

No. 609,559.

Patented Aug. 23, 1898.

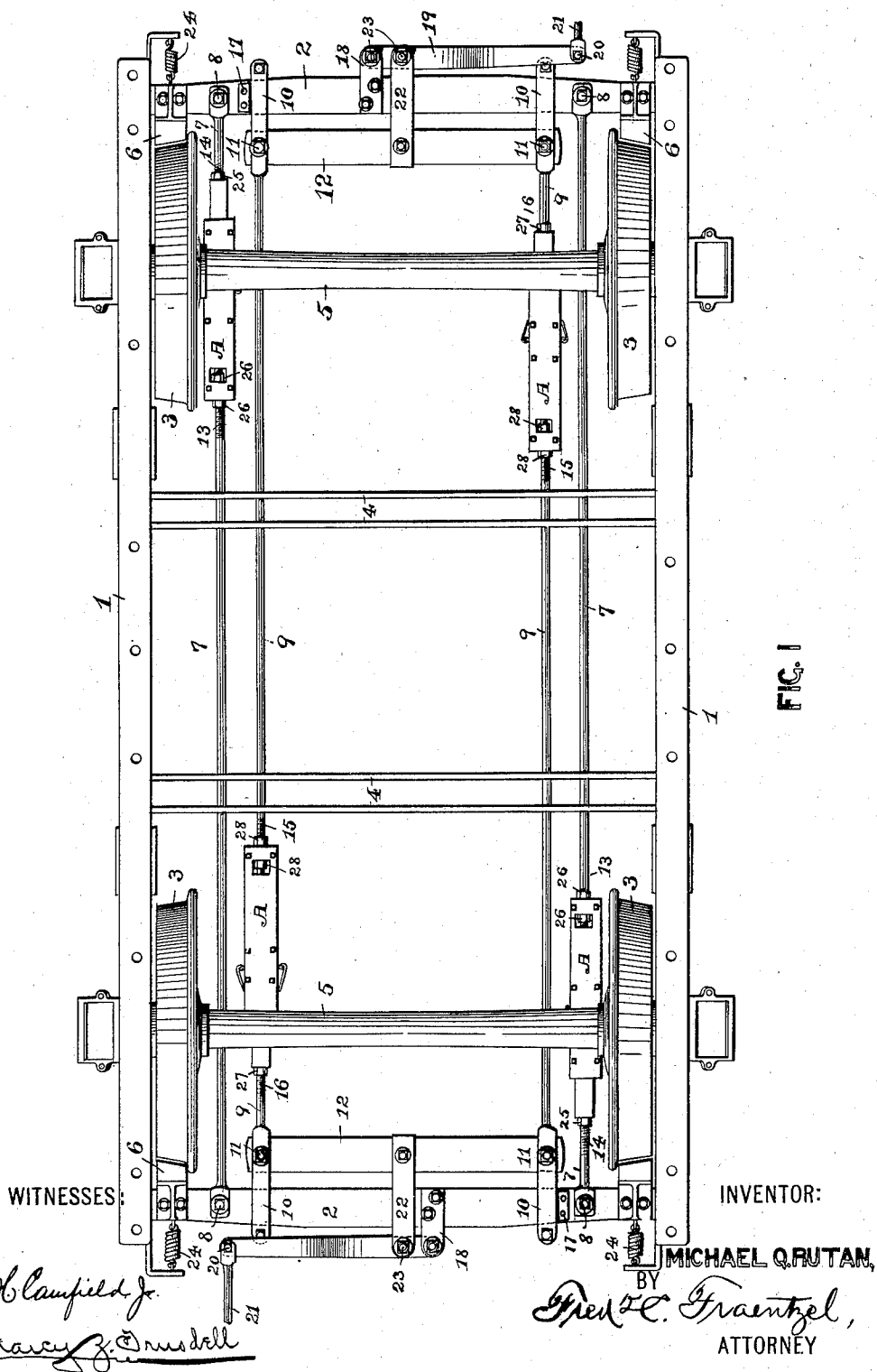
M. Q. RUTAN,

BRAKE SHOE OPERATING MECHANISM.

(Application filed Oct. 28, 1897.)

(No Model.)

3 Sheets—Sheet 1.



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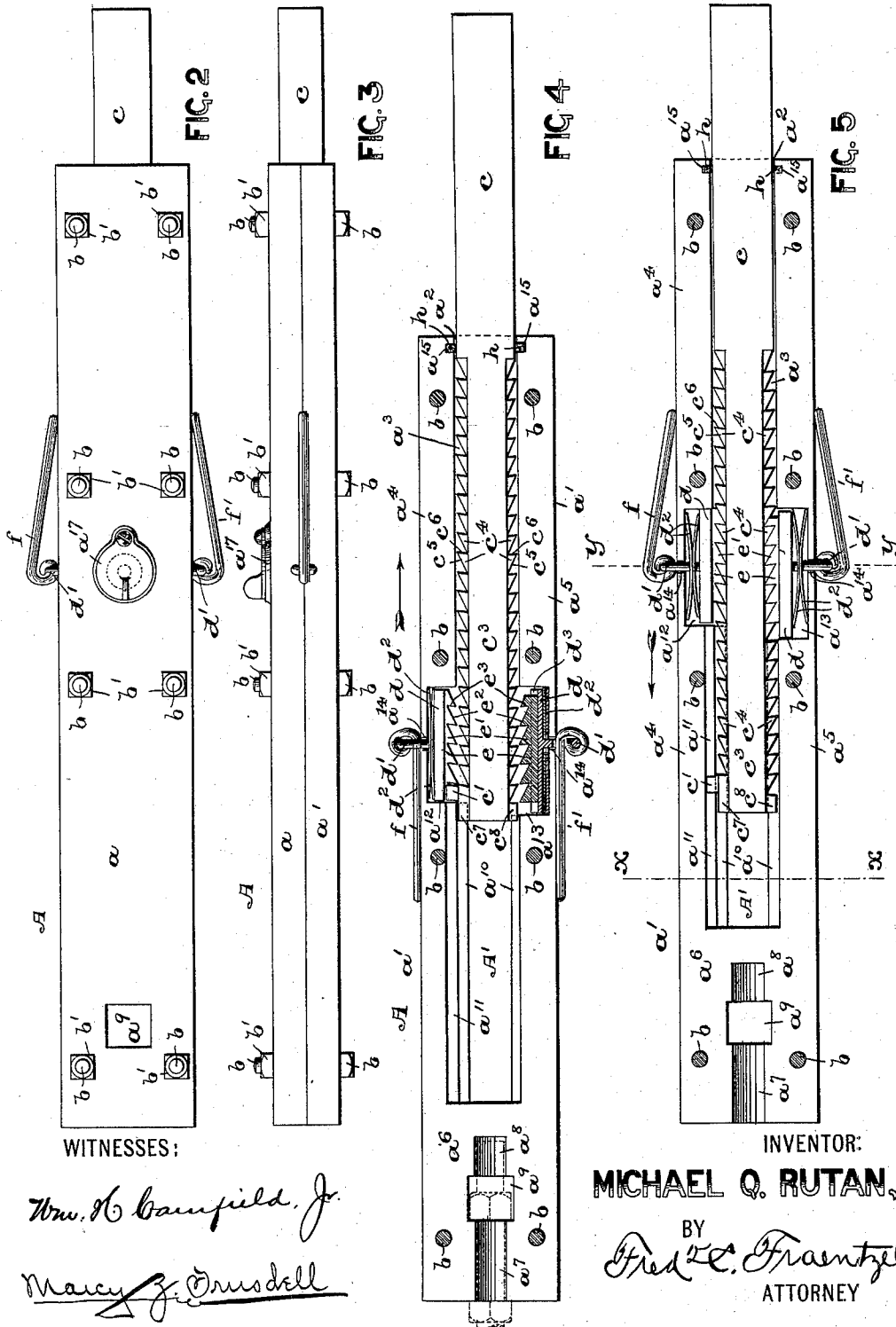
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3 Sheets—Sheet 2.



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BRAKE-SHOE-OPERATING MECHANISM.

SPECIFICATION forming part of Letters Patent No. 609,559, dated August 23, 1898.

Application filed October 28, 1897. Serial No. 656,635. (No model.)

To all whom it may concern:

Be it known that I, MICHAEL Q. RUTAN, a citizen of the United States, residing at East Orange, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Brake-Shoe-Operating Mechanisms; 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 appertains to make and use the same, reference being had to the accompanying drawings, and to letters and numerals of reference marked thereon, which form a part of this specification.

The present invention relates more generally to improvements in brake-shoe-operating mechanism for railway-cars of all classes, and more particularly to the brake mechanism of electric-motor or cable car trucks; and the invention has reference more particularly to an appliance or appliances to be used in connection with brake mechanism of the character stated to automatically "take up" the wear on the brake-shoes and when the brake is applied to cause the several brake-shoes to properly "brake" or grip the respective wheels of the truck.

As is well known, much difficulty has heretofore been encountered in replacing new brake-shoes, owing to their surfaces being very quickly worn down, or in taking up or adjusting certain parts of the brake mechanism to cause the shoes to properly brake or grip the wheels, thus necessitating the employment of skilled mechanics to perform this work. It very often happens that the brake-shoes wear off so fast that a car has to be placed in the shops for repairs almost daily in order to take up or adjust the brake-shoe-operating mechanism, which of course entails extra expense for skilled labor and a loss of money in having the car out of use until such repairs or adjustments have been made. To overcome these objectionable features, I have devised a novel appliance to be placed in and connected with the connecting rod or rods connecting the brake-bars at the opposite ends of the truck, whereby when the brake is applied in the usual manner the several parts of the mechanism of said appliance or appliances automatically adjust them-

selves to regulate the normal distance between the gripping-surfaces of the brake-shoes and the tread of the wheels and continue to automatically adjust the several parts of the brake mechanism during the constant wearing off of the brake-shoes without requiring the assistance of skilled workmen.

The primary object of my invention, therefore, is to provide a brake mechanism and a take-up appliance or appliances connected therewith for automatically taking up the wear upon the brake-shoes without causing an extra expense for labor and a loss of money, caused by the placing of the car in the shops for repairs and adjustment of the several parts of the brake mechanism.

A further object of this invention is to provide a brake mechanism of the character and for the purposes to be hereinafter fully set forth which shall be free from complications and shall be positive and effective in its operation.

The invention therefore consists in the brake mechanism herein set forth, as well as in the several arrangements and combinations of the parts and the details of the construction of said take-up appliance, all of which will be fully described in the accompanying specification and finally embodied in the clauses of the claim.

My novel mechanism is to be used in connection with any construction of brake-shoe-operating mechanism and is adapted to be applied to four-wheeled as well as eight-wheeled trucks of any design, although it is more especially intended for application to the trucks of electric and cable cars.

The invention is clearly illustrated in the accompanying drawings, in which—

Figure 1 is a plan view of one form of car-truck and a brake mechanism, with the take-up appliance, embodying the principles of my invention, illustrated in connection therewith. Fig. 2 is a plan view, on an enlarged scale, of the take-up appliance detached from the brake-shoe-operating mechanism, and Fig. 3 is a side view of the same. Fig. 4 is a plan view of the appliance illustrated in Figs. 2 and 3, with the upper half of the casing of the appliance removed, the several parts of the mechanism being represented in their

disengaged positions and one of the gripping-dogs, a slide in which it is arranged, and a pair of actuating-springs connected therewith being represented in horizontal section.

5 Fig. 5 is a similar view of the parts of mechanism illustrated in Fig. 4, with the several parts in their locked or operative engagement previous to arranging the appliance in the rods connecting the brake-bars of the
10 brake mechanism. Fig. 6 is a view of the take-up mechanism, illustrating the several parts thereof in their sliding engagement while in the act of taking up the wear of a brake-shoe. Fig. 7 is a vertical cross-section
15 taken on line *x* in Fig. 5, and Fig. 8 is a similar section taken on line *y* in the same figure. Fig. 9 is a longitudinal vertical section of the upper and lower halves of the casing, with the movable parts of the take-up mechanism
20 removed; and Fig. 10 is a perspective view of one of the gripping-dogs and a slide, both of which are used in the device illustrated in the preceding figures.

Similar letters and numerals of reference
25 are employed in all of the above-described views to indicate corresponding parts.

Referring to the construction of car-truck illustrated in Fig. 1, which may be of any
30 suitable construction, 1 indicates the upper longitudinal sills of the truck-frame. The brake-bars are indicated by the numerals 2 and are secured at their ends in the usual forms of supports or guides in proper relation
35 to the truck-wheels 3. Transverse bars 4 of any well-known construction are employed to serve as motor-hangers.

The brake-bars 2 are located outside of the car-wheel axles 5, transversely of the truck-frame, their ends entering the usual forms
40 of guides or supports on said sills 1, within which said bars are adapted to slide longitudinally when the brake mechanism is operated.

The brake-shoes are indicated at 6 and are
45 bolted near the respective ends of the brake-bars 2, contiguous to the wheels with which they are adapted to brake or bind when the brake-bars 2 are forced inward. Said brake-bars are connected by suitable connecting-
50 rods 7, the respective ends of which are preferably bifurcated to embrace the brake-bars and are secured thereto by means of the bolts 8. The numeral 9 indicates a second pair of connecting-rods, the respective ends of which
55 may also be bifurcated, as at 10, and embrace the brake-bars 2, being bolted, as at 11, to the bars 12, which are located inside of the brake-bars 2 and are arranged parallel thereto. Said connecting bars or rods 7 and 9 are made in
60 sections, the rods 7 being provided with the screw-threaded ends 13 and 14 and the rods 9 with the screw-threaded ends 15 and 16. The several sections of said rods 7 and 9 are joined and operatively connected with a take-up
65 appliance A, in the manner and of the nature and construction to be hereinafter more fully

set forth, for automatically shortening the distances between the two brake-bars 2 and the two bars 12 as the brake-shoes become worn off. Said brake-bars 2 may be provided
70 with the usual forms of stops 17, which serve as guides for the bifurcated ends of the rods 9. Each brake-bar 2 is provided with a bracket 18, to which is pivoted the usual form of lever 19, which is bent in the usual man-
75 ner, and is connected, as at 20, with the end of the brake rod or chain 21. Bolted to the transversely-arranged bars 12 and central thereof are projecting pieces 22, arranged at
80 right angles to the brake-bars 2 and bifurcated for receiving the levers 19, to which they are pivotally connected, as at 23. Connected in any suitable manner to the brake-bars 2 and to the brake-shoes 6 are the brake-releasing springs 24, which can be properly
85 adjusted to keep the brake-shoes clear of the peripheries of the wheels when not in use.

The operation of the several parts of the brake mechanism will be clearly understood from an inspection of Fig. 1 and is well known,
90 and to such *per se* I waive all claim. Suffice it to say that when either operating-lever 19 at either end of the truck is actuated by the brake-operating rod the bars 2 and 12 at that
95 end where the power is being applied will move toward each other, causing the brake-bar at the opposite end of the truck-frame to move toward the wheels and at the same time forcing all brake-shoes in gripping contact
100 with the respective peripheries of the several wheels. Thus it will be evident that the sections of the respective connecting-rods 7 and 9 which are attached to certain movable parts of the take-up devices A will be capable
105 of being pushed together, or, in other words, will shorten the said rods when any one or all of the brake-shoes have become worn and when the power is applied to the brake rod or chain 21. The said appliance
110 A is more clearly illustrated in Figs. 2 to 10, inclusive, and consists, essentially, of a casing preferably made in halves or sections *a* and *a'*, which are suitably secured together by means of the bolts *b* and nuts *b'*, substantially
115 as illustrated. Each section *a* and *a'* is provided with the open end *a*² and the recessed or channeled part *a*³, forming, with the side walls *a*⁴ and *a*⁵ and the solid end *a*⁶ in each piece, when they are secured together in the manner illustrated in Figs. 2 and 3, a
120 chamber A' for the reception of the operating mechanism of the device. The solid end of each section *a* and *a'* is provided with semi-circular or other suitably-formed grooves *a*⁷ and *a*⁸ and a suitable opening *a*⁹, substantially
125 as illustrated in the several figures of the drawings. Thus it will be seen that when the two sections *a* and *a'* are secured together said grooves *a*⁷ and *a*⁸ form a suitable socket in each appliance A for the reception of the
130 ends 13 and 15 of the respective connecting-rods 7 and 9 of the brake mechanism, said

ends of the rods being securely fastened to said appliances by nuts 26 on the rods 7 and by nuts 28 on the rods 9, as clearly illustrated in Fig. 1 and as more especially indicated in dotted outline in Fig. 4. In said chamber A', formed by the two sections *a* and *a'* when they are secured together and contiguous to the forward portions of said side walls *a*⁴ and *a*⁵, as will be seen from Figs. 4, 5, and 6 and more particularly from Figs. 7 and 9, are suitable offsets, which form guides *a*¹⁰ for the proper movement or guidance of a push-bar *c*. In the forward part of each section *a* and *a'*, on one side of each section, is a similar offset *a*¹¹, which forms a suitable groove for the reception of a guiding projection *c'* on one side of the said push-bar *c* when said sections are secured together, as will be more clearly understood from an inspection of said Fig. 7. Said side walls *a*⁴ and *a*⁵ of the two sections *a* and *a'* are also provided at or near the middle with suitable recesses *a*¹² and *a*¹³, arranged directly opposite each other, for the reception of suitable slides *d* and gripping-dogs *e*, and provided also with grooves *a*¹⁴, forming oblong holes in said walls *a*⁴ and *a*⁵, in which I have arranged certain eyes *d'*, formed on the backs of said slides *d*. Said eyes *d'* extend into and through said openings formed by said grooves *a*¹⁴ and have secured thereto in any well-known manner certain eccentric levers or arms *f* and *f'* for causing a sliding movement of said slides and dogs laterally in said chambered portions; but of course it will be understood that any other means may be employed for causing such sliding movement of these parts. Arranged in said recessed portions *a*¹² and *a*¹³ and against the backs of said slides are suitable leaf or other springs *d*², the purpose of which will be more fully set forth hereinafter. Each slide *d* is provided with the longitudinal ribs *d*³, which are preferably inclined, as at *d*⁴, and held and adapted to slide longitudinally between said ribs *d*³ are the gripping-dogs *e* hereinabove mentioned. Each dog *e* is provided with certain teeth *e'*, formed by the angular sides *e*² and *e*³, as illustrated.

The push-bar *c*, previously mentioned, of each appliance A is provided at its one free end with a screw-threaded socket *c*², (see Fig. 6,) whereby such bar can be securely connected with either of the screw ends 14 or 16 of the respective connecting-rods 7 and 9 and properly adjusted thereon and locked by the nuts 25 and 27. The greater part of the end *c*³ of the push-bar *c* of each appliance A is provided on its opposite sides with a series of teeth *c*⁴, formed by the angular sides *c*⁵ and *c*⁶ and with the oppositely-projecting lugs *c*⁷ and *c*⁸, said teeth and lugs being made narrower than the thickness of the bar *c* to permit said teeth and lugs to slide on the offsets which form the guides *a*¹⁰ in the forward portion of the chamber A', as will be clearly evident from an inspection of said Fig. 7. Said sections *a*

and *a'* are also provided near the openings *a*² with a groove *a*¹⁵ for the reception of a suitable packing *h* to surround the bar *c* and prevent dirt and water from getting into the chamber A' when the several parts of the device are operatively connected. The upper half-section *a* may also be provided with an oil-hole *a*¹⁶ and a suitable cover *a*¹⁷ for admitting a lubricant to the moving parts in the chamber A'.

The manner of connecting the several parts of the appliance A together and attaching it to the respective ends of a connecting-rod of the brake mechanism is as follows: The push-bar *c* is first screwed upon the screw-threaded end of one of the sections of the connecting-rods 7 or 9. The eccentric levers or arms *f* and *f'* are then brought into the positions indicated in Fig. 4, causing the springs *d*² to be compressed and the slides *d* and the dogs *e*, connected therewith, to be forced entirely within the recessed parts *a*¹² and *a*¹³ in the one section, as *a'*, these positions of the parts being clearly indicated in said Fig. 4. The toothed end *c*³ of the bar *c* is then arranged in the said lower half-section *a'*, so that the lug or projection *c'* will become arranged directly in front of the offset *a*¹¹. The said section *a'* is then pushed for a short distance in the direction of the arrow in said Fig. 4 and the two sections *a* and *a'* placed over the end of one of the sections of the connecting-rods 7 or 9, so that the nuts 26 or 28 on the said respective rods will be arranged in the places indicated in the dotted outline in said Fig. 4. The two sections *a* and *a'* are now securely connected by the bolts *b* and nuts *b'*. The two eccentric levers or arms *f* and *f'* are then turned from their positions indicated in Fig. 4 to the positions indicated in Figs. 2, 5, and 6, whereby the slides *d* and the dogs *e* move inward and the several teeth of said dogs interlock with the teeth on the push-rod *c*. The several nuts on the respective connecting-rods 7 and 9 are now screwed tightly against the ends of the several appliances A, and the latter are operatively arranged in the brake mechanism, as illustrated in Fig. 1.

When the operator on the platform of the car operates the brake mechanism in the usual manner and for the first time, the thrust or inward push on the respective sections of the connecting-rods 7 will cause the teeth of the dogs *e* to slide over a corresponding number of teeth on the push-bar *c*, or, perhaps, more, according to the required degree of adjustment, in the direction of the arrow in Fig. 5, and when the brake-shoes have been brought to firmly brake or engage the peripheral surfaces of the several wheels of the truck then the several parts in each appliance A in said rods 7 will have become automatically and properly adjusted, as will be clearly evident. From an inspection of Fig. 1 it will also be evident that in the devices A arranged in the connecting-rods 9, in which the arrange-

ment of the several parts of said devices A is reversed from that of the devices A in the rod 7, the parts comprising said devices A in said rods 9 will properly and automatically become adjusted when the brake is released, inasmuch as the release of the brake causes a strain to be exerted upon said rods 9.

In order that the springs 24, hereinabove mentioned, can keep the brake-shoes away from the wheels when the "braking" power is off and to prevent unnecessary wear and noise, the said dogs *e* have a sufficient sliding movement between the guides of the slides *d* to allow the parts to assume the positions indicated in Fig. 6, said parts being compelled to assume these positions by the power exerted on the several parts of the brake mechanism by said releasing-springs 24, and the brake-shoes are thereby held away from contact with the peripheries of the wheels of the truck.

From an inspection of the several figures of the drawings and from the above description it will be clearly evident that as the braking-surfaces of the brake-shoes wear down again and the operator applies the brake to stop the car the set of teeth on the dogs *e* will be forced past a similar set of teeth on the push-bar *c*, whereby the several parts again become automatically adjusted by the shortening of the connecting-rods 7 or 9 of the brake mechanism in the manner hereinabove set forth and the brake-shoes are automatically adjusted without the necessity of hauling the car off the line into the shops for repairs or adjustment of the parts, as heretofore.

The advantages and benefits derived from my improvements will be evident, for the several parts of the appliance or appliances for taking up the wear of the brake-shoes are automatic, and the construction is also very simple and positive and effective in its operation. I may employ any number of such take-up appliances in connection with the brake mechanism of any form of car-truck, and my invention is applicable to single or double trucks—such as are used in electric, cable, or any other construction of cars.

I am also fully aware that many changes may be made in the arrangements and combinations of the several parts of mechanism, and it will be obvious that the precise form and arrangements of the parts shown and described are not absolutely necessary to my improvements, and they may be varied within the limits of mechanical skill without departing from the scope of my invention. Hence I do not limit myself to the exact arrangements and combinations of the parts herein shown and described.

Having thus described my invention, what I claim is—

1. In a brake mechanism for wheeled trucks, the combination, with movable brake-bars and their brake-shoes, of connecting-rods 7

and 9 connecting said bars, and a take-up device or devices in said rods 7 and 9, acting automatically to move said brake-bars inward and adjust the brake-shoes to the peripheries of the wheels of the truck, substantially as and for the purposes set forth.

2. In a brake mechanism for wheeled trucks, the combination, with movable brake-bars, their brake-shoes, and a connecting-rod made in sections, of a take-up device, comprising a casing attached at one end to one of said sections of said connecting-rod, a push-bar in sliding arrangement in said casing, having one end extending from said casing and attached to the other section of said connecting-rod, and means in said casing adapted to engage with and lock said push-bar, acting automatically, to move said brake-bars inward and adjust the brake-shoes to the peripheries of the wheels of the truck, and mechanism for causing a disengaged arrangement of said push-bar with said locking means, to permit the withdrawal of said push-bar from said casing, substantially as and for the purposes set forth.

3. In a brake mechanism for wheeled trucks, the combination, with movable brake-bars, their brake-shoes, and a connecting-rod made in sections, of a take-up device, comprising a casing attached at one end to one of said sections of said connecting-rod, a push-bar in sliding arrangement in said casing, having one end extending from said casing and attached to the other section of said connecting-rod, a laterally-moving gripping-dog in said casing adapted to engage with and lock said push-bar, acting automatically, to move said brake-bars inward and adjust the brake-shoes to the peripheries of the wheels, substantially as and for the purposes set forth.

4. In a brake mechanism for wheeled trucks, the combination, with movable brake-bars, their brake-shoes, and a connecting-rod made in sections, of a take-up device, comprising a casing attached at one end to one of said sections of said connecting-rod, a push-bar in sliding arrangement in said casing, having one end extending from said casing and attached to the other section of said connecting-rod, a laterally-moving gripping-dog in said casing adapted to engage with and lock said push-bar, acting automatically, to move said brake-bars inward and adjust the brake-shoes to the peripheries of the wheels, and means connected with said gripping-dog for throwing it out of its operative engagement with said push-bar, substantially as and for the purposes set forth.

5. In a brake mechanism for wheeled trucks, the combination, with movable brake-bars, their brake-shoes, and a connecting-rod made in sections, of a take-up device comprising a casing attached at one end to one of the sections of said connecting-rod, a push-bar in sliding arrangement in said casing, having one end extending from said casing and at-

tached to the other section of said connecting-rod, a laterally-moving slide in said casing, a gripping-dog sliding longitudinally in said slide, and teeth on said dog engaging and locking with teeth on said push-bar, acting automatically, to move said brake-bars inward and adjust the brake-shoes to the peripheries of the wheels, substantially as and for the purposes set forth.

6. In a brake mechanism for wheeled trucks, the combination, with movable brake-bars, their brake-shoes, and a connecting-rod made in sections, of a take-up device comprising a casing attached at one end to one of the sections of said connecting-rod, a push-bar in sliding arrangement in said casing, having one end extending from said casing and attached to the other section of said connecting-rod, a laterally-moving slide in said casing, a gripping-dog sliding longitudinally in said slide, teeth on said dog engaging and locking with teeth on said push-bar, acting automatically, to move said brake-bars inward and adjust the brake-shoes to the peripheries of the wheels, and means connected with said slide for throwing said gripping-dog out of its operative engagement with said push-bar, substantially as and for the purposes set forth.

7. In a brake mechanism for wheeled trucks, the combination, with movable brake-bars, their brake-shoes, and a connecting-rod made in sections, of a take-up device comprising a casing attached at one end to one of the sections of said connecting-rod, a push-bar in sliding arrangement in said casing, having one end extending from said casing and attached to the other section of said connecting-rod, a laterally-moving slide in said casing, a gripping-dog sliding longitudinally in said slide, teeth on said dog engaging and locking with teeth on said push-bar, acting automatically, to move said brake-bars inward and adjust the brake-shoes to the peripheries of the wheels, and means connected with said slide for throwing said gripping-dog out of its operative engagement with said push-bar, consisting, essentially, of an eye on the back of said slide extending through an opening in the side of the casing, and an eccentric lever or arm operatively connected with said eye, substantially as and for the purposes set forth.

8. The herein-described take-up device for the brake mechanism of wheeled trucks, comprising a casing, a push-bar movably arranged in said casing, and spring-actuated means in said casing adapted to engage and lock with said push-bar, and mechanism for causing a disengaged arrangement of said push-bar with said locking means, to permit the withdrawal of said push-bar from said casing, substantially as and for the purposes set forth.

9. The herein-described take-up device for the brake mechanism of a wheeled truck, com-

prising a casing, a push-bar movably arranged in said casing, and a spring-actuated gripping-dog in said casing adapted to engage and lock with said push-bar, and mechanism for causing a disengaged arrangement of said push-bar with said locking means, to permit the withdrawal of said push-bar from said casing, substantially as and for the purposes set forth.

10. The herein-described take-up device for the brake mechanism of a wheeled truck, comprising a casing, a push-bar movably arranged in said casing, a chambered or recessed portion in said casing, a laterally-moving slide in said chambered or recessed portion, and a gripping-dog in said slide, having teeth adapted to engage with teeth on said push-bar, substantially as and for the purposes set forth.

11. The herein-described take-up device for the brake mechanism of a wheeled truck, comprising a casing, a push-bar movably arranged in said casing, a chambered or recessed portion in said casing, a laterally-moving slide in said chambered or recessed portion, a gripping-dog in said slide, having teeth adapted to engage with teeth on said push-bar, and means connected with said slide for throwing said gripping-dog out of its operative engagement with said push-bar, substantially as and for the purposes set forth.

12. The herein-described take-up device for the brake mechanism of a wheeled truck, comprising a casing, a push-bar movably arranged in said casing, a chambered or recessed portion in said casing, a laterally-moving slide in said chambered or recessed portion, a gripping-dog in said slide, having teeth adapted to engage with teeth on said push-bar, and means connected with said slide for throwing said gripping-dog out of its operative engagement with said push-bar, consisting, essentially, of an eye on the back of said slide extending through an opening in the side of the casing, and an eccentric lever or arm operatively connected with said eye, substantially as and for the purposes set forth.

13. The herein-described take-up device for the brake mechanism of a wheeled truck, comprising a casing, consisting of sections a and a' , and means for securing them together, a recessed portion a^3 in each section and each section having an opening a^2 , guides a^{10} in said sections and recessed parts a^{12} and a^{13} , a push-bar slidably arranged on said guides a^{10} , and means in said recessed parts a^{12} and a^{13} adapted to engage and lock with said push-bar, substantially as and for the purposes set forth.

14. The herein-described take-up device for the brake mechanism of a wheeled truck, comprising a casing, consisting of sections a and a' , and means for securing them together, a recessed portion a^3 in each section and each section having an opening a^2 , guides a^{10} in said sections and recessed parts a^{12} and a^{13} , a push-bar slidably arranged on said guides

a^{10} , and a movable gripping-dog in each part a^{12} and a^{13} adapted to engage and lock with said push-bar, substantially as and for the purposes set forth.

- 5 15. The herein-described take-up device for the brake mechanism of a wheeled truck, comprising a casing, consisting of sections a and a' , and means for securing them together, a recessed portion a^3 in each section and each
10 section having an opening a^2 , guides a^{10} in said sections and recessed parts a^{12} and a^{13} , a push-bar slidably arranged on said guides a^{10} , gripping-teeth on said push-bar, a slide d in each part a^{12} and a^{13} , and a sliding dog
15 in each slide having teeth adapted to engage and lock with the teeth of said push-bar, substantially as and for the purposes set forth.

16. The herein-described take-up device for the brake mechanism of a wheeled truck, comprising a casing, consisting of sections a and a' , and means for securing them together, a recessed portion a^3 in each section and each
20 section having an opening a^2 , guides a^{10} in said sections and recessed parts a^{12} and a^{13} , a push-bar slidably arranged on said guides a^{10} , gripping-teeth on said push-bar, a slide d in each part a^{12} and a^{13} , a sliding dog in each
25 slide having teeth adapted to engage and lock with the teeth of said push-bar, and means connected with said slides for throwing said
30 gripping-dogs out of their operative engagement with said push-bar, substantially as and for the purposes set forth.

17. The herein-described take-up device for the brake mechanism of a wheeled truck, comprising a casing, consisting of sections a and a' , and means for securing them together, a recessed portion a^3 in each section and each
35 section having an opening a^2 , guides a^{10} in said sections and recessed parts a^{12} and a^{13} , a push-bar slidably arranged on said guides a^{10} , gripping-teeth on said push-bar, a slide d in each part a^{12} and a^{13} , a sliding dog in each
40 slide having teeth adapted to engage and lock with the teeth of said push-bar, and means connected with said slides for throwing said
45 gripping-dogs out of their operative engagement with said push-bar, consisting, essentially, of an eye on the back of each slide extending through openings in the sides of said
50 sections a and a' , and eccentric levers or arms operatively connected with said eyes, substantially as and for the purposes set forth.

18. The herein-described take-up device for the brake mechanism of a wheeled truck, comprising a casing consisting of sections a and a' and means for securing them together, a recessed portion a^3 in each section, and each
55 section having an opening a^2 , guides a^{10} and a^{11} in said sections, and recessed parts a^{12} and a^{13} , a push-bar slidably arranged in said casing, teeth c^4 and projections c^7 and c^8 on said
60 bar and adapted to slide in said guides a^{10} , and a projection c' on said push-bar adapted to fit and slide in said guide a^{11} , and means in
65 said recessed parts a^{12} and a^{13} adapted to en-

gage and lock with the teeth on the push-bar, substantially as and for the purposes set forth.

19. The herein-described take-up device for the brake mechanism of a wheeled truck, comprising a casing consisting of sections a and a' and means for securing them together, a recessed portion a^3 in each section, and each
70 section having an opening a^2 , guides a^{10} and a^{11} in said sections, and recessed parts a^{12} and a^{13} , a push-bar slidably arranged in said casing, teeth c^4 and projections c^7 and c^8 on said
75 bar and adapted to slide in said guides a^{10} , a projection c' on said push-bar adapted to fit and slide in said guide a^{11} , and a movable
80 gripping-dog in each part a^{12} and a^{13} having teeth adapted to engage and lock with said push-bar, substantially as and for the purposes set forth.

20. The herein-described take-up device for the brake mechanism of a wheeled truck, comprising a casing consisting of sections a and a' and means for securing them together, a recessed portion a^3 in each section, and each
90 section having an opening a^2 , guides a^{10} and a^{11} in said sections, and recessed parts a^{12} and a^{13} , a push-bar slidably arranged in said casing, teeth c^4 and projections c^7 and c^8 on said
95 bar and adapted to slide in said guides a^{10} , a projection c' on said push-bar adapted to fit and slide in said guide a^{11} , a spring-actuated slide d in each part a^{12} and a^{13} , and a sliding dog
100 in each slide having teeth adapted to engage and lock with the teeth of said push-bar, substantially as and for the purposes set forth.

21. The herein-described take-up device for the brake mechanism of a wheeled truck, comprising a casing consisting of sections a and a' and means for securing them together, a recessed portion a^3 in each section, and each
105 section having an opening a^2 , guides a^{10} and a^{11} in said sections, and recessed parts a^{12} and a^{13} , a push-bar slidably arranged in said casing, teeth c^4 and projections c^7 and c^8 on said
110 bar and adapted to slide in said guides a^{10} , a projection c' on said push-bar adapted to fit and slide in said guide a^{11} , a spring-actuated slide d in each part a^{12} and a^{13} , a sliding dog
115 in each slide having teeth adapted to engage and lock with the teeth of said push-bar, and means connected with said slides for throwing said gripping-dogs out of their operative
120 engagement with said push-bar, substantially as and for the purposes set forth.

22. The herein-described take-up device for the brake mechanism of a wheeled truck, comprising a casing consisting of sections a and a' and means for securing them together, a recessed portion a^3 in each section, and each
125 section having an opening a^2 , guides a^{10} and a^{11} in said sections, and recessed parts a^{12} and a^{13} , a push-bar slidably arranged in said casing, teeth c^4 and projections c^7 and c^8 on said
130 bar and adapted to slide in said guides a^{10} , a projection c' on said push-bar adapted to fit

and slide in said guide a^{11} , a spring-actuated
slide d in each part a^{12} and a^{13} , a sliding dog
in each slide having teeth adapted to engage
and lock with the teeth of said push-bar, and
5 means connected with said slides for throw-
ing said gripping-dogs out of their operative
engagement with said push-bar, consisting,
essentially, of an eye on the back of each
slide extending through openings in the sides
10 of said sections a and a' , and eccentric levers

or arms operatively connected with said eyes,
substantially as and for the purposes set
forth.

In testimony that I claim the invention set
forth above I have hereunto set my hand this 15
23d day of October, 1897.

MICHAEL Q. RUTAN.

Witnesses:

FREDK. C. FRAENTZEL,

WM. H. CAMFIELD, Jr.