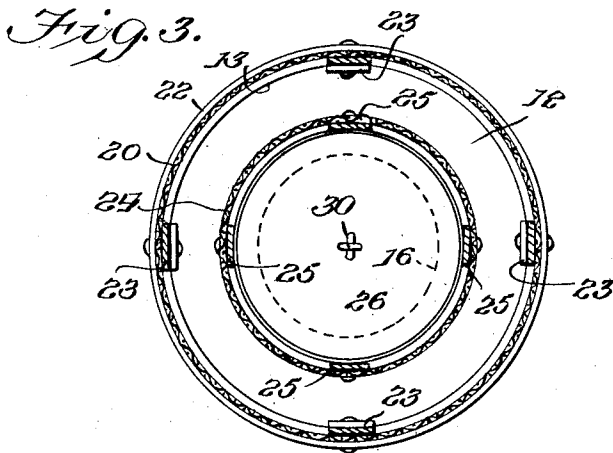
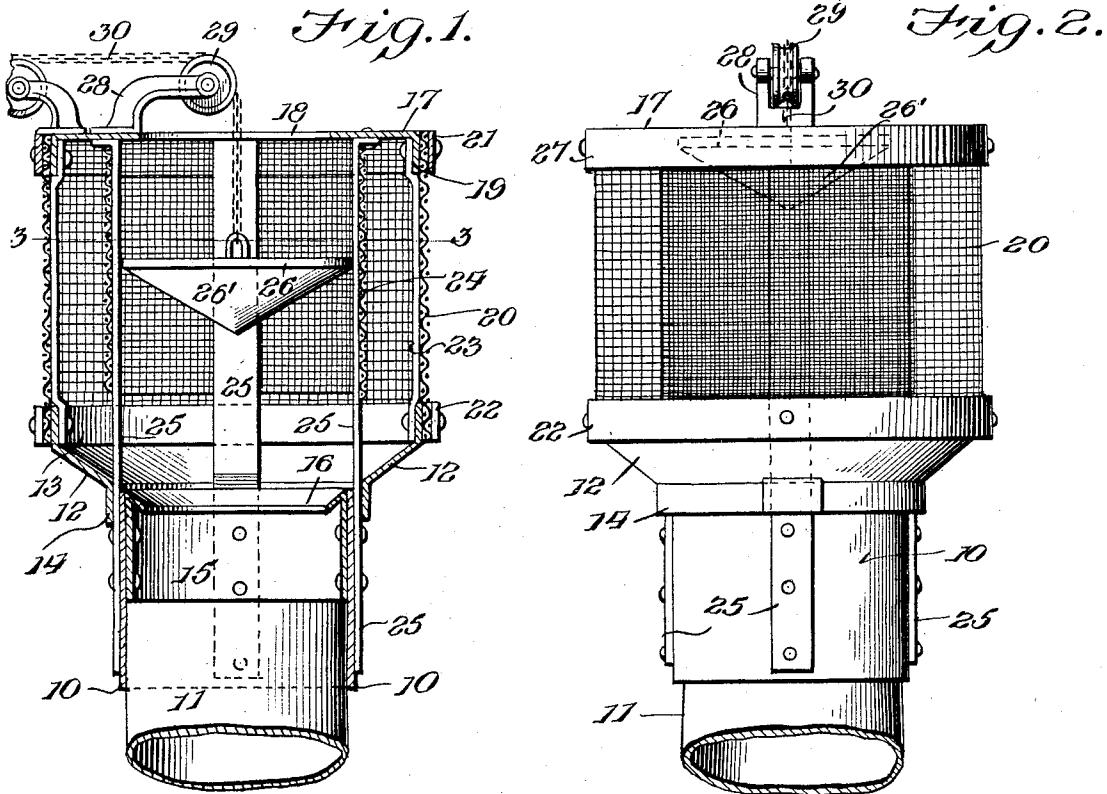


J. BLANCHETTE.
SPARK ARRESTER.
APPLICATION FILED JULY 13, 1914.

1,126,692.

Patented Feb. 2, 1915.



Inventor
J. Blanchette.

Witnesses

C. H. Woodward

per Amie

By

W. H. Macey

Attorneys.

UNITED STATES PATENT OFFICE.

JOSEPH BLANCHETTE, OF TACOMA, WASHINGTON.

SPARK-ARRESTER.

1,126,692.

Specification of Letters Patent.

Patented Feb. 2, 1915.

Application filed July 13, 1914. Serial No. 850,786.

To all whom it may concern:

Be it known that I, JOSEPH BLANCHETTE, citizen of the United States, residing at Tacoma, in the county of Pierce and State of Washington, have invented certain new and useful Improvements in Spark-Arresters, of which the following is a specification.

This invention relates to new and useful attachments to smoke stacks for the purpose of preventing escape of sparks and like products of the combustion, and has for one of its objects to improve the construction and increase the efficiency and utility of devices of this character.

Another object of the invention is to provide a simply constructed device which may be adapted without material structural change to smoke stacks of various sizes and forms, and whereby the escape of the products of combustion may be controlled and checked to any required extent.

Another object of the invention is to provide a simply constructed device whereby the draft may be entirely shut off if required.

With these and other objects in view the invention consists in certain novel features of construction as hereinafter shown and described and then specifically pointed out in the claims; and in the drawings illustrative of the preferred embodiment of the invention Figure 1 is a sectional elevation of the improved device applied. Fig. 2 is an elevation at right angles to Fig. 1 with the controlling member in its elevated position. Fig. 3 is a transverse section on the line 3—3 of Fig. 1.

Corresponding and like parts are referred to in the following description and indicated in all the views of the drawings by the same reference characters.

The improved device includes a base member having a tubular lower portion or outer sleeve 10 adapted to engage over the upper discharge end of a smoke stack, a portion of which is indicated at 11, and an outwardly flaring upper portion 12 terminating at the upper edge in an upwardly directed vertical rim 13 and at the lower edge in a downwardly directed flange 14 which bears over and is connected to the upper portion of the outer sleeve 10. Disposed within the

upper part of the outer sleeve 10 is an inner sleeve or thimble 15, with the upper end formed into an inwardly directed and downwardly sloping flange 16.

The improved device likewise includes a top 17 having a relatively large central opening 18 and a depending rim 19. The top is thus annular in outline with the depending rim 19 in vertical alinement with the upwardly directed rim 13 of the base. The base and top are thus spaced apart and are connected by an outer cylindrical portion of screen material represented at 20. The base member, the upper member and the outer cylindrical portion 17 thus form a cage-like structure somewhat larger in outline than the stack 11. Securing bands 21—22 may be engaged around the upper and lower edges of the screen member 20 if required. A plurality of vertical strips 23 are secured to the rims 13 and 19 and bear against the inner face of the cylindrical member 20, and thus couple the base and top and likewise support the screen material 20.

Located within the outer cylindrical portion 20 is an inner cylindrical portion of screen material less in diameter than the outer cylindrical portion 20 and concentric therewith, thus forming an annular space between the two foraminous portions. The inner cylindrical portion 24 extends at its upper edge to the under face of the top 17, but is of less length than the outer cylindrical portion 20, whereby a space is left between the lower edge of the member 24 and the upper face of the flaring top 12 of the base, as shown in Fig. 1, to permit any particles of matter which may pass through the meshes of the inner cylindrical portion to flow back again into the stack over the flaring portion 12. It will be noted that the flange 16 overhangs the stack 11, so that the particles which may fall upon the flaring portion will be conducted with certainty into the stack.

A plurality of combined guide, guard and reinforcing strips 25 are located within the inner cylindrical portion 24 and support the latter and likewise protect the member 24. The strips 25 extend through the flaring portion 12 and bear at their lower parts against the outer sleeve 10 to which they are

riveted or otherwise secured. By this arrangement the cage-like structure is materially strengthened and stiffened without materially increasing the weight.

- 5 Located within the inner cylindrical portion 24 and the strips 25 is a movable member 26, preferably with a conical lower portion 26' and maintained from lateral displacement by the members 25 which like-
10 wise protect the fabric of the member 24 from contact with the movable member 26.

- Rising from the top 17 is a bracket 28 carrying a chain pulley 29 over which a chain 30 leads and is connected to the mem-
15 ber 26. By this means the member 26—26' may be raised and lowered by actuating the chain 30. When in its lower position the conical portion 26' will engage against the flange 16 and thus wholly close the discharge
20 end of the stack, and when in elevated position the flat upper side 26 will entirely close the opening 18 of the member 17.

- The lower conical portion 26' of the movable member constitutes a combined retarder
25 and deflector for the rising products of the combustion, which are thrown outwardly thereby against the inner face of the inner cylindrical portion 24, the heavy particles falling backward again into the stack while
30 the gases and smaller particles pass through the meshes of the member 24, a portion of the gases passing through the meshes of the member 20 and another portion passing backwardly through the meshes of the mem-
35 ber 24 above the member 26—26' and out through the opening 18, while the small particles which have passed through the meshes of the member 24 fall upon the flaring portion 12 of the base and passing thence into
40 the stack. By this means a double action is produced upon the products of the combustion and the heavier particles separated from the gases and returned to the stack, leaving the gases and smoke only to pass
45 outwardly. By adjusting the member 26—26' the distance between it and the top 17 is controlled to increase or decrease the force of the draft, and to retard the products of the combustion to a greater or lesser
50 extent and thus effectually adapt the device to the conditions of the matter rising from the stack.

- The above described action takes place when the member 26—26' is disposed in its
55 intermediate position as shown in Fig. 1, but if it is desired to provide a freer action the member 26—26' is elevated by actuating the chain 30 until its upper face engages against the lower face of the top 17. The
60 conical portion 26' then operates as a deflector to cause the products of the combustion to be thrown outwardly against the walls of the members 24 and 20 which catch the larger particles and cause them to fall
65 upon the inclined flaring portion 12 and

thence back into the stack, as before described. As before stated, by adjusting the member 26—26' vertically the discharge area of the device may be increased or decreased in size and capacity as required.

The improved device is simple in construction, can be readily installed by slight and unimportant changes in the size of the portion 10 of the device, to stacks of varying sizes and shapes.

Having thus described the invention what is claimed is:—

1. In a device of the class described, an outer sleeve adapted to engage around the open end of a smoke stack, an inner sleeve
80 within the outer sleeve and of less length than the outer sleeve and adapted to bear upon the upper edge of the smoke stack, a cage including foraminous sides and an annular top and an annular bottom, the annu-
85 lar bottom having a depending flange engaging the outer sleeve, and a member movable within the cage and adapted when in lower position to close the stack and to close the annular top when in upper position.

2. In a device of the class described, an outer sleeve adapted to engage around the open end of a smoke stack, an inner sleeve
90 within the outer sleeve and adapted to bear upon the upper edge of the smoke stack and having an inwardly and downwardly sloping flange at its upper end, a cage including foraminous sides and an annular top and an
95 annular bottom, the annular bottom having a depending flange engaging around the outer sleeve, and a member movable within the cage and adapted when in lower position to be seated on the sloping flange and close the stack and to close the annular top
100 when in upper position.

3. In a device of the class described, an outer sleeve adapted to engage around the open end of a smoke stack, an inner sleeve
105 within the outer sleeve and of less length than the outer sleeve and adapted to bear upon the upper edge of the smoke stack and having an inwardly and downwardly sloping flange at its upper end, a cage including foraminous sides and an annular top and
110 an annular bottom, the annular bottom having a depending flange engaging the outer sleeve and sloping inwardly and downwardly and merging into the sloping flange of the inner sleeve, and a member movable
115 within the cage and adapted when in lower position to be seated on the sloping flange of the inner sleeve to close the stack and to close the annular top when in upper position.

4. In a device of the class described, an outer sleeve adapted to engage around the open end of a smoke stack, an inner sleeve
120 within the outer sleeve and of less length than the outer sleeve and adapted to bear upon the edge of the smoke stack, a cage in-

cluding foraminous sides and an annular
top and an annular bottom, the annular bot-
tom having a depending flange engaging the
outer sleeve and provided with a plurality
5 of guideways, a plurality of vertical guide
members connected to the outer sleeve and
extending through the guideways of the de-
pending flange, a member movable within
the cage and movably engaging said vertical
10 guides, said member being adapted when in

lower position to close the stack and to close
the annular top when in upper position.

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

his
JOSEPH X BLANCHETTE. [L. S.]
mark

Witnesses:

W. G. HEINLY,
JOSEPH MARKSON.