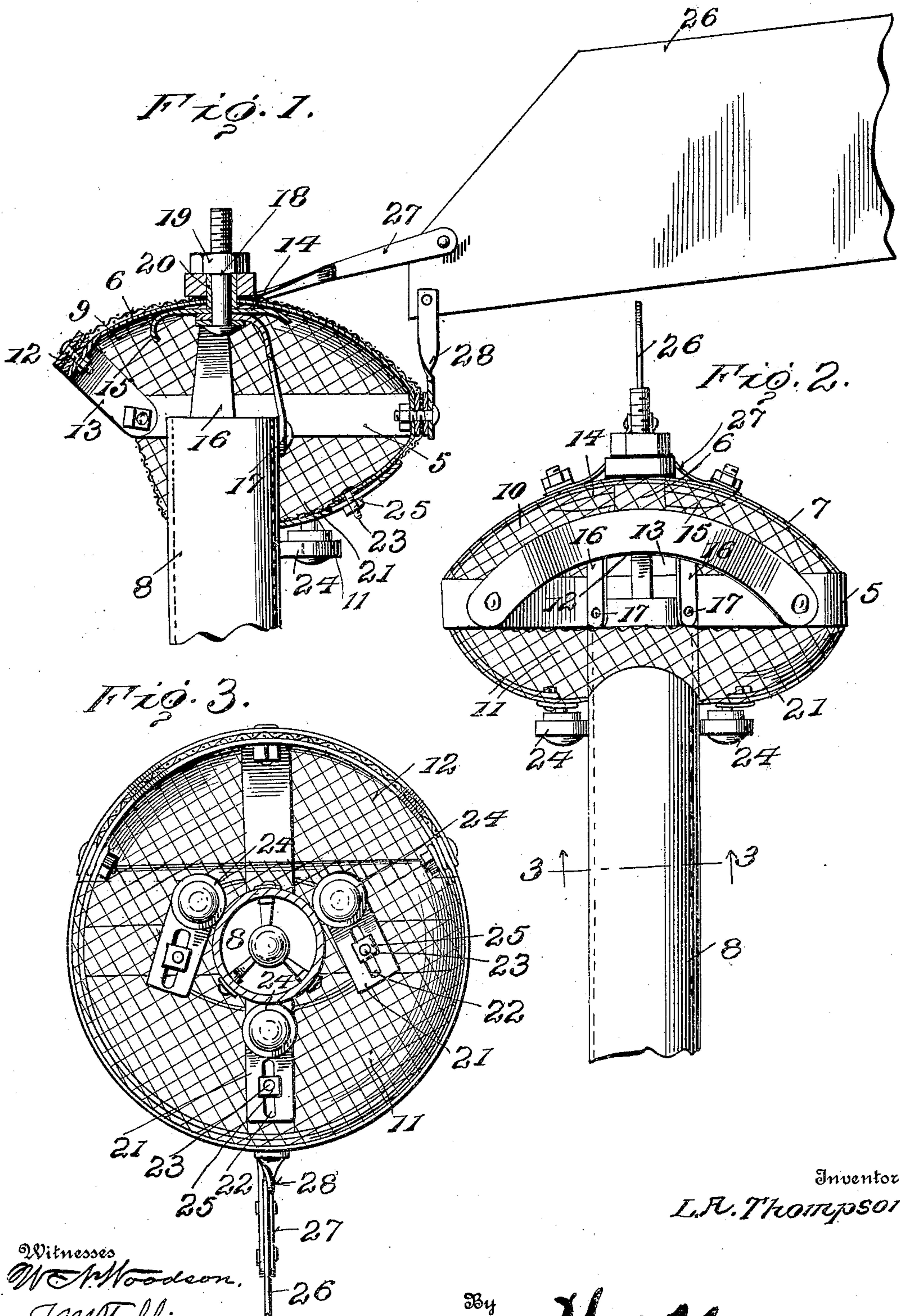


L. A. THOMPSON.
SPARK ARRESTER.
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Witnesses
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UNITED STATES PATENT OFFICE.

LEWIS A. THOMPSON, OF BUFFALO, NORTH DAKOTA.

SPARK-ARRESTER.

934,479.

Specification of Letters Patent. Patented Sept. 21, 1909.

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To all whom it may concern:

Be it known I, LEWIS A. THOMPSON, a citizen of the United States, residing at Buffalo, in the county of Cass and State of North Dakota, have invented certain new and useful Improvements in Spark-Arresters, of which the following is a specification.

This invention relates to spark arresters and has for its object to provide a comparatively simple and thoroughly efficient device of this character, especially designed for attachment to the smoke stacks of traction engines, steam locomotives and other motors for the purpose of catching sparks or incandescent cinders and thus preventing the same from causing expensive fires.

A further object of the invention is to provide a spark arrester including a foraminous hood mounted for rotation on the smoke stack and provided with a vane for normally holding the open front of said hood against the wind.

A further object of the invention is to generally improve this class of devices so as to increase their utility, durability and efficiency.

Further objects and advantages will appear in the following description, it being understood that various changes in form, proportions, and minor details of construction may be resorted to within the scope of the appended claims.

For a full understanding of the invention, reference is to be had to the following description and accompanying drawings, in which:

Figure 1 is a vertical sectional view of a spark arrester constructed according to my invention, showing same applied to a smoke stack. Fig. 2 is a front elevation of same. Fig. 3 is a transverse sectional view taken on the line 3—3 of Fig. 2 and looking in the direction of the arrow.

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

The spark arrester forming the subject matter of the present invention comprises a supporting frame including an annular band 5 to which are bolted or otherwise rigidly secured intersecting bars 6 and 7.

The free ends of the bars 6 and 7 are curved downwardly and inwardly with their terminals spaced apart to form an opening for the reception of the smoke stack indi-

cated at 8. The upper portions of the bars 6 and 7 are covered with a strip of wire netting or other foraminous material 9 to form a hood 10 which latter serves to prevent the sparks or incandescent cinders emitted from the smoke stack from being spread broadcast by the action of the wind and thus causing extensive fires. A strip of wire gauze or similar material is also secured to the lower curved terminals of the bars 6 and 7 to form a shield or pocket 11 which holds the cinders or sparks and prevents the same from falling on the ground.

The forward portion of the central supporting ring or band 5 is deflected upwardly at 12 while the wire forming the shield or pocket 11 preferably terminates at the base of the deflected portion 12 thereby forming an opening 13 to permit the passage of air to the smoke stack in order to create the necessary draft for the engine.

Secured to the bars 6 and 7 at their points of intersection is a disk 14 one edge of which is bent downwardly to form a depending lip or deflector 15 which serves to direct the sparks or cinders coming in contact with the disk laterally within the pocket 11 and thus prevent the same from passing through the opening 13, as will be readily understood.

The perforated hood is retained in position on the smoke stack 8 by means of a spider 16 the arms of which bear against the exterior wall of the smoke stack and are rigidly secured thereto by bolts or similar fastening devices 17. The central portion of the spider has a vertical opening for the reception of a bolt or pin 18 which extends through corresponding openings formed in the disk 14 and intersecting bars 6 and 7 and is provided with terminal threads for engagement with a clamping nut 19, there being a sleeve or collar 20 interposed between the intersecting disk 14 and the nut 19 for the purpose of retaining the parts in assembled position while at the same time permitting free rotation of the hood on the smoke stack.

Secured to the inner curved terminal of the bars 6 and 7 are correspondingly curved fingers 21 having elongated slots 22 formed therein for the reception of the clamping bolts 23 carried by the adjacent terminals of the bars 6 and 7, there being rollers 24 journaled on the free ends of the fingers 21 and adapted to bear against the exterior wall of the smoke stack to prevent friction

between the parts when the hood is rotated. Thus it will be seen that by releasing the nuts 25 the fingers 21 may be adjusted longitudinally of the adjacent bars 6 and 7 so as to regulate the position of the rollers 24 with respect to the smoke stack and thus permit the hood to be used on smoke stacks of different sizes.

Disposed at right angles to the plane of the hood is a vane 26 which serves to normally hold the open front of the hood against the wind so as to permit the entrance of air and thus assist in creating a draft in the smoke stack. The vane 26 is rigidly combined with the hood by means of spaced diverging braces 27, one end of each of which is secured to the vane while the diverging ends thereof are disposed on opposite ends of the side of the pivot pin or bolt 18 and are secured to the adjacent portions of the bar 7 in any suitable manner. A vertically disposed bar 28 is also preferably extended from the band 5 to the inner end of the vane for the purpose of reinforcing and strengthening the whole. Thus it will be seen that the open end of the hood is always held against the wind by the vane 26 while the sparks or incandescent cinders discharged at the mouth of the smoke stack will come in contact with the curved walls of the hood and be deflected downwardly into the pocket or shield 11, the cinders at the forward portion of the hood being prevented from dropping through the opening 13 by the depending lip or deflector 15 in the manner before stated. The spark arresters may be made in different sizes and shapes and provided with any number of rollers for reducing the friction between the hood and smoke stack.

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

1. The combination with a smoke stack, of a foraminous hood mounted for rotation on the smoke stack and having one side thereof open, a vane carried by the hood for normally holding the open side of the hood against the wind, longitudinally adjustable fingers secured to the hood and anti-friction rollers journaled on the fingers and adapted to bear against the exterior wall of the smoke stack.

2. The combination with a smoke stack, of a foraminous hood mounted for rotation on the smoke stack having one side thereof open, a deflector carried by the hood and having a depending lip for preventing the discharge of cinders through the opening in said hood, longitudinally adjustable fingers carried by the hood, and rollers journaled on the ends of the fingers and arranged to bear against the exterior wall of the smoke stack.

3. The combination with a smoke stack, a spider secured to the smoke stack, a hood

pivotally connected with the spider and mounted for rotation on the exterior wall of the smoke stack, said hood being provided with an opening, a vane carried by the hood for normally holding the open side thereof against the wind, fingers slidably mounted on the hood and anti-friction rollers carried by the fingers and adapted to bear against the exterior wall of the smoke stack.

4. The combination with a smoke stack, of a spider detachably secured to the stack, a hood mounted for rotation on the stack at the upper end thereof, a fastening device forming a pivotal connection between the spider and hood, a disk interposed between the spider and hood and having a depending portion constituting a deflector, longitudinally adjustable fingers secured to the hood, and anti-frictional rollers journaled to the fingers and adapted to bear against the exterior wall of the stack, said hood being open on one side and provided with a vane for normally holding the open side thereof against the wind.

5. The combination with a smoke stack, of a hood mounted for rotation on the smoke stack, and comprising a supporting frame having its upper portion covered with a strip of foraminous material and its lower portion covered with a strip of similar material to form a pocket or shield, a portion of the frame being deflected upwardly and spaced from the shield to produce an opening, a vane carried by the hood for normally holding the open end of the hood against the wind, longitudinally adjustable fingers secured to the hood, and anti-friction rollers journaled to the fingers and adapted to bear against the exterior walls of the stack.

6. The combination with a smoke stack having a spider detachably secured thereto, of a hood bearing against the spider and mounted for rotation on said stack, said hood including a frame comprising an intermediate annular supporting member connected by intersecting bars, longitudinally slotted fingers secured to the terminals of said bars, anti-friction rollers journaled on the fingers and adapted to bear against the stack, a foraminous cover secured to the supporting band and intersecting bars, a portion of the intermediate supporting band being deflected upwardly and spaced from the stack to form an opening, a vane carried by the hood for normally holding the open end of the hood against the wind, and braces forming a connection between the vane and hood.

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

LEWIS A. THOMPSON. [L. S.]

Witnesses:

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