

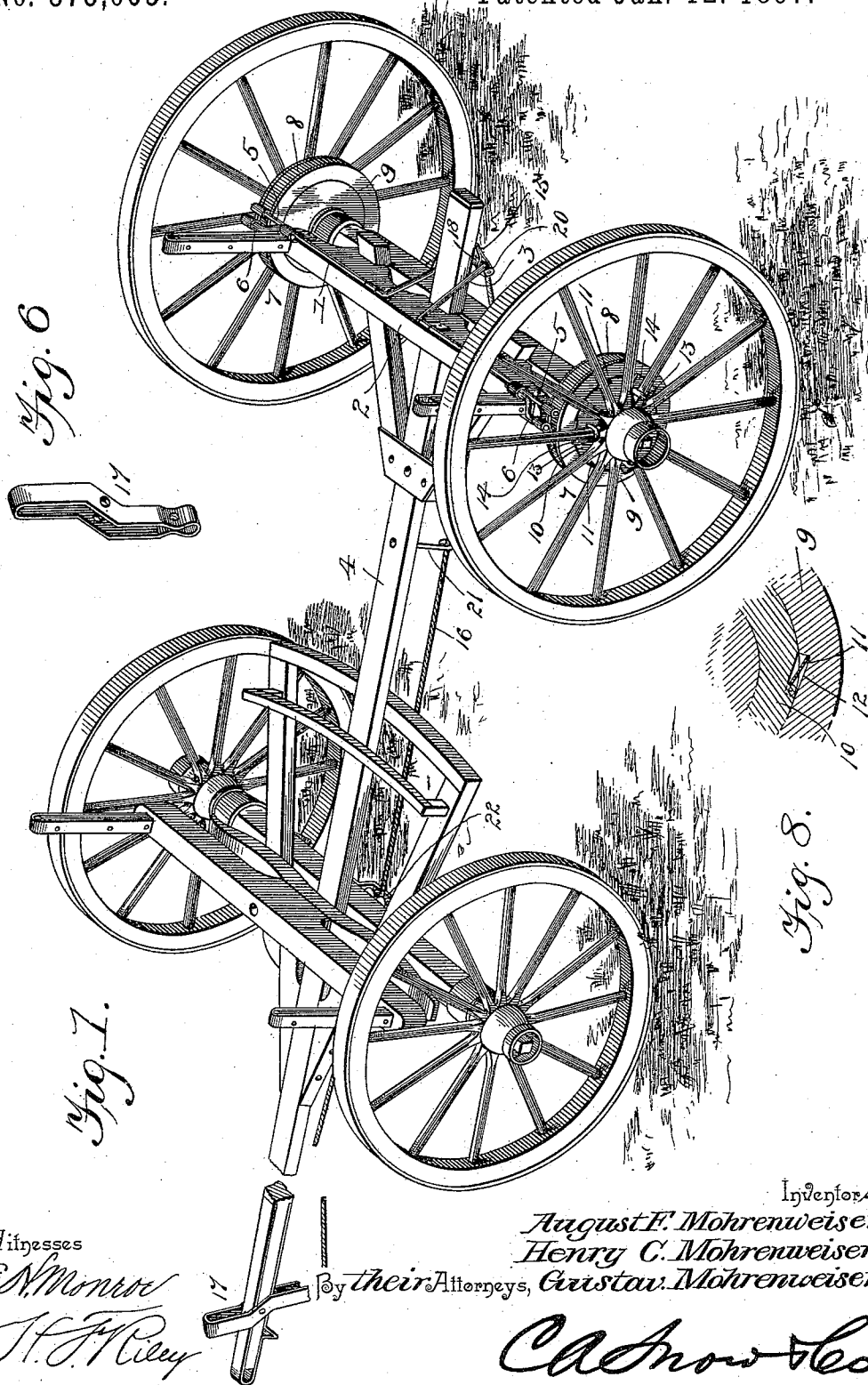
(No Model.)

2 Sheets—Sheet 1.

A. F., H. C. & G. MOHRENWEISER.
AUTOMATIC BRAKE FOR VEHICLES.

No. 575,003.

Patented Jan. 12. 1897.



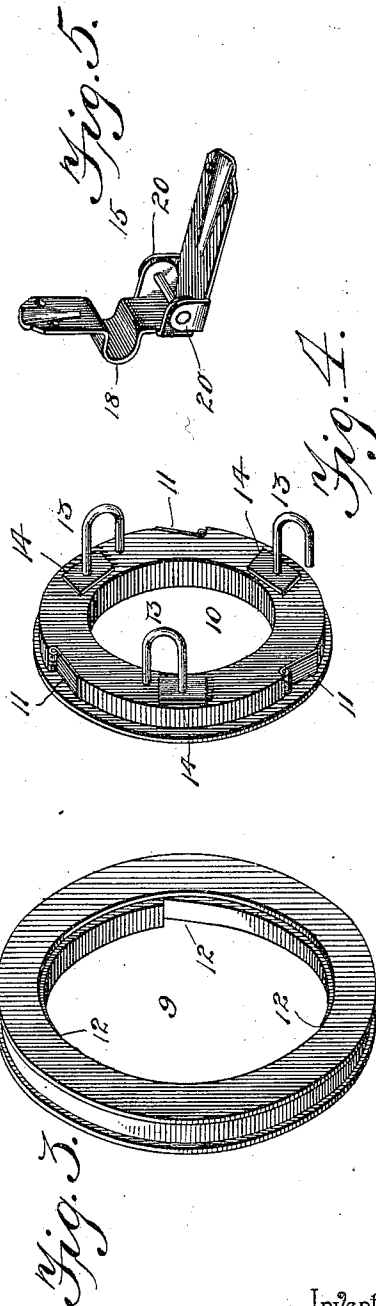
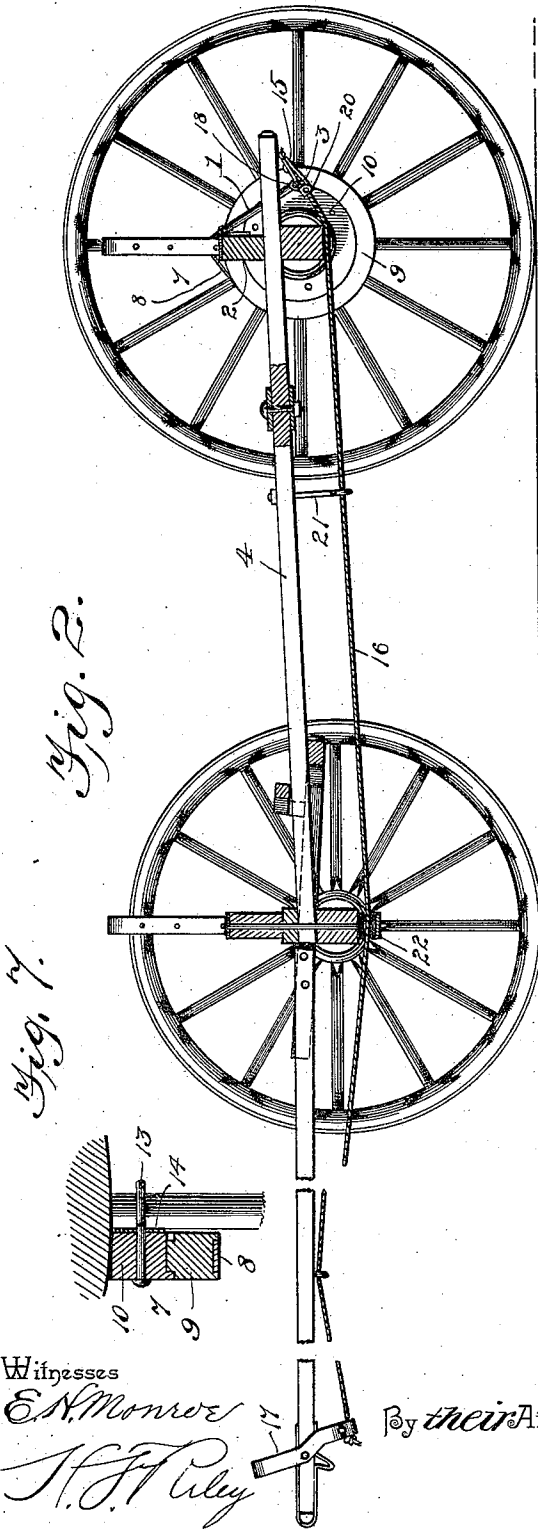
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Witnesses

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UNITED STATES PATENT OFFICE.

AUGUST F. MOHRENWEISER, HENRY C. MOHRENWEISER, AND GUSTAV MOHRENWEISER, OF HENDERSON, MINNESOTA.

AUTOMATIC BRAKE FOR VEHICLES.

SPECIFICATION forming part of Letters Patent No. 575,003, dated January 12, 1897.

Application filed February 24, 1896. Serial No. 580,442. (No model.)

To all whom it may concern:

Be it known that we, AUGUST F. MOHRENWEISER, HENRY C. MOHRENWEISER, and GUSTAV MOHRENWEISER, citizens of the United States, residing at Henderson, in the county of Sibley and State of Minnesota, have invented a new and useful Automatic Brake for Vehicles, of which the following is a specification.

The invention relates to improvements in automatic brakes for vehicles.

The object of the present invention is to improve the construction of automatic vehicle-brakes and to provide a simple, inexpensive, and efficient one adapted to be applied to any ordinary running-gear without necessitating any material change in the construction thereof and capable of checking the forward movement of a vehicle in descending a hill or the like.

A further object of the invention is to provide an automatic brake which while being capable of being readily applied when a vehicle moves forward on the draft-animals will also permit a vehicle to be freely backed.

The invention consists in the construction and novel combination and arrangement of parts hereinafter fully described, illustrated in the accompanying drawings, and pointed out in the claims hereto appended.

In the drawings, Figure 1 is a perspective view of a running-gear provided with an automatic brake constructed in accordance with this invention. Fig. 2 is a longitudinal sectional view of the same. Fig. 3 is a detail perspective view of one of the band-brake rings or wheels. Fig. 4 is a similar view of one of the inner rings or wheels. Fig. 5 is a detail perspective view of the clip for engaging the cable. Fig. 6 is a detail perspective view of the operating-lever. Figs. 7 and 8 are detail sectional views illustrating the construction of the clutch.

Like numerals of reference designate corresponding parts in all the figures of the drawings.

1 designates a transverse rock-shaft journaled in suitable bearings on the rear face of the rear bolster 2 of a running-gear and provided with a central depending loop 3, forming an arm and extending under the rear end of the reach 4 and connected, by means here-

inafter described, with the front of the pole and adapted to be operated by a neck-yoke. The ends of the rock-shaft are provided with arms 5 and 6, arranged in pairs and connected with band-brakes 7, located at the ends of the rear axle. The arm 5 is straight and forms a continuation of the rock-shaft, and the other arm 6 is offset laterally and angularly bent, and has its outer portion arranged substantially parallel with the arm 5.

Each band-brake is connected by a clutch with the adjacent hind wheel and consists of a band 8, having its terminals connected with the arms 5 and 6, and a grooved ring or wheel 9. The periphery of the ring 9 is grooved for the reception of the band 8, and the latter frictionally engages the ring or wheel when the rock-shaft is partially rotated. When the rock-shaft is operated by means hereinafter described, the central loop, which forms an arm, swings downward, and the arm 6 is carried rearward, the other arm holding the terminal of the band to which it is connected substantially stationary. The rearward movement of the arm 6 tightens the band and causes the same to engage frictionally the ring or wheel to check the forward rotation of the hind wheel.

The clutch which connects the ring or band 9 with the hind wheel consists of an inner ring or wheel 10, provided at its periphery, which is grooved or rabbeted for the reception of the ring or wheel 9, with pivotally-mounted outwardly-swinging pawls 11, adapted to engage teeth 12, which are arranged on the inner periphery of the ring or wheel 9. The pawls, when at the bottom of the inner ring or wheel, fall by gravity in position for engaging the teeth of the outer ring or wheel 9, and the ratchet-teeth 12, which are preferably formed by recessing the ring or wheel 9, are arranged to be engaged by the pawls when the hind wheel rotates forwardly, but permits the hind wheel to rotate rearwardly freely to enable a vehicle to be readily backed without applying the brake.

The inner clutch wheel or ring, which is mounted on the hub of the hind wheel, is rigidly connected with the same by means of a series of clips consisting of hook-shaped bolts which embrace the adjacent spokes, and wear-

plates 14 are interposed between the spokes and the outer ring or wheel 9 to prevent the parts from being worn. These wear-plates are perforated for the reception of the shanks of the hook-bolts which attach them to the hind wheel.

The depending loop-arm 3 of the rock-shaft is connected by a clip 15 with the rear end of a cable 16, which extends longitudinally of the running-gear to the front end of the pole or tongue and is connected with the operating-lever 17. The operating-lever 17 consists of two sides embracing the tongue and fulcrumed intermediate of their ends. It extends above and below the tongue and is provided at its lower end with an eye for the reception of the front terminal of the cable 16. The upper portion or arm of the operating-lever extends above the tongue and is adapted to be engaged by a neck-yoke, whereby when the vehicle moves forward on the draft-animals the upper portion of the operating-lever will be carried rearward, thereby applying the brake and checking the vehicle.

The clip 15 consists of a loop or frame composed of upper and lower sides arranged above and below the cable and clamping the same, and the upper side is provided with an upwardly-extending bend 18, receiving the loop-arm of the rock-shaft. The sides of the clip are provided at their front ends with ears 20, pivoted together, and the rear terminals of the sides are detachably secured together by means of bolts, which cause the sides to clamp the cable securely. By this construction the brake may be readily adjusted to secure the desired operation of the band-brakes.

The cable is supported at a point intermediate of the ends of the reach by a depending hanger 21, consisting of a stem or shank and an eye or loop arranged at the lower end thereof and receiving the cable. The running-gear is provided beneath its front axle with a pair of pulleys 22, arranged in a suitable block or casing and disposed at opposite sides of the cable and enabling the running-gear to be turned or cramped without interfering with the operation of the brake.

It will be seen that the automatic brake is exceedingly simple and inexpensive in construction, that it is positive and reliable in operation, and that it is capable of applying the band-brakes when a vehicle moves forward on the draft-animals in descending an incline, and that it will permit a vehicle to be readily backed without applying them.

It will also be apparent that the automatic brake may be readily applied to any ordinary running-gear without altering the construction thereof.

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

What we claim is—

1. In a brake, the combination of a transverse rock-shaft designed to be mounted on the running-gear and provided with a pair of arms disposed longitudinally of the rock-shaft and arranged substantially parallel, and a band-brake provided with a band and having the terminals thereof connected to the arms of the rock-shaft, whereby when the latter is rotated the band will be operated, substantially as described.

2. In a brake, the combination with a running-gear, of a transverse rock-shaft provided with a pair of arms disposed longitudinally of the shaft and arranged substantially parallel, an outer ring or wheel provided at its inner periphery with teeth, an inner ring or wheel mounted on the adjacent wheel of the running-gear, receiving the outer wheel or ring and provided at its periphery with pawls arranged to engage the said teeth, a band arranged on the outer ring or wheel and having its terminals connected with the arms of the rock-shaft, and the clips secured to the inner ring or wheel and engaging the spokes of the adjacent wheel of the running-gear, substantially as and for the purpose described.

3. In a brake, the combination with a running-gear, of a transverse rock-shaft journaled on the rear bolster and provided with a centrally-arranged depending loop extending beneath the ratchet, said rock-shaft being provided at its ends with substantially parallel arms disposed longitudinally of the shaft and arranged adjacent to the hind wheels, an operating-lever mounted on the front of the tongue, a cable extending from the lever to the loop of the rock-shaft, a clip adjustably connecting the cable to the loop of the rock-shaft, a pair of pulleys located beneath the front axle and arranged at opposite sides of the cable, and band-brakes connected with the hind wheels and having the terminals of the bands secured to the arms of the rock-shaft, substantially as described.

4. In a device of the class described, the combination of a loop-arm, a cable, and a clip composed of two sides provided at one end of the clip with pivotally-connected ears, and detachably connected at the other end of the clip and adapted to clamp the cable, the upper section being provided with a curve or band receiving the loop, substantially as described.

In testimony that we claim the foregoing as our own we have hereto affixed our signatures in the presence of two witnesses.

AUGUST F. MOHRENWEISER.
HENRY C. MOHRENWEISER.
GUSTAV MOHRENWEISER.

Witnesses:

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FRANCIS E. JIGGAR.