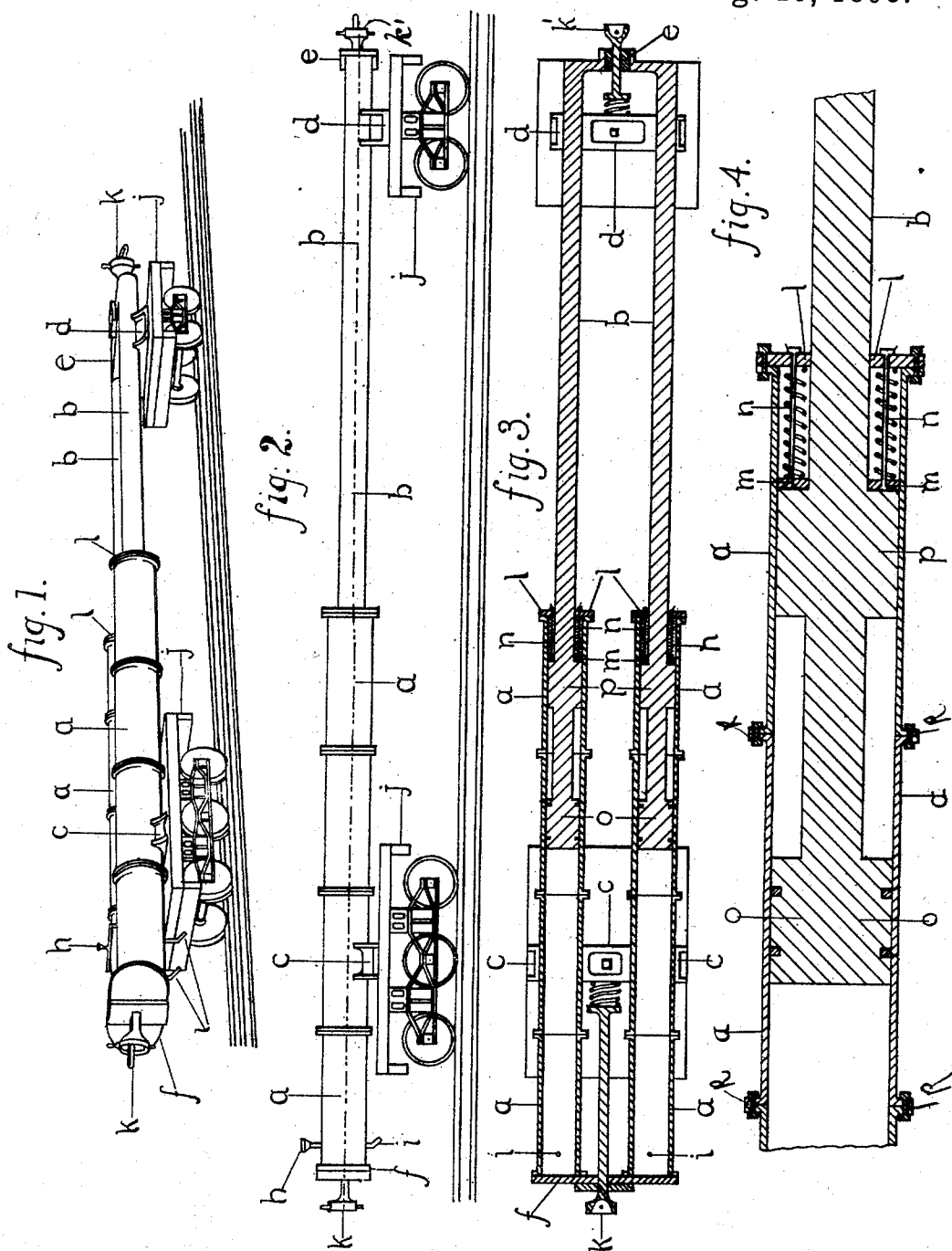


(No Model.)

W. NEUMAN.
SAFETY BUFFER FOR RAILWAY TRAINS.

No. 503,270.

Patented Aug. 15, 1893.



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SAFETY-BUFFER FOR RAILWAY-TRAINS.

SPECIFICATION forming part of Letters Patent No. 503,270, dated August 15, 1893.

Application filed April 8, 1893. Serial No. 469,590. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM NEUMAN, a citizen of the United States, residing at Ashland, in the county of Ashland and State of Wisconsin, have invented certain new and useful Improvements in Railway Safety Appliances, of which the following is a full, clear, and exact description.

My invention relates to railway safety appliances, the object being to provide an apparatus which will lessen the injurious effects of collisions between railway trains and to reduce shocks due to sudden stoppage of a railway train from any cause whatever.

The invention consists of the details of construction hereinafter described and claimed.

In the accompanying drawings, Figure 1 represents a perspective view of my telescoping truck. Fig. 2 is a side elevation of the same. Fig. 3 is a horizontal section taken along the dotted line of Fig. 2; and Fig. 4 is a sectional detail of one of the cylinders and piston heads.

j, j , respectively represent two ordinary car trucks supported upon wheels which run on the railway track in the usual manner. One of these trucks supports and has rigidly attached to it, two long cylinders a, a , which rest in saddles c or in any other convenient way are fastened to the truck. These cylinders are parallel to each other and to the truck and are closed at their forward ends by a cylinder head f through which passes a draw bar k which extends between the cylinders, as shown in Fig. 3, and is connected through a spiral spring with the truck j . Each of these cylinders is provided with an inlet port i and an outlet port h for air. The passages i are provided with ordinary flap valves opening inward while the passages h have similar valves opening outward; these valves are not shown. In each of the cylinders is located a piston consisting of two heads o and p connected together, as shown, and provided with suitable packing to make an air tight connection with the walls of the cylinder. These pistons are respectively connected with two piston rods b, b which extend rearward through the cylinder heads l . The piston rods are rigidly attached to and supported by the rear

truck j in a manner similar to that in which the forward truck supports the two cylinders, that is, by means of saddles d , or otherwise. The rods are connected together at their rear ends by a cross-piece e through which passes a draw head k' . At the rear end of each cylinder a , a ring m is provided surrounding the piston rod and carrying a number of short rods which pass loosely through the rear cylinder heads l . These rods are each surrounded by coiled springs n through which the starting and pulling force is exerted, as will be hereinafter pointed out.

This whole device it will be observed, constitutes a telescoping truck, for when opposing pressures are exerted at the ends of the truck, the pistons will be forced into the cylinders to the extreme forward end thereof and the two trucks j, j will approach each other. In practice, it is proposed to mount the tender of the locomotive on the forward truck j above the cylinders and couple the locomotive direct to the draw head k . The first car of the train will then be coupled to the draw head k' , and the space between the forward car and the tender will be unoccupied except by truck j and the piston rods b . When the train starts and while the locomotive is hauling, the springs n are under compression and, therefore, act as cushions to prevent slight irregular motions incident to ordinary running. Now, in case the locomotive should come to a sudden stop, either by collision with another train, or by any other obstruction, or by sudden application of the brakes, the momentum of the train behind the locomotive tender will carry it forward and force the piston rods b into the cylinders with a sudden and excessive pressure. This movement of the train will cause a sudden compression of the air in the cylinders which will gradually ease up the movement of the train, the motion of the train being controlled by the quantity of air allowed to pass out of the cylinders through the escape pipes h . The cars of the train will therefore be preserved from such catastrophes and the passengers will be saved from injury.

Having thus described my invention, I claim—

A safety appliance for railway trains consisting of an air cylinder closed at both ends and rigidly mounted upon a truck or car, in combination with a piston rod rigidly mounted upon another car or truck and projecting
5 into one end of said cylinder, a piston attached to the rod and located in said cylinder, and springs interposed between the piston and the head of the cylinder through which the

piston rod passes, whereby either a draft or a compressing force is applied between the piston and cylinder for the purpose set forth.

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

WILLIAM NEUMAN.

Witnesses:

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G. NEUMAN.