G and the cone being held in position by the nuts G^2.

I indicates the outer shell of the arrester, which is formed in the shape of an inverted truncated cone, and is attached to the outer side of the main cone H by the curved flange-strips J, thus forming curved ports between the outer and inner cones and the said curved flange-strips.

To the lower surface of the annular shoulder at the upper end of the globular casing, which casing is usually made of iron, are secured a number of small casings, K, thus forming ports L; the casings being cut away on their inner sides and formed with the flaring inlet and outlet openings or ends.

The deflector is formed with an eyebolt, M, for convenience in removing it from the casing.

It will be seen that as the smoke, sparks, and steam enter the outer casing, A, through the opening in the bottom of the same, they will pass between the outer and inner shells of the deflector, between the curved flange-strips J, which serve to lengthen the ports or openings through which the sparks and steam pass, and thus cause the sparks to be put out or extinguished by the steam, with which they must come in contact while passing through these ports in the deflector. After passing through these ports they continue up, and, striking against the outwardly-projecting top flange, H′, of the main cone, are thrown outwardly and come in contact with the upper sides of the cas-

ing, so as to pass through the ports L, formed by the casings K on the lower side of the annular shoulder B, where the sparks which may not have been extinguished while passing through the ports of the deflector are thoroughly extinguished by the steam while passing through these ports L immediately beneath the wire screen. The said casings K also serve to break the current of air from the casing.

When it is necessary for any purpose to remove the screen, this can be readily done by one man by removing the keys D and lifting the screen out from off the annular shoulder on which it rests by taking hold of the ring C^3, while the deflector can be as readily removed by only one man, as will be readily seen.

From the foregoing description, taken in connection with the accompanying drawings, the construction, operation, and advantages of my improved spark-arrester will be readily understood. It will be seen that my invention is simple, cheap, and very durable in construction, while it is also exceedingly efficient in its operation, and the several parts composing it can be easily handled and replaced by one man in a very short time, thus effecting a considerable saving both in time and labor.

Having thus described my invention, what I claim, and desire to secure by Letters Patent of the United States, is—

1. The combination, with the globular casing formed near its upper end with the interior annular shoulder, of the wire screen having the strengthening-rim, the deflector formed of the inner cone having the top flange and the outer shell connected thereto by the flange-pieces, and the brace-rods having the screw-threaded upper and lower ends, the collar formed thereon, and the binding-nuts, all constructed and arranged as and for the purpose set forth.

2. The combination of the globular casing formed near its upper end with the interior annular shoulder, the wire screen having the strengthening-rim, and the cross-piece provided with the eye or ring, the deflector formed of the inner cone having the top flange and the eye or ring, and the outer shell connected thereto by the flange-pieces, the brace-rods having the screw-threaded upper and lower ends, the collars formed thereon, and the binding-nuts, and the small casings secured, as described, to the lower side of the annular shoulder immediately below the wire screen, all constructed and arraged to operate in the manner and for the purpose herein set forth.

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

JEREMIAH M. BUCKLEY.

Witnesses:
CHARLES W. STRIEGEL,
PATRICK MCDONOUGH.