

No. 809,155.

PATENTED JAN. 2, 1906.

B. M. WEBERG.
AUTOMATIC BRAKE FOR SLEDs.

APPLICATION FILED APR. 22, 1905.

2 SHEETS—SHEET 1.

Fig. 2.

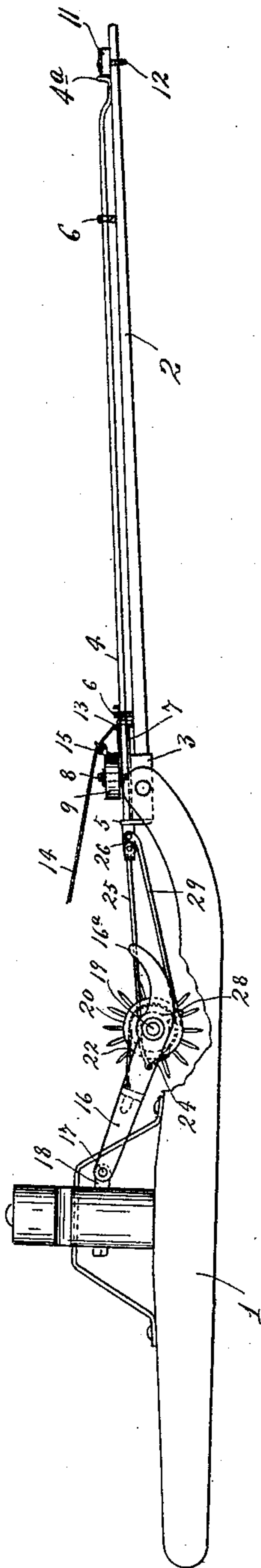
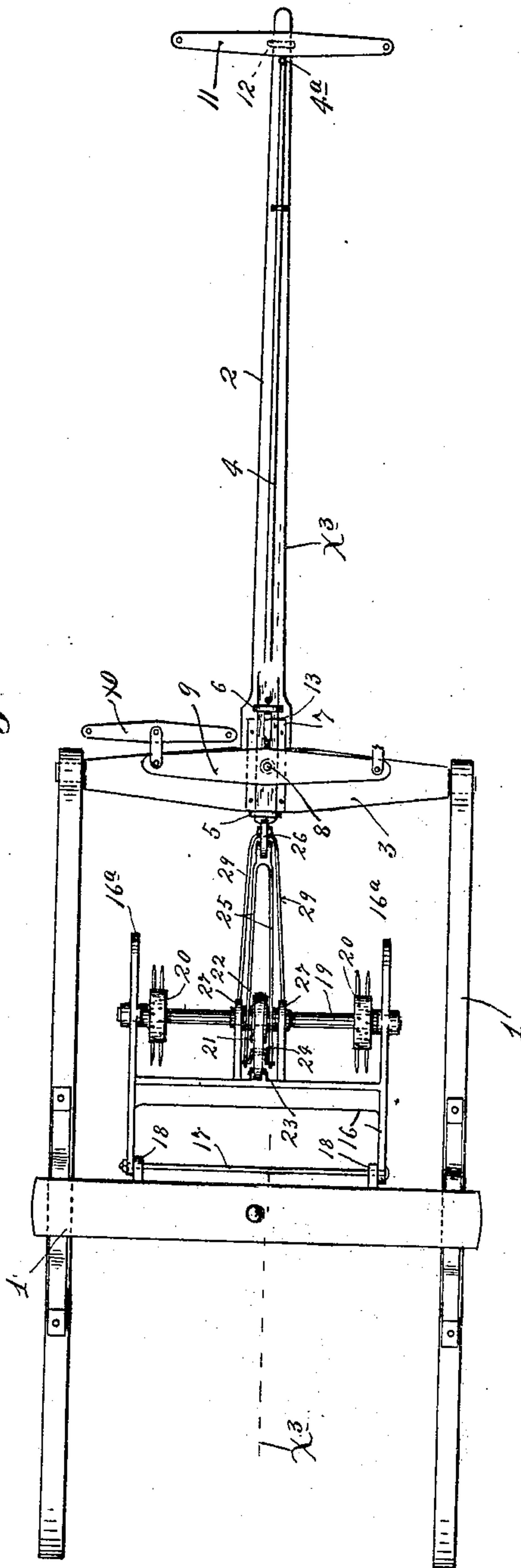


Fig. 1.



Witnesses
A. H. Opsahl.
E. W. Jepsen.

Inventor
B. M. Weberg.
By his Attorneys
William H. Muehler

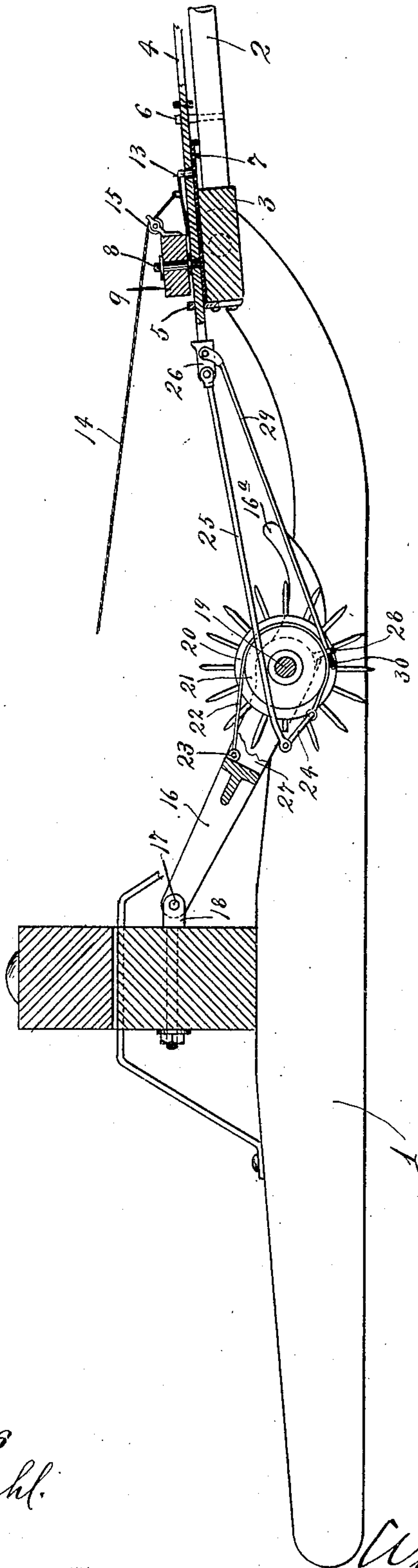
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2 SHEETS—SHEET 2.

Fig. 3.



Witnesses
A. H. Opsahl.
C. W. Jeppesen.

Inventor.
B. M. Weberg.
By his Attorneys
Williamson Muehler

UNITED STATES PATENT OFFICE.

BERNT M. WEBERG, OF BALSAM LAKE, WISCONSIN.

AUTOMATIC BRAKE FOR SLEDS.

No. 809,155.

Specification of Letters Patent.

Patented Jan. 2, 1906.

Application filed April 22, 1905. Serial No. 256,827.

To all whom it may concern:

Be it known that I, BERNT M. WEBERG, a citizen of the United States, residing at Balsam Lake, in the county of Polk and State of Wisconsin, have invented certain new and useful Improvements in Automatic Brakes for Sleds; and I do hereby 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.

My invention has for its object to provide an improved brake for logging-sleds and other sleds that are to be used on icy roads or runways.

To the above ends the invention consists of the novel devices and combinations of devices hereinafter described, and defined in the claims.

The invention is illustrated in the accompanying drawings, wherein like characters indicate like parts throughout the several views.

Figure 1 is a plan view showing the front bob of a logging-sled and illustrating my invention applied thereto. Fig. 2 is a side elevation of the part shown in Fig. 1, some parts being broken away; and Fig. 3 is a vertical section taken on the line $x^3 x^3$ of Fig. 1.

The numeral 1 indicates the front bob of the sled, and the numeral 2 indicates the pole, having at its rear end the usual cross-bar 3, which at its ends is pivotally attached to the forward ends of the runners of the bob.

The numeral 4 indicates the push-rod, mounted to slide in suitable bearings 5 and 6 on the upper portion of the cross-bar 3 and pole 2, respectively. The rear end portion of this push-rod 4 is flattened and, as shown, bears directly upon the chafing-plate 7, rigidly secured to the cross-bar 3 and projecting forward thereof. The flattened rear end portion of the push-rod 4 is provided with a vertically-projecting stud 8, on which is pivoted a primary beam 9 of a two-horse evener, including also whiffletrees 10, pivotally attached to the ends of said beam 9 and to which of course the horses will be hitched in the usual way.

The forward end of the push-rod 4 is preferably turned upward at 4^a , so that it is adapted to be engaged by the neck-yoke 11 when the latter is forced backward on the

pole. The neck-yoke 11 has the usual ring 12, which works loosely on the end of the pole 2.

The numeral 13 indicates the spring-latch, which is attached at one end to the rear portion of the push-rod 4 and the downturned free end of which works through a perforation in the flattened portion of said rod and is adapted to engage with the forward end of the chafing-plate 7, and when the push-rod 4 is moved forward to an extreme position this latch is adapted to be raised and released by a cord 14, attached to the free end thereof, passed over a guide-sheave 15, mounted, as shown, on the intermediate portion of the equalizing-beam 9. The rear end of this cord 14 may be extended within the reach of the driver, seated at some point on the sled or on the load, so that the driver may release the said latch at will.

The pronged frame 16 is pivotally connected, as shown, by a rod 17, and lugs 18, on the transverse beam of the bob. The free end of this frame 16 projects forward, and the counter-shaft 19 is loosely journaled in the prongs thereof some little distance rearward of the extreme forward ends of said prongs. The forward ends of the prongs of said frame are turned upward at 16^a for a purpose as will presently appear. Rigidly secured on the shaft 19 is a pair of toothed heads 20, and rigidly secured to said shaft between said pronged heads is a friction-drum 21 of considerably less diameter than the said pronged heads.

For coöperation with the friction-drum 21 a flexible metallic brake-strap 22 is provided. This strap 22, as shown, is attached at one end to the transverse bar of the frame 16 and is brought forward over the peripheral surface of said drum and then turned downward and backward and connected by a short link 24 to the rear end of the supplemental push-rod 25. The forward end of this push-rod 25 is pivotally connected to a head 26 on the rear end of the push-rod 4. The transverse bar of the frame 16 is provided with a pair of laterally-spaced forwardly-projecting ears 27, that have flat bearings in the intermediate portion of the shaft 19 and are in turn provided with the pinion-lugs 28. Lifting-rods 29, pivotally attached at the forward ends to the head 26 of the push-rod 4, are at their rear ends passed loosely through perforations

in the lugs 28 and are provided at the rear of said lugs with shoulders or nuts 30, which engage with said lugs 28.

The operation of the improved brake is substantially as follows: Under draft strains on the equalizing-beam 9 the push-rod 4 is drawn forward until its rear end heads 26 engage with the guide-bearing 5 on the cross-bar 3. Under this forward movement of the push-rod 4 the rods 29, acting on the lugs 28, lift the free end of the frame 16 high enough to carry the teeth of the heads 20 out of engagement with the road-bed. The spring-latch 13 engages with the forward edge of the chafing-plate 7 to lock the push-rod 4 and other parts in their normal positions just noted. In running downhill the sled will of course have a tendency to run ahead, and hence will push against the neck-yoke 11. To throw the improved brake device into action, the spring-latch 13 is raised by pulling on the cord 14, whereupon the backward thrust of the neck-yoke on the push-rod 4 pushes backward on the rods 25 and 29, thereby dropping the toothed heads 20 into engagement with the road-bed or runway. The backward thrust on the rod 25 serves to tightly clamp the brake-strap 22 against the periphery of the friction-drum 21 with a force depending on the tendency of the sled to run ahead. As is evident, when the toothed heads 20 are in contact with the road-bed the sled can run ahead only by rotating the said toothed heads, and hence it is evident that the sled will be held against forward movements with a force depending upon the friction between the friction-drum 21 and the brake-strap 22. When the toothed wheels are in contact with the road-bed, the upturned ends 16^a of the prongs of the frame 16 serve as shoes or runners to prevent the forward portion of the frame from being gouged into the road-bed. It will be noted that the toothed wheels do not engage with those portions of the road-bed which are passed over by the runners of the sled, but are arranged to engage with the road-bed those portions which are passed over by the horses. Hence the smooth sluices or runways of the sled-runners are not broken up.

The improved brake described may be constructed and applied at a comparatively small cost and is highly efficient for the purposes had in view. It will of course be understood that the brake described is capable of many modifications within the scope of my invention as herein set forth and claimed.

What I claim, and desire to secure by Letters Patent of the United States, is as follows:

1. The combination with a sled, of a toothed head movable into and out of contact with the road-bed, a variable-action friction member operative to frictionally resist the rotation of said toothed wheel, and a con-

nection for moving said head into contact with the road-bed and for setting the frictional brake under a frictional tension depending on the force transmitted through said operating connection, substantially as described.

2. The combination with a sled having a pole, of a push-rod having a limited movement on said pole, a draft-equalizer applied to the rear portion of said push-rod, a neck-yoke operative on the forward end of said push-rod, a pivoted frame applied to said sled, a toothed wheel carried by the free end of said frame and engageable with the road-bed, a friction-brake operative to resist rotation of said toothed head, and a connection from the said push-rod to said friction-brake, for setting said brake under a rearward movement of the said push-rod, substantially as described.

3. The combination with a sled having a pole, of a frame pivoted to said sled with its free end projecting forward and transverse shaft journaled in the free portion of said pivoted frame, a pair of toothed heads carried by said shaft and engageable with the road-bed, a friction-drum on said shaft, a brake-strap attached at one end of said frame and working on the periphery of said friction-drum, a push-rod extending along said pole, and having a longitudinal movement with respect thereto, a draft-equalizer applied to the rear portion of said push-rod, neck-yoke operating on the forward end of said push-rod, a rod attached to the rear end of said push-rod, and with the free end of said pivoted frame for raising the latter and said toothed heads under a forward movement of said push-rod, and a rod attached to the rear end of said push-rod and to the free end of said brake-strap for setting the brake under a rearward movement of said push-rod, substantially as described.

4. The combination with a sled having a pole and a chafing-plate applied to the rear portion of said pole, and a frame 16 pivotally attached at its rear end to said sled, a shaft 19 loosely journaled in the forward portion of said frame 16, and provided with toothed heads 20, and with the intermediate friction-drum 21, brake-strap 22 attached at one end to said frame 16 and frictionally engaging the periphery of said drum 21 and push-rod 4 having a sliding movement on said pole, a draft-equalizer applied to the rear portion of said push-rod and neck-yoke, operative on the forward portion of said push-rod, a spring-latch cooperating with said chafing-plate 7 to hold said push-rod in a forward position, said push-rod having a head at its rear end for limiting its forward movement, a rod 29 attached to the rear end of said push-rod 4, and into the free end of said frame 16 for raising said toothed heads out of contact

with the road-bed under a forward movement of said push-rod, and the rod 25 attached to the rear end of said push-rod 4, and connected to the free end of said brake-strap
5 22 and serving to set the brake under a rearward movement of said push-rod 4, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

BERNT M. WEBERG.

Witnesses:

W. W. WINCHESTER,
SUSIE FAY