J. W. RICHMAN.

DEVICE FOR FEEDING BRUSHWOOD TO CUTTERS.

APPLICATION FILED JUNE 14, 1917.

1,271,773.

Patented July 9, 1918.

2 SHEETS—SHEET 1.

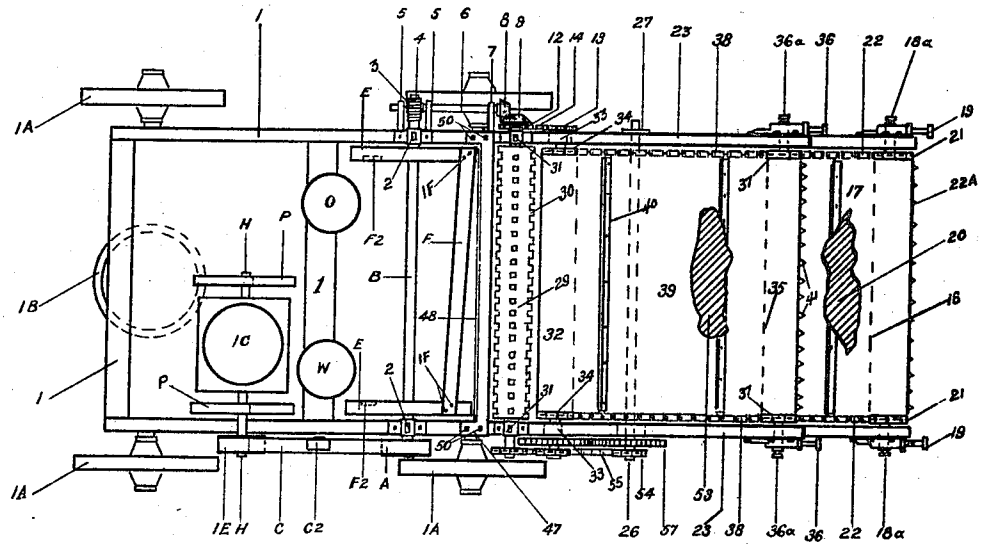


Figure 1

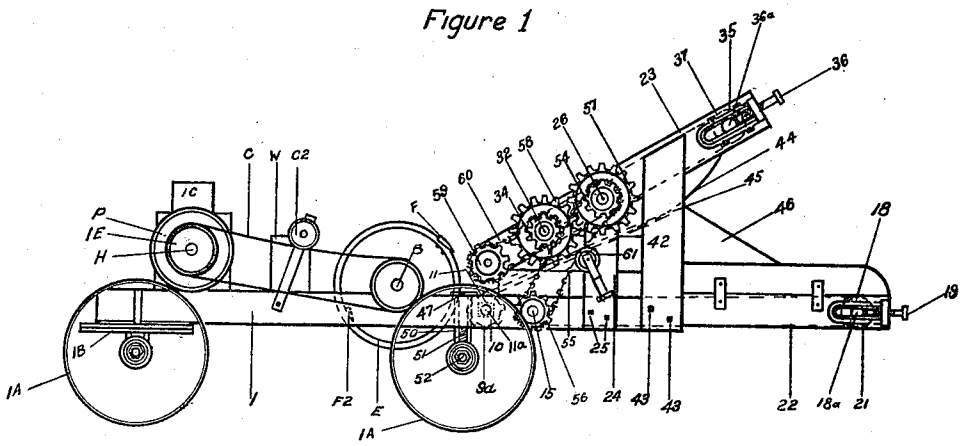


Figure 2

WITNESSES:—

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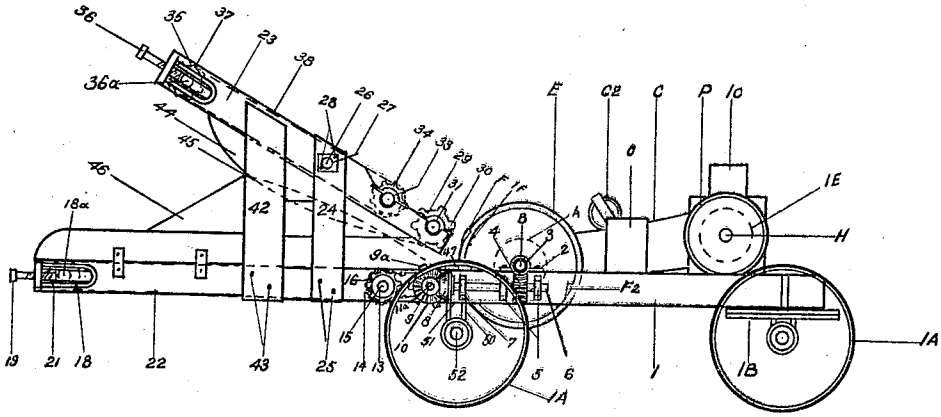


Figure 3.

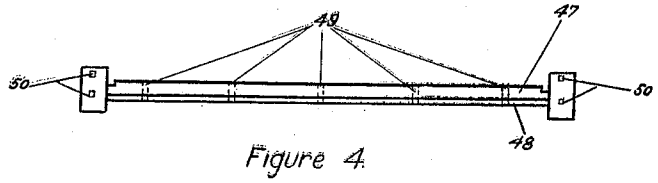


Figure 4.

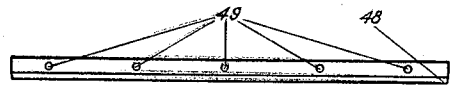


Figure 5.

WITNESSES.

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UNITED STATES PATENT OFFICE.

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DEVICE FOR FEEDING BRUSHWOOD TO CUTTERS.

1,271,773. Specification of Letters Patent. Patented July 9, 1918.

Application filed June 14, 1917. Serial No. 174,751.

To all whom it may concern:

Be it known that I, JOHN W. RICHMAN, a citizen of the United States, residing at Gilroy, in the county of Santa Clara and State of California, have invented certain new and useful Improvement in Devices for Feeding Brushwood to Cutters, of which the following is a specification.

This invention relates to a device for feeding brush-wood to a cutter. It is customary at a certain time of the year to prune a certain amount of the branches from fruit trees, in orchards and other places, leaving a large amount of brush-wood to be taken care of by removing the same from the orchards and burning or otherwise destroying said brush-wood.

The object of my invention is to provide a device for feeding material to a power driven cutter, that will shear off all protruding material as it is being fed to a cutter.

A further object of my invention is to provide a device that will feed material to a power driven cutter in such a manner that even the small material which stand upward and outward in all directions are either sheared off or carried inward and downward to a cutter.

A further object of my invention is to simplify devices of this character and to render them more positive in their operation as well as to provide means for adjustment of the working parts of said device, the mechanism being strong and durable, easily and readily operated.

Further objects and advantages will appear in the following description, it being understood that various changes in form, proportions and minor details of construction may be resorted to within the scope of the appended claims.

For a full understanding of the invention and the merits thereof, reference is to be had to the following description and accompanying drawings, in which—

Figure 1 is a plan view of my device showing arrangement of operating parts thereof.

Fig. 2 is an elevation of one side of my device showing gears which operate the upper feed roller, and upper feed apron and rollers.

Fig. 3 is an elevation of the other side of my device showing worm drive and bevel gears and sprocket wheels attached thereto.

Fig. 4 is a detail plan view of cutter bar and steel cutter blade attached thereto.

Fig. 5 is a detail plan view of the steel cutter blade.

Corresponding and like parts are referred to in the following description and indicated in all the views of the drawings by the same reference numbers.

My improved device for feeding brush-wood to a cutter forming the subject matter of the present invention comprises a main frame 1, which may be made of cast iron or any other suitable material of the required strength to maintain the working parts of my device. Said main frame 1 is supported by forward and rear wheels 1^A, and fifth wheel 1^B, said fifth wheel 1^B and forward wheels 1^A are placed near the forward end of frame 1 for the purpose of making short turns therewith.

An internal combustion engine 1^c is fastened to and near the forward end of frame 1.

Oil tank O and water tank W are shown fastened to frame 1 in any suitable manner and are adapted to furnish oil and water to said internal combustion engine 1^c.

Engine balance wheels P are shown fastened to shaft H.

A driving pulley 1^E is fastened to said shaft H, is adapted to drive the device by belt *c* connecting with pulley A, said belt *c* having a spring tension pulley c^2 connected therewith to keep said belt tight.

Said pulley A is fastened to balance wheel shaft B, said shaft B being connected to frame 1 by bearings 2 in any suitable manner.

Balance wheels E are fastened to shaft B.

Fastened to said balance wheels E is shearing knife F in a shearing position, the same being held in place on said balance wheels E by bolts 1^F.

Balance weight F^2 fastened to balance wheels E is for the purpose of balancing shearing knife F.

Worm drive is shown at 3, the same being an integral part of shaft B.

Worm gear 4 is shown in Figs. 1 and 3 connected to frame 1 by bearings 5 and shaft

6 in such a manner that the same will mesh with worm drive 3.

Near the outer end of shaft 6 is bearing 7 fastened to frame 1 in any suitable manner.

At the outer end of said shaft 6 is fastened bevel gear 8, meshing with bevel gear 9, the same being fastened to lower feed roller 10. Said lower feed roller 10 is made of cast-iron having projections thereon as shown at 9^a for the purpose of feeding the brush-wood to the cutting knife. Said lower feed roller 10 is fastened to shaft 11^a and is turnable in bearings 11, said bearings 11 being fastened to frame 1 in any suitable manner.

Behind said bevel gear 9 and fastened to feed roller 10 is sprocket wheel 12, said sprocket wheel 12 connecting with sprocket wheel 13 by sprocket chain 14, said sprocket wheel 13 being fastened to lower feed apron roller shaft 15 on each end thereof.

Lower feed apron roller 16 is fastened to said shaft 15, carrying lower endless feed apron 17 around end roller 18, said end roller 18 being fastened to shaft 18^a and adjusted by the screw 19, for the purpose of adjusting endless feed apron 17.

A floor 20 is shown fastened to the inside of frame 1 in any suitable manner, over which apron 17 passes, the same being for the purpose of preventing said endless feed apron 17 from sagging, and to prevent puncture of said apron 17 by the brush-wood being fed over the same.

Floor 20 may be made of sheet iron or of any other suitable material. Said endless feed apron 17 may be made of canvas or any other suitable material.

Lower feed apron 17 is operated by sprocket wheels 21, one on each end of rollers 16 and 18 connected together by sprocket chain 22.

Notched bars are shown at 22^A fastened to sprocket chains 22 and to lower feed apron 17 for the purpose of feeding brush-wood to lower feed roller 10.

The tilting frame 23 is mounted on shaft 26, which is journaled in the bearings 27, secured on the stanchions 24 by the bolts 28. The said stanchions 24 as shown are firmly secured to the frame 1 by the bolts 25.

Upper feed roller is shown at 29, positioned near the lower end of tilting frame 23. Said roller is made of cast-iron having projections 30 cast thereon for the purpose of feeding brush-wood to the cutter, said upper feed roller 29 being held in place by bearings 31, one on each side of said tilting frame 23.

Lower apron roller positioned on tilting frame 23 is shown at 32, held in place on tilting frame 23 by bearings 33, one on each side of said frame.

At each end of said roller 32 is secured a sprocket wheel 34.

Upper apron roller 35 is fastened to shaft 36^a and is positioned at the upper end of tilting frame 23 being adjustable therein by adjustable bearings 36, one on each side of frame 23.

Said roller 35 has sprocket wheels 37 fastened thereto, one on each end of said roller, to which is attached sprocket chains 38.

Upper endless feed apron 39 is shown connected to sprocket chains 38 by notched bars 40. These bars are made of angle iron having the upper side thereof notched as shown at 41 and are attached to upper endless feed apron 39 and sprocket chains 38 in any suitable manner, the same being adapted to feed brush-wood downward to the cutter.

Guide stanchions are shown at 42, one on each side of frame 1 and are bolted to frame 1 by bolts shown at 43. These stanchions are for the purpose of supporting and guiding the tilting frame 23 in place when in operation.

Attached to said tilting frame 23 are the steel shearing plates 44, one on each side thereof: the same when in operation come in contact with steel shearing plates 45 attached to guide plates 46, one on each side thereof, said plates 45 and 46 being adapted to cut any small brush-wood that may pass therebetween.

A cutter bar is shown at 47 to which is bolted the steel cutter blade 48 by bolts 49, shown in Fig. 4. Said cutter bar is bolted to frame 1 by bolts 50, and is supported by blocking 51 on axle 52.

A steel plate floor 53 is shown positioned on the inside of tilting frame 23, and is adapted to prevent endless feed apron 39 from puncture of said apron by the brush-wood being fed under the same. Said feed apron 39 may be made of canvas or any other suitable material.

Sprocket wheel 54 fastened to lower feed apron roller shaft 15 is connected by sprocket chain 55 to sprocket wheel 56 on tilting shaft 26 and drives gear 57. Said gear 57 being positioned on shaft 26, in turn drives gear 58.

Fastened to lower apron shaft 32 on tilting frame 23, connected with said gear 58 on shaft 32 is sprocket wheel 34, the same connecting with sprocket wheel 59 attached to upper feed roller 29 by sprocket chain 60 thereby driving upper feed roller 29.

A spring roller sprocket chain attachment is shown at 61, adapted to take up the slack of said chain 55 in the tilting motion of frame 23.

The operation of my device is as follows: Brush-wood is fed in on apron 17, the same coming in contact with notched bars 22^A, is fed forward until notched bars 40 engage said brush-wood. The same is fed forward thereby to lower feed roller 10 and upper feed roller 29, to cutter bar 47, and by said feed rollers 10 and 29 to steel cutter blade

48, and is there cut into small pieces by revolving shearing knife F fastened to balance wheels E.

Any brush-wood protruding through between shearing plate 44 and steel shearing plate 45 is cut by the tilting motion of frame 23. Guide plates 46, one on each side of frame 1 are for the purpose of concentrating the brush-wood to feed rollers 10 and 29.

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

1. A device for feeding material having a main frame with a tilting frame mounted thereon intermediate of the ends thereof, means for feeding material on said frame, and coacting cutters mounted on the sides of said main and tilting frames respectively, said cutters being substantially parallel with the direction of the advance of material by said feeding means.

2. A device for feeding material having a main frame, an upper tilting frame with a carrier above said main frame and coacting cutters mounted on the sides of said main and tilting frame respectively, said coacting cutters being substantially parallel with the direction of movement of said carrier.

3. A device for feeding material comprising a main frame with a carrier thereon, a tilting carrier frame with a carrier thereon mounted on said main frame and operating therewith, and coacting cutters mounted respectively on the sides of said main and tilting frames, said coacting cutters being substantially parallel with the direction of movement of said carriers.

In testimony whereof I have hereunto subscribed my name in the presence of two subscribing witnesses.

JOHN W. RICHMAN.

Witnesses:
PERCY O'CONNOR,
M. J. SELAYA.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."