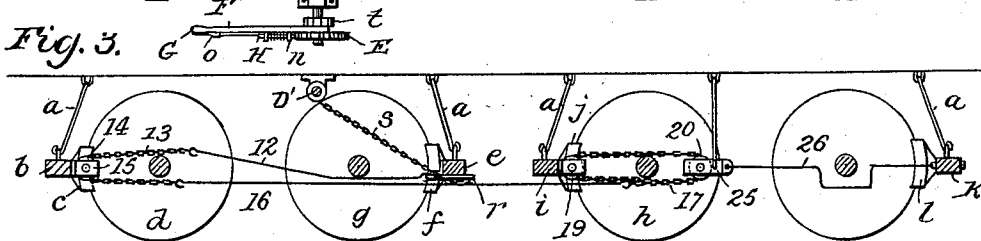
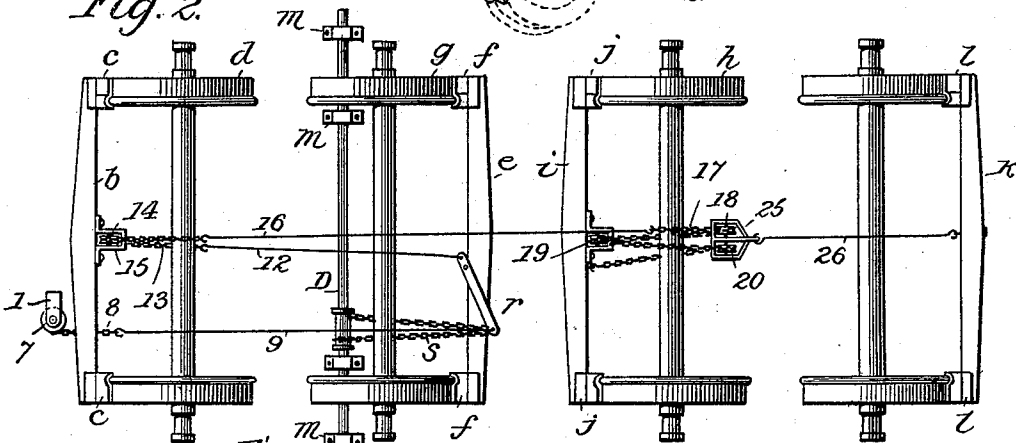
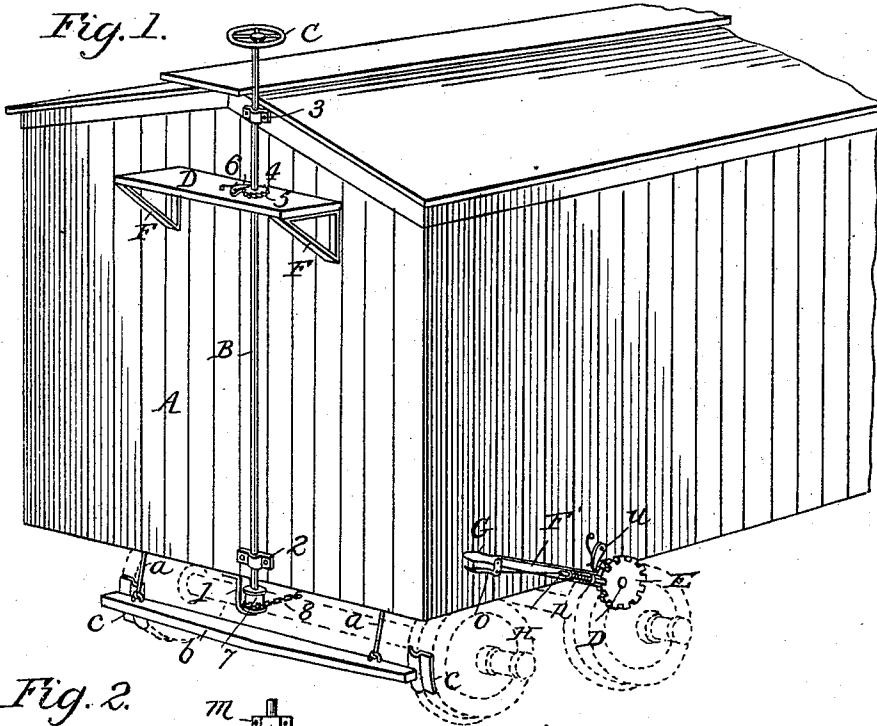


(No Model.)

F. GUY.
BRAKE FOR RAILWAY CARS.

No. 536,380.

Patented Mar. 26, 1895.



Witnesses
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UNITED STATES PATENT OFFICE.

FRANK GUY, OF ARCANUM, OHIO.

BRAKE FOR RAILWAY-CARS.

SPECIFICATION forming part of Letters Patent No. 536,380, dated March 26, 1895.

Application filed November 27, 1894. Serial No. 530,181. (No model.)

To all whom it may concern:

Be it known that I, FRANK GUY, a citizen of the United States, residing in Arcanum, in the county of Darke and State of Ohio, have
5 invented certain new and useful Improvements in Brakes for Railway-Cars, of which the following is a specification.

This invention relates to certain new and useful improvements in brakes for railway
10 cars, and in means or apparatus for operating the same; and it consists substantially in such features of construction, arrangement, and combinations of parts as will hereinafter be more particularly described.

15 The invention has for its object to provide simple and effective devices or mechanism for checking the speed of railway cars without shock and without noise.

The invention has for its further object to
20 provide means whereby the braking devices may be operated either from the top of the car or from the ground, or from both positions, thereby rendering it possible to apply the brakes at almost any time or place that it may
25 be required to stop or check the cars.

A still further object of the invention is to simplify the construction and arrangement of parts, as well as to cheapen the cost of manufacture thereof when compared with many
30 former inventions on this subject.

The above objects are attained by the means illustrated in the accompanying drawings, wherein—

Figure 1 is a view in perspective of the
35 greater part of a car body having my invention embodied in connection therewith. Fig. 2 is a bottom plan view showing two sets of wheel trucks, and having my improved brake mechanism extending from front to rear. Fig.
40 3 is a central longitudinal sectional view to more clearly indicate the construction and general arrangement of parts.

Before proceeding with the more detailed description of my invention I desire to state
45 that the various parts herein shown can be altered in a great many respects both as to their construction and arrangement, and it will be therefore understood that I do not confine myself to the specific details hereinafter
50 particularly set forth. Such construction and arrangement, however, as I have shown, have been found thoroughly practical in use and I

prefer to adhere as closely thereto as possible in practice.

In carrying my invention into effect I provide at the forward end of the lower part of the car A, two brackets 1, 2, in which is supported or held a vertical rod B, which extends upwardly above the car and is provided at its upper end with a hand-wheel C, which can be
60 grasped or manipulated by the brake-man or other operator while in a standing position, the said vertical rod B, being further supported or held in position by a bracket 3, secured to the edge of the car at the top. The
65 said rod B, passes through a foot-rest D, supported at the front of the car by means of brackets F, F, and it is provided at 4, with a ratchet wheel 5, with which engages a spring pawl 6, secured to the foot-board so as to en-
70 gage the wheel in an obvious manner.

As will be observed the location of the vertical brake rod B, is somewhat to one side of the center of the car, and that the same is formed or provided at its lower end with a
75 small drum or pulley 7, to which is attached one end of a chain 8, extending beneath the bottom of the car, the opposite end of said chain being connected to a rod 9, which will be hereinafter more particularly referred to
80 and explained.

The mechanism thus far described is that which is employed for setting or releasing the brake mechanism while on top of the car, but it frequently happens that the brake-man or
85 other operator has to set or release the brake devices while standing on the ground, and I will first describe the arrangement of the brake shoes and connections, and then I will explain my preferred construction and ar-
90 rangement of devices by which the brakes are applied or released through devices at the sides of the car.

Suspended from beneath the bottom of the car at near its forward end by means of rods
95 *a, a*, is a brake beam *b*, having at each end thereof a shoe *c*, designed to engage the periphery of the wheels *d* of the car whenever the brake mechanism is operated or applied, the said brake beam being so suspended that
100 when operated in the proper manner the shoes will be brought against the wheels forwardly of the latter, thereby gradually retarding or checking their motion with but little shock

and noise. Pivoted in like manner by means of similar suspending rods *a, a*, is an additional brake beam *e*, having at each end a shoe *f*, and so arranged with respect to the second pair of wheels *g*, that when the mechanism is applied the shoes *f*, will be brought to bear against the wheels *g*, in a direction reverse to that in which the shoes *c, c*, are carried by the brake beam *b*. Also suspended from beneath the bottom of the car by similar suspended rods *a, a*, and at a point adjacent to the forward edge of the front wheels *h, h*, of the second set, is a similar brake beam *i*, carrying at its ends the shoes *j, j*, which beam when operated or drawn upon in the manner hereinafter described operates substantially in the same manner as the beam *b*, hereinbefore referred to. Still farther suspended beneath the car in a similar way is the brake beam *k*, which similarly as the beam *e*, operates in a reverse manner and is also provided at each end with a brake shoe *l*.

Passing beneath the car intermediate of the first set of wheels is a shaft *D'*, which as shown in Fig. 2 is supported in brackets *m*, the said shaft being prevented from endwise movement in any suitable manner, but yet capable of being turned or rotated in its bearings. The said shaft may be in two parts and provided with duplicate sets of mechanism about to be described, but for all the purposes of my invention a single set of devices only will be necessary and I shall therefore refer to the same in the singular.

It will be observed that the shaft *D'* projects slightly beyond the car at the side, and rigidly connected therewith is a notched or toothed disk *E*, while loosely supported thereon is a hand lever *F'* capable of being worked back and forth on said shaft or carried entirely around the same if necessary, the said lever being formed or provided at its end with a grip portion *G*, adapted to be grasped by the operator. The said hand lever *F'* is formed near its inner end with an eye *n*, through which passes a spring rod *H*, which is formed at its inner end with a catch adapted to take into the notches of the disk *E*, while near its opposite end the said spring rod is pivoted to the hand lever by means of a movable link *o*. The construction is such that normally the catch of the spring rod engages one of the notches of the disk *E*, but whenever the hand lever and the spring rod are grasped together at the outer ends the catch will be withdrawn from the disk by reason of the movable connection between the rod and lever, so that it will be seen that in order to operate the shaft *D'*, it is simply necessary to work the hand lever back and forth while in the meantime the spring rod is caused to engage and disengage the notched disk *E*. In this way the shaft *D'* may be rotated as many times as desired, and from the connections hereinafter described it will be understood how the brake devices are applied and released either by the operation of the said

hand lever and spring rod, or by the vertical operating rod *B*, heretofore referred to.

Pivoted to the brake beam *e*, is a short arm or lever *r*, to the end of the longer arm of which is attached one end of a chain *s*, the opposite end of which latter being attached in any suitable way to the revolving or rotating shaft *D'*. Similarly connected to the same end of the short arm or lever *r* is the inner end of the rod 9 the other end of which latter connects with the inner end of the chain 8, hereinbefore referred to as being attached or connected to the lower end of the vertical operating rod *B*. To the shorter arm of the lever *r*, is attached or connected one end of a rod 12, the other end of which connects with a chain 13, which passes around a sheave or pulley 14, carried by a bracket 15, secured to the brake beam *b*, and this chain then connects with a rod 16, which extends rearwardly and connects with a chain 17, passing over a pulley 18, suspended from the bottom of the car, and thence back again over a pulley 19, held or supported by the brake beam *i*, whence said chain returns again and passes around another pulley 20, also suspended from the bottom of the car, and finally the chain is secured to said beam *i*. The said pulleys 18 and 20, are held or supported in a block 25, and this latter is connected to the rearmost beam *k*, by means of a connecting rod 26.

From the foregoing construction and arrangement of devices it will be seen that should the operator desire to apply the brake while on the top of the car it is simply necessary for him to turn the vertical rod *B*, through the medium of the hand wheel *C*, whereupon through the chain and rod connections 8 and 9, the supplemental lever *r* will be so operated as to exert a draft or strain upon the succeeding connections, and the several brake beams will be carried against the wheels of the car in an obvious manner, the pawl and ratchet maintaining said operating rod to whatever position it is turned, whereas whenever it is desired to release the rod it is simply necessary to disengage the pawl from the ratchet.

It should be remarked at this point that in connection with the shaft *D'*, I employ a similar pawl and ratchet for engaging and holding said shaft to the positions to which it may be brought by the manipulations of the hand lever and spring rod hereinbefore described. This latter device is indicated by the letter *t*, representing a ratchet wheel on the shaft *D'*, which is engaged by a spring pawl *u*, attached or secured to the side of the car. Whenever the hand-lever is operated to rotate the shaft *D'*, to thereby apply the brake shoes or devices the side pawl *u*, engages the teeth of the ratchet *t*, and prevents the shaft from returning backward until the pawl is released by the operator.

It will thus be seen that from my construction and arrangement of devices the brakes can be applied either from the top of a car

or by a person standing on the ground alongside. The devices are simple and effective and they can always be relied upon to act perfectly and reliably.

5. Without limiting myself to the precise details shown and described, I claim—

In railway car brakes, the combination of the connecting mechanism and brake beams, the several chains and rods together with the
10 pulleys by which said brake beams are connected, the suspended block carrying the pulleys, the rotating shaft and the connecting

chain, the notched disk carried by said shaft and the loosely supported hand lever, and the spring lever pivoted to said hand lever 15 and engaging the notches of the disk, substantially as shown and for the purpose described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

FRANK GUY.

Witnesses:

W. W. WILSON,
O. O. SIMPSON.