

(No Model.)

A. H. WILSON.
VEHICLE BRAKE.

No. 400,887.

Patented Apr. 2, 1889.

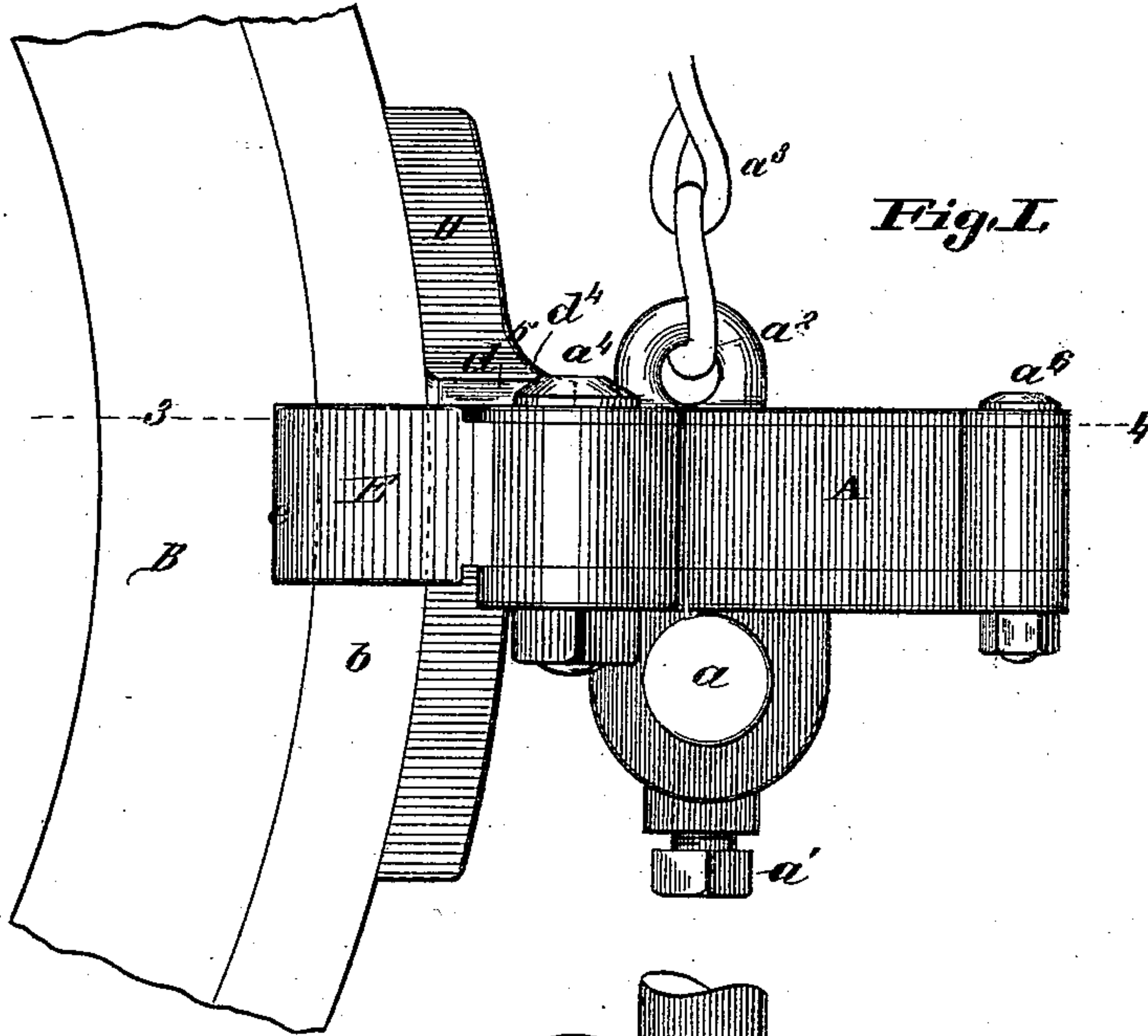


Fig. 1.

Fig. 2.

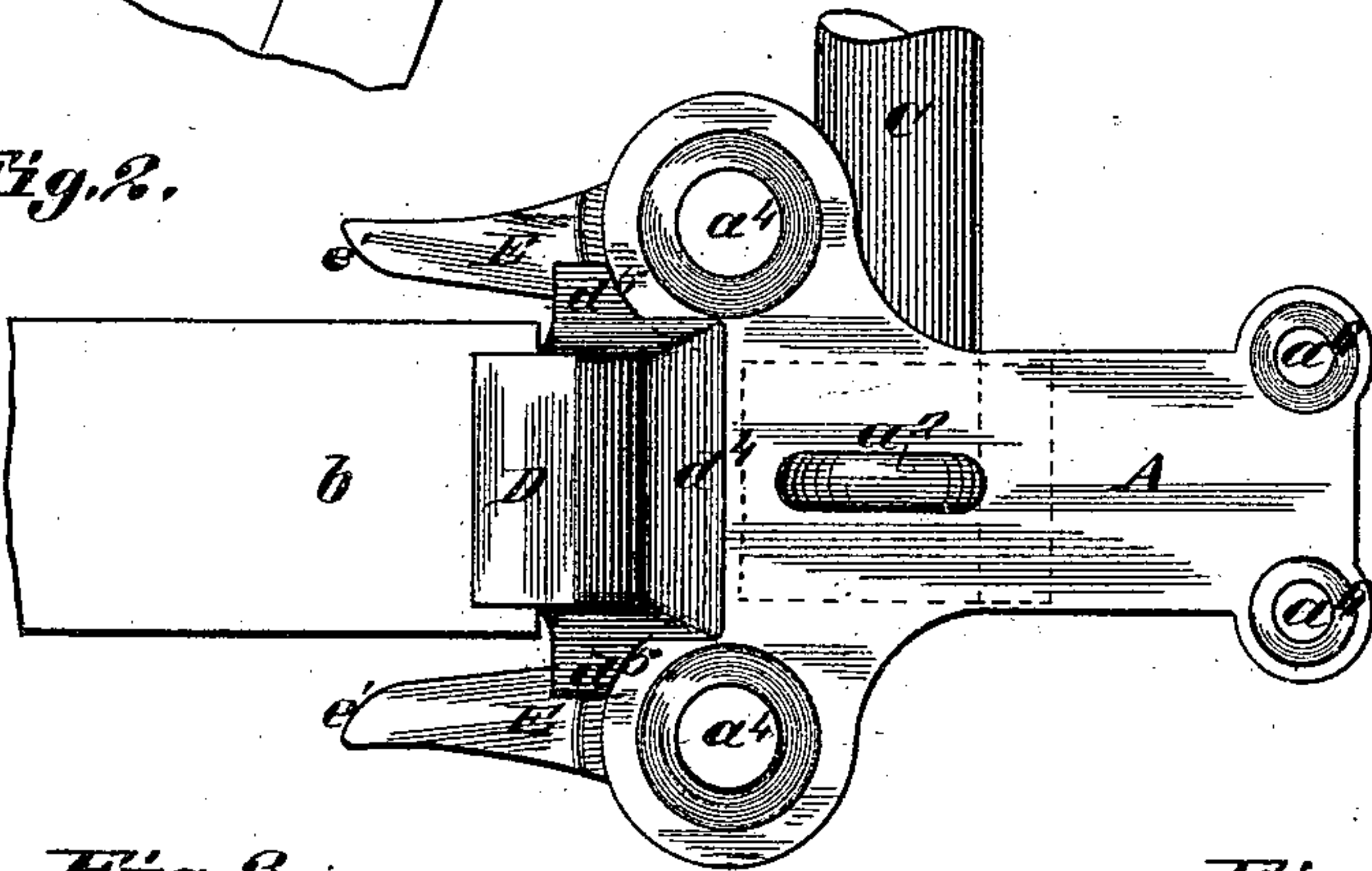


Fig. 3.

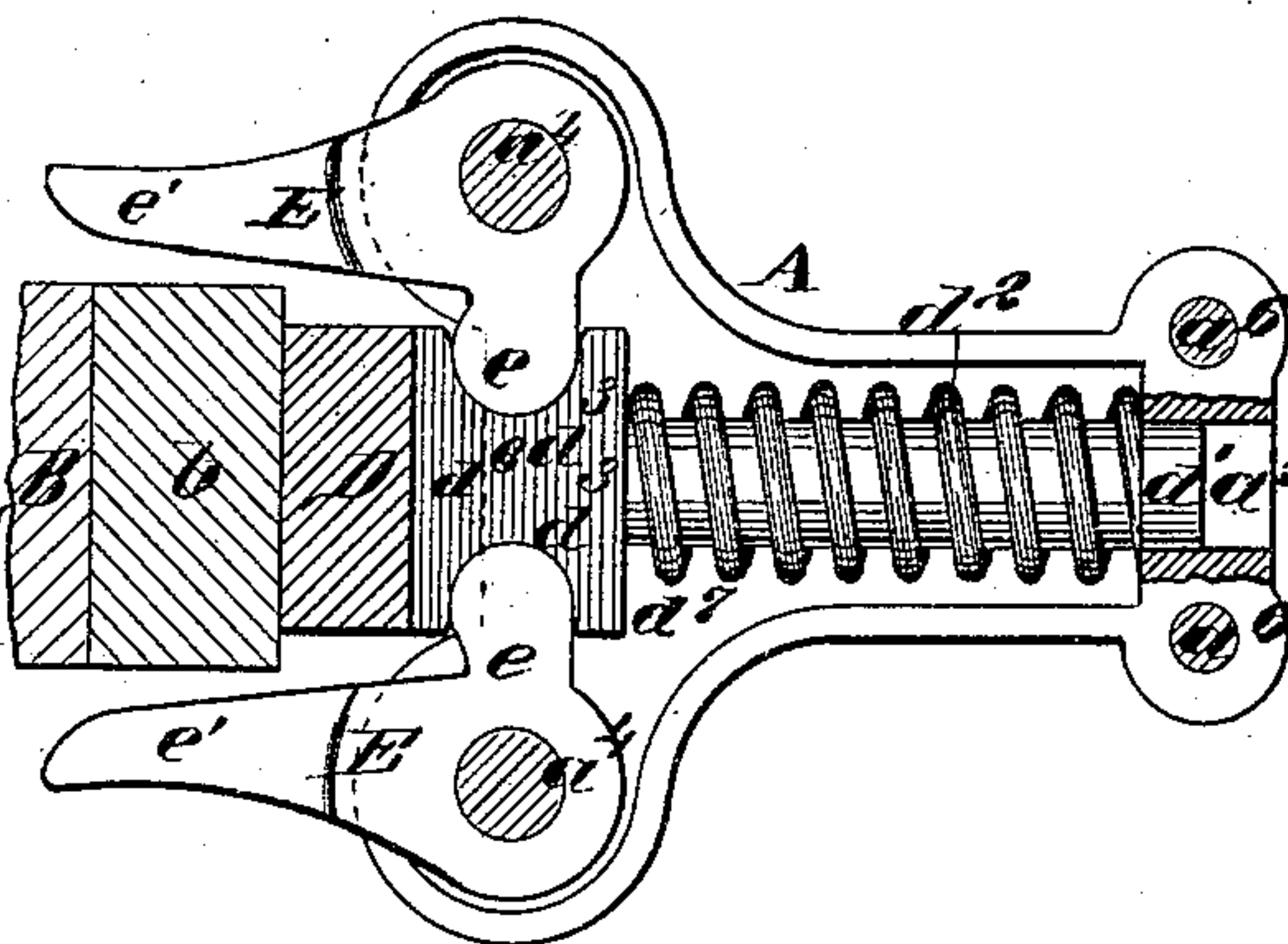
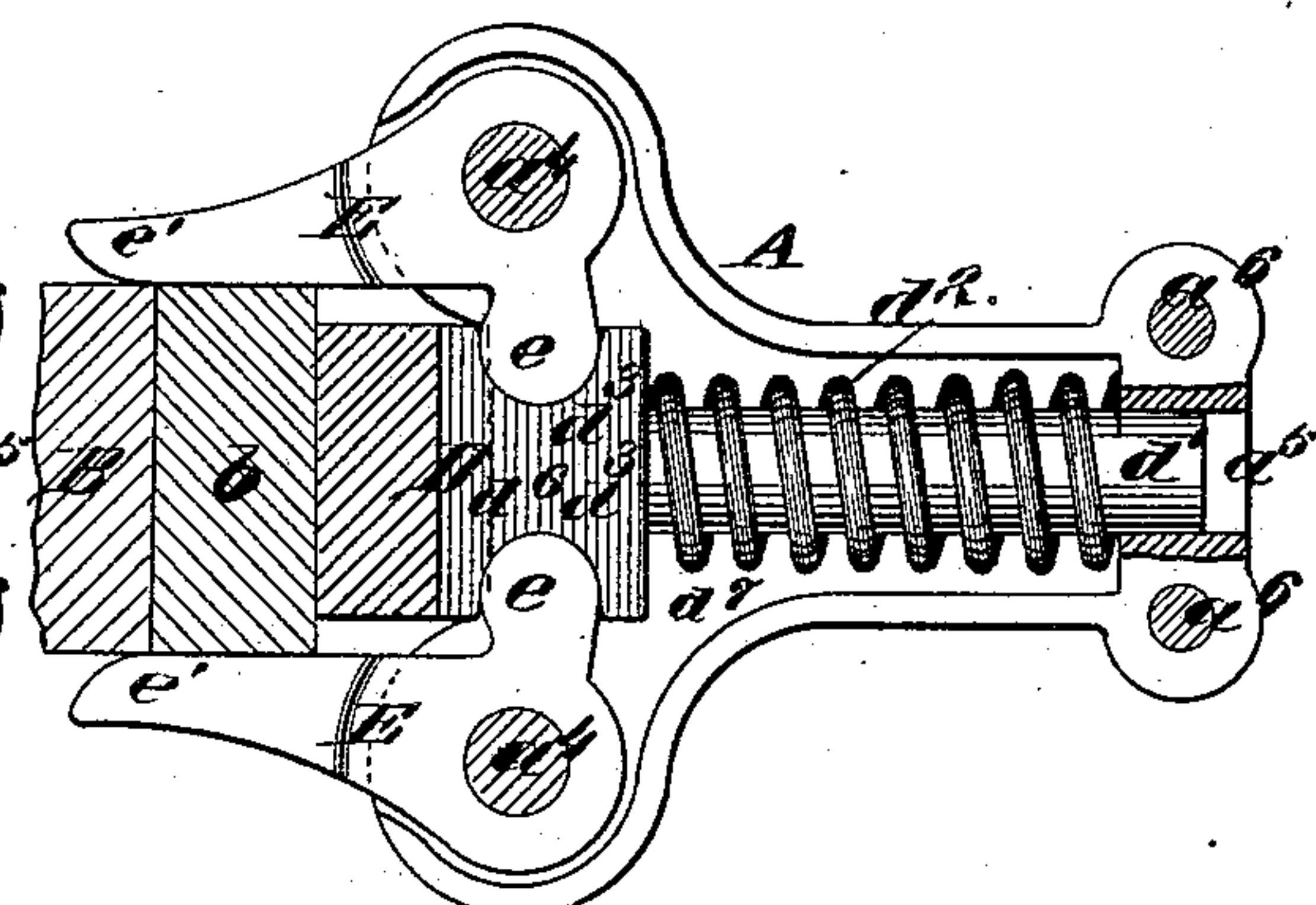


Fig. 4.



Attest;

Gustav F. Vasey
Witness

Inventor;

Arthur H. Wilson.

UNITED STATES PATENT OFFICE.

ARTHUR H. WILSON, OF ST. LOUIS, MISSOURI, ASSIGNOR OF ONE-HALF TO
GUSTAV F. VOGEL, OF SAME PLACE.

VEHICLE-BRAKE.

SPECIFICATION forming part of Letters Patent No. 400,887, dated April 2, 1889.

Application filed December 17, 1888. Serial No. 293,909. (No model.)

To all whom it may concern:

Be it known that I, ARTHUR H. WILSON, a citizen of the United States, residing at St. Louis, in the State of Missouri, have invented
5 a new and useful Improvement in Brakes, of which the following is a full, clear, and exact description.

By means of my improved brake pressure may be brought to bear upon the sides as well
10 as upon the periphery of a wheel, and, if desired, the wheel of a heavily-loaded wagon may be so firmly clutched and locked as to prevent its revolving in descending a steep hill.

15 The improvement consists in the features of novelty and combinations hereinafter claimed.

The most desirable mode of carrying out my improvement is shown in the annexed
20 drawings, forming part of this specification, in which—

Figure 1 is a side elevation of the improved brake and a section of a wagon-wheel. Fig. 2 is a top view. Fig. 3 is a horizontal cross-
25 section along the line 3 4, Fig. 1, showing the jaws of the grip open. Fig. 4 is a horizontal cross-section along the same line, showing the jaws of the grip closed.

Similar letters refer to similar parts.

30 A represents the case containing the unexposed portion of the mechanism. It is shown secured to a brake-lever, C. In Fig. 1 a chain, a^3 , is shown attached to the case A by means of the eye a^2 . Such a chain may be used to
35 bear part of the weight of the brake, and may be attached at its upper end to the vehicle-bed or other support. The case may be attached to the brake beam or lever in any convenient way; but where the brake is used on
40 a wagon I prefer to provide the case with a socket like the one shown in Fig. 1, and lettered a , in which the end of the lever-arm of the brake may be inserted, and to fasten the case to such arm by means of a set-screw
45 such as is shown in the drawings, and lettered a' .

B represents a section of a wagon-wheel, of which b is the tire.

C represents a lever or brake-beam.

50 D represents the shoe or brake-block, which may be of any convenient shape.

The parts d^5 d^5 and d^4 are guards attached to the shoe, which extend back over the top of the case A and sidewise over the jaws $e' e'$ to a sufficient distance to prevent the instru-
55 ment from becoming clogged with mud when in use. I prefer to use such a guard or guards, but they are not absolutely essential.

d^6 is a part extending back from the shoe into the case A. It is preferably provided
60 with the sockets $d^3 d^3$ for the reception of the ends of the lever-arms of the grips, $e e$. It is also preferably provided with an extension, d' , adapted to move back and forth, and the end of which fits into a guide or socket, a^5 . 65

E E represent parts the jaws $e' e'$ of which when closed clasp the rim of the wheel shown in connection therewith. In Figs. 1 and 4 the jaws are shown closed. In Figs. 2 and 3 they are represented as open. These
70 parts E E, which I will call "grips," are pivoted to the case A by means of the pivots $a^4 a^4$, and the jaws $e' e'$ are caused to clasp the rim of the wheel in the particular mechanism shown by the forward movement of the
75 case A when the sole or brake-block rests against the periphery of the wheel and pressure is applied by means of a lever-arm or brake-beam attached to the case A. The jaws $e' e'$ are shown open in Figs. 2 and 3, 80 and closed upon the rim of the wheel B in Figs. 1 and 4.

It will be obvious to any skilled mechanic that it is not essential that the grips E E should be of the form shown, though I prefer
85 that form, and that they may be combined with the shoe D, a lever-arm, and a spring in various ways (not shown in the drawings) without departing from the substance of my invention. All that is essential is that the
90 grips E E should be provided with lever-arms or equivalent parts, through which motion may be communicated to the jaws $e' e'$. As will be obvious, such lever-arms or equivalent parts may be either of many shapes and
95 need not extend in the direction shown in the drawings. It is not essential that said jaws should be closed by a backward movement of the part engaging their lever-arms or equivalent parts. So far as the essence of my inven-
100 tion is concerned, it is immaterial whether said jaws are operated by a forward or backward

movement of the part engaging therewith. Where the grips are pivoted to a part not rigidly attached to the shoe or brake-block they may be so formed and arranged as to
 5 cause the jaws to close by a forward movement of the part to which they are pivoted after the shoe is brought into contact with the periphery of a wheel in various ways, as will be seen at a glance. Where they are
 10 pivoted to a part rigidly attached to the shoe or brake-block or are pivoted to such shoe or brake-block, they may be so formed and arranged with reference to a part connected with the brake lever or beam as to be closed
 15 by a forward movement of such part after the shoe or brake-block comes in contact with the periphery of the wheel. All that is essential is that the lever-arm or brake-beam and parts thereto attached should be so arranged that
 20 they may be moved forward after the brake-shoe is brought in contact with the periphery of the wheel.

Where the brake is placed in the usual position, so that the force of gravity cannot be
 25 made use of, it is very desirable to use a spring and to communicate pressure from the brake lever or beam to the shoe through such spring. It is desirable to communicate the pressure to the shoe in this way not only where grips
 30 are used, but also where they are not; but is especially desirable in the former case. I believe myself to be the first to use a spring in this way. In Fig. 3 the spring d^2 is shown expanded, the pressure being insufficient to com-
 35 press it and close the jaws $e' e'$. In Fig. 4 it is shown compressed sufficiently to allow the haft of the shoe D to enter the case A far enough to close the jaws of the grip by pressing the lever-arms $e e$ inward. Where it is
 40 desired to apply the grips whenever the shoe is pressed against the wheel, the spring should be made weak enough to be easily compressed; but where the intention is that the jaws shall only be used in exceptional cases the spring
 45 should be made strong enough to resist considerable pressure and prevent its being readily compressed. The spring shown is a spiral spring, resting at one end against the inner end of the case A and at the other against
 50 the shoulder d^7 of the haft d^6 of the shoe. I consider the arrangement shown in the drawings very desirable in every way; but it may readily be varied and a different form of spring used without departing from the em-
 55 bodied idea, as will be seen at a glance, and I do not confine myself to that sort of a spring or that particular arrangement, as I have already indicated. The particular mechanism shown in the drawings operates as follows:

60 When the case A is moved forward by means of the lever-arm C, the shoe D is brought into contact with the tire b of the wheel B, and if sufficient pressure is then exerted the case A will be forced forward over
 65 the haft d^6 of the shoe D, and the lever-arms $e e$ will be pressed inward and the jaws $e' e'$

caused to close upon the rim of the wheel and assume the position shown in Fig. 4. This movement will also compress the spring d^2 , as shown. When the brake-lever is unlocked
 70 and the pressure removed from the spring d^2 , it immediately expands and forces the haft d^6 and parts thereto attached outward, carrying the arms $e e$ forward, and thus causing the jaws $e' e'$ to open; but, as hereinbefore
 75 stated, my invention may be embodied in other forms operating somewhat differently, but embodying the same general idea and operating upon the same principle. I desire to cover all equivalents. It is desirable to
 80 have the jaws of the grip curve outward at the ends, substantially as shown in the drawings, but it is not essential that they should do so. When they are so curved, they assist
 85 to guide the wheel to the shoe. The word "forward" where it is used in this specification and the claims hereof means toward the periphery of the adjoining wheel, and the words "back" and "backward" mean away
 90 from it.

I claim—

1. In a brake, the combination of a pair of pivoted grips, a brake shoe or block, and a lever or beam, all so arranged and combined that the brake lever or beam and the part or
 95 parts rigidly attached thereto may be moved forward after the shoe or block is brought into contact with the periphery of the wheel, so as to cause the jaws of the grips to clasp the rim of the wheel, for the purposes set
 100 forth.

2. In a brake, the combination of a pair of pivoted grips each provided with a jaw and a lever-arm or analogous part, a brake shoe or block, and a brake lever or beam, all so con-
 105 nected together, arranged, and combined that the brake lever or beam and the part or parts rigidly attached thereto may be moved forward after the shoe or block is brought into contact with the periphery of the wheel, and
 110 so move the lever-arms of the grips as to cause the jaws thereof to grip the rim of the wheel, for the purposes set forth.

3. In a brake, the combination of a pair of pivoted grips each having a lever-arm or analo-
 115 gous part and a jaw, a brake-shoe or brake-block, a lever or brake-beam, and a spring, all so arranged and combined that pressure may be transmitted to the shoe or block through said spring, and the brake lever or beam and
 120 attached parts or part moved forward, so as to bring pressure upon the lever-arms of said grips and cause the jaws thereof to close upon the rim of the wheel, for the purposes described.
 125

In witness whereof I hereunto set my hand this 15th day of December, 1888.

ARTHUR H. WILSON.

Witnesses:

GUSTAV F. VOGEL,
 D. W. A. SANFORD.