Sept. 9, 1947. J. L. ASHMAN 2,427,038

PORTABLE TRAVELING-SAW SAWMILL

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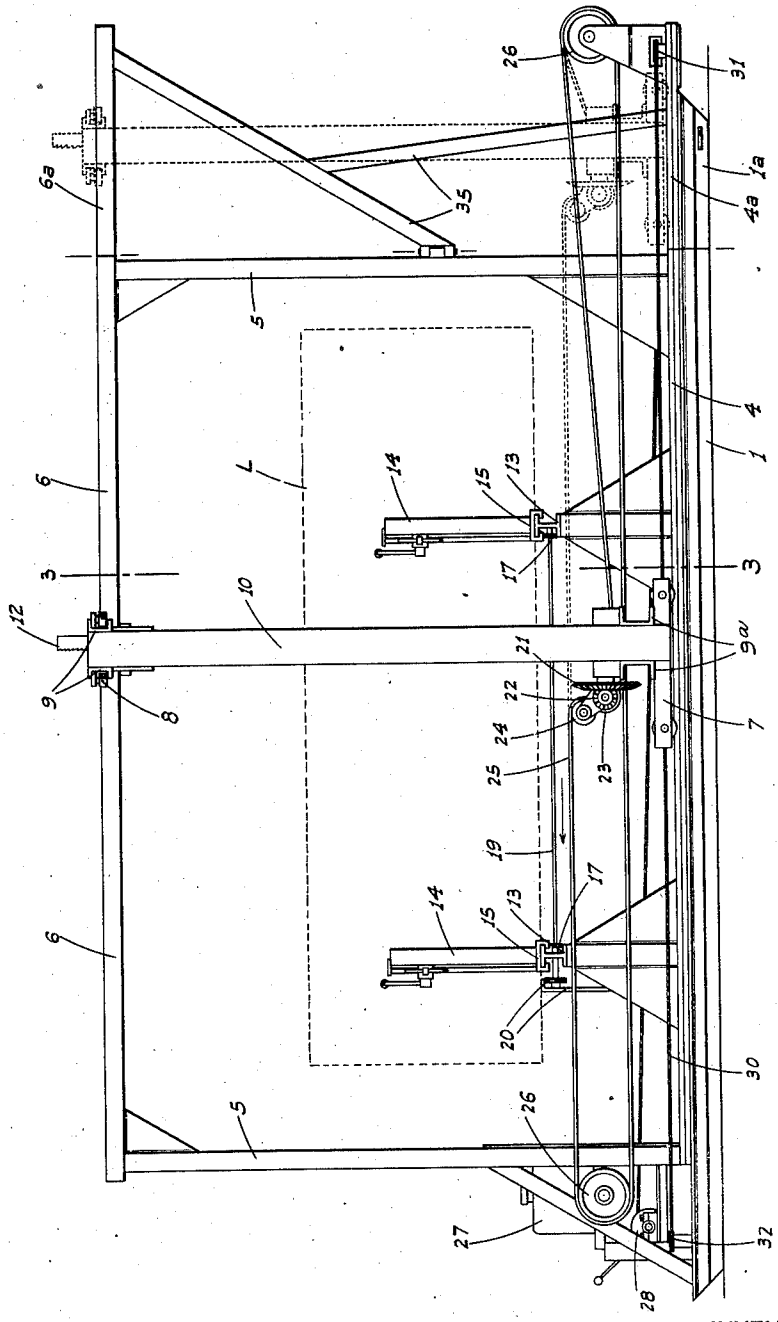


Fig. 1

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Fig. 2

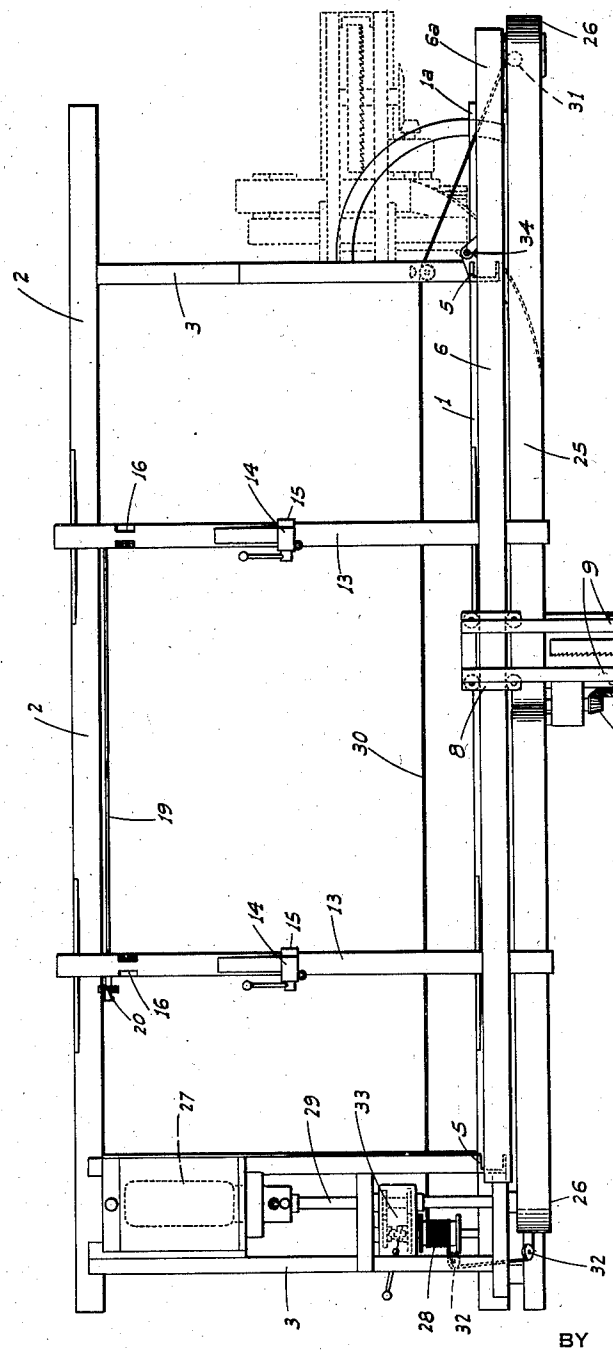


Fig. 5

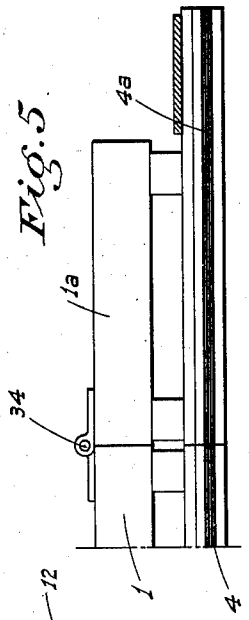
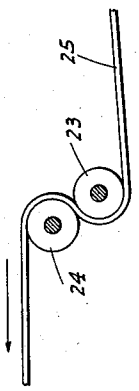


Fig. 4



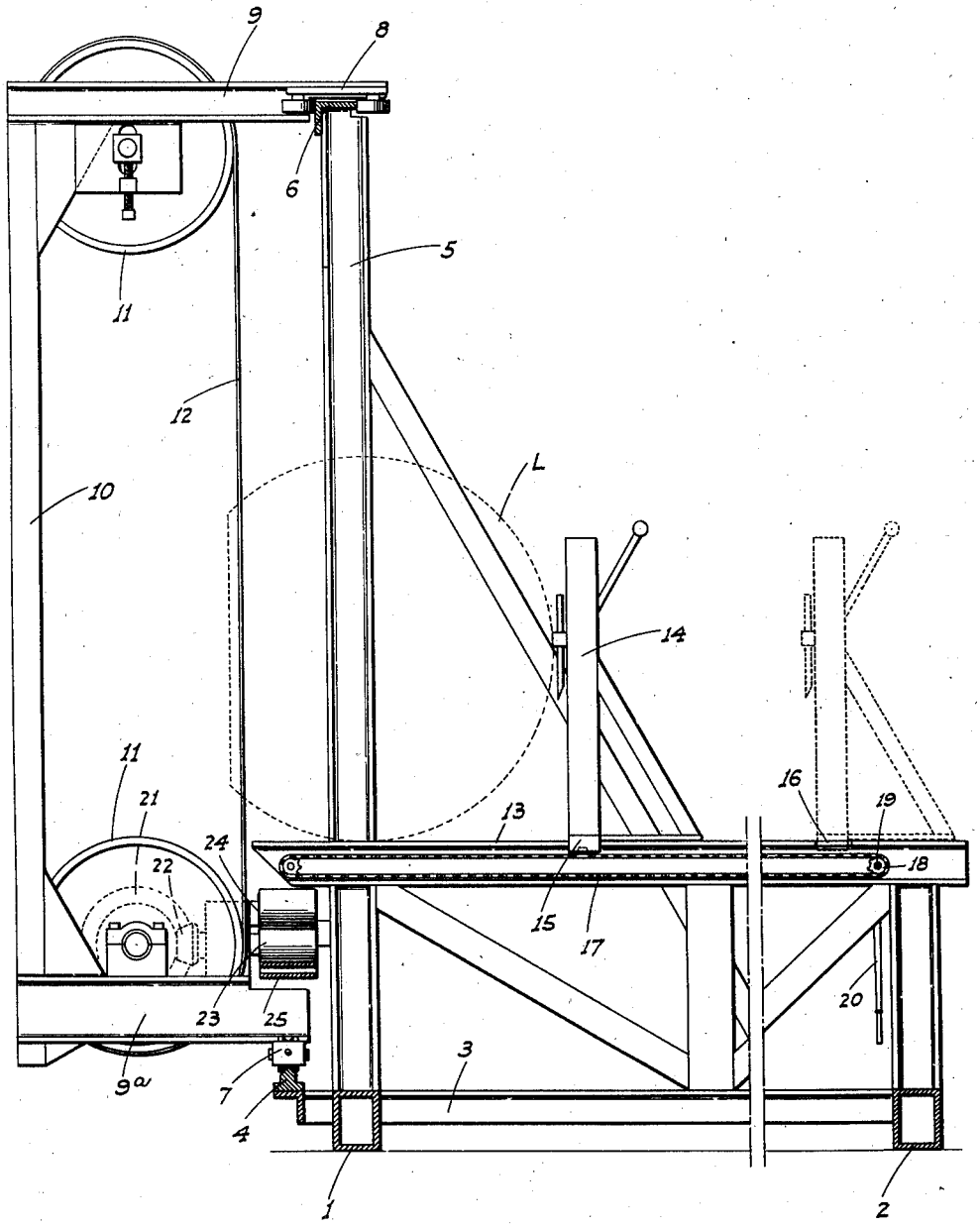
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Fig. 3



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PORTABLE TRAVELING-SAW SAWMILL

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Application December 14, 1943, Serial No. 514,237

2 Claims. (Cl. 143—17)

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This invention relates to saw mills such as are used to rough-cut logs into cants or boards ready for milling.

At present, saw mills of this general type are relatively permanent and costly installations, initially erected as close to the timber being cut as possible, or by mill ponds to which the timber as cut in the woods is floated.

As the distance of the uncut timber from the mill increases with the logging operations, it becomes an increasingly difficult and costly operation to transport the logs thereto, particularly when transportation by water is not available, as is often the case.

These conditions now necessitate the shifting of the mill to a new site closer to the timber, and this is an operation too costly for all but the large operators to undertake.

It is therefore the main object of my invention to provide a saw mill of a portable self-contained nature, which may be easily and quickly moved to any desired point in the woods and put in operation with little or no delay.

By means of my improved portable saw mill, which may readily handle all average sized logs of standard length, sawing under otherwise difficult conditions is easily carried out, and operating costs are considerably reduced.

While my mill will particularly appeal to the small operator, its usefulness will also be appreciated by those owning and operating the present and expensive type of permanent mill.

A further object of the invention is to produce a simple and inexpensive device, and yet one which will be exceedingly effective for the purpose for which it is designed.

These objects I accomplish by means of such structure and relative arrangement of parts as will fully appear by a perusal of the following specification and claims.

In the drawings similar characters of reference indicate corresponding parts in the several views:

Figure 1 is a side elevation of my improved portable saw mill.

Figure 2 is a top plan view of the same.

Figure 3 is an enlarged transverse section on line 3—3 of Fig. 1.

Figure 4 is a fragmentary side view of the belt-drive arrangement for the saw.

Figure 5 is a fragmentary top plan view showing the hinged mounting of the lower carriage-track and frame beam extension.

Referring now more particularly to the characters of reference on the drawings, the mill comprises a pair of heavy transversely spaced skids

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1 and 2 connected at suitable intervals by cross beams 3.

Supported by skid 1 laterally out from the same a short distance and clear of the ground is a longitudinal track 4. Uprights 5 on said skid support another longitudinal track 6 on top, which is parallel to track 4.

Tracks 4 and 6 are engaged by rollered carriages 7 and 8 respectively, from which short beams 9 and 9a project laterally out. These beams, which are in pairs spaced relatively close lengthwise of the mill, are connected at their outer end by an upright 10 preferably of inwardly facing channel form; the above parts forming a rigid unit and constituting a saw carriage. Beams 9 support pulleys 11 journaled therebetween, and about which an endless band saw 12 passes. The band saw is arranged so that its laterally outer run is housed by channel 10, while its inner cutting run, which is of course vertical, is disposed laterally out from skid 1 a short distance, the teeth of the saw facing the forward end of the mill.

Supported from skids 1 and 2 a short distance above the center of the lower pulley 11 are transverse track beams 13 of I section, spaced widely apart lengthwise of the mill and projecting laterally out beyond skid 1 to a point close to the inner run of the saw, as shown in Fig. 3. Upstanding from the beams 13, which form seats for a log L, are head blocks or knees 14 of any suitable type, and which at the bottom are provided with slide yokes 15 engaging the top flanges of beams 13, as shown in Fig. 1. Toward the end of these beams farthest from the saw, said top flanges are cut away, as at 16, to allow of the escape of the yokes. In this manner, the head blocks may be removed, enabling a log to be placed on the seats from either side of the mill.

To run the headblocks back and forth along the beams simultaneously, suitable means may be provided such as endless chains 17 extending along the beams 13 below and detachably connected to yokes 15. Corresponding end sprockets 18 of said chains are connected by a shaft 19 with which a suitable lever and ratchet unit 20 is attached. See Fig. 3.

The saw is driven, and also moved lengthwise of the mill and along the tracks, by the following means:

Secured with and in front of the lower pulley 11 (whose axis extends lengthwise of the mill) is a bevel gear 21 engaged by a pinion 22 mounted on the saw carriage and whose axis is transversely of the mill. Fixed with the pinion and

disposed between the cutting run of the saw and the vertical plane of skid 1 and under the overhanging beams 13 is a pulley 23, while slightly ahead of and above said pulley another pulley 24 is mounted on the saw carriage.

An endless belt 25 is mounted on pulleys 26 at the ends of the mill; the upper run of the belt passing over pulley 24, between pulleys 24 and 23 and then under pulley 23, as clearly shown in Fig. 4; the lower run of the belt clearing both pulleys. By means of this arrangement, the pulley 23, and consequently the gearing and saw mounting pulley, are driven irrespective of the position of the saw carriage along the mill. Also, on account of the arrangement of pulleys 23 and 24 relative to the drive run of the belt, a forward pull is constantly exerted on the saw carriage as the saw is driven.

The forward pulley 26 is driven by a gas engine 27 mounted on the cross beams 3 at the forward end of the mill.

In order to positively advance or retract the saw carriage along the tracks independently of the belt drive, a winch drum 28 is mounted on the mill at its forward end and adjacent the drive shaft 29 which connects the engine and pulley 26. A cable 30 is wound intermediate its ends on the drum, one run of the cable extending rearwardly and over a direction-changing pulley 31 at the rear end of the mill and thence forwardly to a connection with the rear end of lower carriage 7. The other run of the cable extends forwardly of the drum a short distance and then over direction changing pulleys 32 and back to a connection with the forward end of carriage 7. The drum 28 is selectively and reversibly engaged in driving relation with shaft 29 by a suitable driving gear unit 33. When the saw is in operation, it necessarily projects some distance laterally out from skid 1. It is, however, highly desirable that the overall width of the mill shall be held to a minimum for ease of transportation through the woods, and when the saw is not operating.

In order to reduce the width of the mill at such times, and without removing the saw carriage or otherwise dismantling the mill, I provide the following arrangement:

The rear end portions of skid 1, lower track 4, and upper track 6 are formed as sections 1*a*, 4*a*, and 6*a* respectively, separate from the corresponding main members themselves, and hinged thereon as at 34 in common vertical alinement, for laterally inward folding movement, being connected as a unit by suitable vertical bracing 35.

The length of track sections 4*a* and 6*a* is sufficient to receive carriages 7 and 8 thereon, so that when said carriages are thus disposed, the foldable sections, together with the saw carriage, may be swung inward so as to lie at the back of the mill, as shown in dotted lines in Fig. 2.

The rear belt pulley 26 and cable pulley 31 are mounted on the hinged sections, so that when the sections are folded back, the belt is twisted and the cable slack. However, since the belt is never driven nor the saw operated when in this position, this is immaterial.

In operation, the mill is hauled through the woods by a tractor or the like, to the point of desired use, and the skids are then blocked up if necessary to level the mill. The saw carriage is then swung to position at the rear end of the

mill, a log is moved onto the seats, and the saw driven and advanced through the log. When the saw is fully advanced through the log, the winch is manipulated to retract the saw carriage, after which the log is shifted into the path of the saw, and the saw carriage again advanced.

From the foregoing description it will be readily seen that I have produced such a device as substantially fulfills the objects of the invention as set forth herein.

While this specification sets forth in detail the present and preferred construction of the device, still in practice such deviations from such detail may be resorted to as do not form a departure from the spirit of the invention, as defined by the appended claims.

Having thus described my invention, what I claim as new and useful and desire to secure by Letters Patent is:

1. A saw mill comprising a supporting structure including log seats having terminals adjacent one side of the structure, a mono-rail extending longitudinally of the structure, a saw carriage mounted for travel along said mono-rail and normally projecting beyond the adjacent side of the structure, an upstanding frame on the structure, a top rail on the frame extending longitudinally of the structure and in substantial parallelism with the mono-rail, an upstanding frame on the saw carriage, guide means between the top of the carriage frame and the top rail, the top rail and the mono-rail having end portions projecting beyond their respective supports, such end portions having substantially vertically alined pivots joining them to the top rail and mono-rail, respectively, whereby the saw carriage may be transferred to said free ends and the latter then turned on said pivots to position the saw carriage at the rear end of the structure and in substantial longitudinal alinement therewith, while maintaining the carriage in its normal horizontal plane.

2. A portable sawmill comprising a supporting frame structure, transverse log seats on said structure extending to one side thereof, longitudinal rails disposed along the structure adjacent one side thereof, a saw carriage disposed laterally out from said one side of the structure, such carriage being supported by and rideable along said rails, extensions of said rails pivoted to one end thereof and projecting beyond one end of the supporting structure, said carriage being rideable onto said extensions, said extensions being turnable on their pivots to swing said extensions and the carriage laterally inward of said one side of the structure to position the carriage into longitudinal alinement with the structure.

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