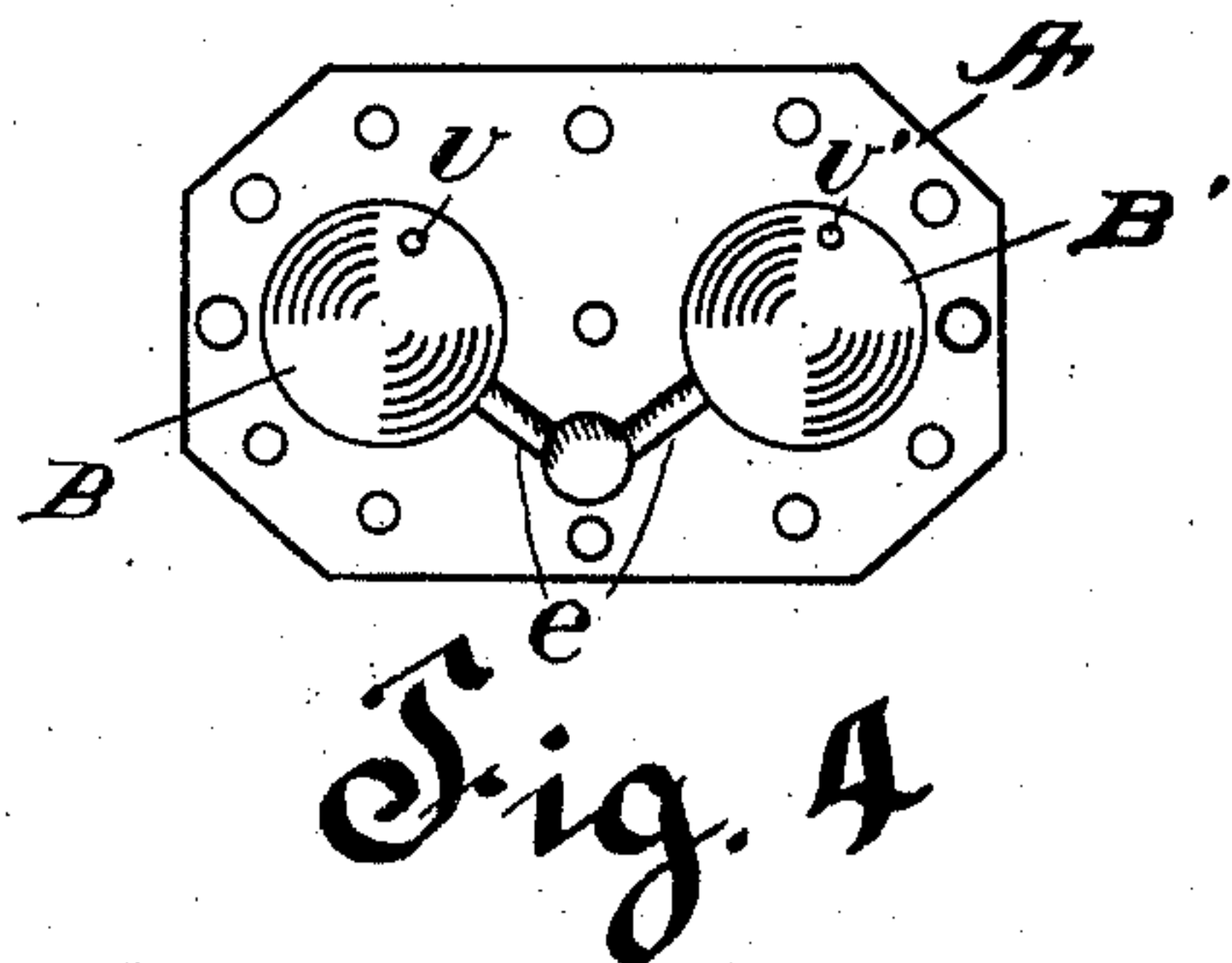
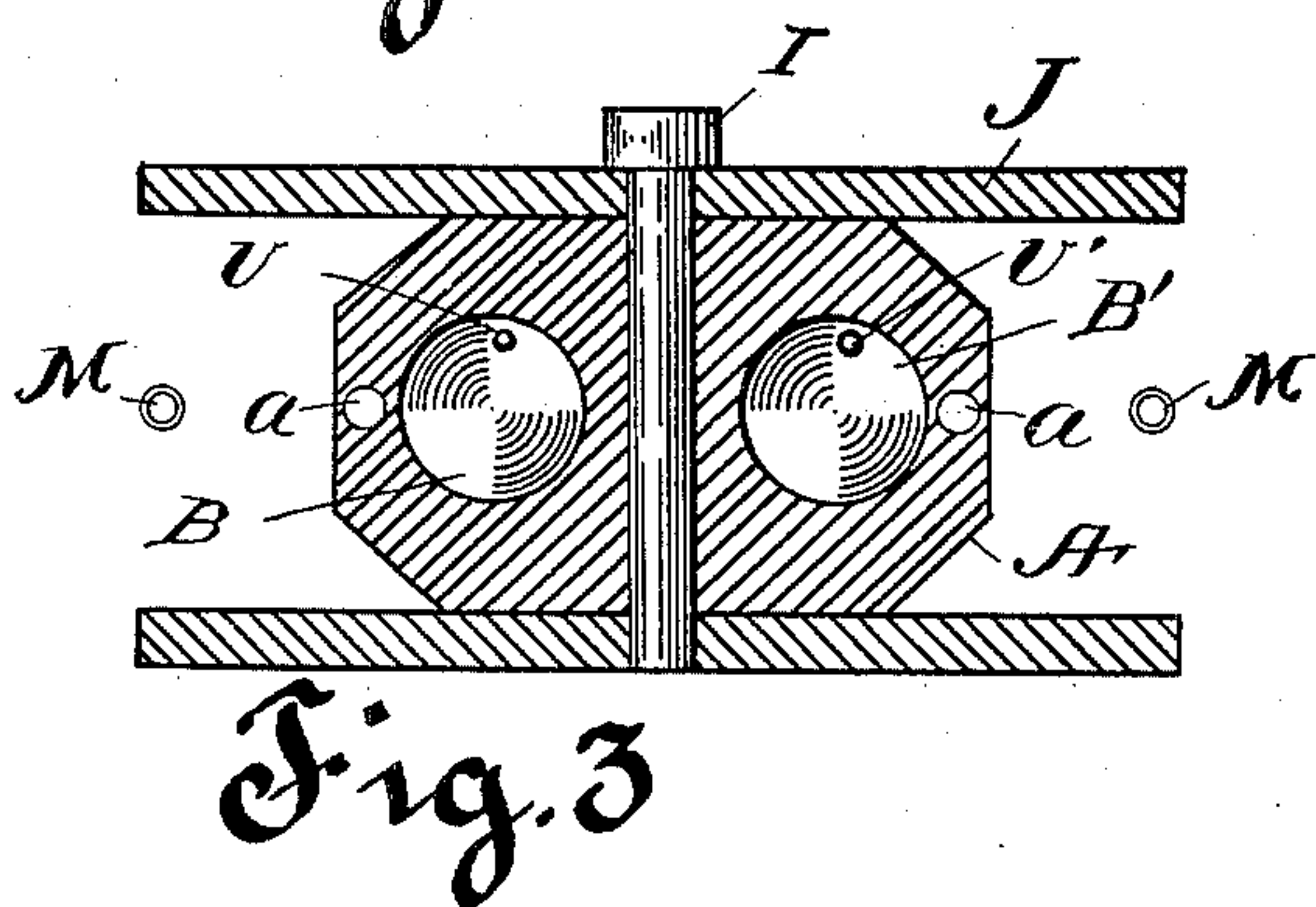
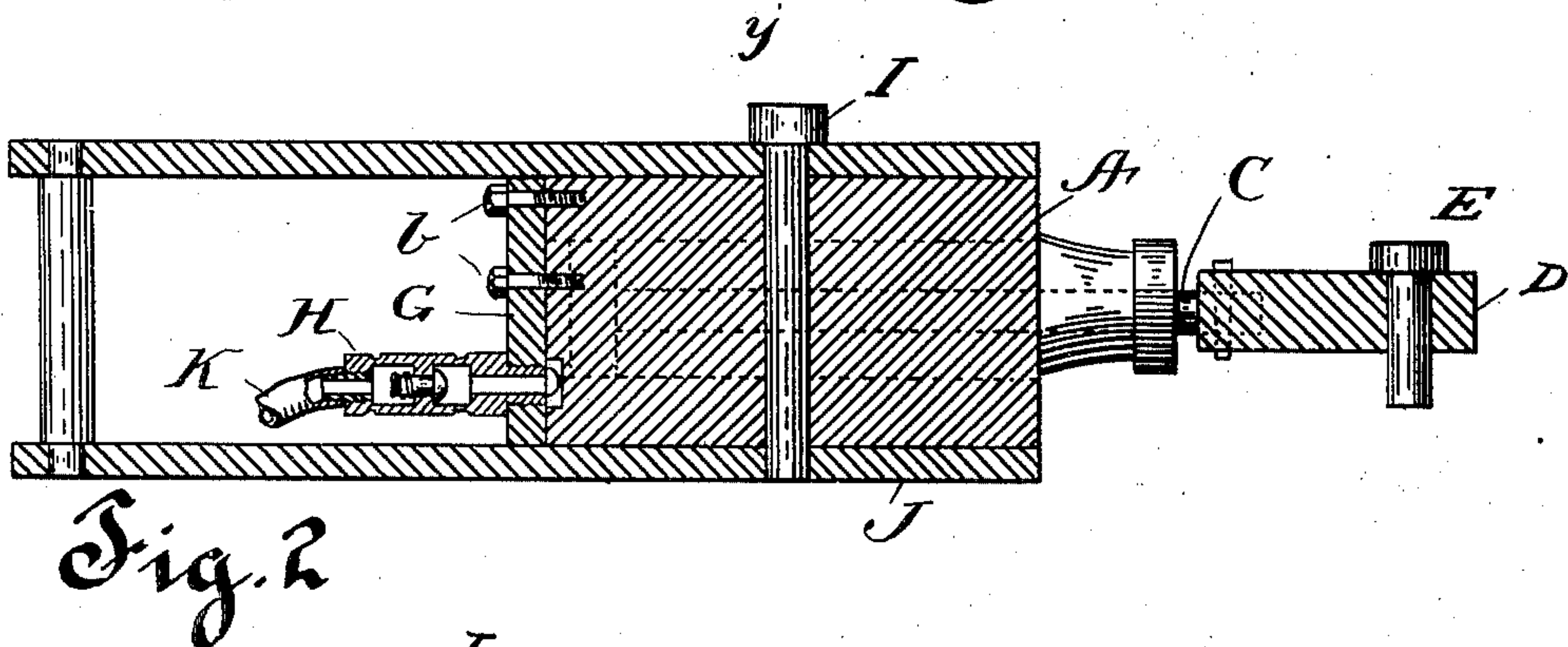
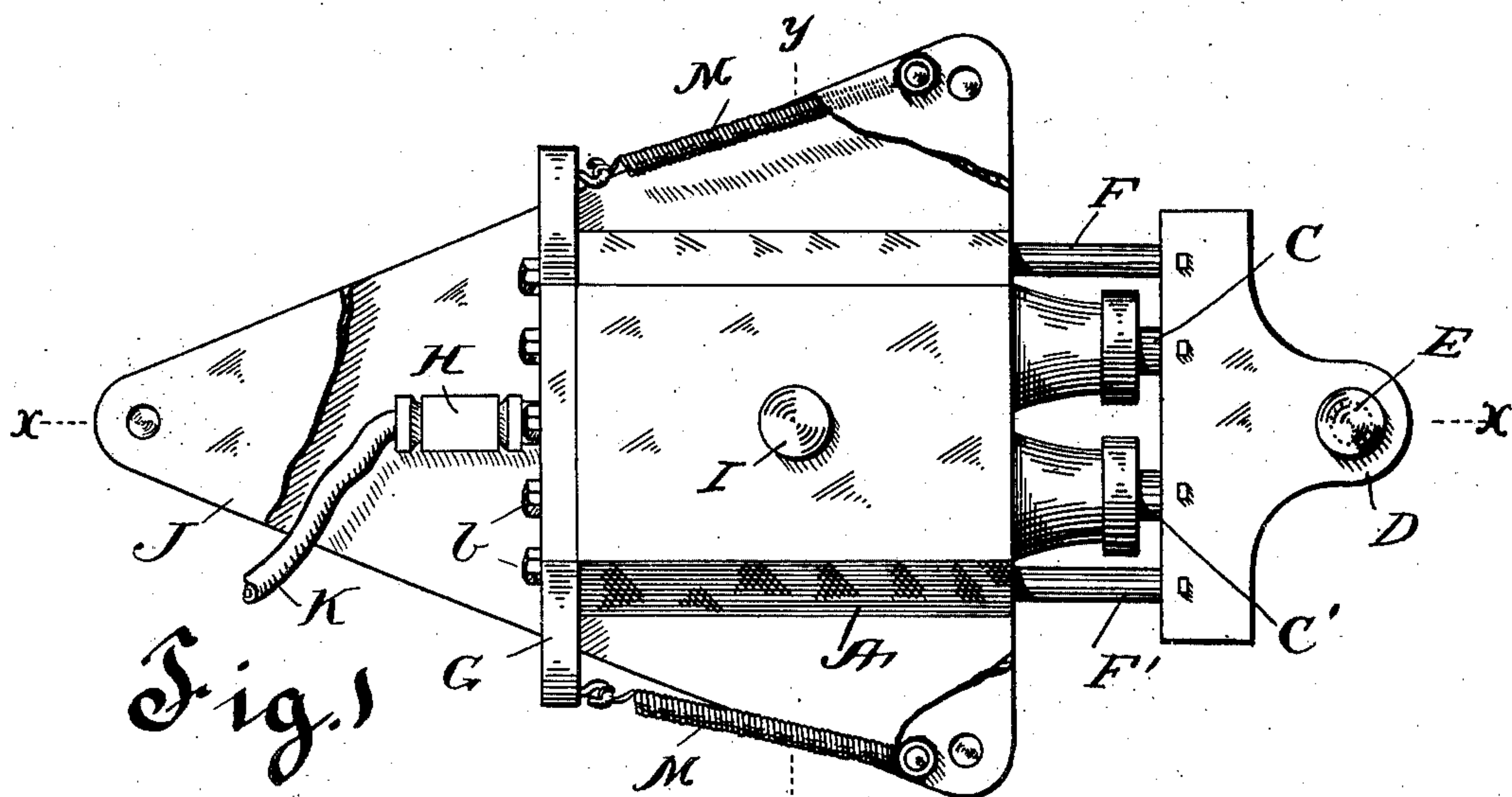


No. 737,709.

PATENTED SEPT. 1, 1903.

T. COLLINS.
BUMPER FOR RAILWAY CARS.
APPLICATION FILED APR. 18, 1902.

NO MODEL.



WITNESSES:

Mary W. Kincaid.
Bessie G. Brewster.

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ATTORNEYS

UNITED STATES PATENT OFFICE.

THOMAS COLLINS, OF SAN JOSE, CALIFORNIA.

BUMPER FOR RAILWAY-CARS.

SPECIFICATION forming part of Letters Patent No. 737,709, dated September 1, 1903.

Application filed April 18, 1902. Serial No. 103,488. (No model.)

To all whom it may concern:

Be it known that I, THOMAS COLLINS, a citizen of the United States, residing at San Jose, in the county of Santa Clara and State of California, have invented certain new and useful Improvements in Bumpers for Railway-Cars; 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.

My present invention is a bumper for railway-cars; and it has for its object to provide a device for passenger or freight cars which will possess all the requisites of strength and durability and which will be especially simple in construction and efficient in operation.

In carrying out my invention I have utilized the air-cushion principle in relieving the cars of the jarring and jerking consequent from the sudden stopping or starting of the engine and have further made provision for preserving a constant pressure of the confined air regardless of escape through imperfect air-seals.

I have so placed the device as to be readily accessible for inspection, but at the same time have not in the least interfered with the employment of the various forms of couplings now in general use.

I have arrived at structural simplicity, compactness, and efficiency, as will be noted in the accompanying drawings, in which—

Figure 1 is a top view of the complete device with a portion of the upper frame broken away to show the position of the twin cylinders. Fig. 2 is a section on the line $x x$ of Fig. 1. Fig. 3 is a cross-section on the line $y y$ of Fig. 1. Fig. 4 is a rear view of the twin cylinders with the head removed.

I will now set forth the general construction of the invention and subsequently explain the operation of the same, reference being had to the above views by letter.

The main body A of the device consists of a metal casting bored longitudinally to form twin cylinders, into which are adapted to reciprocate the piston-heads B B'. The pistons C C', which lead from the heads B B', are

keyed to the cross-head D, the latter being provided with the ordinary coupling-pin E, or it can be formed to operate in conjunction with the ordinary automatic couplers now in general use. In order to guide the reciprocating pistons C C', I have provided the stems F F', which slide in bores a in body A.

Covering the rear of the body A and secured thereto by means of the bolts b is the head G, while entering this head G and connected to the cylinders by means of the induction-ports e is the check-valve H.

The body A is pivoted, by means of the pin I, to the frame J, which is rigidly mounted in a suitable position on the tender of the locomotive.

Having thus fully set forth the construction of the main elements of the invention, I will now explain the operation of the same and in so doing bring in other minor details not heretofore mentioned.

Assuming that the air under the desired pressure is fed from the usual compressors in the engine to the cylinders through the flexible pipe K, it will be seen that any sudden jar imparted to the coupling will be received and absorbed by the compressed air, thereby moderating the effect on the cars and various connections of the train.

In order to prevent the air from backing in the pipe K, I have provided the spring-pressed check-valve H, the operation of which is manifest.

As a means for allowing the air to distribute itself on both sides of the piston-heads, and thereby permit of the backward as well as the forward action of the device, I have provided the vents v and v' through the heads B B', respectively.

The pivot I permits of the body swinging when curves in the road-bed are encountered, while the springs M tend to preserve the body in a straight normal position.

I am aware that changes in the form and proportion of parts of the devices herein shown and described as an embodiment of my invention can be made without departing from the spirit or sacrificing the advantages thereof, and I therefore reserve the right to

make such changes, substitutions, and alterations as fairly fall within the scope of my invention.

What I claim, and desire to secure by Letters Patent, is—

A device of the class described consisting of a suitable body secured to the car, a secondary member pivoted to said body and formed with a plurality of chambers, reciprocating plungers in said chambers, and a cross-head pivoted to the coupling of the car

and connected to said plungers, said plungers being formed with a small perforation and a check-valve leading to said chambers substantially as and for the purpose set forth. 15

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

THOMAS COLLINS.

Witnesses:

J. C. BLACK,
H. F. DUSING.