

A. J. TENOW.
MACHINE FOR SAWING TIMBER.
APPLICATION FILED FEB. 10, 1911.

1,010,091.

Patented Nov. 28, 1911.

2 SHEETS-SHEET 1.

Fig. 1.

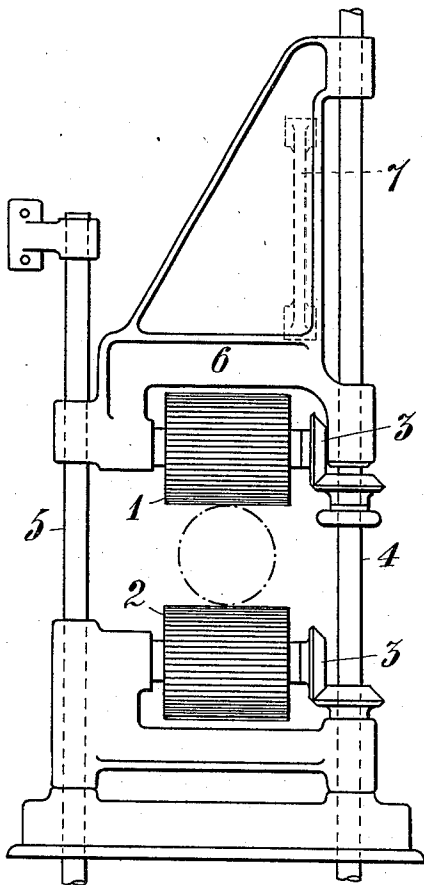
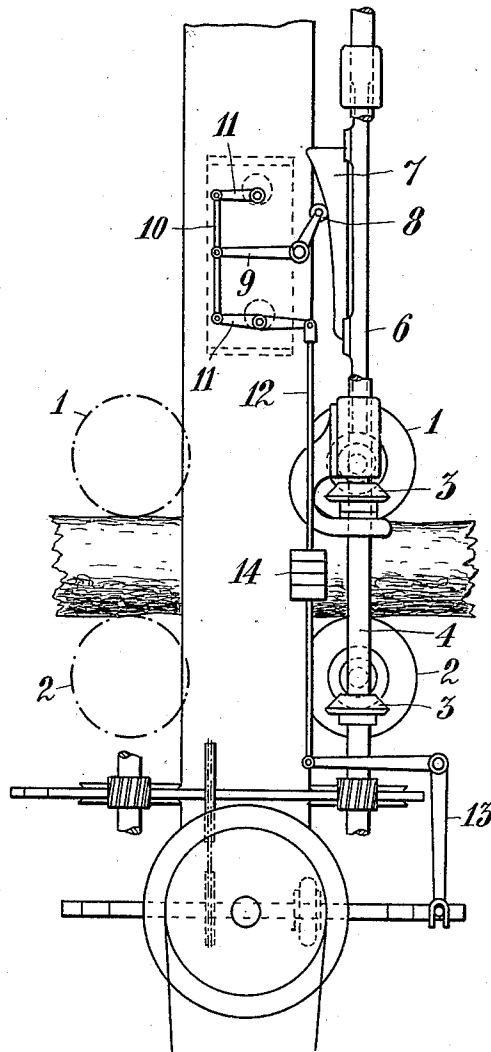


Fig. 2.



Witnesses

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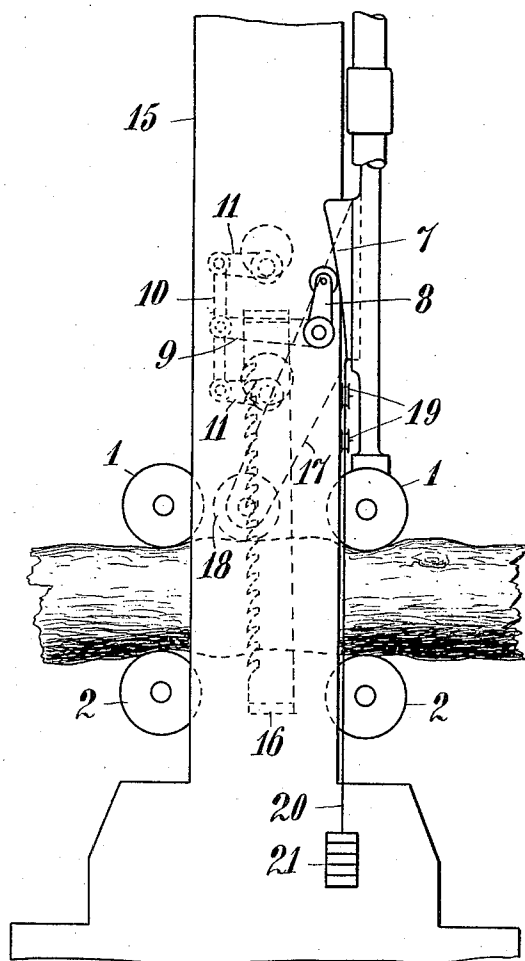
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2 SHEETS—SHEET 2.

Fig. 3.



Witnesses

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MACHINE FOR SAWING TIMBER.

1,010,091.

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To all whom it may concern:

Be it known that I, ADOLF JULIUS TENOW, a subject of the King of Sweden, residing at Stockholm, in the Kingdom of Sweden, have invented new and useful Improvements in Machines for Sawing Timber, of which the following is a specification, reference being had to the drawings accompanying and forming a part hereof.

It is well-known to those skilled in the art that in machines for sawing logs, stems and the like longitudinally it is desirable to change the speed of feeding the timber and the inclination of the reciprocating frame carrying the saw-blades according to the varying thickness of the timber.

The object of the invention is to provide a device of the said kind which is simple in construction and reliable in working.

The invention consists, chiefly, in this that the pressure-roller of the sawing machine, or some other member supported by the timber to be sawed, has connected to it a controlling guide having a curved guide-surface acting on parts connected to the feeding device for the timber or to the guide for the saw-frame or to both.

The invention further comprises the constructions and combinations of parts hereinafter set forth.

In the drawings, I have shown two forms of sawing machines embodying the invention.

Figure 1 shows the one embodiment viewed in the longitudinal direction of the log or stem to be sawed. Fig. 2 is a side-view of the same machine. Fig. 3 is a similar view of the second embodiment.

Referring to Figs. 1 and 2 of the drawings, the pressure-roller 1 and the feed-roller 2 are both rotated in any suitable manner, for instance by bevel gears 3 from a vertical shaft 4 serving, in conjunction with the vertical standard 5, as a guide for the vertically movable pressure-roller. It is, however, to be noted that both rollers need not be driven, but the lower roller, or the upper one, may be driven, as may be desired. The pressure-roller is journaled in a frame 6 movable vertically along the shaft 4 and the standard 5. The frame 6 carries a guide 7 for controlling the speed of movement of the timber and the inclination of the reciprocating frame carrying the saw-blades. Bearing on the curved edge of the said

guide is a roller 8 carried by a lever 9 connected by a linkage 10, 11 to the known device for regulating the inclination of the reciprocating saw-frame. The linkage 10, 11 is also connected through a rod 12 and an angle lever 13 to the likewise known adjustable feeding device. The lever 9 with the roller 8 is kept pressed against the controlling guide 7 by means of a weight 14 attached to the rod 12.

The described machine works as follows: When the pressure rollers 1 are raised or lowered by the log, the guide 7 partakes in the said movement and acts to swing the lever 9 which in turn transmits motion to the feed device as well as to the means for adjusting the inclination of the reciprocating frame carrying the saw-blades. The form of the guide-bar determines in what manner the feeding speed and the inclination of the saw-frame are changed as the diameter of the timber varies. Thus, for instance, if the quantity of saw dust is to be constant during each stroke of the reciprocating saw-frame the guide-bar is suitably formed as a hyperbola. It is easily understood that a true relation is obtained if the member carrying the guide-bar bears on the timber to be sawed at the side of the cutting lines of the teeth of the saws. Generally the thickness of the timber does not vary considerably from the contact point of the pressure-roller to the said cutting lines. Nevertheless, in sawing very irregular timber, it may happen that the said parts of the timber are so unequally thick that the position of the pressure-roller does not at all correspond to the diameter to be cut through by the saw-teeth. In a still higher degree this asserts itself if a new timber is supplied immediately after that which is sawed, for in such case the pressure-roller will bear on the top-end of the following timber before the saw-blades have cut entirely through the butt-end of the foregoing timber. The latter will therefore be sawed at a rate of speed and under an inclination of the saw-frame which do not correspond to the large diameter of the butt-end. In order to remove this drawback the constructional form shown in Fig. 3 may be used, in which the member supported by the timber and carrying the controlling guide is placed between the saw-blades just within the cutting plane, or as near the same as possible, so

that the position of the controlling guide always corresponds to the diameter of the timber in the cutting plane.

Referring to Fig. 3, 15 is the stationary machine frame, and 16 are the saw-blades which are attached to a movable saw-frame the inclination of which is controlled by the linkage 9, 10, 11 hereinbefore described, said linkage acting to adjust the upper guides of the saw frame. The lever 9 of the said linkage bears on the controlling guide 7. In the embodiment shown the said controlling guide is movable vertically in guides in a standard or the like serving as a bearing for one of the pressure-rollers 1. Extending from the controlling guide 7 between two saw-blades is an arm 17 provided at its lower end with a roller 18 or the like. The arrangement is such that the said roller 18 bears on the timber just within the cutting plane of the saw-blades or as near the same as possible. In order to cause the roller 18 to always bear on the timber the controlling guide with the arm 17 is suitably loaded, for instance by a weighted cord 20 or the like suspended from the controlling guide, as shown in the drawing, in which the said cord is placed on rollers 19 and loaded by weights 21.

I claim:

1. In a machine for sawing timber longitudinally, the combination of a reciprocating frame, saw-blades attached to the said frame, means for feeding timber toward and past the said saw-blades, at a variable rate of speed, a speed-controlling mechanism adapted to be supported by the timber to be sawed and comprising a cam having a curved surface and a member bearing thereon, and connections between the said speed-controlling mechanism and the timber-feeding means for varying the speed of movement of the timber according to the varying thickness of the same, substantially as and for the purpose set forth.

2. In a machine for sawing timber longitudinally, the combination of a reciprocating frame, saw-blades attached to the said frame, feed-rollers for feeding timber toward and past the said saw-blades, means for rotating the said rollers at a variable rate of speed, a cam having a curved surface, said cam being adapted to be raised and lowered according to the varying thickness of the timber to be sawed, a lever bearing on the curved surface of the said cam, and connections between the said lever and the roller-rotating means for varying the speed of movement of the timber, substantially as and for the purpose set forth.

3. In a machine for sawing timber longitudinally, the combination of a reciprocating frame, saw-blades attached to the said frame, feed-rollers for the timber to be sawed, means for rotating the said rollers

at a variable rate of speed, pressure-rollers adapted to rest on the timber, a frame movable vertically with the said pressure-rollers, a slide movable in guides in the said vertically movable frame and supported by the timber in the cutting plane of the saws, a speed-controlling mechanism bearing on the said slide, and connections between the said speed-controlling mechanism and the feed-roller-rotating means for varying the speed of movement of the timber according to the varying thickness of the same, substantially as and for the purpose set forth.

4. In a machine for sawing timber longitudinally, the combination of a reciprocating saw-frame, adjustable guides for the said saw-frame, saw-blades attached to the said reciprocating frame, means for feeding timber toward and past the said saw-blades, a guiding member adapted to be supported by the timber to be sawed, and a frame-adjusting mechanism bearing on the said guiding member and connected to the adjustable guides for the saw-frame, substantially as and for the purpose set forth.

5. In a machine for sawing timber longitudinally, the combination of a reciprocating saw-frame, adjustable guides for the said frame, saw-blades attached to the said reciprocating frame, means for feeding timber toward and past the said saw-blades, a guiding member adapted to be supported by the timber to be sawed, a lever bearing on the said guiding member, and connections between the said lever and the adjustable guides for the saw-frame, substantially as and for the purpose set forth.

6. In a machine for sawing timber longitudinally, the combination of a reciprocating saw-frame, adjustable guides for the said frame, saw-blades attached to the said reciprocating frame, feed-rollers for the timber to be sawed, pressure-rollers adapted to rest on the timber, a frame movable vertically with the said pressure-rollers, a slide movable in guides in the said vertically movable frame and supported by the timber in the cutting plane of the saws, and a frame-adjusting mechanism bearing on the said slide and connected to the adjustable guides for the saw frame, substantially as and for the purpose set forth.

7. In a machine for sawing timber longitudinally, the combination of a reciprocating saw-frame, adjustable guides for the said saw-frame, saw-blades attached to the said reciprocating frame, means for feeding timber toward and past the said saw-blades, at a variable rate of speed, a guiding member adapted to be supported by the timber to be sawed, a frame-adjusting and feed-controlling mechanism bearing on the said guiding member and connected to the adjustable guides for the saw-frame, and connections between the said mechanism and the timber-

feeding means for varying the speed of movement of the timber according to the varying thickness of the same, substantially as and for the purpose set forth.

5 8. In a machine for sawing timber longitudinally, the combination of a reciprocating saw-frame, adjustable guides for the said saw-frame, saw-blades attached to the said reciprocating frame, feed-rollers for
10 feeding timber toward and past the said saw-frame, means for rotating the said rollers at a variable rate of speed, a guiding member adapted to be supported by the timber to be sawed, a lever bearing on the said
15 guiding member, connections between the said lever and the adjustable guides for the saw-frame, and connections between the said lever and the roller-rotating means for varying the speed of movement of the timber according to the varying thickness of the
20 same, substantially as and for the purpose set forth.

9. In a machine for sawing timber longitudinally, the combination of a reciprocating

ing saw-frame, adjustable guides for the 25
said saw-frame, saw-blades attached to the said reciprocating frame, feed-rollers for the timber to be sawed, means for rotating the said rollers at a variable rate of speed, pressure-rollers adapted to rest on the timber, a frame movable vertically with the
30 said pressure-rollers, a slide movable in guides in the said vertically movable frame and supported by the timber in the cutting plane of the saws, and a frame-adjusting
35 and feed-controlling mechanism bearing on a guide surface on the said slide and connected to the adjustable guides for the saw-frame and to the roller-rotating means for
40 varying the inclination of the saw-frame and the speed of movement of the timber according to the varying thickness of the same, substantially as and for the purpose set forth.

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Witnesses:

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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."