

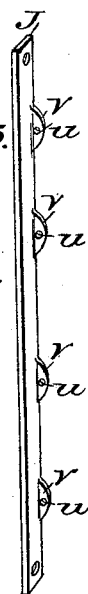
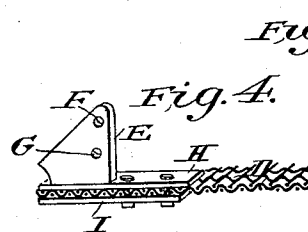
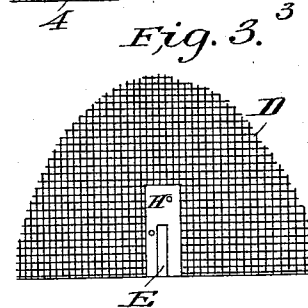
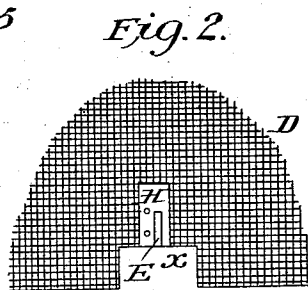
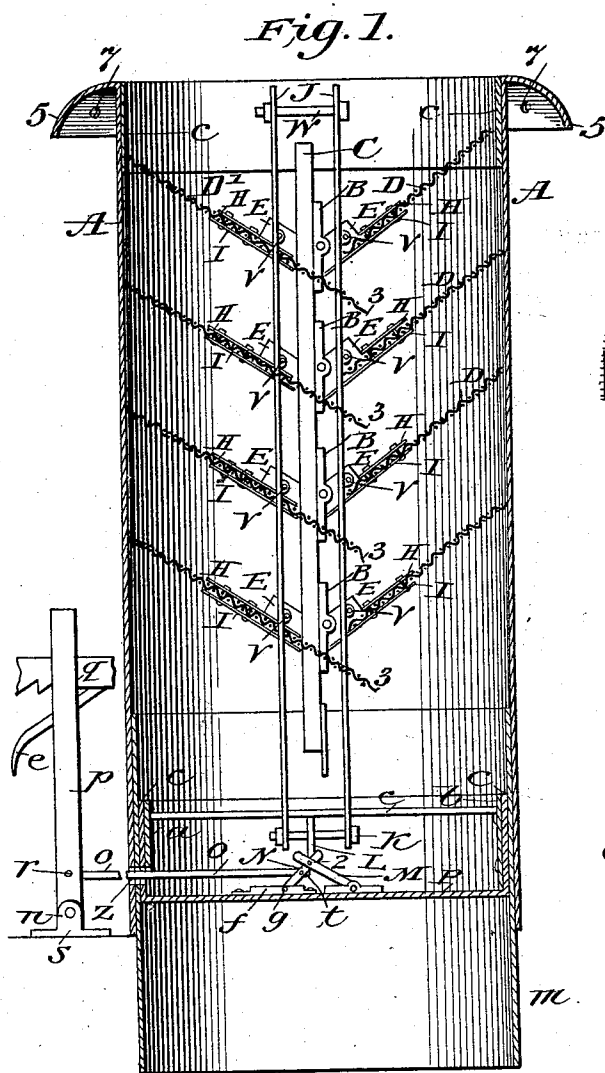
(No Model.)

2 Sheets—Sheet 1.

J. T. BRIGHT.
SPARK ARRESTER.

No. 568,735.

Patented Oct. 6, 1896.



Witnesses.
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A. C. Poynter

Inventor.
Joseph T. Bright

(No Model.)

2 Sheets—Sheet 2.

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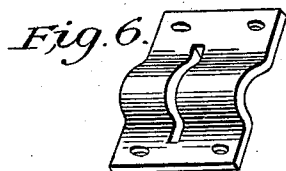
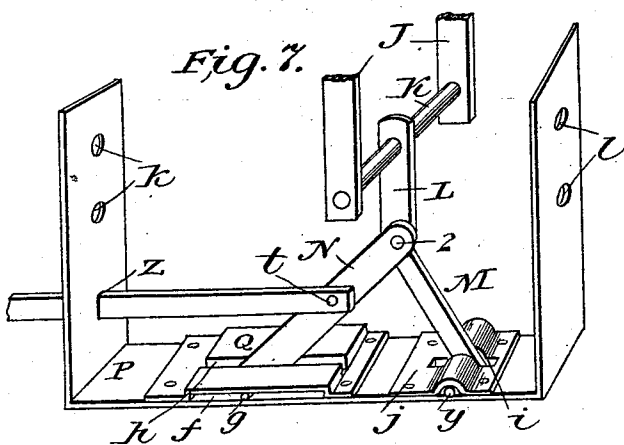
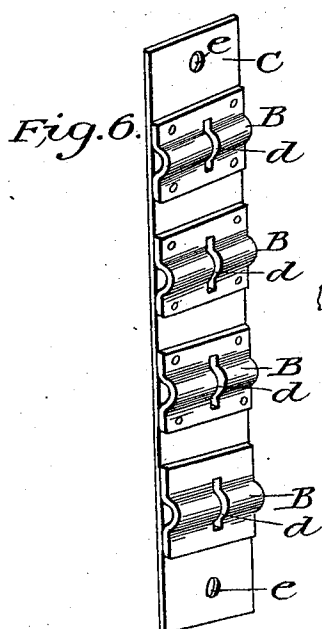
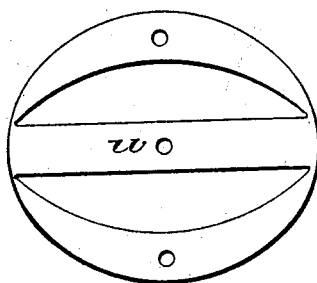


Fig. 8.



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UNITED STATES PATENT OFFICE.

JOSEPH T. BRIGHT, OF MIDWAY, KENTUCKY.

SPARK-ARRESTER.

SPECIFICATION forming part of Letters Patent No. 568,735, dated October 6, 1896.

Application filed July 16, 1896. Serial No. 599,452. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH T. BRIGHT, of Midway, in the county of Woodford and State of Kentucky, have invented a new and useful Improvement in Spark-Arresters, of which the following is a description.

My invention is an improvement in spark-arresters; and it consists in certain novel constructions and combinations and arrangements of parts as will be first fully described, and then pointed out in the claims.

In the drawings, Figure 1 is a sectional view of my spark-arrester. Fig. 2 is a representation of one of the woven-wire sheets or wings with the hinge-plate attached and shows a notch in its lower edge. Fig. 3 is a representation of one of the woven-wire wings or sheets with hinge-plate attached and being straight on its lower edge. Fig. 4 is a sectional view of one of the woven-wire wings with hinge-plate attached. Fig. 5 is a representation of one of the lever-bars which are loosely riveted to the hinge-plates of the woven-wire wings. Fig. 6 is a representation of the perpendicular hinge-plate to which the woven-wire wings are hinged, having journal-plates firmly fastened to one side of its face, also having slots cut through it to correspond with the slots in the journal-plates to admit the hinging ends of the hinge-plates on the woven-wire wings. Fig. 7 is a perspective view of the lever attachment by which the lever-bars that are attached to the hinge-plates of the woven-wire wings are raised and lowered. Fig. 8 is a view of two bands with cross-plate, one of which is placed in each end of the cylinder and affords a fastening for the ends of the perpendicular hinge-plate.

The spark-arrester, Fig. 1, is composed of a cylinder A, made of sheet-iron, in each end of which is fixed a band c, having a cross-plate w, Fig. 8, to which the ends of the perpendicular hinge-plate C, Figs. 1 and 6, are bolted through the holes e e. The perpendicular hinge-plate C, Figs. 1 and 2, has slots cut through it to admit the passage of the hinge ends of the hinge-plates of the woven-wire wings D D D D and D' D' D' D', Fig. 1. On one side of the perpendicular hinge-plate C, Figs. 1 and 6, are securely fastened journal-plates B B B B, Figs. 1 and 6, having slots in them to correspond with the slots cut in

the perpendicular hinge-plate C to allow the hinging ends of the hinge-plates E to pass in order that the hinge-plates of the woven-wire wings D D D D and D' D' D' D' may be hinged together on the perpendicular hinge-plate C, Figs. 1 and 6, by passing a wire through them in the journal-plates B B B B, Figs. 1 and 6. The perpendicular lever-bars J, Figs. 1 and 5, have eyeplates V V V V, placed at right angles to the face of the bar J, Fig. 5, and are loosely riveted through the eyeplates V V V V to the hinge-plates E E E E E E E E, Fig. 1, of the woven-wire wings D D D D and D' D' D' D', of which the woven-wire wings formed like D', Fig. 2, are on one side of the perpendicular hinge-plate C, and those formed like D, Fig. 3, are on the opposite side of the hinge-plate C, Fig. 1.

The woven-wire wings D and D', Figs. 2 and 3, have fastened to their surface hinge-plates H and E by rivets, which pass through them and through the woven-wire wings, thence through a plate I, Fig. 4, on the opposite side of the hinge-plate E H, Fig. 4.

The woven-wire wings D', Fig. 2, have a notch or square opening x on their straight edges to admit of the parts 3 and 4 to pass by the edges of the perpendicular hinge-plate C when the woven-wire wings are spread, thereby closing any undesirable space that might exist between the edges of the woven-wire wings formed like D, Fig. 3, and the face of the perpendicular hinge-plate C.

In Fig. 1 m is a short section of sheet-iron cylinder which fits in or over the cylinder A, in which is constructed the lever, which raises or lowers the lever-bars J, thereby raising or lowering the woven-wire wings.

The plate P, Figs. 1 and 7, is bent at right angles at each end, forming the uprights a and b, through which holes k and l are made in order that the lever-plate P can be firmly attached to the band c, Figs. 1 and 8. Upon the surface of the lever-plate P, at one end, is fastened a journal-plate j. Said journal-plate has a slot i cut through its center to receive the end of the lever-arm M, which is hinged to the journal-plate j by passing a wire or bolt y through a hole in the lower end of the lever-arm M. The lever-plate P also has a journal-plate Q, attached near the opposite end of it.

The journal-plate Q is so constructed that the bolt *g*, which passes under the surface of the journal-plate Q, through the lower end of the lever-arm M, is allowed to slip backward 5 and forward as the lever-rod O, which passes through the hole *z*, is loosely bolted to the lever-arm N by the bolt *t*, is pulled backward or pushed forward by the hand-lever *p* as operated by the engineer. The perpendicular 10 lever-arm L is loosely attached between the upper ends of the lever-arms M and N by a bolt 2, passing through all three of them. A bolt K is passed through one end of the lever-bars J and the upper end of the lever-arm 15 L, thence through the end of the other lever-bar J. The lever-rod O has a slit in the end that is loosely bolted to the lever-arm N at *t*, and from thence passes through the upright *a* at Z, Fig. 7, and is loosely attached to the 20 hand-lever *p* at *r*, Fig. 1. The hand-lever *p*, Fig. 1, is jointed or hinged to a hinge-clip S at *n* by a bolt. Said hinge-clip may be fastened to the most desirable portion of the engine in order to allow the hand-lever *p* to be 25 in easy reach of the engineer. The ratchet-bar *q* has a brace 6, which may be put at any desirable point that will allow the lever-arm *p* to be kept in any desired position firmly.

In Fig. 1 the flange 5 is made to fit inside 30 the cylinder A and to project over the top of the smoke-stack and fixed firmly to it by bolts passed through the holes 7 7, thereby holding the spark-arrester firmly in position.

When the hand-lever *p* is moved toward 35 the smoke-stack in which the spark-arrester, Fig. 1, is fixed, the lever-rod O pushes the lower end of the lever-arm N toward the center of the lever-plate P and raises the upper ends of the lever-arms M and N, thereby raising the lever-arm L, which is loosely bolted to 40 the ends of the upright lever-plates J, thereby raising them, and as they are loosely riveted to the hinge-plates H E, Fig. 4, of the woven-wire wings D D D D and D' D' D' D',

so the woven-wire wings can move freely 45 upon the upright lever-bars, and the hinge-plates of the woven-wire wings are hinged on each side of the perpendicular hinge-plate C, the woven-wire wings are closed, and when 50 the hand-lever is pulled away from the smoke-stack the woven-wire wings are opened; but when the complete section of the woven-wire wings is reversed in the cylinder A and the 55 bolt W passed through the lever-arm L then the movement of the woven-wire wings will be reversed as the hand-lever *p* is operated by the engineer. When the woven-wire wings are spread, no sparks can pass out of the smoke-stack.

Having thus described my invention, what 60 I claim as new is—

1. In a spark-arrester consisting of a cylinder in which are several woven-wire wings, hinged to a perpendicular hinge-plate, which 65 is fixed through the center of the cylinder by the aid of cross-plates which are fastened to bands, which are fastened to a cylinder on its inside, and upright lever-bars which are attached to hinge-plates, which are attached to 70 woven-wire wings and lever-arms operated by a hand-lever through which the woven-wire wings are opened or closed at the will of the engineer, substantially as set forth.

2. The combination of the hand-lever with 75 the lever-rod, the lever-arms, the lever-plates, the lever-bars, the hinge-plates, the woven-wire wings, the ratchet, the cylinder, the bands with cross-plates, the flange that laps over the top edge of the smoke-stack, to keep the 80 cylinder in position, the reversibility of the woven-wire wings in the cylinder, all of which is under the control of the engineer, to spread or close the woven-wire wings by the operation of a hand-lever, substantially as set forth.

JOSEPH T. BRIGHT.

Witnesses:

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W. D. OFFUTT.