

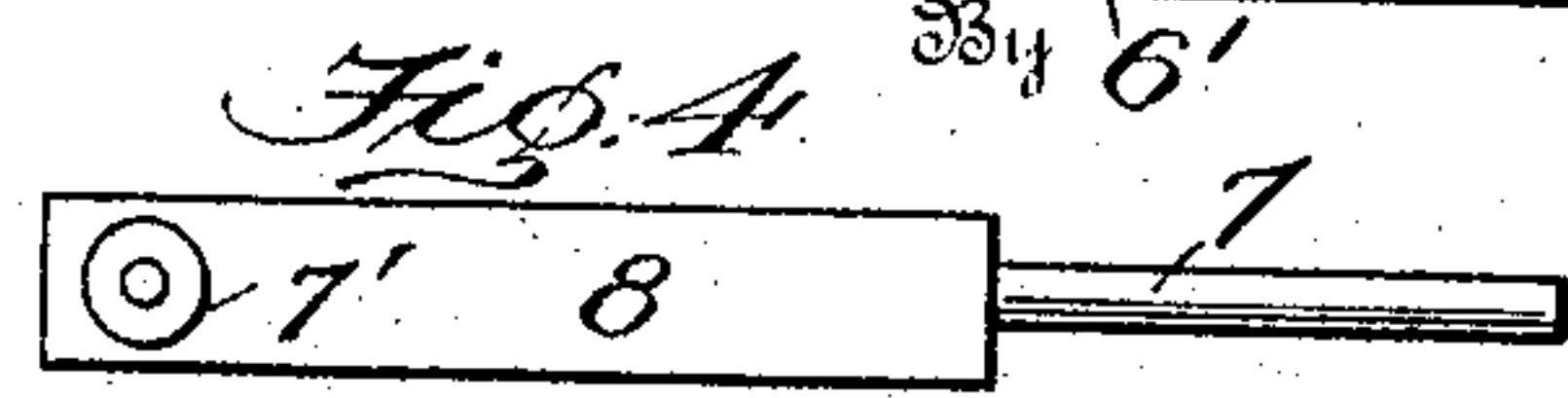
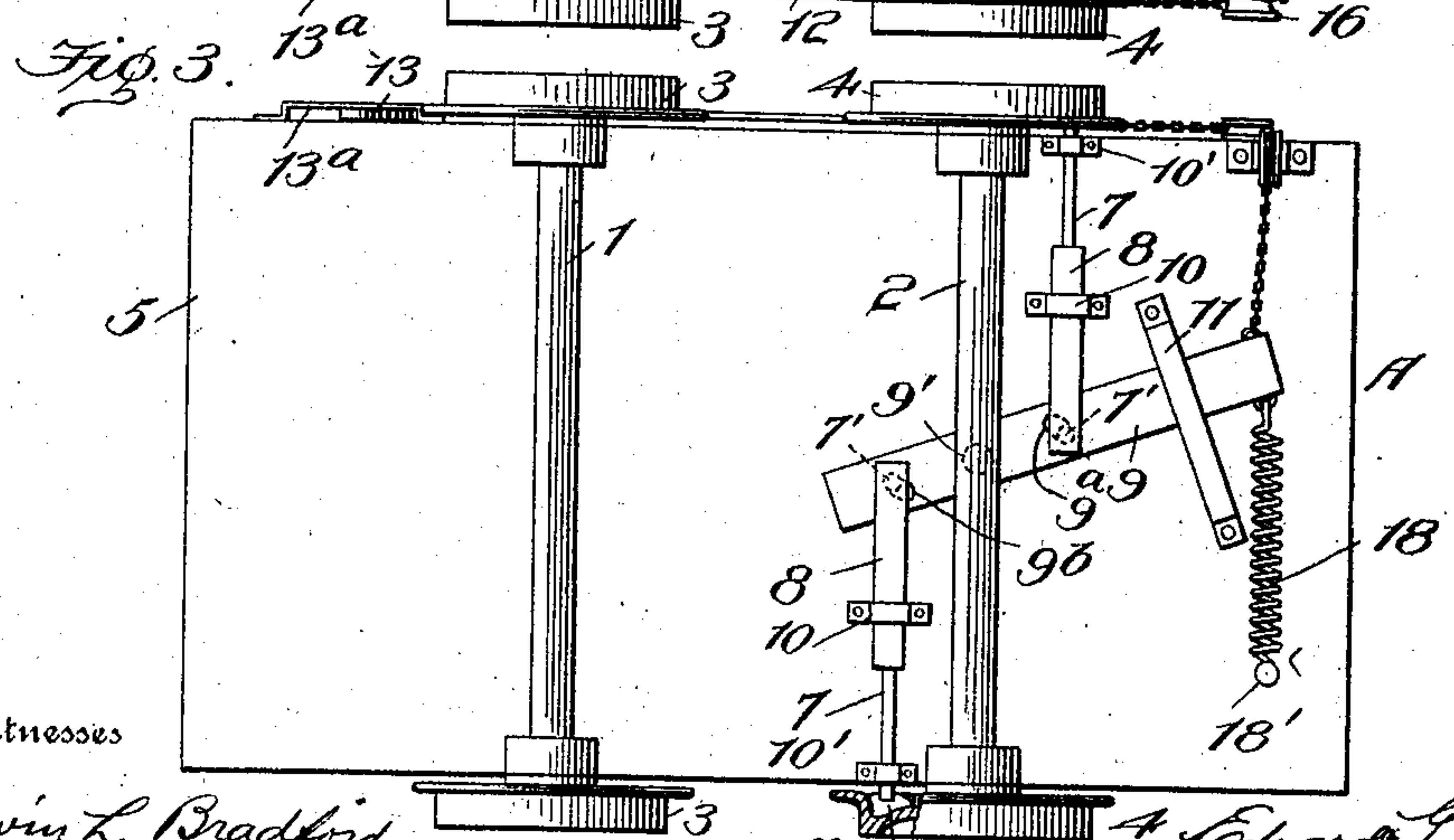
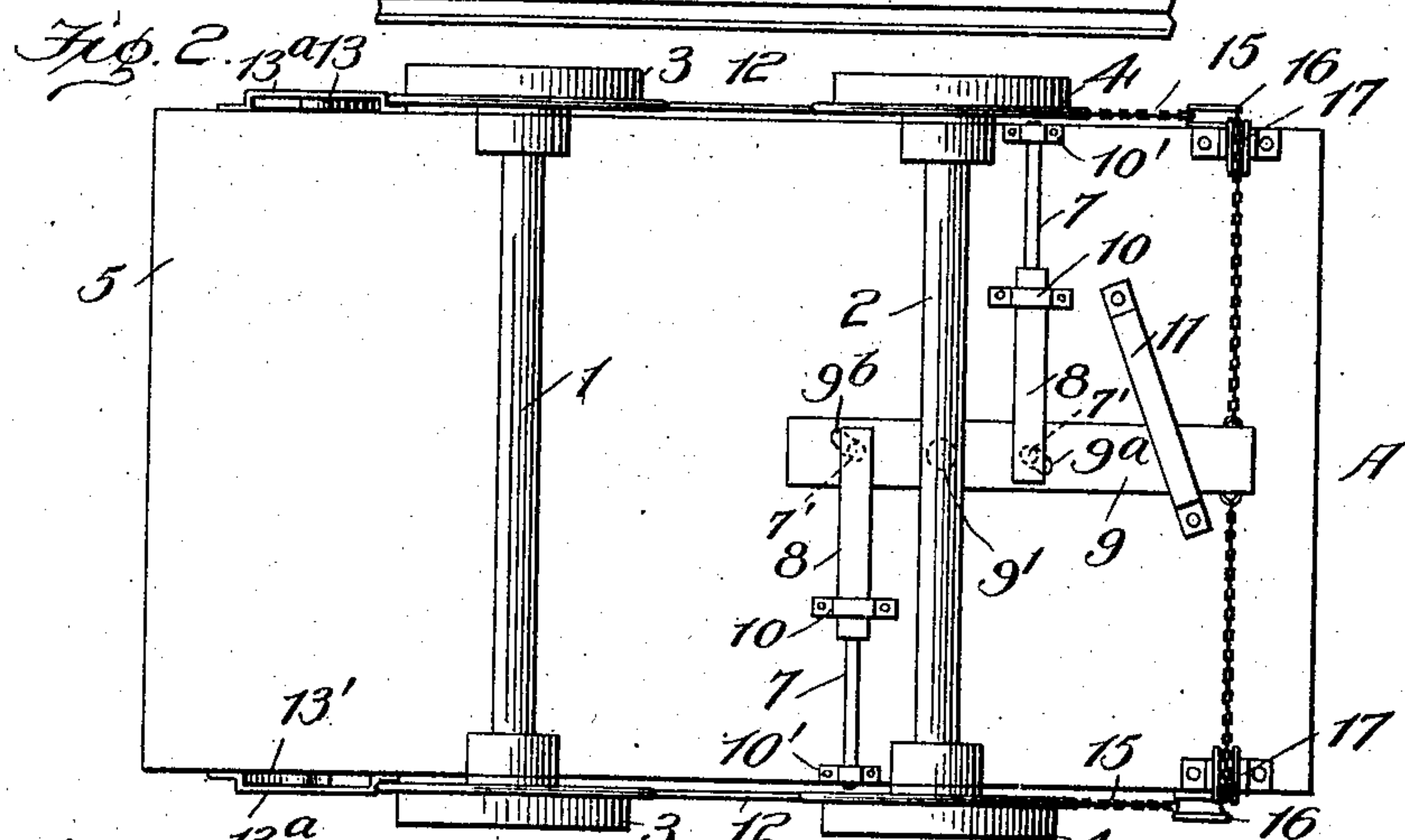
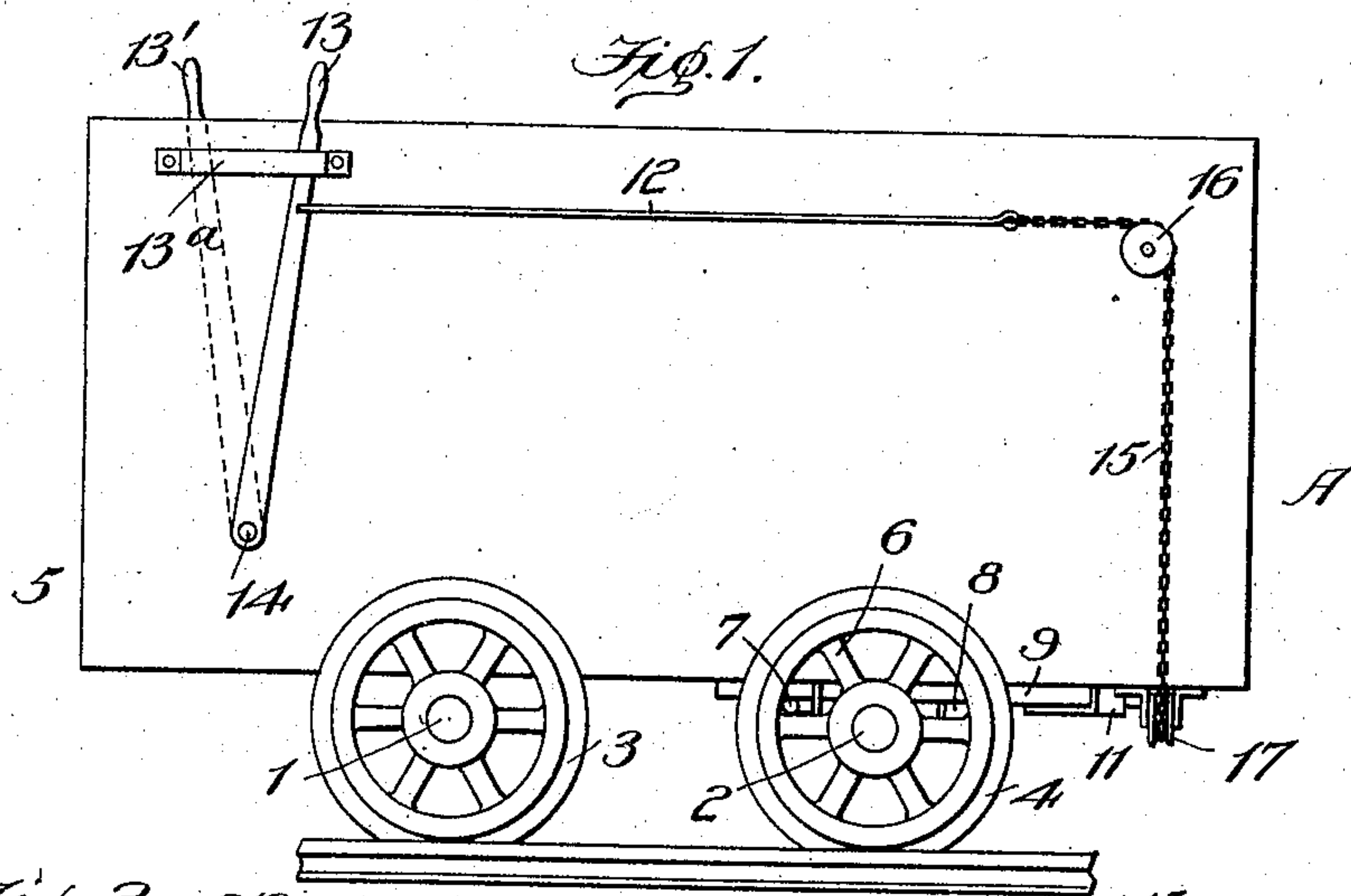
No. 815,880.

PATENTED MAR. 20, 1906.

E. G. TILLMAN.

CAR BRAKE.

APPLICATION FILED JUNE 7, 1905.



Witnesses

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# UNITED STATES PATENT OFFICE.

EDWARD G. TILLMAN, OF THAYER, WEST VIRGINIA.

## CAR-BRAKE.

No. 815,880.

Specification of Letters Patent.

Patented March 20, 1906.

Application filed June 7, 1905. Serial No. 264,127.

*To all whom it may concern:*

Be it known that I, EDWARD G. TILLMAN, a citizen of the United States, residing at Thayer, in the county of Fayette and State of West Virginia, have invented new and useful Improvements in Car-Brakes, of which the following is a specification.

This invention relates to improvements in sprag-brakes to be used on mine-cars and for similar purposes.

Figure 1 is a side elevation of a mine-car fitted with sprag-brakes embodying my improvements. Fig. 2 is a bottom plan view of the same. Fig. 3 is a bottom plan view of a car, showing a modified manner of operating the brakes. Fig. 4 is a view of one of the sprags.

In the drawings, A represents as an entirety a mine-car of any well-known type. 1 and 2 represent axles of the car; 3 3 and 4 4, the supporting track-wheels mounted on the said axles. The frame or body of the car is represented by 5. The supporting-wheels are formed with radially-arranged spokes 6, as indicated in Fig. 1, although they may be formed with solid webs provided at intervals with lugs or projections, as indicated by 6' in Fig. 3, the purpose of which will be hereinafter described. Preferably each car is provided with two sprags or brake-bars 7 and 8, arranged one at either side of and substantially parallel with one of the axes of one of the car-axles, the sprags being arranged transversely of the car and adapted to reciprocate longitudinally in straight lines and in opposite directions in order to engage with the adjacent supporting-wheels at opposite sides of the car to stop their rotation.

9 is a swinging bar or plate arranged longitudinally of the car midway between the sides and pivotally supported from the bottom of the car on a pivot 9', about the axis of which it is free to oscillate. The axis of this pivot lies, preferably, in the vertical plane of the axis of the adjacent axle. On either side of the pivot 9' the swinging bar 9 is slotted, as indicated at 9<sup>a</sup> 9<sup>b</sup>, these cam slots or grooves preferably being curvilinear in shape for a purpose to be hereinafter described.

At their inner ends the sprag-bars 7 and 8 have pivotally connected to them the slide-blocks or antifriction-rollers 7' 8', respectively, the former of which is fitted into and adapted to engage with the walls of the slot 9<sup>a</sup> and the latter of which is fitted into and adapted to engage with the walls of the slot 9<sup>b</sup>.

10 represents clips or guides secured to the car-bottom and adapted to guide and support the sprags near their centers, and 10' 10' are guides secured to the car-bottom and adapted to support and guide the outer end of each sprag, the guides 10' 10' for each sprag serving to hold the sprag at all times in parallelism with the adjacent axle.

The front end of the bar 9 is supported and guided by a guide-bar 11, secured to the bottom of the car and arranged to permit the said bar to swing freely in one direction a predetermined distance in order to set the sprags and to prevent the swinging of the bar in the opposite direction when the sprags are in inactive position.

12 12 are bars or rods arranged longitudinally at either side of the car. At their rear ends each of these rods is pivotally connected at 12' to one of the hand-levers 13 13' and arranged at either side of the car and pivotally connected at 14 to the adjacent side of the car.

13<sup>a</sup> represents guides for the upper ends of the hand-levers 13 13'. At their rear ends each of these longitudinally-arranged bars 12 is connected to one end of a chain 15. This chain leads over an antifriction-roller 16, mounted on the side of the car, and thence downward and around an antifriction guide-roller 17, secured to the bottom of the car, and thence to the front end of the swinging bar 9, to which it is securely fastened.

To operate the sprags, the operator grasps the handle 13 and throws it rearwardly, thereby swinging the bar 9 about its pivotal connection 9' and causing it to impart longitudinal motion to the sprags 7 and 8, the slides or antifriction-rollers thereon sliding along the grooves 9<sup>a</sup> 9<sup>b</sup>, respectively, in the said swinging bar and causing the sprags to move outward and engage with the adjacent track-wheels and lock them against their rotation. To release the brakes, the operator grasps the hand-lever 13', which is thrown forward by the rearward throw of the lever 13, and throws it rearward, swinging the bar 9 in the opposite direction and causing the sprags to be withdrawn from engagement with the wheels, the cooperation of the walls of the slots in the said bar with the slides on the sprags insuring that the sprags will be moved longitudinally in parallelism with the car-axle and with a minimum of friction between the slide and the swinging bar.

In the modification shown in Fig. 3 a spring



18 is secured at one end to the bottom of the car (shown at 18') and at its other end to the front end of the swinging bar 9, the operating-chain being connected to the other side of the said swinging bar, as hereinbefore described. In this construction but one hand-lever is required, as the spring will cause the bar 9 to swing normally into the position in which it holds the sprags out of engagement with the wheels.

It will be noted that I have constructed a sprag-brake comprised of a few parts and having the sprags connected to a swinging bar in such a manner as to impart longitudinal movement to the sprags as the said bar swings about its axis, the connection between each sprag and bar being a sliding one.

What I claim is—

1. In a car-brake, the combination with the car-frame, an axle mounted in said frame, and the supporting-wheels of the axle, of the swinging bar pivotally connected to the bottom of the car and having cam-slots therein, of sprag-bars arranged transversely of the car and having their outer ends adapted to engage with said car-wheels, and the slide-blocks secured to the inner ends of said sprag-bars fitted into said cam-slots in said swinging bar and adapted to be actuated by the walls of said slots to effect a longitudinal movement of said sprag-bars, substantially as set forth.

2. In a brake of the class described, the combination with the car-frame, the car-axle, and the wheels thereon, of the swinging bar pivotally mounted on the car-bottom and having a slot therein, the sprag-bar arranged transversely of the car-frame, and the slide-block carried by said sprag and adapted to be engaged by the walls of said slot to move the sprag longitudinally, substantially as set forth.

3. In a brake of the class described, the combination with a car-frame, the axle mounted in the frame and the wheels thereon, of the sprag-bars arranged transversely of the car-frame and adapted to have their outer ends engage with the said wheels, and having slide-blocks carried by their inner ends, and a swinging bar pivotally mounted on the car-bottom and having cam-slots therein, the slots of which are adapted to engage with the slide-blocks on the sprag-bars to move the bars longitudinally, substantially as set forth.

4. In a brake of the class described, the

combination with the car-frame, an axle mounted on the frame and the supporting-wheels of the axle, of the swinging bar pivotally connected to the bottom of the car and having a cam-slot therein, the sprag-bar mounted transversely of the car and having its outer end adapted to engage with one of said car-wheels, the guides for said bar adapted to hold it in parallelism with the said axle, and the slide-block carried by the inner end of said sprag-bar and fitted into said cam-slot in the swinging bar and adapted to be actuated by the walls thereof, substantially as set forth.

5. In a car-brake, the combination of the car-frame, an axle mounted therein and the supporting-wheels of the axle, of the swinging bar pivotally connected to the bottom of the car on an axis in the vertical plane of the axis of said axle, and having cam-slots arranged at either side of said pivotal connection, the sprag-bars arranged transversely of the car at either side thereof and on opposite sides of said axle and adapted to have their outer ends engage with the adjacent supporting-wheel, and the slide-blocks secured to the inner ends of said sprag-bars and each fitted into one of said slots in said swinging bar and adapted to be actuated by the walls thereof, substantially as set forth.

6. In a car-brake, the combination with a truck-frame, an axle therefor and supporting-wheels for the axle, of the sprag-bars arranged transversely of the truck-frame, a swinging bar, and cam-like connections between said sprag-bars and said swinging bar, each adapted to reciprocate one of the sprag-bars in a straight line into and out of engagement with one of said supporting-wheels, as said swinging bar is oscillated.

7. In a car-brake, the combination with a car-frame, an axle thereon and supporting-wheels on the axle, of the longitudinally-reciprocatable sprag-bars, each adapted to be thrown into and out of engagement with one of said supporting-wheels, a swinging bar, and cam connections between said swinging bar and said sprag-bars adapted to impart straight-line motion to the sprag-bars as the swinging bar is oscillated.

In testimony whereof I affix my signature in presence of two subscribing witnesses.

EDWARD G. TILLMAN.

Witnesses:

A. W. HALL,  
J. L. NAYLOR.