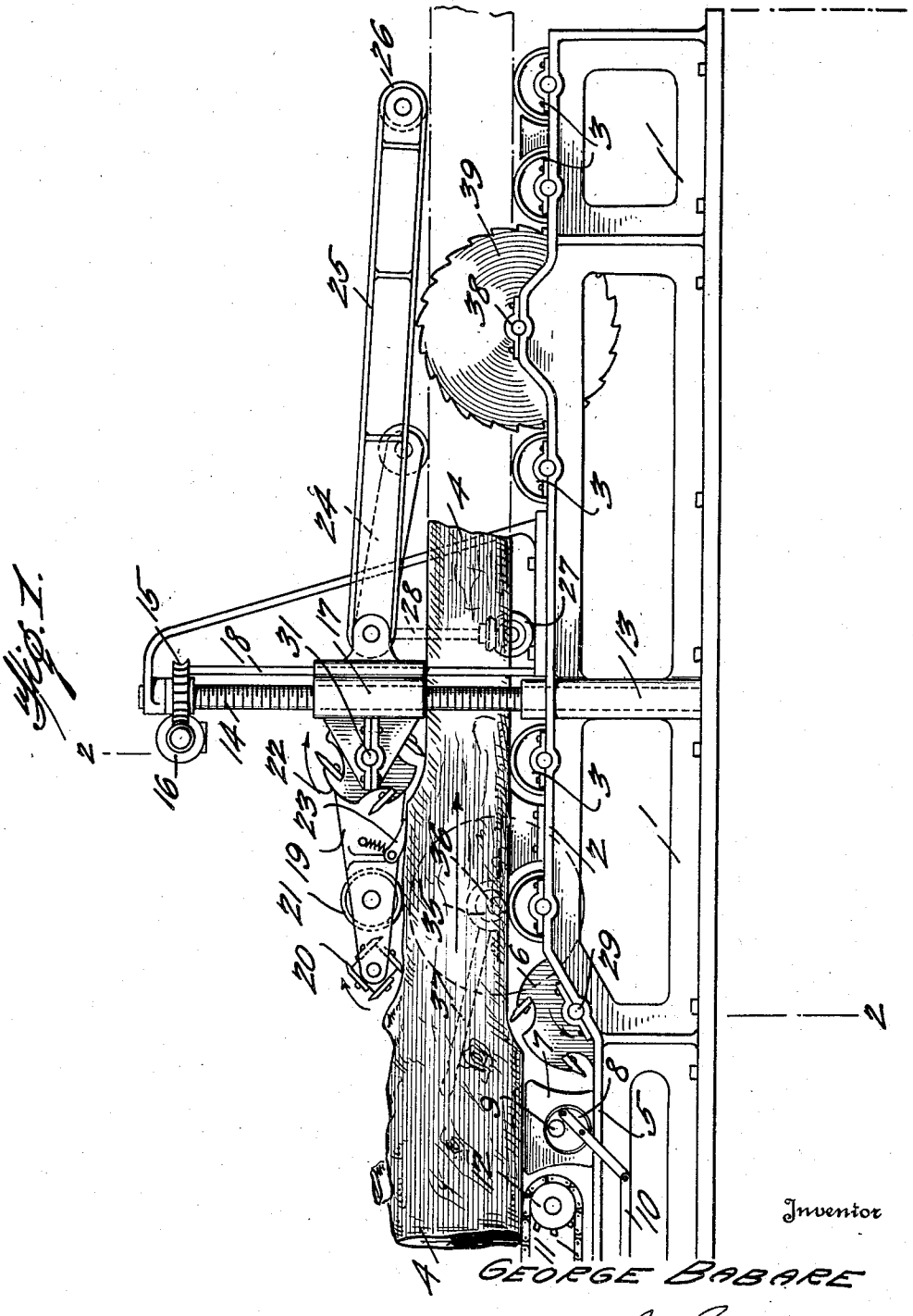
Sept. 29, 1931. G. BABARE 1,825,041

SAWING MACHINE

Filed March 29, 1929 2 Sheets-Sheet 1

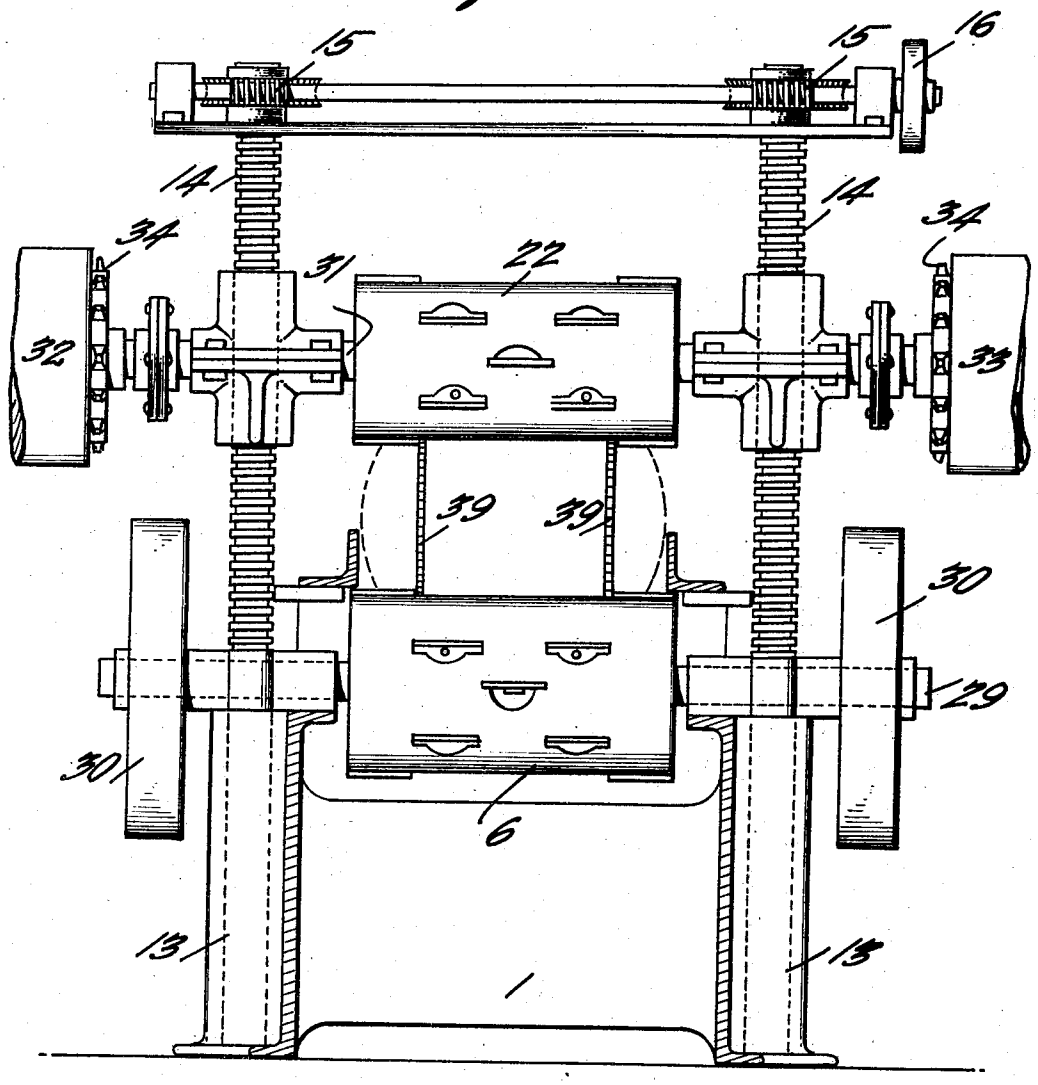


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Fig. 2.



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Patented Sept. 29, 1931 1,825,041

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SAWING MACHINE

Application filed March 29, 1929. Serial No. 351,029.

This invention is directed to an improvement in sawing machines wherein the log is trimemd on its upper and lower surfaces to a comparatively square surface and thereafter and in the same machine presented to the saws.

The primary object of the present invention is the provision of a unit machine of this type in which the irregularly shaped log may be automatically handled and cut with the minimum loss of timber to present flat upper and lower surfaces which are rigidly held and guided through the machine and presented to the saws for the sawing operation.

A further object of the present invention is the provision of means whereby the log trimming elements, particularly for the upper surface thereof, are adjustable to accommodate logs of different diameters and to insure that the log, when in the machine, will be guided rigidly along predetermined lines during the operation of the machine parts.

A further object of the invention is the provision of means by which the cutting elements for the lower surface of the log may be permitted an adjustable cut through the adjustment of log supporting elements.

A further object of the invention is the provision of a machine in which the guiding, cutting and sawing instrumentalities are associated in a relatively small, compact unit, whereby to permit the carrying out of the successive operations in close order, to thereby avoid rehandling of the log as is usually necessary where the described operations are the product of several independent machines.

The invention is illustrated in the accompanying drawings, in which:

Figure 1 is a view in side elevation of the improved machine.

Figure 2 is a section on line 2—2 of Figure 1.

The improved machine comprises a main frame 1 of appropriate length and width, the bed plate 2 of which is designed to support a plurality of rollers 3 on which the log, indicated at 4, is supported and guided during and following the respective operations on such log.

In advance of the foremost guiding roller 3, the bed plate 2 is of reduced height at 5 and supported on the bed plate between the upper and lower levels thereof is a rotating cutter 6, which may be in the form of the usual hog.

Immediately in advance of the cutter 6 there is an adjustable bed block 7 supported on the reduced height bed plate 5 by rollers 8 which are eccentrically mounted at 9 on the bed block, with said rollers controlled by a manually operable lever connection 10 extending forwardly of the machine.

In advance of the bed block 7 there is mounted a feed belt 11 including a metallic belt structure mounted on rollers 12 and suitably driven to advance the log to the machine. The opposite end of the belt (not shown) is suitably supported, so that the logs may be delivered thereto and fed by the belt onto the machine.

The main frame 1 about midway of its length is provided on each side with upstanding hollow standards 13 in each of which is rotatably supported the lower end of a threaded rod 14. This screw rod 14 is driven through a worm and pinion connection 15 at the upper end, with such worm and pinion connection operated from an appropriately driven pulley or sprocket wheel 16.

A slide 17 is designed for threaded connection with the screw rod 14 and held against rotation with the rod through sliding cooperation with a plain upright rod 18 supported adjacent and in parallelism with the screw rod. Carried by the slide 17 and extending toward the forward end of the machine is a frame arm 19 which at the forward end supports a knot cutter 20 and is provided immediately in rear of the knot cutter with a guide roller 21.

The rear end of the arm 19 is provided with a cutter 22 which may be a conventional hog, the operating plane of which is below that of the knot cutter 20. A chip breaker 23 is mounted in the arm 19 in advance of the hog 22 to prevent slivers being torn off in the operation of the hog.

Extending rearwardly from the slide 17 are arms 24 and 25, the latter being of greater length than the former and each being terminally provided with a guide roller 26. The guide rollers 26 are driven by the mechanism illustrated at 27 including a vertical shaft 28 and bevel pinion connections to and from said shaft for the operation of belts or sprocket chains for driving the respective guide rollers.

The shaft 29 of the lower hog 6 is driven from a suitable source of power by means of belt wheels 30 while the shaft 31 of the upper hog 22 is driven by motors 32 and 33. The motor shafts are provided with sprockets 34 by which the various guide rollers 21 and 26 of the upper frame and also the knot cutter 20 may be positively driven. The lower guide rollers 3 are connected for unitary movement and are driven through a frictional member 35 eccentrically mounted at 36 and controlled by a hand lever 37 for actuating these guide rollers at will.

Toward the rear or delivery end of the machine there is mounted on the bed plate 2 a shaft 38 on which are mounted saws 39 which are adjustable and of course to be provided in appropriate number so as to divide the log vertically into boards of appropriate thickness, or into sections of appropriate width. The saw shaft is appropriately driven and in the proper direction by belt connections (not shown.

In the use of the machine, the log in its normal irregular form, trimmed only to the extent of removing branches and like projections, is delivered onto the belt 11 and advanced into the machine. The bed block 7 is adjusted so as to control the cutting depth of the lower hog 6 and as the log advances, this lower hog trims away the lower surface of the log to present a more or less flat surface for accurate guiding on the lower feed rollers 3. The slide 17 having been vertically adjusted to the required height for the particular log through the set works screw 14, it is apparent that as the log advances the knot cutter 20 will sever the protuberances or knots from the upper surface of the log, presenting a comparatively smooth surface on which the guide roller 21 may firmly bear to insure a proper rigid guiding of the log. As the log advances, the upper hog 22 cuts away the material to define a smooth, broad, upper surface parallel to the lower surface. This smooth upper surface is finally engaged by the guide roller 26 of the arm 24 and finally reaches the saws by which the log is divided, the log beyond the saws and in divided condition being held rigidly in place by the final guide roller 26.

Thus, the log throughout all of its operations is firmly guided and positively moved by the upper and lower guide rollers which, as previously explained, are positively driven. The log is thus fed to its work and the effective upper and lower hogs square the surface so that when finally divided by the saws, the resultant products are pure rectangles having parallel sides and parallel upper and lower edges. The log is thus completely surfaced and divided in a comparatively small, compact machine, all operating instrumentalities of which are under manual control to vary their effect on the log both as to the extent of cut and as to the rapidity with which the log is moved through the machine.

What is claimed to be new is:

1. In a sawing machine, a saw, a frame, a plurality of positively driven feed rolls mounted therein for feeding the log into the operative plane of the saw, a cutter for the lower surface of the log arranged in advance of the feed rolls, a threaded post rotatably mounted in the frame, an arm having threaded connection with the post to permit vertical adjustment of the arm in the rotation of the post, an upper log cutter carried by the arm, a pressure roll carried by the arm, and a knot cutter carried by the arm.

2. In a sawing machine, a saw, a plurality of positively driven feed rolls to advance the log into the operative plane of the saw, a conveyor by which the log is delivered to the feed rolls, a cutter for squaring the lower surface of the log arranged intermediate the conveyor and feed rolls, and a cutter for squaring the upper surface of the log arranged intermediate the lower cutter and the saw, the lower cutter acting to square the log for proper bearing on the feed rolls to resist the operative pressure of the upper cutter.

3. In a sawing machine, a saw, a plurality of positively driven feed rolls to advance the log into the operative plane of the saw, a conveyor by which the log is delivered to the feed rolls, a cutter for squaring the lower surface of the log arranged intermediate the conveyor and feed rolls, a cutter for squaring the upper surface of the log arranged intermediate the lower cutter and the saw, the lower cutter acting to square the log for proper bearing on the feed rolls to resist the operative pressure of the upper cutter, and means for adjusting the log with respect to the lower cutter to vary the cutting depth of the latter.

4. In a sawing machine, a saw, a plurality of positively driven feed rolls to advance the log into the operative plane of the saw, a conveyor by which the log is delivered to the feed rolls, a cutter for squaring the lower surface of the log arranged intermediate the conveyor and feed rolls, a cutter for squaring the upper surface of the log arranged intermediate the lower cutter and the saw, the lower cutter acting to square the log for proper bearing on the feed rolls to resist the operative pressure of the upper cutter, and means for manually adjusting the cutting depth of the upper cutter.

5. In a sawing machine, a saw, a plurality of positively driven feed rolls to advance the log into the operative plane of the saw, a conveyor by which the log is delivered to the feed rolls, a lower squaring cutter for the log operating between the conveyor and saw, a bed block to support the log intermediate the conveyor and lower cutter, means for adjusting the bed block to thereby vary the cutting depth of the lower cutter, and an upper cutter operating between the lower cutter and saws, said upper cutter acting on the upper surface of the log in line with one of the bearing rolls on which the squared lower surface of the log is traveling.

6. In a sawing machine, a saw, a plurality of positively driven feed rolls to advance the log into the operative plane of the saw, a conveyor by which the log is delivered to the feed rolls, a lower squaring cutter for the log operating between the conveyor and saw, a bed block to support the log intermediate the conveyor and lower cutter, means for adjusting the bed block to thereby vary the cutting depth of the lower cutter, an upper cutter operating between the lower cutter and saws, said upper cutter acting on the upper surface of the log in line with one of the bearing rolls on which the squared lower surface of the log is traveling, and means for adjusting the upper cutter to vary its cutting depth.

In testimony whereof I affix my signature.

GEORGE BABARE. [L. S.]