(No Model.)

J. H. BURKS.

CAR BRAKE.

No. 256,876. Patented Apr. 25, 1882.

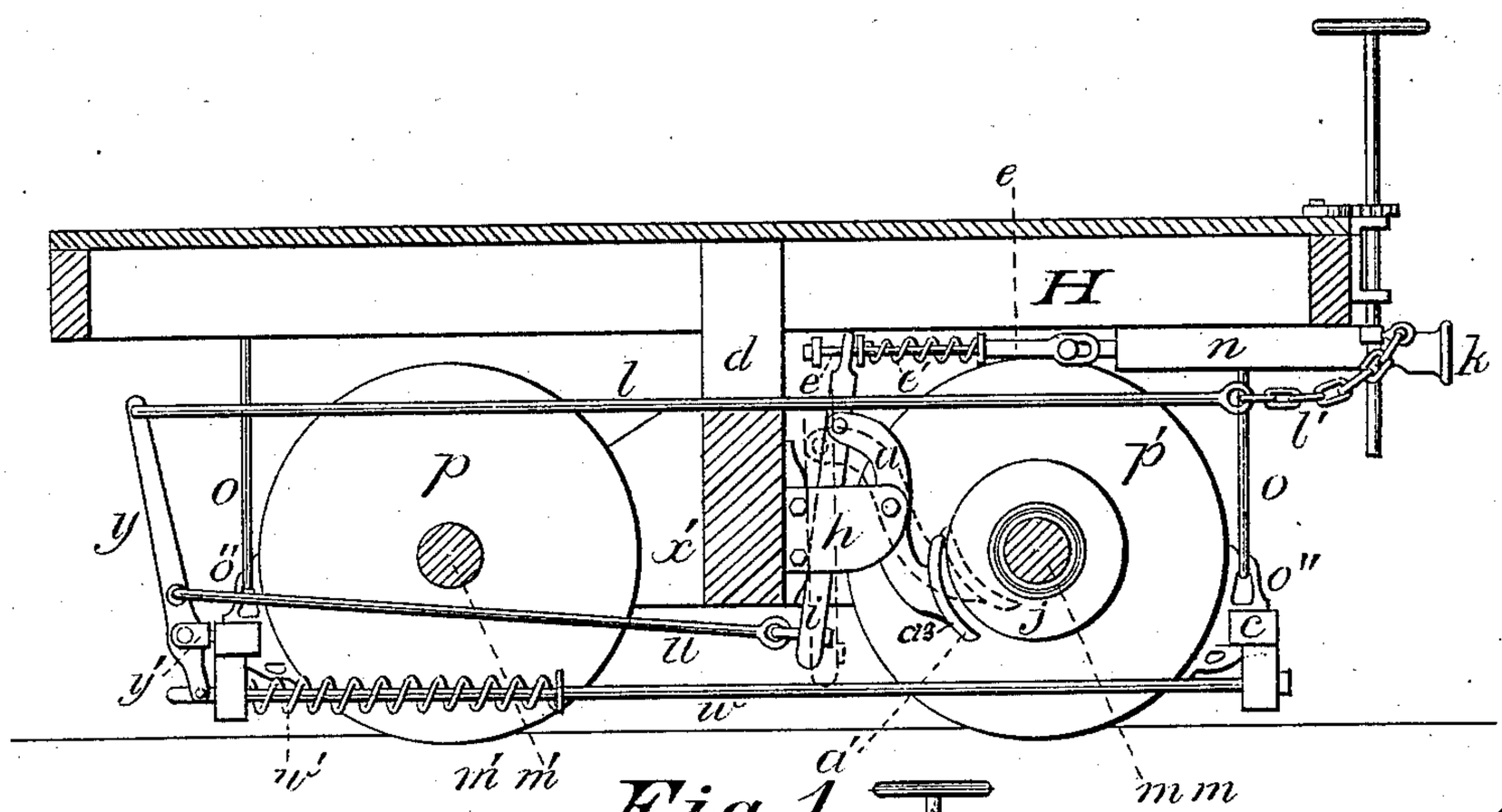

Fig. 1.

Fig. 6.

Fig. 3.

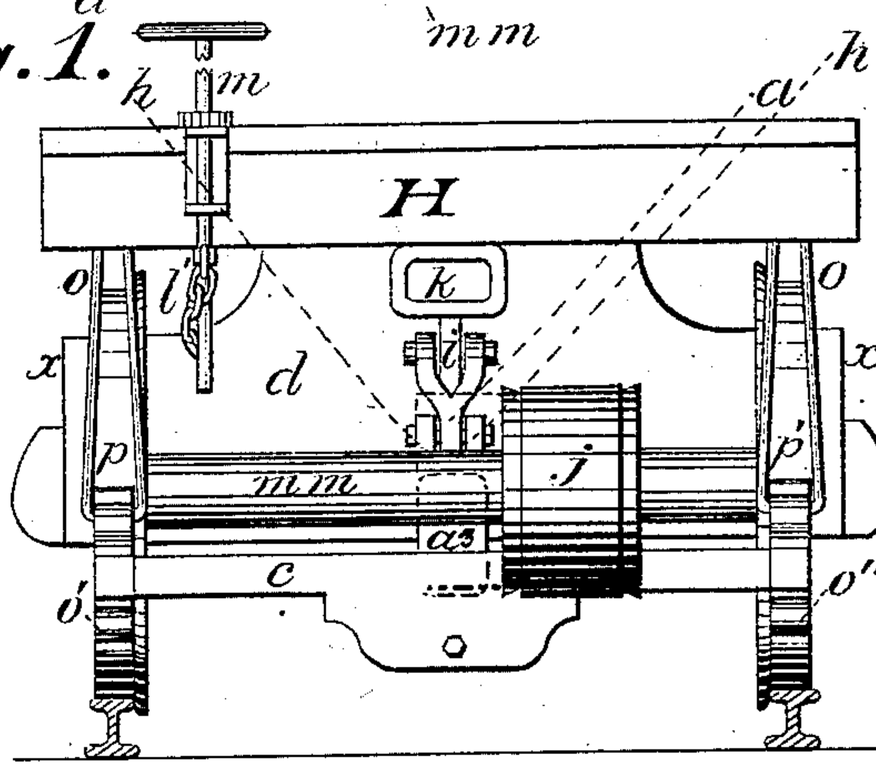

Fig. 2.

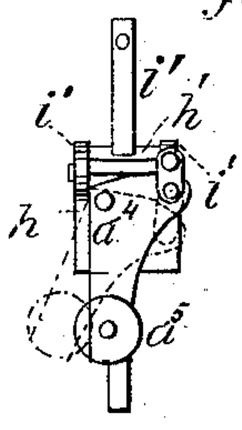

Fig. 5.

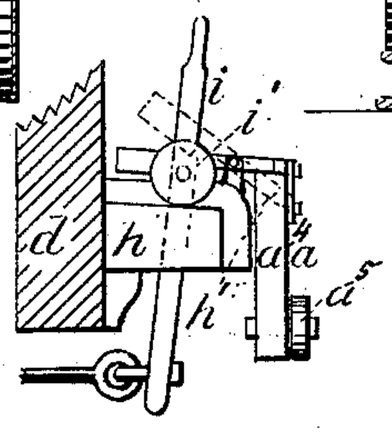

Fig. 4.

Witnesses:

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UNITED STATES PATENT OFFICE.

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CAR-BRAKE.

SPECIFICATION forming part of Letters Patent No. 256,876, dated April 25, 1882.

Application filed July 22, 1881. (No model.)

To all whom it may concern:

Be it known that I, JESSE H. BURKS, a citizen of the United States, residing at Los Angeles, in the county of Los Angeles and State of California, have invented certain new and useful Improvements in Car-Brakes, of which the following is a specification.

My invention relates to that class of car-brakes in which the momentum of the moving car is utilized to apply the brakes through the pressure on the buffer and draw-head. I attain this object by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a side view; Fig. 2, an end view. Fig. 3 is a sectional view of a hollow wheel or cylinder which encircles the front axle of the car. Figs. 4, 5, and 6 illustrate a different method of controlling the action of the brake on cars the axle of which is not heavy enough to bear the strain of the mechanism shown in Fig. 1.

Similar letters refer to similar parts throughout the several views.

Through a slot in the bearing *h*, which is made fast to the truck-beam *d* of the car, passes an upright lever, *i*, which is connected at its upper end with the rear end of the draw-bar *k* by means of the rod *e* and at its lower end with the brake-lever *y* by means of the rod *u*. The lever *i* is also pivoted at a point above its center to the short lever *a*, which is pivoted between the jaws of the bearing *h*, and provided at its lower end with a brake-shoe, a^3. One end of the rod *w* is fastened firmly to the front brake-beam, *c*, and the other end passes through or below the rear brake-beam and connects with the lower end of the brake-lever *y*.

The rod *w* is provided with a pin or shoulder, against which one end of the spiral spring *w'* rests, the other end of the spring resting against the rear brake-beam, thus pressing the brake-beams apart and keeping the brakes from the wheels when not needed. The rod *e* is also provided with a spiral spring, *e'*, one end of which rests against a shoulder on the rod and the other against the lever *i*, forming a cushion to receive the pressure from the draw-head. The axle *m* is provided with a hollow wheel or cylinder, *j*, a sectional view of which is shown in Fig. 3, where *a'* is a sleeve made in halves and secured to the axle by bolts or otherwise. This sleeve is provided with lugs *f* and *f'*, in which are hinged the arms f^2 f^3. These arms or quadrants are provided with teeth or cogs on their outer edge, which fit into similar cogs on the inner surface of the cylinder *j*, which is also made in halves and bolted together over the sleeve *a'*. The quadrants f^2 f^3 are cast very light, except a segment next the axle, which is cast solid. When the car is at rest or moving at a low rate of speed these are held in the position shown in the drawings by the spiral springs a^2; but when a speed of, say, four miles an hour has been attained, the centrifugal force throws out the heavy part of the quadrants, and in so doing causes the cylinder to move by means of the teeth *c c*. Now, it will be seen that when the car is at rest or moving at a rate less than four miles an hour, the cylinder *j* being held by the springs a^2 in the position shown in Fig. 2, any pressure on the draw-head will cause the levers *i* and *a* to assume the positions shown by the dotted lines in Fig. 1 without applying the brakes; but when a speed of four miles an hour (or such speed as shall be deemed most advisable) has been attained the cylinder *j* moves to a position in front of the brake-shoe a^3, and if now pressure be applied to the draw-head, since the short lever *a* cannot move backward its lower end, with its shoe a^3, is caught against the cylinder *j*, the upper end of the lever *i* is forced back, and the lower end moves forward, applying the brakes.

The face of the brake-shoe a^3 is slightly beveled, as is also its bearing on the cylinder *j*, so that if the cylinder is once engaged it cannot return to it place till the pressure is removed; but as soon as the pressure is removed from the draw-head the weight of the shoe a^3 and the force of the spring *w'* at once release the brakes.

Fig. 4 is a side view, and Fig. 5 an end view, of a device for controlling the action of the lever *i* when the axle is not heavy enough to bear the pressure of the lever *a*. The lever *i*, instead of being pivoted to a short lever, as in Fig. 1, has a pin passing through it on the ends of which are the small rollers *i'*, running on cleats cast on the sides of the bearing *h*.

Hinged to the top of the front end of the

bearing *h* is a hook, *h'*, with a slot corresponding to the slots in the bearing *h*. The arms of this hook pass between the lever *i* and the rollers *i'*, and, dropping down upon the bearing *h*, engage and hold in place the pin passing through the lever *i*.

To the front of the bearing *h* is hung the lever a^4, which is connected with the front end of the hook *h'*, and is provided at its lower end with an anti-friction roller, a^5. Now, when the car is at rest or moving at a slow speed the end of the cylinder *j*, Fig. 2, (which would be reversed upon the axle for that purpose,) would press against the roller a^5 and hold it in the position shown by the dotted lines, Fig. 5, which brings the hook *h'* to the position shown by the dotted lines in Fig. 4. In this position, when pressure is applied to the upper end of the lever *i* the lever simply moves back on the rollers and no pressure is brought to bear upon the brakes; but when a speed of four miles an hour has been attained the cylinder by moving allows the lever a^4 to drop to a perpendicular position and the hook *h'* drops down, engaging the pin which passes through the lever *i*. This lever, owing to the inclination of the cleats on which the rollers *i'* move, always drops forward when the pressure is removed. In this position, as the rollers cannot move when pressure is applied to the upper end of the lever *i* the lower end is forced forward, thus applying the brakes.

I am aware that brakes have been constructed to operate by means of the pressure on the draw-head. I therefore do not claim such brakes, broadly; but

What I do claim as my invention, and desire to secure by Letters Patent, is—

1. The upright lever *i*, connected at its upper end with the draw-head and at its lower end with the brake-lever Y, and at some convenient point hung or pivoted to the short lever *a*.

2. The short lever *a*, hung in the bearing *h*, with its upper end attached to the lever *i* and its lower end provided with a brake-shoe to operate against a wheel or cylinder on the axle, for the purpose set forth.

3. The hollow wheel *j*, provided on its inner surface with teeth or cogs, together with the toothed quadrant-arms f^2 f^3, the spiral springs a^2, and the sleeve *a'*, arranged on the axle of a car and operating together for the purpose set forth.

4. A wheel or cylinder moving upon the axle of a car in the direction of its length by means of centrifugal force acting on arms f^2 f^3, said cylinder furnishing, when the car is in motion, a bearing for the shoe of a brake-lever, a^3.

5. The combination of the brake-lever *i*, the auxiliary lever *a*, and the wheel *j*, for the purpose set forth.

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Witnesses:
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