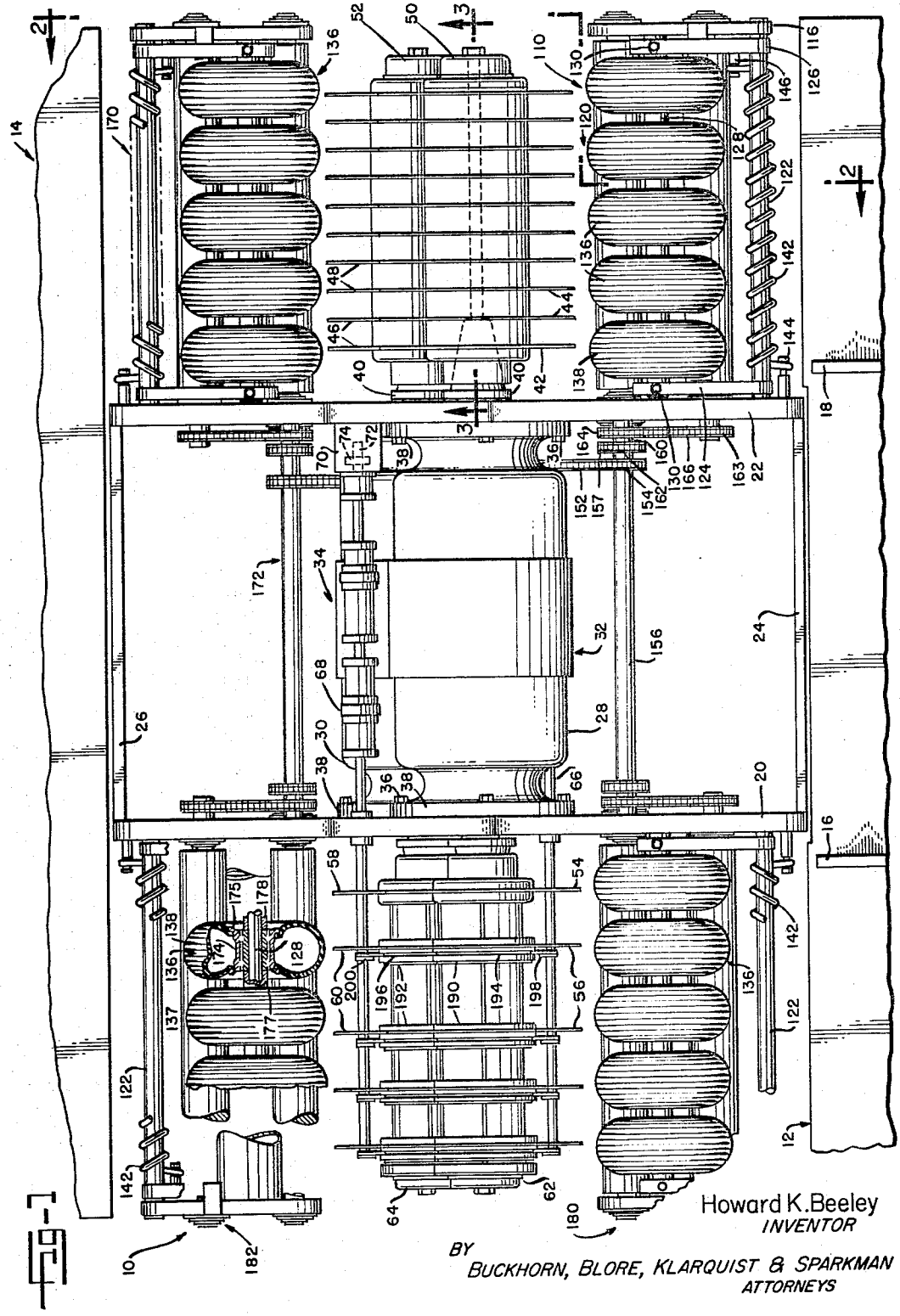
Sept. 27, 1966 H. K. BEELEY 3,275,045

EDGER

Filed March 2, 1964 2 Sheets-Sheet 1



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EDGER

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Fig-2

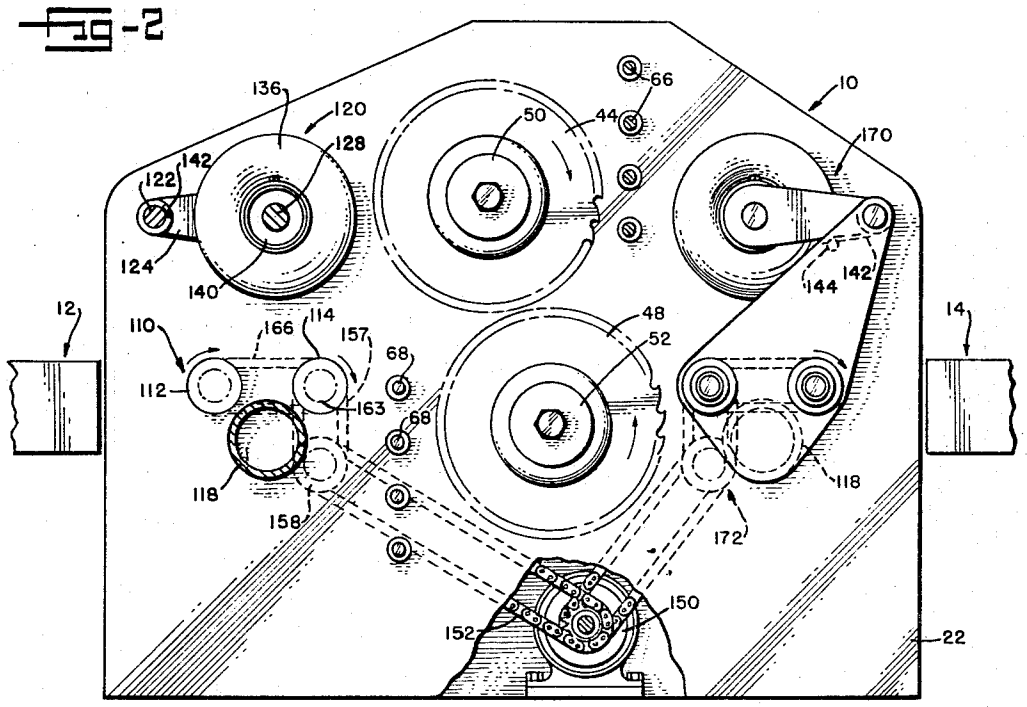
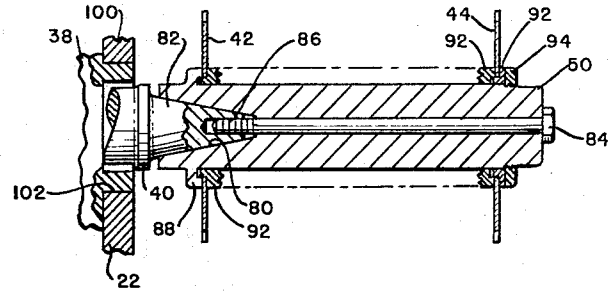


Fig-3



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EDGER

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This invention relates to an edger for sawing cants into boards, and more particularly to a cantilever type edger.

An object of the invention is to provide a new and improved edger.

Another object of the invention is to provide an edger of the cantilever type.

A further object of the invention is to provide an edger of the utmost simplicity in construction and occupying a minimum space, while having maximum precision.

Another object of the invention is to provide an edger having an electric motor drive in which a saw arbor is mounted in cantilever style on the edger and the motor is connected between two side frame plates to provide the frame for the saws.

The invention provides an edger having a frame comprising a pair of side plates and an electric motor positioned between the side plates and connected to the side plates to form a rigid frame therewith with a saw arbor connected to one end of the motor and supported in cantilever fashion thereby. Preferably infeed and outfeed rolls are hung by a cantilever framework from one of the side plates along with presser means for holding cants and boards against the infeed and outfeed rolls, respectively.

In an edger forming a specific embodiment of the invention there is provided a pair of vertical side frame plates between which there is positioned a double ended motor which is connected to the two side plates and forms a rigid frame therewith. Saw arbors are mounted on the ends of the motor shaft and extend outwardly from each end of the motor. Infeed rolls and outfeed rolls are mounted on opposite sides of the saw arbors and are supported by tubular frameworks carried by the side plates and pressers for the infeed and outfeed rolls are carried by the side plates and comprise pivotal frames carrying a plurality of pneumatic tires rotatably in side-by-side relationship for pressing downwardly against the cants and boards. If desired, the arbors on one or both sides of the motor may be provided with shiftable saws thereon, and saw guides engage the saws and are connected to setworks mounted between the two side plates, and an electric motor for driving the presser rolls also is mounted in the space between the two side plates so that compactness is provided.

A complete understanding of the invention may be obtained from the following detailed description of an edger forming a specific embodiment thereof, when read in conjunction with th appended drawings, in which:

FIG. 1 is a fragmentary, top plan view of an edger forming one embodiment of the invention;

FIG. 2 is a partially sectional view taken substantially along line 2—2 of FIG. 1; and

FIG. 3 is a vertical, sectional view taken along line 3—3 of FIG. 1.

Referring now in detail to the drawings, there is shown therein an edger 10 to which is fed slabs and cants by an infeed 12 and which saws the slabs and cants into boards and wanes, which are conveyed away from the edger by an outfeed 14. The infeed 12 has laterally shiftable straightedges 16 and 18 shiftable by the operator of the edger to precisely position the cants and slabs in feeding the cants and slabs to the edger 10. The edger includes side frame plates 20 and 22 which are connected together into a rigid frame work by plates 24 and 26 and housings

28 and 30 of motors 32 and 34 respectively. The motors are fastened rigidly to the plates 20 and 22 by capscrews 36 connecting flanged or belled ends 38 of the motor housings to the plates. The motors 32 and 34 are commercially available electric motors, and are of the double ended type having heavy duty bearings at each end of each of the motors, and have double ended shafts 40 rigidly carrying the rotors of the motors. At the righthand ends of the motors 32 and 34, as viewed in FIG. 1, there are mounted saws 42, 44, 46 and 48 in laterally fixed positions on saw arbors 50 and 52, and at the lefthand side of the edger 10, as viewed in FIG. 1, there are provided saws 54, 56, 58 and 60 mounted in laterally adjustable positions on saw arbors 62 and 64, the saws 56 and 60 being adjustable laterally relative to one another by groups of setworks 66 and 68 mounted as two units by brackets illustrated by bracket 70, which carries the setworks 68 adjustably thereon by means of screw 72 and nut 74 clamping the screw 72 adjustably to the bracket 70, the screw 72 being rigid with one of the setworks 68, each of the setworks 68 being provided with such mounting elements. Thus the setworks 66 and 68 are mounted between the plates 20 and 22 so that no extra overall space is required for the setworks.

The arbor 50 has a tapered socket 80 (FIG. 3) therein fitting closely upon tapered end 82 of the shaft 40 and locked tightly on the tapered end 82, which is complementary to the socket 80, by an elongated capscrew 84 threaded into tapped bore 86 in the tapered end 82. The screw 84 locks the arbor 50 to the shaft 40 rigidly and in alignment with the shaft 40. The arbor 50 has a cup-shaped flange 88 at the inner end thereof, and the flange 88 cooperates with a torque plate 92 splined to the arbor 50 and pinned to the saw 42 to key the saw 42 to the arbor 50. The saws 44 are mounted by torque plates 92 and a retaining nut 94 on the arbor and are splined thereto to key the saws 44 to the arbor 50. The arbor 50 and the saws 42 and 44 thereon may be removed from the shaft 40 as a unit merely by unscrewing the elongated capscrew 84 and pulling the arbor 50 off the tapered end 82 of the shaft 40, and another unit identical therewith may be placed on the shaft 40 while the saws of the removed unit may be sharpened or otherwise treated for maintenance. The arbors 52, 62 and 64 are mounted on the shafts 40 of the motors 32 and 34 by identical structure, which will not be described in detail.

As illustrated in FIG. 3, both flanged ends 38 of the housing 28 of the motor 32 have reduced end portions or bosses 100 whose external surfaces are precisely concentric with the shaft end 40 and which fit into precisely formed, aligned bores 102 formed in the side plates 20 and 22. The ends of the motor housing 30 are similarly positioned in aligned bores in the plates 20 and 22. The upper saws 42, 44, 54 and 56 are mounted in horizontally offset and vertically overlapping positions relative to the lower saws 44, 48, 58 and 60, respectively, as illustrated best in FIG. 2, with each of the opposed pairs of upper and lower saws cutting slightly over halfway through a cant or slab of nominal thickness. The saws 42, 46, 54 and 58 saw outer cuts in the cants and slabs, and travel through wane, knots and rough material more than the saws 44, 58, 56 and 60, and consequently are made substantially thicker and more rugged than the saws 44, 48, 56 and 60. That is, the saws 42, 46, 54 and 58 are substantially more rugged for the more rugged duty required therefrom.

To feed cants to the saws 42 and 48 there is provided an edger infeed 110 (FIGS. 1 and 2) including driven roller infeed rolls 112 and 114 journaled in bearings carried by the plate 22 and by a plate 116. The plate 116 is supported by a tubular support 118 fixed rigidly at one end to the plate 22 and to the other end of which the

plate 116 is rigidly secured. The edger infeed 110 includes a presser 120 for holding the cant tightly against the rolls 112 and 114. The presser 120 includes a shaft 122 journaled in the plates 22 and 116 having arms 124 and 126 keyed rigidly thereto, the arms mounting at the outer ends thereof an axle 128 secured thereto by setscrews 130. The axle 128 carries at spaced points therealong pneumatic tire wheels 136 having tires 137 preferably provided with annular grooves 138, the wheels 136 having bearings 140 mounted on the axle 128, the bearings 140 being suitably fixed against longitudinal movement along the axle 128 to maintain the spacing of the wheels 136 on the axle 128. A torsion spring 142 fixed at one end to a pin 144 rigidly carried by the plate 22 has its other end connected to a pin 146 fixed rigidly to the arm 126. The spring 142 biases the arms 124 and 126 clockwise, as viewed in FIG. 2, to press the pneumatic rubber tires of the wheels 136 downwardly against the cant to press the cant against the rolls 112 and 114, which have roughened or toothed surfaces to drivingly engage the lower face of the cant and advance the cant to the saws above the arbor 52 and below the arbor 50.

As best illustrated in FIGS. 1 and 2, the rolls 112 and 114 are driven in clockwise directions, as viewed in FIG. 2, by an electric motor 150 mounted below the motors 32 and 34, a chain 152, a sprocket 154 keyed to shaft 156 journaled in the plates 20 and 22, chain 157 driven by a sprocket 158 mounted on jack shaft 160, sprocket 162 keyed to the jack shaft 160, a second sprocket 164 keyed to the jack shaft 160, which is journaled in the plate 22, a chain 166 and a sprocket 168. The boards and wane sawed from the cant are fed from the saws 42, 44, 46 and 48 by an edger outfeed 170 which is identical with the infeed 110 but is handed relative to the infeed 110 but driven in the same direction. The outfeed 170 is also driven by the motor 150 through a chain and sprocket drive 172 substantially identical, but reversed relative to, the chain and sprocket drive of the infeed rolls 112 and 114. At the lefthand side of the edger 10, as viewed in FIG. 1, there is provided an edger infeed 180 of similar construction to the edger infeed 110 and also there is provided an edger outfeed 182 similar to the outfeed 170.

The mounting of the pneumatic tire wheels 136 of the edger infeeds 110 and 180 and outfeeds 170 and 182 is identical, and is best illustrated by the wheel 136 of the outfeed 182 shown in cross-section and which includes a pneumatic tire 137 carried by a rim 174 mounted by bearing 175 and having an inner race 176 spaced by sleeves 177 and 178 on axle 128. The bearing 175 provides a low friction mounting for the wheel 136, and the parallel, circumferential grooves 138 provide excellent guides to grippingly engage the cants and slabs and the boards and wanes sawed therefrom to cause them to advance at right angles to the arbors 50, 52, 62 and 64.

By precisely mounting the precisely formed end portions 100 of the belled ends 38 of the motors 32 and 34 in the precisely milled bores 102 in the plates 20 and 22, the arbors 50, 52, 62 and 64 are kept in precisely parallel positions, the arbors 50 and 62, of course, being exactly aligned and the arbors 52 and 64 also being exactly aligned with each other. The saws 42, 46, 54 and 58 are mounted on the arbors 62 and 64 in fixed positions thereon, as is well known in the edger art, while the saws 56 and 60 are mounted by saw mounting bushings 190 and 192 which are splined to the arbors 62 and 64, and the bushings 190 and 192 have grooves 194 and 196 therein into which plates 198 and 200 of the setworks 66 and 68, respectively, project to slide the bushings 190 and 192 and the saws 56 and 60 carried thereby along the arbors 62 and 64 to desired positions.

The above described edger 10 is a very precise machine, is constructed with a maximum simplicity and a minimum number of parts and is very rugged in its construction. Other arrangements utilizing the principles

of the invention may, of course, be made. For example, only one arbor and the saws mounted thereon may be utilized to saw cants and wanes rather than to have two arbors mounting opposed saws thereon. Also, it may be desirable to have an arbor at only one end of the motor.

It is to be understood that the above-described arrangements are simply illustrative of the application of the principles of the invention. Numerous other arrangements may be readily devised by those skilled in the art which will embody the principles of the invention and fall within the spirit and scope thereof.

What is claimed is:

1. In an edger,
a pair of side frame plates mounted in parallel, vertical positions, one of the plates having an opening therein,
a double ended motor having a pair of end plates,
one end plate being provided with a boss fitting in the opening,
the motor having a shaft having an end projecting through the opening,
means securing the end plates to the side frame plates to rigidly mount the motor on the side frame plates and rigidly secure the side frame plates against movement relative to each other,
a saw assembly including an arbor and a plurality of saws carried by the arbor,
and means for detachably securing one end of the arbor to the end of the shaft projecting through the opening.

2. In an edger,
a pair of side frame plates mounted in parallel, vertical positions, one of the plates having an opening therein,
a double ended motor having a pair of end plates,
one end plate being provided with a boss fitting in the opening,
the motor having a shaft having an end projecting through the opening,
means securing the end plates to the side frame plates to rigidly mount the motor on the side frame plates and rigidly secure the side frame plates against movement relative to each other,
a saw assembly including an arbor and a plurality of saws carried by the arbor,
means for detachably securing one end of the arbor to the end of the shaft projecting through the opening,
a pair of outboard frame means mounted on the side of said one of the side frame plates more remote from the other side frame plate,
a plurality of feed rolls mounted on the outboard frame means,
and means positioned between the side frame plates for driving the feed rolls.

3. In an edger,
a pair of side frame plates mounted in parallel, vertical positions, one of the plates having an opening therein,
a double ended motor having a pair of end plates,
one end plate being provided with a boss fitting in the opening,
the motor having a shaft having an end projecting through the opening,
means securing the end plates to the side frame plates to rigidly mount the motor on the side frame plates and rigidly secure the side frame plates against movement relative to each other,
a saw assembly including an arbor and a plurality of saws carried by the arbor,
means for detachably securing one end of the arbor to the end of the shaft projecting through the opening,
a tubular post mounted rigidly on the side of said one of the side frame plates more remote from the

other side frame plate in a position extending parallel to the arbor,
a mounting plate fixed to the post,
a feed roll journaled in the mounting plate and said one of the side frame plates,
presser roller means,
and means mounting the presser roller means for movement toward and away from the feed roll.

4. The edger of claim 3 wherein the presser roller means comprises
an axle,
means mounting the axle for movement toward and away from the feed roll,
and a plurality of pneumatic tire wheels mounted rotatably on the axle.

5. In an edger,
a pair of side frame plates mounted in parallel, vertical positions having a pair of aligned openings therein,
a double ended motor having a pair of end plates provided with bosses fitting in the openings and having a shaft having ends projecting through the openings,
means securing the end plates to the side frame plates to rigidly mount the motor on the side frame plates and rigidly secure the side frame plates against movement relative to each other,
a pair of saw assemblies each including an arbor and in plurality of saws carried by the arbor,
and means for detachably securing the ends of the arbors to the ends of the shaft.

6. In an edger,
a pair of side frame plates mounted in parallel, vertical positions having a pair of aligned openings therein,
a double ended motor having a pair of end plates provided with bosses fitting in the openings and having a shaft having ends projecting through the openings,
means securing the end plates to the side frame plates to rigidly mount the motor on the side frame plates and rigidly secure the side frame plates against movement relative to each other,
a pair of saw assemblies each including an arbor and in plurality of saws carried by the arbor,
means for detchably securing the ends of the arbors to the ends of the shaft,
a pair of outboard frame means mounted on the sides of the side frame plates,
a plurality of feed rolls mounted on the outboard frame means and the side frame plates,

and means positioned between the side frame plates for driving the feed rolls.

7. In an edger,
a pair of side frame plates mounted in parallel, vertical positions having a pair of aligned openings therein,
a double ended motor having a pair of end plates provided with bosses fitting in the openings and having a shaft having ends projecting through the openings,
means securing the end plates to the side frame plates to rigidly mount the motor on the side frame plates and rigidly secure the side frame plates against movement relative to each other,
a pair of saw assemblies each including an arbor and a plurality of saws carried by the arbor,
means for detchably securing the ends of the arbors to the ends of the shaft,
and a setwork carried by one of the side frame plates for adjusting the saws of one of the arbors.

8. In an edger,
a pair of side frame plates mounted in parallel, vertical positions having laterally spaced pairs of aligned openings therein,
a pair of double ended motors each having a pair of end plates provided with bosses fitting in the openings and having a shaft having ends projecting through the openings,
means securing the end plates to the side frame plates to rigidly mount the motor on the side frame plates and rigidly secure the side frame plates against movement relative to each other,
a plurality of saw assemblies each including an arbor and a plurality of saws carried by the arbor,
and means for detachably securing the ends of the arbors to the ends of the shafts.

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