

R. J. THOMPSON.
SHOCK ABSORBER.
APPLICATION FILED FEB. 16, 1911.

1,046,900.

Patented Dec. 10, 1912.

Fig. 1.

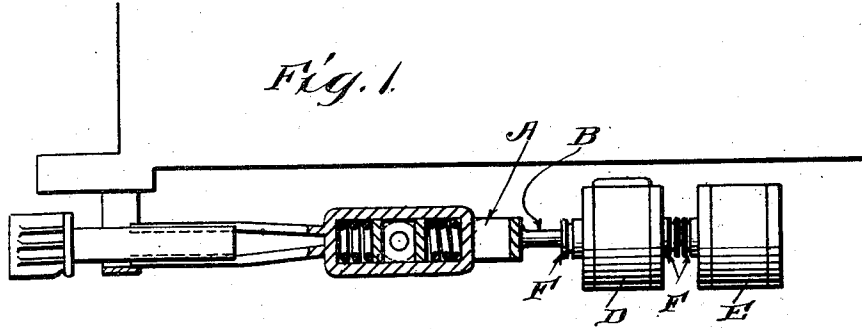


Fig. 2.

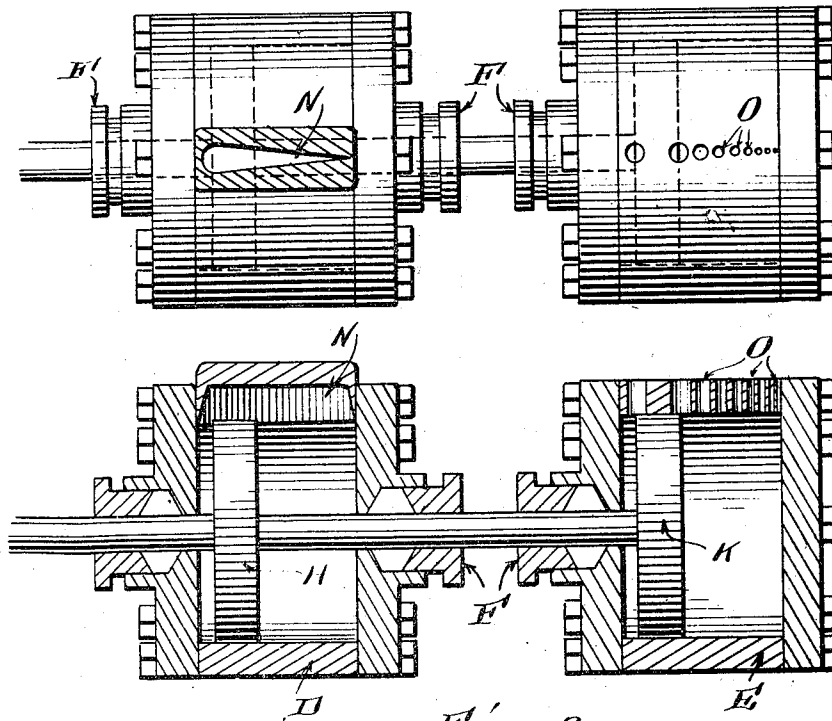


Fig. 3.

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UNITED STATES PATENT OFFICE.

ROY JAMES THOMPSON, OF MUSKEGON, MICHIGAN.

SHOCK-ABSORBER.

1,046,900.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, ROY J. THOMPSON, a citizen of the United States, residing at Muskegon, in the county of Muskegon and State of Michigan, have invented certain new and useful Improvements in Shock-Absorbers; 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, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

This invention relates to new and useful improvements in shock absorbers for vehicles of various kinds, especially adapted for cars.

The invention comprises an apparatus of this nature having various details of construction and combinations and arrangements of parts which will be hereinafter fully described and then specifically defined in the appended claim.

I illustrate my invention in the accompanying drawings, in which:—

Figure 1 is a plan view partly in section, showing the application of my device to the draw bar of a coupler. Fig. 2 is a plan view partially in section showing the two cylinders with a piston stem having two pistons, one movable within each cylinder, and Fig. 3 is a sectional view through the two cylinders.

Reference now being had to the details of the drawings by letter, A designates a draw bar of a coupler of any suitable construction, forming yielding mechanism which will permit a forward movement of the draw bar from the position shown. A piston rod B is fastened to said draw head and moves through the heads of the two cylinders D and E, the stem of which is provided with suitably packed glands F. Pistons H and K are fastened to said rod, the former of which pistons is mounted within the cylinder D and the other within the cylinder E. The cylinder D has an offset or recess N formed in the inner surface thereof and which offset or recess is tapered, as shown

clearly in Fig. 2 of the drawings, one end of the recess being wide and narrowing to a point at the other. The cylinder E, instead of having an offset or recess, is provided with a series of apertures O of different diameters and which pass through the wall of the cylinder to the atmosphere. It will be noted that the cylinder E is to be utilized in connection with air, while the cylinder D is adapted to contain oil against which the cylinder acts in absorbing shock.

The operation of the apparatus will be readily understood and is as follows:—Oil is placed within the cylinder D and, when the plunger is at its farthest outer limit or toward the end of the cylinder having the widened part of the recess or offset, the apparatus is in shape for operation. In the event of a blow being imparted to the piston rod, the plungers will be moved, the one in the cylinder D against the surface of the oil, which latter will be forced from in front of said piston, through the offset which will afford a passageway for the oil from one side of the piston to the other, the flow of the oil, however, being reduced as the piston advances, owing to the narrowing of the walls of the recess. This action being gradual, the shock will readily be absorbed. The action of the piston K within the cylinder E will act in the same manner upon air in advance of the cylinder, causing the same to be driven out through the holes in the cylinder to the atmosphere, said holes being graduated in size in order to restrict the exit of the air and gradually cushion the piston K. The sizes of the recesses and the diameters of said apertures respectively in the two cylinders will depend entirely upon the size of the cylinder employed and the quality or thickness of the oil employed. As the cars are drawn forward through the medium of the couplers, the pistons and rods will be returned to their normal positions and ready to operate upon any impact which may come upon the piston rod.

What I claim to be new is:—

A shock absorber comprising a cylinder, a piston rod movable through the opposite ends thereof and mounted in suitably packed glands, said cylinder having an offset with

a recess opening from the interior of the cylinder and terminating at its bottom in a line coincident with the end of the cylinder, said recess extending from one cylinder end to the other and provided with inclined ends leading to the bottom of the recess, the opposite walls of the latter tapering at one end to a point and their other ends merging

into a semi-circular outlined portion, as shown and described.

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

ROY JAMES THOMPSON.

Witnesses:

FRANK BABCOCK,
NORMAN T. THOMPSON.