

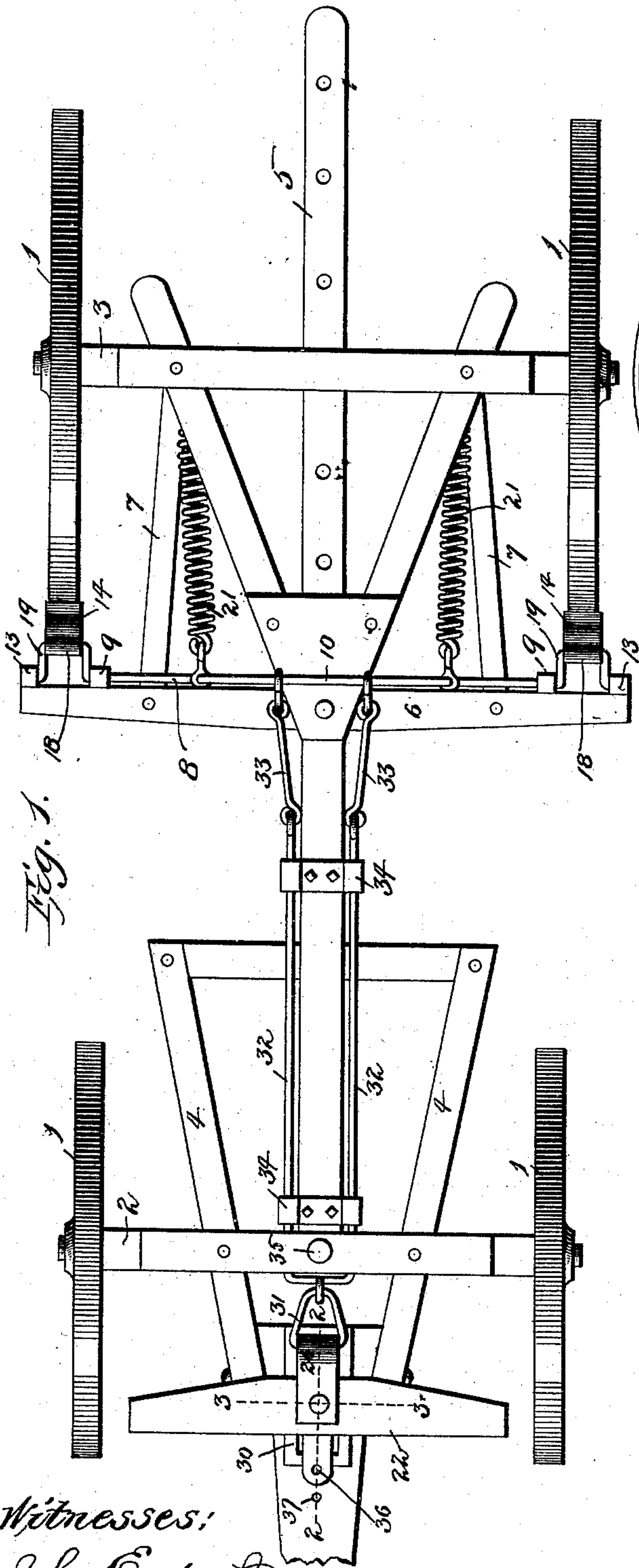
(No Model.)

A. J. SMITH & J. V. LANDES.
AUTOMATIC WAGON BRAKE.

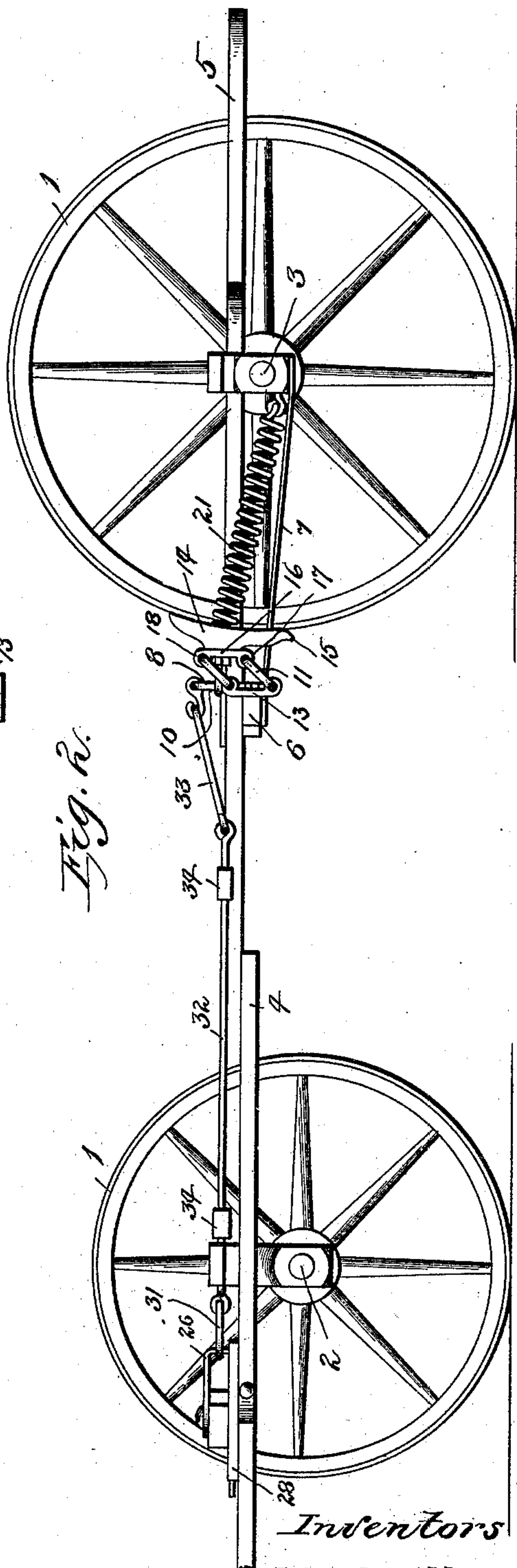
2 Sheets—Sheet 1.

No. 505,680.

Patented Sept. 26, 1893.



Witnesses:
John Anders Jr.
W. J. Lanley.



Inventors
Albert J. Smith and
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Attys.

(No Model.)

2 Sheets—Sheet 2

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Fig. 6.

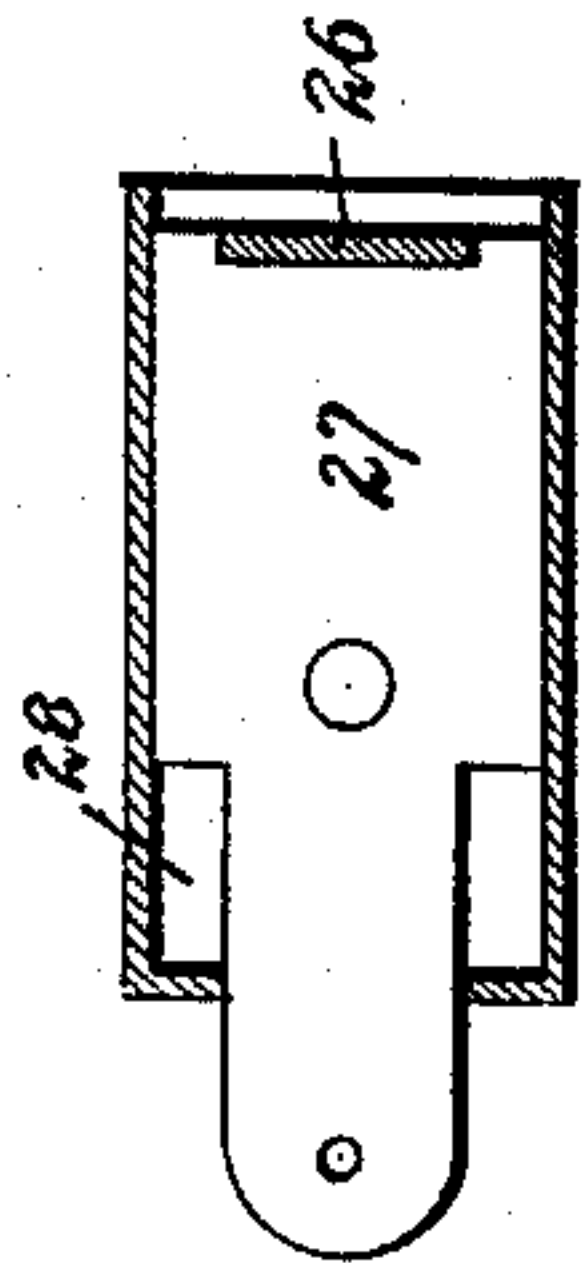


Fig. 3.

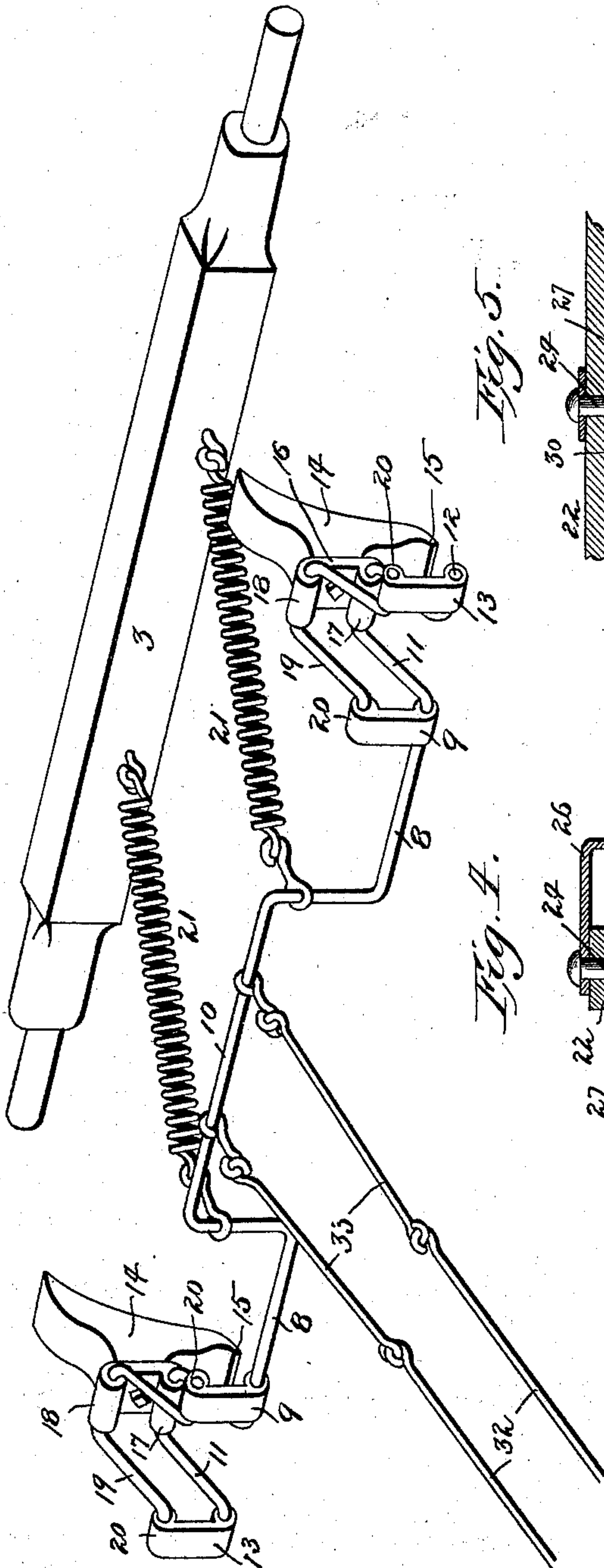


Fig. 5.

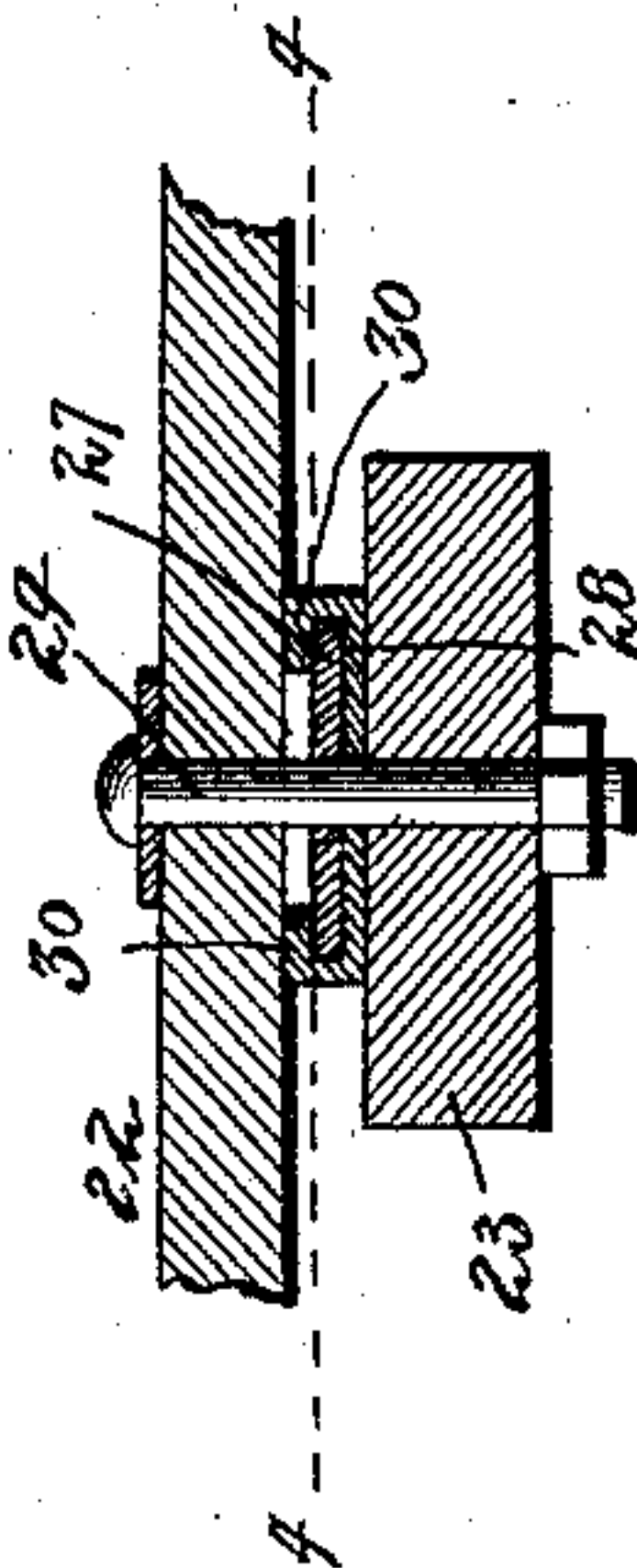
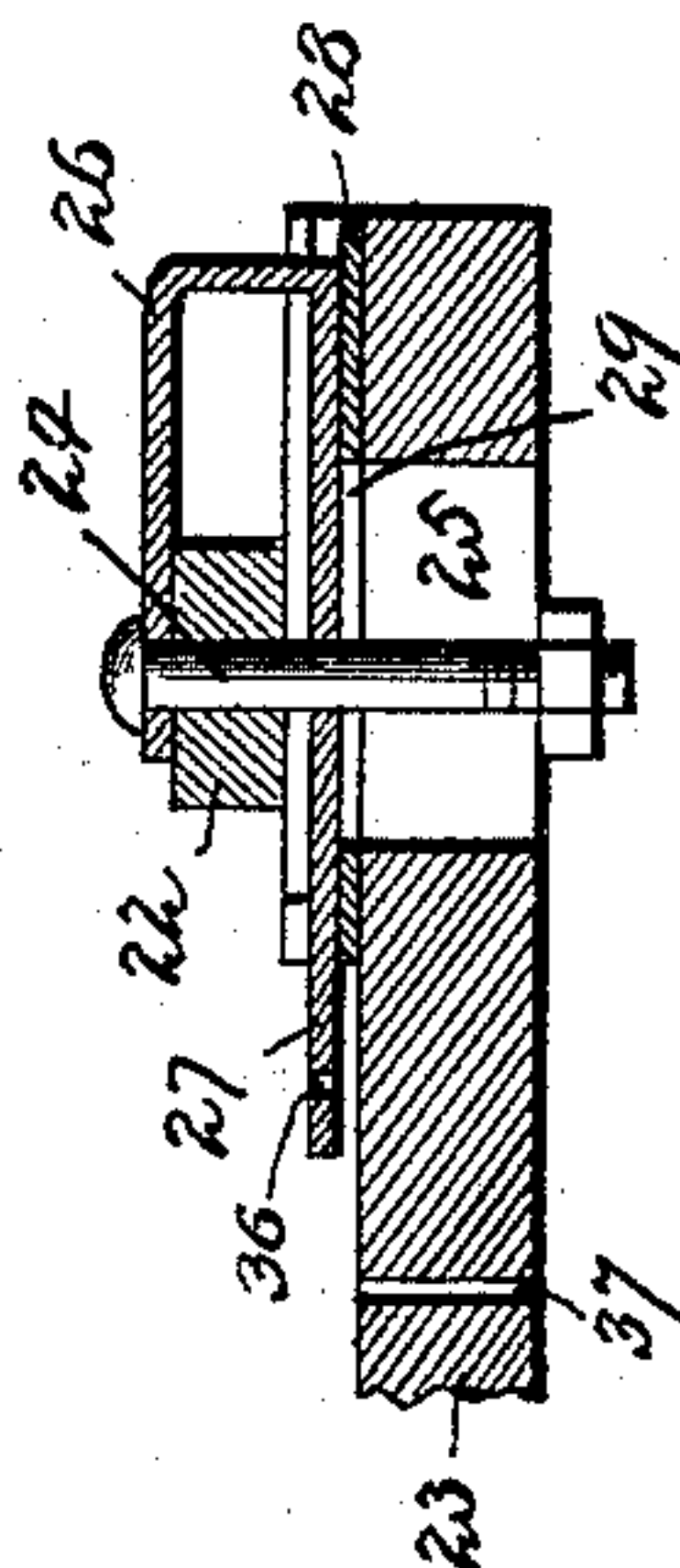


Fig. 4.



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UNITED STATES PATENT OFFICE.

ALBERT J. SMITH AND JOHN V. LANDES, OF ADRIAN, MISSOURI.

AUTOMATIC WAGON-BRAKE.

SPECIFICATION forming part of Letters Patent No. 505,680, dated September 26, 1893.

Application filed May 22, 1893. Serial No. 475,110. (No model.)

To all whom it may concern:

Be it known that we, ALBERT J. SMITH and JOHN V. LANDES, of Adrian, in the county of Bates and State of Missouri, have invented certain new and useful Improvements in Automatic Wagon-Brakes, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part hereof.

Our invention relates to an improved "automatic wagon brake," and consists in the novel arrangement, construction and combination of parts hereinafter described and pointed out in the claims.

The object of our invention is to provide an improved automatic brake for wagons and other vehicles, in which the brake-blocks shall normally be applied to lock the wheels and be released from the wheels when a pull is exerted upon the draft-mechanism of the vehicle, and which shall be simple and inexpensive in construction and reliable and efficient in operation.

In the drawings: Figure 1 is a top plan view of a wagon with the bed or box removed, and having our invention applied thereto. Fig. 2 is a side elevation of same with the wheels on one side removed. Fig. 3 is a perspective view of a portion of the running gear. Fig. 4 is a sectional detail elevation of the parts located on the rear end of the tongue, the section being taken on the line 2—2 of Fig. 1. Fig. 5 is a detail front elevation of these parts, with portions in section, the section being taken on the line 3—3 of Fig. 1. Fig. 6 is a detail sectional plan view, taken on the line 4—4 of Fig. 5.

The wheels 1, front-axle 2, rear-axle 3, hounds 4 and reach 5 may be of any ordinary construction.

6 indicates a transverse beam or rod which is rigidly fixed at a point about midway of its length to the under side of the reach 5, or rigidly fixed to some part of the running gear of the wagon, at a point a distance in advance of the rear-wheels, and this beam is held in such position by means of braces 7, the front ends of which are bolted or otherwise secured to the beam 6, the rear ends of which are bolted or otherwise secured to the rear axle 3.

8 indicates a rock-shaft which is securely mounted in bearings 9 which are carried by

the beam 6, one adjacent each end of said beam. This rock-shaft is provided at a point intermediate of its bearings 9 with a vertical crank 10 and with a crank 11 at a point adjacent each of its ends. The outside cranks 11 are set in alignment with each other, but they stand at an angle with relation to the vertical crank 10. These cranks are preferably formed upon the shaft 8 by bending the shaft, as herein shown, although they may be applied thereto in any known manner.

12 indicates the outer ends of said shaft, which project free and in alignment with the body of the shaft, and are mounted in outside bearings 13 which are also carried by the beam 6.

14 indicates the brake-blocks which have their faces curved to fit the periphery of the rear-wheels, their lower ends 15 being curved forward away from said wheels, for the purpose of facilitating backing of the wagon. The brake-blocks 14 each have a bracket 16 bolted or otherwise secured to them, and this bracket is provided with a lower bearing 17 and an upper bearing 18. The lower bearing 17 is engaged by the crank 11 of the shaft 8, while the upper bearing 18 is engaged by a U-shaped stirrup or link 19. This link is located above the crank 11 with its arms extending parallel to the arms of said crank, while its free ends are mounted in suitable bearings 20 located at a point above the bearings 9 and 13 of the shaft 8, and also carried by the beam 6. This construction forms a sort of "parallel" movement for the brake-blocks, so that their faces during operation will always lie substantially parallel to the peripheries of the rear-wheels, whether they be in contact therewith, or removed therefrom.

21 indicates one or more strong springs, having their forward ends secured to the crank 10 or some other portion of the shaft 8, and their rear ends secured to the rear axle 3, so that they will exert sufficient power to normally hold the brake-blocks in engagement with the rear-wheels and to lock the same against rotation upon the rear axle.

22 indicates the ordinary double-tree to which the horses are to be attached, and this is connected to the tongue 23 by means of a bolt 24. The rear portion of the tongue is

provided with a slot 25 which extends longitudinally thereof and in which the bolt 24 slides back and forth during operation.

26 indicates a link or stirrup having a base 27 which slides upon a plate 28 secured to the upper side of the tongue 23. This plate is provided with a slot 29 which registers with the slot 25 in the tongue, and which is also engaged by the doubletree bolt 24. The sliding stirrup 26 is retained in position and is caused to slide longitudinally upon the plate 28 by means of flanges 30 which are formed upon the opposite longitudinal edges of said plate, and which overhang the edges of the base 27 of said stirrup.

Secured to the rear end of the stirrup is a ring or link 31, and secured to this ring or link are the forward ends of a pair of parallel brake-rods 32, which extend one upon each side of the reach 5 in advance of the beam 6, and have their forward ends connected to the ring or link 31 in any desired manner, and the rear ends of which are connected to the crank 10 by means of suitable short rods or chains 33. The brake rods 32 are properly mounted in or carried by bearings or brackets 34 fixed upon the reach. It will be observed that one of the brake-rods 32 is located upon one side of the king bolt 35 and that one is located upon the opposite side of said king-bolt, so that said rods do not interfere with the movement of said axle.

When it is desired to retain the brake-blocks out of engagement with the wheels for any definite length of time, a common pin or bolt may be inserted in an aperture 36 formed in the forward end of the sliding base 27 of the stirrup 26 and into a vertical hole or aperture 37 formed in the tongue at a suitable point in advance of the plate 28.

When it is desired to lengthen the reach of the wagon, this may be accomplished by detaching the short connecting rods 33 from the crank 10, and replacing them with longer rods or chains, which may be kept on hand, in duplicate, for such purpose.

The operation is as follows: Whenever the horses exert a pull upon the double-tree 22 sufficient to move the wagon forward, said double-tree is thereby slid forward, the bolt 24 sliding forward in the slot 25 of the tongue, until said bolt 24 comes in contact with the front end of said slot and the wagon is thereby moved forward. In the meanwhile, this forward movement of the double-tree has carried the stirrup 26, the ring or link 31, the brake rods 32, coupling rods 33, and the upper end of the crank 10 forward a corresponding distance. This moves the shaft 8

in its bearings, and throws the cranks 11, the stirrups 19 and the brake-blocks 14 also forward and away from the rear-wheels, said brake-blocks being held by said stirrups and said cranks with their faces substantially parallel with the faces of said wheels, throughout this movement. Likewise, as soon as the vehicle starts down a hill or incline, or as soon as the draft upon the doubletree is released, the strong springs 21 draw the crank 10 rearward, and apply the brake-blocks to the wheels.

The above described construction for bringing about a parallel movement of the brake-blocks, causes the faces of said blocks to engage the wheels with a substantially equal pressure throughout the surfaces of said blocks, and prevents same from being worn away more at the upper or lower end than at the opposite end, so that said blocks are worn evenly throughout their length.

What we claim is—

1. The improved brake constructed with a transverse beam or rod 6 fixed at a point adjacent the peripheries of the wheels, and held in such position by suitable braces, a rock-shaft 8 mounted in bearings carried by the beam, a vertical crank 10 on said shaft, cranks 11 on said shaft adjacent the wagon-wheels, links or stirrups 19 also mounted upon said beam, one above each crank 11, brake blocks 14 secured to said cranks 11 and said stirrups 19 so as to engage said wheels and wear evenly, and means arranged to apply and release said brake-blocks by rocking said shaft, substantially as herein specified.

2. The improved brake constructed with a transverse beam or rod 6 fixed at a point adjacent the wheels, a rock-shaft 8 mounted in bearings on this beam, a vertical crank 10 on said shaft, cranks 11 on said shaft adjacent said wheels, brake-blocks 14 secured to said cranks 11, springs 21 secured to said crank 10 and normally retaining said brake blocks in contact with said wheels, a double-tree 22 mounted to slide, and means connecting said doubletree to said crank 10, whereby when draft is applied to the doubletree the brake-blocks will be removed from the wheels, and when draft is released from said doubletree said springs will apply the blocks to the wheels, substantially as herein specified.

In testimony whereof we affix our signatures in presence of two witnesses.

ALBERT J. SMITH.
JOHN V. LANDES.

Witnesses:

F. S. BARBER,
JNO. K. ESTEP.