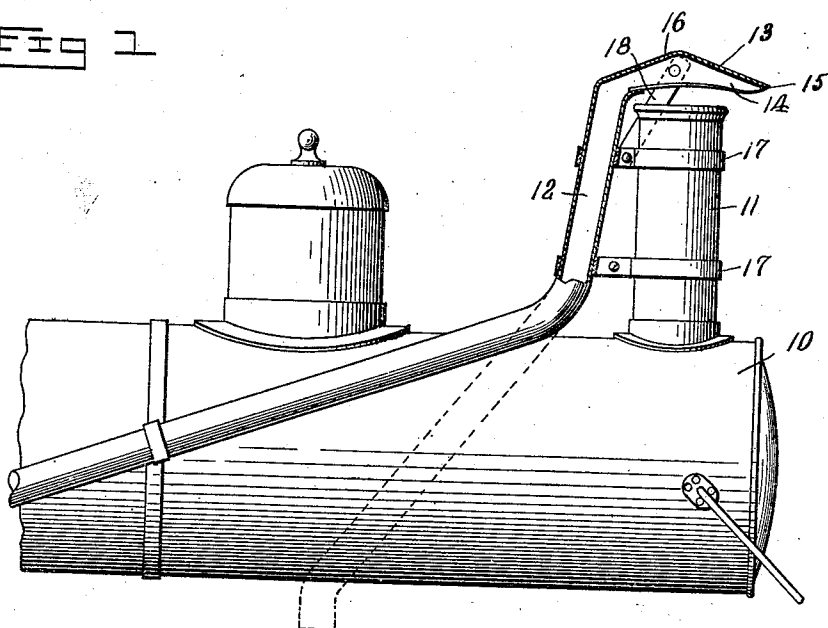


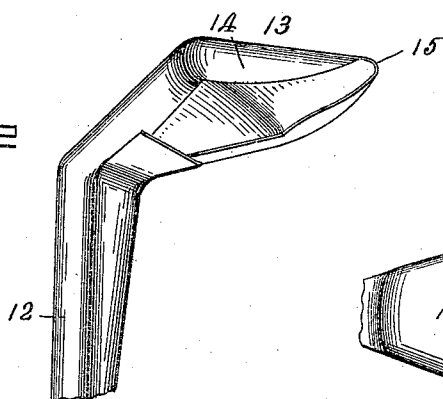
940,955.

Patented Nov. 23, 1909.

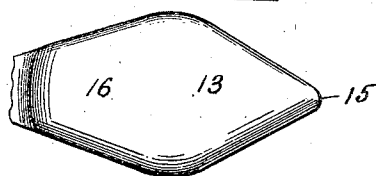
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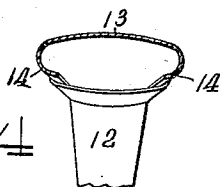
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Witnesses

H. C. Rohmets

Inventor
Lewis A. Coleman

By *Meyers, Cushman & Lea.*
Attorneys

UNITED STATES PATENT OFFICE.

LEWIS A. COLEMAN, OF NORFOLK, VIRGINIA, ASSIGNOR OF ONE-THIRD TO E. D. HOBBS,
OF NORFOLK, VIRGINIA.

SPARK-ARRESTER.

940,955.

Specification of Letters Patent.

Patented Nov. 23, 1909.

Application filed July 17, 1909. Serial No. 508,191.

To all whom it may concern:

Be it known that I, LEWIS A. COLEMAN, a citizen of the United States, residing at Norfolk, in the county of Norfolk and State of Virginia, have invented new and useful Improvements in Spark-Arresters, of which the following is a specification.

My invention relates to that class of devices which are used in connection with the outlets for the products of combustion from generators in order to aid in the disposal or completely dispose of the products of combustion.

It relates particularly to those of such devices as are applied to moving generators.

The object of my invention is to produce a simple and efficient device of this character which will entirely eliminate the trouble and annoyance usually caused by sparks and fine particles of partly consumed fuel or foreign matter which are usually present in the products of combustion when coal, wood or similar fuels are used.

A simple and practical construction of the device which embodies my invention, and its efficiency of operation will be readily apparent from the following description taken in connection with the accompanying drawings.

The novel features of my device as distinguished from the devices which others have patented will be particularly pointed out in the annexed claims.

The sheet of drawings contains Figure 1 which is a side elevation of my device as applied to a locomotive of the usual type. Fig. 2 which is a perspective view of the device, and Figs. 3 and 4 which are respectively a plan view of a portion of my device and a sectional elevation.

10 is the front end of a locomotive boiler in which is located the smoke box and from the top of which projects the stack 11 communicating with the smoke box. A conduit 12 of suitable size leads from a point adjacent the top of the stack 11 downwardly at an angle to the stack and rearwardly to a suitable point. This point may be either the fire-box of the locomotive, some convenient receptacle, or any other point where it is desired to discharge the objectionable products of combustion. It may, of course, be desirable for the locomotive engine to discharge the products of combustion down on the track where they will be dissipated

without interfering with the comfort of the passengers and without chance of lodgement on the moving train behind the locomotive. Attached to the top end of this conduit 12 and extending forwardly and over the top of the stack 11 is an oblong or diamond shaped hood 13, which is shown in perspective in Fig. 2. This hood has downwardly and inwardly turned edges 14 which, as clearly shown in Fig. 2, taper gradually to the point 15 of the hood. The main body or back of the hood 16 is angular. This hood may be said to consist of a plate having portions bent at an angle to each other and provided with downwardly and inwardly turned edges. The conduit 12 adjacent the point where it connects with the hood is divergent and its open end is bent over at an angle such that it faces in the forward direction of movement of the locomotive.

Both the conduit and the hood are supported by brackets 17 which embrace the stack, and a brace 18 extends upwardly to the hood from the uppermost bracket 17. This brace 18 serves to keep the hood from being bent out of its normal position above the stack by the onrush of the train at high speed.

The operation of my device is as follows: When the locomotive moves forward with its exhaust being discharged in the smoke box, as is usual, the products of combustion are expelled from the stack and violently impinge upon the back 16 of the hood. The sparks and cinders are spread by the impact and are thrown to the sides of the hood where they are caught by the downwardly and inwardly turned edges 14. The onrush of the locomotive creates a draft through the conduit 12, which draws the sparks and cinders down into the conduit along with a part, or the whole, of the remaining products of combustion. Whether or not the part, or the whole, of the products of combustion are carried off by the conduit depends upon the size of that conduit. I prefer to make it of such a size that the entire products of combustion will be carried off, and to discharge these products within the ash-box where the smoke and unsummed carbon will be burned.

By tapering the downwardly turned edges of the hood to the point 15, I allow a free access of the air to the edges 14, thus facilitating the removal of the sparks and cinders

to the conduit 12. The diamond shape of the hood decreases resistance to movement through the air.

It will be seen that I have produced an extremely simple and efficient device for accomplishing the results named. This device can be very cheaply constructed and very easily attached to any existing locomotive.

It is, of course, obvious that the device can be applied to any type of moving generator, and also obvious that many modifications may be made in its general structure without departing from the generic spirit of my invention. I desire to cover all such modifications in the annexed claims.

I claim:—

1. A device of the character described comprising a hood and a conduit communicating with the under side of said hood, said hood having downwardly and inwardly turned edges terminating short of each other at the front end of said hood and leading into said conduit at the rear end of said hood, whereby the air has access to the said side edges and the products caught by said side edges are discharged into said conduit.

2. In combination, a moving generator, an outlet for the products of combustion from said generator, an oblong hood placed in juxtaposition to said outlet, and a conduit communicating with the under side of said hood, said hood comprising a plate having downwardly and inwardly turned side portions opening on the front end of the hood and leading at their rear ends into said conduit whereby the products caught in said side portions are swept into said conduit.

3. In combination, a moving generator, an outlet for the products of combustion from said generator, a conduit leading from a point above said outlet to a point of discharge, and a plate having downwardly and inwardly turned side edges extending from the top of said conduit and over said out-

let in the path of the products of combustion issuing therefrom, said side edges terminating short of each other at the front end and leading into said conduit at the rear end of said plate.

4. In combination, a moving generator, an outlet for the products of combustion therefrom, a pointed deflector in juxtaposition to said outlet and having downwardly and inwardly turned edges, there being an opening between said edges at the front end of said deflector, and the pointed end of said deflector extending in the direction of movement of said generator, and a conduit communicating with the under side of said deflector for receiving products of combustion from said outlet.

5. In combination, an outlet for the products of combustion from a generator, a hood in juxtaposition to said outlet, said hood comprising a main body portion and depending trough-shaped portions on each side of said main body portion, each of said portions being tapered to the front end of the hood, and a conduit communicating with the hood at its rear end and on its under side.

6. In a device of the character described, a generator, a hood comprising a main body portion and depending trough-shaped portions on each side of said main body portion, and a conduit communicating with the hood at its rear end and on its under side, said trough-shaped portions of the hood being open at the front end and leading at the rear end into said conduit, whereby the air sweeps the products caught by them into the conduit.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

LEWIS A. COLEMAN.

Witnesses:

ARTHUR L. BRYANT,
J. P. TARBOX.