

No. 776,964.

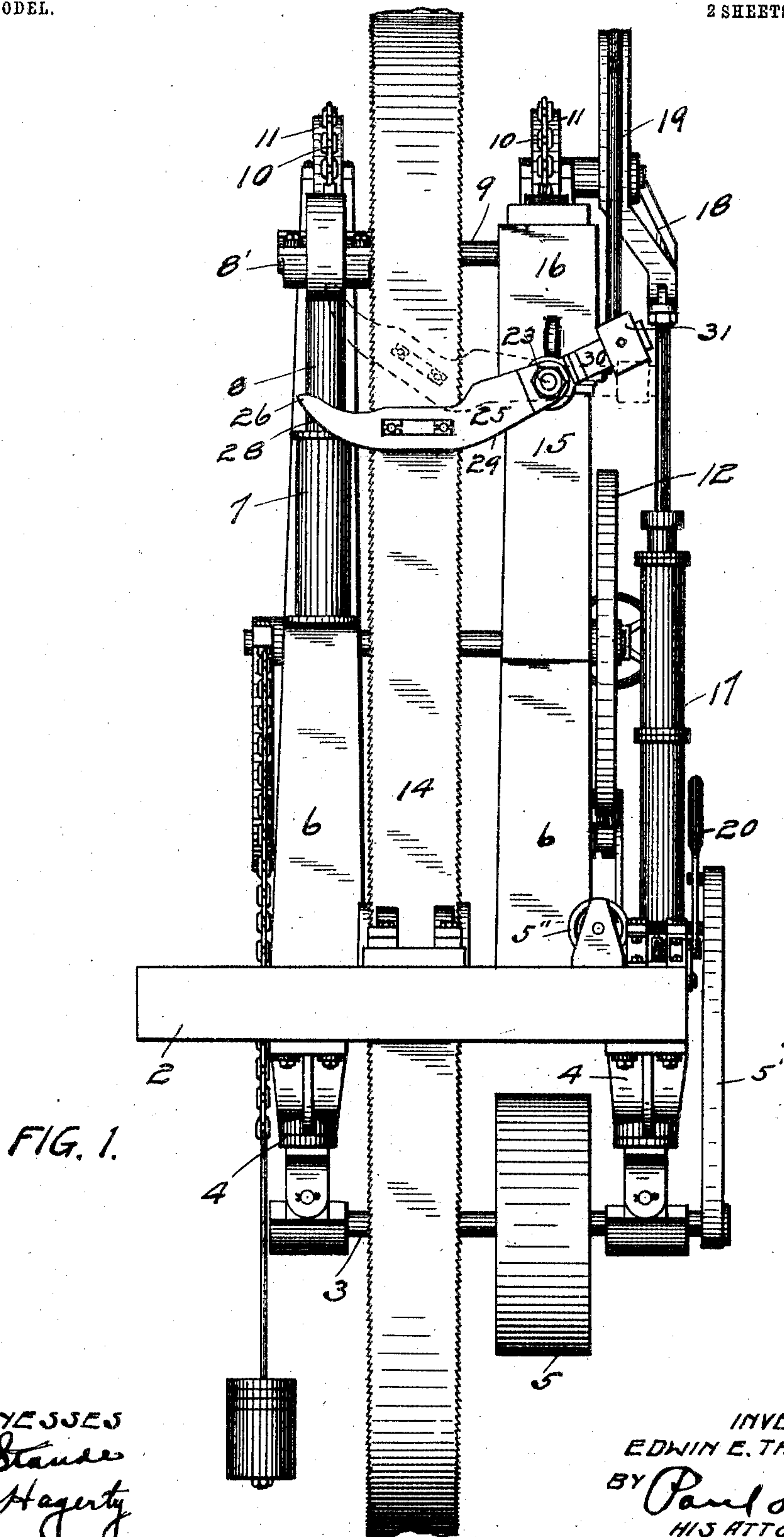
PATENTED DEC. 6, 1904.

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APPLICATION FILED JAN. 11, 1904.

NO MODEL.

2 SHEETS—SHEET 1.



WITNESSES
E. J. Stander
M. Hagerty

INVENTOR
EDWIN E. THOMAS
BY *Paul & Paul*
HIS ATTORNEYS

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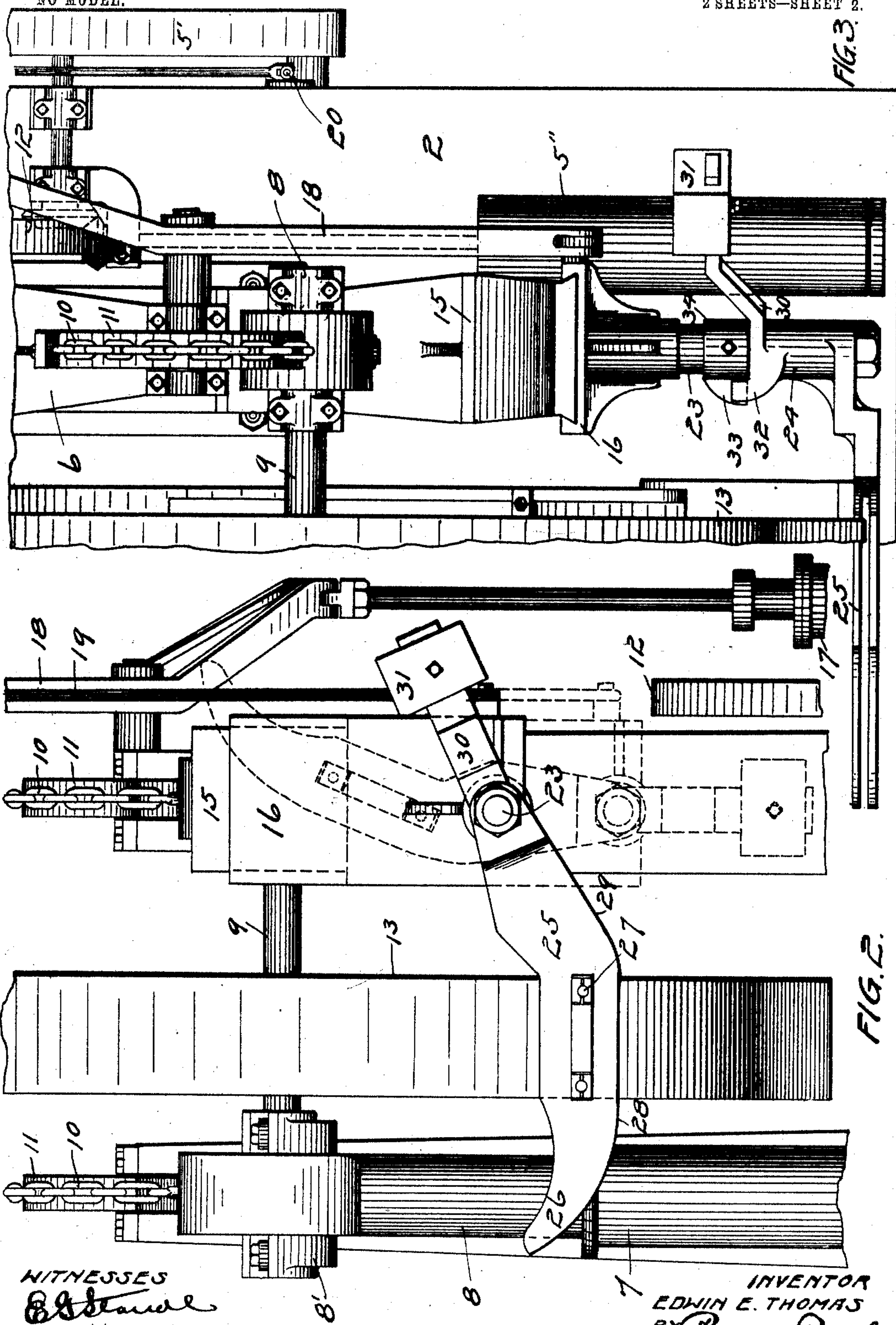
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UNITED STATES PATENT OFFICE.

EDWIN E. THOMAS, OF TACOMA, WASHINGTON, ASSIGNOR TO WILLAMETTE IRON & STEEL WORKS, OF PORTLAND, OREGON, A CORPORATION.

UPPER GUIDE FOR BAND-SAW MILLS.

SPECIFICATION forming part of Letters Patent No. 776,964, dated December 6, 1904.

Application filed January 11, 1904. Serial No. 188,422. (No model.)

To all whom it may concern:

Be it known that I, EDWIN E. THOMAS, of Tacoma, Pierce county, Washington, have invented certain new and useful Improvements in Upper Guides for Band-Saw Mills, of which the following is a specification.

The object of my invention is to provide an upper guide of simple construction having a minimum number of working joints and parts that render the device easy to keep in accurate adjustment and comparatively inexpensive to manufacture and repair.

A further object is to provide a guide of comparatively light weight and one that can be easily and quickly counterbalanced and operated and at the same time thoroughly efficient for the purpose designed.

A further object is to provide a guide of small compact construction that will swing vertically when struck by a log or carriage moving in either direction and which can be easily mounted in its working position and will not materially obstruct the sawyer's view.

Other objects of the invention will appear from the following detailed description.

The invention consists generally in a vertically-swinging upper guide pivotally supported near one end and having an upwardly-curved under surface at its other end.

Further, the invention consists in providing a vertically-swinging guide having upwardly inclined or curved surfaces on both sides of the normal position of the saw therein.

Further, the invention consists in pivoting the guide above the level of the surfaces that are struck by the log or carriage.

Further, the invention consists in various constructions and combinations, all as hereinafter described, and particularly pointed out in the claims.

In the accompanying drawings, forming part of this specification, Figure 1 is a side elevation of a band-saw mill with my invention applied thereto. Fig. 2 is a similar view of the upper portion of the mill, showing the position of the guide thereon. Fig. 3 is a plan view showing the manner of supporting the guide on the mill.

In the drawings, 2 represents the base of a

mill, beneath which is a lower band-wheel shaft 3, supported by hangers 4 and provided with a driven pulley and a belt 5', that drives, through suitable mechanism, a lumber-roll 5".

Upon the base 2, I arrange brackets or pedestals 6, provided with upright sleeves or bearings 7 for the columns 8 that telescope therewith. These columns have bearings 8' for the upper band-wheel shaft 9 and are connected to chains 10, that are secured to the curved faces of rocker-arms 11, operatively connected with a tension mechanism 12, that forms the subject-matter of a companion application herewith. The upper band-wheel 13 is connected with the lower wheel by a saw 14, which I have shown provided with two cutting edges; but it will be understood that I do not confine myself to the use of a double cutting-saw, as my improved upper guide will be fully as efficient with a saw having a single cutting edge.

The upper end of one of the brackets 6 is provided with a guide 15, whereon a casting 16, forming a support for the upper guide, is vertically slidable. This casting is raised or lowered to vary the height of the upper guide with respect to the log and carriage by means of a steam-cylinder 17, having its piston connected to a rocking bar 18, pivoted at a point intermediate to its ends and connected by a link 19 with the support 16. A lever 20 has suitable connections with a valve (not shown) for controlling the admission of steam to said cylinder.

The mechanism heretofore described, except the saw tension mechanism, is similar to that shown in various types of band-saw mills heretofore invented by me, and I make no claim, broadly, to the same in this application, the saw tension mechanism, as heretofore stated, forming the subject-matter of another application.

I will now proceed to describe in detail the upper guide for the band-saw in which the novelty of this case resides.

23 represents a stud projecting horizontally from the support 16 and whereon a sleeve 24 is loosely mounted. At the outer end of the sleeve, preferably integral therewith, is the

guide proper, 25, having an upwardly-turned free end 26 corresponding in shape substantially to the nose of a shoe or runner and bifurcated to receive the saw, the usual blocks 5 27 being provided, with which the saw contacts. The upwardly-turned end 26 forms a curved under surface 28 at the free end of the guide to be struck by the log or carriage, and a similar surface, 29, is provided between the 10 bifurcation and the pivot of the guide, which, as clearly shown in Figs. 1 and 2, is considerably above the level of the contacting surfaces, where it will be out of the path of a log or the carriage. The sleeve 24 is also pro- 15 vided with an arm 30, projecting in the direction opposite to that of the guide 25 and carrying an adjustable counterweight 31, by means of which the guide can be nicely balanced, so that it will freely swing on its pivot 20 in a vertical direction when struck by a log or the carriage moving in either direction. The sleeve 24 is also provided with a lug 32, adapted to engage a stop 33 on a collar 34, that is adjustably secured on the stud 23 and serves 25 to limit the downward-swinging movement of the guide 25. The adjustable feature of this stop allows the guide to be swung to any desired angle; but it is arranged, preferably, to support the guide in a substantially horizontal position, as shown in full lines in Figs. 1 30 and 2.

The operation of my improved guide is as follows: The operator having adjusted the guide-support at the desired elevation with 35 respect to the log-carriage and the logs to be sawed will set the carriage in motion toward the saw, and should the log come in contact with the guide when moved in either direction the guide will swing freely and easily on 40 its pivot in a vertical direction to the position shown by dotted lines in Fig. 1 and will return to its normal position after the passage of the log. The under surfaces of the guide being upwardly turned on both sides of the 45 saw, it will be immaterial in which direction the log or carriage is moving, as the guide will swing as freely when struck on one side as on the other. The guide-support is adjusted to a suitable height for the log on the 50 carriage, and the sawing operation is carried on, the adjustment of the guide being altered from time to time to suit the character of the logs being sawed.

If it is desired to remove the guide from 55 the saw in order that all the space between the upper band-wheel and the head-blocks may be utilized in sawing large logs having deep cuts, the guide-support is first lowered until the free end of the guide can be swung 60 vertically to clear the band-wheel. Then the guide is tilted to a vertical position (indicated by dotted lines in Fig. 2) and moved upward with its support until it is out of the path of the log, where it will remain until again re- 65 quired to guide the saw in sawing smaller logs.

It will be noted that the guide is extremely simple in construction and having very few working joints and parts can be easily and accurately adjusted. It is light, compact, and easily handled, occupies a comparatively small 70 space on the mill, and in no way interferes with the sawyer's view of the work.

I claim as my invention—

1. An upper guide for band-saw mills, pivotally supported near one end and upwardly 75 inclined at its other end, the pivot of said guide being its only connection with the mill.

2. An upper guide for band-saw mills, pivotally supported near one end, the opposite free end of said guide being upwardly inclined 80 and arranged to swing vertically on its pivot and assume a horizontal position to guide the saw or a vertical one out of the path of the saw, and a stop for limiting the downward swinging movement of said guide. 85

3. An upper guide for band-mills, pivotally supported near one end, the opposite free end of said guide being provided with an upwardly-inclined under surface, the pivot of said guide being above the level of said surface, and a 90 counterbalance for said guide.

4. An upper guide for band-saw mills, pivotally supported near one end, the opposite free vertically-swinging end of said guide being upwardly inclined, the pivot of said guide 95 being above its free end, and a stop for limiting the downward movement of said free end.

5. An upper guide for band-saws, pivotally supported near one end and having an upwardly-turned nose at its other free end, a 100 counterbalance for said guide located on the opposite side of the guide-pivot from said free end and adapted to hang below said pivot when said free end is raised to a vertical position above it. 105

6. An upper guide for band-saws, pivotally supported near one end and bifurcated at its opposite end to receive a saw, and having an upwardly-inclined under surface between its support and said bifurcation. 110

7. An upper guide for band-saws, pivotally supported near one end and bifurcated at its free opposite end to receive a saw, the under surfaces of said guide upon both sides of the normal position of the saw in said bifurcation 115 being upwardly inclined.

8. An upper guide for band-saws, pivotally supported near one end and bifurcated at its opposite free end to receive a saw, and having upwardly-inclined under surfaces upon each 120 side of the normal position of the saw in said bifurcation, the pivot of said guide being above the level of its normal working position.

9. The combination, with a vertically-adjustable support and a stud horizontally mounted 125 thereon, of a band-saw guide pivoted near one end on said stud and having its opposite end free to swing vertically and bifurcated to receive a saw, and the under surface of said free end being upwardly inclined, and a counter- 130

balance carried by said guide on the opposite side of said stud from said bifurcated end.

10. The combination, with a vertically-adjustable support and a stud horizontally mounted thereon, of a band-saw guide pivoted near one end on said stud and bifurcated at its opposite free end to receive a saw, the under surfaces of said guide on both sides of the normal position of the saw therein being upwardly inclined, for the purpose specified.

11. The combination, with a vertically-adjustable support and a stud horizontally mounted thereon, of a sleeve loosely mounted on said stud, a band-saw guide projecting from one side of said sleeve into the path of the saw and having a free vertically-swinging end, an oppositely-projecting arm having a counterbalance-weight also mounted on said sleeve, a lug provided on said sleeve, and a collar adjustably mounted on said stud and having a stop in the path of said lug.

12. An upper guide for band-saw mills, pivotally supported near one end and having an upwardly-inclined under edge at its opposite end, said guide being free to swing vertically on its pivot and assume a horizontal guiding position for the saw or a vertical one out of the path of the saw.

13. An upper guide for band-saws, pivotally supported and having a free end provided with an upwardly-inclined lower edge and a counterbalance carried by said guide on the oppo-

site side of its pivot from said free end, said counterbalance being at one side of said pivot when said guide is in its normal working position and below said pivot when said guide is in its vertical inoperative position.

14. The combination, with a stud, of a sleeve loosely mounted thereon, a band-saw guide projecting from said sleeve on one side, an oppositely-projecting arm having a counterbalance-weight carried by said sleeve, a lug provided on said sleeve, and an adjustable stop mounted on said stud in the path of said lug.

15. An upper guide for band-saw mills, pivotally supported and having a free end provided with an upwardly-inclined lower surface, said guide being free to swing vertically and offering no resistance except its own weight to the force of the log.

16. An upper guide for band-saw mills pivotally supported and provided with an upwardly-inclined under surface upon each side of the normal position of the saw in said guide, said guide being free to swing vertically and offering no resistance except its own weight to the force of the log.

In witness whereof I have hereunto set my hand this 4th day of January, 1904.

EDWIN E. THOMAS.

In presence of—

HERBERT S. GRIGGS,
M. HAGERTY.