

No. 713,250.

Patented Nov. 11, 1902.

A. J. SNYDER.
AUTOMATIC WAGON BRAKE.

(Application filed Aug. 18, 1902.)

(No Model.)

2 Sheets—Sheet 1.

FIG. 1

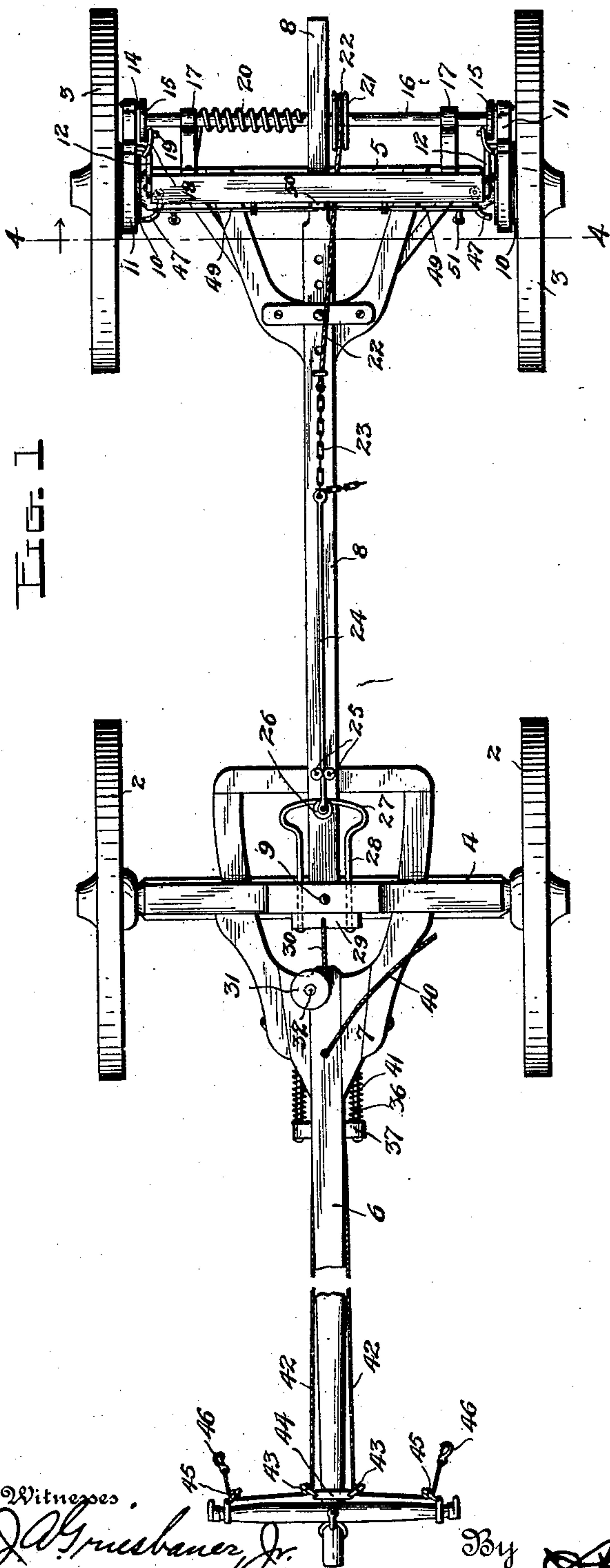
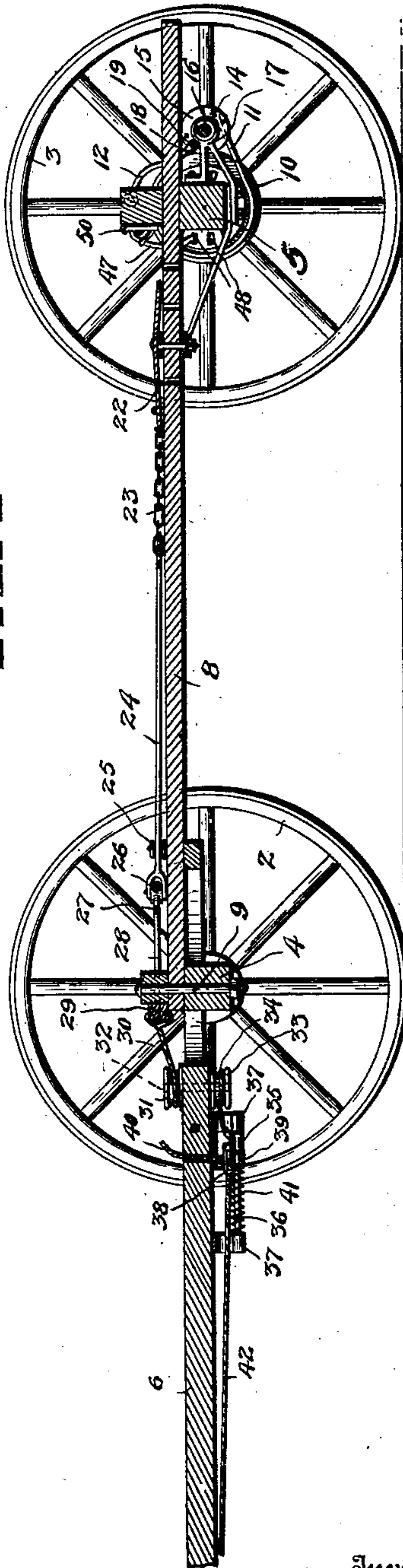


FIG. 2



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2 Sheets—Sheet 2.

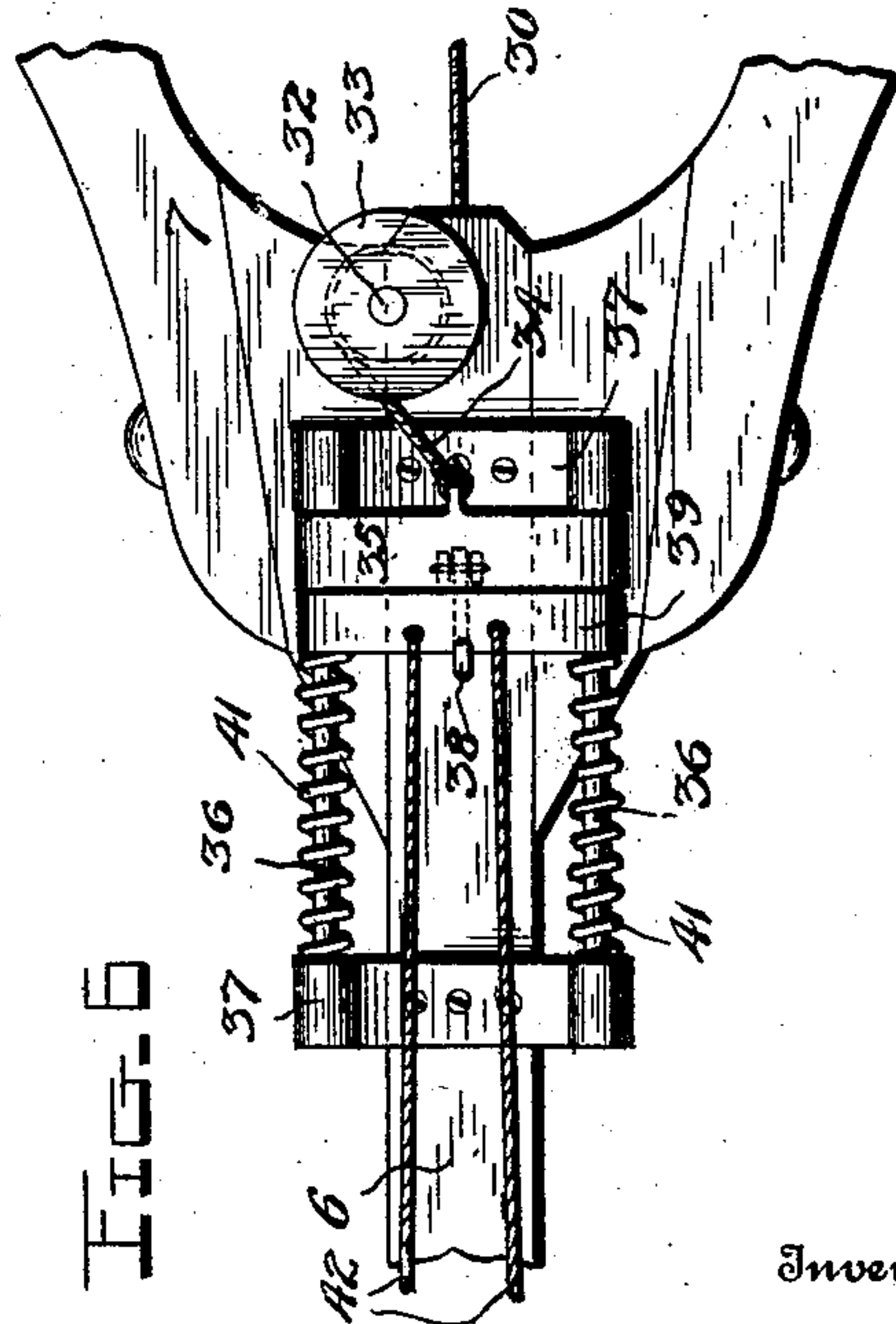
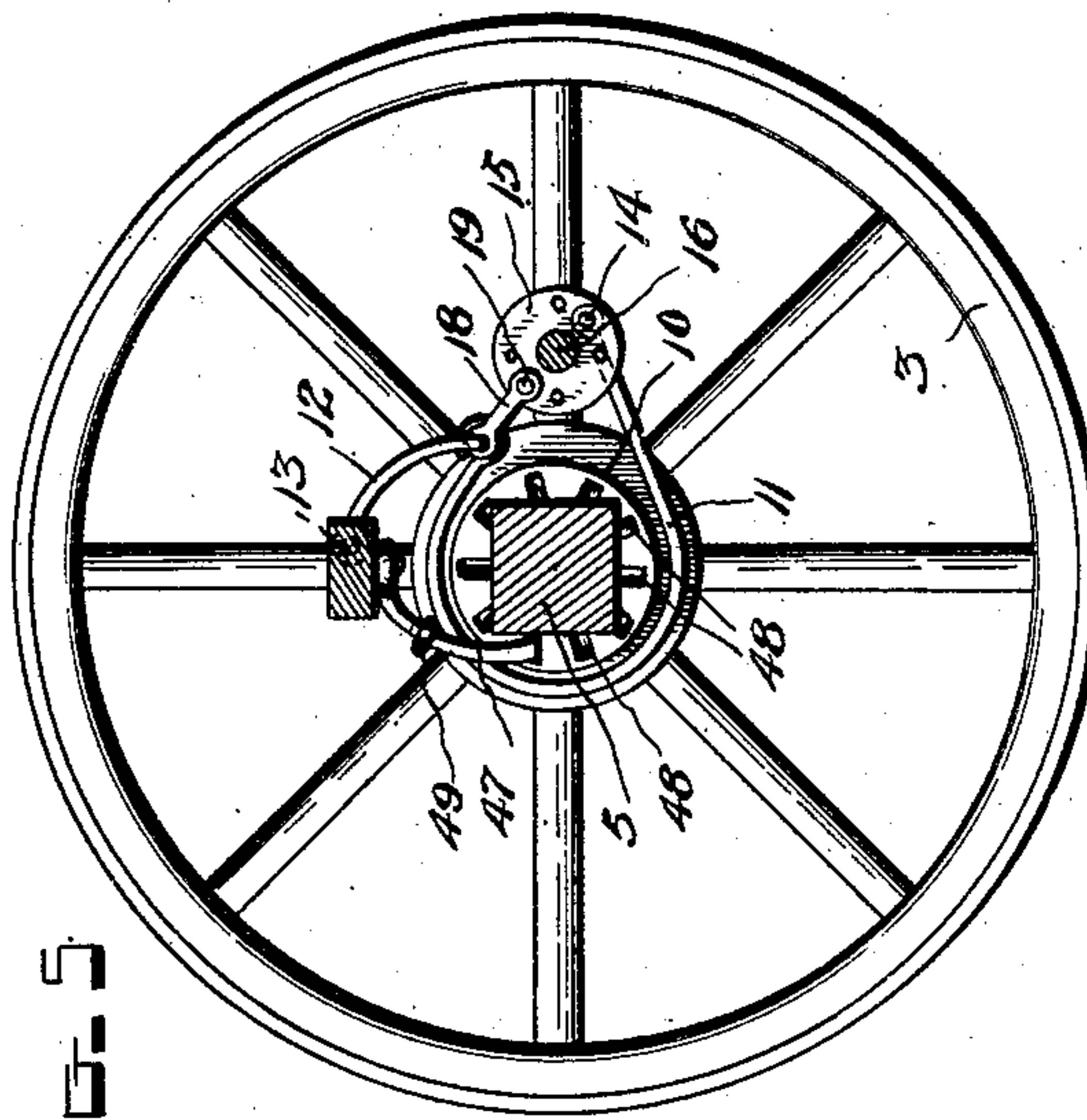
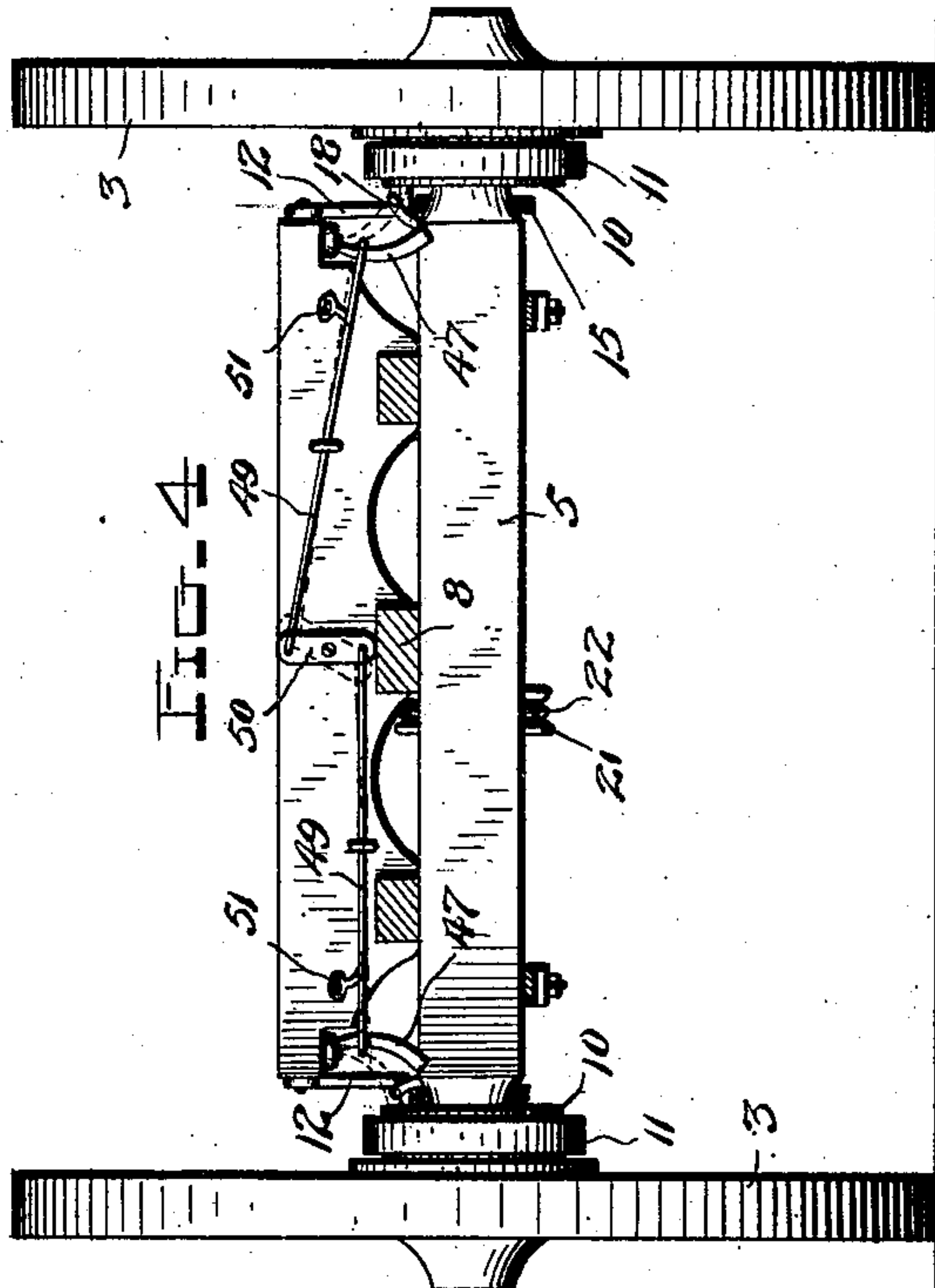
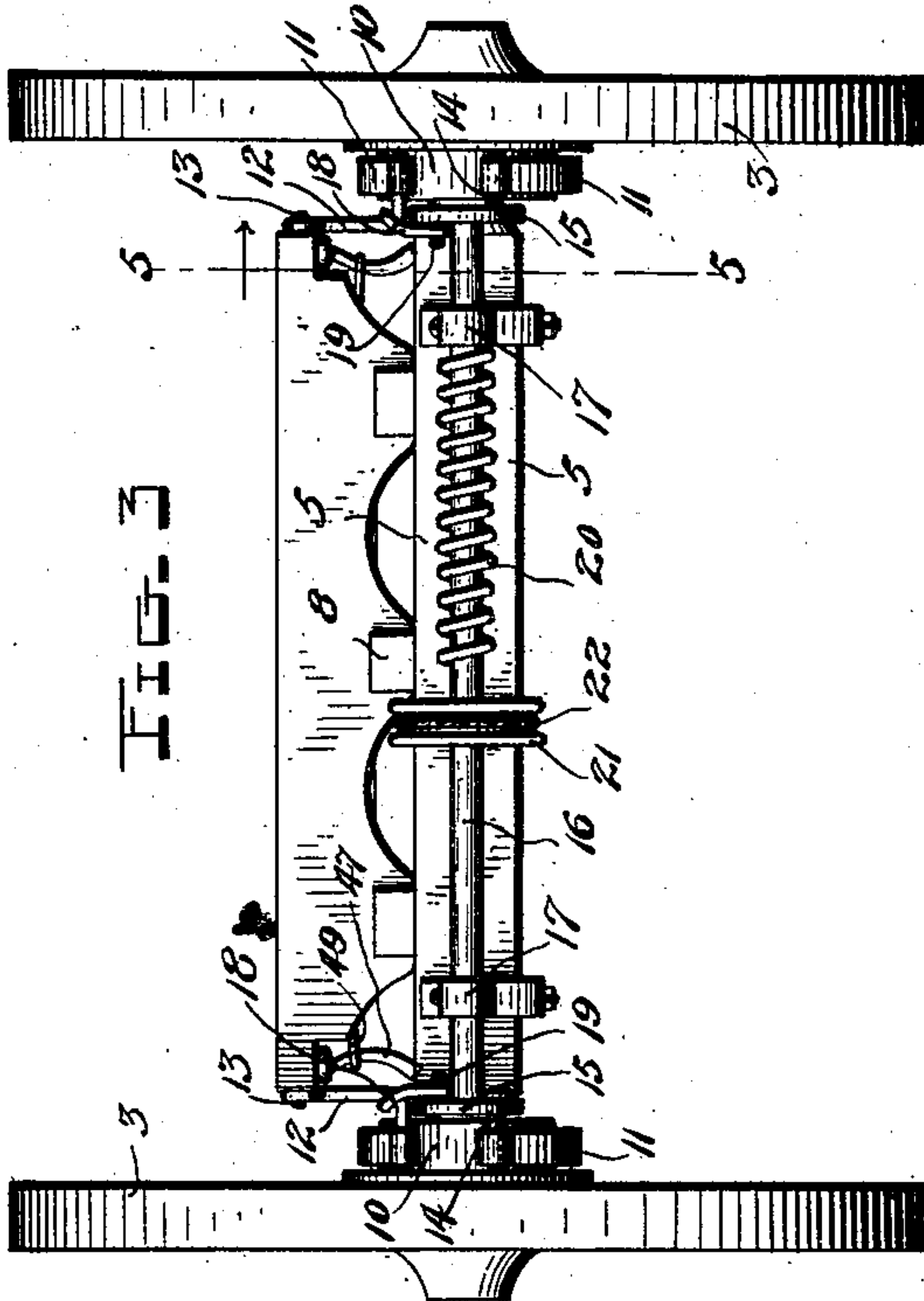


FIG. 5

FIG. 6

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UNITED STATES PATENT OFFICE.

ANDREW JACKSON SNYDER, OF CASSOPOLIS, MICHIGAN, ASSIGNOR OF
ONE-HALF TO DAVID S. TALLERDAY.

AUTOMATIC WAGON-BRAKE.

SPECIFICATION forming part of Letters Patent No. 713,250, dated November 11, 1902.

Application filed August 18, 1902. Serial No. 120,112. (No model.)

To all whom it may concern:

Be it known that I, ANDREW JACKSON SNYDER, a citizen of the United States, residing at Cassopolis, in the county of Cass and State of Michigan, have invented certain new and useful Improvements in Automatic Wagon-Brakes; and I do declare the following to be 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 automatic wagon-brakes, and particularly to mechanism adapted to be actuated by the holding-back action of the draft-animals to apply a brake regulating the speed of descent of the vehicle down a hill or grade.

The objects of the invention are, first, to provide an automatic brake of this character which shall be simple of construction, efficient in use, and inexpensive of production; second, to provide brake mechanism which can be temporarily thrown out of operative arrangement whenever it may be desired to back the draft-animals without applying the brake, and, third, to provide a lock for holding a standing vehicle against movement.

With the above and other objects in view, which will readily appear as the nature of the invention is better understood, said invention consists in certain novel features of construction and combination and arrangement of parts, which will be hereinafter fully described and claimed, and illustrated in the accompanying drawings, in which—

Figure 1 is a top plan view of a wagon with my improved brake applied thereto. Fig. 2 is a central longitudinal section through the same. Fig. 3 is a rear end elevation of the same. Fig. 4 is a cross-section taken on the line 4 4 of Fig. 1 to illustrate the locking mechanism. Fig. 5 is a detail sectional view taken on the line 5 5 of Fig. 3 to illustrate more clearly the connection of the brake-band. Fig. 6 is a detail bottom plan view of the tongue or pole and the connections for throwing the brake into and out of operative position.

Referring to the drawings, the numeral 1 denotes a wagon or vehicle of any description, which consists of the front and rear support-

ing-wheels 2 and 3, journaled upon the front and rear axles 4 and 5. 6 denotes the pole or tongue, connected by the front hound 7 to the front axle, and 8 the reach, to one end of which the front axle is pivoted by the king-bolt 9 and the other end of which is adjustably secured to the rear hound and axle 5. These parts are old and well known and may be of any desired construction.

In carrying out my invention I place upon the hubs of the rear wheels 3 the steel sleeves 10, which form the braking-surface upon which the brake-bands 11 are adapted to operate to check the movement of the wheels. One end of said bands is supported by the arms 12, pivoted at 13 to the ends of the rear bolsters. The bands 11 surround the braking-surfaces 10 and have their other ends carried by the pins 14, which project from one side of the disks 15, secured upon the ends of a horizontal shaft 16, journaled at the rear of the axle 5 in brackets 17. Links 18 connect the free end of the arms 12, to which one end of the brake-band is pivoted, and the pins 19, projecting from the opposite side of disks 15 and at diametrical opposite points from the pins 14. The coil-spring 20, which surrounds the shaft 16, has one of its ends secured to the shaft and its other end secured to one of the brackets 17 and exerts its energy to hold the shaft in its normal position, in which the brake-band is open or extended to allow the rear wheels to rotate freely.

Secured to the shaft 16 near its center is a drum or pulley 21, which has one end of a cable or cord 22 secured to it. The said cable is wound one or more times about said drum and extends forwardly between the bolster and rear axle and has its other end attached to a chain 23, located upon the upper surface of the reach 8. The opposite end of the chain is connected to one end of a sliding rod 24, which is guided in its movement by the grooved rollers 25, located upon the top of the reach. The front end of said sliding rod has a grooved pulley 26 journaled thereon, which is adapted to engage an arc-shaped yoke 27, the arms 28 of which project through the front bolster and are secured to the block 29.

A cord or cable 30 has one of its ends at-

tached to said block 29 and its other end wound about a drum 31, secured upon the upper end of a vertical shaft 32, journaled in the front hound and tongue. Secured to the lower end of the shaft 32 upon the under side of the hound is a similar drum 33, to which one end of a cord or cable 34 is secured after being wound around the same one or more times in a direction reverse to that in which the cord 30 is wound upon the drum 31 in order that when the said shaft 32 is turned one of the drums will wind up its cord and the other will unwind.

The free end of the cord 34 is secured to a head 35, slidably mounted upon the guide-rods 36, supported in the brackets 37, secured to the under side of the tongue and hound. The said sliding head 35 has pivoted or hinged upon its upper side a catch 38, which is adapted to engage a second sliding head 39, also mounted upon the guide-rods 36. An operating-cord 40 is fastened to said catch and extends upwardly through an aperture in the hound and may be secured to the body of the wagon within convenient reach of the driver in order that he may disengage the sliding head 39 from the head 35 for a purpose hereinafter explained. The coil-springs 41 upon the guide-rods 36 force the sliding heads 39 and 35 rearwardly.

To the sliding head 39 is fastened the rear ends of the cords or cables 42, which extend forwardly along the pole or tongue 6, one on each side thereof, and are passed around the guide-pulleys 43, carried by the clip 44, secured to the tongue, and then extend outwardly along the neck-yoke and are passed around the guide-pulleys 45, carried by clips secured to the same. Snap-hooks 46 are fastened upon the ends of these cables or cords for the purpose of attaching them to the ring on pole-strap, which is connected with the breeching of the harness.

The device for locking the vehicle against movement consists in pivoting upon the rear bolster the pawls or dogs 47, which are adapted to be swung outwardly to engage one of the pockets or recesses 48, formed in the hubs of the rear wheels. The pawls are adapted to be operated simultaneously by the links 49, which connect them to the opposite ends of a lever 50, pivoted to the rear bolster. The links 49 are provided with hand-grips 51, by means of which the links, and hence the pawls, are operated. It will be readily seen that when the wagon is standing and it is desired to lock the same one of the hand-grips 51 is pulled outwardly and both of the pawls 47 will be swung into engagement with the recesses or pockets upon the hubs of the rear wheels to lock the same.

In the operation of the brake the holding-back action of the draft-animals upon the breeching of the harness will draw upon the cables 42 and pull the sliding head 39 and also the head 35 (as the two are locked together by the catch 38) forwardly against the tension of

the springs 41. The forward movement of the head 35 will draw upon the cable 34 and unwind the same from the drum 33, and at the same time the drum 31 will wind up its cable 30, which will pull the block 29 and yoke 27 forwardly and draw upon the sliding rod 24, the chain 23, and the cable 22 to rotate the shaft 16 against the tension of the spring 20. When the shaft 16 is turned, the ends of the brake-band will be drawn together to tighten said bands upon the bearing-surfaces of the sleeves 10 on the hubs, and hence brake and stop the movement of the wagon. The instant the tension is removed from the cables 42 by the draft-animal ceasing to hold back the spring 20 will restore the shaft 16 to its normal position to release the brake-band and the springs 41 will restore the sliding heads and other parts to their proper position.

When it is desired to back the wagon without applying the brake, the operating-cord 40 is drawn upon to disengage the catch 38 upon the head 35 from the sliding head 39, so that when the cables 42 are drawn upon by the backing of the animals the sliding head 39 will be drawn forwardly without moving the sliding head 35, and hence without applying the brake.

From the foregoing description, taken in connection with the accompanying drawings, it is thought that the construction, operation, and advantages of my improved automatic wagon-brake will be readily apparent without requiring a more extended explanation.

Various changes in the form, proportion, and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of this invention.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a brake mechanism for vehicles, the combination with the running-gear, of a braking device adapted to arrest the motion of the wheels, means attached to the harness for actuating said braking device by the pulling-back action of the draft-animals, and means for disconnecting the braking device and actuating means comprising a sliding head having connection with the braking mechanism, a second spring-actuated sliding head having the actuating means connected thereto and a catch adapted to lock the said sliding heads together to connect the braking device and its actuating mechanism, substantially as described.

2. In a brake mechanism for vehicles, the combination with the running-gear, of a braking device adapted to arrest the motion of the wheels, and means for actuating said braking device by the pulling-back action of the draft-animals comprising a yoke slidably mounted in the front bolster, a flexible connection between the forward end of said yoke and the harness of the draft-animals, a sliding rod mounted between guide-rollers upon the run-

ning-gear provided upon its forward end with a grooved pulley adapted to engage said yoke, and a flexible adjustable connection between the opposite end of said rod and the braking device, whereby the said parts may be operated at any angle to which the front axle is turned, substantially as described.

3. In a brake mechanism for vehicles, the combination with the running-gear, of a braking device comprising a bearing-sleeve, a brake-band surrounding said bearing-sleeve, a supporting-arm for said band, a spring-actuated shaft, connections between said shaft and the ends of the brake-band, a drum fixed to said shaft, and a flexible connection between the harness of the draft-animals and said drum whereby upon the holding back of the animals the said shaft will be rocked or turned to draw the ends of the brake-band together to cause the same to bind upon the bearing-sleeve and arrest the motion of the wheels, substantially as described.

4. The combination with the running-gear of a vehicle, of an automatic brake mechanism, comprising a bearing-sleeve, a brake-band surrounding said bearing-sleeve, an arm for supporting said band, a spring-actuated shaft, connections between said shaft and the ends of said band, a drum fixed to said shaft, a flexible connection secured to said drum, a

sliding yoke in the front bolster, a sliding rod between said flexible connection and said yoke, and means attached to the harness of the draft-animals for operating said yoke, substantially as described.

5. The combination with the running-gear of a vehicle, of an automatic brake mechanism comprising bearing-sleeves secured to the rear wheels, brake-bands surrounding said bearing-sleeves, an arm for supporting one end of said band, a spring-actuated shaft journaled in brackets upon the rear axle, disks secured upon said shaft provided with pins to which the ends of said brake-bands are secured, a drum fixed to said shaft, a yoke slidably mounted in the front bolster, a sliding rod loosely connected with said yoke; a flexible connection between said rod and drum, and a flexible connection between the harness of the draft-animals and said sliding yoke, whereby the brake mechanism will be operated upon the holding back of the animals, substantially as described.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

ANDREW JACKSON SNYDER.

Witnesses:

ULYSSES S. EBY,
JESSE AUSTIN.