

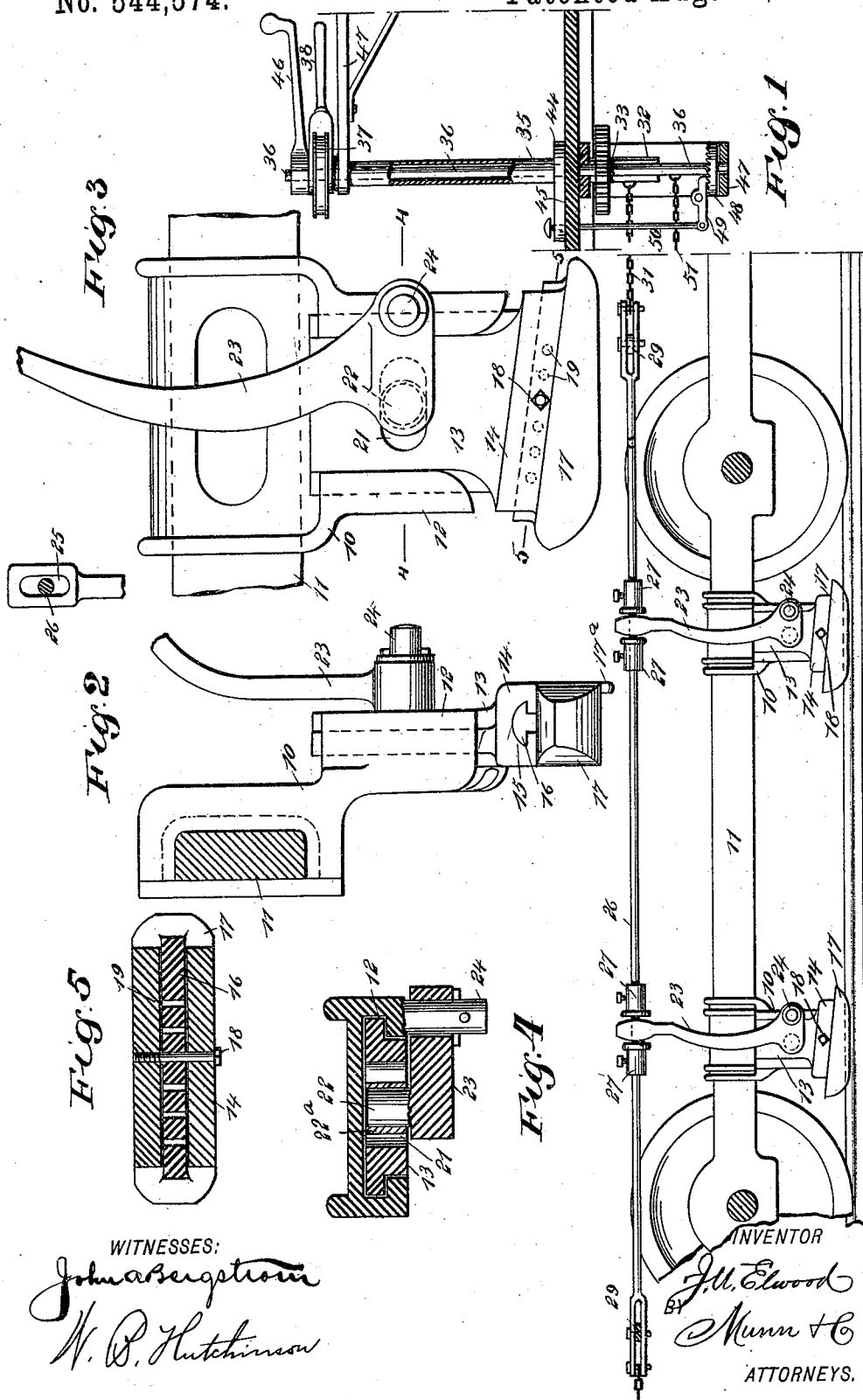
(No Model.)

2 Sheets—Sheet 1.

J. U. ELWOOD.
SAFETY CAR BRAKE.

No. 544,574.

Patented Aug. 13, 1895.



WITNESSES:
John A. Bergstrom
W. B. Hutchinson

INVENTOR
J. U. Elwood
BY *Munn & Co*
ATTORNEYS.

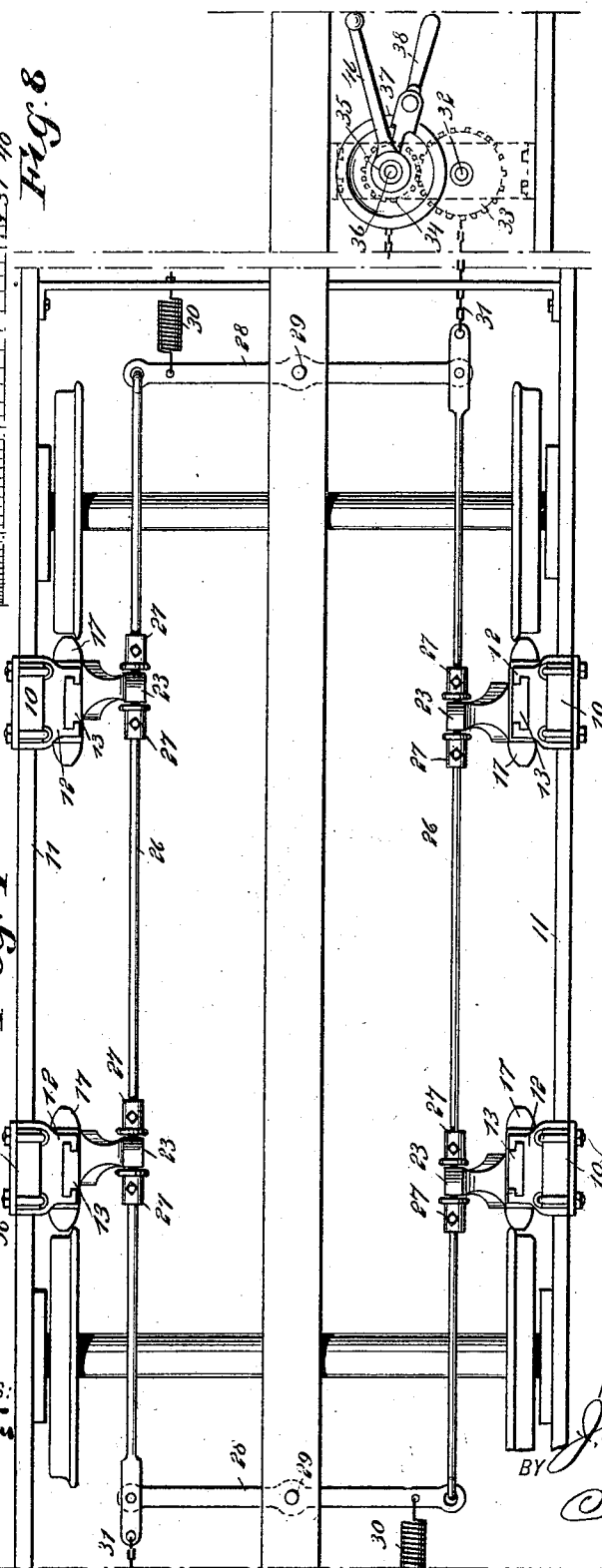
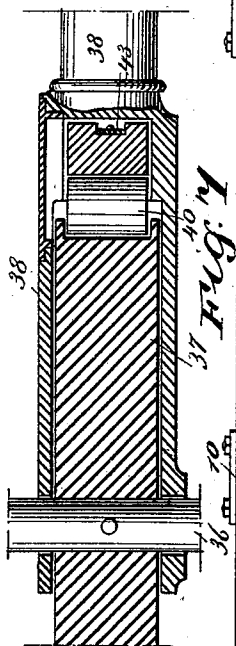
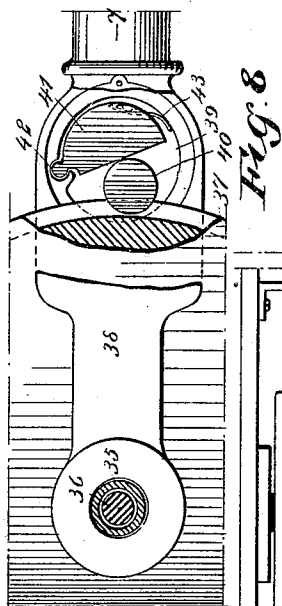
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UNITED STATES PATENT OFFICE.

JEFFERSON U. ELWOOD, OF MCKEESPORT, PENNSYLVANIA, ASSIGNOR TO HIMSELF AND DUANE P. SMITH, OF SAME PLACE.

SAFETY CAR-BRAKE.

SPECIFICATION forming part of Letters Patent No. 544,574, dated August 13, 1895.

Application filed January 16, 1895. Serial No. 535,129. (No model.)

To all whom it may concern:

Be it known that I, JEFFERSON U. ELWOOD, of McKeesport, in the county of Allegheny and State of Pennsylvania, have invented a new and Improved Safety Car-Brake, of which the following is a full, clear, and exact description.

My invention relates to improvements in car-brakes, and the object of my invention is to produce a safety-brake which is especially applicable to street-cars, which may be applied to ordinary cars having the usual brakes, which is adapted to be used in conjunction with the ordinary brakes, which is intended to frictionally engage the rails of the track so as to exert a drag on the car, which is placed so that it may work on a curve as well as on a straight course, which has its handle mechanism for working it applied to an ordinary brake-shaft so as not to interfere with the working of the latter, and which in general affords a safe, durable, and easily-operated brake.

To these ends my invention consists of certain features of construction and combinations of parts, which will be hereinafter described and claimed.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar figures of reference indicate corresponding parts in all the views.

Figure 1 is a broken side elevation, partly in vertical section, of my improved brake mechanism as applied to a car. Fig. 2 is an enlarged detail cross-sectional view showing in end elevation one of the brackets which is secured to the frame of the car-truck, and the brake-shoe holder and shoe. Fig. 3 is an enlarged detail side elevation of the brake-shoe holder, the brake-shoe holder and shoe, and the supporting-bracket for the holder. Fig. 4 is a sectional plan on the line 4 4 of Fig. 3. Fig. 5 is a sectional plan on the line 5 5 of Fig. 3. Fig. 6 is a broken plan view of the complete brake mechanism. Fig. 7 is an enlarged detail section on the line 7 7 of Fig. 8, showing the handle-lever and clutch mechanism for working the safety-brakes; and Fig. 8 is a broken sectional plan of the said handle-lever and clutch mechanism.

The brakes are preferably four in number,

and are arranged, as shown in Fig. 6, close to the wheels of the car so that they may be applied in rounding a curve, and each brake has a bracket 10, which is clamped to one of the longitudinal beams 11 of the car-truck, and the bracket has a vertical slideway 12, (best shown in Figs. 2 and 3,) in which moves the brake-shoe holder 13, this sliding holder projecting from the lower end of the slideway 12, and being at its bottom widened out, as at 14, and provided on the under side with a dovetailed groove 15, parallel with the track-rails, this groove being adapted to receive the tongue 16 of the brake-shoe 17, the shoe being preferably provided with a guide-flange 17^a to overlap the side of a rail.

The bottom of the brake-shoe holder is inclined, and the top of the brake-shoe 17 is also inclined, so that by shoving the shoe forward in the holder it may be made to bear harder on the rail, and thus by adjusting the shoe in the holder the degree of friction may be regulated, and the shoe may be pushed forward when necessary to take up the loss occasioned by wear. To provide for this adjustment the tongue 16 is provided with a series of holes 19, (see Fig. 3,) which are adapted to receive the bolt 18, which extends through the bottom 14 of the brake-shoe holder 13 and fastens the shoe to the holder.

The brake-shoe holder 13 is provided with a transverse slot 21 to receive the roller 22^a on the pin or stud 22 on the foot of the lever 23, which lever is fulcrumed on a stud 24, which is rigid with the bracket 10, and thus, by tilting the lever, the brake-shoe holder and shoe may be moved up and down, so as to bring the shoe out of or into contact with the rails. The lever 23, which works the brake-shoe, has its upper end slotted, as shown at 25, in Fig. 2, to receive the brake-rod 26, which extends longitudinally of the car, and by reference to Figs. 2 and 6 it will be seen that the brake-rod of each side of the car is adapted to operate the two brake-levers and brake-shoes on that side of the car. The upper end of each lever 23 is clasped by collars 27, which are adjustable on the rod 26, and thus when the rod is moved longitudinally the collars strike the lever and tilt it, so as to raise or lower the brake-shoe. The rods 26 are, at

their ends, connected by cross-levers 28, which are pivoted to the rods and are fulcrumed near the center, as shown at 29, in Fig. 6, and thus when one rod 26 is moved longitudinally in one direction the opposite rod will move a similar distance in the opposite direction, and as the opposite brake-levers 23 and brake-shoes are arranged to work in reverse directions the movement of one rod will be transmitted to the other and all the brake-shoes will be simultaneously applied to the rails. The levers 28 are moved against the tension of springs 30, which are connected to the levers and to suitable supports beneath the car.

Each rod 26 connects at one end with a chain 31, which is connected to the brake-handle mechanism on the car-platform, and one chain extends to one end of the car and the other to the opposite end of the car, so that the brakes may be worked from either end. Each chain 31 connects with a shaft 32, on which is a gear-wheel 33 meshing with a gear-wheel 34 on the tubular shaft 35, which shaft is journaled on the ordinary brake-shaft 36 of the car, so that it may be moved independently of the brake-shaft or in connection therewith, as desired. The shaft 35 has at its upper end a friction-wheel 37 on which moves freely a handle 38, the handle being mounted loosely on the shaft 35, and the handle is provided with a circular recess 39, (see Figs. 7 and 8,) in which is a friction-roller 40, which is adapted to engage the face of the wheel 37 and is also adapted to engage the friction-block 41, which is held in the recess 39, being journaled at one end, as shown at 42, and pressed by a spring 43 into engagement with the roller 40. The block and roller thus form a clutch, for when the handle 38 is turned to the left it swings freely over the friction-wheel, but when turned in the opposite direction the block 41 engages the roller 40 and the latter is wedged between the block and the friction-wheel, so that the wheel is turned and the movement transmitted to the shaft 35, and so through the gear-wheels 34 and 33 to the shaft 32 and to the brakes, as above described. The shaft 35 is provided with the ordinary ratchet-wheel 44 and pawl 45, by which it may be fastened when the brakes are set.

The shaft 36 extends upward through the shaft 35 and has at the top the ordinary brake-handle 46, and its lower end is stepped in a suitable hanger 47 and is provided with a ratchet-wheel 48, which is engaged by a pawl 49, worked by a foot-rod 50, which extends upward through the car-platform, as shown

clearly in Fig. 1. The shaft 36 has the usual brake-chain 51 to connect with the ordinary brake mechanism, which is not shown, and so by turning the handle 46 the usual wheel-brakes may be set, or by turning the handle 38 to the right the safety-brakes may be applied.

When the handle 46 is turned to the right the movement is transmitted to the shaft 32, as already described, which causes the chain 31 to be wound upon it, and this pulls one of the rods 26 and tilts the levers 28, so as to impart a similar movement to the opposite rod 26, and so all four of the levers 23 are tilted and the brake-shoes 17 forced together upon the rails.

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

1. The combination, with the car, of the brackets secured to the car truck, the vertically sliding transversely slotted brake shoe holders in the brackets, the brake shoes secured to the holders and adapted to engage the rails, the levers fulcrumed on the brackets and having projections engaging the transverse slots in the holders, the cross levers connecting the rods, and means for imparting a longitudinal movement to the rods, substantially as described.

2. The combination, with the brackets and the vertically movable brake shoe holders having their lower sides inclined to the track, of the wedge-shaped shoes secured to the inclined lower sides of the brake shoe holders, and means for longitudinally adjusting the shoes, substantially as described.

3. The combination, with the bracket and the brake shoe holder slidable therein and provided with a grooved bottom, of the wedge shaped shoe having a tongue to enter the groove of the brake shoe holder, and means, as the series of holes in the tongue and the bolt in the brake shoe holder, for adjusting the brake shoe, substantially as described.

4. The combination, with the brake shaft and the friction wheel thereon, of the recessed handle journaled on the shaft and turning opposite the friction wheel, the roller held in the recess of the handle and adapted to engage the friction wheel, and the block movably mounted in the recess of the handle to engage the roller, substantially as described.

JEFFERSON U. ELWOOD.

Witnesses:

T. D. GARDNER,
M. C. BRYAN.