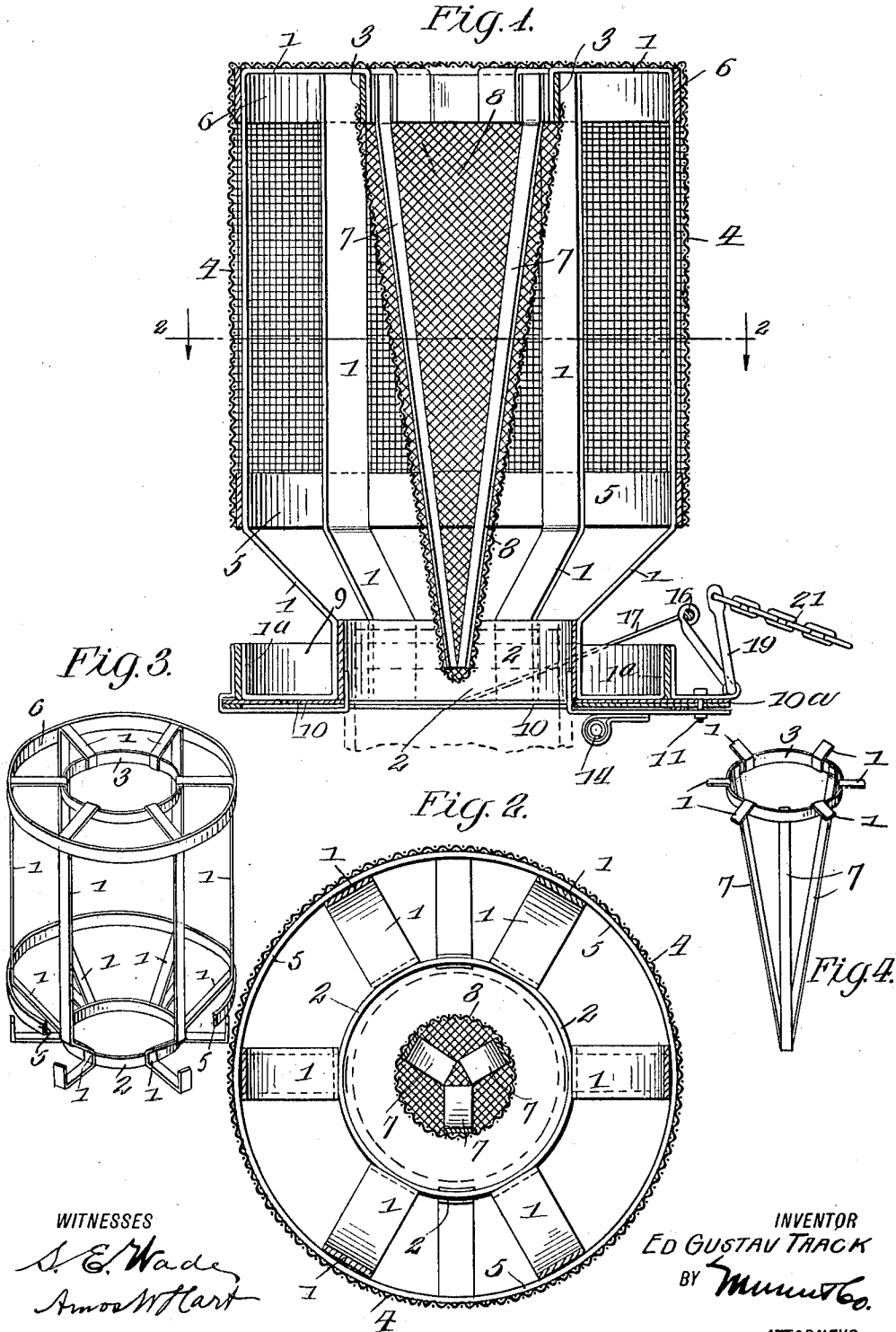


E. G. TAACK.
SPARK ARRESTER.

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1,022,277.

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WITNESSES
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SPARK-ARRESTER.

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Specification of Letters Patent.

Patented Apr. 2, 1912.

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To all whom it may concern:

Be it known that I, Ed G. TAACK, a citizen of the United States, and a resident of True, in the county of Young and State of Texas, have invented an Improved Spark-Arrester, of which the following is a specification.

My spark-arrester is particularly adapted and intended for use on traction engines, but may be made in larger proportions for use on railway locomotives.

It comprises, 1st, a vertical frame covered with wire netting and attached to a base ring, the whole thus forming practically a wire screen drum which is open at the bottom; 2nd, a conical or tapered frame also covered with wire netting, which is attached to the top of the larger frame and suspended centrally within it; 3rd, a base-ring to which the superstructure is attached, the same being in practice adapted for attachment to the smoke-stack of a traction engine; and 4th, an annular pan attached to, and surrounding, the said base-ring and serving, in practice, to receive the dead sparks that drop from the arrester proper, and to discharge them when operated for the purpose.

In the accompanying drawings, Figure 1 is a vertical central section of my improved spark-arrester. Fig. 2 is a horizontal section on the line 2—2 of Fig. 1. Fig. 3 is a perspective view of the main frame of the spark-arrester. Fig. 4 is a perspective view of the inner or cone frame.

A series of bars 1 is rigidly attached to a base ring 2 from which they extend outward at an angle of about 45°, and they then extend vertically parallel to each other, their upper ends being bent inward horizontally and then downward and attached to the top ring 3. Thus the series of bars are rigidly connected at the bottom by the base-ring 2 and at the top by the ring 3. They are further rigidly connected by means of a bottom ring 5 and top ring 6, both of which encircle them. Their lower ends are extended laterally from the ring 2 and are then bent upward and secured to an outer ring 9 as shown in Fig. 1. This rigid or skeleton frame is covered with wire netting 4 on the top and sides, the same extending down only to the ring 5, whereby a free space is left between the lower ring 5 and the base-ring 2. Thus constructed, the superstructure has practically a drum-like form.

From the inner top ring 3 depends a tapered frame composed of bars 7, the same extending down to a point within the base-ring 2. The frame thus formed is covered with wire netting 8, thus forming a wire cone, inverted, and rigidly attached to, and pendent from, the top of the drum of the spark arrester.

An annular pan is attached to the base ring 2 and surrounds the same as shown, its diameter being about the same as the body of the drum above. The pan is formed of a fixed rim or band 9 which is arranged concentrically with the base ring 2, and a bottom composed of two segmental parts 10 which are pivoted and adapted to be opened as shown in Fig. 7. In Figs. 1, 5 and 6 they are shown closed. The rim 9 is riveted to the upturned lower ends 1^a of the frame bars 1, as shown in Fig. 1.

The parts 10 composing the bottom proper of the spark pan are provided with shanks 10^a that are pivoted at 11 to a lateral projection of the rim 9 and when closed they lie beneath the laterally extended portions of the frame bars and are supported upon an annular band 13 which forms an attachment of the frame. The parts 10 are thus in the nature of valves and they are held normally closed by a spiral spring 14 which is held in a keeper and whose ends are connected with the side portions of the valves.

A lever attachment is employed for opening the valves when it is desired to discharge the dead sparks which have accumulated in the pan. The attachment comprises a horizontal bar 16 connected by rods 17 with the segmental valves 10, and a pivoted bell-crank 19 to which a chain 21 is attached. Upon pulling this chain, the bell-crank will be swung over to the right in Fig. 1, thus opening the valve 10 and causing discharge of the dead sparks which have accumulated in the pan.

In practical use, the live sparks from the furnace of the engine passing upward, strike the sides of the cone and are thus diverted laterally into contact with the top or sides of the body of the arrester, and, being thus "killed" or extinguished, they fall back and are received by the pan 9. The gaseous products of combustion, together with finer particles of carbon or ash produced by friction and impact of live sparks with the drum, escape freely through the top and sides of the latter.

The spark-arrester thus constructed may be produced at comparatively small cost, is easily attached, and highly effective in use.

What I claim is:—

- 5 The improved spark-arrester, comprising a superstructural frame whose lower portion is contracted, a base-ring to which said portion is rigidly attached, a wire screen covering such frame save at the lower portion, and an annular pan attached to and
10 surrounding the base ring, the same having about the same diameter as the spark-ar-

resting screen above, the latter being elevated from and of greater diameter than the base ring, whereby sparks may discharge 15 from the screen through the open space above and surrounding the base ring and thus be received by the pan, substantially as described.

ED GUSTAV TAACK.

Witnesses:

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A. F. JONES.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."