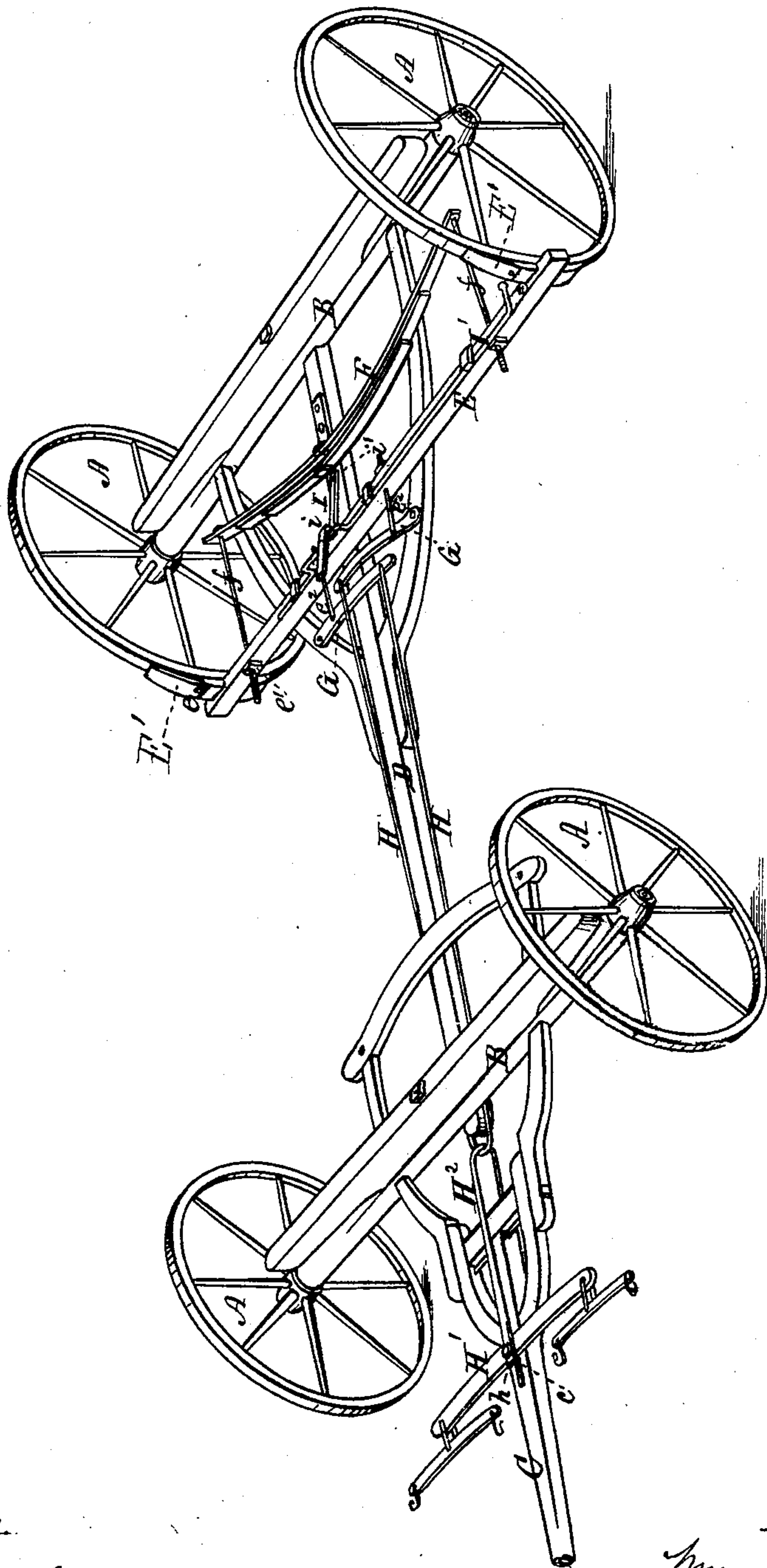


Brakes for Vehicles.

Patented Dec. 17, 1872.



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UNITED STATES PATENT OFFICE.

WILLIAM A. PIER, OF CORRY, PENNSYLVANIA, ASSIGNOR OF ONE-HALF
HIS RIGHT TO H. A. CATLIN, OF SAME PLACE.

IMPROVEMENT IN BRAKES FOR VEHICLES.

Specification forming part of Letters Patent No. 134,096, dated December 17, 1872.

To all whom it may concern:

Be it known that I, WILLIAM A. PIER, of Corry, in the county of Erie and State of Pennsylvania, have invented certain Improvements in Wagon-Brakes, of which the following is a specification:

My invention consists in a certain new combination of devices by means of which a brake is automatically applied to the wheels of a wagon, buggy, coach, or other vehicle, or to a car drawn by either steam or horse power, when moving down a grade.

In the drawing, which is a perspective view of a wagon having my invention applied thereto, A represents the wheels; B, the axles; C, the tongue; and D, the reach; these parts being of any usual or approved construction, except that the tongue is slotted. E is a brake-beam provided with shoes *e*, and supported upon the reach in such manner as to slide freely backward and forward. F is a spring secured centrally to the reach a short distance in rear of the brake-beam. The ends of the spring are connected with the beam by means of links *f*, and any required degree of tension may be given to the spring by turning up the screw-nuts *e*¹. The brake-beam may be confined to the reach by means of straps screwed to the rear hounds or braces. G are levers pivoted to the hounds, and connected to the brake-beam by links *e*². E¹ are scrapers to clean the mud from the tires of the wheels. They may be mounted either on the brake-beam or on the shoes, and should be sufficiently elastic to keep their upper ends in contact with the wheels, whether the shoes are in contact or not. H is a double-armed link arranged parallel with the reach, with its closed end projecting a short distance in front of the front axle, the rear ends of its arms being connected with the free ends of levers G. H¹ is the evener or double-tree. H² is a second double-armed link connecting the evener with link H. One arm of link H² passes above the evener and tongue, and the other one below them, the hammer-bolt *h*, or its equivalent, being inserted through an eye in the upper arm of link H², then through the evener, then through a slot, *c*, in the tongue, and then through the lower arm of said link. I usually screw the bolt into the lower arm. I is a latch

pivoted to the reach at *i*'. The rock-shaft I' is mounted on the brake-beam in such position that the free end of latch I rests upon the crank at the inner end of the shaft.

When the parts are in the position represented in the drawing, the brakes are held firmly against the wheels by the spring F. If, however, the horses move forward the first effect of the draft upon the evener is to draw the brakes from the wheels, through the action of links H H², levers G, and links *e*². A further forward movement of the team will bring the hammer-bolt in contact with the tongue at the end of the slot *c*, so as to move the vehicle. Of course the spring F will, as soon as the draft upon the evener ceases, press the brake upon the wheels; hence as soon as the vehicle begins to go down a hill the brake is brought into action automatically; and the amount of tension of the spring may be made such as to hold a heavy load without operating injuriously with an entirely empty wagon, because, when the wagon is brought to a stand going down hill, a very slight draft upon the evener will sufficiently release the brake.

As shown in the drawing, the latch I is raised by the crank of the shaft I' so that the brake-beam is free to move backward and forward without coming in contact with the shoulder *i* of the latch; but if I desire to back the vehicle, I turn the crank down so that it lies flat upon the brake-beam, thus letting the latch I also rest upon said beam. If, now, the beam be moved forward so as to draw the brake from the wheels, the shoulder *i* will drop down behind the brake-beam and lock it, so that when the team backs up, thus releasing the evener, the spring cannot press the brake against the wheels, as will be readily understood without further explanation.

My invention can be readily applied to either street-cars or railway cars by connecting the brake-beam with the draw-head, in which case one link can ordinarily be dispensed with, my object in using two in this construction being to permit the desired swiveling motion of the front axle on the king-bolt.

I might use two separate springs attached to the brake-beam by the links *f*; or I might arrange the spring or springs in front of said beam without departing from the spirit of my

invention; or I might operate the link H by hand. Hence I do not wish to be confined to the exact construction shown; but

What I do claim is—

1. In combination with the brake-beam E and spring F, a latch or stop to lock the brake from the wheels when backing the wagon, substantially as described.

2. The combination of the brake E, spring F, latch I, crank I', and their connecting devices, substantially as set forth.

3. The combination of whiffletrees H¹, links H and H², levers G G, links e² and e², spring F, links f f, latch I, and crank I' with the running-gear and brake-beam E, substantially as described.

WILLIAM A. PIER.

Witnesses:

H. H. DOUBLEDAY,
J. S. WILLIAMS.