(No Model.) 2 Sheets—Sheet 1.

E. NASHOLD.

SOUND ARRESTER.

No. 462,771. Patented Nov. 10, 1891.

Fig. 1.

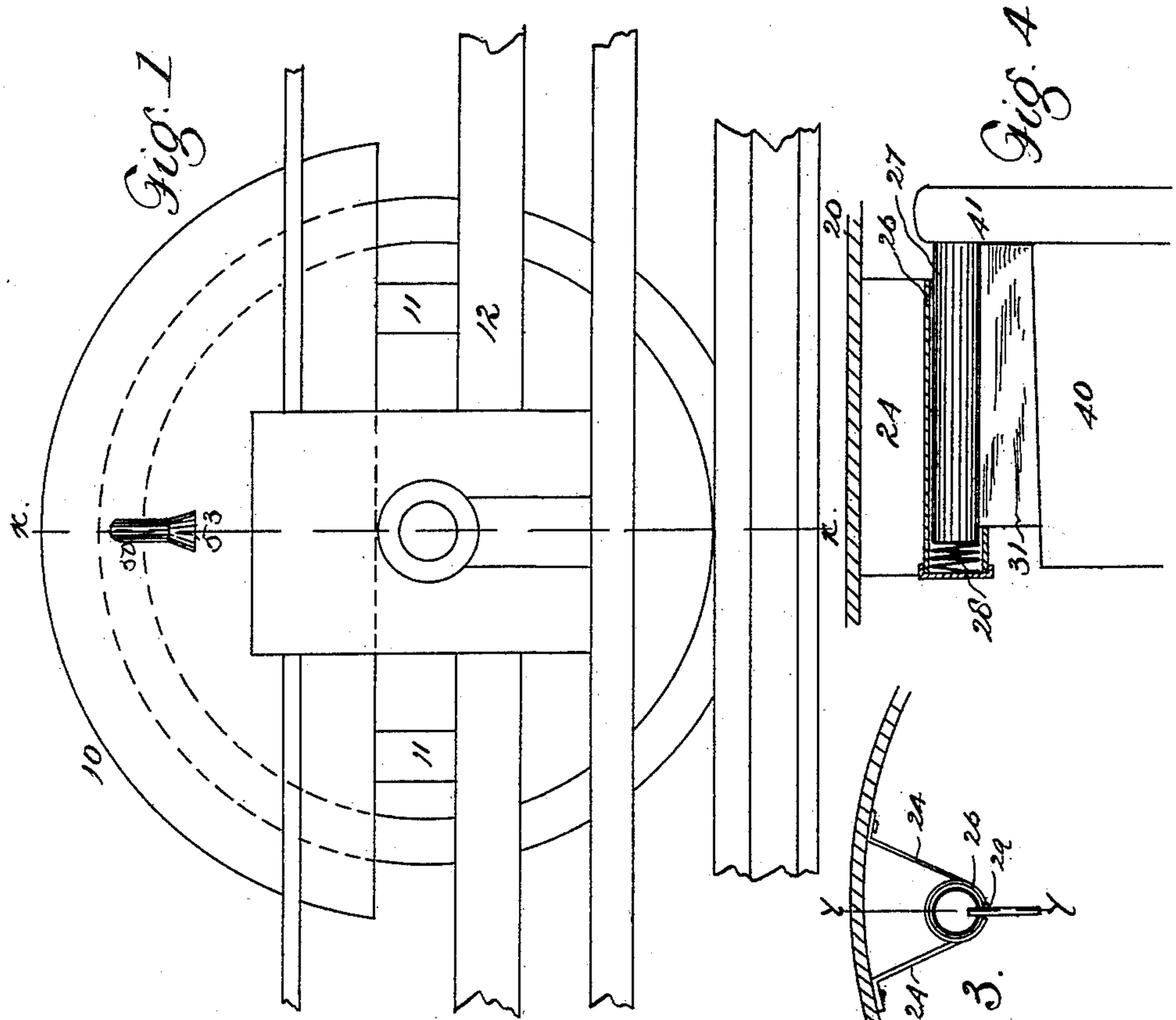
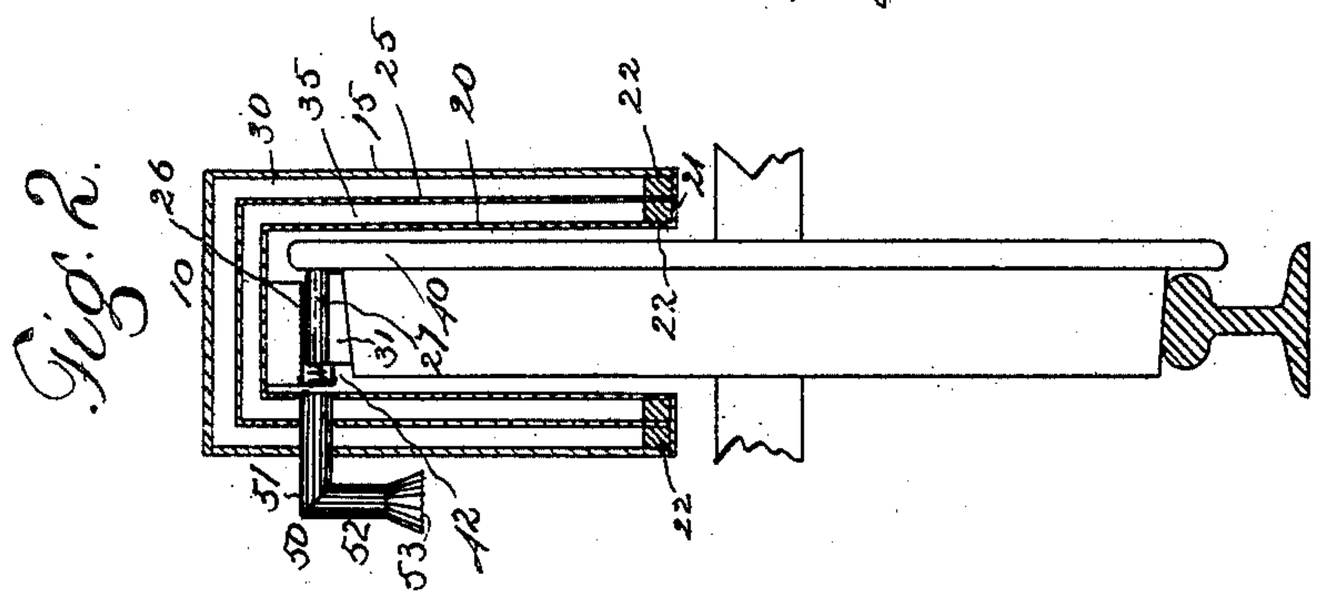


Fig. 4.

Fig. 3.

Fig. 2.



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(No Model.) 2 Sheets—Sheet 2.

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SOUND ARRESTER.

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Fig. 5

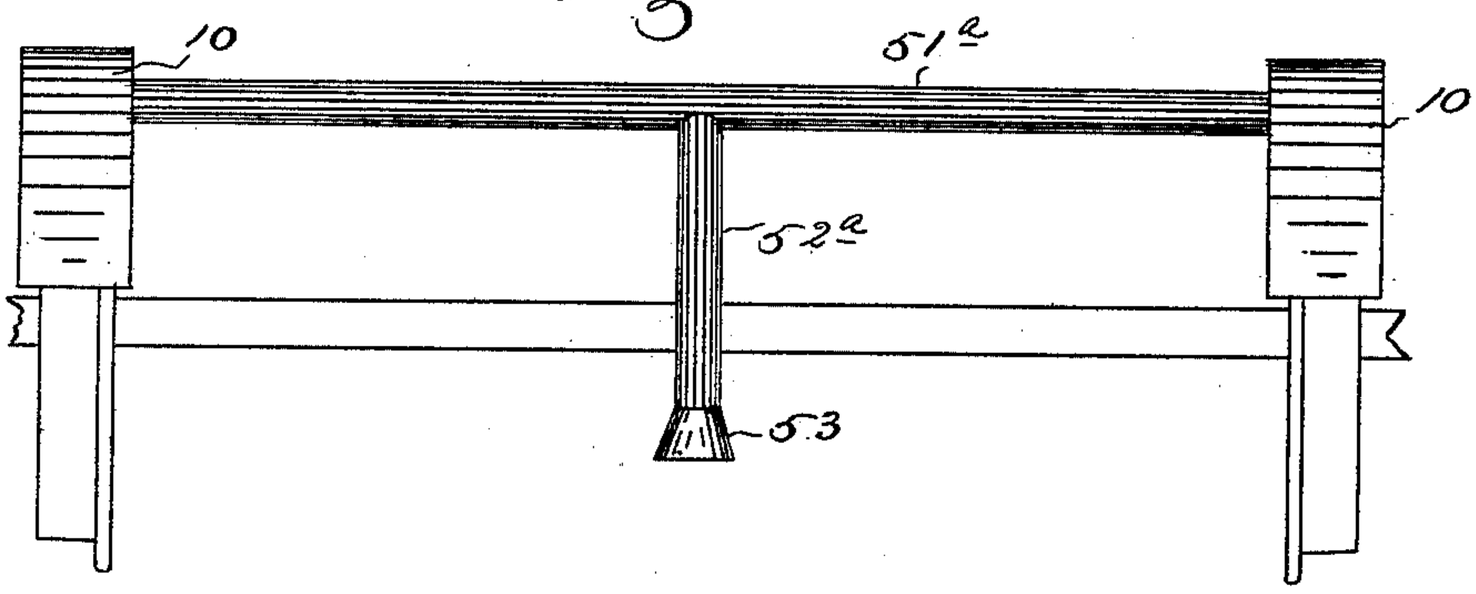

Fig. 6.

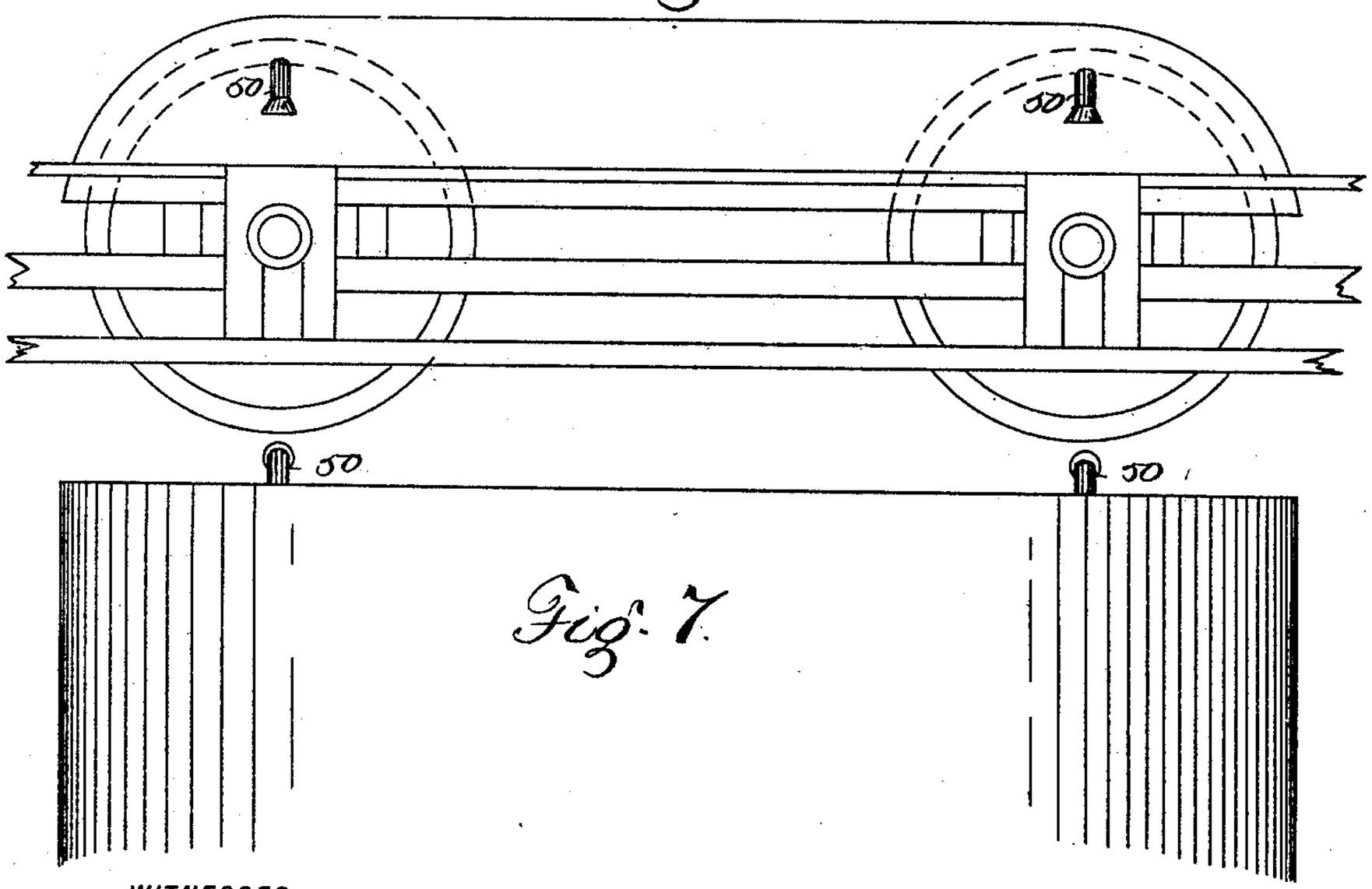

Fig. 7.

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UNITED STATES PATENT OFFICE.

ELIAS NASHOLD, OF DENVER, COLORADO, ASSIGNOR TO THE SOUND ARRESTER MANUFACTURING COMPANY, OF SAME PLACE.

SOUND-ARRESTER.

SPECIFICATION forming part of Letters Patent No. 462,771, dated November 10, 1891.

Application filed May 1, 1891. Serial No. 391,248. (No model.)

To all whom it may concern:

Be it known that I, ELIAS NASHOLD, a citizen of the United States of America, residing at Denver, in the county of Arapahoe and State of Colorado, have invented certain new and useful Improvements in Sound-Arresters; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the figures of reference marked thereon, which form a part of this specification.

My invention relates to a novel form and construction of sound-arrester for use in connection with vehicle-wheels or the gearing or moving parts of all classes of machinery. In this specification, however, the invention will be described more particularly with reference to its use in connection with car-wheels and car-motors.

The chief object of my invention is to approximately overcome or decrease to a great extent the noise resulting from the moving of trains upon railroads. The device is equally applicable to all classes of cars, whether used upon street or other railroads, and will be fully understood by reference to the accompanying drawings, in which is illustrated an embodiment of the invention.

In the drawings, Figure 1 is a side elevation of a car-wheel provided with my improved device. Fig. 2 is a vertical section taken on the line x x, Fig. 1. Figs. 3 and 4 illustrate details of construction. Fig. 5 is an end view of a modified form of the device in which the sound-tube extends transversely of the car and connects the attachments of two separate wheels. Fig. 6 is a side elevation of the device designed to cover the wheels and gearing upon electric-motor street-cars. Fig. 7 is a plan view of Fig. 6.

In the views, wherein similar reference-characters designate corresponding parts of the mechanism, let the numeral 10 designate, generally, a cap or cover for the wheel or other mechanism. This cap is of the same general contour as the part inclosed by it. Hence it is exteriorly convex and interiorly concave. It consists of an outer shell 15 and an inner shell 20 and an intermediate shell 25, the three parts being so connected that there shall be two separate and distinct dead-air compartments 30 and 35, the former lying between parts 15 and 25 and the latter between parts 20 and 25. The outer shell is preferably made of wood, the inner shell of metal, and the intermediate part of paper or paper fiber, which is a poor sound conductor or vibrating medium, though any suitable or desirable material may be used.

For the sake of convenience in connecting the different parts of cap 10 the inner metal part is provided with a flange 21, extending outward to part 15 and closing the compartments between the three parts, since the edges of the parts 15 and 25 are secured to this flange. For convenience in attaching the last-named parts to flange 21 said parts are each provided with a wooden strip 22, which the flange engages. This cap 10 is supported above the wheel 40 by blocks 11 11, resting upon the framing-beam 12.

Secured to the inner surface of part 10, and preferably to its highest portion by means of depending plates 24, is a tube 26, within which is located a short rod or bar 27. The tube is open at one end and closed at the other end. Between rod or bar 27 and the closed end of this tube is located a weak coil-spring 28, which forces the bar out of the opposite end of the tube and normally holds it in contact with the flange 41 of the wheel. Secured to part 27 and projecting downward therefrom through a slot 29, formed in tube 26, is a flexible or elastic lip 31, adapted to engage the periphery of the wheel. Leading from chamber 42, which receives the upper portion of the wheel, is a pipe 50, consisting of a horizontal portion 51 and a downwardly-extending vertical portion 52, terminating in a funnel-shaped mouth 53. This mechanism is designed to arrest the sound-vibrations which ordinarily pass upward to the bottom of the car, causing that peculiar rumbling noise so disagreeable to passengers.

When the car is in motion, there is a strong suction from chamber 42 through pipe 50, by which means the sound is carried outward and downward toward the ground and away from the car. The caps 10 for the two wheels of the same axle may be connected by a continuous sound-conduit 51^a, communicating with the downwardly-extending branch con-

ductor 52^a, terminating in the funnel-shaped mouth 53^a.

When used on electric-motor cars, the cap 10 may be constructed of sufficient magnitude for the four wheels of the car, together with the motor mechanism, as shown in Figs. 6 and 7. In this case a number of sound-conduits 50, extending outward from each side of the cap, may be used.

Having thus described my invention, what I claim is—

1. A sound-arrester for use in connection with the moving parts of machinery, as wheels, gearing, &c., said arrester consisting of a cap supported above and partially covering the parts, said cap having an outer, an inner, and an intermediate wall, these walls being so arranged that there shall be a dead-air chamber between the intermediate wall and each of the other walls, substantially as and for the purpose set forth.

2. A sound-arrester for vehicle-wheels, consisting of a cap supported above and partially covering the wheels and having an outer, an inner, and an intermediate wall, these walls being so arranged that there shall be a dead-air chamber between the intermediate wall and each of the other walls, the cap being shaped to correspond to the general contour of the part of the wheel which it covers, and a sound-conduit leading from the space inclosing the wheel, substantially as and for the purpose set forth.

3. A sound-arrester for vehicle-wheels, consisting of a triple-walled cap, each shaped to conform to the general contour of the portion of the wheel covered thereby, these walls being so arranged and connected that they occupy outer, inner, and intermediate positions with respect to each other, whereby a dead-air chamber is formed between the intermediate wall and each of the other walls, and a yielding block supported within said cap and adapted to engage the wheel, substantially as and for the purpose set forth.

4. A sound-arrester for car-wheels, consisting of a triple-walled cap shaped to conform to the general contour of the portion of the wheel inclosed and provided with two dead-air chambers, one lying between the central wall and each of the other walls, a sound-conduit leading from the space occupied by the wheel, and a yielding block supported within said space and provided with a lip, the free end of the block engaging the flange and the lip the periphery of the wheel, substantially as and for the purpose set forth.

5. A sound-arrester for vehicle-wheels, consisting of a plural-walled cap inclosing a dead-air space and forming an outer chamber adapted to cover a portion of the wheel, said cap being suitably supported upon the vehicle-frame, substantially as described.

6. A sound-arrester for vehicle-wheels, consisting of a plural-walled cap inclosing a dead-air space and forming an outer chamber adapted to cover a portion of the wheel, the walls of the chamber conforming to the general contour of the portion of the wheel inclosed, and a sound-conduit leading from the wheel-chamber, substantially as and for the purpose set forth.

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

ELIAS NASHOLD.

Witnesses:

WM. MCCONNELL,

G. J. ROLLANDET.