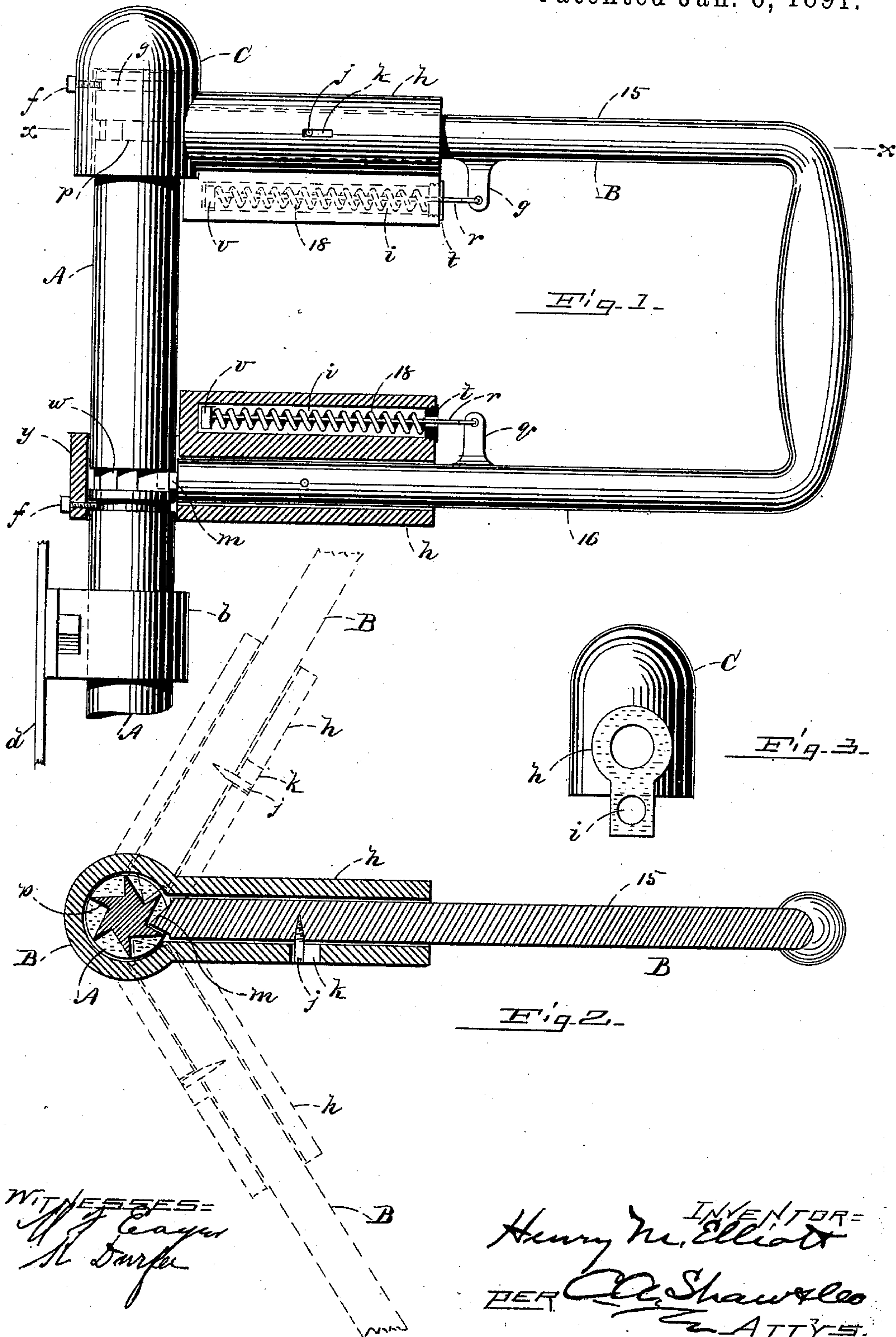


H. M. ELLIOTT.
BRAKE FOR STREET CARS.

No. 444,168.

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UNITED STATES PATENT OFFICE.

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BRAKE FOR STREET-CARS.

SPECIFICATION forming part of Letters Patent No. 444,168, dated January 6, 1891.

Application filed November 10, 1890. Serial No. 370,845. (No model.)

To all whom it may concern:

Be it known that I, HENRY M. ELLIOTT, of Danvers, in the county of Essex, State of Massachusetts, have invented certain new and useful Improvements in Brakes for Street-Cars, 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 an elevation of a portion of a brake-rod, showing my improved mechanism in position; Fig. 2, a horizontal section taken on line *xx* in Fig. 1, and Fig. 3 a detail view of the cap.

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

My invention relates especially to a handle for the brake-rods of street-railways 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 brake-rod, and B the handle, considered as a whole. The brake-rod is arranged vertically and mounted to rotate in eyes *b*, secured to the dasher *d* in the ordinary manner. A cap C is fitted to inclose the top of the rod A, and is prevented from being withdrawn therefrom by a pin *f* passing through said cap into an annular groove *g* in the top of said rod, the groove permitting the cap to freely rotate thereon. The cap C is provided with a laterally-projecting tubular arm *h*, in the lower end of which a longitudinally-arranged chamber *i* is formed. The handle B is U-shaped, and has one arm 15 fitted to slide longitudinally in the tube *h*, a pin *j* on said arm 15 projecting through a slot *k* in the wall of said tube and preventing it from being withdrawn.

The end of the handle-arm 15 is reduced, forming a pawl-point *m*, which engages ratchet-teeth *p*, formed in the brake-rod A

within the cap C. Said handle-arm 15 is provided with a lug *q*, to which a rod *r* is attached, and which projects into the chamber *i*. The mouth of said chamber is closed by a screw-plug *t*, through which said rod is fitted to slide. The inner end of the rod has a block *v*, and a coiled spring 18 is disposed around the rod between said block and plug, said spring acting expansively to hold the handle-arm in engagement with the ratchet. A ratchet *w* is formed in the rod A below the ratchet *p* and is inclosed in a collar *y*, said collar being held by a pin *f*, working in a groove *g* in said rod in the same manner as the cap C. The collar *y* is provided with a tubular arm *h*, having a longitudinal chamber *i* arranged in the same manner as the arm on said cap. The lower arm 16 of the handle B is fitted to slide in said tubular arm *h* of said collar, and is held in engagement with the ratchet by a spring 18 on the rod *r*, working in said chamber and attached to a lug *q* on said arm.

In the use of my improvement the handle B is moved forward, its pawl-points *m* engaging the ratchets *p w* and rotating the rod A to set the brake in the usual manner. On the return movement of the handle said points click on the ratchets, the rod being prevented from returning by the ordinary click on the platform of the car. By thus oscillating the handle the brake may much more quickly be set than when the ordinary handle-bar is employed, and greater force may be applied thereto. The ends of the handle-arms are held in engagement with their respective ratchets by the springs 18. By drawing the handle outward until its points *m* are disengaged from the respective ratchets the brake may be quickly released, the handle remaining stationary.

The brake-rod may be provided with only one ratchet-groove *p*, inclosed by the cap, and a single bar employed to operate it, if desired; but I prefer to use the U-shaped handle described, as it imparts greater strength and is more readily manipulated.

Having thus explained my invention, what I claim is—

1. In a device of the character described, the combination of a brake-rod provided with two ratchet-grooves and a spring-tensioned U-

shaped handle disposed with its ends in engagement with said ratchets, substantially as described.

2. In a car-brake, a rotatable brake-rod provided with two ratchets, in combination with sleeves rotatable on said rod, a U-shaped handle fitted to slide longitudinally in arms on said sleeves, and springs for holding the ends of said arms in engagement with said ratchets, substantially as described.

3. The combination of the brake-rod provided with ratchets, as *p w*, a U-shaped handle, and springs for holding said handle with its ends, respectively, in engagement with said ratchets, substantially as and for the purpose set forth.

4. The combination of the brake-rod provided with ratchet-grooves, sleeves rotatable on the rod around said grooves, tubular arms on said sleeves, a U-shaped handle having its arms fitted to slide in said tubes, and springs connecting said arms and sleeves, substantially as and for the purpose set forth.

5. The brake-rod provided with the ratchet-grooves, in combination with the cap C and

sleeve *y*, respectively having hollow arms *h*, the U-shaped handle B, fitted to slide in said arms and having points *m*, engaging said ratchets, and mechanism for limiting the outward movement of the handle in said arms, substantially as set forth.

6. The brake-rod A, provided with ratchets *p w*, in combination with the sleeves C *y*, having the arms *h*, the U-shaped handle B, fitted to slide in said arms and provided with pawl-points *m*, and the springs 18, connecting said handle and arms, substantially as described.

7. The rod A, provided with ratchets *p w*, in combination with the U-shaped handle B, having pawl-points *m* and fitted to slide in sleeves C *y*, rotatable on said rod, springs 18, disposed in said sleeves, connecting them with said handle, and pins *j*, for limiting the longitudinal movement of said handle, all being arranged to operate substantially as described.

HENRY M. ELLIOTT.

Witnesses:

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ANNA W. MEAD.