(No Model.)

D. C. KNOWLTON & J. E. HARRIS.

CAR BRAKE.

No. 336,120. Patented Feb. 16, 1886.

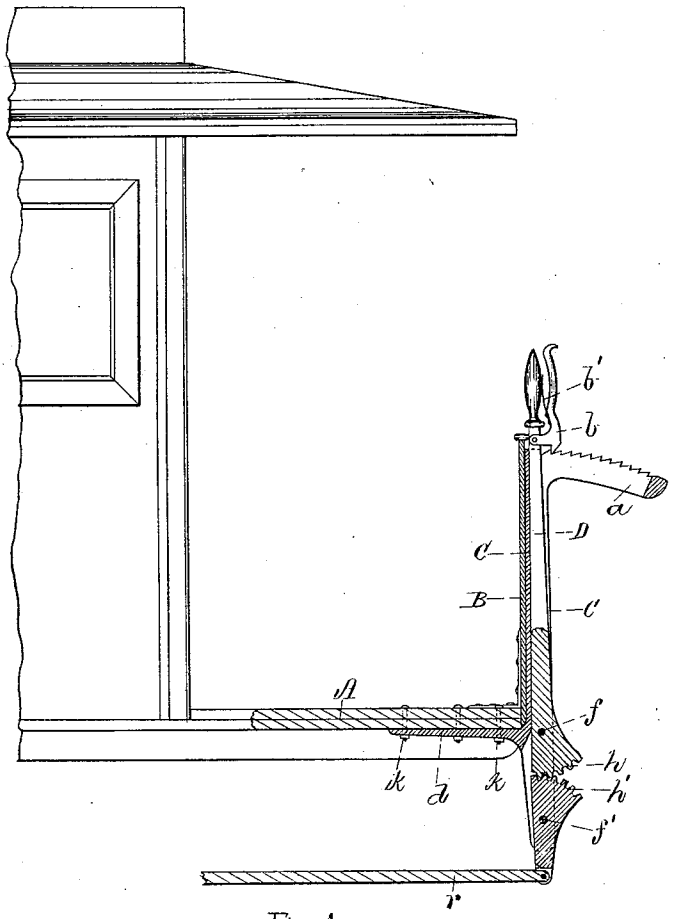


Fig. 1.

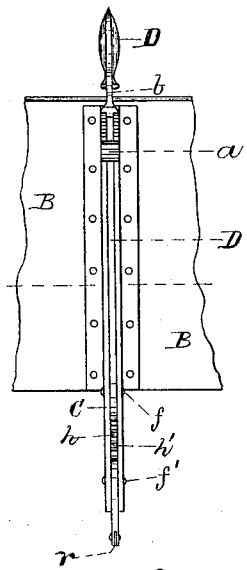


Fig. 2.

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UNITED STATES PATENT OFFICE.

DANIEL C. KNOWLTON AND JAMES E. HARRIS, OF BOSTON, MASS.

CAR-BRAKE.

SPECIFICATION forming part of Letters Patent No. 336,120, dated February 16, 1886.

Application filed May 21, 1884. Renewed July 31, 1885. Serial No. 173,184. (No model.)

To all whom it may concern:

Be it known that we, DANIEL C. KNOWLTON and JAMES E. HARRIS, both of Boston, county of Suffolk, State of Massachusetts, have invented a new and useful Improvement in Car-Brake Appliances, of which the following is a full, clear, concise, and exact description, taken in connection with the drawings accompanying and forming a part hereof, in which—

Figure 1 is a side view of a horse-car platform with our device attached. Fig. 2 is a front view.

In order that our invention may be more fully understood, we will describe it, using letters of reference to the drawings.

A represents the platform of a horse-car, and B the dasher or fender, usually of metal. C is an upright piece or standard, preferably of metal, secured, as shown, to the platform and dasher. Near the top of the standard is placed an arm, *a*, slotted lengthwise to allow of the movement of the rod D in the slot. The upper edge of the arm is toothed or serrated, the teeth being cut so as to allow the pawl *b*, pivoted to the rod D, to slip over them when the rod is pushed forward away from the fender B, but so as to take with the pawl and prevent any movement of the rod in the opposite direction until the pawl is raised. At its lower end the standard C is provided with a bracket or stud, *d*, which projects in the opposite direction from the arm *a* and underneath the car-platform, and is securely bolted thereto, as shown at *k k*. The operating lever or rod D is provided at its upper end with a handle, which may be grasped by the car-driver, and near its lower end it is pivoted at *f* to the standard C. The standard may be made with a recess, as shown, in which the rod rests when the brake is off, or may be without such recess, but provided below with two parallel projecting arms, between which the sectors *h h'* are pivoted. Below the pivot *f* the rod D spreads out, forming a sector, *h*, which is provided with gear-teeth, the teeth meshing with the teeth of a corresponding sector, *h'*, which is also pivoted, at *f'*, to the downward projections of the standard C. The lower end or tail-piece of the sector *h'* is pivoted directly to the connecting-rod *r*, which actuates the brake mechanism. This rod is the same as at present commonly used, and to which a short chain is attached, which winds on a drum as the brakeman or driver puts on the brake in the appliance now in common use.

The operation of our device is very simple. To put on the brake, the operator seizes the handle and shoves it from him. The pawl *b* is pressed against the teeth of the arm *a* by the spring *b'* and prevents the handle from moving back when the brake is on. The forward movement of the handle will cause the sectors *h h'* to mesh, thus throwing the lower end or tail-piece of the sector *h'* forward in the same direction as the handle and directly actuating the brake.

It will be obvious that by changing the position of the pivots *f f'* in the sectors the power applied may be increased or diminished, while the length of action is diminished or increased. It will also be obvious that the standard C may be shortened above and the arm *a* be lowered. The pawl *b* will then correspondingly be lowered, and must be provided with a longer handle projecting up to the handle of the rod D, or otherwise arranged so that the pawl may conveniently be operated.

What we claim is—

1. The combination, with the car-platform, of standard C, serrated arm *a*, pawl *b*, operating-lever D, and sectors *h h'*, substantially as described.

2. The brake-frame and connection *r*, in combination with the pivoted sectors *h h'*, and means for operating the same, substantially as described.

3. The brake-frame and connection *r*, in combination with the geared sectors *h h'*, rod D, and handle, pawl *b*, serrated arm *a*, and standard C, as and for the purposes described.

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