No. 706,515. Patented Aug. 12, 1902.

V. BERFORD.

SOD LINE CUTTER MECHANISM FOR RAILWAY TRACK APPLIANCES.

(Application filed June 10, 1901.)

(No Model.)

FIG. 1.

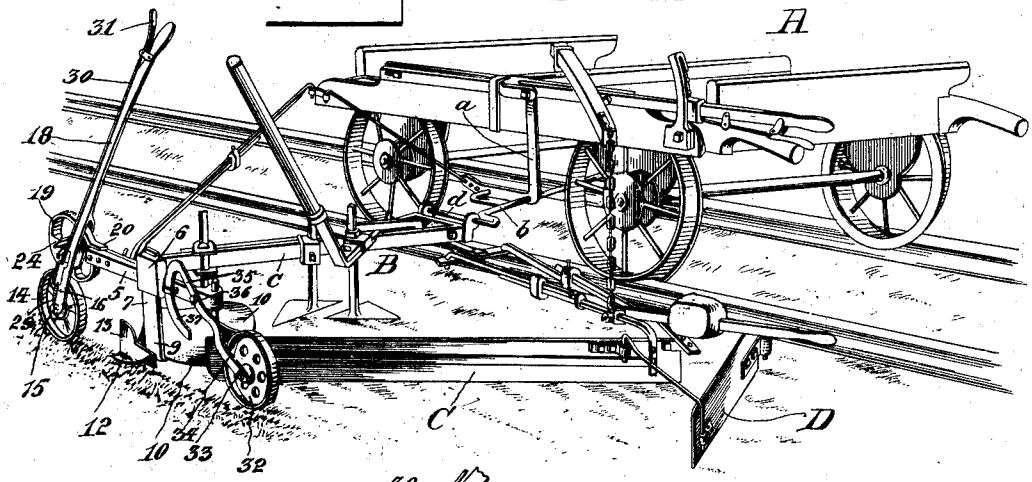


FIG. 2.

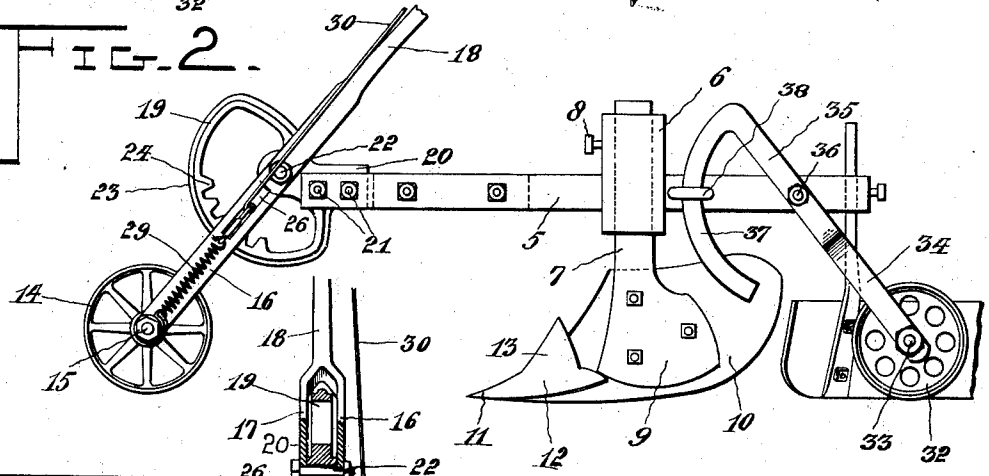


FIG. 4.

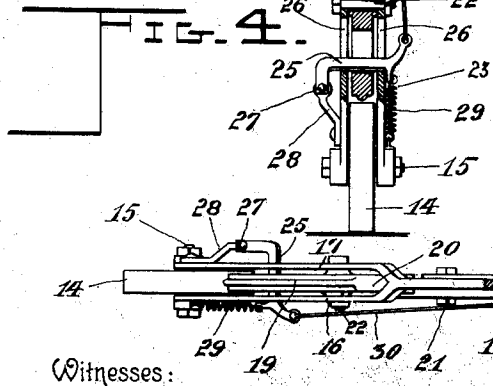


FIG. 3.

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UNITED STATES PATENT OFFICE.

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SOD-LINE-CUTTER MECHANISM FOR RAILWAY-TRACK APPLIANCES.

SPECIFICATION forming part of Letters Patent No. 706,515, dated August 12, 1902.

Application filed June 10, 1901. Serial No. 63,856. (No model.)

To all whom it may concern:

Be it known that I, VICTOR BERFORD, a subject of His Majesty the King of Great Britain, residing at Tara, county of Bruce, Province of Ontario, Canada, have invented certain new and useful Improvements in Sod-Line-Cutter Mechanism for Railway-Track Appliances; and I do hereby declare that the following is 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 relates to a sod-line-cutter mechanism for railway-track appliances of the class disclosed by a prior application for United States Letters Patent filed by me on November 23, 1900, Serial No. 37,318.

The primary object of the present invention is to provide an improved mechanism for sharply and cleanly cutting the sod at a certain distance from and parallel to the line of railway-track, whereby the encroachment of the grass upon the shoulder or slope of a railway-track may be limited.

A further object of the invention is to provide a cutter mechanism of this class with means for regulating the depth of the cut by the sod-line cutter and also to furnish an adjustable support for the outer end of the frame-bar, to which a gang of subsoil weed-destroying cutters are attached.

To the accomplishment of these ends my invention consists in the novel construction and arrangement of parts, which will be hereinafter fully described and claimed.

In the accompanying drawings, forming a part of this specification, Figure 1 is a perspective view of a railway-track appliance equipped with a sod-line cutter of my invention. Fig. 2 is an enlarged view, in side elevation, of the sod-line cutter disconnected from the other elements of the track appliance. Fig. 3 is a plan view of the parts shown by Fig. 2. Fig. 4 is a sectional elevation looking at the front end of the sod-line cutter.

The same numerals and letters of reference denote like parts in each of the several figures of the drawings.

In Fig. 1, A designates the wheeled carriage, which is adapted to travel on a railway-track, and this carriage supports a hanger *a*, to which is connected a carrier *b*, having the framework *c* of the weed-destroying mechanism B connected hingedly thereto, as at *d*. In rear of the weed-destroying mechanism is arranged the slope dresser-rake C and the tie dresser-rake D of the ballast-dressing mechanism; but as the weed-destroying mechanism and as the ballast-dressing mechanism are not claimed herein as a part of this invention I have not considered it necessary to more particularly describe said mechanisms, because they form the subjects-matter of other applications filed by me of even date herewith.

I will now proceed to describe the improved sod-line-cutter mechanism, which is shown more particularly by Figs. 2, 3, and 4 of the drawings and is represented in its operative relation to the weed-destroying mechanism and to the ballast-dressing mechanism by Fig. 1 of the drawings.

5 designates the carrier-bar that affords the support for the several elements of the sod-line-cutter mechanism, and this carrier-bar is arranged in a position substantially at right angles to the extensible bar which forms the framework of the weed-destroying mechanism. This carrier-bar is secured firmly to the framework *c* in any suitable way, and said carrier-bar normally occupies a horizontal position, and it lies at a suitable elevation above the surface of the ground and parallel with the wheeled carriage A. This carrier-bar is provided at a point intermediate of its length with a vertical sleeve-socket 6, the same being angular in cross-section and slidably receiving the cross-sectionally angular standard 7, the latter being secured firmly in the sleeve-socket by the clamping-screw 8, whereby the standard is adapted to be raised or lowered with relation to the carrier-bar by moving the same in the sleeve-socket, as will be readily understood. This standard is enlarged or expanded at its lower portion to provide the foot 9, to which is firmly secured the moldboard 10, the latter terminating at its front end in the point 11. On the land side of the moldboard is disposed the vertical share 12, having the inclined cutting edge 13, which is continuous with the point 11. The employment of the moldboard, the point, and the vertical share provide a cutter mechanism adapted to overturn the sod on the slope

or shoulder of a railway-track at a predetermined line parallel with the length of the track, whereby the limit of the encroachment of the sod or weeds upon the track shoulder or slope will be sharply defined by the action of the cutter mechanism.

The carrier-bar 5 is equipped with suitable wheels at the front and rear ends thereof, and these wheels are sustained in operative relation to the carrier-bar by certain adjustable devices which permit the carrier-bar 5 and the cutter devices to be raised or lowered, whereby the cutter devices may be adjusted to regulate the depth of the cut according to the condition of the ballast or of the sod.

The caster-wheel 14 at the front end of the sod-line-cutter mechanism has its axle 15 journaled in the members 16 17, forming the fork for the regulating-lever 18. A yoke 19 is cast in a single piece of metal with a shank 20, that is firmly bolted at 21 to the front end of the carrier-bar 5, and the forked lower end of the regulating-lever 18 is arranged to straddle the yoke 19 at a point close to the front end of the carrier-bar, thus making provision for the reception of the fulcrum-bolt 22, which passes through the forked part of the lever and through the yoke 19, so as to effectually connect the lever to the framework of the sod-line-cutter mechanism through the medium of the yoke 19, all as clearly shown by Figs. 2 and 4. The yoke is provided with an arcuate length or section 23, which is concentric with the fulcrum 22 of the lever, and on the inner end of this arcuate length or section is provided a series of teeth 24, with either of which is adapted to engage the transverse portion of a latch 25, the latter extending through slots 26, which are provided in the members 16 17 of the forked portion of the lever, thus disposing the latch 25 transversely across the lever-fork, as shown more clearly by Fig. 4. One end of the latch is bent and is pivoted, as at 27, to a bracket-plate 28, that is fastened securely to the fork member 17, and the other end of this latch has a spring 29 and a pull-rod 30 connected therewith. This spring is attached to the member 16 of the lever-fork in a manner to normally draw the pivoted transversely-arranged latch 25 into engagement with one of the teeth 24 of the yoke, thus locking the lever 18 in fixed relation to the carrier-bar. The pull-rod 30 is shown by Fig. 1 as connected to a hand-grip 31, which is provided at the upper end of the regulating-lever 18, whereby the operator is able to manipulate the hand-grip and make the rod withdraw the latch 25 from engagement with the yoke, thus allowing the lever to be adjusted to a new position and to raise or lower the caster-wheel 14 with respect to the plane of cutter devices before the latch 25 is again drawn by this spring 29 into locking engagement with the yoke.

The rear end of the carrier-bar is supported by a trailing wheel 32, which has its axle 33 supported in the lower forked end 34 of the trailing hanger 35. This hanger is arranged in an inclined position, so as to make the trailing wheel 32 travel in rear of the moldboard, and said hanger is pivotally supported by the bolt 36 on the rear portion of the carrier-bar 5. (See Figs. 2 and 3.) The upper front end of the trailing hanger is furnished with a curved arm 37, which is struck on an arc concentric with the hanger-pivot 36, and this arm is clamped adjustably to the carrier-bar by means of the yoke 38, the same being secured to the carrier-bar and embracing the curved arm 37 of the trailing hanger. It is evident that the clamping-yoke 38 may be slackened from engagement with the arm 37, and thereby permit the hanger 37 to be turned on its pivot 36 in a direction to raise or lower the trailing wheel 32, after which the clamping-yoke should be again tightened, so as to firmly hold the hanger 35 in its adjusted position.

From the foregoing description, taken in connection with the drawings, it will be seen that the lever 18 and the trailing hanger 35 may be adjusted in order to support the carrier-bar 5 and the outer end of the frame-bar *c*, forming a part of the weed-destroying mechanism, at the desired distance above the ground; but the lever 18 may be adjusted independently of the hanger 35, or vice versa, thus making provision for adjustment of the moldboard and the point, so as to vary the angle of presentation of the cutter devices to the ground, and that the standard 7 may be raised or lowered in the sleeve-socket, so as to adjustably support the moldboard with relation to the carrier-bar.

The frame-bar *c* of the weed-destroying mechanism is extensible, and the carrier-bar 5 is thus adapted to be shifted to different positions away from the railway-track.

Changes within the scope of the appended claims may be made in the form and proportion of some of the parts, while their essential features are retained and the spirit of the invention is embodied. Hence I do not desire to be limited to the precise form of all the parts as shown, reserving the right to vary therefrom.

Having thus described my invention, what I claim as new is—

1. In an apparatus of the class described, the combination with a carriage, and a framework extending outwardly therefrom, of a horizontal carrier-bar, suitable wheel-supports connected adjustably to said carrier-bar and each having a ground-wheel, and sod-line-cutter devices mounted on the carrier-bar between the connection of the wheel-supports thereto, substantially as set forth.

2. In an apparatus of the class described, the combination with a carriage, and a framework extending outwardly therefrom, of a carrier-bar, wheel-supports connected to the fore and after ends of the bar and adjustable independently of each other, suitable wheels mounted in the wheel-supports, and sod-line-

cutter devices mounted on the carrier-bar, substantially as set forth.

3. In a sod-line-cutter mechanism for railway-track appliances, the combination with a wheeled car, and a suitable frame extending outwardly therefrom, of weed-cutter devices on the frame, a carrier-bar lying substantially parallel to the length of the car and attached to the frame, a caster-wheel having adjustable connection with said carrier-bar, and sod-line-cutter devices mounted on the carrier-bar beyond the operative plane of the weed-cutter devices, substantially as set forth.

4. In an apparatus of the class described, the combination with a carriage and a suitable framework extending outwardly therefrom, of a carrier-bar, a standard attached to said carrier-bar and provided with a vertical share at one side of a moldboard, and suitable wheels for supporting the carrier-bar, substantially as set forth.

5. In an apparatus of the class described, the combination with a carriage and a suitable framework extending outwardly therefrom, of a carrier-bar having sod-line-cutter devices mounted thereon, a lever fulcrumed on the carrier-bar and provided with a caster-wheel, and means for locking the lever in adjustable relation to the carrier-bar, substantially as described.

6. In an apparatus of the class described, the combination with a carriage and a suitable framework extending outwardly therefrom, of a carrier-bar having sod-line-cutter devices attached thereto, a lever mounted on the carrier-bar and provided with a caster-wheel, and a trailing hanger supporting a trailing wheel and connected adjustably with the carrier-bar, substantially as described.

7. In an apparatus of the class described, the combination with a suitable framework, of a standard attached to said framework and provided with a moldboard and with a vertical share, a toothed yoke disposed on the framework in advance of the standard, a lever having a pivotal connection with the framework and carrying a caster-wheel, and a latch mechanism mounted on the lever and arranged for engagement with the yoke, substantially as set forth.

8. In an apparatus of the class described, the combination with a suitable framework, of a standard provided with suitable sod-line-cutter devices, a caster-wheel having adjustable connection with the framework and disposed in advance of said cutter devices, a trailing hanger pivoted on the framework in rear of the cutter devices and provided with a curved arm, a clamping-yoke for adjustably fastening said arm to the framework, and a trailing wheel mounted in the hanger, substantially as set forth.

9. In an apparatus of the class described, the combination with a suitable framework, of a standard fastened adjustably to the framework and provided with a moldboard and with a vertical share, a lever fulcrumed on the framework in advance of the standard and supporting a caster-wheel, means for locking the lever in adjustable relation to the framework, a trailing hanger pivoted to the framework in rear of the share and supporting a trailing wheel, and means for adjustably holding the trailing hanger with relation to the framework, said lever and said hanger being adjustable independently with respect to one another, substantially as set forth.

In witness whereof I have hereunto set my hand in the presence of two witnesses.

VICTOR BERFORD.

Witnesses:
J. F. SMITH,
C. E. START.