

(No Model.)

J. W. RICE.
CAR BRAKE MECHANISM.

No. 559,344.

Patented Apr. 28, 1896.

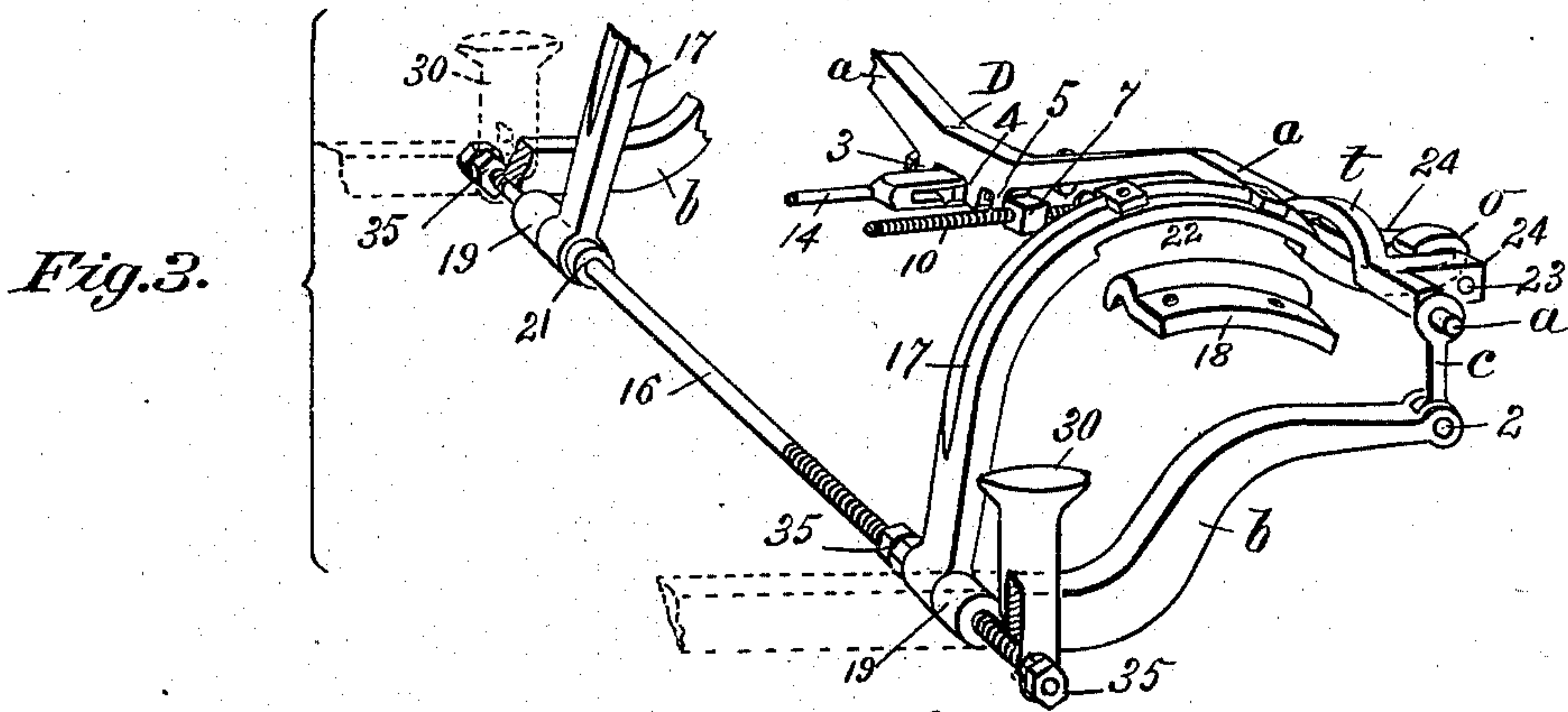
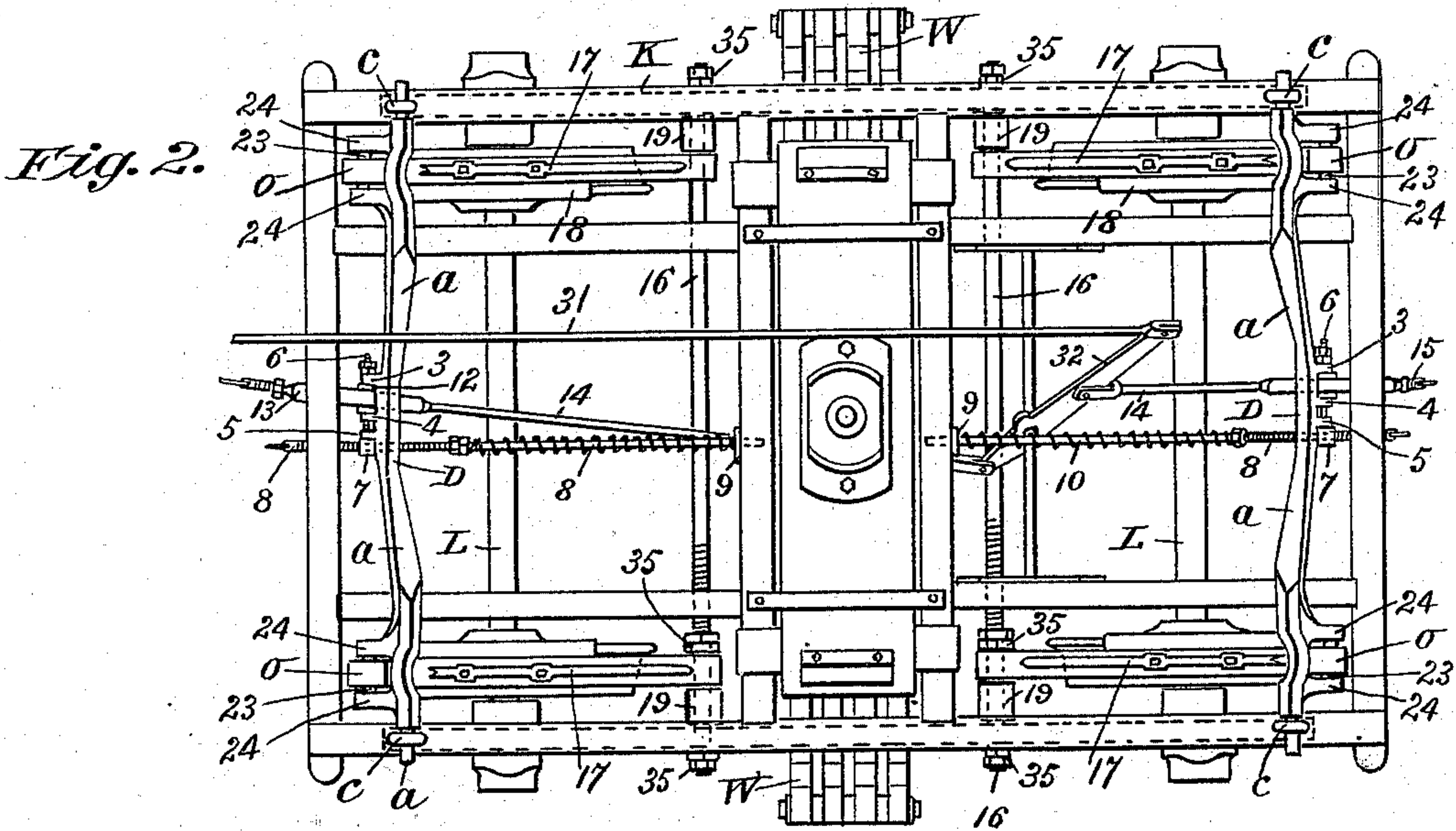
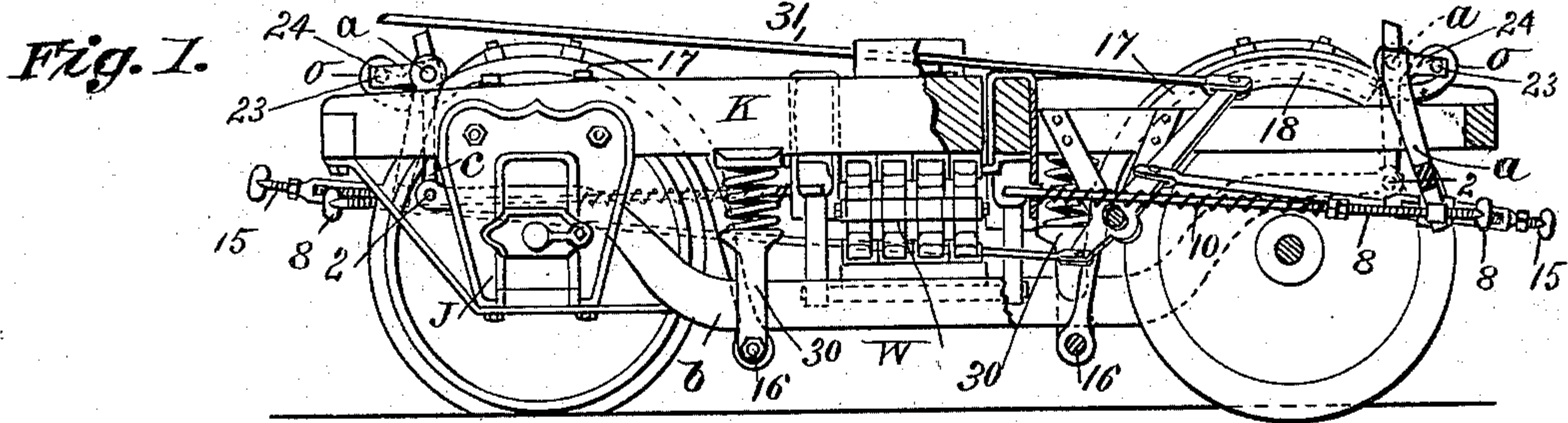
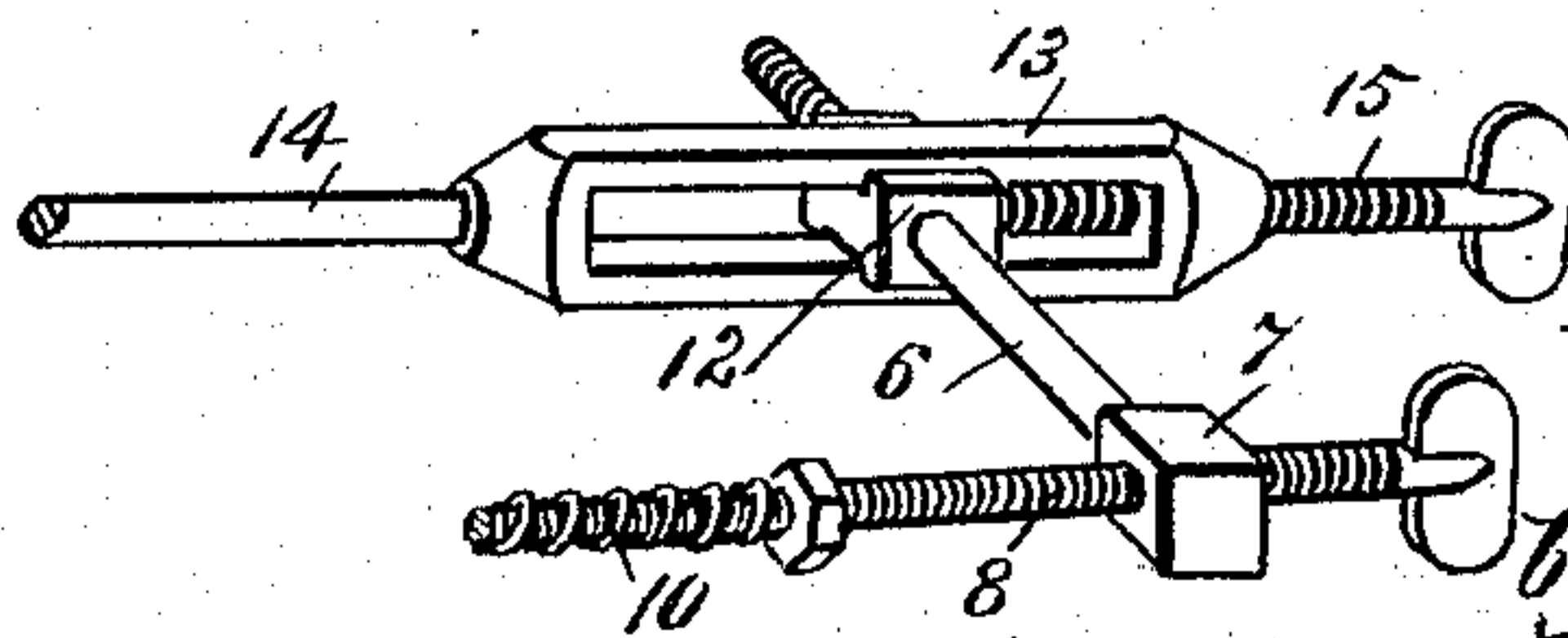


Fig. 4.



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UNITED STATES PATENT OFFICE.

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CAR-BRAKE MECHANISM.

SPECIFICATION forming part of Letters Patent No. 559,344, dated April 28, 1896.

Application filed January 2, 1896. Serial No. 574,107. (No model.)

To all whom it may concern:

Be it known that I, JOHN W. RICE, a citizen of the United States, residing at Springfield, in the county of Hampden and State of Massachusetts, have invented new and useful Improvements in Car-Brake Mechanism, of which the following is a specification.

This invention relates to brake devices for railway-car trucks and is in the nature of an improvement upon the construction set forth in Patent No. 345,320, issued to me July 13, 1886, the object being to provide certain improvements in the details of the construction of the said brake devices; all as hereinafter fully described, and more particularly pointed out in the claims.

In the drawings forming part of this specification, Figure 1 is a side elevation, partly in section, and Fig. 2 is a plan view, of a car-truck embodying my improvements. Figs. 3 and 4 are perspective views of detail parts which are hereinafter fully described.

In the drawings, K indicates the truck-frame, on which the usual pedestals J are secured for the usual purpose of supporting the bearing-boxes of the axles L of the trucks. An equalizing-bar *b*, whose extremities extend between the sides of the pedestals, as shown in Fig. 1, and have a bearing on the top of the journal-boxes of the truck, is placed on each side of the latter and has applied thereto the spring-supporting posts 30, whose lower portions are arranged astride of said equalizing-bar, as illustrated in Fig. 3, and the upper ends of said spring-supporting posts are broadened to form suitable seats for the truck-springs, as shown in Fig. 1. Thus the complete truck construction contains two of said equalizing-bars, one on each side, four of said posts 30, and four truck-springs in addition to the usual elliptic springs W W, (clearly shown in Fig. 2,) which have also their bearing upon said equalizing-bars. Thus the weight of one end of a car under which said truck may be placed is brought upon the said equalizing-bars which rest upon the car-boxes, as aforesaid.

In the present construction each eccentric shaft *a*, which directly actuates the brake-straps 17 to move them against and from the wheels of the truck, is constructed with its central portion D curved laterally or eccen-

tric to the axis of its extremities, thereby forming, in effect, a lever thereon, to which are attached the connections between said shaft and the brake-operating devices. Said shaft *a* is connected by each end to the ends of said equalizing-bars *b* by an eyebolt *c*, which is pivotally connected at 2 to said bar, and its upper eye receives the journal end of said bar. (See Fig. 3.) Said eccentric shaft is provided with the lugs 3, 4, and 5 at its central portion or the extreme point of its lateral extension. Said lugs are bored to receive the bolt 6, which has the head 7, which head has a screw-threaded hole through it to receive the screw-bolt 8. Said bolt 6 is secured in said lugs 3, 4, and 5 by nuts on the end thereof, as shown in Figs. 2 and 3. The bolt 8 has its inner end extending through a guide-plate 9 on a cross-beam of the truck, in which it has a free endwise movement. This bolt 8 serves to adjust the tension of spring 10 on said bolt, whereby its lifting power for swinging shaft *a* to free the brakes from the car-wheels is determined. On said bolt 6, which extends somewhat beyond the end of the truck for convenience of adjustment, is the bearing-block 12, whose operative position is between said lugs 3 and 4 on said shaft *a*. A link 13, sliding on said block 12, extends under said bar *a* and has said connecting-rod 14 connected to one end thereof. An adjusting-screw 15 is provided in the outer end of said link, whose inner end bears against said block 12, whereby by turning said screw 15 the brake-shoes are adjusted relative to the tread-surface of the wheels, for the result of turning said last-named screw is to rock the shaft *a* more or less and to cause it to act upon the brake-straps, as below described, with the above-named result. The said spring-supporting posts 30, carried on said equalizing-bars *b*, extend far enough below said bars *b* to provide bearings in their lower ends for the cross-shafts 16, on which the brake-straps 17 are hung at a point below the car-axles, so that they may have the desired vibratory motion upwardly and downwardly over the wheels. Said brake-straps, on which the brake-shoes 18 are secured, have bosses on their lower ends, through which said shaft 16 freely passes, and said straps are adjusted to and retained in proper position thereon rel-

ative to said wheels by means of a loose collar 19 on each end, a fixed collar 21, and nuts 35, as shown. A long screw is formed on one end of said shaft 16, so that the nuts thereon may be run well back toward the center thereof and permit the shaft to be so slid in its bearings that its ends may become free for placing new straps thereon in case of needed repairs. The said brake-straps 17 are each formed with a shoe-socket 22, Fig. 3, in the side thereof adjoining the car-wheel to the end that when the shoe 18 is bolted therein it cannot slip or have any endwise movement when forced against a revolving car-wheel, and, furthermore, the abutment of the ends of said shoe against the end walls of said socket prevents any strain upon the shoe-bolts. The outer extremity of each of the said brake-straps (which are preferably of wrought-steel) has a loop *o* formed thereon, and each is connected between two lugs 24, extending at right angles from the axis of said eccentric shaft *a* near the bearing ends of the latter. (See Figs. 2 and 3.) A bolt 23, passing through said lugs 24 and loop *o* therebetween, serves to attach the said looped end of each brake-strap to said shaft *a*, the latter being slightly curved at *t* to allow said brake-straps to pass under said bar and the latter to rock freely when the brakes are operated.

The operation of the above-described improvements is as follows: The eccentric shaft *a* is hung or connected to said equalizing-bars *b*, which are unyieldingly rigid under any brake strain that may be applied thereto, and the entire weight of one end of a car is supported on said bars. Consequently the points of attachment of said shaft *a* to the truck are practically unyielding. The said bar *b* is likewise of such size as prevents its deflection under any brake strain. Consequently the brake-straps to which the shoes are secured may operate in close proximity to the wheels and require but little free motion toward and from the same and need comparatively short leverage for their operation. The result of said short leverage is to provide for the most advantageous development of the brake-power, when shaft *a*, through the action of its above-described connections, is caused to roll and swing its said lugs 24 and the brake-straps connected thereto downwardly against the wheels. The said brake action is vertically against the wheels, and practically the entire weight of the part of a car upon one truck is the opposite point of brake resistance.

Thus it will be seen there is no such strain laterally upon the journal-boxes and pedestals of the truck as results from forcing the brake-shoes in a horizontal direction against the wheels thereof. The result of the said rigid points of resistance which receive the force of the brake-power is more immediate brake effect, quicker relief therefrom, and greater durability of the brake mechanism.

Having thus described my invention, what

I claim, and desire to secure by Letters Patent, is—

1. The curved brake-straps hung by one end to the truck at points below the car-axles, and extending therefrom over the car-wheels, and terminating in loops at their extremities on the opposite sides of said wheels, combined with the eccentric shaft having laterally-extending lugs thereon between which said loops enter and to which they are connected, and means for rocking said shaft, substantially as set forth.

2. The shaft 16, the posts 30, having bearings therein for said shaft, the brake-straps 17, hung by one end on said shaft and having loops *o*, on their opposite ends combined with the eccentric shaft *a*, having the lugs 24, between which said loops are connected, and means for rocking said shaft *a*, whereby the said straps are moved toward and from the wheels, substantially as set forth.

3. The curved brake-straps hung by one end to the truck at points below the car-axles, and extending therefrom over the car-wheels, and terminating in loops at their extremities on the opposite sides of said wheels, combined with the eccentric shaft having laterally-extending lugs thereon between which said loops enter and to which they are connected, the brake-lever 32, a rod connecting said lever and said eccentric shaft, substantially as set forth.

4. The eccentric shaft *a*, bearings for the ends of said shaft consisting of the eyebolts *c*, pivotally connected to the equalizing-bars *b*, of the truck, combined and operating substantially as set forth.

5. The eccentric shaft having the separated lugs 3, 4, and 5 thereon, the bolt 6, extending through said lugs, the bearing-block 12, on said bolt, the link 13, having a sliding engagement with said block, the brake-lever 32, connected to said link, and means for longitudinally adjusting said link on said block, combined and operating substantially as set forth.

6. The eccentric shaft, the bolt 6, connected to said shaft, and having a screw-threaded perforation through its head, combined with the screw-rod 8, engaging said bolt-head, and having its free end supported in the truck-frame, and the spring 10, carried on said screw-rod, substantially as set forth.

7. The posts 30, supported on the equalizing-bars *b*, having shaft-bearings in their lower ends, the shaft 16, supported in said bearings, the brake-straps 17, hung on said shaft, the collars 19 and 21, and nuts 35, on said shaft, serving to adjust said shaft and straps, and retain the same in operative positions, combined and operating substantially as set forth.

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Witnesses:

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