

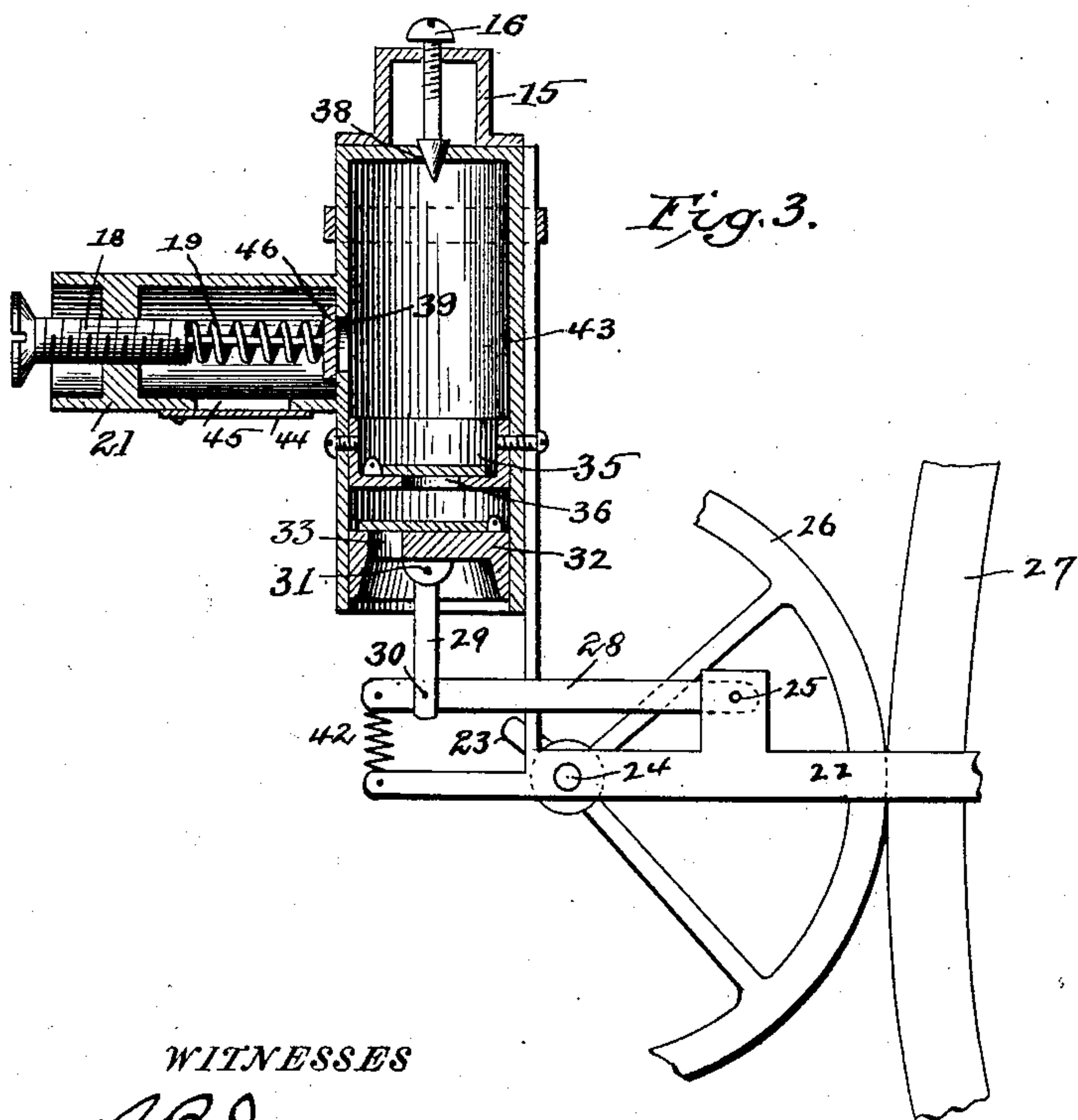
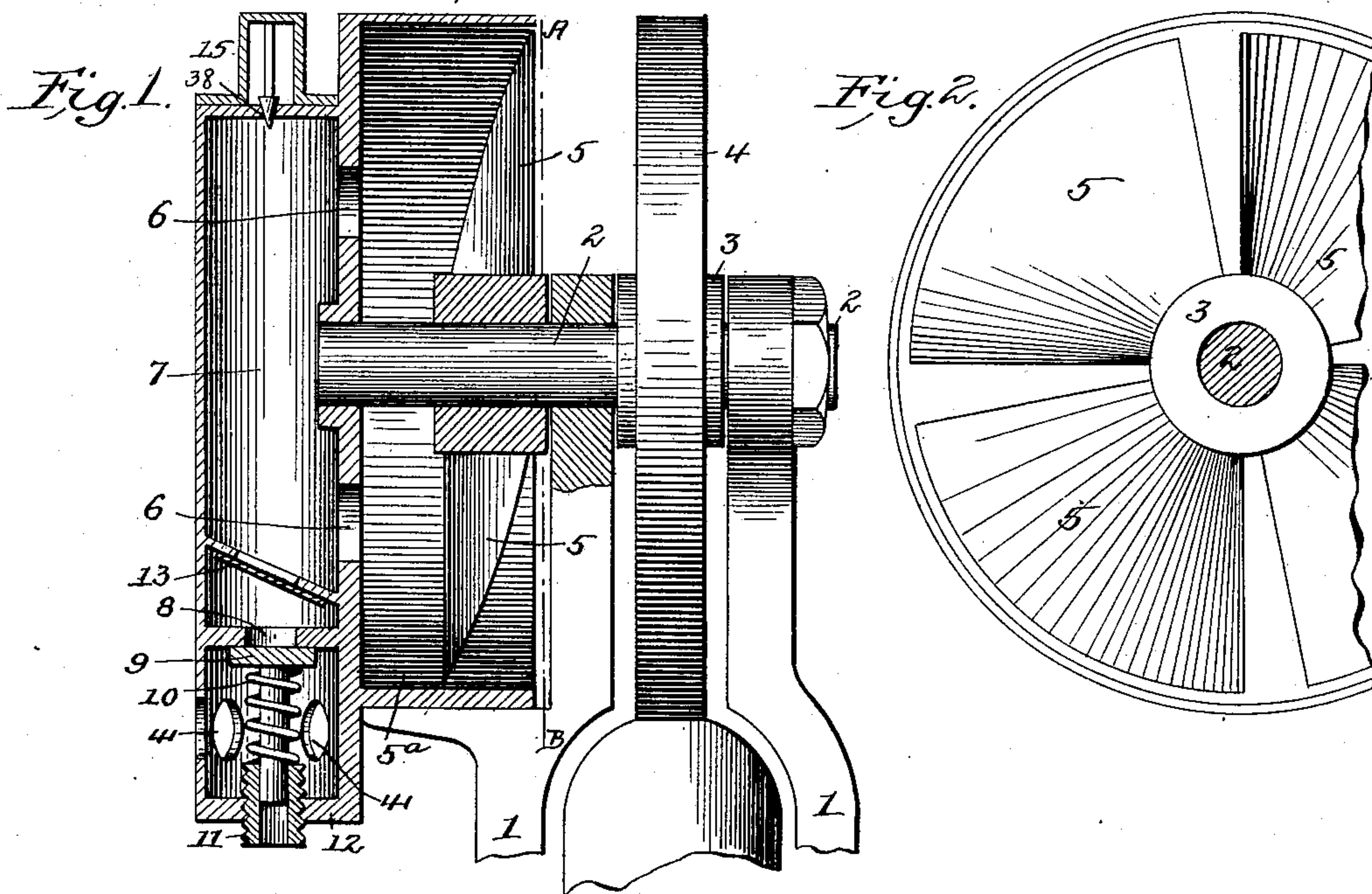
No. 608,511.

Patented Aug. 2, 1898.

G. DITTMAR.
SPEED SIGNAL FOR BICYCLES.

(Application filed Aug. 9, 1897.)

(No Model.)



WITNESSES

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SPEED-SIGNAL FOR BICYCLES.

SPECIFICATION forming part of Letters Patent No. 608,511, dated August 2, 1898.

Application filed August 9, 1897. Serial No. 647,553. (No model.)

To all whom it may concern:

Be it known that I, GUSTAVE DITTMAR, a citizen of the United States, residing at Washington, District of Columbia, have invented certain new and useful Improvements in Speed-Signals for Bicycles; and I do hereby 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.

The object of my invention is a device serving to emit a sound when in bicycle-riding a certain velocity is exceeded.

The device consists, generically, of means for producing by utilizing the revolving parts of the wheel a pressure of air within a certain confined space from which the compressed air escapes by raising an adjustable pressure-valve, and the escaping gust of air causes a reed or tongue to vibrate, whereby the sound is emitted, as will be hereinafter more fully described.

For better disclosing my invention I have illustrated the same in two practical forms in the drawings, the means for producing the air-pressure being in one case a piston and in the other a fan.

Referring to the accompanying drawings, Figure 1 is a sectional elevation of the device. Fig. 2 is a view of the device on the line A B of Fig. 1. Fig. 3 is a sectional elevation of another form of the device using the piston-compressor. Fig. 4 is a sectional elevation similar to Fig. 3, the spring-valve being dispensed with.

Referring now to the drawings, 1 1 are supporting-arms suitably connected with the bicycle-frame (not shown) and affording bearings for a shaft 2, having keyed upon it the hub 3 of a wheel 4, adapted to be rotated by the wheel of the bicycle, as shown. The shaft 2 carries a fan 5, fixed upon it and adapted to be inclosed in a casing 5^a.

Integral with the casing 5^a is a tube 7, imperforate except for the apertures 6, which lead into it from the casing or chamber 5^a, and an opening 8 in a partition in the tube, closed below by a valve 9, adapted to afford elastic pressure upon its seat by means of a spring 10, supported by an adjustable screw-plug 11, screwed into the bottom 12, whereby the pressure of the valve 9 upon its seat can

be varied at pleasure. The stem of the valve 9 is guided in a longitudinal bore through the plug 11. Suitably fixed above the opening 8 is a partition provided with a slot, and a tongue or reed 13 covers the same, adapted to vibrate when a current of air is passing through.

The operation of the device is as follows: The wheel 4 being caused to rotate by its contact with the tire of the bicycle, the shaft 2 and the fan 5 will rotate in the casing 5^a, whereby air is forced through the ports 6 into the chamber 7. If a wheelman rides at a speed surpassing the legal limit, the fan will produce a pressure inside the chamber 7 which will be sufficient to depress the valve 9 from its seat and air will flow through the port 8, and in passing the tongue 13 will cause the same to vibrate, thereby producing sound. The air then escapes into the atmosphere through the ports 41.

In turning the nut 11 in the plate 12 the tension of the spring 10 can easily be adjusted to answer the limit of allowed speed.

A further means of regulating the escape of air or the pressure developed at legal speed is the plug 38 in the top of the casing 7, which will be hereinafter more fully described.

Referring to the modifications shown in Figs. 3 and 4, 27 is a portion of the wheel of the bicycle, affording contact upon a wheel 26, mounted in a bearing 24 and carrying fixed upon its shaft an arm 23, adapted in rotating to raise a lever 28, having a link-pin at 30 and pivoted at 25 to a frame or bracket 22, suitably fixed to the bicycle-frame. The supporting-bracket 22 has an upstanding arm adapted to act as a support for the device, whose casing consists of a cylinder 43, closed above, except for a small opening, and open below and provided in its side with an opening 39, leading into a tube whose walls are preferably integral with those of cylinder 43. The walls of the tube are closed except for the aperture 39 and a lateral aperture or slot 45, the latter being covered by a tongue 44, adapted to vibrate on the passage of a current of air. The aperture 39 is closed by a valve 46, elastically held closed by a spiral spring 19, which bears from a screw 18, inserted in the head or partition 21 of the tube, whereby the pressure of the valve 46 upon its seat may be

regulated. The cylinder 43 has a fixed head 35, provided with an upwardly-swinging flap adapted to cover an opening 36 in the head 35. Suitably fastened upon the top of the cylinder 5 43 is a yoke 15, adapted to afford a bearing in its top for a screw 16, having a conical point adapted to enter into the conical opening 38, whereby the area of the escape-aperture 38 in the top of the cylinder can be regulated at 10 pleasure. The bracket 22 is provided at its extremity with a spring 42, adapted to pull down, when released, the lever 28, which is provided near its end with a pin 30, to which is pivoted a link 29, pivoted at its other end 15 to the piston 32 by the pin 31. The operation of this modified form is as follows: The rim of the bicycle-wheel in transferring motion upon the wheel 26 acts by means of the arm 23 upon the lever 28 more or less often, and 20 accordingly pumps more or less air into the cylinder 43. When the legal speed is exceeded, the piston 32 will move so quickly that the air passing through its opening 33 will produce in the cylinder 43 a pressure sufficient 25 to lift the valve 46 from its seat, and the air in rushing through will cause the reed 44 to vibrate and produce a sound. The pressure sufficient to lift the valve 46 from its seat will be obtained evidently more easily when the 30 screw-plug closes the conical opening 38 fully, and more revolutions of the wheel 36 will be necessary to produce said pressure when the plug is withdrawn, allowing part of the air to escape through the opening 38.

35 In the modified form, Fig. 4, the tube, with the valve 46, is omitted and the cylinder 43 is provided with a slot 45 in the side covered by the reed 44. All the other parts are the same as in Fig. 3. When the opening 38 al- 40 lows much of the air to escape, a comparatively high speed of the bicycle will be necessary to pump sufficient air into the cylinder 43 in order to produce a pressure capable of vibrating the reed 44, and if the area of the 45 opening 38 is reduced in size by its plug the reed 44 will evidently vibrate more rapidly or at a small speed of the bicycle. Thus it will be seen that the pressure within the cylinder 43 can be regulated at will by more or 50 less screwing upon the screw-plug 11.

Having described my invention, what I claim as new, and desire to secure by Letters Patent, is—

55 1. A signal attachment for vehicles, comprising means for compressing air, a pressure-chamber, a signal and means for regulating the pressure in said chamber and sounding the signal at a predetermined speed of the vehicle.

60 2. A signal attachment for vehicles, comprising means for compressing air, a pressure-chamber, a signal and means for regulating the pressure in said chamber proportionate to a predetermined speed of the vehicle and 65 sounding the signal at such predetermined speed.

3. A speed-signal for vehicles comprising

means for transferring motion from revolving vehicle parts upon an air-compressor, said air-compressor working in a closed chamber, and 70 means for regulating the pressure in said chamber in combination with a signal adapted to sound at a given pressure, *i. e.* at a predetermined speed.

4. A speed-signal for vehicles, comprising 75 means for transferring motion from revolving vehicle parts upon an air-compressor, said air-compressor working in a closed chamber, said chamber being provided with an adjustable outlet or leak to regulate the pressure in com- 80 bination with a signal adapted to sound at a given pressure, *i. e.* at a predetermined speed, substantially as described.

5. A speed-signal for vehicles comprising 85 means for transferring motion from revolving vehicle parts upon an air-compressor, said air-compressor working in a closed chamber, said chamber having an adjustable outlet or leak and an adjustable valve to allow air to escape when the pressure surpasses a given 90 limit, in combination with a signal, adapted to sound in a current of air, located in the path of the escaping air substantially as described.

6. In speed-signals for bicycles and the like, 95 supporting-arms, a chamber or casing mounted on one of said arms, said support adapted to afford suitable bearings for a shaft passing through the casing, a fan fixed to the shaft in said casing, a wheel keyed to said 100 shaft and adapted to contact with the bicycle-wheel, said chamber or casing having an adjustable outlet or leak and an adjustable valve to permit the escape of surplus air, when the pressure produced by the rotation of the 105 fan exceeds a certain point, in combination with a reed located in the path of the escaping air, substantially as described.

7. In speed-signals for bicycles and the like, 110 a support, an upright on said support, a lever pivoted at one end to said upright, a wheel mounted on a pin in said support and adapted to contact with a revoluble part of the bicycle, a cylinder secured to said support, a piston working up and down in said cylinder, a 115 link pivoted at one end to the piston and at the other end to said lever, said lever being actuated by an arm or cam fixed to the hub of the wheel, and being held in tension by a spring at the end of the support, a yoke on 120 the farther end of said cylinder and a screw-plug for regulating the pressure of air in said cylinder, said cylinder having a fixed head provided with an upwardly-swinging flap adapted to cover an opening in said head, a 125 tube integral with the wall of the cylinder, an aperture opening into said tube, a valve adjustable in said tube and normally closing said aperture, said valve adapted to permit the escape of surplus air when the pressure 130 produced by the motion of the piston exceeds a certain point, said air escaping through a slot in the wall of the tube or valve-casing, in combination with a reed adapted to cover

said slot and to emit a sound when vibrated by the escaping air, substantially as described.

8. A speed-signal for vehicles comprising a piston deriving motion from a vehicle, and
5 a cylinder in which said piston reciprocates, said cylinder being provided with an opening or outlet adjustable in size by a plug, and with an opening covered by a reed adapted

to sound in the current of escaping air, substantially as described.

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

GUSTAVE DITTMAR.

Witnesses:

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