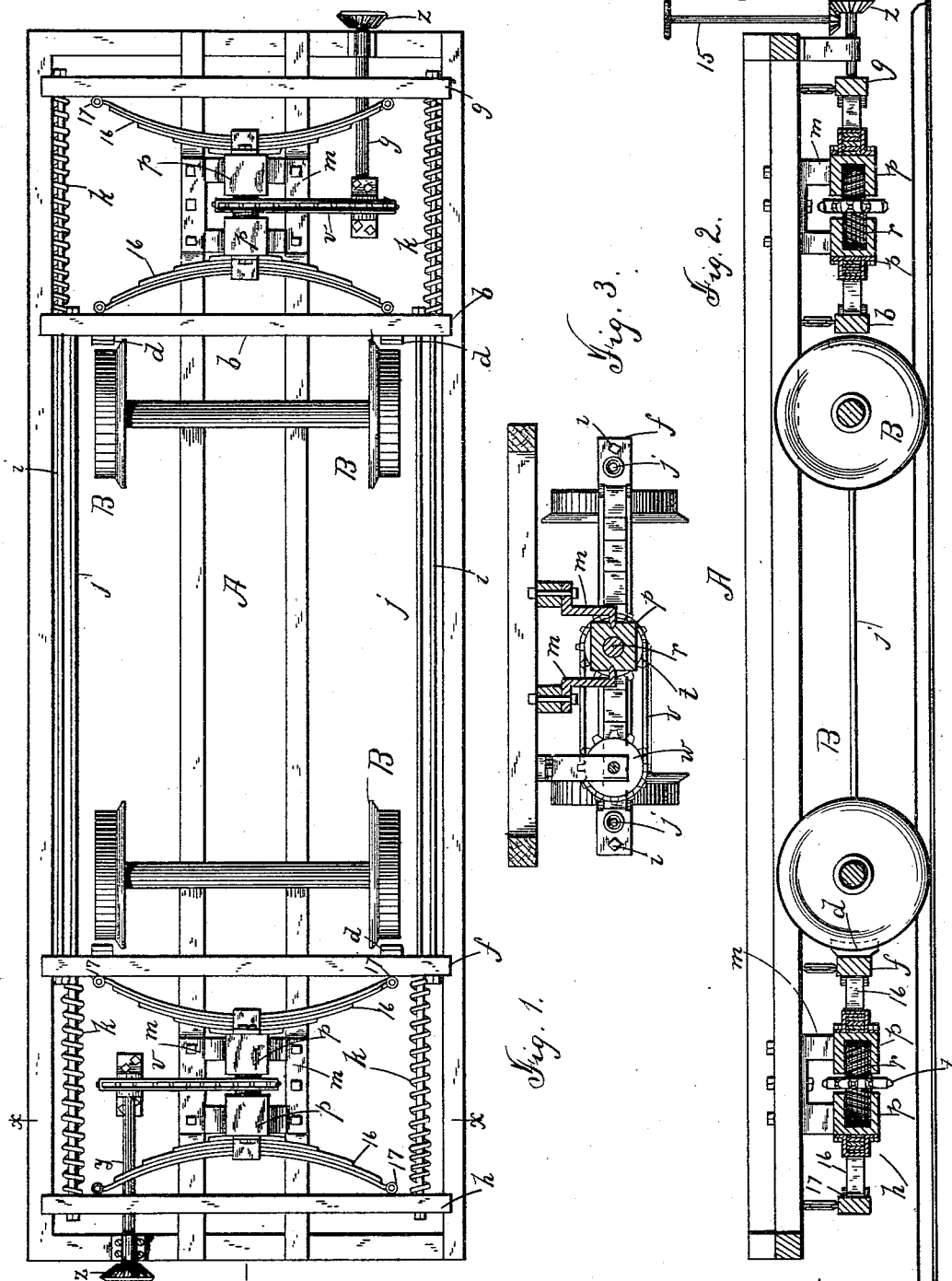


(No Model.)

A. B. POOL & J. J. BEALS.  
CAR BRAKE.

No. 458,407.

Patented Aug. 25, 1891.



WITNESSES

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# UNITED STATES PATENT OFFICE.

ANTHONY B. POOL AND JOSEPH J. BEALS, OF BOSTON, MASSACHUSETTS.

## CAR-BRAKE.

SPECIFICATION forming part of Letters Patent No. 458,407, dated August 25, 1891.

Application filed January 13, 1891. Serial No. 377,600. (No model.)

*To all whom it may concern:*

Be it known that we, ANTHONY B. POOL and JOSEPH J. BEALS, both of Boston, in the county of Suffolk, State of Massachusetts, have invented certain new and useful Improvements in Car-Brakes, of which the following is a description sufficiently full, clear, and exact to enable any person skilled in the art or science to which said invention appertains to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a bottom plan view of a car provided with our improved brake; Fig. 2, a vertical longitudinal section of the same, and Fig. 3 a transverse section taken on line *xx* in Fig. 1.

Like letters and figures of reference indicate corresponding parts in the different figures of the drawings.

Our invention relates to a brake mechanism which is especially adapted for use on street-cars; and it consists in certain novel features hereinafter fully set forth and claimed, the object being to produce a simpler, cheaper, and more effective device of this character than is now in ordinary use.

The nature and operation of the improvement will be readily understood by all conversant with such matters from the following explanation.

In the drawings, A represents the car, which is of the ordinary form and construction. The wheels B are mounted in the usual manner, and swinging brake-beams *b f*, provided with shoes *d*, are secured to the car-body. Swinging beams *g h* are secured, respectively, near the car ends parallel with the beams *b f*. The beam *g* is connected with the ordinary beam *f* by rods *i*, passing loosely through the adjacent beam *b*, and the beam *h* is connected in like manner with the beam *b* by rods *j*. Springs *k*, disposed around said rods, connect adjacent beams *g b* and *f h* and act contractively to draw them toward each other. Two hangers *m* are secured to the car-bottom between the beams *h* and *f*, and two nuts *p* are fitted to slide horizontally on said hangers. These nuts work on opposite ends of a double worm *r*, whereby they may be moved in opposite directions. A sprocket-wheel *t* is se-

cured on the worm-shaft between the nuts, and is connected by a jack-chain *v* with a sprocket *w* on the inner end of a horizontal shaft *y*, journaled on the car. The end of said shaft projects beyond the car end and bears a beveled gear *z*, which meshes with a like gear on the brake-rod 15. A half-elliptic spring 16 is secured centrally to each nut *p*. The free ends of said springs are provided with friction-rolls 17, bearing against the beams *f h*, respectively, being held in contact therewith by the pull-springs *k*. A like arrangement of parts is disposed between the beams *b g*.

In the use of our improvement when the brake-rod 15 at either end of the car is rotated the worm *r* is driven, spreading the nuts *p* and forcing their springs 16 against the respective beams, as *b g*. The beam is driven toward the wheels and its shoes into contact therewith. The beam *g* is simultaneously driven outward toward the end of the car. The rods *i*, connecting it with the opposite brake-beam *f*, force its shoes into engagement with the adjacent wheels B. By this arrangement the brakes are applied at the same time to all the wheels of the car from either end thereof, rendering the action much quicker and more effective than when a single beam is moved, as in brakes of ordinary construction. The springs 16 serve to cushion the beams and relieve the body of the car from the jar resulting from the contact of the shoes with the wheels. By rotating the rod 15 in the opposite direction the nuts are driven toward each other, permitting the springs *k* to draw the beams in like direction and release the wheels.

Having thus explained our invention, what we claim is—

1. In a car-brake, the combination of a supplemental brake-beam, a right and left worm disposed between said beam and the main brake-beam, nuts fitted to slide on the car-body and travel on said worm, springs secured to said nuts and engaging the respective beams, and means for rotating the worm from the car-body, substantially as described.

2. In a car-brake, a supplemental beam on the car-body disposed adjacent to one brake-beam and connected by rods with the brake-

beam at the opposite end of the car, in combination with a worm rotatable from said body and connecting mechanism actuated thereby for spreading the adjacent beams.

5 3. In a car-brake, a supplemental beam on the car body disposed adjacent to one brake-beam and connected by rods with the brake-beam at the opposite end of the car, in combination with a worm rotatable from said body,  
10 and connecting mechanism actuated thereby for spreading the adjacent beams, and springs for returning said beams when released by the worm, substantially as described.

15 4. In a car-brake, a supplemental brake-beam in a plane parallel with the main beam, in combination with a right and left hand worm rotatable from the car-body, nuts on said worm, semi-elliptic springs on said nuts bearing, respectively, against said beams, and  
20 springs for returning the beams when released, substantially as described.

5 5. In a car-brake, the combination of a car-body provided with a supplemental beam, two nuts fitted to slide on said body between said  
25 beam and the brake-beam, springs on the nuts bearing against said beams, a worm for spreading said nuts, springs for returning the beams when released, and mechanism oper-

ated by the brake-rod for actuating said worm, substantially as described.

30 6. The combination of the car-body provided with supplemental brake-beams *g h*, respectively connected with opposite main brake-beams, pull-springs connecting said supplemental brake-beams with the adjacent main  
35 beams, two nuts fitted to slide on the car between each set of beams, worms for spreading said nuts rotatable from the car-body, and a semi-elliptic spring on each nut bearing against the adjacent beam, substantially as  
40 described.

7. The combination of the car-body provided with beams *g h*, rods *i j*, connecting said beams with opposite brake-beams, springs *k*,  
45 connecting said beams with adjacent brake-beams, nuts *p*, fitted to slide on said body, the worms *r* and actuating mechanism, and the springs *l*, secured to said nuts and provided with friction-rolls bearing against said beams, substantially as described.

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Witnesses:

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