

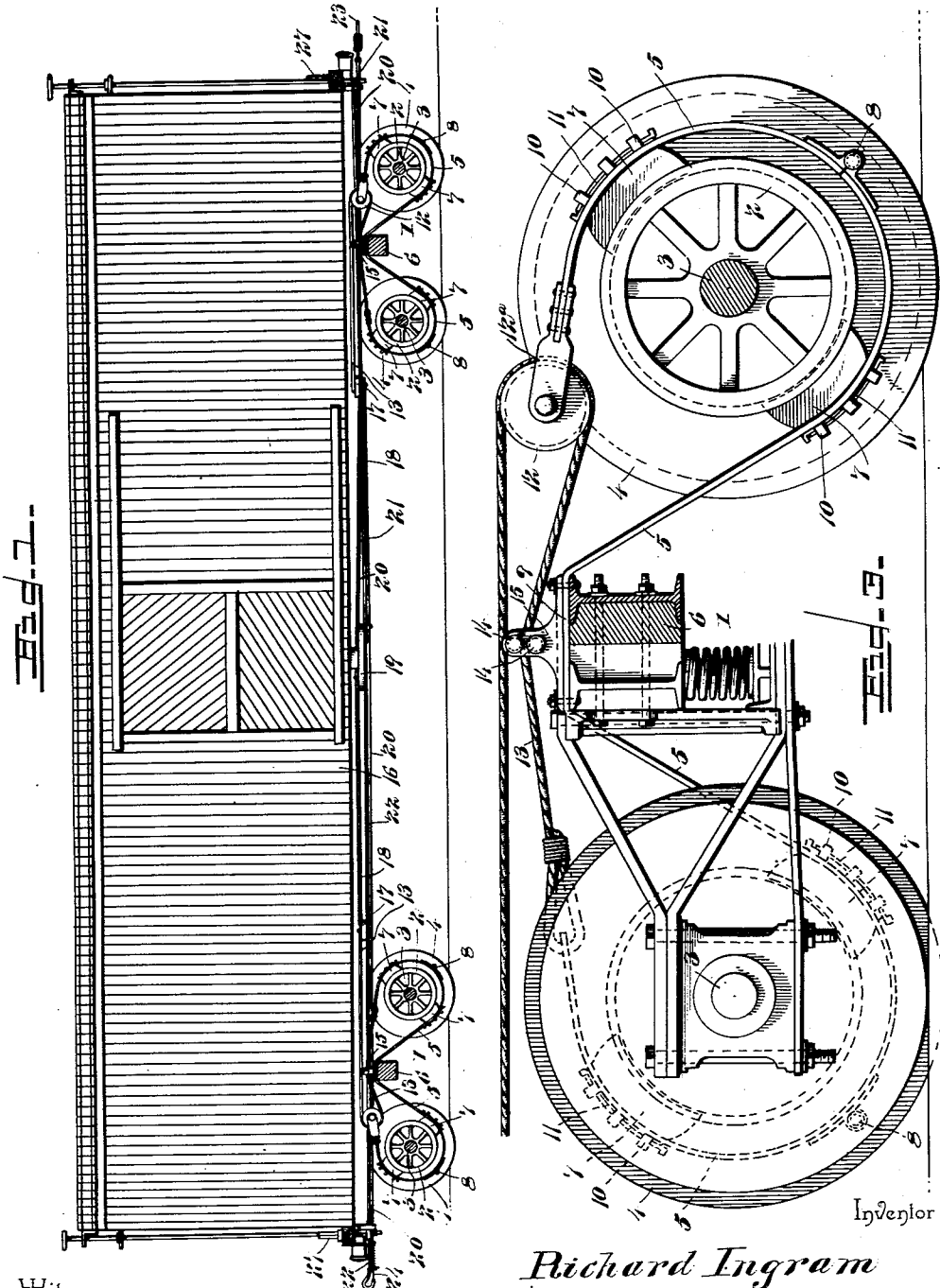
(No Model.)

2 Sheets—Sheet 1.

R. INGRAM.
CAR BRAKE.

No. 586,496.

Patented July 13, 1897.



Witnesses

E. H. Stewart.
J. F. Riley

By *his* Attorneys.

Richard Ingram

Chas. Snow & Co.

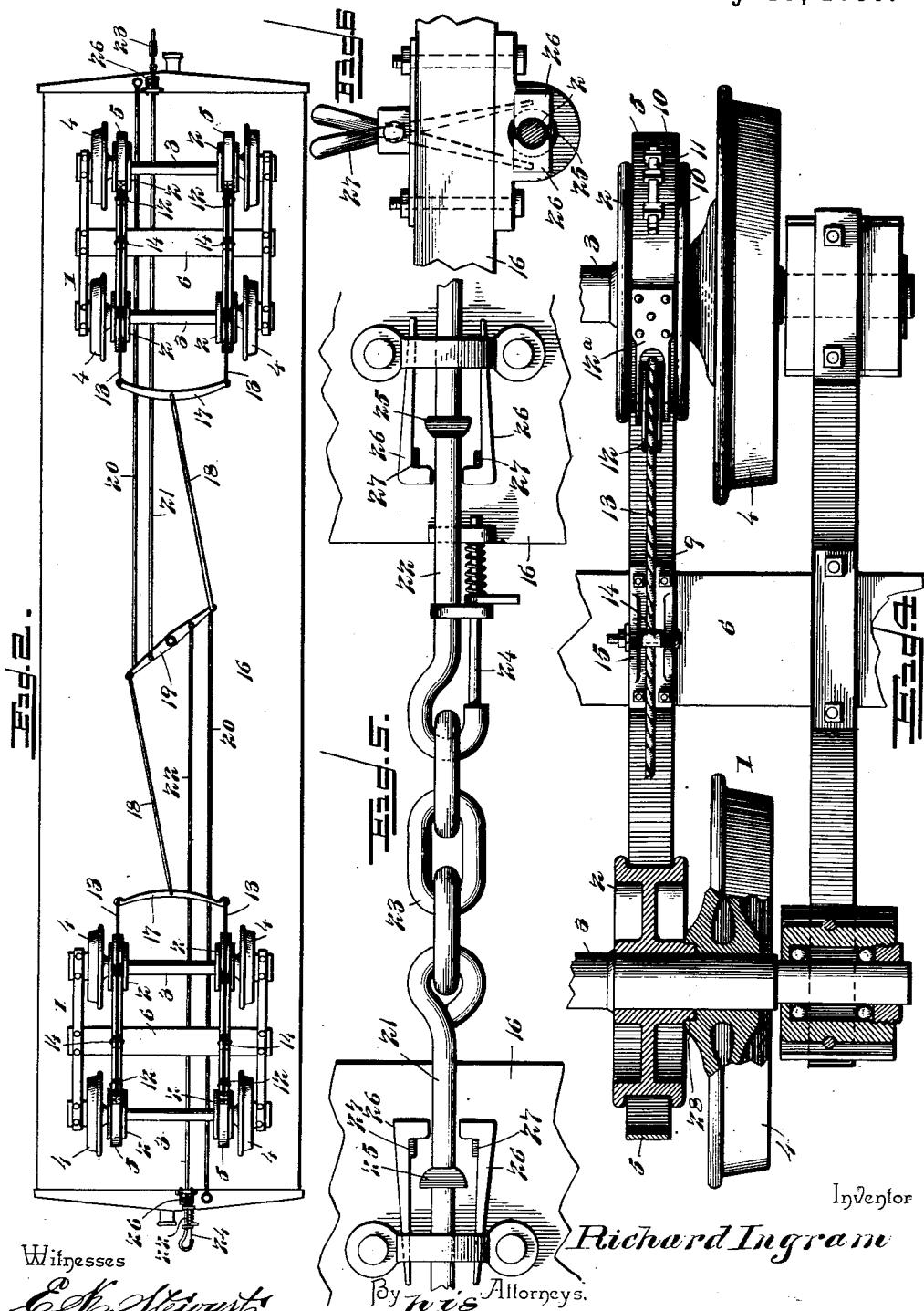
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Inventor

Richard Ingram

By *W. S. W. S.* Attorneys.

Witnesses

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UNITED STATES PATENT OFFICE.

RICHARD INGRAM, OF ROANOKE, VIRGINIA.

CAR-BRAKE.

SPECIFICATION forming part of Letters Patent No. 586,496, dated July 13, 1897.

Application filed September 10, 1896. Serial No. 605,420. (No model.)

To all whom it may concern:

Be it known that I, RICHARD INGRAM, a citizen of the United States, residing at Roanoke, in the county of Roanoke and State of Virginia, have invented a new and useful Car-Brake, of which the following is a specification.

The invention relates to improvements in car-brakes.

10 The object of the present invention is to improve the construction of car-brakes and to provide a simple and comparatively inexpensive one which will enable an economical construction of truck to be employed and
15 which will avoid heating and injuring car-wheels.

A further object of the invention is to provide means for automatically applying the brakes of all of the cars of the train in the
20 event of the breakage of the latter into two or more parts.

The invention consists in the construction and novel combination and arrangement of parts hereinafter fully described, illustrated
25 in the accompanying drawings, and pointed out in the claims hereto appended.

In the drawings, Figure 1 is a longitudinal section of a car provided with brake mechanism constructed in accordance with this invention. Fig. 2 is a reverse plan view of the same. Fig. 3 is an enlarged view, partly in elevation and partly in section, illustrating the manner of mounting the band-brakes on the car-wheels and showing the same for simultaneous operation. Fig. 4 is a view of the same, partly in plan and partly in horizontal section. Fig. 5 is a detail view of the means for automatically applying the brakes should the cars of a train become accidentally
30 uncoupled. Fig. 6 is a detail view of the levers for releasing the resilient catches.

Like numerals of reference designate corresponding parts in all the figures of the drawings.

45 1 designates a car-truck provided at each side with a pair of band-brakes. The members of each pair of band-brakes are connected with each other by means hereinafter described, and each band-brake comprises a
50 friction or brake wheel 2, fixed to the axle 3 adjacent to the car-wheel 4, and a metal band or strap 5, connected at its inner ter-

minus to the top of the truck, preferably at the bolster 6, and extending downward therefrom under the brake or friction wheel and
55 upward at the outer side thereof to a point above the top of the same, and a pair of brake-shoes 7, mounted on the band or strap and arranged to engage the periphery of the brake or friction wheel. The band or strap, for convenience in assembling the parts, is preferably composed of inner and outer sections or
60 portions connected by a hinge 8, and the shape of the band and its size are such that when released its resiliency carries the brake-shoes
65 off the wheel and holds them out of contact therewith.

The hinge-joint 8 is so constructed that it is sprung when the brake is applied and the sections are in alinement, and when the strap
70 or band is released the hinge causes the sections to spring out of alinement and carry the brake-shoes clear of the brake-wheel. This operation is effected by causing the adjacent ends of the sections of the strap or
75 band to abut when the sections are in alinement, but the hinge-joint may be otherwise constructed to produce the same result, as will readily be seen.

The inner members of each pair of straps
80 or bands may, as illustrated in Fig. 3 of the accompanying drawings, be constructed of a single or continuous piece of metal with the central or connecting portion 9 extending
85 across the top of the bolster 6.

Each brake-shoe has its outer face curved to conform to the configuration of the band and is provided at its outer face with a series of integral lugs 10, extending through apertures of the strap or band and provided with
90 openings receiving a key 11, which is arranged on the outer face of the strap or band and secures the shoe to the same.

A pulley 12 is mounted on the outer end of one of the straps or bands, and a cable 13 or
95 similar flexible connection is secured to the outer end of the other band or strap and extends across the truck and passes around the pulley 12, whereby it is adapted to operate both band-brakes simultaneously. After
100 passing around the pulley 12 the cable or other flexible connection employed is returned across the truck, which is provided at its top with a pair of pulleys 14, journaled in a

bracket 15. The lower leaf of the cable passes between the pair of pulleys and the upper leaf rests upon the upper pulley of the pair. The end of the lower leaf of the cable is
 5 looped and is linked into a perforation of the outer end of the adjacent strap or band. The pulley 12 is journaled in the yoke or frame 12^a, which is bifurcated to receive the strap or band and which is riveted or otherwise se-
 10 cured to the same.

The two cables or other flexible connections of each truck of the car 16 are connected at their outer ends by a yoke 17, and the yokes are connected by rod or chain connections 18
 15 with the ends of a centrally-arranged transversely-disposed brake-lever 19. The terminals of the brake-lever 19 are connected by rods or chains with brake-shafts 20 or other desired operating mechanism.

20 In order to apply the brakes automatically on all the cars of a train should the latter break into two or more parts by accidental uncoupling of the cars or otherwise, each car is provided at its ends with rods 21 and 22,
 25 which are connected by rod or chain connections with the brake-lever 19 at points intermediate of the ends thereof to decrease the leverage. The rod 21 is looped to form an eye and carries a short chain 23, which is
 30 adapted to engage detachably the rod 22, which is bent to form a hook, the chain being retained in the hook by a spring-actuated bolt 24, mounted in suitable bearings at one side of the rod 22 and forming a catch for
 35 closing the mouth of the hook. Should the coupling of a car break or become uncoupled, the chain 23 will be drawn taut and the strain incident to pulling the train of cars will be
 40 exerted on the rods 21 and 22 and other connections, whereby the brake-lever will be operated to apply the brakes.

The rods 21 and 22 are provided with shoulders 25, preferably formed by collars or flanges welded to the rods. The outer faces
 45 of the collars or flanges are beveled and are adapted to spread a pair of oppositely-disposed spring-catches 26 and pass the outer engaging ends thereof, and as soon as the
 50 shoulders in the application of the brakes are carried outwardly past the engaging ends of the spring-catches the latter close on the rods, engage the shoulders 25 thereof, and prevent the return of the rods, thereby holding
 55 the brakes applied. This construction applies the brakes of all of the cars of a train and will prevent the rear portion of a train running into the front portion and will immediately notify the engineer of the accident.

The spring-catches are disengaged from
 60 the rods by a pair of levers 27, fulcrumed intermediate of their ends on the car and adapted to spread the catches to permit the rods to recede and relieve the brake-wheels of the brake-shoes.

65 The friction or brake wheel is spoked to lighten it, and it is provided at the outer edge of its hub with lugs 28, which interlock with

corresponding recesses of the adjacent portion of the hub of the car-wheel 4, whereby the friction or brake wheel is securely fixed
 70 to the car-wheel.

It will be seen that the car-brake is simple and comparatively inexpensive in construction, that it is positive and reliable in operation, and that it dispenses with the ordinary
 75 brake-beams and enables an economical construction of truck to be employed. It will also be apparent that each band-brake carries a pair of brake-shoes, thereby doubling the holding power of the brake and enabling
 80 the same to be effectually applied at the expenditure of a minimum amount of power. By employing the separate brake or friction wheels the car-wheels are not heated and rendered liable to breaking. Furthermore, it
 85 will be seen that simple and effective means are provided for automatically applying the brakes on all the cars of a train in the event of the latter separating into two or more parts through accidental uncoupling or breakage
 90 of couplings.

Various changes in the form, proportion, and the minor details of construction may be resorted to without departing from the spirit or sacrificing any of the advantages of this
 95 invention.

What I claim is—

1. In a car-brake, the combination of a brake-wheel, oppositely-disposed brake-shoes arranged to engage the brake-wheel, a resilient
 100 strap or band extending around the brake-wheel, carrying the brake-shoe and composed of two sections hinged together at their adjacent ends, and means for springing the hinged sections apart at the hinge-joint,
 105 substantially as described.

2. In a device of the class described, the combination with a truck, of a pair of brake-wheels mounted on the axles of the truck, bands or straps secured to the truck and extending
 110 around the brake-wheels, a pulley mounted on the outer end of one of the bands or straps, and a flexible connection secured to the outer end of the band or strap extending across the truck and passing around the
 115 said pulley, whereby both band-brakes are simultaneously operated, substantially as described.

3. In a device of the class described, the combination with a truck, of a pair of brake-
 120 wheels mounted on the axles, bands or straps secured to the truck and passing around the brake-wheels, a pulley mounted on the outer end of one of the straps or bands, a flexible connection secured to the outer end of the
 125 other strap or band, extending across the truck, and composed of upper and lower leaves and passing around the said pulley, whereby both band-brakes will be simultaneously operated, and a pair of pulleys mounted upon
 130 the truck, receiving the lower leaf of the flexible connection between them and supporting the upper leaf of the same, substantially as described.

4. In a device of the class described, the combination with brake mechanism, rods connected with the same and provided with shoulders, a coupling-chain designed to connect the rods of two cars and adapted to be drawn taut should the cars become uncoupled, and catches mounted on the cars and arranged to engage the shoulders when the rods are drawn outwardly, substantially as and for the purpose described.

5. In a device of the class described, the combination of a car, brake mechanism, rods arranged at the ends of the car, connected with the brake mechanism and provided with shoulders, the oppositely-disposed spring-actuated catches mounted on the car and arranged to engage said shoulders when the rods are drawn outward, levers arranged in pairs and adapted to spread the catches to release the rods, and means for coupling the outer ends of the rods, substantially as and for the purpose described.

6. In a device of the class described, the combination of a car, brake mechanism, rods arranged at the ends of the car, connected with the brake mechanism and provided with shoulders, one of the rods being provided with a loop and the other rod having a hook, a chain linked into said loop, a spring-actuated catch mounted on one of the rods and arranged to close the mouth of the hook to retain the chain in engagement with the same, and catches mounted on the car, arranged to engage the shoulders of the rods when the latter are drawn outward, substantially as described.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

RICHARD INGRAM.

Witnesses:

JOHN H. SIGGERS,
THEODORE DALTON.