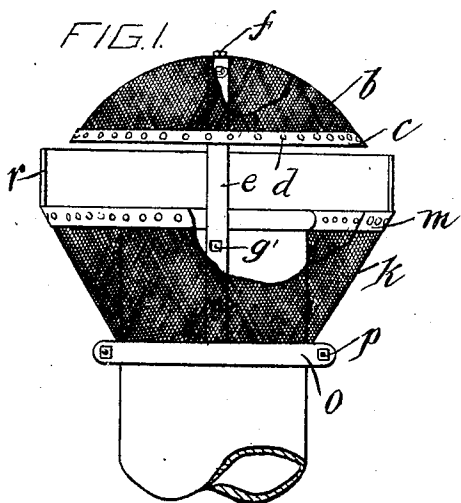
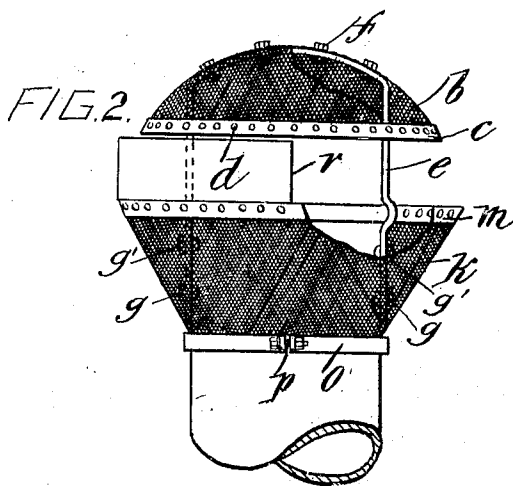
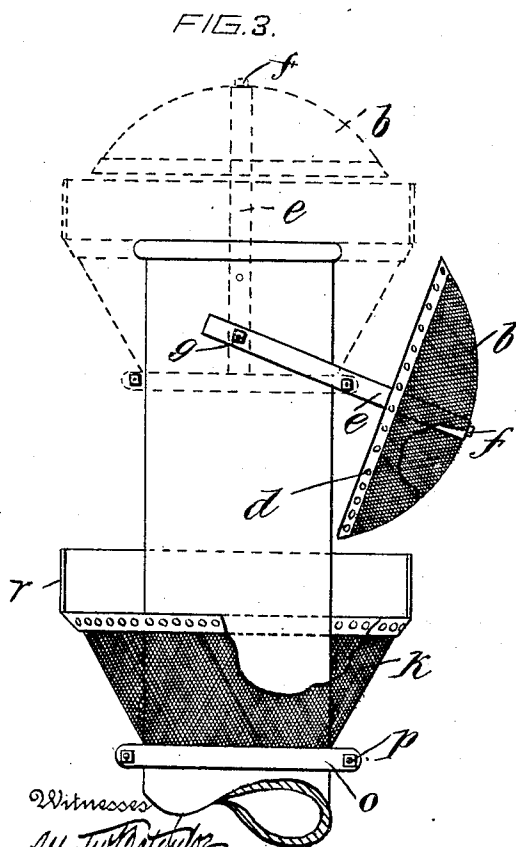
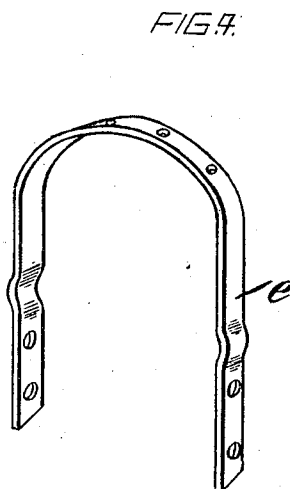


No. 832,188.

PATENTED OCT. 2, 1906.

W. C. J. HALL.
SPARK ARRESTER.
APPLICATION FILED MAY 25, 1906.



Witnesses
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TO MURRAY KENNEDY, OF QUEBEC, CANADA.

SPARK-ARRESTER.

No. 832,188.

Specification of Letters Patent.

Patented Oct. 2, 1906.

Application filed May 25, 1906. Serial No. 318,767.

To all whom it may concern:

Be it known that I, WILLIAM CHARLES JOHN HALL, of the city of Quebec, Province of Quebec, Canada, have invented certain
5 new and useful Improvements in Spark-Arresters; and I do hereby declare that the following is a full, clear, and exact description of the same.

My invention may be said briefly to consist, first, of the combination with a locomotive smoke-stack of a spark-arrester in the form of a hood of wire mesh extending completely across the top of the stack and means for supporting same a short distance above
15 such stack, so as to leave an open space between stack and hood; secondly, of the combination with the stack and hood of a cinder-basket carried by and encircling the stack adjacent to its top, and, thirdly, the combination with the hood and basket of a cinder-guard located at the rear of the space between the basket and hood, the basket being
20 movable to allow the hood to be moved out of position as occasion may require. For full comprehension, however, of my invention reference must be had to the accompanying drawings, forming a part of this specification, in which like reference characters indicate the same parts, and wherein—

30 Figure 1 is a front view, partly in section, of my improved spark-arrester. Fig. 2 is a side elevation, partly in section. Fig. 3 is a similar view to Fig. 1 with the basket lowered and the hood collapsed, and Fig. 4 is a perspective view of the carrier for the hood.

35 The hood of my improved device consists of a steel spark-cloth member *b* of inverted-saucer form and having its edges strengthened by a double band *c*, of metal, secured thereto by rivets *d*, while a supporting-strap
40 *e*, conforming to the internal radius of the hood and secured thereto by bolts *f*, has its legs secured to diametrically opposite sides of the stack by bolts *g g'*, such strap supporting
45 the hood a sufficient distance above the top of the stack to allow a free draft between the edges of the said hood and stack.

The cinder-basket of my spark-arrester consists of a member *k* of substantially the
50 form of the frustum of an inverted cone, its base being of slightly-greater diameter than the hood and protected by a double metal band *m* and located on a level with the top of the stack, the truncated apex thereof being

movably secured to the barrel of the stack by 55 a clamp *o*, held in place by bolts *p*.

The cinder-guard consists of a semicircular curved plate *r*, conforming to the radius of and secured to the top of the cinder-basket and of a height to extend to a point a short
60 distance below the level of the edge of the hood.

The smoke flows freely from the stack through the space between the top thereof and the edge of the hood as well as through
65 the hood itself, and the sparks or live cinders issuing with the smoke are projected against the interior of the hood, from which they fall into the basket and there die and become harmless and in a short time work out, owing
70 to vibration, and fall to the ground.

This construction of spark-arrester offers no obstacle to the draft of the locomotive, owing to the clear space between the top of the stack and the lower edge of the hood. 75 Furthermore, by reason of the meshed feature of the hood there is a greater diffusion of the gases immediately after their issuance from the smoke-stack, lessening to that extent their tendency to carry sparks with
80 them through the space between the stack and the hood and at the same time permitting a freer precipitation of the sparks to the spark-arresting basket.

The cinder-guard plate does not interfere 85 in any way with the draft of the locomotive and protects the engineer and fireman in the cab.

In order to enable access to be had to the mouth of the stack or for other purposes, I
90 make the hood movable to one side of the stack, as shown in Fig. 3, it being necessary to first lower the basket by loosening the clamp *o* and allowing the basket to slide
95 down the stack, after which by removing upper bolts *g'* the hood can be swung downward on the lower bolts *g*.

What I claim is as follows:

1. The combination with a locomotive smoke-stack, of a spark-arresting hood 100 formed of wire mesh supported a short distance above the top of the stack and separated therefrom by an open space, and a cinder-basket carried by the stack adapted to receive the sparks or cinders impinging upon
105 and falling from the hood, substantially as described.

2. A spark-arrester comprising a wire-

mesh hood supported a short distance above the stack so as to leave an open space between hood and stack, and a wire-mesh basket of greater circumferential measurement than the hood and encircling and carried by the stack with its upper edge on a level with the top thereof.

3. The combination with a locomotive smoke-stack, of a hood of inverted-saucer form formed of wire mesh extending completely across the top of the stack a short distance above same so as to leave an open space between hood and stack, means movably supporting said hood, and a wire-mesh basket of greater circumferential measurement than the hood and encircling and carried by the stack with its upper edge on a level with the top thereof.

4. A spark-arrester comprising a hood of inverted-saucer form formed of wire mesh extending completely across the top of the stack a short distance above same so as to leave an open space between hood and stack, a strap supporting said hood, bolts securing such strap to the stack and a wire-mesh basket of greater circumferential measurement than the hood and encircling and carried by the stack with its upper edge on a level with the top thereof.

5. A spark-arrester comprising a hood of inverted-saucer form formed of wire mesh extending completely across the top of the stack a short distance above same so as to leave an open space between hood and stack, a strap supporting said hood, bolts securing such strap to the stack and a wire-mesh basket of greater circumferential measurement than the hood and encircling the stack with its upper edge on a level with the top thereof, and a clamp movably securing the basket in place.

6. A spark-arrester comprising a movable hood formed of wire mesh extending completely across the top of the stack a short distance above same and a movable wire-mesh basket of greater circumferential measurement than the hood and encircling and carried by the stack with its upper edge on a level with the top thereof.

7. The combination with a locomotive smoke-stack, of a spark-arresting hood

formed of wire mesh and extending completely across the top of the stack a short distance above same, and a vertical strap supporting the hood so that it may be moved from its position above the stack to a position to one side of the stack, with means for retaining the hood in its operative position, substantially as described and for the purpose set forth.

8. The combination with a locomotive smoke-stack, of a spark-arresting hood, and a cinder-receiving basket, the hood being mounted so as to be movable to a position above and allowing an open space between it and the stack, or movable to one side of the stack, and the basket being slidable up and down the stack, with means for retaining both hood and basket in their operative positions, substantially as described and for the purpose set forth.

9. The combination with a locomotive smoke-stack, of a spark-arrester in the form of a hood of inverted-saucer form formed of an edge ring of greater diameter than the stack and a disk of wire mesh attached to the ring and so extending completely across the top of the stack and means for supporting such hood a short distance above the stack, whereby wire mesh is opposed to the upward blast from the stack at all points and a completely-unobstructed draft-space is provided between stack and hood, substantially as described.

10. The combination with a locomotive smoke-stack, of a spark-arrester in the form of a hood of wire mesh extending completely across the top of the stack and means for supporting same a short distance above such stack so as to leave an open space between stack and hood, a cinder-basket of wire mesh carried by the stack, and a cinder-guard carried by the rear half of the cinder-basket and projecting vertically from the upper edge of same, substantially as described.

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

WILLIAM CHARLES JOHN HALL.

Witnesses:

FRANK HOELMAN,
GEORGE SIDDON OLIVER.

It is hereby certified that Letters Patent No. 832,188, granted October 2, 1906, upon the application of William Charles John Hall, of Quebec, Quebec, Canada, for an improvement in "Spark-Arresters," was erroneously issued to "Murray Kennedy" as owner of the entire interest in said invention; that said Letters Patent should have been issued to the inventor *William Charles John Hall and Murray Kennedy, jointly*, said Murray Kennedy being the assignee of one-half interest only in said patent, as shown by the record of assignment in this office; and that said Letters Patent should be read with this correction therein that the same may conform to the record of the case in the Patent Office.

Signed and sealed this 23d day of October, A. D., 1906.

[SEAL.]

F. I. ALLEN,
Commissioner of Patents.