

A. WHITTEMORE.

Improvement in Railway-Car Brakes.

No. 132,225.

Patented Oct. 15, 1872.

Fig. 1

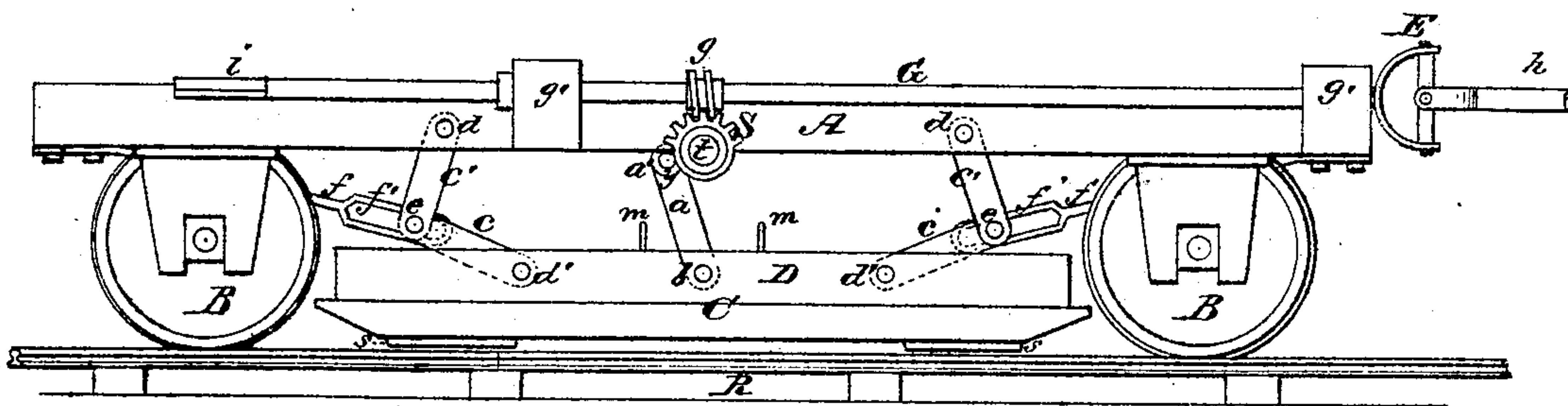


Fig. 2

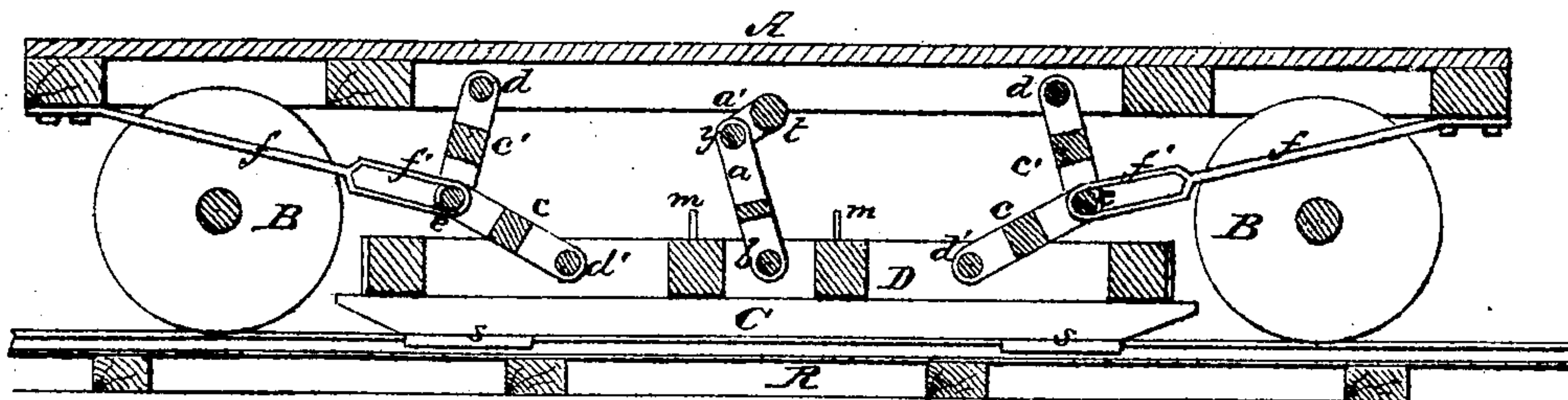
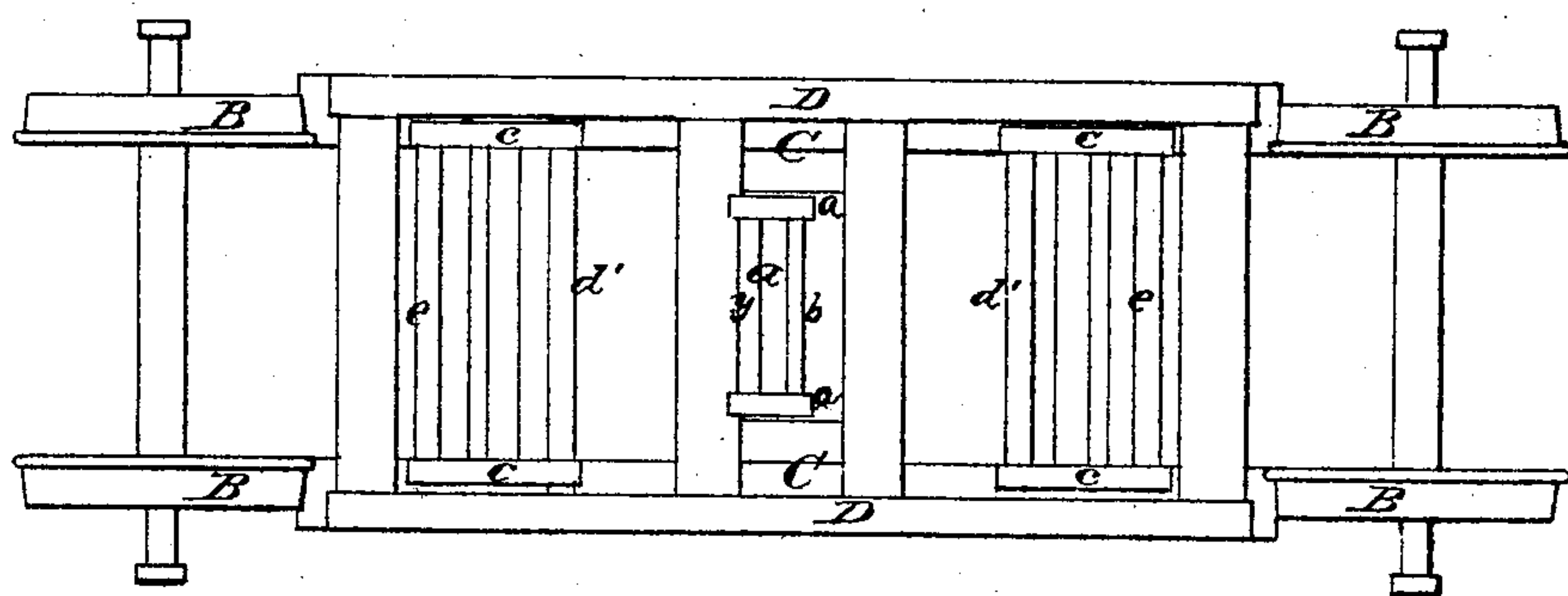


Fig. 3



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# UNITED STATES PATENT OFFICE.

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## IMPROVEMENT IN RAILWAY-CAR BRAKES.

Specification forming part of Letters Patent No. 132,225, dated October 15, 1872.

*To all whom it may concern:*

Be it known that I, AMOS WHITTEMORE, of Cambridgeport, in the county of Middlesex and State of Massachusetts, have invented a new and Improved Railroad-Car Brake; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawing making part of this specification, in which—

Figure 1 is an elevation of one side of a railroad car having my improved brake applied to it; Fig. 2 is a section taken longitudinally and centrally through Fig. 1; and Fig. 3 is a top view of the brake-frame and lower sections of the toggle-levers arranged between the trucks.

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

This invention relates to friction-brakes which are arranged between the trucks of a car and over the rails in such manner that they can be brought down upon the surfaces of the rails with more or less force, as may be found necessary.

The following description of my invention will enable others skilled in the art to understand it.

In the accompanying drawing, A represents a car-bed; B B, the truck-wheels beneath the ends thereof, which parts may be constructed in the usual well-known manner. D represents a brake-frame, which is composed of longitudinal and transverse beams, secured together in a substantial manner. To the bottom sides of the longitudinal beams of this frame I rigidly secure the brake beams or shoes C C, which are turned up at their ends, as shown in the drawing, so as not to offer abrupt obstructions to their passage over the rails R when brought down thereupon. The lower sides of these beams or shoes C may be concave transversely, or they may be flat. They may be shod with metal or any other suitable material, or covering may be omitted altogether, and the material of which the brake-bars are composed left exposed as friction-surfaces. To the lower edges of these brake-bars C guards s s are applied, which extend below the lips of the rail-tops, inside thereof, and prevent lateral displacement of the brakes when they are brought down upon the rails. The ends of these guards may be beveled inward toward the middle of

the track, so as not to present abrupt obstructions. At the middle of the length of the brake-frame D, and extending transversely across this frame, is a bar, b, to which is pivoted two arms, a a, that are connected together at their upper ends by a bar, y. These arms a a are rigidly connected together by means of an intermediate bar so as to constitute a frame which vibrates about the central bar b. Similar vibrating frames, which are composed of arms c and bars d' e, are applied near the extremities of the brake-frame D, as shown in the three figures of the accompanying drawing. To the transverse rod y of the central vibrating frame a crank-arms a' are pivoted, which arms are rigidly secured to a horizontal transverse rock-shaft, t, which has its bearings applied to the sill-beams of the car-bed A in the same vertical plane as the rod b. On one end of this rock-shaft t a toothed segment, S, is keyed, which engages with the threads of a worm-screw, g, on a longitudinal rod, G. The rod G has its bearings at g' g', on one side of the car-bed, and terminates at one end in a gimbal or universal joint, E, and a prismatic tenon, h, and at the other end in a prismatic tenon, i, which is adapted to receive a socket presenting a corresponding aperture, which is made into a rod, G, on another car. Thus it will be seen that each car is provided with a rod, G, having a short universal coupling, h, on one end, and a coupling, i, on the opposite end adapted for connecting with corresponding rods on other cars. These connections allow the cars to turn curves freely, as well as to vibrate at the junctions of cars, at the same time they allow all the rods to be rotated by power applied to the foremost rod of the train, and under control of the engineer.

In Figs. 1 and 2 I have represented means for resisting the longitudinal strain on the brake-frame when it is pressed upon the rails. This consists of bars f, which are slotted or looped at f', and secured fast to the timbers of the car-bed. The rods e, which connect the toggle-frames c c' together, pass through the loops f' of the rods f, and play in these loops while raising or depressing the brakes. The length of the rods f is such that they serve as tie or drag rods for the brakes and relieve the toggles from strain when the brake-shoes are pressed on the rails. If desirable, the brakes



of all the cars may be connected together by means of chains attached to staples *m m* on each brake-frame.

It will be seen, from the above description, that my brake-shoes extend from one truck to the other of a car, and are arranged over the rails; also that these shoes are applied to a strong frame, which is attached to the car-bed by means of toggle-frames, to the intermediate one of which the power is applied which operates the brakes. By thus hanging the brakes they are free to rock about the rod *b*, and to accommodate themselves to inequalities of the rail-track.

I am aware that it is not new to arrange brake-shoes between trucks so that they may be pressed upon the rails for braking cars in motion, and this I do not claim, broadly.

What I claim as new, and desire to secure by Letters Patent, is—

1. The actuating-shaft *G*, arranged as described, in combination with worm-screw *g*,

segment *S* on shaft *t*, toggle *a a'*, and brake-shoes which are suspended by links at their ends, and sustained against endwise strain by looped rods *f*, substantially as described.

2. The links *c c'*, centrally arranged arms *a*, and cranks *a' a'* applied to the car-bed *A*, and the frame *D* carrying brake-shoes *C C*, the said links being independent of each other and of the said cranks and arms, so as to allow the brake-shoes, with their frame, to properly accommodate themselves to the inequalities of the road when pressed down thereon, substantially as described.

3. Inclined stay-rods *f*, connected by loops *f'* to the transverse link-rods *e e*, and also to the ends of the car-bed, substantially as described.

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Witnesses:

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