

(No Model.)

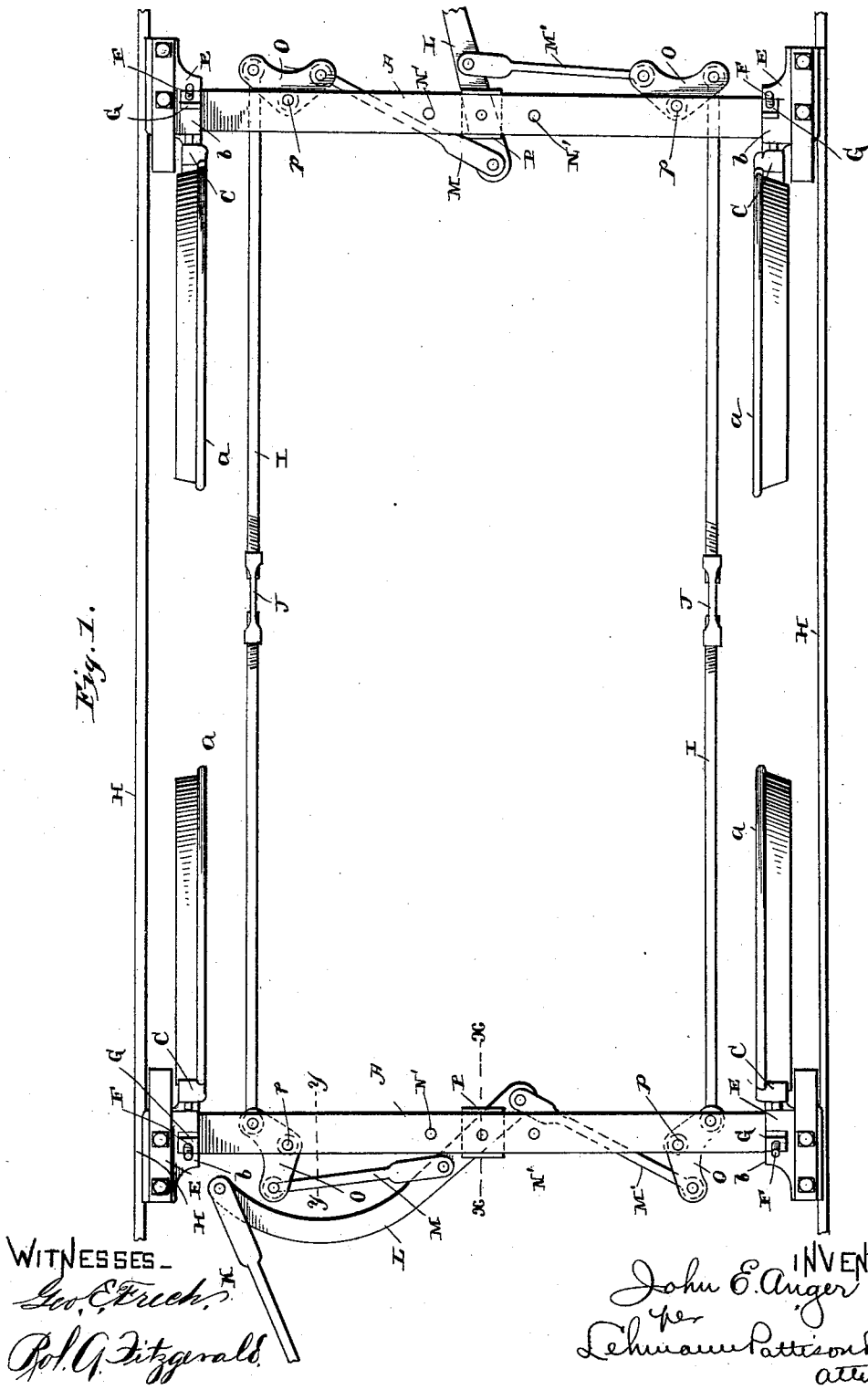
2 Sheets—Sheet 1.

J. E. ANGER.

CAR BRAKE.

No. 484,693.

Patented Oct. 18, 1892.



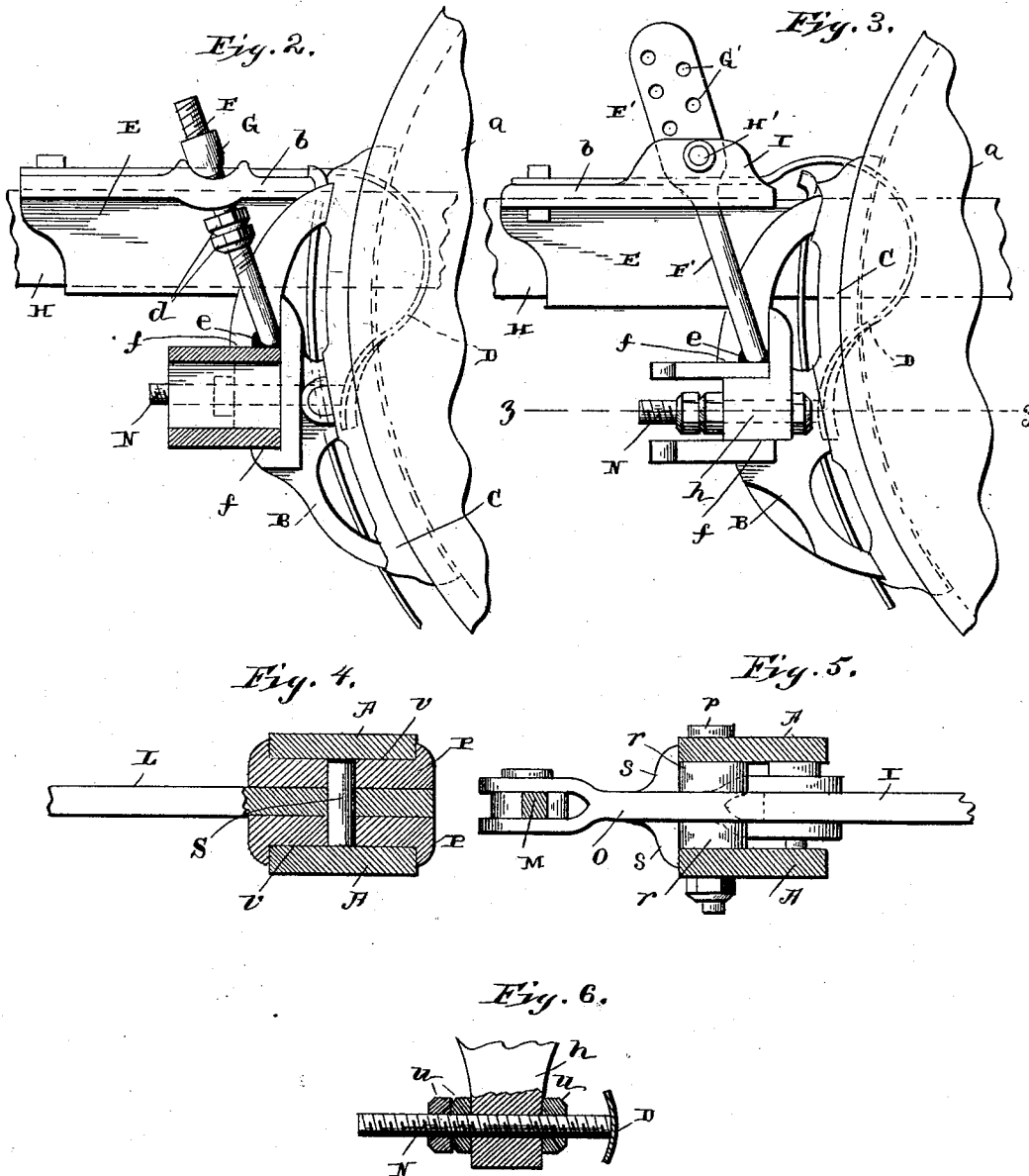
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UNITED STATES PATENT OFFICE.

JOHN E. ANGER, OF GREEN ISLAND, NEW YORK.

CAR-BRAKE.

SPECIFICATION forming part of Letters Patent No. 484,693, dated October 18, 1892.

Application filed June 7, 1892. Serial No. 435,866. (No model.)

To all whom it may concern:

Be it known that I, JOHN E. ANGER, of Green Island, in the county of Albany and State of New York, have invented certain new and useful Improvements in Car-Brakes; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use it, reference being had to the accompanying drawings, which form part of this specification.

My invention relates to improvements in car-brakes; and it consists in the construction and arrangement of parts which will be fully described hereinafter, and particularly referred to in the claims.

The object of my invention is to produce a car-brake of the construction hereinafter shown and described, which is simple and effective in construction and operation, and capable of producing a great pressure upon the wheels by the shoes at the expense of comparatively small amount of power.

In the accompanying drawings, Figure 1 is a plan view of my invention complete. Fig. 2 is a view of one of the brake-shoe heads and the hanger therefor, showing the shoe applied to a wheel. Fig. 3 is a separate view of one of the brake-shoe heads, showing a modified form of hanger. Fig. 4 is a vertical section taken on the dotted line *x x* of Fig. 1. Fig. 5 is a similar view taken on the dotted line *y y* of Fig. 1. Fig. 6 is a horizontal section taken on dotted line *z z* of Fig. 3.

H indicates the side bars of the truck-frame, and *a* the wheels thereof, and which are journaled therein in any suitable manner. Secured to the inner sides of the truck-frame bars H, adjacent to the outer peripheries of the wheels *a*, are the castings E. Each of these castings E is constructed to be readily secured to the said frame, and is provided with an inwardly-extending portion *b*, through which an opening is made for the passage of a vertical brake-shoe-head hanger or rod F. This rod is preferably screw-threaded, as shown in Fig. 2, and has screwed upon its upper end a rocker-nut G, which fits in a recess formed in the said extension *b* of the casting E, which recess forms a seat for the said nut; also placed upon this

hanger, for the purpose of preventing it from being jolted or otherwise forced up through the opening and also to limit its upward movement, are the two lock-nuts *d*. The lower end of this hanger F is formed into a hook which rests in a recess *e* of the brake-head B, which latter carries at its inner circular edge a brake-shoe C, of any suitable and desirable material. By means of this construction the brake-shoe head can be raised or lowered at will so as to adjust it to the periphery of the wheel, thus making it engage the same at about a central point.

Projecting inward horizontally from the brake-head B is a lug *h*, which is provided with a horizontal screw-threaded opening through which a spring-adjusting screw N passes. The inner end of this screw N passes through the said lug and rests in the concaved or spoon-shaped lower end of a spring D, which latter has its upper end secured to the upper face of the casting E outside of the upper end of the hanger F. Formed in the rear side of the brake-shoe head are the two recesses *f*, one above and the other below the lug *h*, and into these recesses the ends of the brake-bars A extend and are suitably secured. Passing through these bars A, near their centers, are the two bolts N', and placed between the said bars are thimbles through which the bolts pass, the thimbles serving to keep the bars separated the proper distance, and to which the bars A are clamped by the said bolts.

The spring-tension screw N is made adjustable by means of the nuts *u*, which are placed thereon upon opposite sides of the lug *h*, whereby the said screw can be turned in or out to regulate the tension of the springs, and then clamped into this adjusted position by means of the said nuts. These springs D normally hold the brake-shoes out of engagement with the wheels, as will be readily understood.

An operating-lever L is pivoted between the bars A, substantially at their centers, by means of the two castings P, which are placed between the said bars and upon opposite sides of the operating-lever, as plainly shown in Fig. 4. These castings are provided in their outer faces with recesses *v*, which receive the said bars and which hold the said

castings from lateral displacement in relation to the bars A. Made through the castings are transverse openings through which a pivotal pin S passes, the said pin also passing through an opening in the said lever L. The pin S is preferably made slightly shorter than the distance between the bars A, so that the castings P can have a free longitudinal movement upon the bars and the lever with them, for a purpose to be fully described further on.

Plates O, forming bell-crank levers, are pivoted at their centers between the bars A by means of pins or bolts p, which pass through the said bell-crank levers, the bars A, and disks r, which are placed at each side of the levers, as shown in Fig. 5. Each end of these levers is provided with bifurcated ends to receive the ends of connecting-rods, as will now be described. The outer end of one of the said levers is connected by means of a rod M to the outer portion of the operating-lever L, and the other end of the other bell-crank lever is connected by means of a rod M' with the inner end of the lever L.

At the opposite end of the car is placed a mechanism similar to that just described, as shown, and the inner ends of the bell-crank levers at one end of the bar are connected with the inner ends of the bell-crank levers at the opposite end of the car by means of the connecting-rods I. Each of the bell-crank levers O is provided on its outer end above and below with the lugs or projections s, which when the said levers are operated by the lever L at the opposite end of the car are turned and the lugs engage the outer edges of the bars A, thus forcing the brake-head against the wheel. The connections I are each made in two pieces with screw-threaded inner ends that are connected by means of the swivels J, so that the said connections can be shortened or lengthened at will, as desired, to bring the brake-shoes near to the wheels or allow them to be separated therefrom a greater distance, thus regulating the amount of movement to be given the lever L in order to apply the brakes.

In Fig. 3 I show a modified construction of hanger, which consists of a rod F', having a series of perforations G', through which a pivotal pin H' passes, the said pin passing through ears I', formed upon the casting E. By this construction it will be seen that the brake-shoe head can be adjusted; but I prefer the construction shown in Figs. 1 and 2.

The object of making the pivotal point of the lever L movable transverse the car upon the bars A is to evenly distribute the pressure upon the several brake-heads when power is applied to either lever. The outer ends of each lever L is connected with any suitable operating mechanism by means of the rods K.

While I show rods for connecting the several parts, it will be understood that chains can be substituted therefor and the same equalizing effect secured.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. A brake comprising brake-shoe heads, a connection therefor, a lever pivotally supported upon the said connection, a bell-crank lever pivotally supported by the said brake-head connection at each side of the said lever, connections between the outer ends of the said bell-crank levers and the inner and outer portions, respectively, of the said operating-lever, and connections between the inner ends of the bell-crank levers and the brake-head connection at the opposite end of the car, substantially as specified.

2. A brake comprising brake-shoe heads, a connection therefor, an operating-lever pivotally connected between its ends in a movable bearing upon the said connection, bell-crank levers pivoted between their ends upon the said connection at opposite sides of the operating-lever, connections between the outer ends of the said bell-crank levers and the inner and outer portions, respectively, of the operating-lever, and connections between the inner ends of the bell-crank levers and the brake-head connection at the opposite end of the car, substantially as set forth.

3. A brake mechanism comprising brake-shoe heads, a connection therefor, an operating-lever pivoted between its ends upon the said connection, bell-crank levers pivoted upon the said connection at opposite sides of the operating-lever, stops for the bell-crank levers, whereby they are allowed a limited movement, and connections between the inner ends of the levers and the brake-head connections at the opposite end of the car, substantially as described.

4. A brake mechanism comprising brake-heads, a connection therefor, an operating mechanism upon the said connection, a connection between the said mechanism and the brake-head connection at the opposite end of the car, castings upon the car or truck frame, and adjustable hangers suspended at their upper ends from the said castings and having their lower ends loosely connected with the brake-heads, substantially as set forth.

5. A brake mechanism comprising brake-shoe heads, a connection therefor, a lever pivoted between its ends upon the said connection, a bell-crank lever at each side of the operating-lever and each bell-crank lever having a stop formed thereon outside of the connection and which engage therewith for the purpose specified, connections between the outer ends of the bell-crank levers and the inner and outer portion of the operating-lever, respectively, and connections between the inner ends of the bell-crank levers and the brake-head connection at the opposite end of the car, substantially as set forth.

6. A brake mechanism comprising brake-shoe heads, two parallel connecting-bars connecting the said brake-shoe heads and separated a suitable distance, an operating-lever,

a sliding pivotal connection for the lever between the said connecting-bars, bell-crank levers pivoted between the bars at each side of the said operating-lever, connections between
5 the outer ends of the bell-crank levers and the outer and inner portion of the operating-lever, respectively, and connections between the inner ends of the said bell-crank levers and the brake-head connection at the opposite end of the car, substantially as described. 10

In testimony whereof I affix my signature in presence of two witnesses.

JOHN E. ANGER. [L. S.]

Witnesses:

GEORGE A. VAN BERGEN,
E. J. TILBERT.