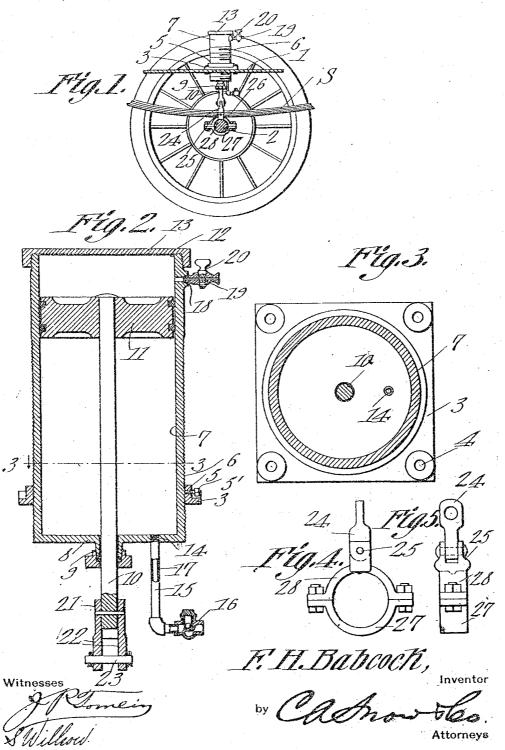
F. H. BABCOCK. SHOCK ABSORBER.

APPLICATION FILED MAR. 21, 1913.

1,120,885.

Patented Dec. 15, 1914.



UNIONO STATES PATERT OFFICE.

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such connections must be tigid or preparity secured. It has also been found desirable to 30 so place the prenumitic eviluder of the shock absorber as to be out of view, the absorber in the present and noing preferably at

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cont the consection of the scheme thereto. In attaching the consection of the scheme thereto. In attaching the continue the deep of the car is the continue the c

there led partion producing no compressive ee lott upon the cylinder that would hinder 55 we act was the movement of the pistop. In this makes the extrater may be properly somethed to the flow of the car and us bethe control for the space below the seat so the control of the space below the seat so the control of the pictus may be projected to the control for some the form and property connected to the control of the control the activation care requiring only one cyling while asher ear a sadish to

it ble the foregoing and other objects in we which will oppose as the description 65 proceeds, the nevertien resides in the combityrop and envangement of parts and in the the forested too bereinafter described and observed, it being understood that on area in the profite embedies at of the 10 but on her our this closed out he made with-De stope of wher is claimed without deis there the spirit of the invention. the marings Physics a is a view in

or otion of the present device as applied to 75 was at contract sectional view through the the proofs wing the scattery decided in the of Fig. 2. Eye. 4 and 5 are detail news of 50 the arte enveying member.

Referring to the drawings, the numeral 1 designates the body support of the motor car is that portion of the chassis which is specify above the axle 2, the carrying mem- 85 ber or plate 3 of the present shock absorber being rigidly approach to the support I stream an appetitive (not shows), which is hat is the support for the projection of the in the support for the projection of the lower end of the sylinder I distributiongh, so the plate is being provided with the upstracting interactly series threshold rim is the the spring of the Shreaked person 6 of the city is a crimin to the city in a control by the rise I and specifies a mome to present the city is a control to the rise I and specifies a mome to present the city is a control to the city in the city is a control to the city in the city is a control to the city in the city in the city is a control to the city in the city ent the volumen of the evilador ? after the there has been properly installed and in the

desired program, as illustrated in Fig. 1. The apprehence the secon threads upon the The face of the cylinder fit is apparent 100 in the complete uplates and be collected and from the case 2 vectoring to the floor The second of the second but the second but the of the responsible superior as is produced as war and a larger character chains is pendily

connected to any make of motor car without the necessity of lengthening or shortening the connection of the plungers, as will pres-

ently appear.

The lower end 8 of the cylinder 7 is formed integral and is provided with the concentrically disposed stuffing box 9 for the reception of the piston rod 10, said piston rod 10 being rigidly onnected to the piston 10 11 within the cylinder and said rod being insertible through the open end 12 of the cylinder, which is sealed by the removable cap 13, in such a manner that the cap is air and liquid tight and prevents leakage at 15 this point of the cylinder 7.

A threaded port It is formed in the scaled head 8 of the casing 7 and has led therefrom, the pipe 15, which has connected at its end. the check valve casing 16, the valve therein 20 being so disposed as to permit of the inflow of air, due to the upward movement of the piston 11, but which will prevent the outflow when the piston 11 is moved downwardly. In order to provide a means for slightly 25 venting the cylinder 7 due to the downward movement of the piston 11 and, as has been

found in practice, relieve the too sudden jar due to the separation of the floor I from the axle 2 during the passage of the motor car 30 over a hillock or ridge in the road, a vent 17 is formed in the pipe 15 intermediate the port 14 and the check valve 16. By this means a slight bleeding of the air within the

cylinder 7 below the piston 11 is provided.
35 This vent opening 17 varies in size according to the size of the car and the capacity thereof, a two passenger car necessitating the employment of an exceedingly small

vent while a seven passenger car or truck 40 necessitates the employment of a proportionately enlarged vent or bleeding port. The port 18 formed in the upper end of

the cylinder 7 has disposed therein the cock valve casing 19, having a manually con 45 trolled cock 20, the same being readily accessible, that is where the device is employed as shown in Fig. 1 below the rear seat of the motor car, so that the valve 20 may be manipulated according to the load of 50 the vehicle to permit of the necessary bleeding of the cylinder upon the upstroke of the piston 11, or if so desired a check valve and bleeding conduit as 15 may be employed, but it has been found in practice that a valve as 55 shown in Fig. 2 will efficiently operate, as the upward action of the piston 11 does not have the same use as the downward movement, as the spring S of the motor car will

in most cases carry the load and relieve the 60 shock, under varying load conditions and when the floor or chassis 1 is moving toward the springs.

Mounted upon the lower end of the piston rod 10 is a sleeve 21, the same being con-65 nected thereto by means of the removable

pin 21, said sleeve being provided with the apertured lugs 22 for the reception of the pin 23 which is pivotally connected to the link 24, said link 24 being pivoted to the spaced lugs 25 of the axle engaging member 70 26, so as to have a movement at right angles to the connection at 23, it being necessary to produce a flexing member at this point so that the clamping members 26 and 27 may be positioned as shown in Fig. 1 or so that the 75 lugs 25 are at right angles thereto, according to the make of the car upon which the present device is applied.

The member 26 of the clamping device is provided with a spur 28, which is adapted 80 to be clamped in to the axle 2 and thus hold the clamping member against rotation relatively to the axle 2 and thus maintain the link 21 in proper alined relation to the piston 10. In the position as shown in Fig. 1, 85 it is preferred that the device be so adjusted that the plunger 11 will be disposed centrally of the cylinder 7, that is when the

spring S is in normal condition.

It will thus be seen that by threading the 90 exterior of the cylinder, that the retaining or attaching plate 3 may be readily rotated thereon and be held against longitudinal movement by the coacting threads upon the cylinder and within the aperture of the 95 plate, and that such plate may be locked against rotary movement after properly adjusted by means of the set screw 5'.

What is claimed is:

1. The combination with two members 100 movable to and from each other, of a pneumatic shock absorber, including a cylinder having a closed end, a cap for the other end a piston mounted in the cylinder, a rod connected to the piston, means for attaching 105 the red to one of the movable members, the exterior of the cylinder beginning at its closed end being provided with screw threads, and a plate for attaching the cylinder to the other movable member having an 110 interiorly serow threaded aperture, whereby the aperture of the plate fits over the closed end of the cylinder and by rotation causes the screw threads of the plate and cylinder to engage and hold the plate against longitudi 115 nal movement relatively to the vlinder.

2. The combination with two members movable to and from each other, of a pneumatic shock absorber, including a cylinder having a closed end, a stop for the other 120 end, a piston mounted in the cylinder, a rod connected to the piston, means for attaching the rod to one of the movable members, the exterior of the cylinder beginning at its closed end being provided with screw 125 threads, a plate for attaching the cylinder to the other movable member having an interiorly screw threaded aperture, whereby the aperture of the plate fits over the closed end of the cylinder and by rotation causes the 130

screw threads of the plate and cylinder to engage and hold the plate against longitudinal means carried by the plate for engaging the cylinder to lock the plate against independent rotary movement relatively to the cylinder.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

FRANK H. BABCOCK.

Witnesses:

JEFF. G. WINGERT,

H. P. TURNER.