Oct. 26, 1965 C. E. McMANAMA 3,213,905

SETTING MECHANISM FOR A HAND PORTABLE SAWMILL

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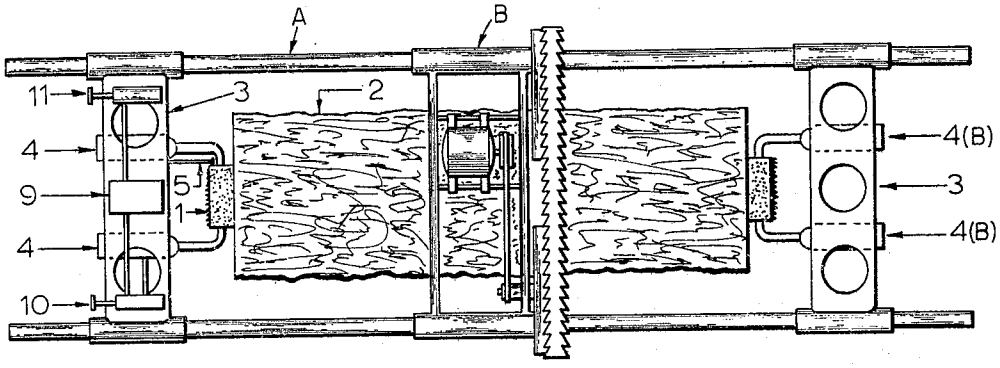


FIG. 1

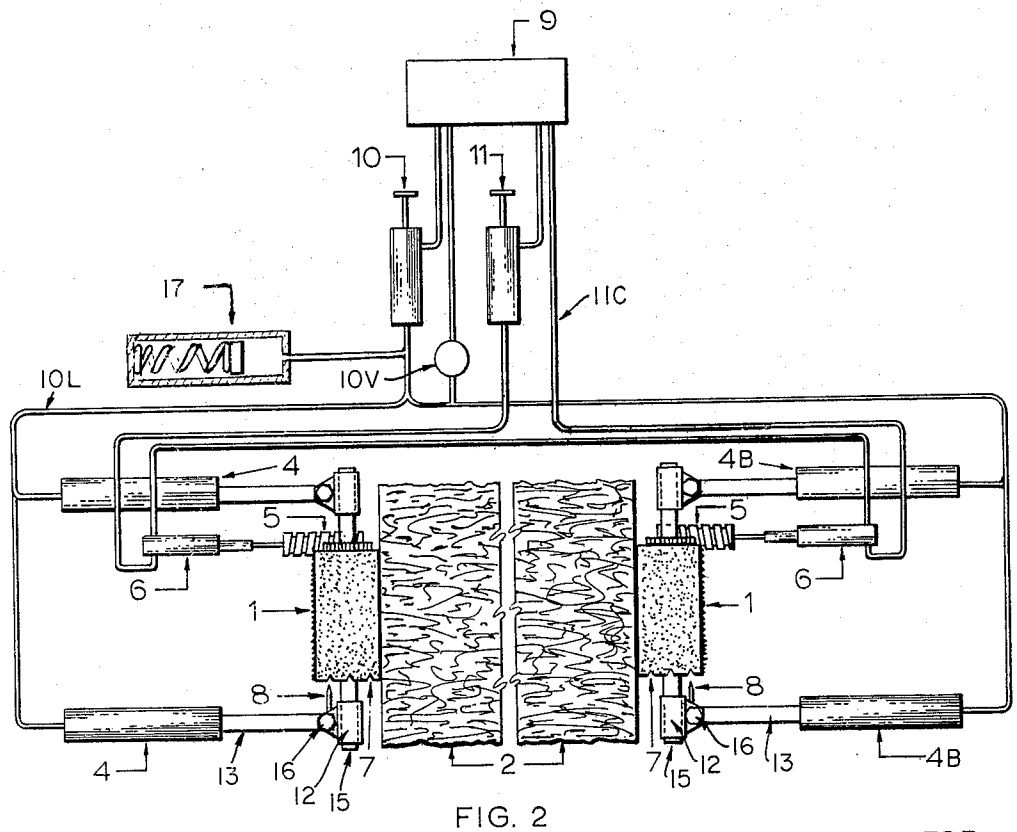


FIG. 2

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SETTING MECHANISM FOR A HAND PORTABLE SAWMILL

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4 Claims. (Cl. 143—19)

This setting mechanism was designed especially for hand portable sawmills composed of a horizontal bandsaw which traverses in sawing upon a rectangular guide rail assembly that is adjustably supported upon the log by engagement to each end of the log, as described in copending applications No. 26,877 and No. 139,706. This invention concerns manner of engagement, manner of adjustable support upon the log in setting, and how such adjustment is accurately measured and controlled.

The virtue of the device is that it provides simplified, easy, and accurate control of setting in a minimum of weight.

Essentially, this mechanism is a pair of elongate horizontal rollers with tractive engageable surfaces which engage each end of the log by hydraulic pressure means from the ends of the rectangular guide rail assembly, placing the log in a vise like grip, thereby supporting the sawmill mechanism upon the log and adjusting its position upon the log in the process of setting when the rollers are turned. With its calibrated metering device and hydraulic compensating and synchronizing components, all uniquely combined in one unit, this setting mechanism is accurate, simple, and easy to operate while of minimum weight.

Th advantages as they reside in the details of construction are more fully hereinafter described, reference being had to the accompanying drawing in which:

FIGURE 1 is a general top view of the sawmill;

FIGURE 2 is a diagrammatic top view of the setting mechanism.

Referring now in detail to the drawing, it will be seen that the embodiment of the invention illustrated comprises an elongate generally rectangular frame of parallel side rails A and of cross members 3 with attached and integrated components of the setting mechanism described as follows: Tractive rollers 1 which are adapted to engage each end of the log 2, are supported from cross members 3 by single acting self returned hydraulic cylinders 4 and 4*b*. These rollers are rotated by worm gears 5 and rotary hydraulic motors 6 in setting. The roller shaft 15 by means of bearing 12 is pivotally connected to the piston spindles 13 by pin 16. At one end of each roller 1 there are calibrated marks 7 which correspond with indicating needle 8 for precise measurement of setting. Integrated in one guide rail cross member 3 there is a hydraulic reservoir 9 and two hand operated piston pumps, one pump 10 for the hydraulic pressure cylinders 4 and one pump 11 to power the hydraulic motors 6 which turn the traction rollers 1 in the process of setting. These motors 6 necessarily of close structural tolerance so there is little or no fluid bypass are connected in series and thereby are synchronized. Also integrated in the guide rail cross member 3 there is a hydraulic pressure accumulator 17 which is hydraulically interconnected with the hydraulic pressure cylinders 4 providing reasonably constant pressure against the end of the log regardless of variances in the face of the end of the log or how squarely the end has been cut. Also a free interconnection between the hydraulic pressure cylinders 4 and also 4*b* allows the rollers 1 to accommodate horizontal unsquareness in the end of the log by the equalizing action thereof. The hydraulic pressure

cylinders 4*b* in an alternate form of the mechanism are not hydraulically connected to pump 10 and reservoir 9 but are hydraulically connected to each other to permit roller 1 to conform to the end of the log 2. Pressure valve 10V, manually operated, allows depressurization of pressure line 10L, causing retraction of piston spindles 13 of hydraulic cylinders 4, and also 4*b* if connected, and consequent release of rollers 1 from log 2. Control of flow in circuit 11C connecting pump 11 to rotary hydraulic motors 6 in series and to reservoir 9 is determined solely by the output of pump 11.

In operation of a sawmill to which this type of setworks would apply, the lowering of the rectangular guide rail frame to a predetermined position upon the log gauges the thickness of the next board to be cut. After each board is sawed, the saw carriage B is returned to the first position at the end of the rail A and the guide rail frame is again lowered to a predetermined position in preparation for sawing another board.

Having described my invention which I desire to protect by Letters Patent, I claim the following as original invention:

1. In a sawmill composed of a horizontal bandsaw which traverses in sawing upon a rectangular guide rail frame which straddles the log being sawed and is adjustably supported upon the log therefrom by tractive means of engagement to each end of the log to saw precise thicknesses of lumber therefrom, said guide rail frame having a pair of parallel side rails and a pair of cross members rigidly connecting the side rails adjacent the opposite ends thereof, said tractive means of engagement consisting of two rollers, each of said rollers forcibly engaging each end of the log by means of paired hydraulically interconnected hydraulic cylinders rigidly mounted upon each of aforesaid cross members, a pump to actuate said hydraulic cylinders, each end of each roller pivotally and rotatably supported from each piston spindle of the respective paired aforesaid hydraulic cylinders, and means for turning said tractive rollers while in such engagement.

2. A mechanism as set forth in claim 1, having within the said pumps pressure line a hydraulic accumulator to automatically maintain the engagement of said rollers while in use.

3. A mechanism as set forth in claim 2, the turning of each tractive roller measured by spaced indicating marks upon the circumference of one end of said roller as they pass an indicating point projecting from the bearing within which the roller shaft turns.

4. A mechanism as set forth in claim 1, wherein the means for turning said tractive rollers comprises another hydraulic system including hydraulic motors, one for each roller, hydraulically connected in series from a powering pressure source.

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