B. O. WOOSTER.

MACHINE FOR CUTTING CORD WOOD.

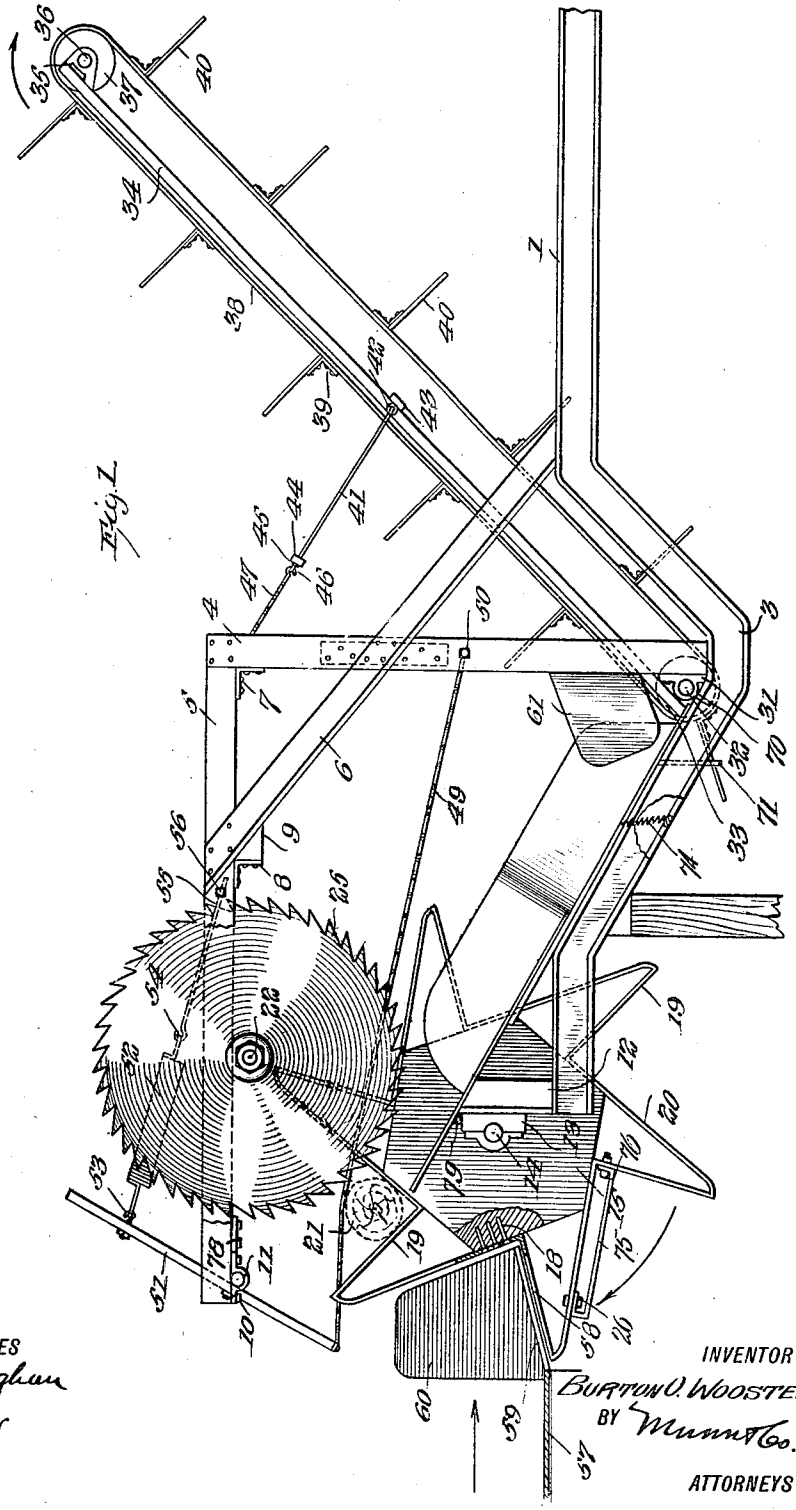
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1,123,056.

Patented Dec. 29, 1914.

2 SHEETS—SHEET 1.

Fig. 1.



WITNESSES

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C. E. Trainor

INVENTOR

Burton O. Wooster

BY Munn & Co.

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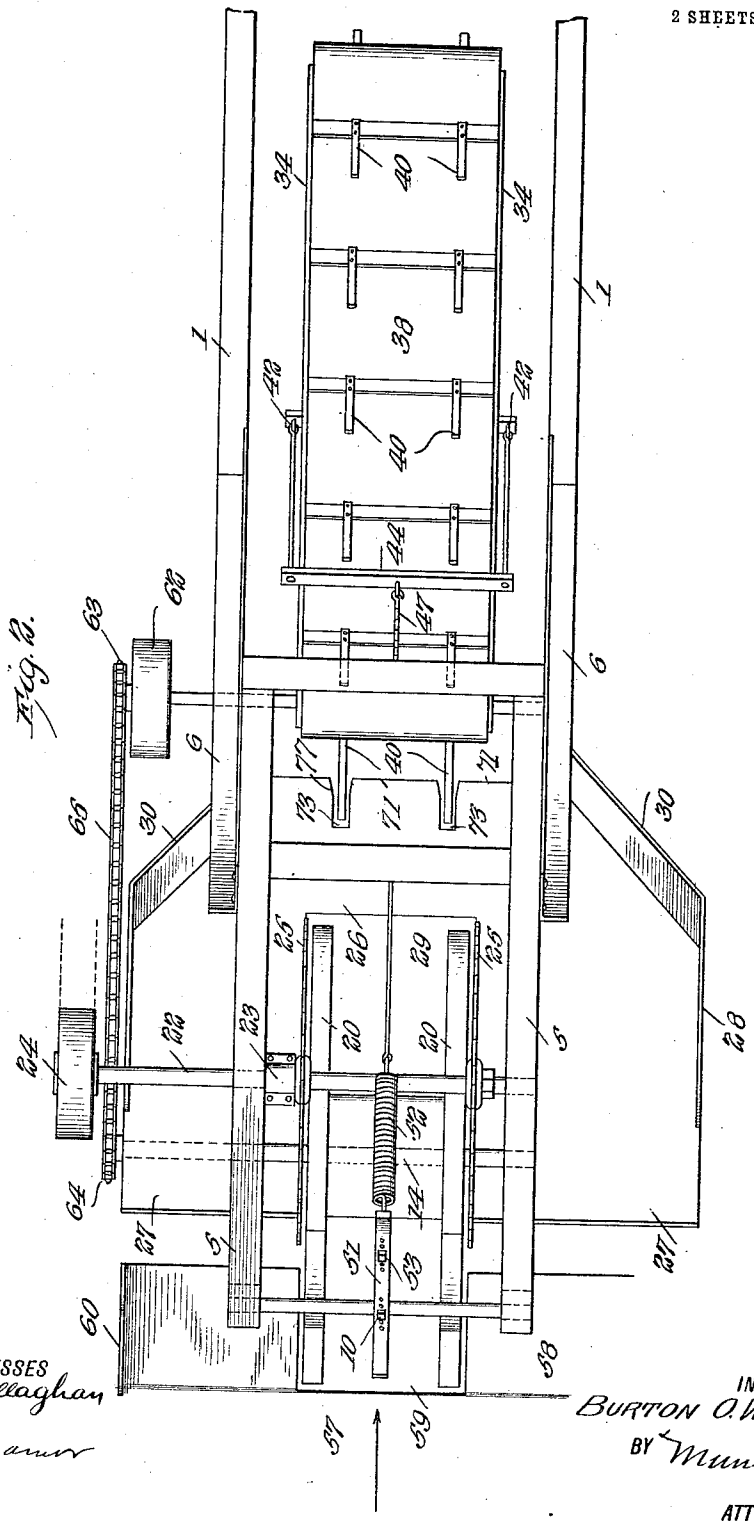
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2 SHEETS—SHEET 2.

Fig. 2.



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MACHINE FOR CUTTING CORD-WOOD.

1,123,056. Specification of Letters Patent. Patented Dec. 29, 1914.

Application filed March 17, 1911. Serial No. 615,045.

To all whom it may concern:

Be it known that I, BURTON O. WOOSTER, a citizen of the United States, and a resident of San Jose, in the county of Santa Clara, State of California, have invented a new and useful Improvement in Machines for Cutting Cord-Wood, of which the following is a specification.

My invention is an improvement in wood sawing machines, and consists in certain novel constructions and combinations of parts hereinafter described and claimed.

The object of the invention is to provide a machine of the character specified, especially adapted for sawing cord wood into stove lengths, wherein the operation of sawing and delivering the lengths is automatic, requiring only the feeding of the sticks of wood to the machine.

In the drawings: Figure 1 is a side view of the improvement, with parts in section; and Fig. 2 is a plan view.

The machine comprises a pair of laterally spaced parallel base bars 1, each of which is provided with a downwardly extending substantially V-shaped bend 3 intermediate its ends. A standard 4 extends upwardly from the bottom of each bend, and a horizontal bar 5 extends forwardly from the top of each standard. Each bar 5 is braced against the adjacent standard and the adjacent base bar 1 by means of a brace 6. The standards are connected at their upper ends by an angle plate 7 arranged in the angle between the standards and the bars 5, and a second angle plate 8 connects the bars 5 at the end of the brace 6. A wedge block 9 is arranged between the angle plate and the brace. The braces are also of angle material and the base bars are I-bars.

A sectional bearing 10 is provided at the front end of each bar 5, and a shaft 11 is journaled in the bearings. An upright 12 is arranged at the front end of each base bar, and each upright is provided with a sectional bearing 13. A shaft 14 is journaled in the bearings, and a disk 15 hexagonal in cross section is secured to the shaft near each end thereof. A strip is secured to each face of each disk, the strip being bent to form a stop on each face of the disk. The strip is secured to each face of the disk near the front edge of the face by nails or screws 18 to form the inclined side 20 of the stop, and is then bent inwardly to form the side 19 of the stop, the said side being radial to the disk. The shaft, disks and stops are a feeding device for the sticks of cord wood, the said sticks being laid on the vertical sides 19 of the stops and the said stops hold the stick firmly against the sawing device to be described.

A shaft 22 is journaled in bearings 23 secured to the under sides of the adjacent bars 5, and the one end of the shaft extends beyond the frame and is provided with a pulley 24 for connection by a belt to a suitable source of power. A plurality of circular saws 25 are secured on the shaft inside the frame, and the saws are spaced on the shaft to cut the sticks into proper billets or lengths for the stove.

A platform 26 is held on the base bars 1, and the platform extends beyond the frame at each side, and each of the extensions 27 is provided with a flange or guard 28 at its outer edge. The central portion of the platform is cut away at 29 to permit the passage of the disks and stops, and the extensions 27 incline inwardly at their rear ends to the frame, the guards or flanges 28 each having an angular portion 30 following the edge of the inclined portions. The inclined portions of the extensions catch the billets when the sticks have been cut and guide the billets to a delivering mechanism to be described.

A sectional bearing 31 is connected with each standard 4 near its lower end, and a shaft 32 is journaled in the bearings. A roller 33 is secured to the shaft. A bar 34 is journaled at one end on the shaft near each end of the roller, and the opposite end of each bar is provided with a bearing 35. A shaft 36 is journaled in the bearings, and a roller 37 is secured to the shaft.

An endless belt or apron 38 is supported on the rollers 33 and 37, and angle plates 39 are arranged transversely of the belt at spaced intervals, and arms 40 are secured to the plates and extend outwardly from the belt. The platform 26 is inclined from front to rear so that the billets, as they fall from the feeding device, move down toward the forward and lower end of the elevator, formed by the rollers and the apron, and are engaged by the arms 40 and carried upward and rearward by the apron. The elevator is supported by a hanger consisting of rods 41 pivoted at one end to eyes 42 on the ends of a cross bar 43 beneath the bars 34 and connected at their other end to a cross bar

44. The bar 44 is provided with an eye 45 at its center, and a chain 47 is connected at one end with the eye and at the other with the angle plate 7 intermediate its ends.

The sticks 21 are held on the stops by means of a flexible member 49, a chain in the present instance, having one end connected to a rod 50, extending between the standards 4 and having the other end connected with the lower end of a lever 51. The lever 51 has a coil spring 52 connected with its upper end, one end of the spring engaging a hook 53 on the lever and the other end a hook 54 on a rod 55 connected with a rod 56 extending between the bars 5. The spring is of sufficient strength to hold the chain 49 taut, and the lower end of the lever 51 extends low enough to bring the chain at approximately the lowest part of the saws. When the feeding device carries a stick upwardly toward the saws, the chains engage the stick and hold the said stick against the stops so that they will not be displaced by the action of the saws. Should, however, the saw meet with an obstruction, the sticks may yield to prevent damage. The spring permits the chain to yield, but not enough to permit the stick to be displaced. It will be evident that a greater number of chains may be used, if desired. The sticks are fed to the feeding device from a platform 57 having an upwardly inclined apron or extension 58 provided with slots 59 for permitting the passage of the stops. The apron or extension is provided at one side with a flange or gage plate 60 which correctly positions the sticks to be cut. The flange 60 is spaced from the adjacent saw the same distance that the saws are spaced apart, so that when a stick is placed with one of its ends in contact with the flange 60, three billets of equal length will be formed, provided that the stick is of a length three times the distance between the saws. The saws are spaced preferably sixteen inches apart, and the flange 60 is sixteen inches from the adjacent saw. Wood is as a rule forty-eight inches in length, so that with a stick of that length, three billets will be formed, each sixteen inches long. It will be noted that at one end each of the said bars 75 is provided with an angular lug fitting against the portion 19 of the strips, and the other end of each of the said bars 75 is doubled over upon the bar in spaced relation to fit against the portion 20 of the adjacent stop. A hood 61 is provided at each side of the frame, between the flange 30 and the elevator for moving the billets inwardly into engagement with the elevator.

The shaft 32 at the lower end of the elevator is extended outside of the frame and is provided with a pulley 62 and with a sprocket wheel 63. The shaft 14 of the roller 15 is also provided with a sprocket wheel 64 and a chain 65 connects the wheels 63 and 64. A belt from any suitable source of power may be connected with the pulley for driving the elevator, and the elevator drives the feed roller.

It will be evident that the pulley 62 might be connected with the shaft 22 so that all of the parts would move together. Or the elevator may be operated from the feeding device, the latter being operated manually by pushing the sticks toward the saw.

In operation, the sticks are placed on the disks against the stops by moving them up the inclined extension 58. As the shaft 14 rotates the stops pass up through the slot or opening 59, lifting a stick, and carrying it against the saws. The chains 49 hold the sticks in place, and as the billets are cut they pass down the platform 26 and are deflected onto the elevator, which delivers them at the rear of the machine and into a vehicle, if desired.

The platform 26 rests at its upper end on the uprights 12, and is jarred or agitated by means of radial pins 70 on the shaft 32, which engage the lower end of the platform, and lift the same and drop it onto the inclined sides of the bends 3. The lower end of the platform or hopper is slotted as shown at 73, to permit the passage of the arms 40 as they pass around the roller 33 on the shaft 32. That portion 71 of the material of the hopper between the slots and on the outer sides thereof is bent downwardly, to form guides for the arms as they pass around the said roller.

The bars 5 are connected at their front ends by a cross bar 78, and the platform or hopper is pivoted at 79 to the standard 12. Coil springs 74 connect the lower end of the hopper to the side bars 1, the said springs acting to hold the platform in place and return it to proper position when it is agitated by means of the radial pins 70 before mentioned. It will be noticed from an inspection of Fig. 2 that the outer ends of the slots 73 are flaring or enlarged as shown at 77 to permit the easy entrance of the arms.

The shaft or mandrel upon which the saws are mounted is turned down to receive the saws and shoulders are provided between the turned down portions and the main portions against which the saws abut. That portion of the mandrel between the pulley and the frame is of larger size than the other portion for this reason. When the saws become so worn that they do not cut through the stick of wood entirely, the bars 75 shown at the bottom of Fig. 1 are placed on the portions 20 of the strips. Each of the said bars has one of its ends bent angularly and secured to the portions 20 of the strips by means of rivets or bolts 76.

I claim:

1. In a machine of the character specified,

a frame, spaced co-axial saws journaled transversely of the frame, a feeding device comprising a shaft, radial stops arranged in alinement longitudinally of the shaft for supporting the sticks and presenting them to the saws, and means for yieldingly engaging the sticks and pressing them toward the stops, said means comprising a chain connected with the frame and arranged transverse to the sticks and in position for engagement thereby when lifted by the stops toward the saws, a spring interposed between one end of the chain and the frame, and means for delivering the billets from the frame.

2. In a machine of the character specified, a frame, spaced co-axial saws journaled transversely of the frame, a feeding device comprising a shaft, radial stops arranged in alinement longitudinally of the shaft for supporting the sticks and presenting them to the saws, and means for yieldingly engaging the sticks and pressing them toward the stops, said means comprising a chain connected with the frame and arranged transverse to the sticks and in position for engagement thereby when lifted by the stops toward the saws, and a spring interposed between one end of the chain and the frame.

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