FOOTE & ORTON.

Freight Car.

No. 41,212. Patented Jan. 12, 1864.

Fig. 1.

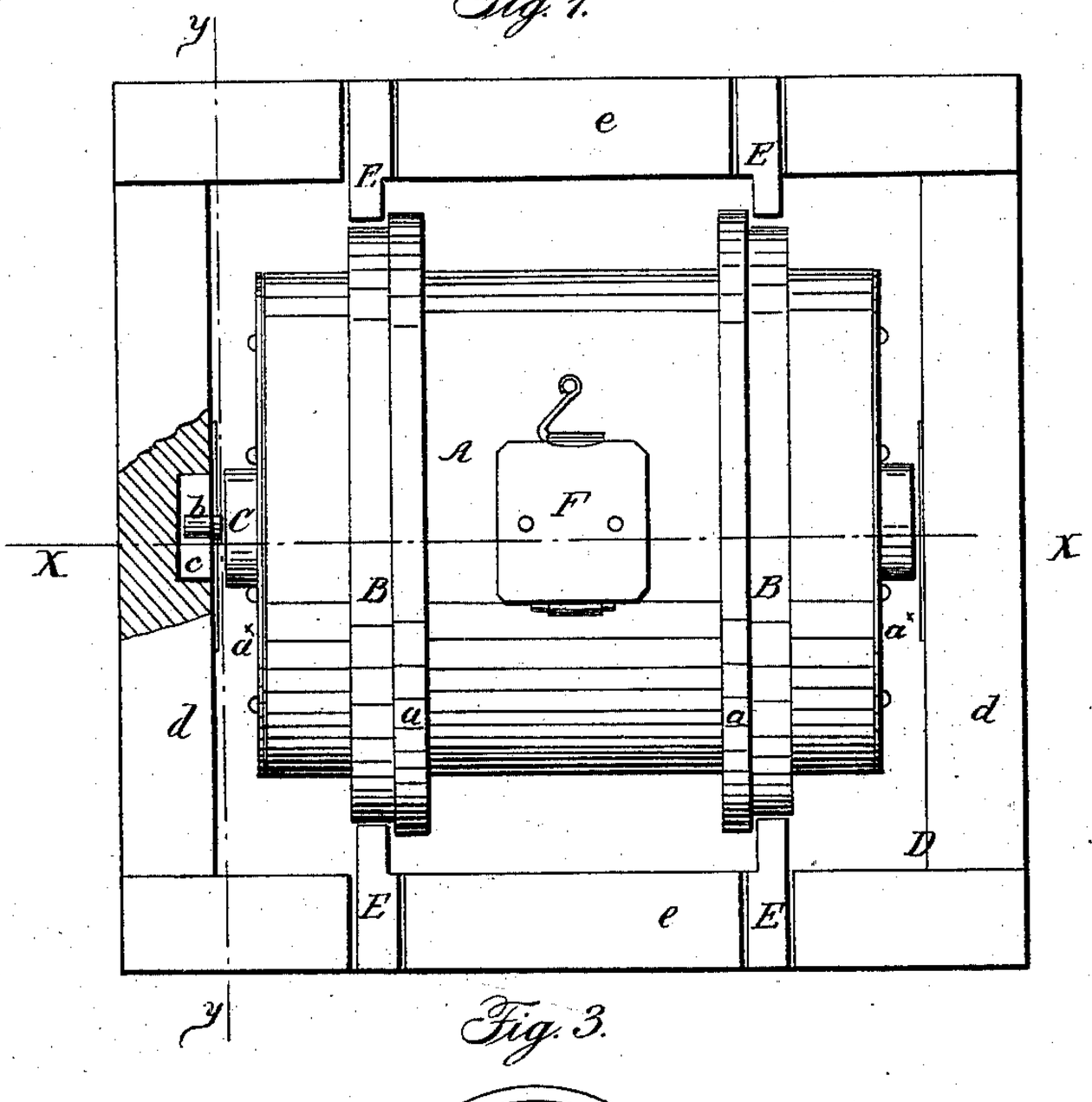


Fig. 3.

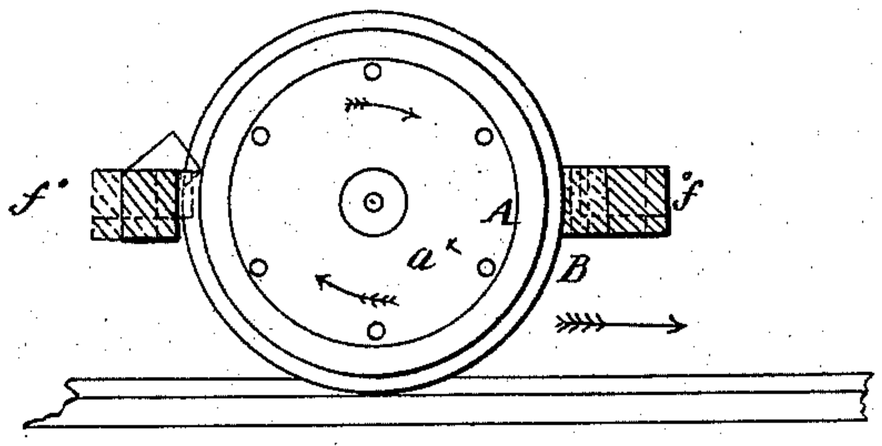
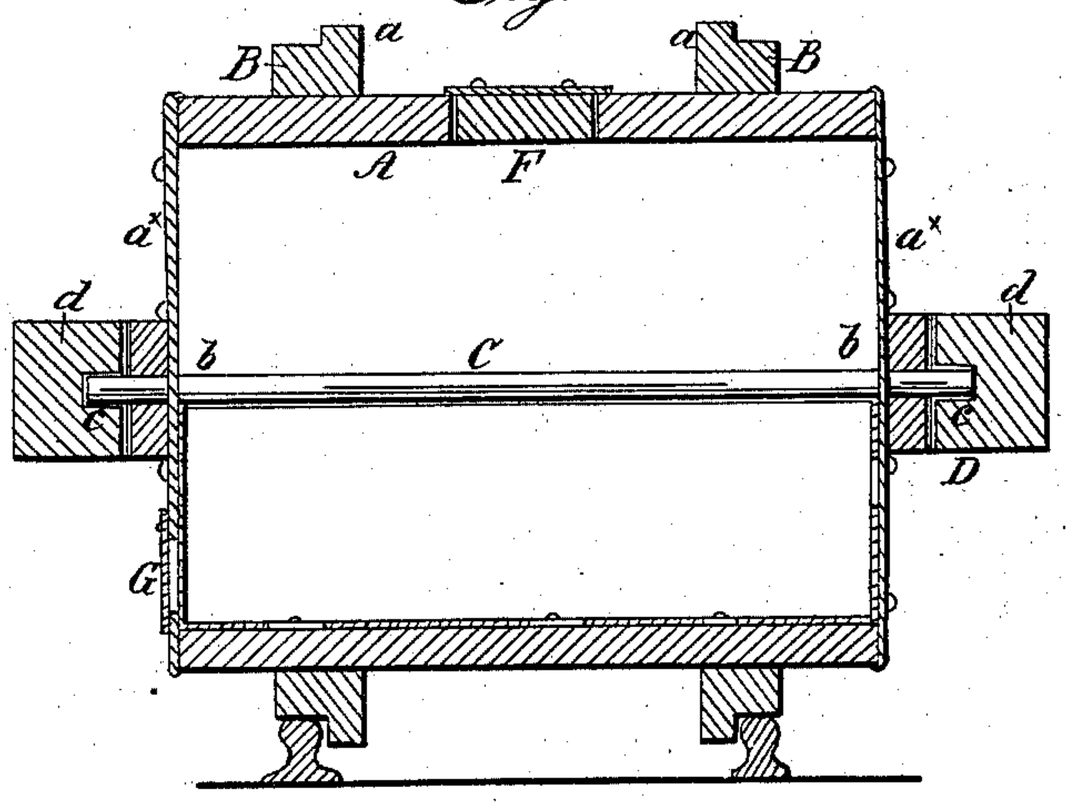


Fig. 2.



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AM. PHOTO-LITHO. CO. N.Y. (OSBORNE'S PROCESS.)

UNITED STATES PATENT OFFICE.

CHARLES R. FOOTE AND JAMES ORTON, OF WILLIAMSTOWN, MASS.

IMPROVEMENT IN FREIGHT-CARS.

Specification forming part of Letters Patent No. **41,212**, January, 12, 1864.

To all whom it may concern:

Be it known that we, CHARLES R. FOOTE and JAMES ORTON, of Williamstown, in the county of Berkshire and State of Massachusetts, have invented a new and Improved Freight-Car; and we do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is a plan or top view of our invention; Fig. 2, a vertical central section of the same taken in the line *x x*, Fig. 1; Fig. 3, a diminished side sectional view of the same, taken in the line *y y*, Fig. 1.

Similar letters of reference indicate corresponding parts in the several figures.

This invention relates to a new and improved freight-car, designed more especially for transporting or carrying coal-oil and other liquids, grain in bulk, &c.

The invention consists in constructing the body of the car of cylindrical or approximate form and encompassing the same with bands provided with flanges to serve as wheels. The body of the car is provided with an axle the journals of which are fitted in oblong bearings in a frame and arranged in connection with self-acting brakes, all being combined in such a manner that the body of the car will rotate as it is drawn along, and it is believed several advantages are obtained over the ordinary freight-cars in use.

To enable those skilled in the art to fully understand and construct our invention, we will proceed to describe it.

A represents the body of the car, which is of cylindrical or an approximate form, and constructed of either wood or metal. If constructed of metal, wrought-iron plates, riveted together like those of a steam-boiler, would be a good way of manufacturing them. Around the body A there are two massive wrought-iron bands, B B. These bands are placed at a suitable distance apart, and are provided with flanges *a*, so that said bands may serve the office of wheels and run upon the rails in the same way as those of an ordinary car. The body A may be of any suitable dimensions. As a general thing its diameter and length will be about equal to the height and width of an ordinary freight-car.

C represents the axis of the car-body. The axis may extend entirely through the car-body, the ends of the former projecting sufficiently far through the ends or heads $a^{\times}$ of the car-body to form journals *b b*, which are fitted in oblong bearings *c c*, made in the sides *d d* of a rectangular frame, D. The front and back bars, *e e*, of the frame D have each two brake-shoes, E E, attached to them opposite the treads of the wheels B B. These shoes E are hung on pivots *f*, and are fitted in mortises in the bars *e e* in such a manner that their inner ends cannot descend below a horizontal position, but may be raised above such a position, as will be understood by referring to Fig. 3. The journals *b* are allowed to rotate freely in the bearings *c c*, and also allowed to move or work in them from their front to their back ends, and vice versa.

In the car-body A there is a door, F, constructed and arranged in any proper way to admit of being opened with facility and securely fastened, when required, and in one of the heads $a^{\times}$ of the car-body there is another door, G, said door being near the edge of the head.

The operation is as follows: The car-body is turned until the door F is brought to the top. The door F is then opened and the grain, oil, or other freight introduced into the car-body. The freight may be taken from the car-body through either of the doors F or G, as may be most convenient. When the car is drawn along in the direction indicated by the arrow in Fig. 3, the journals *b b* will be at the back parts of the bearings *c c*, as the coupling is connected with the frame D, and the wheels B will be in contact with the shoes E on the back part of the frame. These shoes, however, will offer no obstruction to the wheels, as the latter have the power to turn their inner ends upward, and said shoes simply rest upon the wheels. The shoes on the front of the frame do not touch the wheels B during this movement of the car, in consequence of the journals *b b* being at the back parts of the bearings *c c;* but when the engineer desires to stop the train and reverses the engine the speed of the train will be checked and the car-body, owing to its inertia, will move forward in the frame D, and the journals *b* will be at the front parts of the bearings *c c*, and the wheels B in contact with the front shoes E E, and as the inner ends of the

latter cannot be forced downward, they will of course serve as brakes and act in the most efficient manner, owing to the large diameter of the wheels B. In case the engineer desires to back the train, the shoes on the back part of the frame D are shoved outward from the wheels B as the frame D is moved back, and the shoes on the front part of said frame will be in contact with the wheels; but the forward shoes will, in the latter case, be acted upon by the wheels in the same manner as the back shoes were during the forward movement of the car, as the wheels in the latter movement turn in a reverse direction and the front shoes cannot, therefore, serve to check the rotation of the wheels. This will be fully understood by referring to Fig. 3, in which the position of the parts during the backing movement is shown in red.

The advantages of this invention are as follows: First, there will be but little friction, for the weight of the car and its contents is upon the rails and not on the axle; second, easy draft—a small locomotive will be capable of drawing a long train—consequently a saving of fuel is effected; third, a saving in oil for lubricating purposes; fourth, non-liability of the breakage of axles, as they are not subject to strains and friction; fifth, no brakemen are required, the engineer being enabled to control a whole train; sixth, the brakes act more efficiently than those of ordinary cars in consequence of the large diameter of the wheels; seventh, moderate cost in construction and little wear and tear; eighth, the facility with which the cars can be unloaded and returned for use; ninth, the cars can be switched off from a main road and each drawn by a single horse on the paved street of a city to a warehouse or any desired place; tenth, a car can be used as a tender to carry water for a locomotive in cases where water cannot readily be procured on the route.

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

1. A car-body of cylindrical or an approximate form with wheels fitted on its periphery and arranged to rotate with its contents or load on the rails, substantially as herein set forth.

2. The frame D, in combination with the car-body A, the journals of the latter being fitted in bearings in the former, substantially as described.

3. The oblong bearings *c c* in the frame D, in combination with the shoes E, placed on said frame, and all arranged to operate as and for the purpose set forth.

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