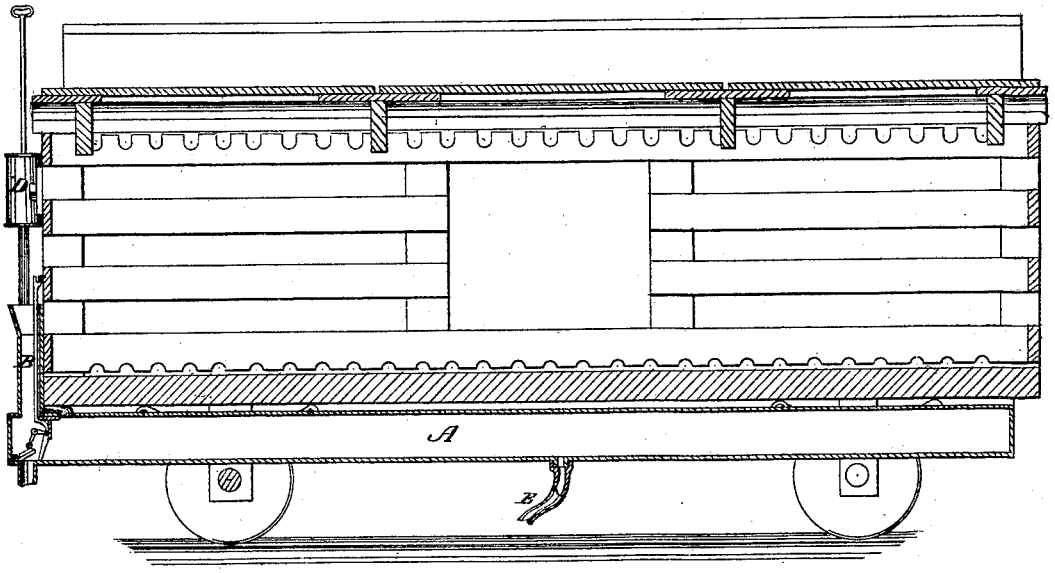
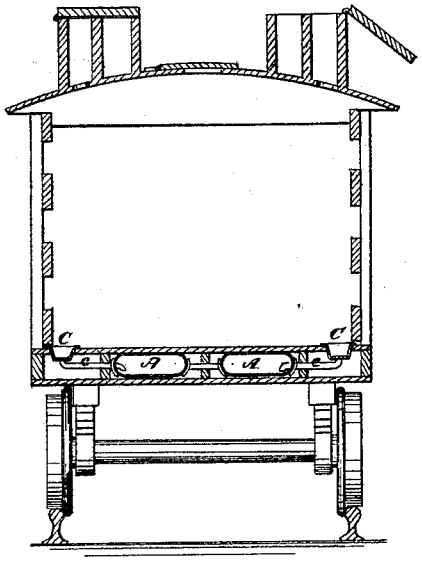
RANK, KING, & SHARP.

Stock Car.

No. 111,873. Patented Feb. 14, 1871.





Witnesses:
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UNITED STATES PATENT OFFICE.

AMOS RANK, HENRY KING, AND JOEL SHARP, OF SALEM, OHIO.

IMPROVEMENT IN RAILWAY STOCK-CARS.

Specification forming part of Letters Patent No. **111,873,** dated February 14, 1871.

To all whom it may concern:

Be it known that we, AMOS RANK, HENRY KING, and JOEL SHARP, all of Salem, in the county of Columbiana and State of Ohio, have invented certain new and useful Improvements in Railway Stock-Cars, of which the following is a specification:

Our improvement consists, first, in arranging the water-reservoir underneath a stock-car, where it can be protected from injury from accident and its contents prevented from freezing, and also avoiding the liability to capsizing the car incident to carrying a heavy weight of water on the roof; second, in combining a water-reservoir, located below the level of the drinking-troughs, with an atmospheric pump, to force the water from the reservoir into the troughs.

The accompanying drawing shows our improvements as applied to an improved stock-car invented by Amos Rank, of Salem, Ohio. They might obviously, however, be adapted to any ordinary car.

Figure 1 represents a longitudinal central section, and Fig. 2 a vertical transverse section, through our improved car.

The construction of the running-gear and body of a car is too well known to require description here.

Beneath the body of the car we arrange an air-tight reservoir, A, of any suitable size, shape, construction, or material; but, by preference, we use long tubes or cylinders extending lengthwise of the car. Water is run into this reservoir at the station through an inlet-pipe, B. The reservoir communicates, by suitable pipes *c*, with troughs C, arranged in or upon the floor of the car, and where a middle deck is employed upon its sides. The water is forced from the reservoir into these troughs by a suitable atmospheric pump, D, by means of which atmospheric pressure may be applied to the upper surface of the water in the reservoir, to force the water from the reservoir into the watering-troughs.

As this pressure may be perfectly regulated by the attendant, he may force into the troughs only so much water as he may deem necessary; or, if more water is introduced than is required by the stock, by simply relieving the excessive pressure in the reservoir, by allowing the compressed air to escape therefrom, the water remaining in the troughs will flow back into the reservoir, thereby avoiding not only a waste of water, but preventing the liability of the water freezing, as it would be liable to do if kept in an open trough.

We also attach a hose, E, to the reservoir, to enable the attendant to shower the cattle, to cool hot boxes, or to wash out the cars. This we regard as a much simpler and more effective plan than that of having a showering-roof and a tank above it.

We of course contemplate the use of our improvements on cars provided with feed-troughs, bins, removable partitions, and other improvements now being introduced on this class of cars.

The water in the reservoir might be prevented from freezing by means of a coil of pipes connected with the boiler of the engine, or with a stove on the cars.

We are aware that atmospheric pressure has been used for ejecting fluids from receivers in which they have been contained, and into which they would flow back, the pressure being relieved, and we therefore do not claim, broadly, the device here shown. We are aware, also, that water-reservoirs have been used to supply the necessities of animals on stock-cars.

Our invention is distinguished from any with which we are acquainted in this, that we have applied to stock-cars water-troughs, into which the water can be forced in regulated supplies, and from which the water not used can flow back by its own gravity merely into the reservoir; and also in this, that by our arranging the reservoirs beneath the body of the cars an adequate supply of water can be carried to supply the animals transported for a considerable time without refilling the reservoir, which reservoir being located beneath the center of gravity of the car when loaded diminishes the liability of capsizing the car instead of augmenting it, as when placed upon the roof of the car, according to the ordinary mode of construction.

Another advantage resulting from this location under the floor is, that the reservoir may be packed with a non-conductor of heat, or warmed by steam or hot-air pipes, without in-

terfering with the convenient use of the car, or tending to make it top-heavy.

We claim as our invention—

1. The combination of the reservoir, arranged beneath the floor of the car, with the watering-troughs, arranged above the reservoir, substantially as hereinbefore set forth.

2. In combination with a stock-car, a water-reservoir and watering-trough, arranged in relation to one another as aforesaid, and an atmospheric pump for supplying water to the troughs in regulated quantities, while an excess of pressure is maintained on the surface of water in the reservoir.

In testimony whereof we have subscribed our names.

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