

No. 633,017.

Patented Sept. 12, 1899.

C. C. LONG.
WAGON BRAKE.

(Application filed Mar. 31, 1899.)

(No Model.)

Fig. 1.

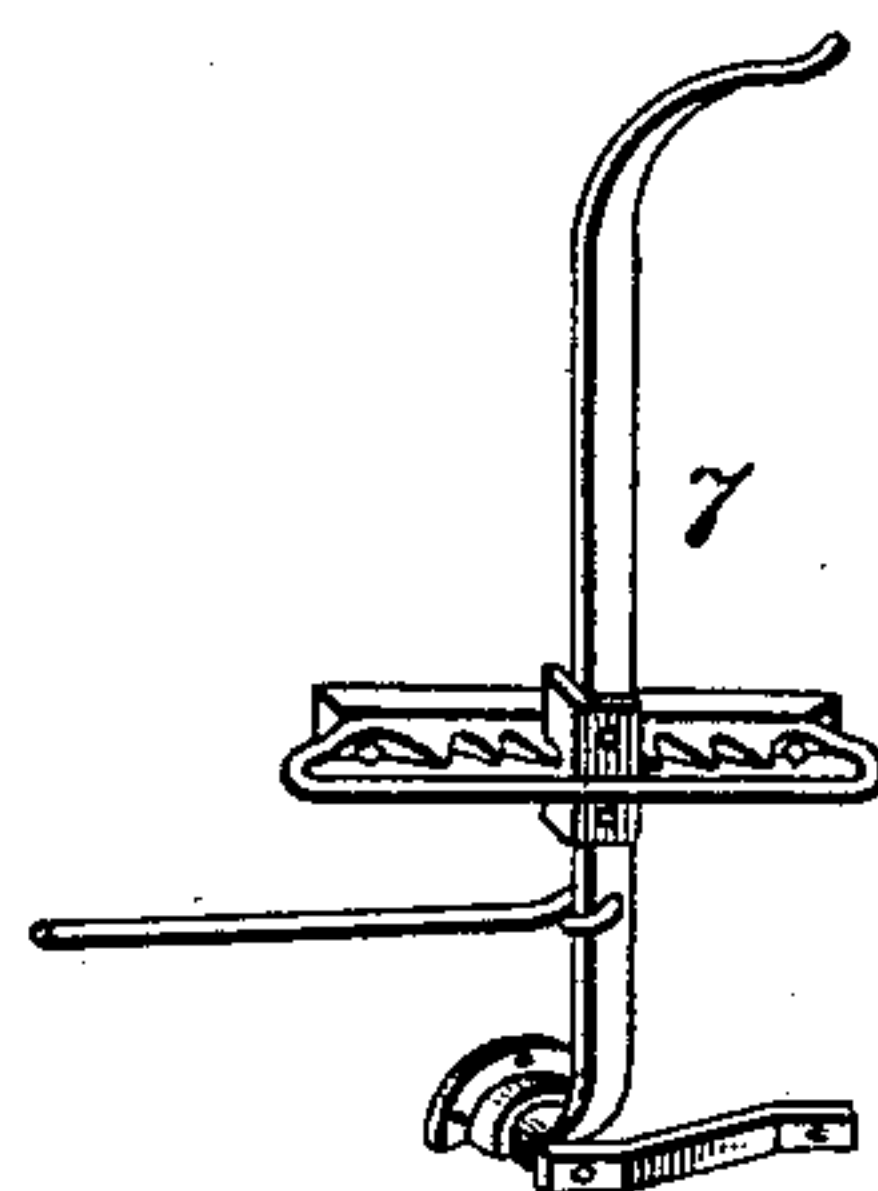
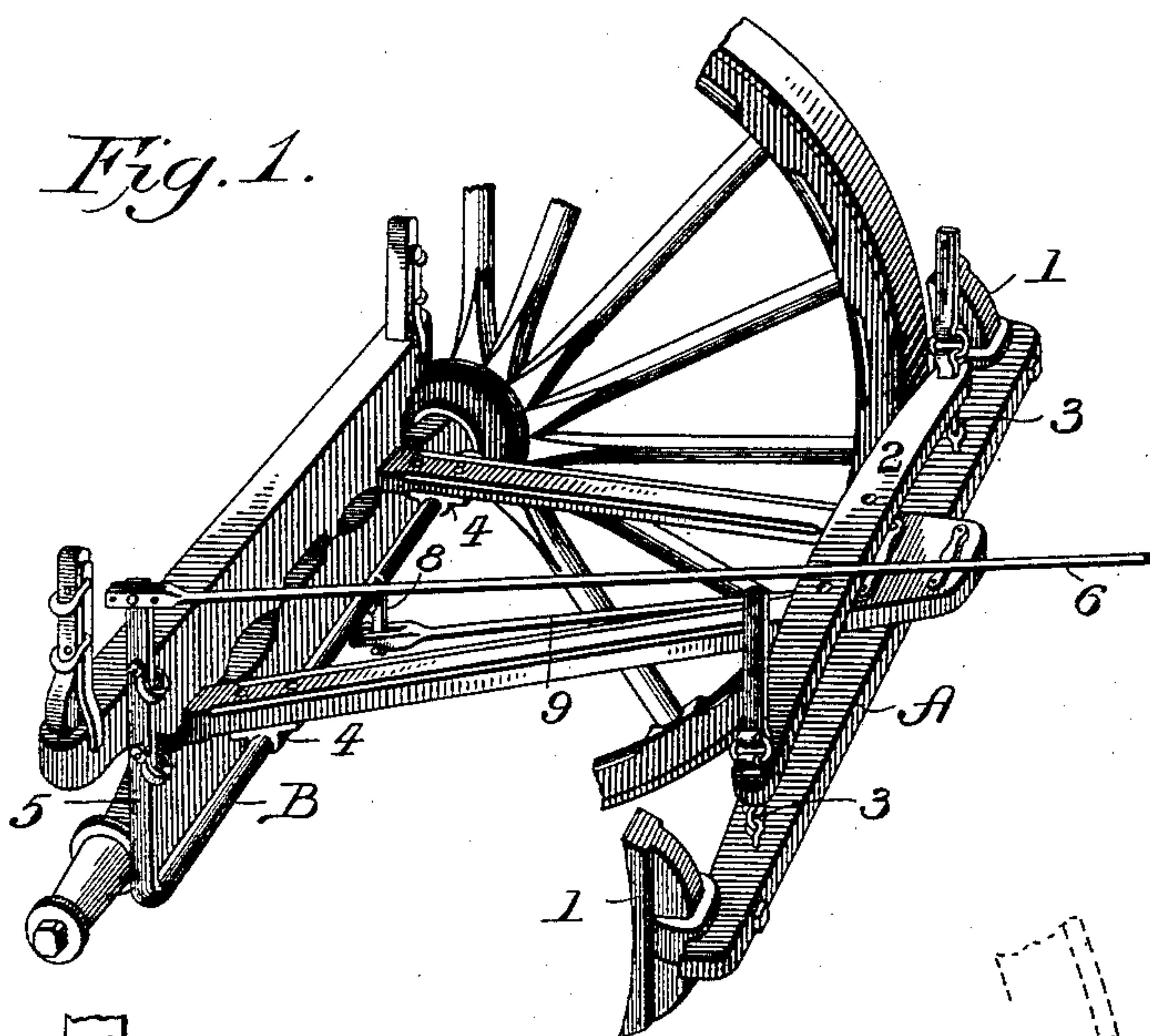


Fig. 2.

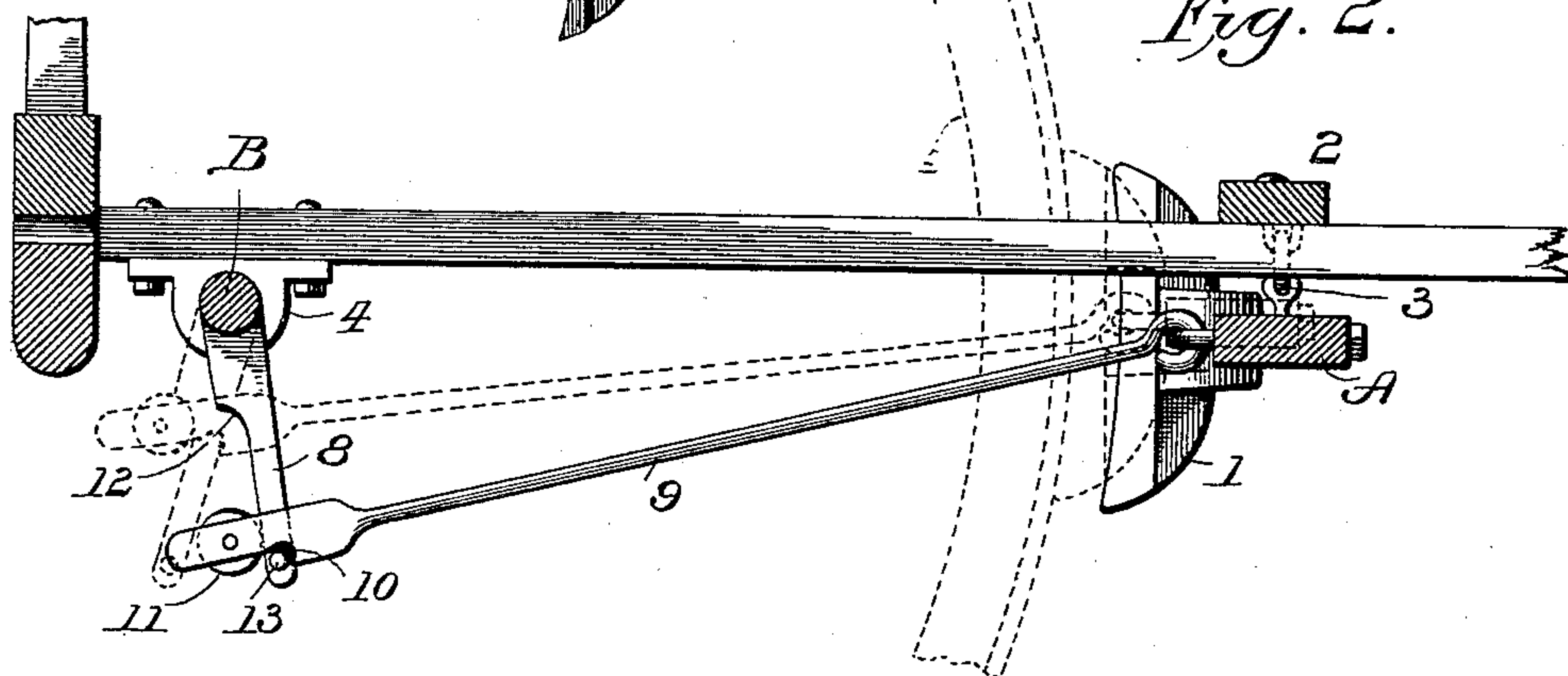


Fig. 3.

WITNESSES

John Anders, Jr.
Ralph H. Warfield.

INVENTOR

Calvin C. Long
by *Philo G. Boissac*
his Attorneys.

UNITED STATES PATENT OFFICE.

CALVIN C. LONG, OF WASHINGTON, IOWA, ASSIGNOR OF ONE-HALF TO
WALTER B. WILDE, OF SAME PLACE.

WAGON-BRAKE.

SPECIFICATION forming part of Letters Patent No. 633,017, dated September 12, 1899.

Application filed March 31, 1899. Serial No. 711,239. (No model.)

To all whom it may concern:

Be it known that I, CALVIN C. LONG, a citizen of the United States of America, residing at Washington, in the county of Washington and State of Iowa, have invented certain new and useful Improvements in Wagon-Brakes, of which the following is a specification.

My invention relates to an improvement in wagon-brakes.

10 The objection to nearly all wagon-brakes is that they do not have enough leverage or power to lock the wagon; and it is the object of my invention to obviate this objection by increasing the power and leverage and also 15 the amount of movement of the brake-guard from the wheel when the brake is released, so that the brake-blocks will assume a position far enough from the wheels to avoid gathering mud.

20 With these objects in view my invention consists in certain novel features of construction and combinations of parts, which will be hereinafter described more fully, and particularly pointed out in the claim.

25 In the accompanying drawings, Figure 1 is a view in perspective showing my improved brake applied. Fig. 2 is a longitudinal sectional view showing the two extreme positions of the brake, and Fig. 3 is a modification.

30 A represents the brake-bar, carrying the usual brake-blocks 1 1 and suspended from the running gear or bed 2 by means of links or rods 3 3.

35 B indicates the usual rock-shaft, supported in bearings 4 4 on the running gear or bed and provided, preferably at one end, with an upturned arm 5, to which the connecting-rod 6, which extends to the brake-lever 7, is pivoted. Depending from this rock-shaft, preferably at or near its middle, is an arm 8, and 40 a draw-rod 9, extending rearward from the brake-bar, is provided with a slotted rear end in which to receive this arm loosely. Heretofore it has been the practice to pass a pin 45 through the draw-rod and arm at this intersecting point, and thus give them a fixed pivoted connection. In the present invention in lieu of this fixed pivotal connection a sliding connection is provided, and the object of this 50 is to increase the leverage and power of the rock-shaft and arm upon the draw-rod when

the brakes are applied by giving freedom to the rear end of the draw-rod to travel inward toward the axis of movement of the arm, thus shortening its length when the power is applied; and a further object of this particular connection is to allow the rear end of the draw-rod the benefit of the whole length of the arm in which to move when the brake is released to cause the brake bar and block 60 when released to assume a position far enough away from the wheels so that they will not collect mud and cause friction upon the wheels when none is required. The present construction insures these two functions, and 65 as a means for accomplishing it, which is only one of many which might be described, the arm 8 is provided with a cross pin or lug 13 at its outer or lower end, which limits the downward movement of the draw-rod with respect 70 to this, and the draw-rod in turn is provided with a notch 10 on its lower edge to receive this pin when the brake is released and afford an abutment for the forward thrust of the draw-rod for moving the brake-blocks from the 75 wheels. The arm 8 is also provided with an offset 12 on its rear edge, and the draw-rod is preferably provided with a roller 11, although this is not necessary, to facilitate its movement upon the arm. 80

From the foregoing the operation will be manifest. The driver places his foot or hand upon the brake-lever in the usual manner, bringing it forward. This causes the rock-shaft to turn and its depending arm 8 to swing 85 backward. This backward movement causes the rear end or the roller 11 of the draw-rod to ride up on the arm until it reaches the shoulder or offset 12 thereon, whereupon it stops and further movement of the arm 8 in 90 swinging rearward causes a backward movement upon the draw-rod, thus applying the brake with just as much power as the driver cares to exert. When the brake is released, the arm 8 swings forward, the rear end of the 95 draw-rod drops until the pin enters the notch 10, when any further movement of the arm forward causes the brake-bar to move away from the wheel, and the weight and inclination of the upturned arm 5, the connecting-rod 6, and the brake-lever 7, all tend to cause 100 this movement. So it will be seen that from

this differential connection between the arm and draw-rod great power is derived when it is required to apply the brakes by shifting the connection of the arm and draw-rod to a point
5 near the axis of the arm, and when less power is required, as when removing the brake-rod from the wheels; but if greater sweep of movement is desired, then the full length of the arm is utilized to accomplish it.
10 In the modification the same principle is applied in connection with an air-brake. By using this invention on an air-brake double the power can be applied to the wheels with the same pressure in the cylinder. This, how-
15 ever, is not necessary from the fact that it would cause the wheels to slip; but the point to be gained is that one-half the pressure in the cylinder would do the same work, or the cylinder could be reduced so as to have about
20 one-half the number of square inches and yet give the same power in applying the brakes and at the same time move the bar 6 the required distance away from the wheels in releasing it. With this smaller cylinder there
25 would be only one-half the amount of air to be pumped, which would be a saving in this direction, while using smaller brakes on the cars.

The spring 15, which is shown in dotted lines, is not absolutely necessary, but is desirable in insuring the movement of the brake
30 away from the wheels.

It is evident that slight changes might be resorted to in the form and arrangement of the parts described without departing from the spirit and scope of my invention, and hence
35 I do not wish to limit myself to the exact construction herein set forth; but,

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

The combination with an arm provided with an offset or shoulder 12 thereon at one point and a pin or lug 13 at or near one end, of a draw-rod having the notch 10 adapted to receive the lug or pin 13 whereby the draw-
45 rod may be given a positive thrust backward when the outer end of the arm is forced in the direction of the notch, and means for swinging the arm to apply or release the brake.

CALVIN C. LONG.

In presence of—

DANIEL WILDE,
O. K. CLAPPER.