

[54] **PORTABLE SAWMILL HAVING A
HORIZONTAL TRAVERSING
BANDSAW**

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83/928

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795, 813, 928, 471.2

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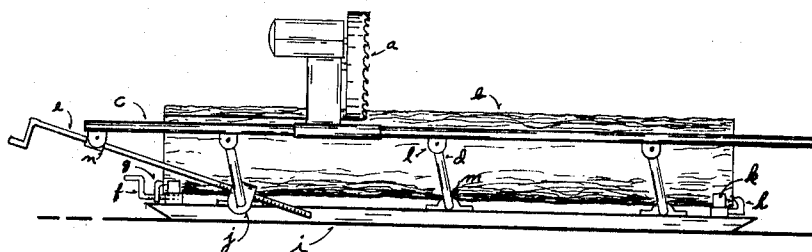
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[57] **ABSTRACT**

A sawmill comprising a horizontal bandsaw which traverses upon paired rail members supported above and straddling a log supporting base by parallel pivotal arms which transmit structural rigidity to the rail members from the base while also providing an adjustable relationship to the base. The essence of advantage resides in this rigidity, which, in combination with a low loading-level at which a log can be loaded upon the mill, enables new methods and systems of operation purporting to reduce over-all investment requirement and increase versatility and efficiency.

4 Claims, 3 Drawing Figures



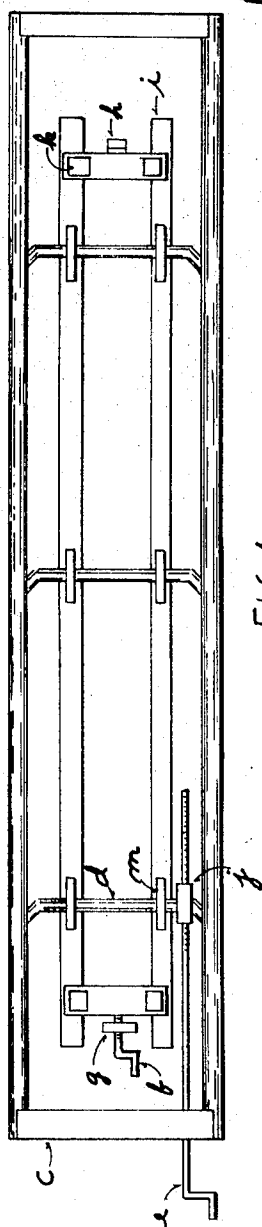


FIG. 1

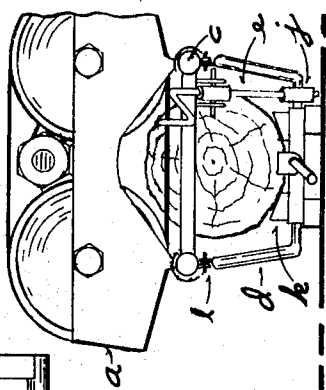


FIG. 3

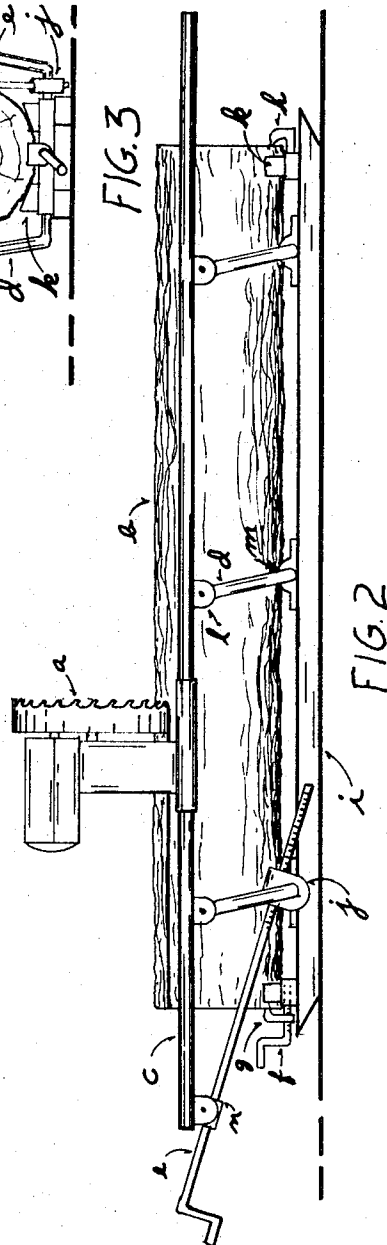


FIG. 2

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This sawmill is ideally used for sawing lumber in the forest from logs at the site of the fallen tree. A need for such a machine is seen particularly to establish an efficient and profitable means to utilize small lumber sized trees selectively removed from a growing timber stand in the practice of forestry. Also, such a machine would be of value in sawing recoverable slash remaining after logging, and to saw diseased, dead, or blown down trees of relatively small diameter.

The unique feature lending to such use is that the log supporting base, with straddling paired rail members which when in lowered position thereupon, presents such a low profile that a log may be easily rolled thereupon over one of said rail members directly from the ground by hand tools. For example, this profile can easily be only four inches from the ground, depending upon the size of the skids used thereunder by which the machine may be dragged from place to place by a tractor.

The essence of the invention resides in the means enabling the saw supporting rail members to be so closely lowered that little obstruction is posed to rolling a log onto the log supporting base, while at the same time providing rigid support to the rail members in all elevated positions. It is of greatest value in portable machines, but could also be used to advantage in machines that are not portable. It should be here noted that the most practical construction for such sawmills is of low cost and easily fabricated structural steel.

The essential structure of the sawmill comprises a low base having at each end thereof a clamping means which engages the ends of a log mounted thereupon to firmly secure said log, two or more pairs of parallel pivotal arm structures in the form of equal U-shaped crossbars pivotally hinged upon said base, a rail structure of fixedly spaced paired side rails pivotally attached upon the respective ends of the U-shaped crossbars so that with the lineal movement of the rails in relation to the base their elevation from the base is uniformly changed, a bandsaw and carriage which traverses on said rail structure in sawing, and a crankscrew device or other means to move said rail structure lineally upon said base. The essence of the invention therein is in the use of the U-shaped cross bars, which, in spaced intervals attached to the rail structure, support the weight of the traversing bandsaw and also firmly resist the saw thrust and vibration—enabling the use of comparatively slender rail members and thereby making possible the low profile described. The said base and log clamping means consist in the log carriage. By the said crankscrew device the said rail structure straddling a log on said log carriage is elevated or lowered to proper position that lumber of desired thicknesses can be sawed from the log. In sawing, the traversing bandsaw guided and supported by the rail structure makes successive passes upon the log.

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

FIG. 1 shows a top view of the rail frame and base structures;

FIG. 2 shows a complete side view with log mounted;

FIG. 3 shows an end view.

Referring now in detail to the drawing, FIG. 1 shows a top view of rail structure *c*, pivotally connected U-shaped cross bars *d*, and the base structures comprising the lineal members *i* usable as skids upon which the machine may be dragged from place to place, overlying cross members *p* joining members *i* near the respective ends thereof and provided support for each end of a log, log blocks *k* which prevent the log from rolling from a centered position on said cross members, and clamping jaws *g* and *h* which engage each end of the log and secure it firmly for sawing. Clamping jaw *g* is adjustable by screw crank *f* by threaded means to engage and disengage said clamping device. Crankscrew *e*, by a bearing *r* fixed thereon and pivotally connected to structure *c*, and a threaded nut *s* pivotally connected to the base via nearest cross bar *d* near its juncture therewith, adjustably connects the rail structure *c* to the base, thereby providing a means to elevate or lower said rail structure from said base.

FIG. 2, a side view, more readily shows how these parts are used in operation. Traversing horizontal bandsaw *a*, comprising the commonly known elements thereof necessary for sawing, traverses upon rail structure *c* in sawing the log *b*. To lower the bandsaw supporting and guiding rail structure *c* upon the log *b* to saw successive determinable thicknesses of lumber therefrom, crankscrew *e* is turned within nut *s* to extend the distance between said nut and bearing *r*, thereby moving the rail structure accordingly and also causing it to be lowered because of the pivoting interaction of the U-shaped cross bars respectively connected to said rail structure and said base by bearings *l* and *m*. The crankscrew *e* is turned until the desired proper setting is made for each new saw cut to be made. After the log is completely sawed into lumber the rail frame is nearly at the level of the base structure, at which time a new log can be conveniently rolled over one side of the rail structure *c* into place between log blocks *k* and clamped by devices *g* and *h* in sawing position. To again elevate the rail structure *c* to the desired position for the first cut, crankscrew *e* is turned in the opposite direction, reversing the the described action for lowering the rail structure, until the rail structure *c* is elevated to the desired setting to begin sawing the log.

FIG. 3 shows an end view, further clarifying aforesaid description.

The foregoing detailed description does not intend to convey limitation upon the invention in regard to component parts used. These are intended as one of a number of different known possible means or designs necessary to describe my invention.

Having hereby described my invention, I claim:

1. In a sawmill having a horizontal bandsaw which traverses in sawing upon a rail structure of paired side rails which straddle a log being sawed, and having a means to adjustably support this rail structure from a base upon which the log is positioned; a means to adjustably support said rail structure upon the base comprising a plural number of parallel U-shaped cross bars spaced under the rail structure, each leg of each U-shaped cross bar pivotally attached to a respective side rail, and the base of each U-shaped cross bar pivotally hinged upon the aforesaid base, and a means to move the rail structure forward or backward upon said

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pivotally mounted U-shaped cross bars or retain any desired relative position thereon.

2. In a sawmill as set forth in claim 1, said means to move the rail structure forward and backward comprising an elongate member, pivotally attached to the rail structure and pivotally attached to the said base, adapted to extend or lessen the distance between these pivotal attachments and, by virtue of this, consequently effect movement of the rail structure forward and backward upon said pivotally mounted U-shaped cross bars or retain any desired relative position thereon.

3. In a sawmill as set forth in claim 2, a means to secure a log firmly in sawing position comprising a pair of jaws mounted upon said base adapted to engage a log therebetween.

4. In a sawmill having a horizontal bandsaw which traverses in sawing upon a rail structure of paired side rails which straddle a log being sawed, and having a means to adjustably support structure from a base upon which the log is positioned; said means to adjustably support said rail structure comprising a plural number of equal pairs of parallel arm structures hingedly attached upon an axis crosswise of said rails and base, one arm-structure of each pair attached to a respective rail of the paired side rails from the said base, and a mechanical means adapted to move the rail structure forward and backward in an arc over the base, or to retain any desired position thereupon.

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