

No. 662,418.

Patented Nov. 27, 1900.

J. H. GREENWOOD.
AUTOMATIC BRAKE.

(Application filed Jan. 8, 1900.)

(No Model.)

3 Sheets—Sheet 2.

Fig. 3.

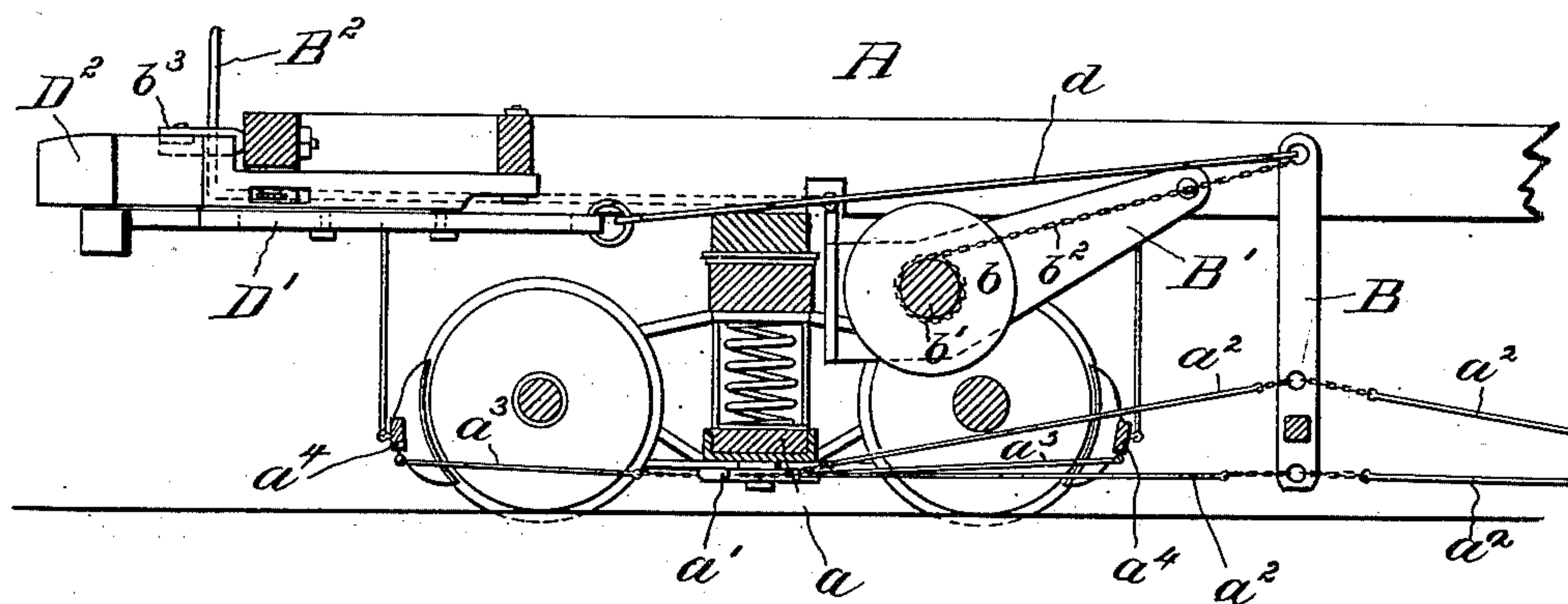
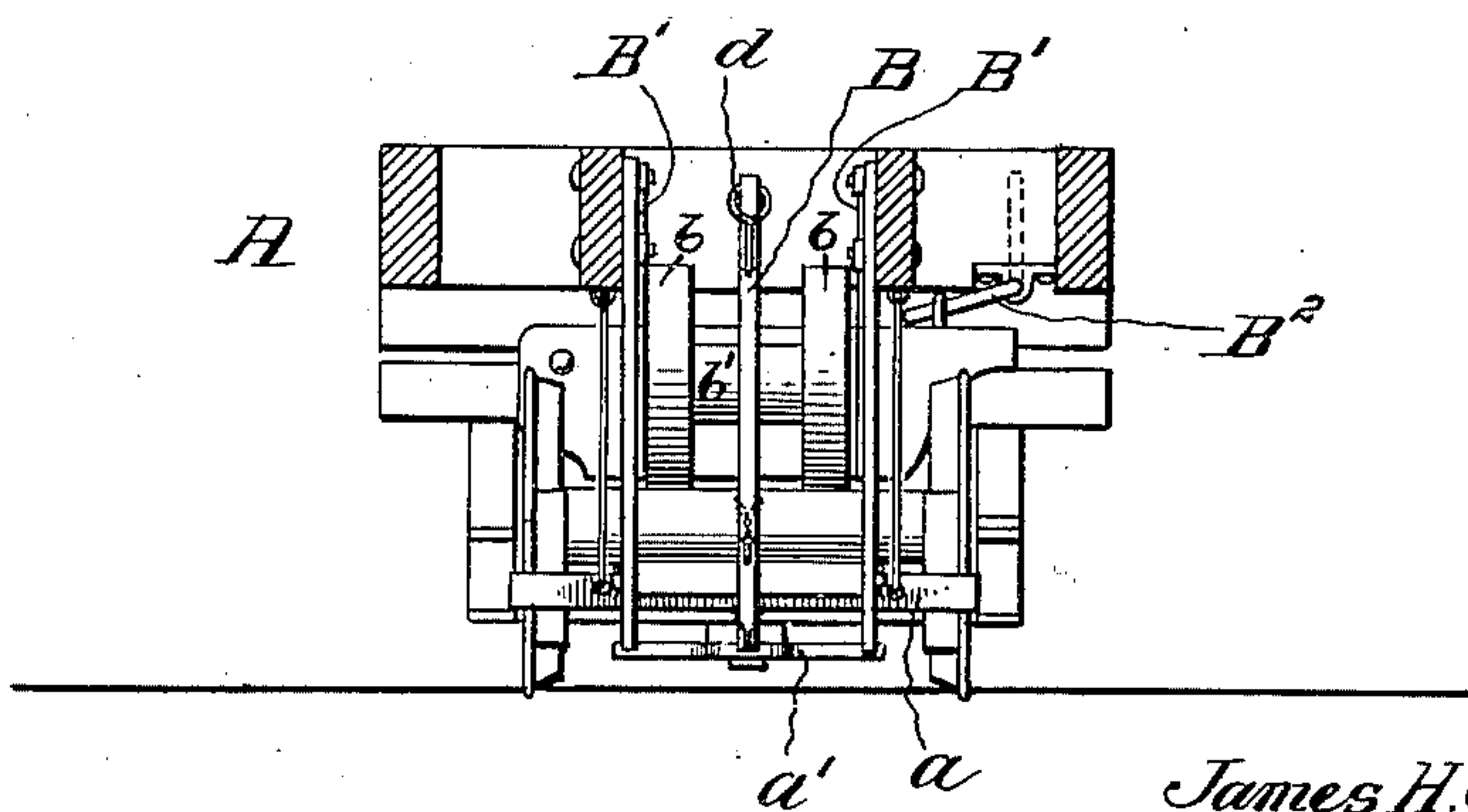


Fig. 4.



James H. Greenwood

Inventor

Witnesses:
John F. Deussen
J. A. Page

By Marion T. Marion

Attorneys

J. H. GREENWOOD.
AUTOMATIC BRAKE.

(Application filed Jan. 8, 1900.)

(No Model.)

3 Sheets—Sheet 3.

Fig. 5.

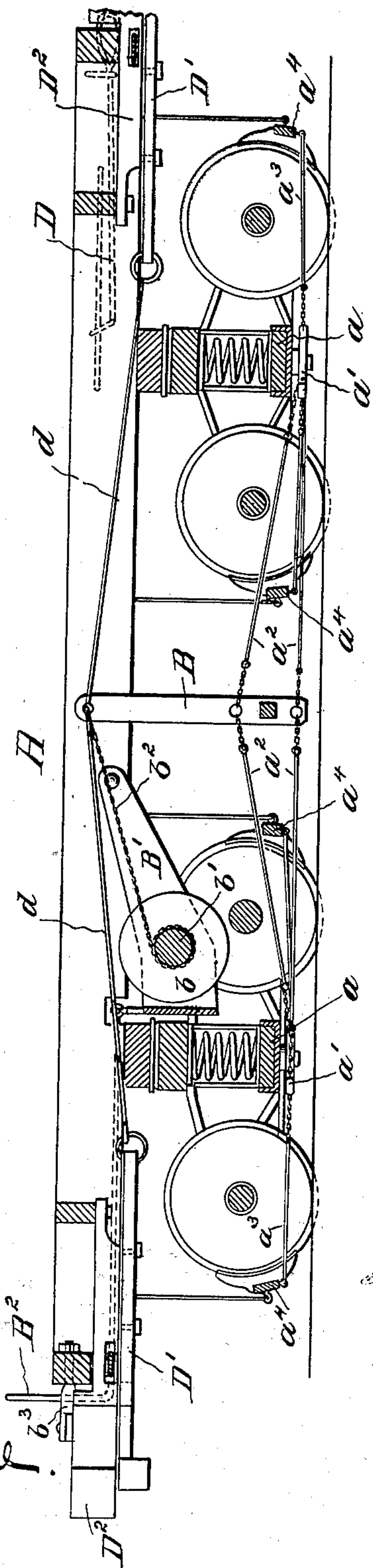
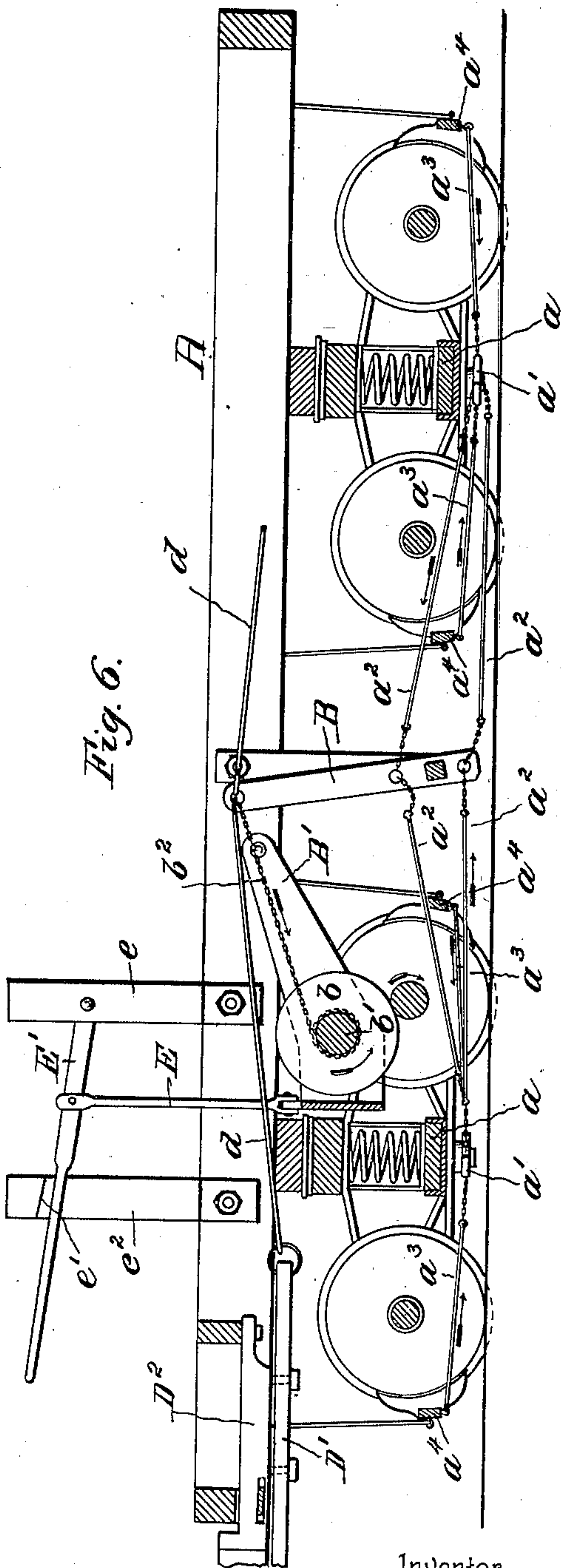


Fig. 6.



Witnesses:
John T. Deffenwiel
J. H. Page

Inventor
James H. Greenwood,
By Marion & Marion
Attorneys

UNITED STATES PATENT OFFICE.

JAMES HARVEY GREENWOOD, OF BOISSEVAIN, CANADA, ASSIGNOR OF ONE-HALF TO THOMAS N. MORRISON, WILLIAM LONG, STEWART BURROWS, WILLIAM HANLEY, ROBERT F. MORRISON, AND JOHN MORROW, OF SAME PLACE.

AUTOMATIC BRAKE.

SPECIFICATION forming part of Letters Patent No. 662,418, dated November 27, 1900.

Application filed January 8, 1900. Serial No. 770. (No model.)

To all whom it may concern:

Be it known that I, JAMES HARVEY GREENWOOD, a subject of Her Majesty the Queen of Great Britain, residing at Boissevain, county of Turtle Mountain, Province of Manitoba, Canada, have invented certain new and useful Improvements in Automatic Brakes; and I do hereby declare that the following is a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to an automatically-operating brake mechanism; and one object is to provide an automatic brake which will be set by the accidental separation of the cars or may be set by hand.

A further object is to provide an automatic brake which is instantaneous in operation, powerful and effective, simple in construction, and which may be manufactured at a moderate cost.

To these ends the invention consists in an automatic brake mechanism constructed substantially as hereinafter illustrated and described, and defined in the appended claims.

Referring to the drawings, in which similar letters of reference indicate similar parts, Figure 1 is a top or plan view of the frame of a car provided with an automatic brake mechanism constructed in accordance with this invention. Fig. 2 is a similar view looking from below the car. Fig. 3 is a central longitudinal vertical section through one end of the car-frame. Fig. 4 is a vertical transverse section. Fig. 5 is a vertical central longitudinal section. Fig. 6 is a similar view of a modified form.

In the drawings, A represents the frame of a car, which may be of any usual or preferred construction, having the usual trucks, &c. Upon the beam a is rotatably mounted a bar a' , to the ends of which are secured suitable wires or rods a^2 and a^3 , whereby the bar a' is connected with the lever B and to the brake-beams a^4 . (Best shown in Fig. 2.)

Pivottally supported to the frame A is a vertically-swinging bracket B', in the lower ends of which are rotatably mounted the friction-

disks b , which are united by a shaft or drum b' , to which is connected one end of a chain or cord b^2 , which is adapted to be wound thereon by the rotation of the friction-disks b . The other end of the chain b^2 is connected to the upper end of the lever B, as is clearly shown in Figs. 3, 5, and 6. An operating-lever B² is connected at one end to the bracket B' and extends therefrom to the end of the car, the extremity of said lever being bent at right angles to the body portion and adapted to be swung into engagement with a catch-link b^3 , pivoted to an extending portion of the frame A, as clearly shown in Fig. 1. A rod D is slidably secured to the end of the car-frame and is provided with a loop at its extremity which is adapted to be engaged with the end of the catch-link b^3 , as shown in Fig. 1. By means of this construction should the cars be accidentally parted, as by the breaking of the coupling, the rod D will pull the catch-link b^3 out of engagement with the lever B² and the bracket B' will descend by gravity, bringing the friction-disks b into engagement with one of the axles of the truck, whereby they are instantly rotated, winding up the chain b^2 , and thus setting the brakes. The movement of the lever B also draws the chain d , which is connected to the draw-bar D', which movement sets the brakes on the succeeding cars by operating the corresponding levers B, with which each car is provided, in an obvious manner. The draw-bar D' is preferably secured to the coupler-bar D² by means of a pin-and-slot connection, whereby it is adapted to move longitudinally with respect thereto and also move laterally with the coupler-bar when the cars are being coupled or uncoupled, as will be readily understood.

The draw-bars D' are connected in any suitable manner with a suitable operating mechanism located in the cab and under the control of the engineer, whereby the train may be braked in the usual manner and as clearly set forth in a companion application filed concurrently herewith.

If desired to apply the automatic or emergency brake by hand at any moment of dan-

ger, each car may be provided with a duplicate set of brake mechanism such as described above; but instead of the automatically-operating lever D² the bracket B' is
 5 connected to a vertically-operating rod E, which is connected at its upper end with a lever E', pivotally supported in the standard e, secured to the car-frame, as shown in Fig. 6. The lever E' is sustained in its raised or
 10 inoperative position by means of a shoulder e', formed on the upper portion of the standard e².

When it is desired to apply the emergency-brake by hand, it is only necessary to disengage the lever E' from the shoulder e' of the
 15 standard e², whereupon the bracket will descend, bringing the friction-disks into engagement with the axle of the truck and brake the train in the same manner as above described.
 20

While I have herein shown a preferred form of carrying my invention into effect, yet I do not desire to limit myself to such preferred details of construction, but claim
 25 the right to use any and all modifications thereof which will serve to carry into effect the objects to be attained by this invention in so far as such modifications and changes may fall within the spirit and scope of my
 30 said invention.

I claim—

1. A brake mechanism, comprising a suitable brake operatively mounted upon the frame of a car; a lever pivotally mounted in
 35 said frame; flexible connections between said lever and said brake; a friction-disk movably mounted in said frame and adapted to be moved into contact with the axle of the truck; a drum fixed upon said friction-disk; a chain
 40 connected to said drum and the upper portion of said lever, and a tripping device detachably connected to the succeeding car and adapted to release the friction-disk upon the
 45 separation of the cars, substantially as described.

2. A brake mechanism, comprising a suitable brake operatively mounted upon the frame of a car; a lever pivotally mounted in
 50 said frame; flexible connections between said lever and said brake; a bracket pivotally mounted in said frame; a friction-disk journaled in said bracket and adapted to be moved into engagement with the axle of the
 55 truck; a drum fixed upon said friction-disk; a chain connected to said drum and the upper portion of said lever, and a tripping device detachably connected to the succeeding car and adapted to release the friction-disk

upon the separation of the cars, substantially as described.

3. An automatic brake mechanism, comprising a suitable brake operatively mounted upon the frame of a car; a lever pivotally mounted in said frame; flexible connections between said lever and said brake; a friction-disk movably mounted in said frame and adapted to engage the axle of the truck; a drum fixed upon said disk; a chain connected to said drum and to said lever; a tripping-lever journaled in said frame and connected
 70 at one end with said friction-disk, the other end of said lever being adapted to engage a tripping-link, whereby the said disk is normally held in its raised position; and means for releasing said tripping-link from engagement with said levers, whereby the said disk
 75 will be moved automatically into engagement with the truck-axle, substantially as described.

4. An automatic brake mechanism, comprising a suitable brake operatively mounted upon the frame of a car; a lever pivotally mounted in said frame; flexible connections between said lever and said brake; a friction-disk movably mounted in said frame and adapted to be automatically moved into contact with the axle of the truck; a drum fixed upon said friction-disk; a chain connected to
 80 said drum and the upper portion of said lever; a draw-bar slidably mounted in said frame; and a suitable connection between said draw-bar and said lever, substantially as described.

5. In a car-brake, the combination with an axle, a brake mechanism having an upright lever B, and a draw-bar, of a pivoted bracket, a drum journaled in the free end of the bracket and provided with friction-disks arranged to be rotated by said axle, a chain attached to the drum and to said upright lever
 95 of the brake mechanism, a bar having slidable engagement with the draw-bar to move laterally therewith and also capable of a limited independent movement thereon, a connection between said slidable bar and the upright lever of the brake mechanism, and means for normally upholding the bracket and the drum carried thereby, substantially as described.

In witness whereof I have hereunto set my hand in the presence of two witnesses.

JAMES HARVEY GREENWOOD.

Witnesses:

R. C. DOLLOQUIN,
 FRIS. J. O'NEILL.