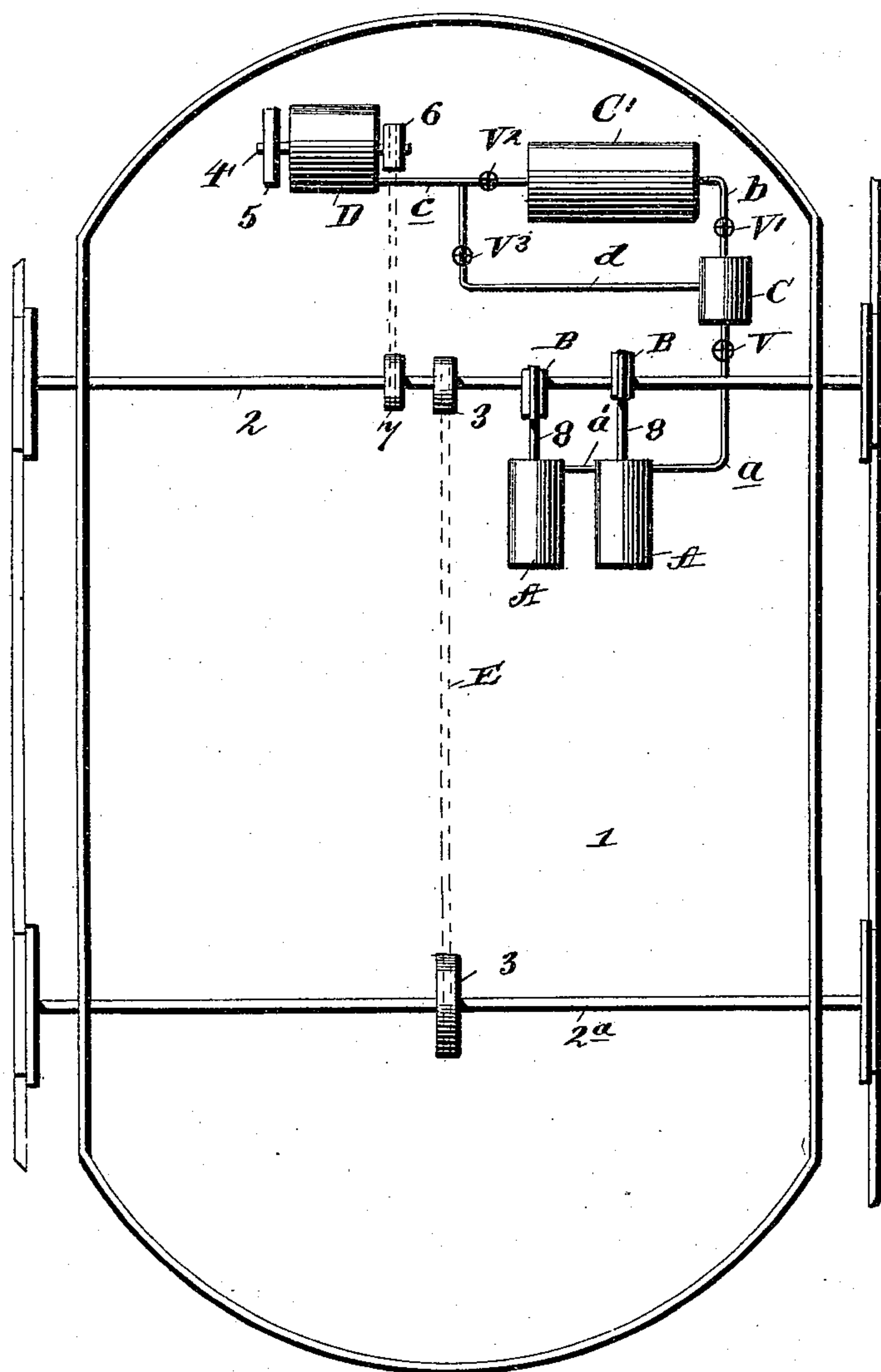


(No Model.)

H. S. BODLEY.  
CAR STARTER AND BRAKE.

No. 488,865.

Patented Dec. 27, 1892.



Witnesses:

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# UNITED STATES PATENT OFFICE

HOMER S. BODLEY, OF BATON ROUGE, LOUISIANA.

## CAR STARTER AND BRAKE.

SPECIFICATION forming part of Letters Patent No. 488,865, dated December 27, 1892.

Application filed March 26, 1892. Serial No. 426,566. (No model.)

*To all whom it may concern:*

Be it known that I, HOMER SMITH BODLEY, a citizen of the United States, residing at Baton Rouge, in the parish of East Baton Rouge and State of Louisiana, have invented certain new and useful Improvements in Processes for Propelling and Stopping Street or other Railway Cars; 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.

My invention has relation to improvements in apparatus for starting and automatically braking cars and other vehicles, and it has for its general object to provide an apparatus of a cheap, simple, and durable construction, capable of being connected to the bottom of a car and adapted to utilize the rotary motion of the car axles to store a quantity of compressed air and use said air to start the car; the parts being so arranged and connected with the car axles that the storing of the air will serve to check the rotation of the car axles and will consequently automatically brake the car.

With the foregoing ends in view, the novelty of the invention will be fully understood from the following description and claims when taken in conjunction with the accompanying drawing in which:—The figure is an inverted plan view of a car equipped with my improvements.

Referring by numerals and letters of designation to the said drawing:—1, indicates the body of a car which may be propelled by any suitable motive power, and 2, 2<sup>a</sup>, respectively indicate the front and rear rotary axles of the same. These axles 2, 2<sup>a</sup>, are respectively provided with pulleys 3, around which takes a belt E, which serves to transmit motion from one to the other as will be presently described.

D, indicates a rotary engine, which is designed to be set in motion by compressed air, and is provided with a drive shaft 4, carrying a fly wheel 5, and a band pulley 6. This band pulley 6, is connected by a band or belt E', with a pulley 7, upon the forward axle 2, to which motion is imparted from the engine.

Situated adjacent to the axle 2, are two

(more or less) air pumps A, which may be of any approved construction and have their piston rods 8, provided at their free ends with eccentric straps to engage the eccentrics B, on the said axle 2, whereby it will be seen that while the axle is rotating the pistons will be reciprocated and air will be pumped into the primary reservoir C, which is connected with the pumps A, by the pipes a, a', as shown; the said pipe a, being provided with a regulating valve V, through the medium of which the supply of air to the reservoir C, may be controlled.

C', indicates the comparatively large secondary or auxiliary reservoir which is connected with the reservoir C, by a pipe b, controlled by a valve V'. This secondary reservoir C', is connected to the engine D, by a pipe c, having the valve V<sup>2</sup>, and leading from said pipe c, at a point between the valve V<sup>2</sup>, and the engine, to the primary reservoir C, is a pipe d, having a controlling valve V<sup>3</sup>. By this construction it will be readily perceived that by closing the valves V', and W<sup>2</sup>, and opening the valve V<sup>3</sup>, air may be conducted directly from the primary reservoir C, to the engine, and by closing the valve V<sup>3</sup>, and opening the valves V', V<sup>2</sup>, air may be led from the secondary reservoir C', to the engine.

In the practice of my invention I design employing the secondary reservoir C', only when the car makes long runs without stopping, since the primary reservoir is of sufficient capacity to store the air when frequent stops and starts are made.

In operation it will be seen that while a car is in motion the pumps A, are constantly pumping air into the reservoir C, so that when a car is stopped the said reservoir is charged. When it is desired to start the car (the reservoir C', being shut off by closing the valves V', V<sup>2</sup>), the valve V<sup>3</sup>, is opened by the driver when air will be fed to the engine D, and the same will be set in motion and will transmit motion to the axles 2, 2<sup>a</sup>. It will be readily perceived that in going down a steep grade, the pressure of air in the reservoir will render the working of the pumps stiff and hard and will consequently serve automatically to brake the car.

Although I have specifically described the



construction and relative arrangement of the several elements of my improved apparatus, I do not desire to be confined to the same as such changes or modifications may be made  
5 as fairly fall within the scope of my invention.

Having described my invention what I claim is:—

1. In a car starting and braking apparatus,  
10 substantially as described, the combination of the rotary axles, having pulley wheels fixed thereon, a belt connecting said pulley wheels, the eccentrics B, fixed on one of the axles, the air pumps having pistons provided  
15 with straps to engage said eccentrics, the reservoir C, the pipes *a*, *a'*, connecting said reservoir and the air pumps, the valve V, the engine D, a valve controlled pipe leading from the reservoir to the engine, and a suitable means for transmitting motion from the  
20 engine to one of the axles, substantially as specified.

2. In a car starting and braking apparatus, substantially as described, the combination

with the rotary axles having pulley wheels 25 fixed thereon, a belt connecting said pulley wheels, the eccentrics B, fixed on one of the axles, the air pumps having pistons provided with straps to engage said eccentrics, the reservoir C, the pipes *a*, *a'*, connecting said reservoir 30 and the air pumps, the valve V, the engine D, a valve controlled pipe *d*, leading from the reservoir C, to the engine, and a suitable means for transmitting motion from the engine to one of the axles; of the auxiliary or secondary reservoir C', the valve controlled pipe *b*, connecting the reservoirs C, 35 C', the pipe *c*, connecting the reservoir C', and the engine and connecting with the pipe *d*, and the valve V<sup>2</sup>, arranged in the pipe *c*, between the pipe *d*, and the reservoir C', all substantially as and for the purpose set forth. 40

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

HOMER S. BODLEY.

Witnesses:

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PERCY D. PARKS.