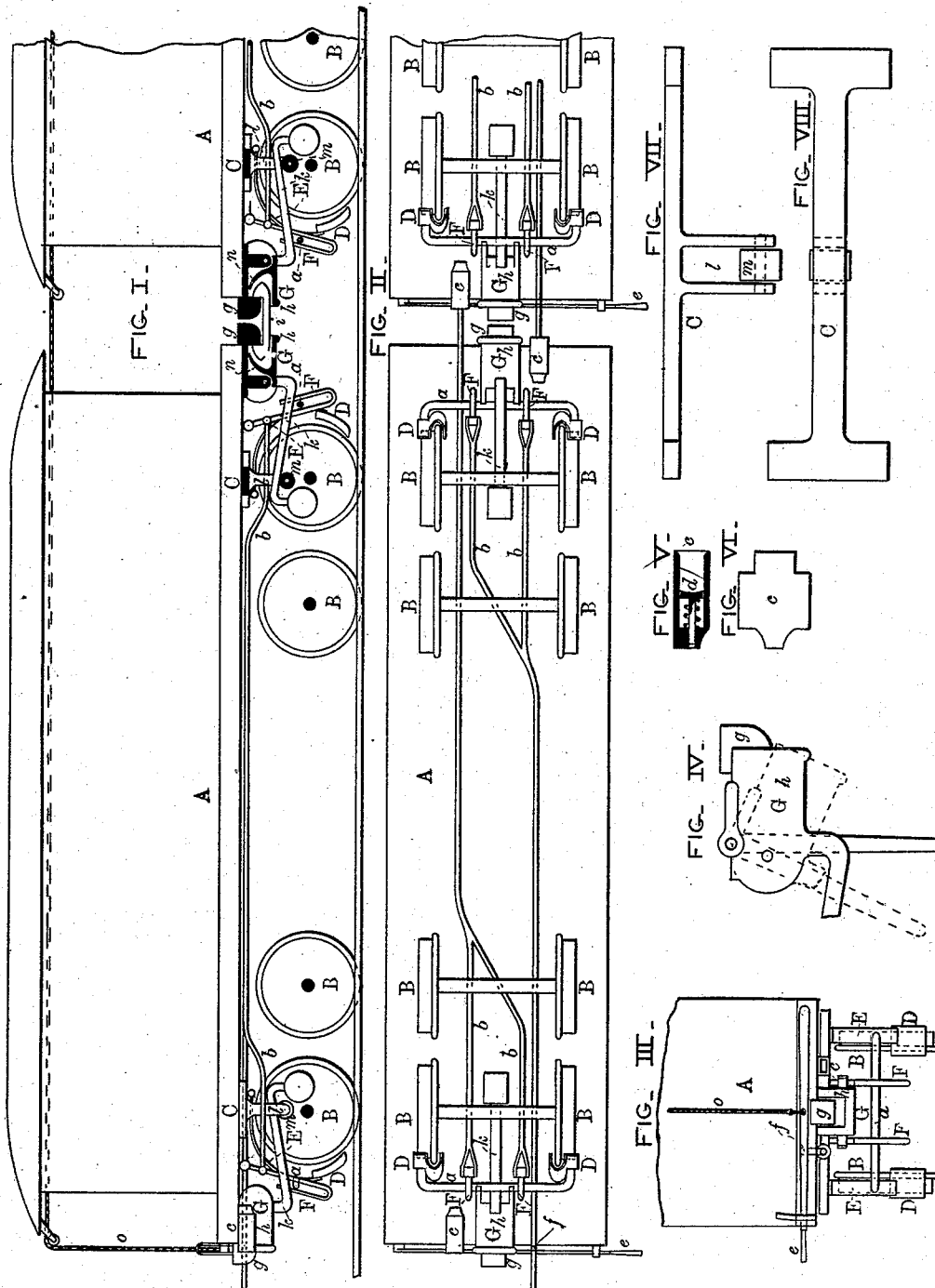


S. FAIRMAN.
Combined Car Brake and Coupler.

No. 217,356.

Patented July 8, 1879.



WITNESSES:

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UNITED STATES PATENT OFFICE.

SIMON FAIRMAN, OF BALTIMORE, MARYLAND.

IMPROVEMENT IN COMBINED CAR BRAKE AND COUPLER.

Specification forming part of Letters Patent No. **217,356**, dated July 8, 1879; application filed November 26, 1878.

To all whom it may concern:

Be it known that I, SIMON FAIRMAN, of the city of Baltimore, and State of Maryland, have invented certain Improvements in Combined Car Brake and Coupler, of which the following is a specification; and I do hereby declare that in the same is contained a full, clear, and exact description of my said invention, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

This invention relates to an improved combined car brake and coupler, to be used independently of the ordinary braking mechanism, in case of accident, to stop and separate the cars; but it is also constructed to admit of the independent action of the coupler in the attachment and detachment of cars—that is to say, the coupler may be operated without affecting the braking mechanism to which it is connected, or interfering with the free forward and backward movement of the cars.

The said invention, briefly stated, consists, first, in providing a car with a system of brake-shoes adapted to be thrown beneath the wheels of the car, and between the said wheels and the rails of the track; and in combining with the brake-shoe-operating mechanism a coupler, which is arranged to open and discharge the coupling-link upon the application of the shoes to the car-wheels, as aforesaid.

The said invention consists, secondly, in the peculiar construction and arrangement of the braking and coupling devices, and in the manner of applying the same to the car, as will hereinafter fully appear.

In the further description of the said invention which follows, reference is made to the accompanying drawings, forming a part hereof, and in which—

Figure I is a partly-sectional side elevation of parts of two cars, to which the said invention is applied. Fig. II is a view of the under side of the cars. Fig. III is an end view of a car embodying the said improvements; and Figs. IV, V, VI, VII, and VIII are views of parts of the invention on an enlarged scale.

Similar letters of reference indicate similar parts of the invention in all the views.

A is the car-body, and B B are the wheels

of the car, secured to the trucks (which are not shown in the drawings) in the usual manner. C C are plates, one of which is located over each truck and under the car-body, adapted to have a limited sliding movement longitudinally of the car.

D D represent the brake-shoes, which consist of shells, conforming somewhat in form to the edges of the wheels, and which are attached to the plates C by means of hinged flexible bars E.

F F are swinging bars, dependent from the car-body, and connected loosely to rods *a*, one of which is used to couple each pair of flexible bars. Each pair of brake-shoes operate independently of the others, and fall beneath the car-wheels by reason of their weight when the sustaining mechanism, hereinafter described, is detached or liberated. The sustaining mechanism for each pair of brake-shoes consists of a suitably-supported forked brake-rod, *b*, pivoted to the swinging bars, extending to a point slightly beyond the end of the car. The free end of each brake-rod, except the one projecting from the rear end of the rear car, enters a socket, *c*, secured to the platform of an adjoining car, and comes into contact with a yielding plate, *d*, located in the said socket. By this means, when the train is made up, all the brake-shoes, except those connected to the rod projecting from the rear end of the train, are removed from contact with the wheels, and the latter pair are retained in a similar position by means of a lever, *e*, which is placed over a projection, *f*, on the said rod.

As any one of the cars may be placed at the rear of the train, and either end of the car used as the forward one, both ends of the cars are provided with the levers *e*, and all the brake-rods with projections *f*. I do not, however, limit myself to the devices herein described for securing the brake-rods, as other contrivances may be used in lieu thereof without affecting the nature of the invention.

The coupler before alluded to, and which is represented by G, consists of two parts, viz., fixed block, *g*, adapted as a bumper, and a jaw, *h*, pivoted to a part of the said block, and fitted to open as the coupling-link *i* is inserted thereto. The coupler is held in a closed

position by means of a weighted lever, *k*, which passes through a slotted arm, *l*, extending from the plate *C*, and the said arm is provided with a sheave, *m*, for obvious purposes.

The weighted lever *k* is bent substantially as shown in the drawings, to enable the sheave *m* to clear it when the plate *C* is thrown back and the shoes removed from contact with the wheels, and to cause the said sheave to strike an inclined surface and open the jaw *h* when the said plate is drawn forward by the passage of the shoes beneath the wheels.

By reference to the drawings it will be seen that the coupling-link engages with the bumpers only when the cars are coupled; and in order to disengage the link from the bumpers as the jaw is opened, I provide the said jaw with a curved plate, *n*, which, as the jaw is lowered, strikes the link and forces it below and clear of the bumper.

In the description of the operation of my improved brake and coupler which follows parts of the invention not yet alluded to will be described and their uses fully set forth.

To make up a train equipped with the present improvements, the brake-rods of the separated cars must be locked by means of the levers, as described, to remove the brake-shoes from the wheels and allow of the free rotation of the latter, and after the coupling operation, which is accomplished by the backing of one car against the other, all the brake-rods except the one at the rear end of the train are liberated. A line, *o*, extending from the engineer's cab through the cars, is next attached to the rear lever, when the apparatus is ready for use, and remains in this condition until circumstances require the instant checking and separation of the cars.

When the engineer deems it prudent to apply the brakes and separate the cars, he draws the line *o*, which disconnects the rear lever from its brake-rod, and allows the forward brake-shoes of the rear car to fall, and at the same time the rear car is detached from the next forward one. As the rear car is detached the forward brake-shoes on the next car are applied, in consequence of the release of the brake-rod from the socket into which it projects, and the second car is thus separated from the train. This operation is repeated until the entire number of cars are stopped and isolated.

The object of the yielding plate in the sockets is to take up or compensate for any irregularity in the length of the brake-rods, and to allow for a slight variation in the relative positions of adjoining cars when the train is turning or rounding a curve.

When it is desired to detach the rear car without affecting the remaining portion of the train, the forward brake-rod of the second car is secured by its lever, to which lever the check-line *o* must be attached, and the coupler of the rear car opened by means of a lever and cam or crank. (Shown in connection with the coupler in Fig. IV of the drawings.)

Having thus described my invention, what I claim as new, and wish to secure by Letters Patent of the United States, is—

1. A combined car brake and coupler having the following essential elements in combination—that is to say: a pair of brake-shoes, consisting of shells conforming somewhat in shape to the edge of the car-wheels, suspended by means of flexible bars to a plate adapted to have a sliding movement longitudinally of the car, and a coupler having a movable jaw, which is depressed or opened to discharge the coupling-link upon the falling of the said brake-shoes and the movement of the said plate consequent thereupon, substantially as herein described.

2. In combination with a pair of brake-shoes, *D D*, suspended as described, and provided with the connecting-bar *a*, the swinging bars *F*, and brake-rod *b*, the said brake-rod being fitted with suitable locking mechanism, whereby the said brake-shoes may be sustained from contact with the wheels of the car, substantially as herein specified.

3. In combination with the brake-rods *b*, having the projection *f* thereon, the lever *e*, whereby the said brake-rods may be locked and the brake-shoes sustained in an elevated position, as shown.

4. The platforms or bodies of two adjoining cars having each a socket, *c*, provided with a yielding plate, *d*, combined with the brake-rods *b*, each of which enters the socket *c* of the car adjoining that to which said rod is attached, substantially as specified.

5. The car-coupler *G*, having in combination the fixed bumper *g*, vibrating jaw *h*, and curved plate *n*, forming a part of said jaw, constructed substantially as described, whereby the said plate, when the jaw is depressed, falls on the head of the link, as set forth.

6. The sliding plate *C*, roller *m*, weighted lever *k*, vibrating jaw *h*, and fixed bumper *g*, combined substantially as specified.

In testimony whereof I have hereunto set my hand this 23d day of September, A. D. 1878.

SIMON FAIRMAN.

Witnesses:

WM. T. HOWARD,
JNO. T. MADDOX.