(No Model.)

J. B. G. A. CANET.

HYDRAULIC BUFFER FOR VEHICLES.

No. 254,917. Patented Mar. 14, 1882.

FIG. 3

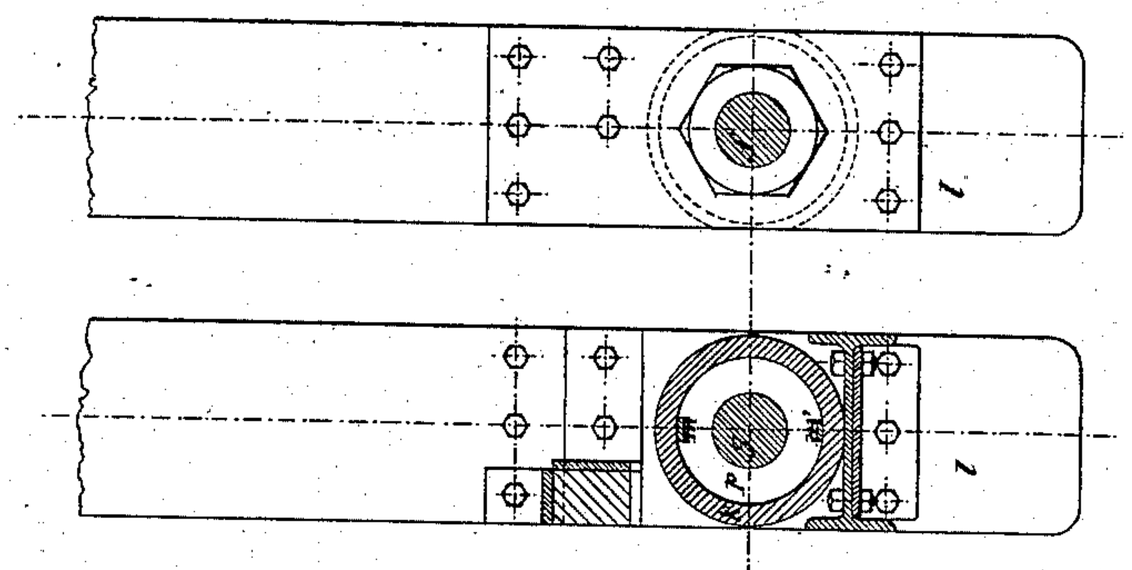

FIG. 2

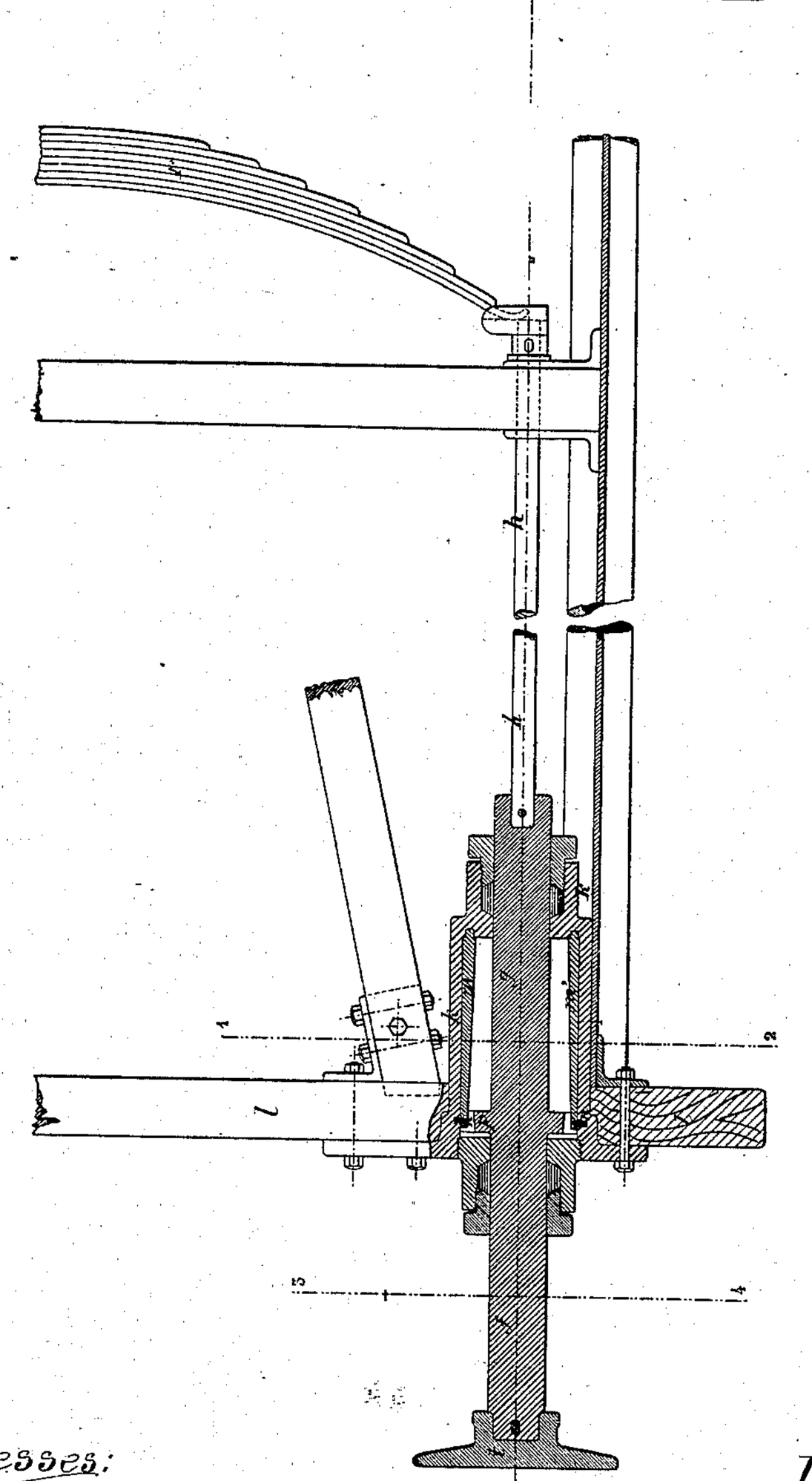

FIG. 1.

Witnesses:
John C. Tunbridge.
John M. Speer

Inventor:
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by his attorneys
Brisen & Betts

UNITED STATES PATENT OFFICE.

JEAN BAPTISTE GUSTAVE ADOLPHE CANET, OF PARIS, FRANCE.

HYDRAULIC BUFFER FOR VEHICLES

SPECIFICATION forming part of Letters Patent No. 254,917, dated March 14, 1882.

Application filed November 1, 1881. (No model.)

To all whom it may concern:

Be it known that I, JEAN BAPTISTE GUSTAVE ADOLPHE CANET, civil engineer, of Paris, in the Republic of France, have invented Hydraulic Buffers for Railroad-Cars and other Vehicles; and I do hereby declare that the following is a full and exact description thereof, reference being made to the accompanying drawings.

The buffing apparatus at present used for preventing shocks between railway-carriages is entirely dependent upon spring action, and is neutralized if the shock exceeds the resistance of the spring.

The aim of my invention is to prevent sudden shocks at collisions by so disposing the buffers as to automatically increase the resistance as the violence of the shock is increased. In order to obtain this result I apply to the buffer an arrangement similar to the hydraulic brakes used on gun-carriages, so as to overcome the recoil, and for this purpose I prefer the arrangement hereinafter described.

In the accompanying drawings, Figure 1 is a horizontal section on the axis of a hydraulic buffer. Figs. 2 and 3 are horizontal sections on the lines 1 2 and 3 4.

The buffer *t* is secured to a rod, *f*, which carries a piston, *p*, moving in a cylinder, *k*, which cylinder is filled with a liquid which is not liable to become frozen. The cylinder is secured to the carriage-frame.

On the inner side of the cylinder are two tapering rods, *m* and *m'*, placed parallel to its axis, and entering orifices *n n* in the piston *p*. The piston-rod back of the piston *p* is marked *g*, and passes through a stuffing-box at the rear end of cylinder *k*. A bar, *h*, connected with a spring, *r*, is joined to the rod *g*. The spring *r* serves to normally hold the piston *p* at the front end of the cylinder. Supposing that the car fitted with the hydraulic buffer encounters an obstacle against which the buffer *t* is forced, the result will be as follows: Through its momentum the car is impelled forward on the rod *f*; but as it encounters the resistance resulting from the liquid in the cylinder it will cause the liquid to pass forward through the orifices *n n* of the piston. The tapering rods *m* will at the same time gradually reduce the area of the orifices *n*, so as to gradually increase the resistance. By this means I obtain a constant resistance, increasing in proportion to the violence of the shock and motion of the car.

In order to be quite certain that the buffer *t* will not come against the stuffing-box of the cylinder *k*, I prefer to construct the back piston-rod, *g*, smaller in diameter than the front rod, *f*, so that the quantity of liquid displaced by the rod *f* may be greater than the quantity which is to replace the rod *g*—that is, leaving the cylinder. By this means the liquid is caused to be compressed, and this considerably increases the resistance of the buffer.

I claim—

The combination of the buffer *t* and its rod *f g* and piston *p*, having orifice or orifices *n*, with the cylinder *k*, having tapering rod or rods *m*, and with the spring *r*, for operation substantially as specified.

J. B. G. A. CANET.

Witnesses:
C. BLÉTRY,
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