

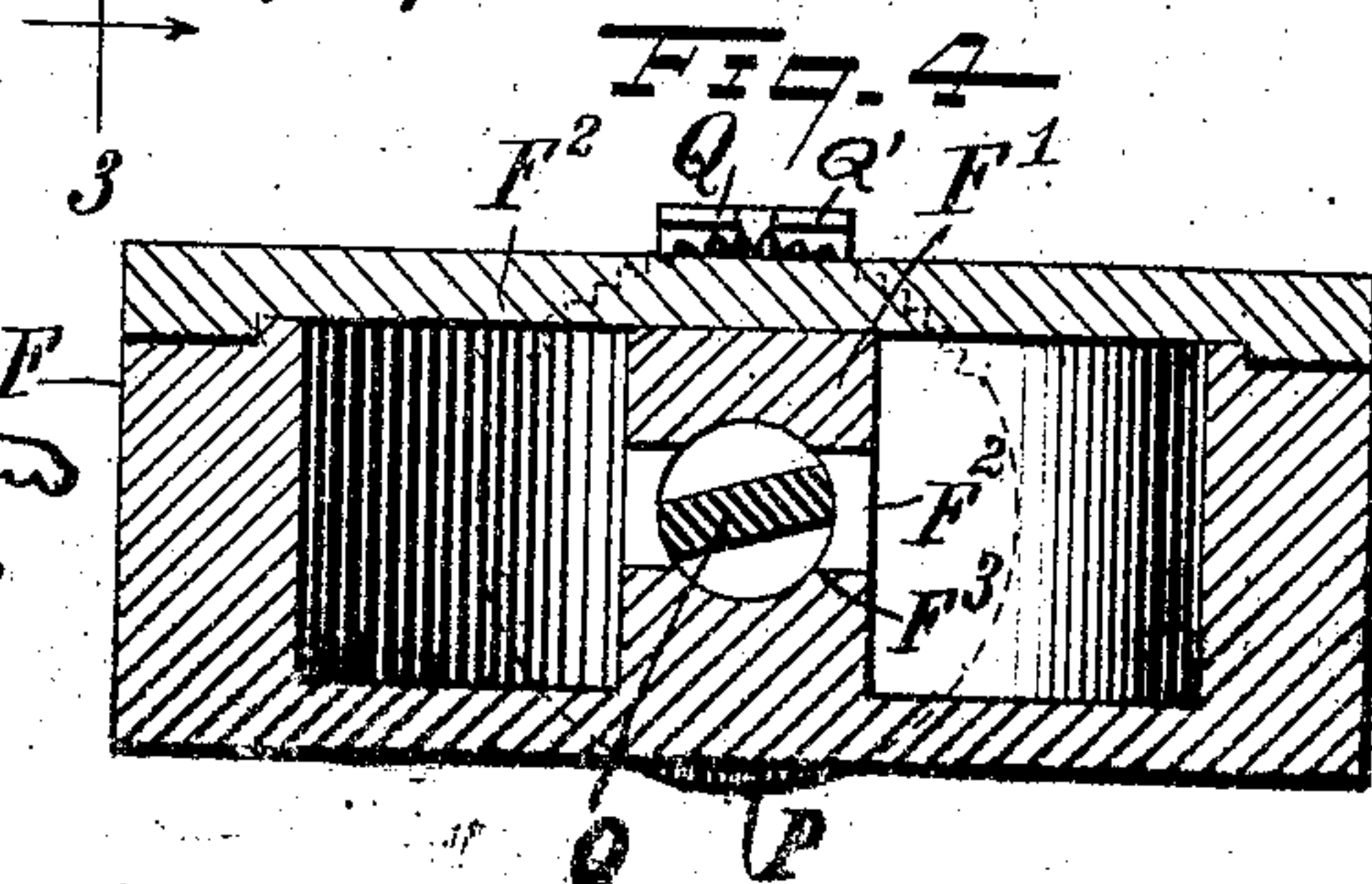
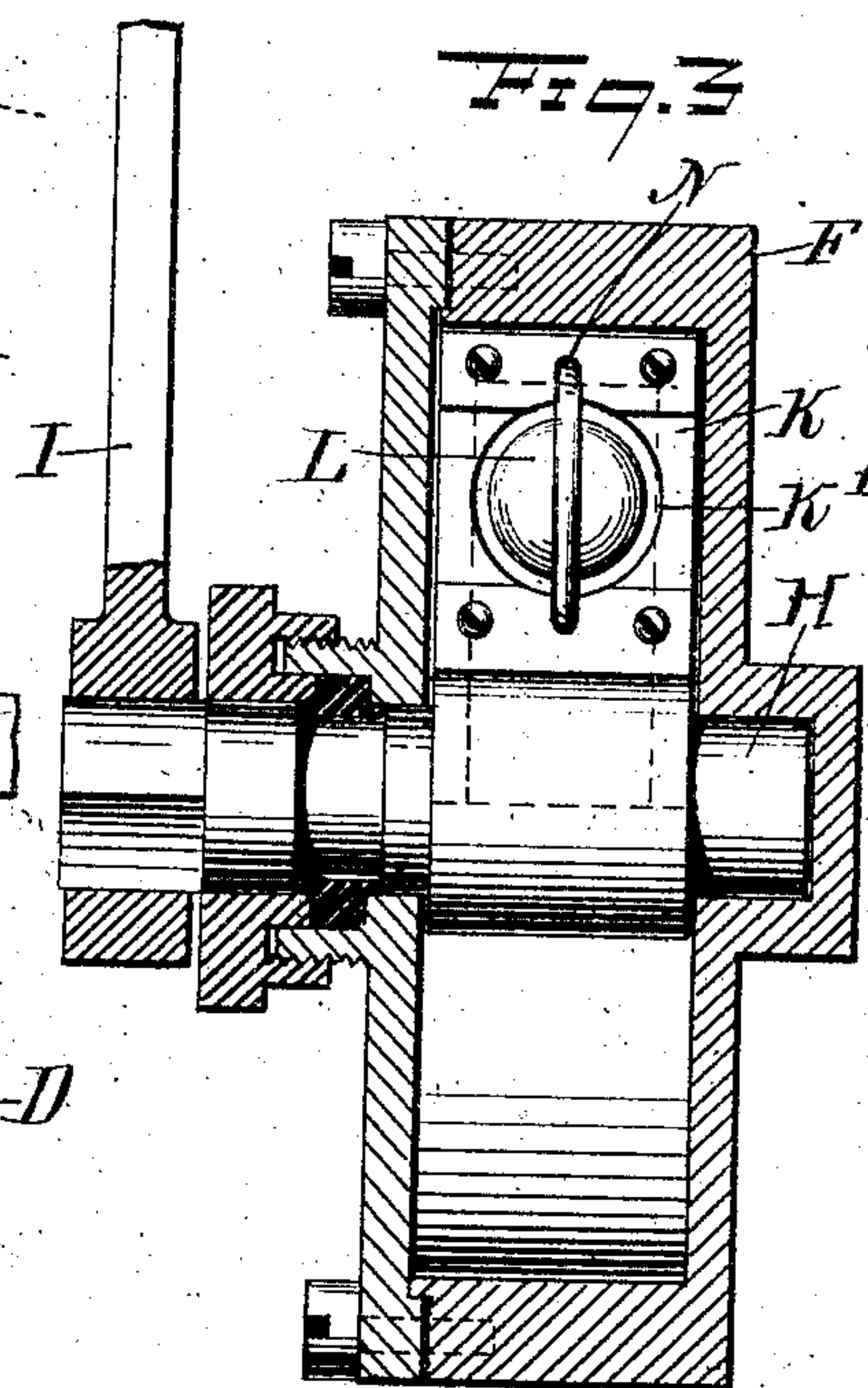
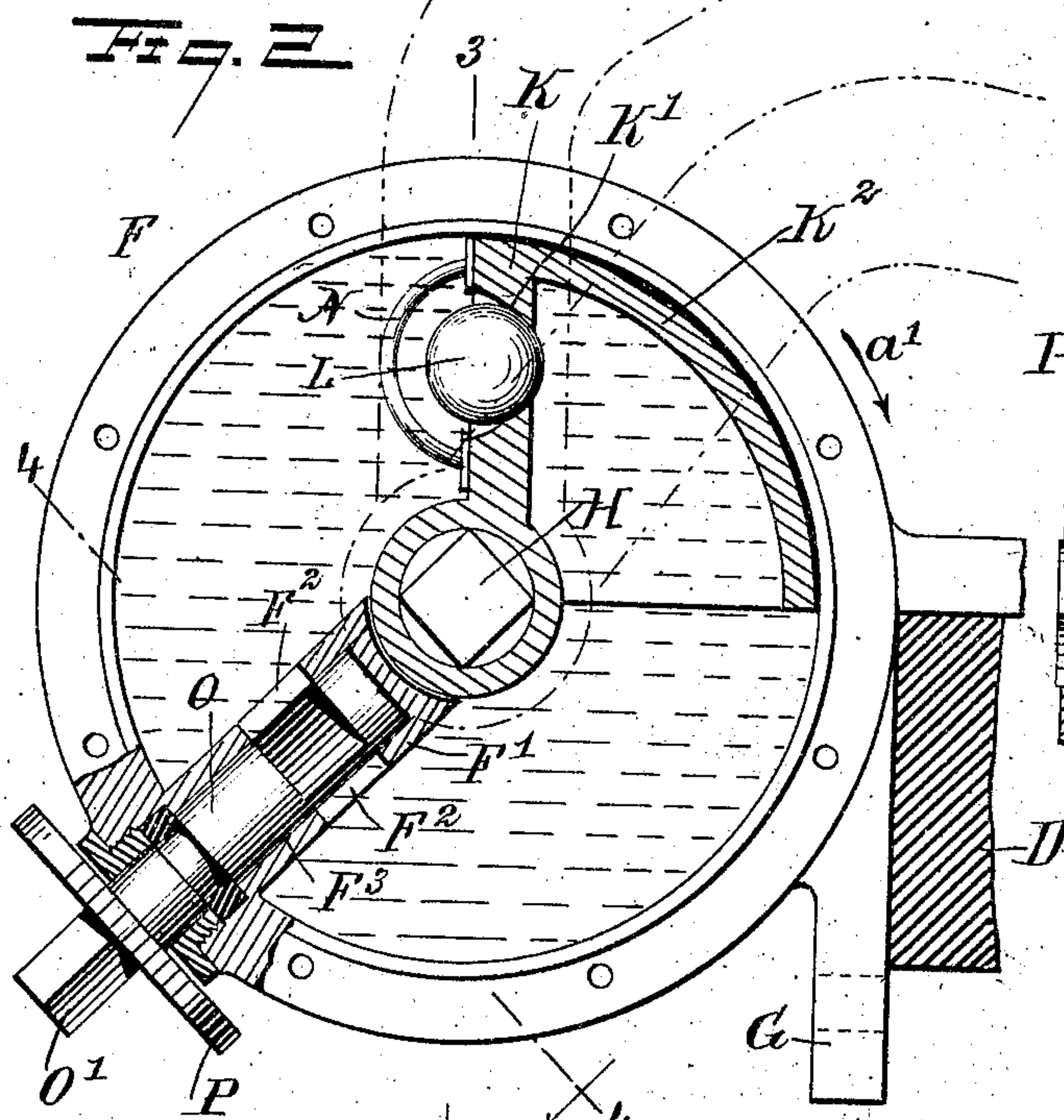
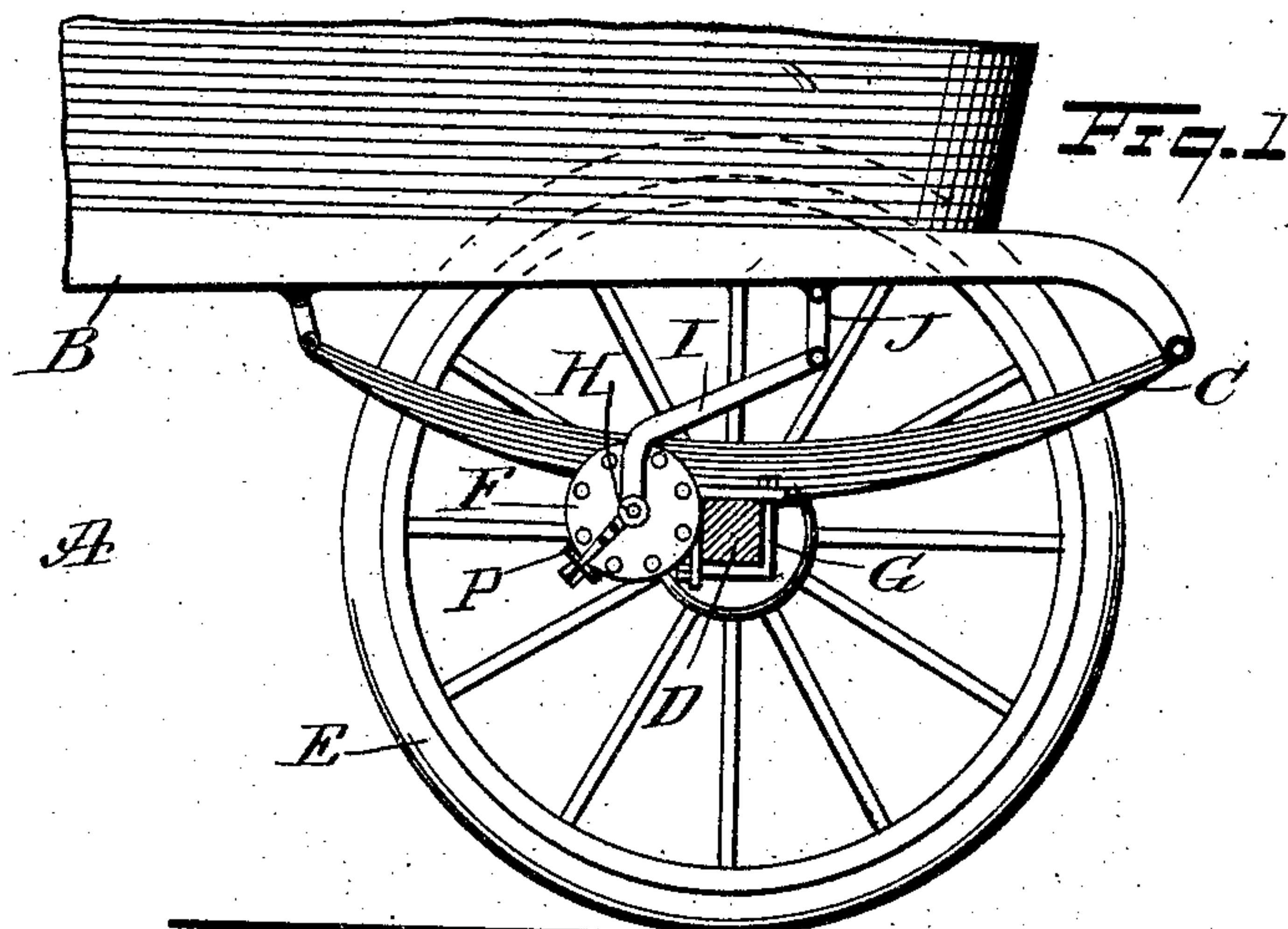
No. 842,732.

PATENTED JAN. 29, 1907.

A. C. WALLING.

AT. S. WALLING.
 DEVICE FOR RETARDING THE REBOUNDED ACTION OF SPRINGS.
 APPLICATION FILED MAR 22 1900

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WITNESSES:

WITNESSES: FF
Johna Burghom
Rev. J. H. H. H.

INVENTOR

Allan Campbell Walling

BY

M. J. [Signature]
ATTORNEY

UNITED STATES PATENT OFFICE.

ALLAN CAMPBELL WALLING, OF NEWARK, NEW JERSEY.

DEVICE FOR RETARDING THE REBOUNding ACTION OF SPRINGS.

No. 842,732.

Specification of Letters Patent.

Patented Jan. 29, 1907.

Application filed March 29, 1905. Serial No. 252,869.

To all whom it may concern:

Be it known that I, ALLAN CAMPBELL WALLING, a citizen of the United States, and a resident of Newark, in the county of Essex and State of New Jersey, have invented a new and Improved Device for Retarding the Rebounding Action of Springs, of which the following is a full, clear, and exact description.

The invention relates to automobiles and other road-vehicles; and its object is to provide a new and improved device for preventing or retarding the sudden rebounding action of the springs in the space between the axle and the body or frame of the vehicle to insure easy riding to the occupants of the vehicle and without danger of the occupants being unduly jolted or unseated when the vehicle passes over deep gutters or over stones and other obstructions in the roadway.

The invention consists of novel features and parts and combinations of the same, as will be more fully described hereinafter and then pointed out in the claims.

A practical embodiment of the invention is represented in the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the views.

Figure 1 is a side elevation of the improvement as applied to a motor-vehicle, the axle of which is shown in section. Fig. 2 is an enlarged sectional side elevation of the improvement. Fig. 3 is a transverse section of the same on the line 3 3 of Fig. 2, and Fig. 4 is a sectional plan view of the same on the line 4 4 of Fig. 2.

The vehicle A, on which the improvement is applied, consists of the usual body or frame B, hung on springs C, clipped or otherwise secured to the axle D, carrying the wheels E. The cylindrical casing F of the device for preventing or retarding the rebounding of the springs C is fastened by a clip G or other suitable means to the axle D, and in the said casing F is journaled a transverse shaft H, carrying at its outer end an arm I, connected at its free end by a link J with the under side of the vehicle-body or frame B, as plainly indicated in Fig. 1. On the shaft H, within the casing F, is secured an arm K, having a valve-seat K', on which is adapted to be seated a ball-valve L, held in a cage N, attached to the arm K. The casing F is provided in its interior with a partition F', extending radially from the rim of the casing to

the hub of the arm K, as plainly indicated in Fig. 2, and in this partition F' is formed a passage F², leading to opposite sides of the partition and intersecting a valve-seat F³, containing a regulating-valve O, having its stem O' extending to the outside of the casing F to permit the operator to set the regulating-valve O. On the stem O' of the regulating-valve O is secured a disk P, having its periphery provided with teeth or notches adapted to be engaged by a locking-pawl Q to hold the disk P, and consequently the valve O, locked in the position in which the valve is set by the operator. The pawl Q is an ordinary click-pawl, attached to a spring-plate Q', secured to the casing, as clearly shown in Fig. 4.

The casing F is filled with a suitable fluid, preferably glycerin or the like, as indicated in Fig. 2. The arm K is provided with an integral packing in the form of a cup K² to prevent leakage of the liquid past the arm K—that is, from one side thereof to the other.

The operation is as follows: The arm I normally stands in the position shown in Fig. 1 to hold the arm K in the position illustrated in Fig. 2—that is, spaced from the partition F' in the casing F. Now when the wheel E passes over a stone or other obstruction in the road in its path and the springs C are compressed then the body B and the axle D move toward each other, whereby the link J imparts a downward swinging motion to the arm I to turn the shaft H and the arm K in the direction of the arrow a'. During this movement of the arm K the ball-valve L is unseated, so that the liquid on the right-hand side of the arm K can readily pass through the valve-seat K' to the other side of the arm K—that is, little or no resistance is given to the arm K by the liquid during the compression of the springs C. As soon as the obstruction is passed and the spring C begins to rebound—that is, to move the body B and the axle D apart—then the link J imparts an upward swinging motion to the arm I, so that the latter turns the shaft H and the arm K in the reverse direction of the arrow a'. During this return movement of the arm K the valve L is seated on the seat K', thus closing the latter and preventing the liquid contained in the casing F from passing through the said seat K' in the direction from the left to the right. As the arm K moves against the body of the liquid in the casing F, it is evident that this

liquid offers resistance, and consequently the rebounding of the springs C is retarded, it being understood that the liquid in front or on the left-hand side of the arm K and pressed on by the latter is forced gradually through the passage U^2 and one open or partly-open regulating-valve O to the other side of the partition F'; but as this passage of the liquid is slow it is evident that the arm K moves slowly in the inverse direction of the arrow a' to graduate the rebounding action of the springs C. Now by adjusting the regulating-valve O to open the passage F² more or less any desired resistance can be given to the return movement of the arm K by the fluid contained in the casing F, and hence the rebounding action of the springs C can be graduated to any desired degree.

The device is very simple and durable in construction, is not liable to easily get out of repair, and can be readily attached to vehicles as now constructed.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. In an automatic checking device for vehicles, a liquid-filled cylinder adapted to be connected with the running-gear of a vehicle, a partition extending radially from the center of said cylinder to the cylinder-wall, and having a contracted port therein, an oscillat-

ing horizontally-arranged piston adapted to be pivotally connected with the body of the vehicle and having bearings on the inner end of said partition and on the wall of the cylinder respectively, and, with said partition dividing the cylinder into two chambers, means for permitting the free passage of liquid from one chamber to the other in one direction only, and a manually-adjustable valve controlling the port in said partition.

2. An automatic checking device for vehicles, comprising a liquid-filled cylinder adapted to be secured to a vehicle running-gear, an oscillating piston arranged in said cylinder and pivotally connected to the body of a vehicle, a partition arranged in said cylinder and having an opening therein, and with said piston, dividing said cylinder into two compartments in constant communication through said opening, means whereby liquid in said cylinder may freely pass around said partition in one direction only, and adjustable means controlling said opening.

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

ALLAN CAMPBELL WALLING.

Witnesses:

EDITH ST. JOHN WALLING.
Mrs. EDWARD LEONARD.