

W. J. SPENCER.
POWER AIR PUMP FOR AUTOMOBILES.
APPLICATION FILED JULY 24, 1908.

924,115.

Patented June 8, 1909.

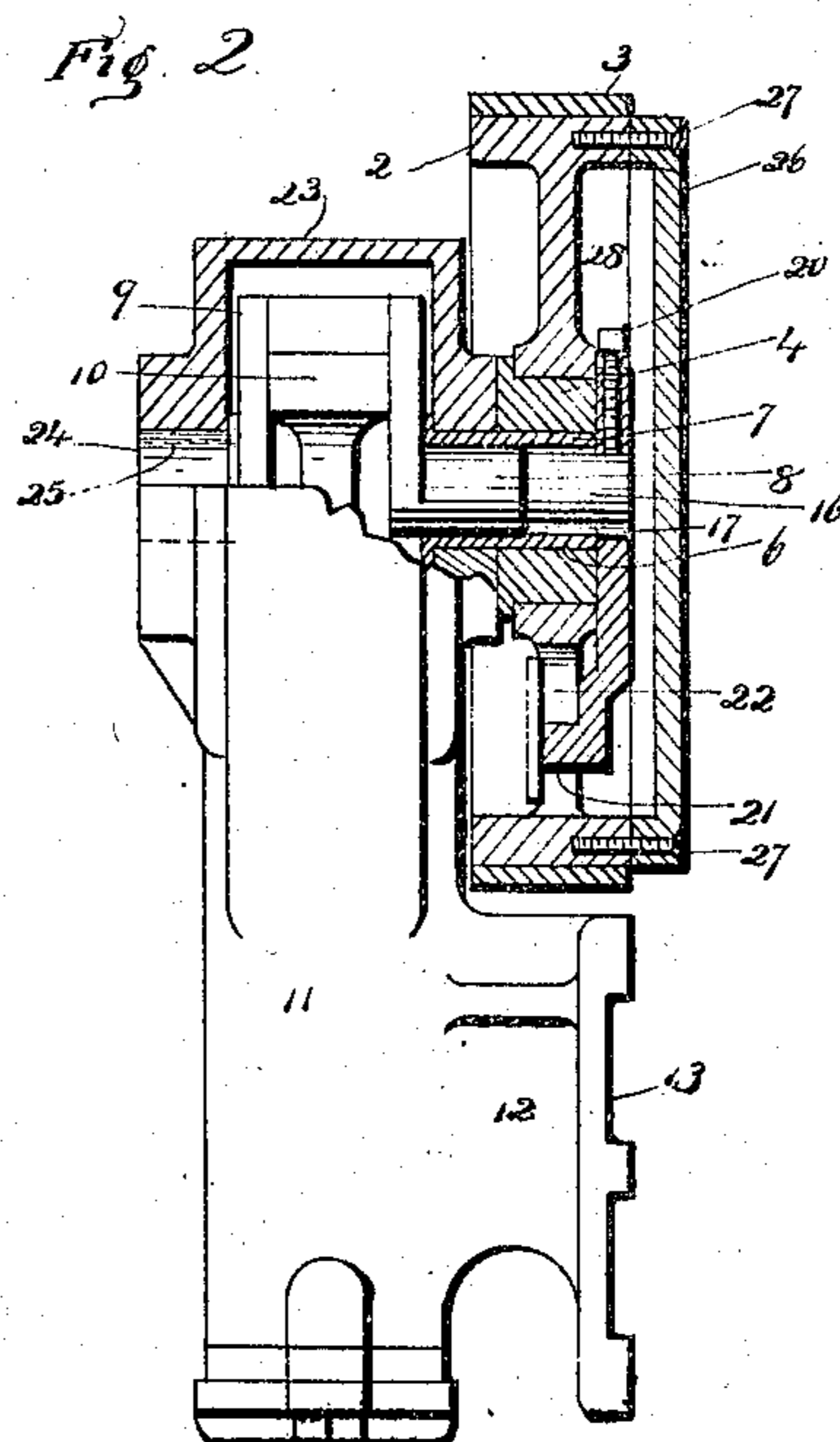
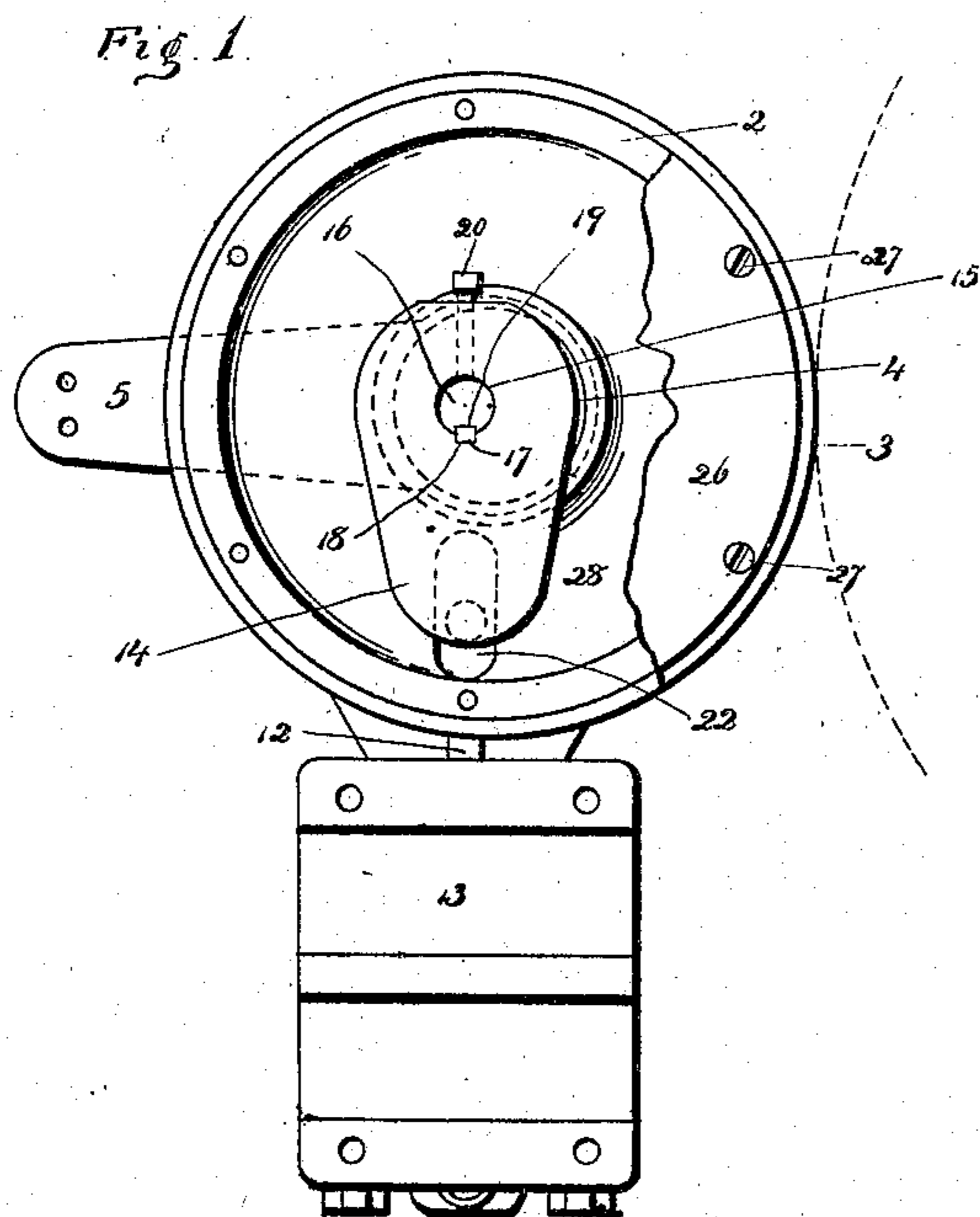


Fig. 6.

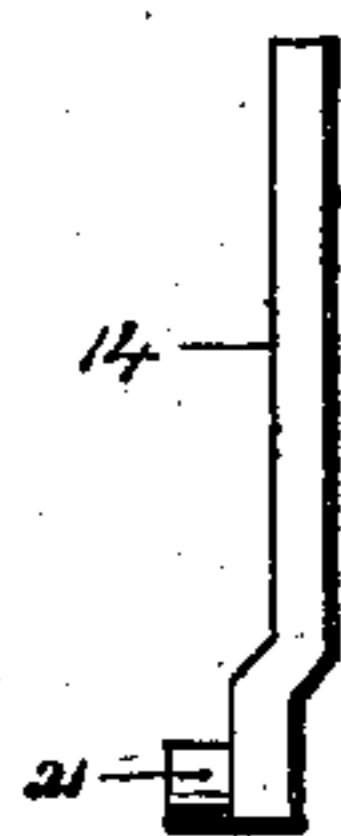


Fig. 5.

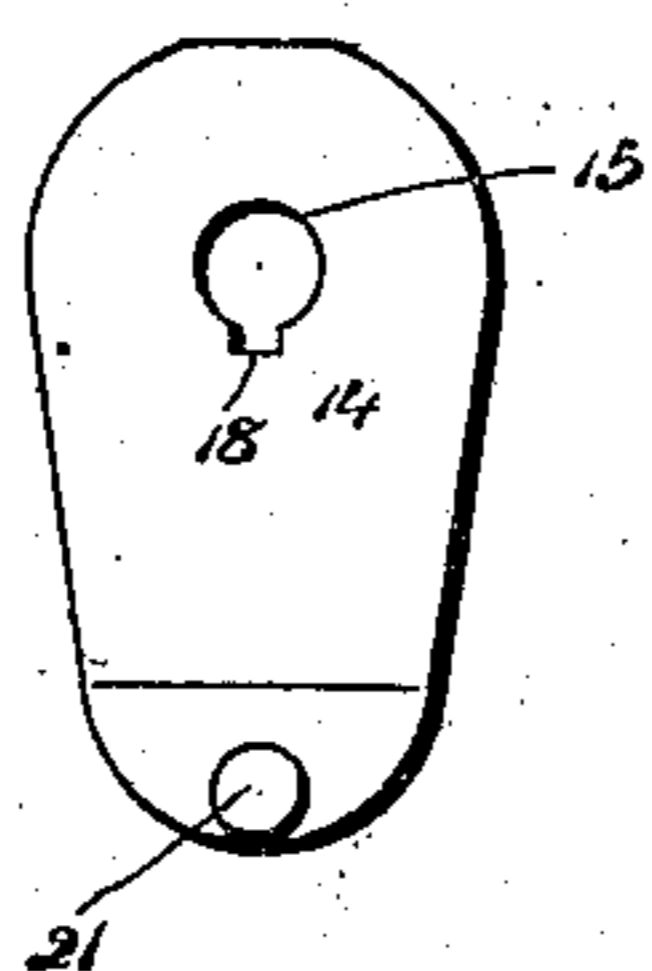


Fig. 3.

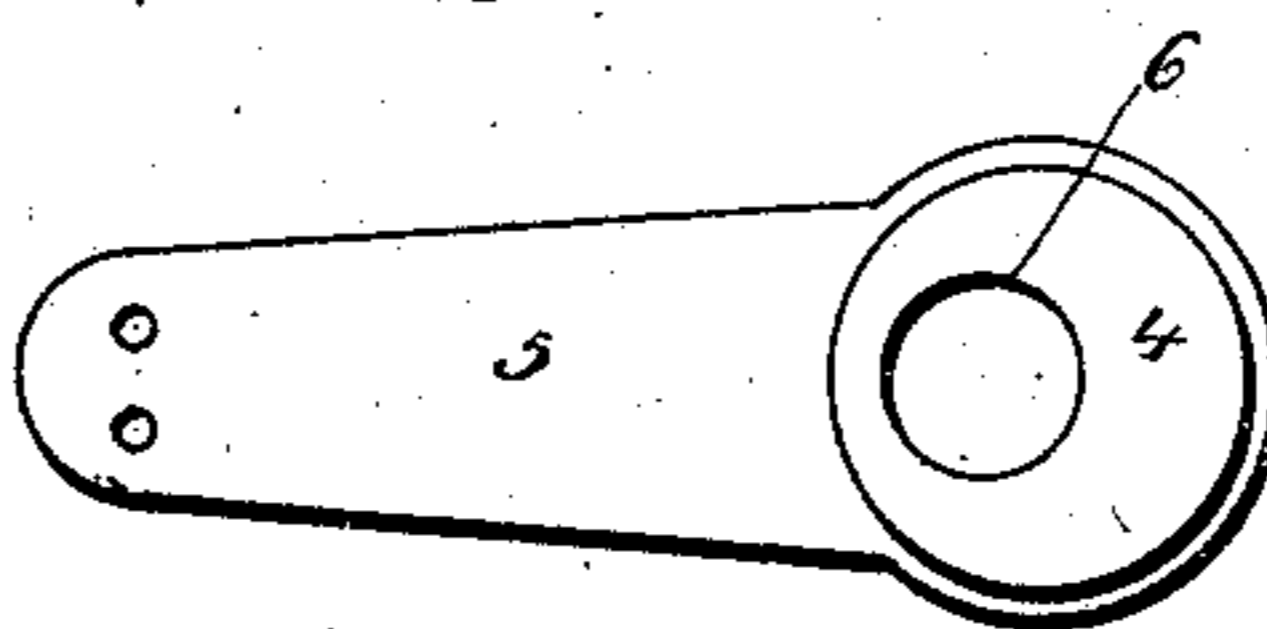
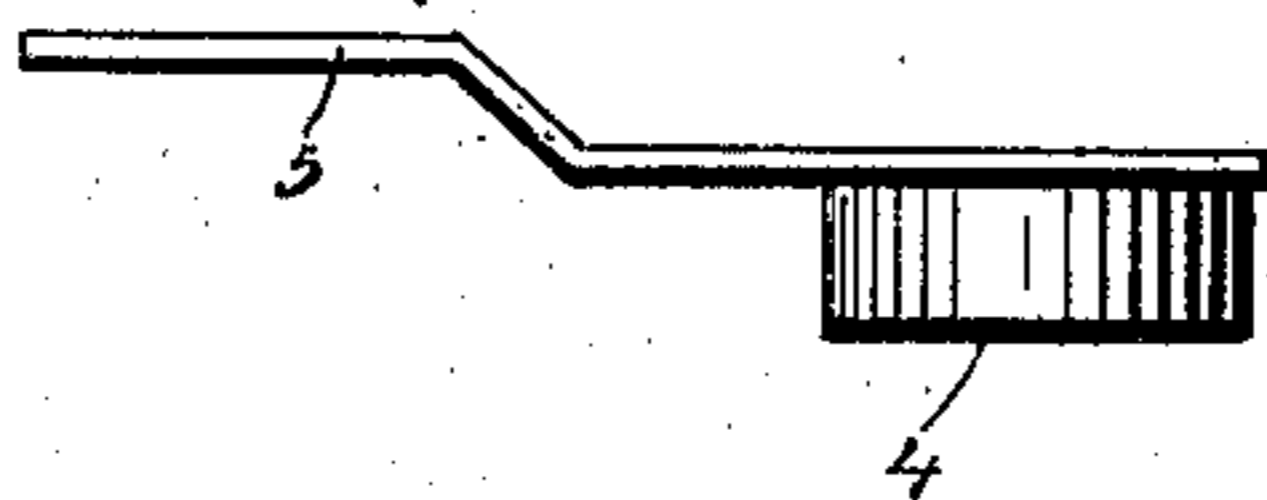


Fig. 4.



Witnesses
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UNITED STATES PATENT OFFICE.

WILLARD J. SPENCER, OF WATERBURY, CONNECTICUT.

POWER AIR-PUMP FOR AUTOMOBILES.

No. 924,115.

Specification of Letters Patent.

Patented June 8, 1909.

Application filed July 24, 1908. Serial No. 445,262.

To all whom it may concern:

Be it known that I, WILLARD J. SPENCER, a citizen of the United States, residing at Waterbury, in the county of New Haven and State of Connecticut, have invented a new and useful Improvement in Power Air-Pumps for Automobiles; and I do hereby declare the following, when taken in connection with the accompanying drawings, and the letters of reference marked thereon, to be a full, clear, and exact description of the same, and which said drawings constitute part of this specification, and represent, in—

Figure 1 a view in front elevation of a power air-pump constructed in accordance with my invention. Fig. 2 a view thereof partly in vertical section and partly in side elevation. Fig. 3 a detached view of the eccentric with its operating arm. Fig. 4 an edge view thereof. Fig. 5 a detached plan view of the dog. Fig. 6 an edge view thereof.

My invention relates to an improvement in power air-pumps for installation upon automobiles for furnishing compressed air for whatever purpose it may be used, the object being to produce a simple, compact and convenient pump of the type shown in my pending application filed November 25th, 1907, Serial No. 403,702, in so far as the base-plate and driven wheel are located in the same plane for enabling the pump to be installed upon the frame of an automobile without the use of a bracket or other intermediate part.

With these ends in view my invention consists in a power air-pump having certain details of construction and combinations of parts as will be hereinafter described and pointed out in the claims.

In carrying out my invention as herein shown I employ a driven-wheel 2 furnished with a band 3 of leather or other suitable material and mounted upon an eccentric 4 having an operating-arm 5 long enough to extend beyond the periphery of the wheel 2. Said eccentric 4 is formed with an eccentric opening 6 receiving a bushing 7 which in turn receives the trunnion 8 of a crank shaft 9 with which the rod 10 of the piston is connected, the said piston not being shown but understood to be located in the cylinder 11 which is rigidly connected by a web 12 with a base-plate 13 located in the plane of the driven wheel 2 as clearly shown. In other words, the eccentric is mounted upon the projecting end of a bushing which receives one end of the crank-shaft, the said bushing

being mounted in a frame comprising a rigidly connected cylinder and base-plate. By preference the said cylinder and base-plate are cast in one piece. By locating the driven-wheel 2 and base-plate 13 in the same plane, the pump may be applied directly to the frame of an automobile; that is to say, without the use of a bracket or any intermediate part for the connection. The driven-wheel 2 turns upon the eccentric which forms a hub-like bearing for it, the eccentric being normally stationary. To transmit the rotation of the said wheel 2 to the trunnion 8 for the rotation of the crank-shaft 9 and the reciprocation of the piston-rod 10, I employ a coupling in the form of a dog 14 having an opening 15 adapted to fit the reduced outer end 16 of the trunnion 8, the dog being keyed to the trunnion by means of a key 17 entering slots 18 and 19, the former leading out of the hole 15 in the dog 14 and the latter being formed in the outer end 16 of the trunnion 8. But of course some other mode of non-rotatably securing the dog to the crank-shaft might be employed. For this purpose I also employ a set screw 20 radially mounted in the inner end of the dog for engagement with the end 16 of the trunnion 8. The outer end of the dog is formed with a heavy projection 21 entering a radial slot 22 in the driven-wheel and traveling back and forth in the slot according as the wheel is changed in position by the shifting of its eccentric 4. Under this construction, therefore, the wheel remains coupled with the crank-shaft though free to be moved toward or away from the center thereof. The bushing 7 before mentioned bears in the cylinder 11 and in the cap 23 thereof, the said cylinder and cap also affording bearing for the bushing 24 of the other trunnion 25 of the shaft 9, the said trunnion 25 corresponding to the trunnion 8 barring that it has no extension 16. A cap 26 applied to the wheel 2 by screws 27 closes the recess 28 formed in the wheel for the reception of the coupling dog 14.

It will be understood that by operating the arm 5 of the eccentric 4 the driven wheel 2 may be moved radially for a distance dependent upon the throw of the eccentric, this distance being sufficient to move the wheel into or out of engagement with the fly wheel of the motor of an automobile.

It will be apparent that the eccentric may be set, in the installation of the pump upon

an automobile, so as to effect the radial movement of the driven wheel in any desired direction, this being dependent of course, upon the location of the fly-wheel of the motor with respect to the driven-wheel of the eccentric. All that is required to use the pump is to swing the arm 5 so as to cause the eccentric 4 to move the driven-wheel into engagement with the fly-wheel of the motor. A corresponding reverse movement of the arm 5 breaks the connection between the driven-wheel and the fly-wheel of the motor and, so to speak, cuts the air-pump out of action. The cylinder 11, web 12 and base-plate 13 are cast integral with each other and form the frame of the pump.

I claim:—

1. In a power air-pump for installation upon automobiles, the combination with a frame comprising a cylinder and a base-plate which are rigid with each other, of a crank-shaft mounted in the said frame, a normally stationary eccentric mounted upon the crank-shaft which revolves within the eccentric, a driven wheel mounted upon the eccentric upon which it turns as upon a hub, means for connecting the driven wheel with the crank-shaft for the transmission of the rotary movement of the former to the latter, and means for moving the eccentric, whereby the driven wheel is moved radially with respect to the crank-shaft.

2. In a power air-pump for installation upon automobiles, the combination with a frame comprising a cylinder and a base-plate which are rigid with each other, of a crank-shaft mounted in the said frame, a normally stationary eccentric mounted upon the crank-shaft which rotates within it, a driven wheel, and means for connecting the

said wheel with the said crank-shaft for the transmission of the rotation of the former to the latter.

3. In a power air-pump for installation upon automobiles, the combination with a frame comprising a cylinder and a base-plate which are rigid with each other, of a crank-shaft journaled in the said frame, a normally stationary eccentric mounted upon the crank-shaft, a driven wheel mounted upon the eccentric upon which it turns as upon a hub, a dog for coupling the driven wheel and crank-shaft so as to permit the wheel to be moved radially with respect to the said shaft, whereby by moving the eccentric the driven wheel may be moved radially and still remain coupled with the crank shaft.

4. In a power air-pump for installation upon automobiles, the combination with a frame comprising a cylinder and a base-plate which are rigid with each other, of a bushing mounted in the said frame and projecting therefrom, a crank-shaft having one end journaled in the said bushing, a normally stationary eccentric mounted upon the projecting end of the said bushing, an arm for operating the eccentric, a driven-wheel turning upon the eccentric, and means for transmitting the rotation of the wheel to the crank-shaft, whereby the turning of the eccentric by its arm shifts the position of the wheel with respect to the crank-shaft.

In testimony whereof, I have signed this specification in the presence of two subscribing witnesses.

WILLARD J. SPENCER.

Witnesses:

GEORGE D. SEYMOUR,
CLARA L. WEED.