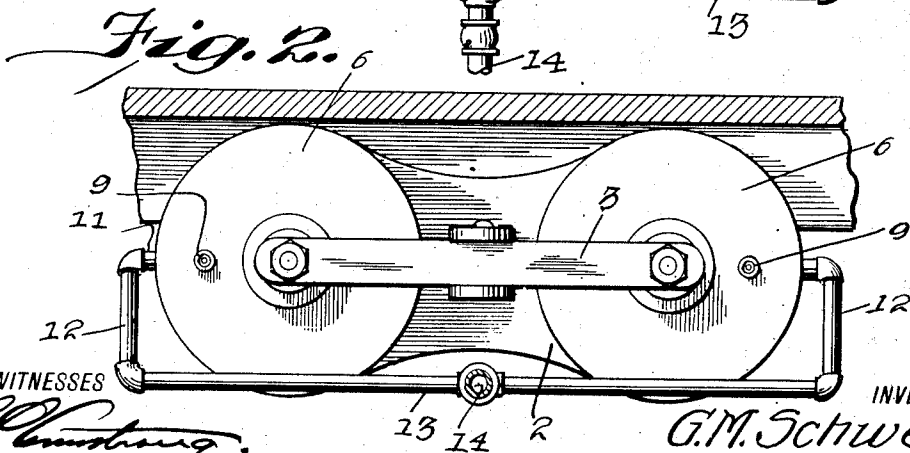
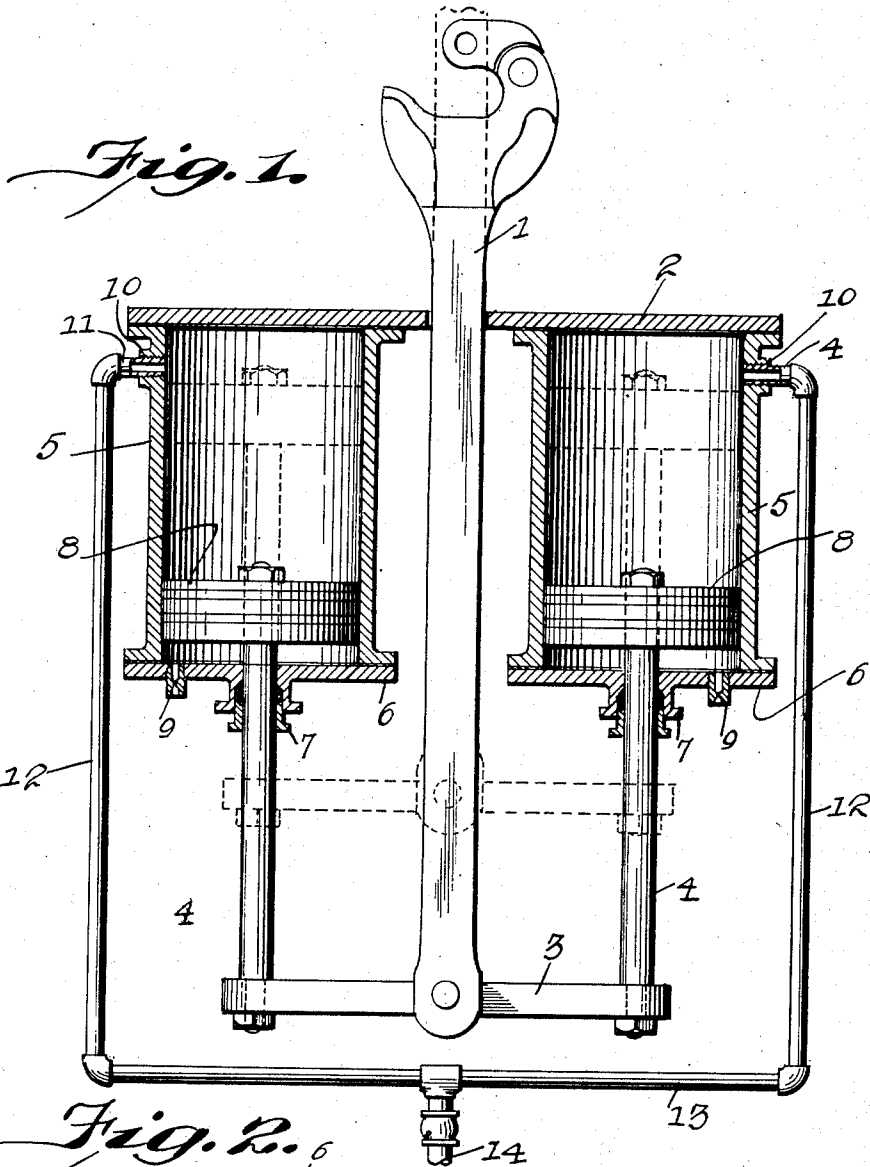


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DRAFT GEAR.
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WITNESSES
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DRAFT-GEAR.

1,363,360.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, GEORGE MARTEEN SCHWEND, a citizen of the United States, and a resident of Birmingham, in the county of Jefferson and State of Alabama, have invented certain new and useful Improvements in Draft-Gears, of which the following is a specification.

My invention is an improvement in draft gears, and has for its object to provide a gear of the character specified especially adapted for use with locomotives of any character and so arranged as to prevent jerking of the cars in starting and in stopping.

In the drawings:

Figure 1 is a plan view of the improvement with the cylinders in section;

Fig. 2 is an end view.

In the present embodiment of the invention the draw bar 1 of the locomotive, which is of any usual construction, so far as its coupling features are concerned, is mounted to slide through a plate or housing 2, suitably supported by the locomotive, and the inner end of the draw bar 1 is connected to a cross head 3. To each end of this cross head there is connected a piston rod 4, and these rods extend into cylinders 5 which are connected with the housing 2.

The head 6 of each cylinder adjacent to the cross head 3 has a packing nut 7 through which the adjacent piston rod slides, and a piston or plunger 8 is connected with the rod inside the cylinder. Each cylinder has a port at its inner end in the form of a nipple 9 which is threaded into an opening in the head 6, and these ports are restricted, as shown, so that the passage of the air at the said end of the cylinder is restricted.

Each cylinder 5 is provided at its outer end, that is, near the end adjacent to the housing 2, with an internally threaded nipple 10, and a pipe section 11 is threaded into each nipple. Pipes 12 are connected with the pipe sections 11, and extend inwardly, substantially parallel with the piston rods 4, to a point beyond the cross head 3 when the parts are in normal position, and these pipes 12 are connected by a cross pipe 13. The pipe 13 is connected by a pipe 14 with the main drum or reservoir on engine.

The operation of the device is as follows:

When the locomotive is coupled to the train, and is standing idle, the parts will occupy the position of Fig. 1. When the locomotive starts, the draw bar 1 will be drawn out, the cross head 3 moving toward the cylinders, as indicated in dotted lines, and the pistons or plungers 8 will be moved toward the housing plate 2, as also indicated in dotted lines. The air in the outer ends of the cylinders will be compressed in cylinders due to check valve in pipe 14 being seated and the movement of the locomotive will be cushioned, so that there will be no jar of the train of cars. The resistance of the air cushion in the cylinders will gradually check the movement of the draw bar, and the train will be started easily and smoothly. As soon as the engine is in motion and the train started the pressure will flow from the main reservoir to the cylinders 5, and will gradually force the plungers 8 back to the normal position shown, the position being, however, determined by the amount of pull on the draw bar. The draw bar is responsive to the pull of the train and the pistons will occupy a position determined by the resistance offered by the pressure in the main reservoir and the pull of the train.

As the cylinders 8 move toward the plate 2, air passes in through the restricted ports 9 to fill the space between the head 6 and the plungers. When the train comes to a stop this air forms a cushion which will cushion the inward movement of the pistons, so that there will be no jar in stopping. The movement of the pistons, and as a consequence the movement of the draw bar, in both directions, will be cushioned.

Pipe 14 supplies air at all times to cylinders 5. The check in pipe 14 is to prevent air flowing out of cylinders 5 when pressure gets greater than in main reservoir, due to piston heads compressing air in cylinders 5 when train is started.

I claim:

1. A draft gear for locomotives comprising in combination with the draw bar, of a cylinder arranged on each side thereof, pistons in the cylinders, a cross head at the inner end of the draw bar, rods connecting the

pistons with the cross head, and means for connecting the outer ends of the cylinders with a main air reservoir, each cylinder having a restricted port at its inner end.

- 5 2. A device of the character specified comprising in combination with the draw bar, of a cylinder on each side thereof and

connected at its outer end with a main reservoir, each cylinder having a restricted port at its inner end, and a plunger in each cylinder, said plungers being connected with the draw bar. 10

GEORGE MARTEEN SCHWEND.