

No. 745,592.

PATENTED DEC. 1, 1903.

I. D. GEORGIEVITZ-WEITZER & M. POZZO.

DEVICE FOR DEADENING OR MINIMIZING SHOCKS TO WAGONS OR CARS.

APPLICATION FILED DEC. 15, 1902.

NO MODEL.

2 SHEETS—SHEET 1.

FIG. 1

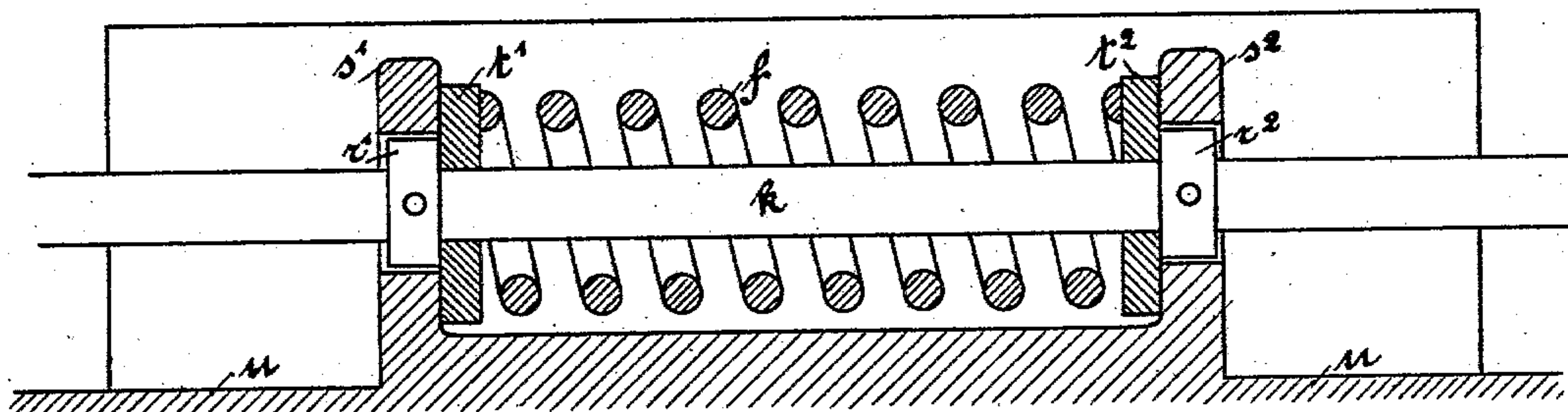


FIG. 2

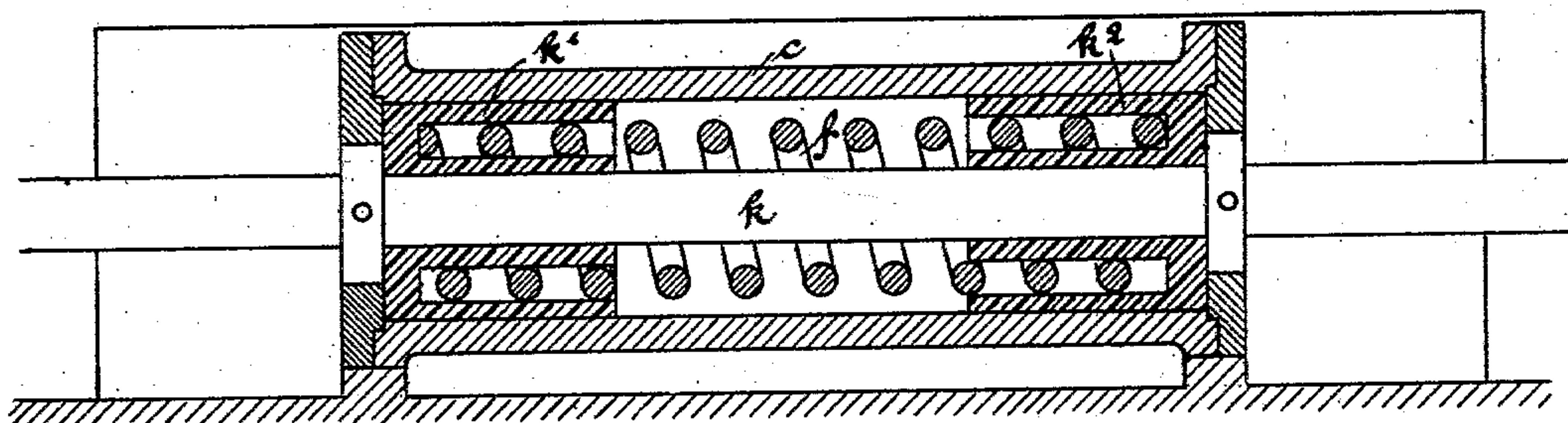
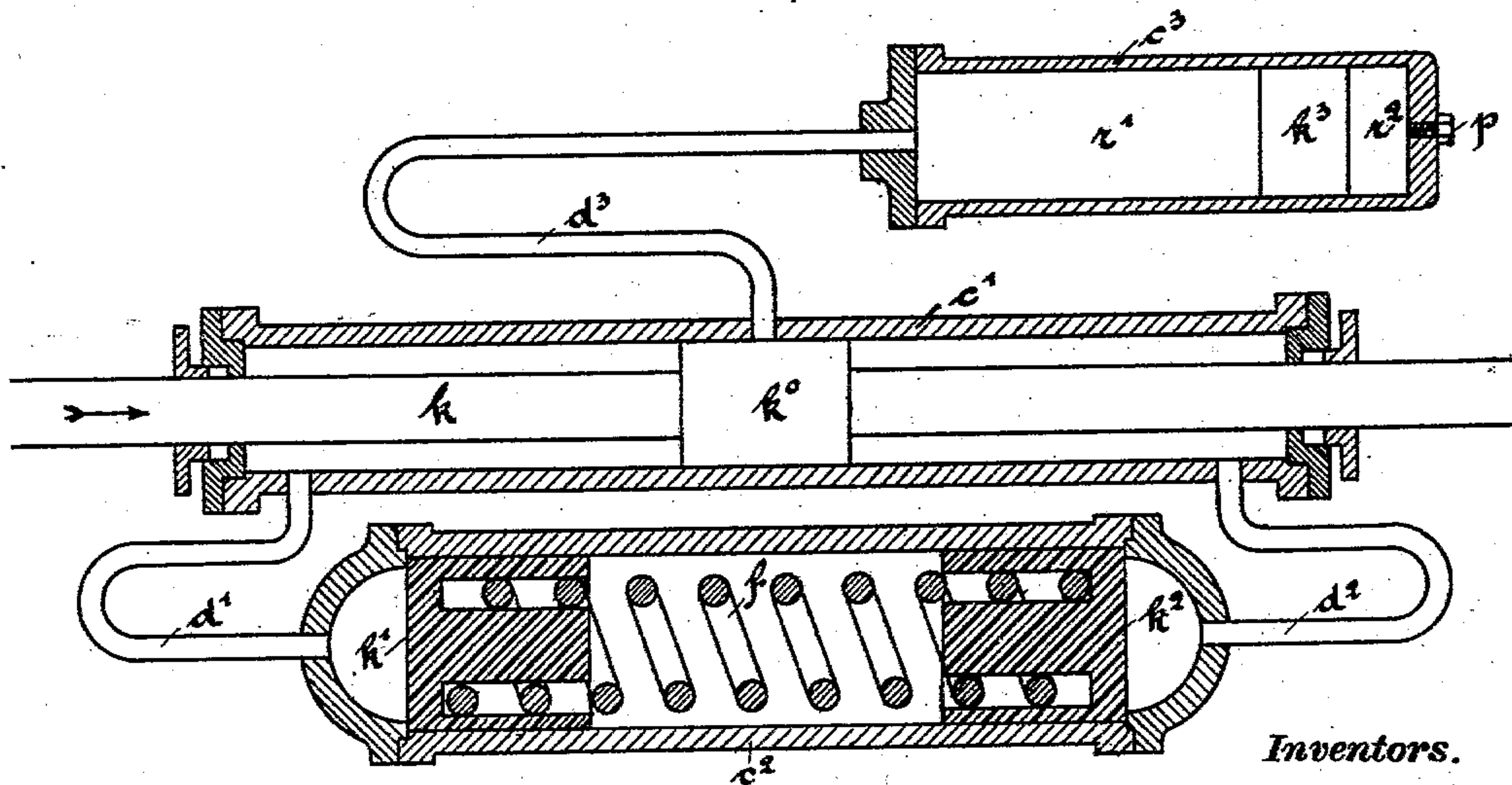


FIG. 3



Witnesses.

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Mario Pozzo  
by T. J. Singer

Inventors.

Att'y.

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2 SHEETS—SHEET 2.

FIG. 4

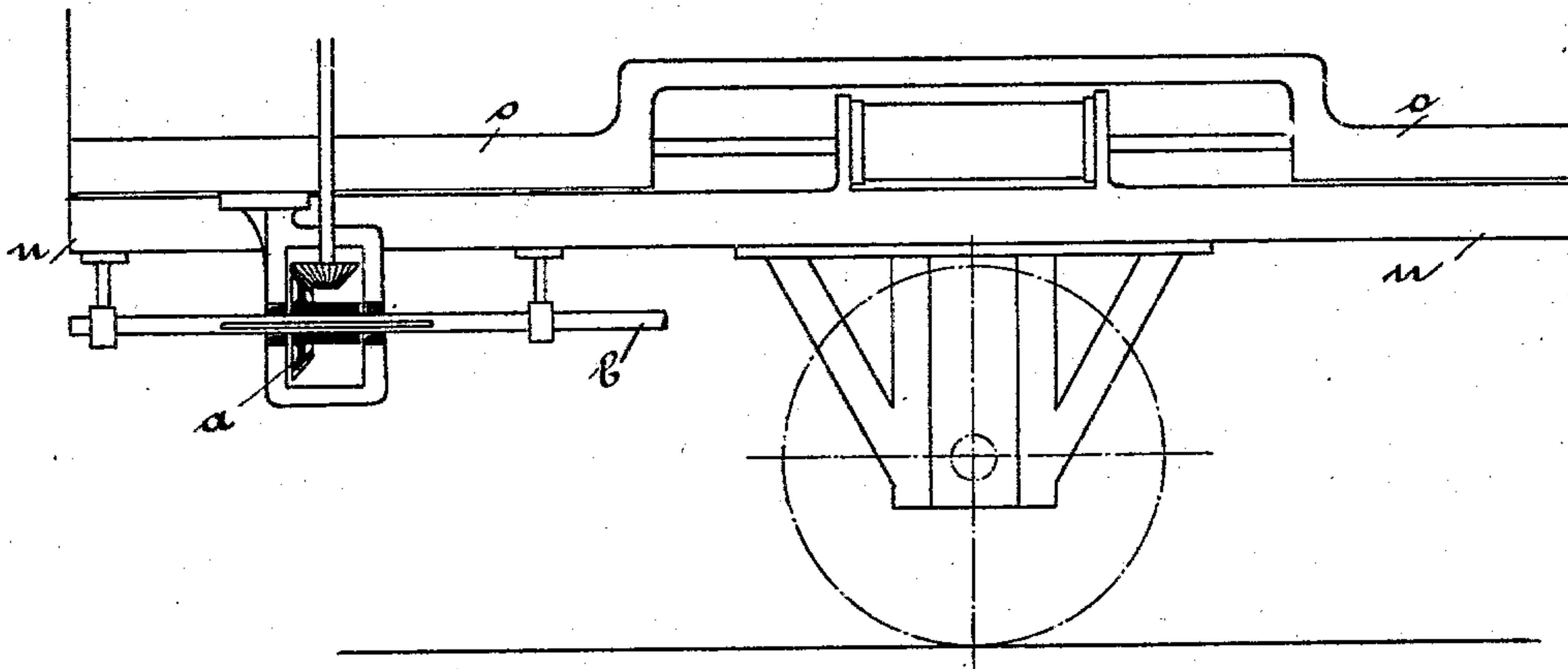


FIG. 5

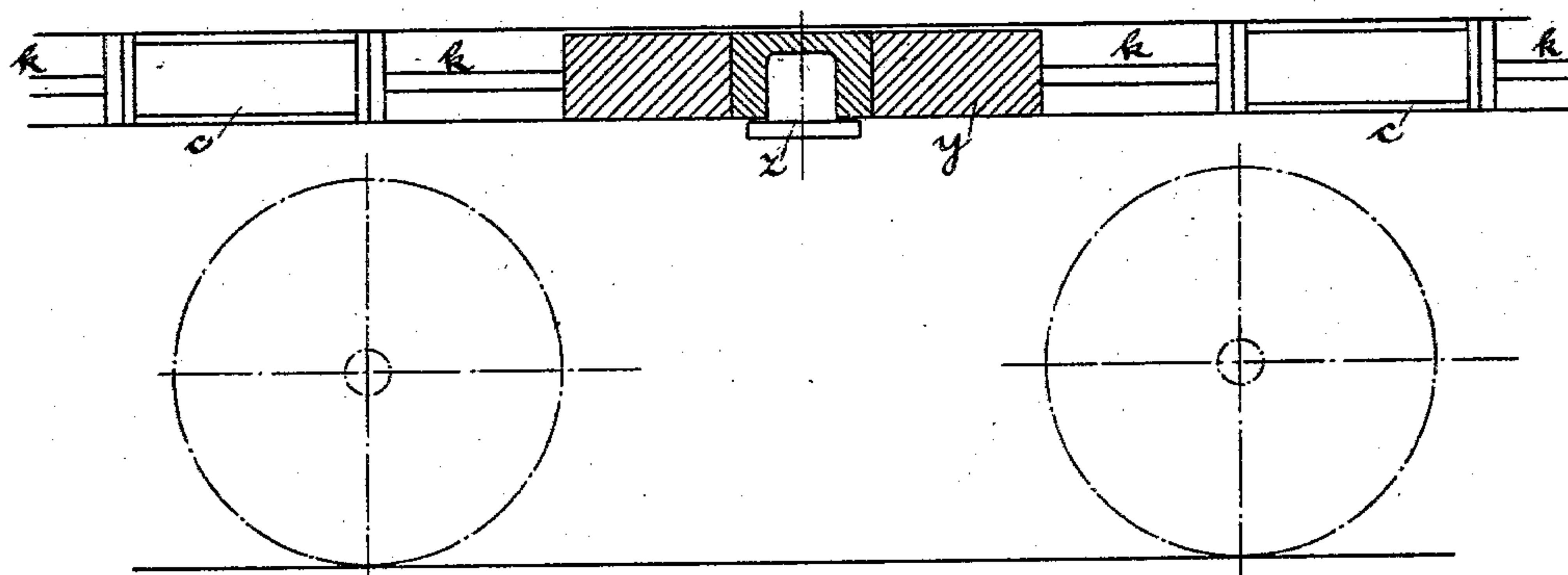
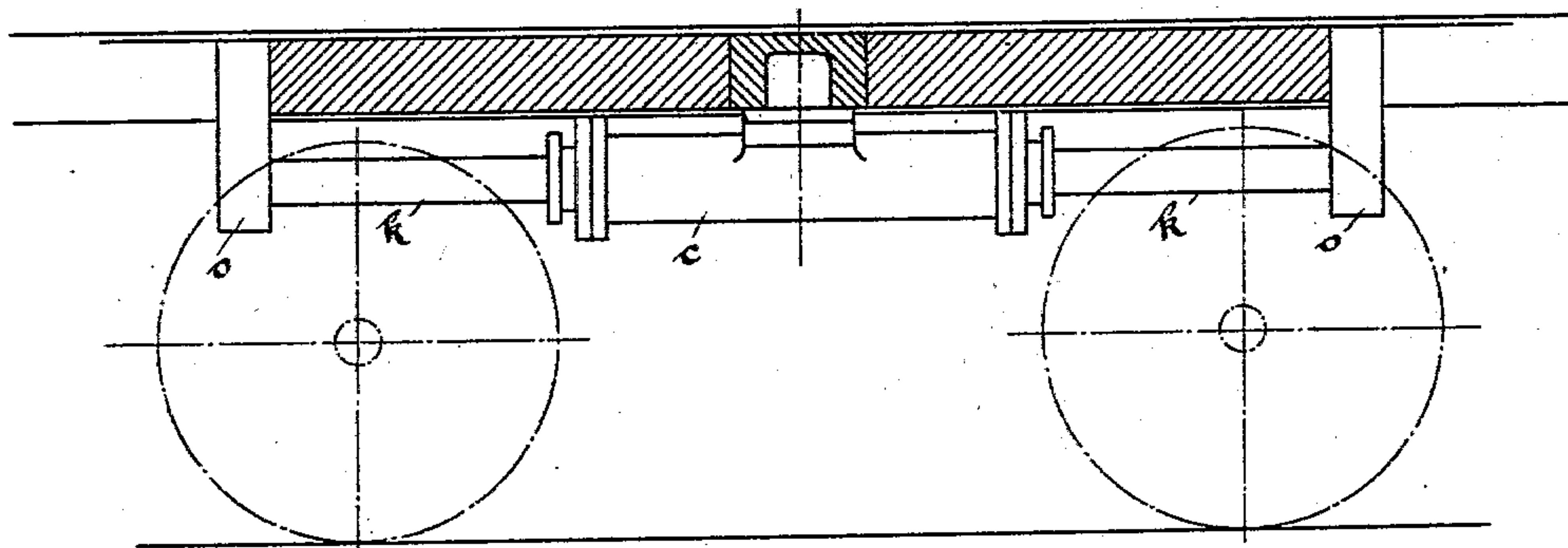


FIG. 6



Witnesses.

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# UNITED STATES PATENT OFFICE.

ISIDOR DEMETER GEORGIEWITZ-WEITZER AND MARIO POZZO, OF GRAZ,  
AUSTRIA-HUNGARY.

DEVICE FOR DEADENING OR MINIMIZING SHOCKS TO WAGONS OR CARS.

SPECIFICATION forming part of Letters Patent No. 745,592, dated December 1, 1903.

Application filed December 15, 1902. Serial No. 135,238. (No model.)

*To all whom it may concern:*

Be it known that we, ISIDOR DEMETER GEORGIEWITZ-WEITZER and MARIO POZZO, subjects of the Austrian Emperor, and residents of Graz, Austria, have invented certain new and useful Improvements in Devices for Deadenening or Minimizing Shocks to Wagons or Cars, of which the following is a specification.

The object of the present invention is a device for deadening or lessening shocks to wagons and cars caused by sudden change of speed, the application of the brake, or a sudden stoppage. This device, which works, first, by means of a single spring capable of being compressed; second, by means of a spring in connection with an air-cylinder, or, third, by means of a spring, air-cylinder, and hydraulic brake, is adapted to be employed on ordinary wagons and street-tramways, as well as on such as have bogies or movable axles. For this purpose the underframe and the body of the car or wagon form two different parts, connected together by means of slide-channels or the like. When employed on single vehicles or tram-cars, the spring device is fastened to the underframe. On vehicles with bogies it is fixed on the bogie itself.

In the annexed drawings, Figures 1, 2, and 3 are sectional views of the device. Fig. 4 is a side elevation of part of a vehicle provided with the device. Figs. 5 and 6 are sections of a bogie provided with the device.

In Fig. 1 is illustrated the draw-spring device in its most simple form. It consists, essentially, of the rod  $k$ , fastened to the body of the vehicle. The rod  $k$  is guided through two eyes  $s'$  and  $s''$  of the frame  $u$ . On the rod  $k$  are fixed two rings  $r'$  and  $r''$  and two sliding disks  $t'$  and  $t''$ . These disks are continually pressed against the eyes  $s'$  and  $s''$  of the frame by the action of the spring  $f$ . In the moment of a shock—say from the left—the rod  $k$  will be moved to the right, causing the ring  $r'$  to move the disk  $t'$  equally to the right, compressing spring  $f$ , whereby the shock is minimized. The reexpansion of spring  $f$  causes the different parts to return to their normal position.  $u$  is the underframe.

In Fig. 2 the spring  $f$  is shown lodged in a cylinder  $c$ , closed hermetically at both ends

by the pistons  $k'$  and  $k''$ , so that besides the action of spring  $f$  the compression of the air in cylinder  $c$  will operate to deaden shocks. The general disposition of this construction is like that shown in Fig. 1. The disks  $t'$  and  $t''$  are replaced by the pistons  $k'$  and  $k''$  in cylinder  $c$ .

Fig. 3 shows a combination of the device represented in Fig. 2 with a hydraulic brake. This method of execution is principally suited for electric tram-cars. The cylinder  $c'$ , containing a suitable liquid—for instance, glycerin—permitting a free sliding of the rod  $k$  with its piston  $k^0$ , is in connection with the spring and the air-cylinder  $c''$  by means of the pipes  $d'$  and  $d''$ , and with the vacuum-cylinder  $c'''$  by means of the pipe  $d'''$ . When a shock arrives in the direction of the arrow, the rod  $k$ , with its piston  $k^0$ , moves in the same direction and pushes the liquid before it through the pipe  $d''$  into cylinder  $c''$ , behind the piston  $k''$ , thus compressing the spring  $f$  and causing a simultaneous compression of the air in the cylinder  $c''$ . At the same time piston  $k^0$  (on rod  $k$ ) aspirates liquid out of cylinder  $c'''$  through the pipe  $d'''$ , and thus draws forward the piston  $k'''$ , which separates the front part  $r'$  of cylinder  $c'''$ , filled with liquid, from the rear part  $r''$ , filled with air. A screw  $p$ , provided in the cylinder-jacket, permits the entrance of air into cylinder  $c'''$ . The force of the bent spring  $f$  likewise causes the return of the different parts into their normal position.

In Fig. 4,  $u$  represents the frame of a vehicle provided with the spring device described in Fig. 2.  $o$  is the box of the car, sliding upon the frame in any convenient manner. On the left side of the vehicle is shown the arrangement of the wheel-brake, permitting a free sliding of the bevel-gear  $a$ , mounted on the brake-shaft  $b$ .

In Fig. 5,  $z$  is the pivot-bolt, the collar of which is guided slidingly in the bogie. The cylinders  $c$  are fixed on the body of the vehicle, the rods  $k$  on the collar-piece  $y$ , and on the bogie-frame.

Fig. 6 is a variation from Fig. 5, showing the brake device represented in Fig. 3, in combination with two bogies. The braking-cylinders  $c$  (two for each bogie) are fixed on



the bogie, the rods  $k$  on the vehicle at  $o$ , while the hydraulic cylinder  $c^3$ , Fig. 3, may be fixed to one of the frames, (like a gas-cylinder.)

Having described our invention, what we  
5 claim as new, and desire to secure by Letters Patent, is—

1. In a car-buffer, the combination of a rod secured to the body of the vehicle, a frame on which said body may slide, and means  
10 connecting said rod and frame to prevent a sudden displacement of said body and to return the body and frame to normal position after displacement.

2. In a device of the nature set forth, the  
15 combination of a vehicle-body, a rod secured to said body, a frame on which said body is slidably secured, a cylinder on said frame,

and resilient means coacting with said cylinder and rod to hold them in normal position.

3. In a device of the nature set forth, the  
20 combination of a vehicle-body, a rod secured to said body, a frame, a cylinder through which said rod passes mounted on said frame, a spring in said cylinder, a piston in either end of said cylinder engaging said spring, 25 end caps on said cylinder, and collars on said rod engaging the outer ends of said pistons.

In testimony whereof we have hereunto set our hands in the presence of two witnesses.

ISIDOR DEMETER GEORGIEWITZ-WEITZER.

MARIO POZZO.

Witnesses:

ALVESTO S. HOGUE,

AUGUST FUGGEE.