

No. 734,429.

PATENTED JULY 21, 1903.

H. A. PAQUETTE.
HAND BRAKE MECHANISM FOR CARS.

APPLICATION FILED MAY 15, 1903.

NO MODEL.

2 SHEETS—SHEET 1.

Fig. 1.

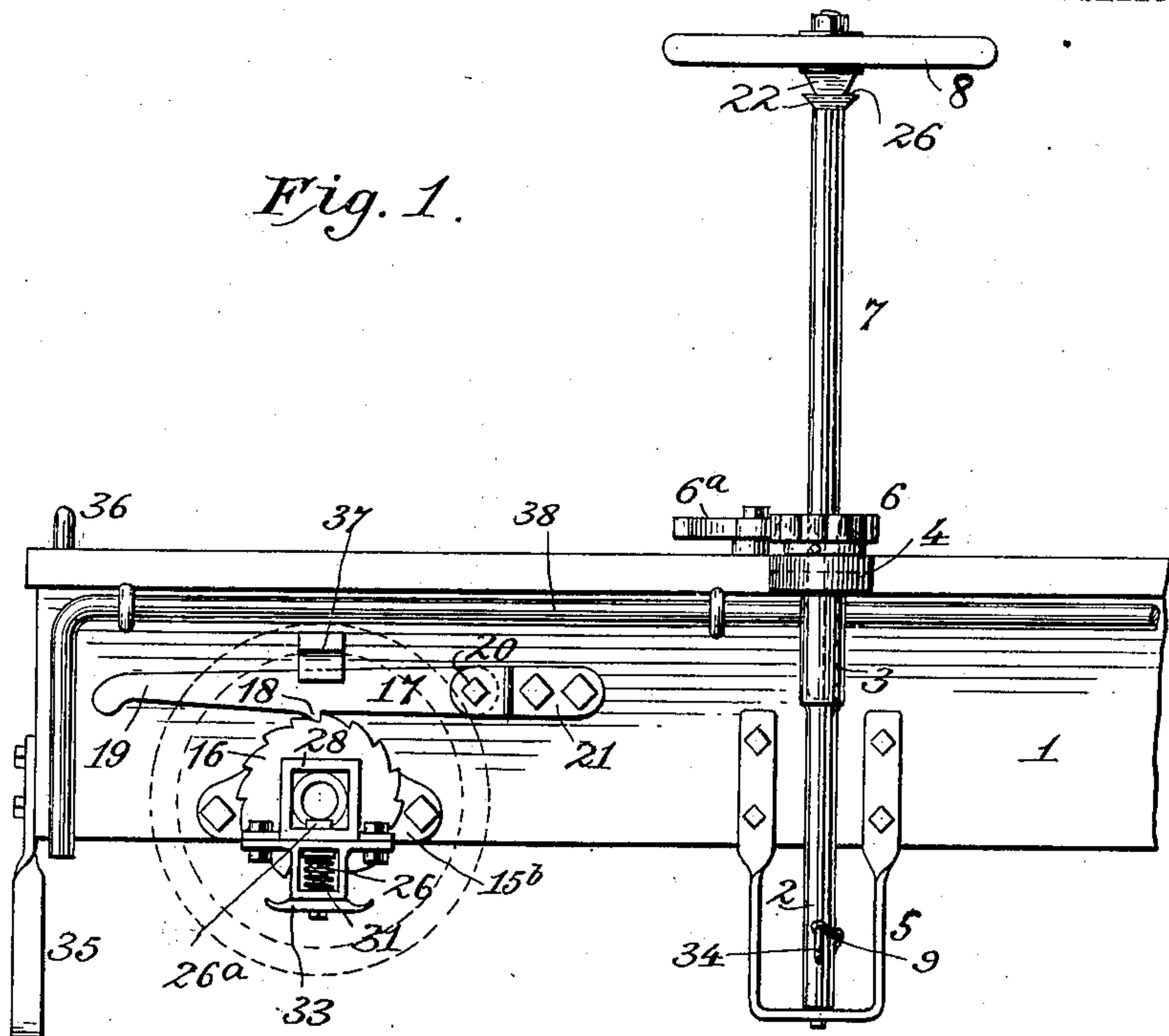
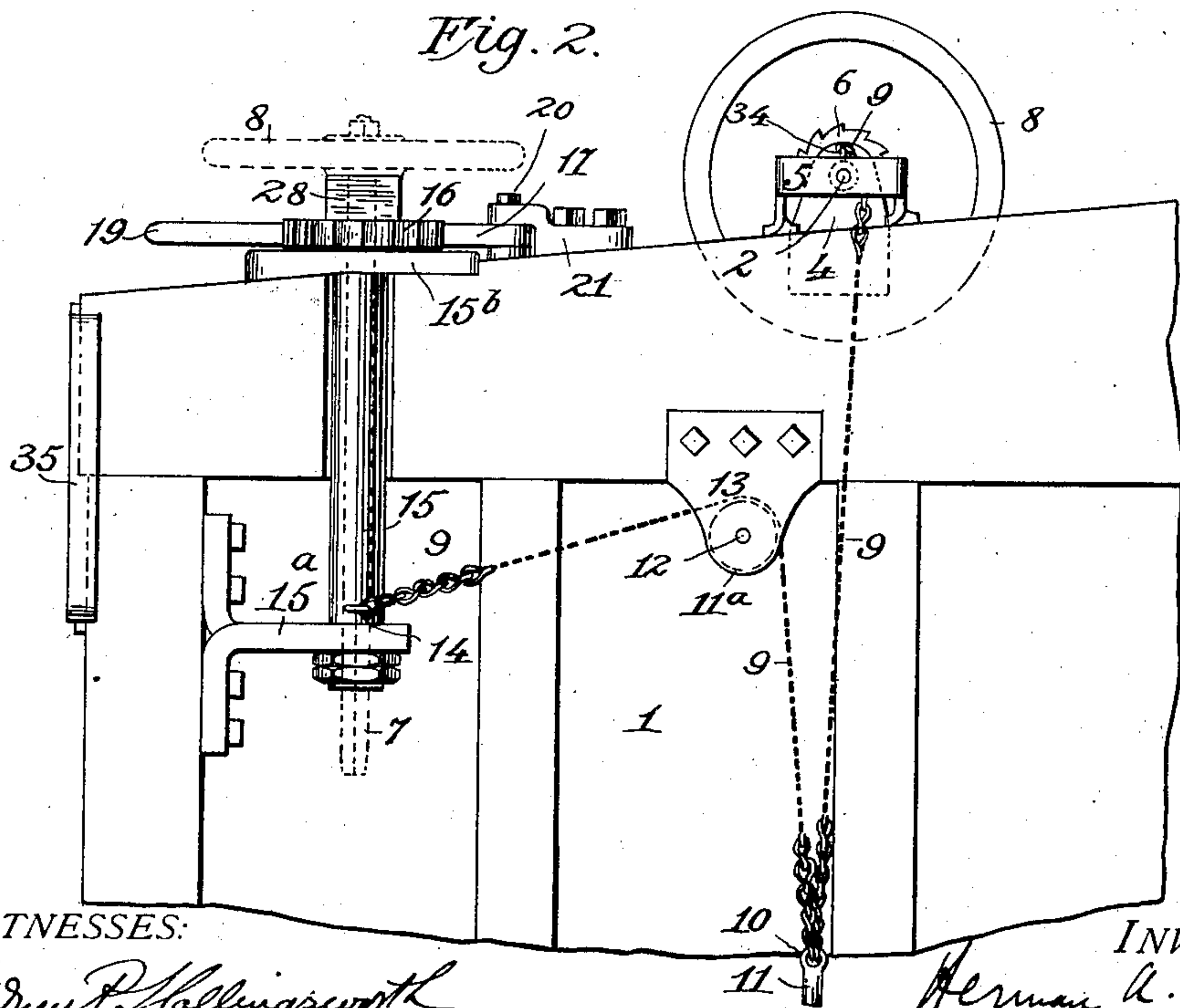


Fig. 2.



WITNESSES:

Sidney P. Hollingsworth
C. D. Bull

INVENTOR

Herman A. Paquette
BY *W. J. Howard*,
Attorneys.

No. 734,429.

PATENTED JULY 21, 1903.

H. A. PAQUETTE.
HAND BRAKE MECHANISM FOR CARS.

APPLICATION FILED MAY 15, 1903.

NO MODEL.

2 SHEETS—SHEET 2.

Fig. 3.

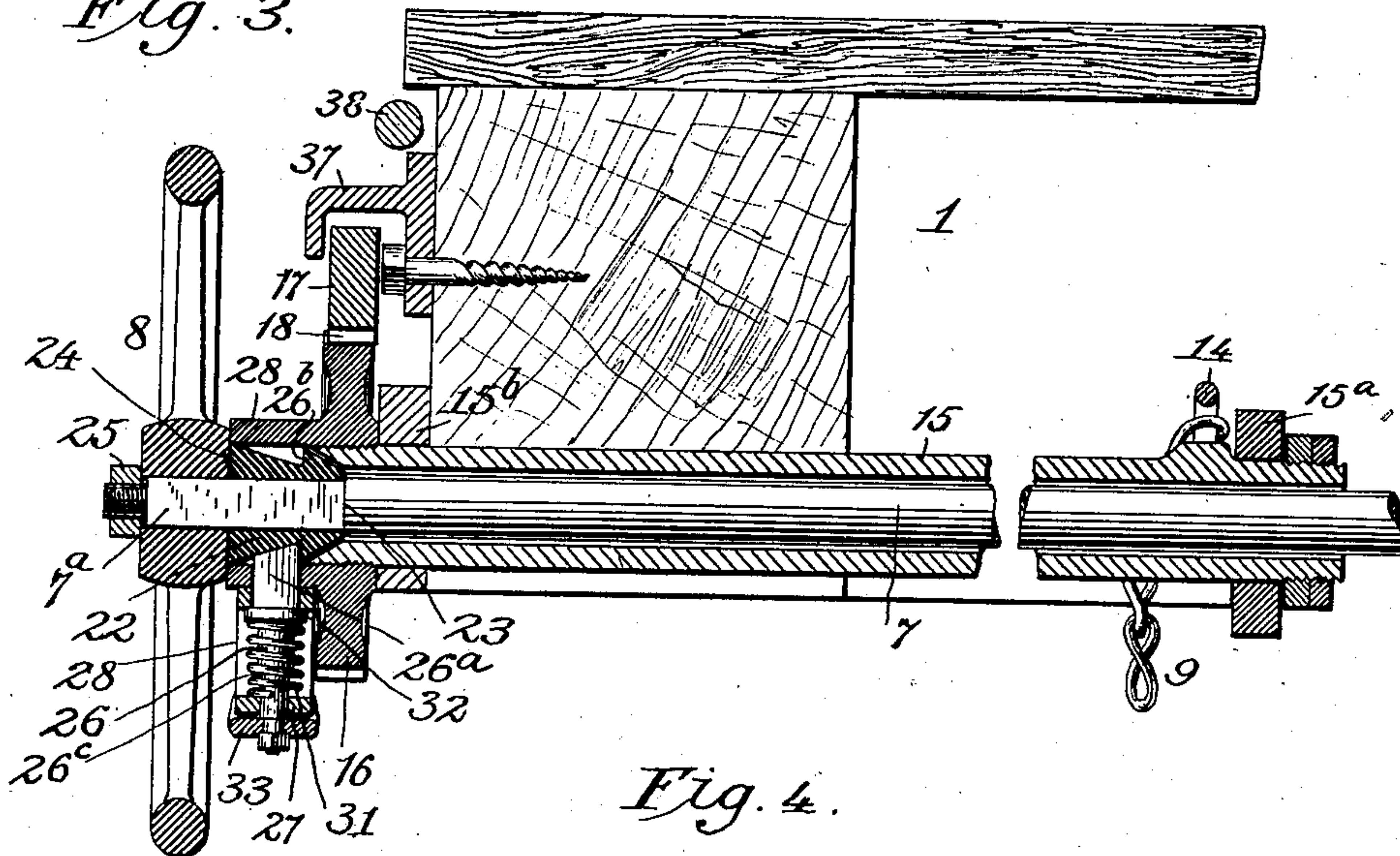


Fig. 4.

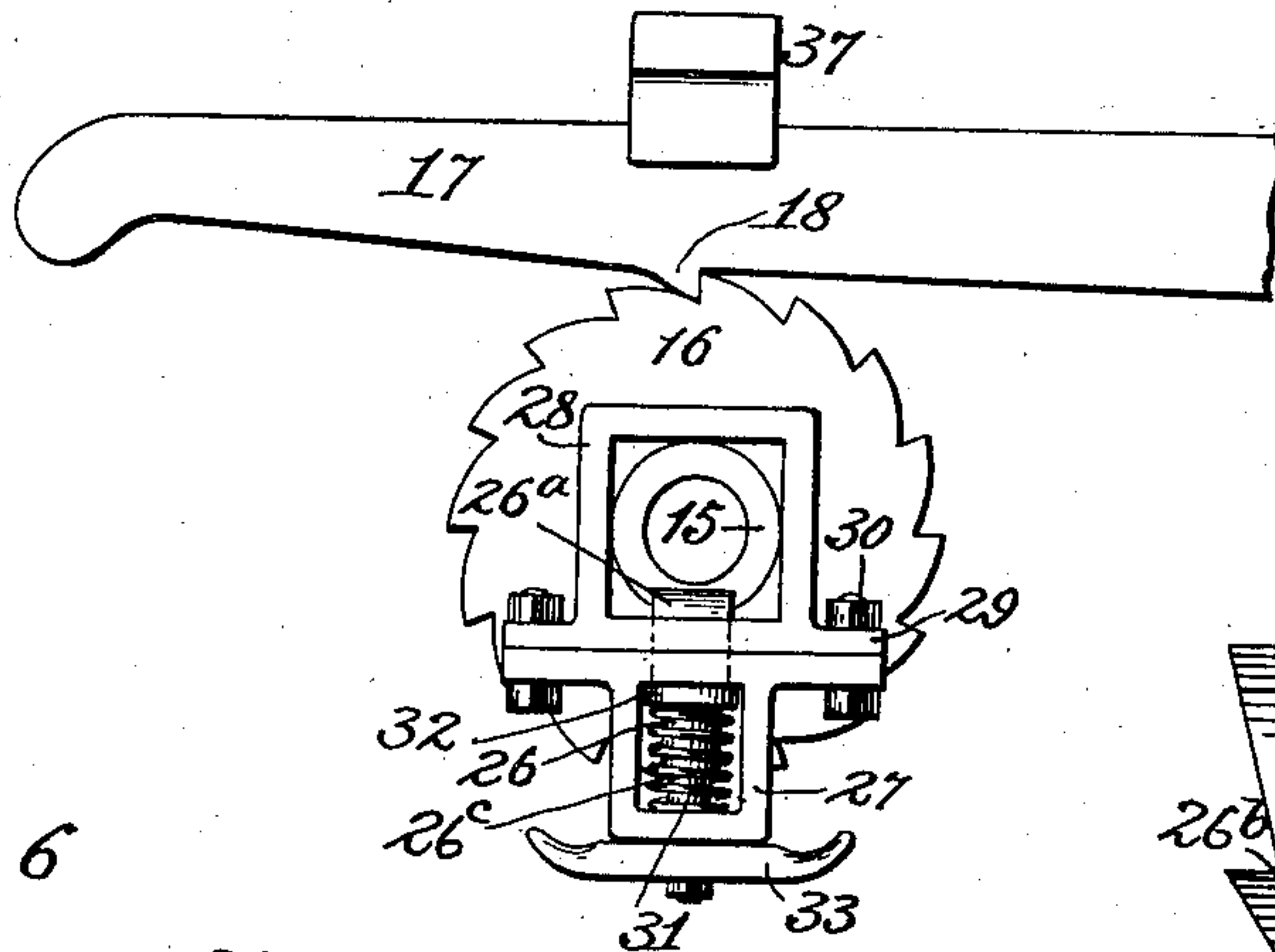


Fig. 6.

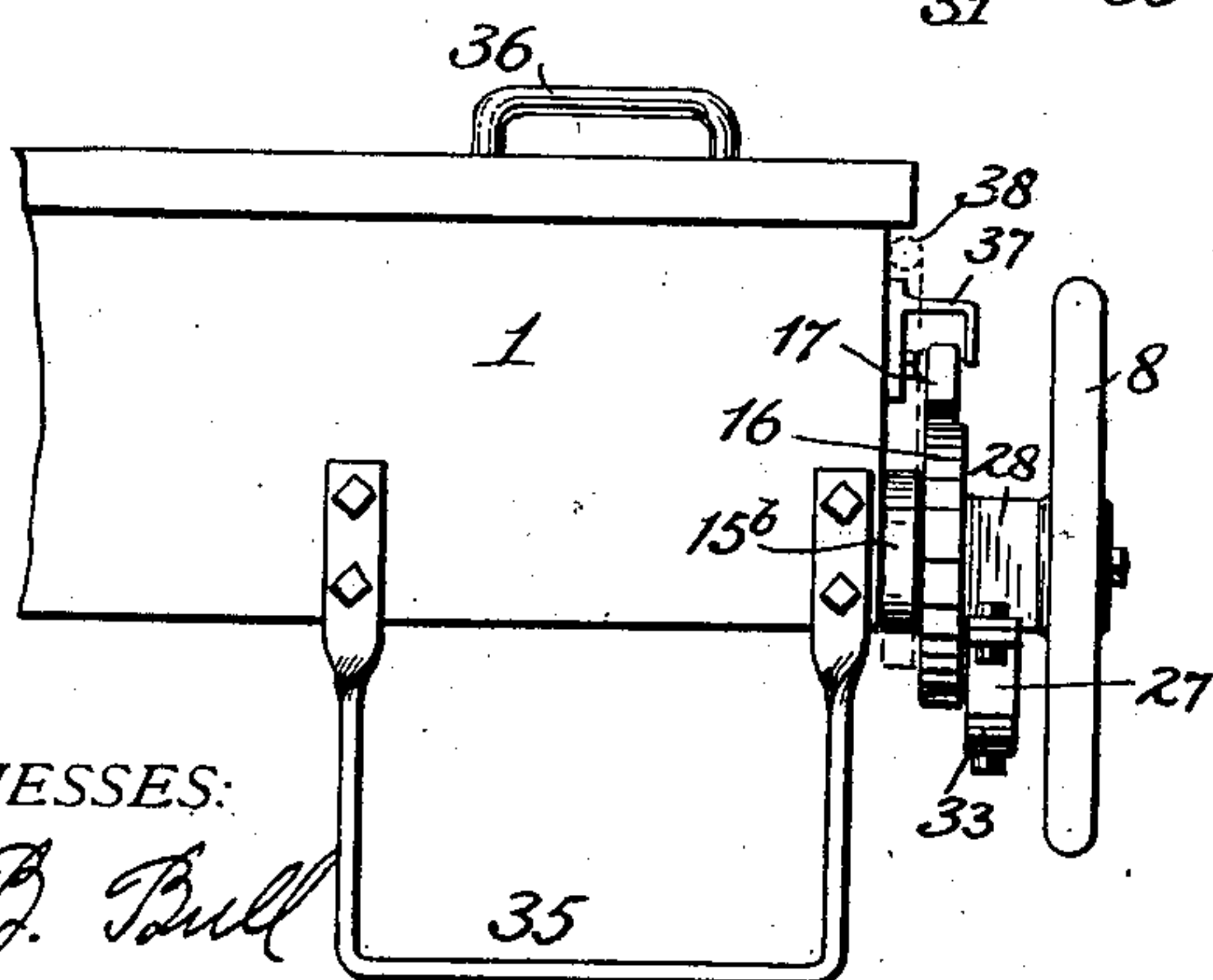
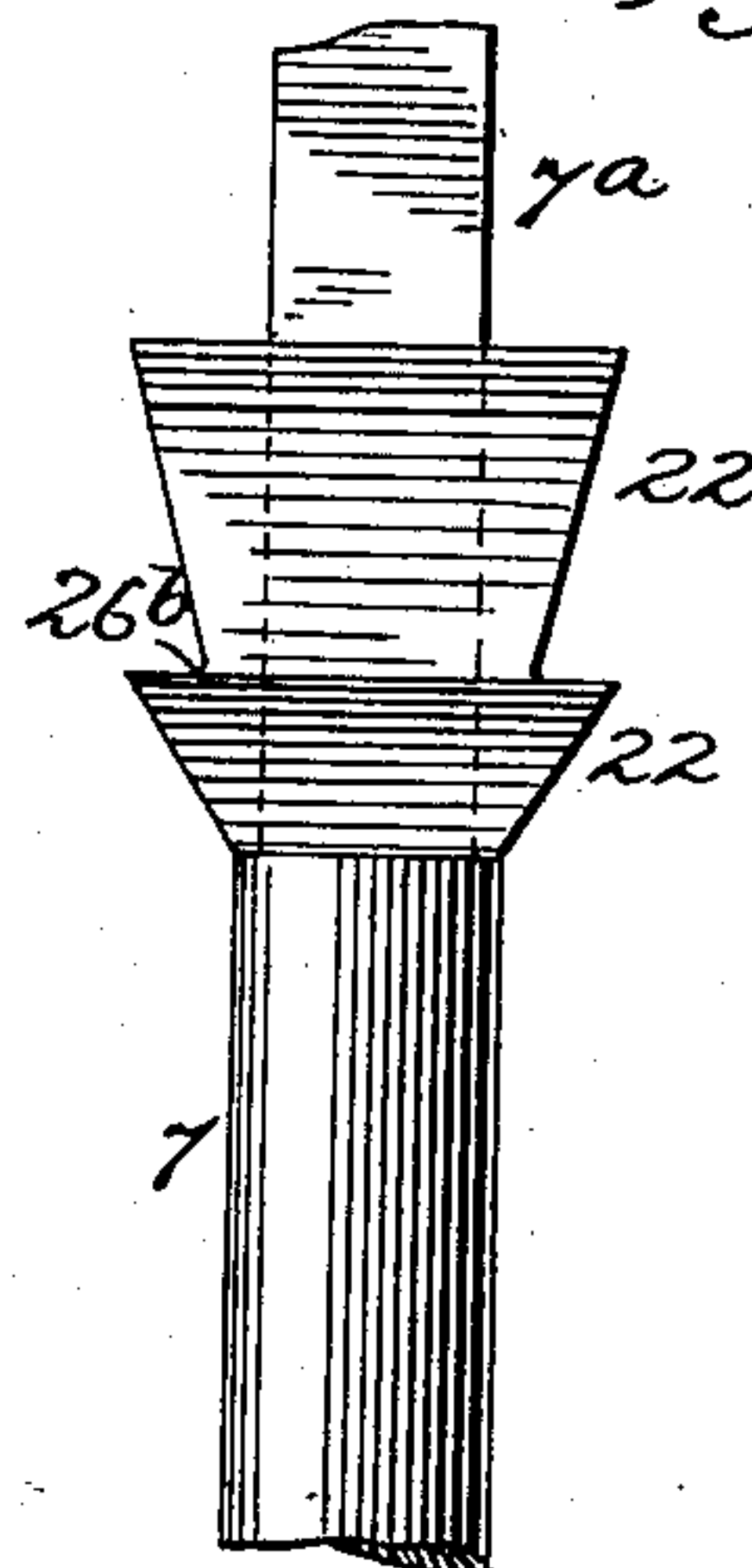


Fig. 5.



WITNESSES:

C. B. Bull

Sidney P. Hoelingsworth

INVENTOR

Herman A. Paquette,

BY *[Signature]*
Attorneys

UNITED STATES PATENT OFFICE.

HERMAN A. PAQUETTE, OF BENNING, DISTRICT OF COLUMBIA.

HAND-BRAKE MECHANISM FOR CARS.

SPECIFICATION forming part of Letters Patent No. 734,429, dated July 21, 1903.

Application filed May 15, 1903. Serial No. 157,322. (No model.)

To all whom it may concern:

Be it known that I, HERMAN A. PAQUETTE, a citizen of the United States, residing at Benning, in the District of Columbia, have

5 invented certain new and useful Improvements in Hand-Brake Mechanism for Cars, of which the following is a specification, reference being had to the accompanying drawings, forming a part thereof.

10 My invention relates to hand-brake mechanism for flat, box, and other cars; and its object is to adapt the brake to be applied by means of a brake-shaft standing in a vertical plane or in a horizontal plane at the op-

15 tion of the brakeman.
It is known that where, say, a flat-car is to be loaded with or unloaded of long timber, railroad-rails, or similar freight the brake-staff, which ordinarily stands in a vertical
20 position above the level of the car-floor, prevents convenient loading or unloading, and therefore my invention provides for the removal of such vertical brake-shaft and its change of location to the end of the car at
25 which mechanism is mounted for the convenient manipulation of the brake-shaft when standing in a horizontal position entirely out of the way of the loading and unloading operations. The mechanism leading to the
30 brakes proper is equally operative without change in arrangement, whether the brake-shaft is employed in a vertical or a horizontal position.

35 Another advantage belonging to my invention is that in the use of the horizontal brake-shaft its location—viz., at one corner of the car—is such that the brakeman may conveniently apply the brake when the car is being run on switches or sidings, the necessity for
40 the brakeman to mount the car and all danger of injury to him by going between the cars being avoided.

In the use of my invention with flat-cars the vertically-disposed brake-shaft, its hand-
45 wheel, and certain other adjuncts are bodily removed from the parts adapted to receive them and transferred to corresponding parts at an end of the car, near one corner thereof; but when the invention is used with a box-
50 car the vertically-arranged brake-staff and its adjuncts may be permanently affixed to the car, as also may the horizontal brake-

shaft and its adjuncts to the end of the car, near one corner thereof, as stated, and my invention is intended to cover both arrange- 55 ments.

In the accompanying drawings, Figure 1 is a view of a part of the end of a flat-car, showing the adaptation of my invention thereto. Fig. 2 is a view from underneath the car of a portion 60 thereof, showing the application of my device. Fig. 3 shows enlarged details in longitudinal section. Figs. 4 and 5 indicate other details, also enlarged. Fig. 6 is a view upon reduced scale, showing a portion of the 65 side of a flat-car and exhibiting the attachment of my invention to the end thereof.

Similar numerals of reference indicate similar parts in the several figures.

1 represents a portion of the body of a flat- 70 car, which may be provided with brake-beams, levers, shoes, and their adjuncts of any approved construction.

In Fig. 1, 2 represents a shaft having a squared socket 3, said shaft being perma- 75 nently but rotatably attached at the side of the car in bearings 4 5 and carrying at its upper end a ratchet-wheel 6, which is furnished with an ordinary pawl arrangement 6^a. 7 shows a removable brake-shaft, the lower end 80 of which is adapted to fit in the squared socket 3 and to be removable therefrom, the shaft 7 being provided with an ordinary hand-wheel 8. To the lower end of the shaft 2 is attached a chain 9, which runs through the 85 eye 10 of the brake-operating rod 11, passing thence over a sheave 11^a, mounted upon a pivot 12 in a bearing 13, and thence to an eye 14 of a sleeve 15, mounted in horizontally- 90 disposed bearings 15^a 15^b under the floor of the car and, as here shown, at one corner of an end of said car. Other features connected with the brake-shaft 7 not yet mentioned and adapted for use when said shaft is employed in the horizontal position and their functions 95 will be hereinafter described.

In the operation of my device in the more ordinary manner—that is to say, when the shaft 7 stands in vertical position, as seen particularly in Fig. 1—when it is desired to 100 apply the brakes the hand-wheel 8 is turned, the chain 9 winding upon the shaft 2, the opposite end of the chain being fixed in the eye 14, the result being the drawing upon the

brake-rod 11 and the application of the brakes in the usual manner, the ratchet 6 and its pawl acting, as customary, to prevent the reversal of the brake-shaft.

5 When for any reason it is desired to discontinue the use of the vertically-disposed brake-shaft, said shaft 7 is drawn from the socket 3 of the shaft 2 and thrust into the sleeve 15, before described as mounted in
10 horizontal bearings under the floor of the car. This sleeve 15 carries attached thereto in any approved manner a ratchet-wheel 16, with which is operatively engaged a pawl 17, provided with a tooth 18 and a lifting-handle 19.
15 The pawl 17 is pivoted at 20 in a bearing 21, secured to the end of the car at one side of its longitudinal center. Fig. 2 shows in dotted lines the shaft 7 and hand-wheel 8 thrust to position, as does also Fig. 3, the latter indicating the parts enlarged and in longitudinal section. Referring to the latter figure, it will be seen that the outer portion 7^a of the shaft 7, said part being squared, has slipped thereon a squared collar 22, which in longitudinal section presents the form of a double
25 incline, said collar being fitted between the shoulder 23 of the shaft 7 and the inner face 24 of the hub of the hand-wheel 8, said hand-wheel and the squared collar 22 being clamped
30 upon the squared end 7^a of the shaft 7 by means of a nut 25.

Referring more especially to Figs. 1 and 4, it will be seen that a spring-catch 26, having a tooth 26^a, is adapted to engage the shoulder 26^b of the squared collar 22, said catch
35 being mounted in a stirrup 27, affixed to the squared projection 28 of the ratchet-wheel 16 by means of lugs or ears 29 and bolts 30. 31 shows a spiral spring surrounding the catch 26 and confined between the shoulder 32 thereof and the face of the stirrup 27, and 33 shows a handle attached to the outer end of said spring-catch by means of a pin and nut, the office of said handle being to enable the
45 tooth 26^a of said spring-catch to be withdrawn from contact with the shoulder 26^b of the squared collar 22 as desired. A shoulder 26^c on the spring-catch 26 prevents by contact with the stirrup 27 the withdrawal of
50 the catch. When the shaft 7 is thrust into the sleeve 15, carrying the ratchet-wheel 16, the outer inclined face of the squared and tapered collar 22 forces back the catch 26 until the tooth 26^a of said catch springs behind the shoulder 26^b, when the shaft 7, hand-wheel 8, and ratchet-wheel 16 are securely locked together and adapted to turn with the sleeve 15. Now when the brakes are to be applied by the use of the operative mechanism thus arranged in horizontal line upon (see Fig. 2) the turning of the hand-wheel 8 the chain 9 is wound upon the sleeve 15, the opposite end of the chain being fixed in the eye 34 of the shaft 2, and the chain being thus
65 wound upon the sleeve 15 the brakes are set by drawing upon the brake-rod 11 in a manner well understood.

As seen more particularly in Fig. 6, 35 shows a foot-step, and 36 a handhold, which the brakeman may (more especially while the car is being run on switches and sidings) conveniently use in applying the brake by the rotation of the hand-wheel, as shown in that figure. The pawl 17 is guided or kept from lateral play and undue height of lift by means
70 of the guard 37. The coupler-operating rod is shown by 38.

In the use of my invention with a box-car it is not essential that the shaft here shown vertically arranged shall be convertible to the horizontal position; but in such case it may remain at all times in position and a separate horizontal shaft be employed, in which event the locking devices herein shown, consisting more especially of the spring-catch 26 and the squared collar 22, may be omitted.

I do not restrict myself to the exact details of construction, combination, and arrangement herein set forth, it being obvious that minor variations thereof not involving the exercise of invention may be made by the skilled mechanic, and such departures from what is herein described and claimed not involving invention I consider as within the scope and terms of my claims.

Having thus described my invention, I claim—

1. A hand-brake mechanism for cars having, in combination with the brake-rod and chain attached thereto, a vertically-mounted winding-shaft to which one end of said chain is attached, and a horizontally-mounted winding-shaft to which the opposite end of said chain is secured, substantially as set forth.

2. A hand-brake mechanism for cars having, in combination with the brake-rod and chain attached thereto, a vertically-mounted winding-shaft to which one end of said chain is attached, a horizontally-mounted winding-shaft to which the opposite end of said chain is secured, and an intervening sheave over which the chain passes, substantially as set forth.

3. In a hand-brake mechanism for cars having, in combination with the brake-rod and a chain attached thereto, a vertically-mounted socketed winding-shaft to which one end of said chain is secured, a shaft carrying a hand-wheel and adapted to be removably placed in the socket of said first-named shaft, and a horizontally-mounted winding-sleeve to which the opposite end of said chain is secured, the said shaft carrying the hand-wheel being adapted, when removed from the socketed winding-shaft, to be inserted within said sleeve, whereby the brakes may be applied by the rotation of said horizontally-mounted sleeve, substantially as set forth.

4. A hand-brake mechanism for cars having, in combination with the brake-rod and chain attached thereto, a vertically-mounted winding-shaft at the end of the car, to which shaft one end of said chain is attached, and a horizontally-mounted winding-shaft ar-

ranged in bearings parallel with the longitudinal center line of the car and near a corner of said end of the car, said horizontally-mounted winding-shaft having attached thereto the opposite end of said chain, substantially as set forth.

5. In a hand-brake mechanism for cars, the combination of a horizontally-mounted winding-shaft arranged in bearings in line parallel to the longitudinal center line of the car and near a corner of one end of said car, combined with a ratchet-and-pawl mechanism, a step and a handhold to be used by the brakeman in the rotation of the said winding-shaft, substantially as set forth.

6. In a hand-brake mechanism for cars, the combination of a horizontally-mounted sleeve carrying a ratchet-wheel, a pawl adapted to engage said ratchet-wheel, a spring-catch carried by said ratchet-wheel, and a shaft carrying a hand-wheel adapted to be locked by said spring-catch when thrust within said sleeve, substantially as set forth.

7. The combination of the shaft 7 carrying a hand-wheel and the double-inclined squared collar 22 having a shoulder 26^b, the ratchet-wheel 16 having a squared projection 28, the stirrup 27 attached to said squared projection, and a spring-catch 26 adapted to engage the shoulder 26^b, substantially as set forth.

8. The combination of the shaft 7 carrying the hand-wheel 8 and double-inclined squared collar 22 having a shoulder 26^b with the ratchet-wheel 16 having a squared projection 28, the stirrup 27 attached to said squared projection, and a spring-catch 26 adapted to engage the shoulder 26^b, said spring-catch having a shoulder 26^c and a handle 33, substantially as set forth.

In testimony whereof I hereunto set my hand and seal.

HERMAN A. PAQUETTE. [L. S.]

Witnesses:

GEORGE H. HOWARD,
EDWIN S. CLARKSON.