C. M. BURTON.

SHOCK ABSORBER.

APPLICATION FILED JUNE 9, 1910.

986,904. Patented Mar. 14, 1911.

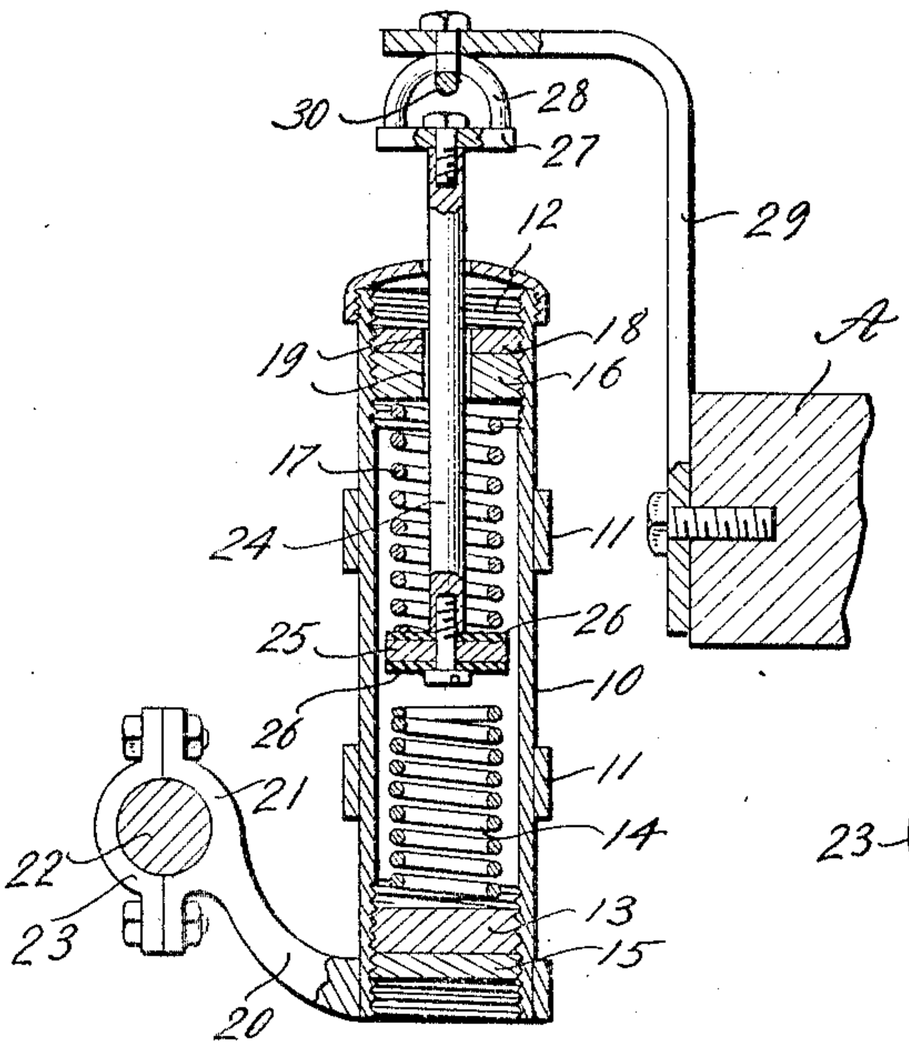

Fig. 1

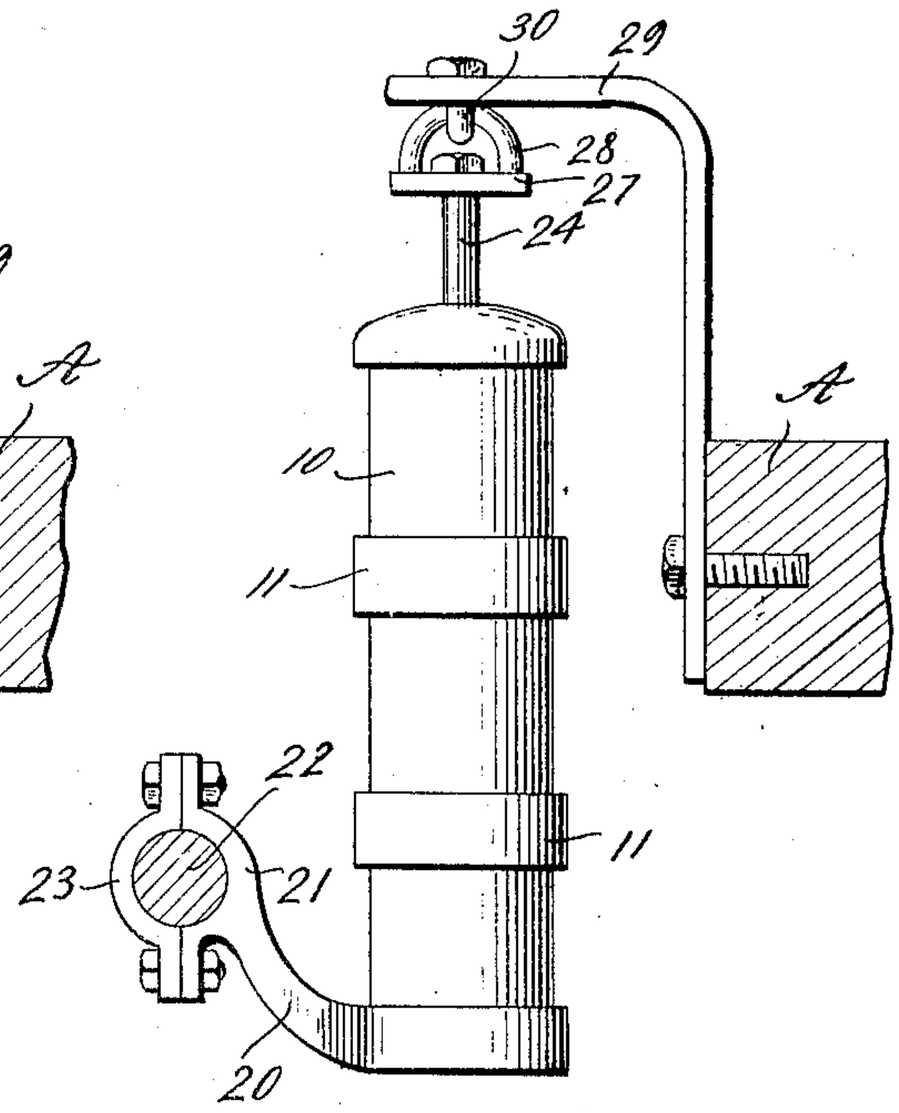

Fig. 2

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UNITED STATES PATENT OFFICE.

CHARLES M. BURTON, OF NEW YORK, N. Y.

SHOCK-ABSORBER.

986,904. Specification of Letters Patent. Patented Mar. 14, 1911.

Application filed June 9, 1910. Serial No. 565,931.

To all whom it may concern:

Be it known that I, CHARLES M. BURTON, a citizen of the United States, residing at New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Shock-Absorbers, of which the following is a specification.

This invention relates to new and useful improvements in shock absorbers, and is designed particularly to construct a device of this nature wherein the unevenness of roads which occurs during the ordinary travel will be taken up by the springs of the vehicle to which the present invention is applied while all exceptional shocks and the like will be taken up by the shock absorber, said shock absorber being adjustable to the unevenness of the road over which it is adapted to travel.

With the above and other objects in view, this invention consists in the construction, combination, and arrangement of parts, all as hereinafter more fully described, claimed, and illustrated in the accompanying drawings, wherein—

Figure 1 is a central vertical section of a device constructed in accordance with the present invention; Fig. 2 is a side elevation of the present invention, illustrating the attachment thereof to an automobile.

The present invention resides in the provision of a cylinder embraced by a series of spaced bands and having its upper and lower terminals interiorly threaded. The lower terminal of said cylinder is supported by the axle of the vehicle while the upper terminal rests substantially free. The lower terminal is provided with an adjusting nut operating in the threads thereof which is held in various positions by a jam nut operating against the lower face thereof, said adjusting nut carrying a coiled spring, the position of which in the cylinder is regulated by the position of the adjusting nut.

A centrally orificed adjusting nut carrying a coiled spring operates in the upper terminal of the cylinder and is retained in various positions by a central orificed jam nut which operates against the upper face of said adjusting nut. A piston rod reciprocates through the orificed adjusting and jam nuts in the upper terminal of the cylinder and is suspended by an arm to the frame of the vehicle, said piston rod having at its lower terminal a piston on each side of which is mounted a rubber plate.

Referring more particularly to the drawings 10 indicates a cylinder having the spaced bracing bands 11 encircling the same and the interior threads 12 at each extremity thereof. An adjusting nut 13 operates on the threads 12 located adjacent the lower terminal of the cylinder 10 and carries on the inner face thereof the coil spring 14 which is of any suitable construction and strength. A jam nut 15 likewise operates on the threads 12 adjacent to the nut 13 and coöperates with the latter to retain the same in various positions in the cylinder. It will be understood that by the adjustment of the nuts 13 and 15 the location of the spring 14 in the cylinder 10 will be adjusted, increasing or decreasing the distance thereof from the piston as hereinafter more fully described. A similar adjusting nut 16 operates on the threads 12 adjacent to the upper terminal of the cylinder 10 carrying the coil spring 17 thereon and is retained in various positions in the cylinder by the jam nut 18 operating against the upper face thereof, said nuts 16 and 18 being provided with the registering orifices 19 through which the piston hereinafter more fully described operates, and extends through the center of the coiled spring.

The lower terminal of the cylinder 10 has mounted thereon the upwardly curved arm 20 which is provided at its outer terminal with the transverse channel plate 21. The axle 22 is clamped in this transverse channel plate by the clamping plate 23 cooperating therewith.

The piston rod 24, which reciprocates in the openings 19 of the nuts 16 and 18 and extends through the center of the spring 17, is provided at its lower terminal with a solid detachable piston 25, said piston having on each face thereof the rubber cushion 26, said cushions adapted to bear against the inner terminals of the springs 14 and 17. The upper terminal of the piston rod 24 is provided with a plate 27 to which is secured or formed the eye 28. An arm 29 is secured to the frame A of the automobile or vehicle and extends outwardly over the upper terminal of the piston rod where it is

provided with an eye 30 which engages the eye 28 of said piston rod, thus supporting the piston and piston rod.

From this construction it will readily be seen that by the adjustment of the nuts 13 and 16 the position of the springs in the cylinder 10 is likewise adjusted and during the ordinary unevenness of the road the springs of the vehicle will absorb all of the shocks, but should an exceptional shock occur the absorber will operate, causing the cylinder to move upwardly on the piston rod, thereby creating a contact between the lower face of said piston and the spring 14 and on the rebound the shock will be absorbed by the contact of the upper face of the piston and the spring 17. It will be understood, therefore, that the present invention may be adjusted to the type of road over which the vehicle is adapted to operate, that is, the absorber may be adjusted so that all of the shock will be absorbed by the springs of the vehicle; and so that the ordinary shocks will be absorbed thereby while the greater and more damaging shocks be absorbed by the present invention.

Having thus described my invention, what is claimed as new is:

A device of the class described, comprising a cylinder having interiorly formed threads at each terminal thereof, nuts adapted to operate on said threads, springs carried by said nuts the inner terminals of said springs being spaced and the upper of said nuts having an opening therein, a piston rod adapted to reciprocate in said opening and through the upper of said springs, a piston detachably carried at the lower terminal of said rod having a rubber collar on each side thereof, an arm carried at the lower terminal of said cylinder having a transverse channeled plate at its outer terminal, a clamping plate coöperating therewith, an eye formed at the upper end of said piston rod, and an arm coöperating therewith.

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

CHARLES M. BURTON.

Witnesses:
RIO GARDNER,
ELMER T. SMITH.