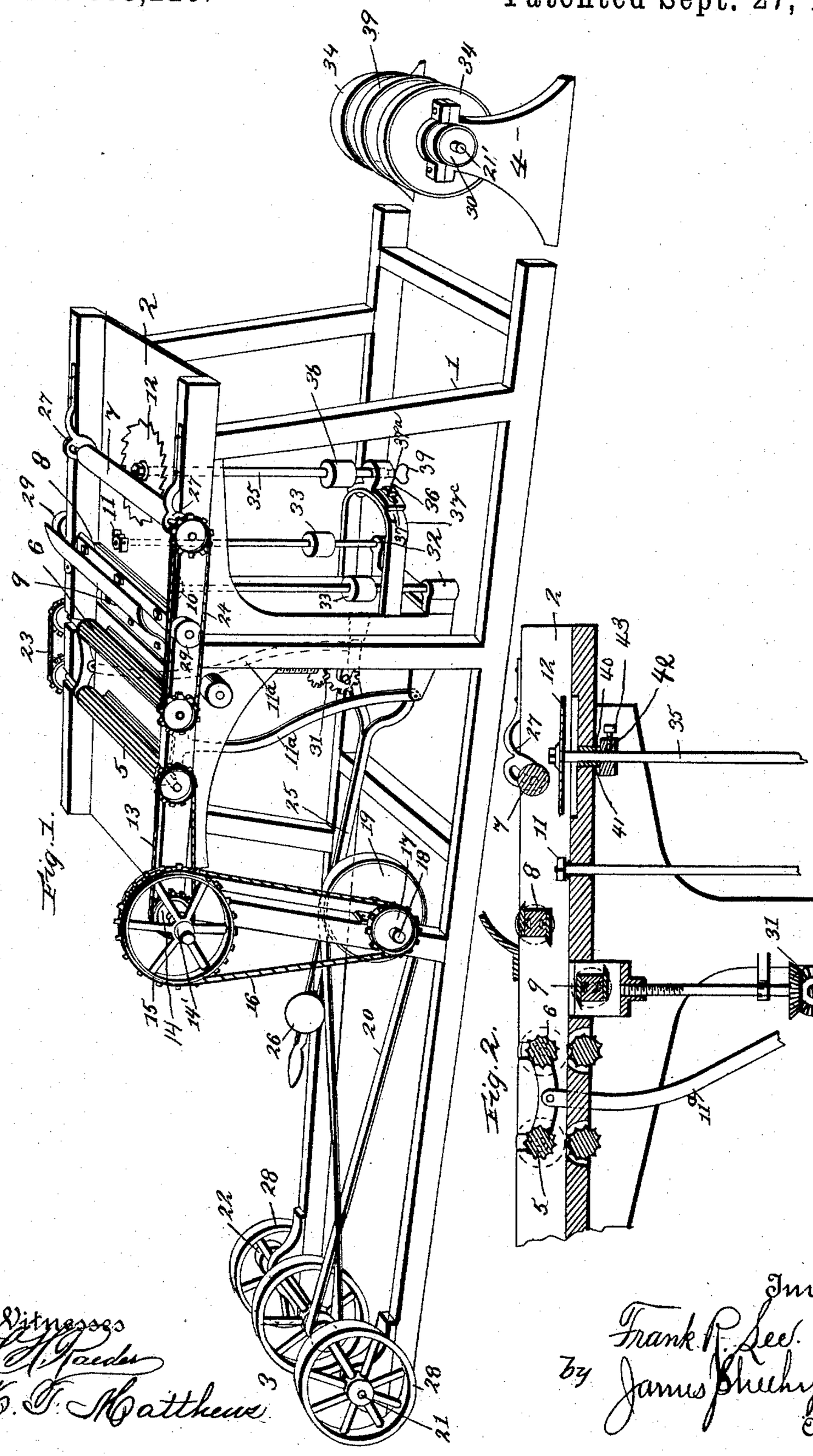
(No Model.)

F. R. LEE.

RESAWING MACHINE.

No. 483,226. Patented Sept. 27, 1892.



Witnesses
C. F. Goepel
H. T. Matthews.

Inventor
Frank R. Lee.
by James Shelby
Attorney

UNITED STATES PATENT OFFICE.

FRANK R. LEE, OF LEAD HILL, ARKANSAS.

RESAWING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 483,226, dated September 27, 1892.

Application filed June 2, 1891. Serial No. 394,836. (No model.)

To all whom it may concern:

Be it known that I, FRANK R. LEE, a citizen of the United States, residing at Lead Hill, in the county of Boone and State of Arkansas, have invented certain new and useful Improvements in Resawing-Machines; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to woodworking-machines in which a board or other piece of timber is planed, matched, and split or cut in two at the same time; and it consists in certain improvements in the construction and combination of parts of such a machine, as will be hereinafter more fully set forth.

In the accompanying drawings, Figure 1 is a perspective view of my improved machine, and Fig. 2 is a detail longitudinal section.

Referring to the drawings, 1 represents a frame, which may be of wood or metal and upon which the table 2 is secured, as also a portion of the driving mechanism 3, the remaining portion of the driving mechanism being shown upon a separate stand 4. The table 2, which is formed into a bed at its top, is provided with the feed-rollers 5, 6, and 7, the upper and lower planer-heads 8 and 9, the side heads 10 and 11, and the revoluble saw 12. The feed-roller 5 is driven by a sprocket-chain 13 from a small sprocket-wheel 14 on one end of a short shaft 14′, which is suitably journaled in a bearing at one corner of the table 2, which shaft also carries a large sprocket-wheel 15. The wheel 15 is driven by a sprocket-chain 16 from the smaller wheel 17 at the bottom of the table, which is secured to one end of a short shaft 18, the opposite end of the shaft having the larger wheel 19 secured thereto. The larger wheel 19 is driven by the belt 20 from the main shaft of the driving mechanism, which receives its motion from any suitable motor through the small pulley 22 at one end. In this manner a very powerful feed is secured, as a smaller wheel is arranged to drive a larger one, which always increases the power in proportion to the difference in size of the two wheels. The feed-roller 6 is driven from the roller 5 by the chain 23 and the roller 7 from the roller 6 by the chain 24, the feed-rollers all being geared to travel at the same rate of speed and the two in front of the planer-head being grooved or fluted, as shown, to give a better grip upon the board, while the other roller 7 is smooth, as it must engage with the board after it has been planed or smoothed ready for use, and would indent the surface if it were rough or uneven. The pressure of the rollers in front of the planer-heads is regulated by the ordinary pressure-bar and straps 11^a, which are secured at their lower ends to the handle or lever 25. A weight 26 is loosely secured upon the lever, so that it can be shifted toward or from the fulcrum or pivoted end of the lever to give the degree of pressure required. The pressure of the smooth roller 7 may be regulated by securing it in slotted bearings 27 27 and securing it by suitable means at any point in the slots after it has been arranged to give the pressure required; or the bearings 27 27 may be yielding or elastic, which will give it sufficient pressure to keep the board in place. The upper planer-head 8 is driven from the pulleys 28 28 upon the shaft 21, each end of the planer-head being provided with a driving-pulley 29. The lower planer-head 9 is driven in a corresponding manner from the pulleys 30 30 upon the shaft in the stand 4. The relative distance between the upper and lower planer-heads to correspond with thicker or thinner lumber is regulated or adjusted by means of the ordinary screw-shafts and bevel-gearing 31. The matching or side heads 10 and 11 are journaled at their lower ends in lugs or supports 32 upon the lower portion of the frame 2 and are each provided with a driving-pulley 33 and driven from the pulley 34 upon the shaft 21′.

The resawing mechanism consists of the flat circular saw 12, which is secured to the upper end of the shaft 35, which is journaled at its lower end in a bearing 36 upon a curvilinear bracket or frame 37. The bracket 37 is provided with slots 37^b for the passage of bolts 37^a, which take through the curved face of the supporting-frame 37^c, whereby it will be seen that the bearing 36 may be shifted to one side or the other to adjust and adjustably fix the saw with respect to the matching-heads 10 and 11. The shaft is provided with a driving-pulley 38, by means of which it and the saw are driven from the pulley 39 upon the shaft on

the stand 4. The height of the saw above the top of the table 2 is adjusted or regulated by means of a set-screw 39, that bears against the bottom of the shaft in the bearing 36, while the upper end of the shaft 35 is journaled in a bearing 40, suitably secured in a curvilinear slot 41 of the table, through which the shaft or arbor 35 passes.

Adjustably secured by a set-screw 43 upon the shaft or arbor 35 beneath the bearing 40 is a collar 42, which is designed to bear against the bearing 40 and prevent a casual upward movement of the shaft 35 and the saw carried thereby.

When it is not desired to use the saw, it can be taken out of the table by means of one bolt in the box that holds the shaft.

In use the mechanism is all put in motion by the belting and gearing above described, and the lumber to be operated upon is passed in under the feed-rollers 5 and 6. The upper and lower planer-heads then smooth the upper and lower surfaces and the sides or edges are smoothed by the side heads, which may also tongue and groove it for matching or joining, and it is then passed on to the resawing mechanism, where it is split or cut in two pieces longitudinally. The teeth of the saw can be the ordinary plane teeth, if desired, which will dress or smooth the surfaces, as well as split the lumber in two.

Having thus described my invention, but without limiting myself to the exact construction shown, I claim—

1. In a resawing-machine substantially as described, the combination, with the main frame having the supporting-frame 37^c provided with a curved face, the saw-table having the curvilinear slot, and the matching-heads 10 and 11, arranged above the saw-table in advance of the slot, of the adjustable curvilinear bracket 37, having the slots 37^b and carrying the bearing 36, bolts taking through the slots of the bracket 37 and into the curved face of the supporting-frame below the table, an upright saw arbor or mandrel stepped in the bearing 36 and having its upper end passing through the slot 41 in the saw-table, the horizontally-disposed saw mounted on the upper end of the arbor or mandrel, and a set-screw carried by the bearing 36 for adjusting the arbor or mandrel and the saw vertically, substantially as specified.

2. In a resawing-machine substantially as described, the combination of the horizontally-disposed vertically and laterally adjustable saw, the pressure-roller 7, arranged above said saw and having a vertical adjustment, the matching-heads 10 and 11, arranged in advance of the saw and upon opposite sides of a longitudinal line drawn through the center of said saw, the upper planer-head 8, arranged in advance of the matching heads and above the horizontal plane of said matching heads, the lower planer-head 9, arranged in advance of the upper planer-head 8 and in a horizontal plane below that of the matching-heads, and the feed-rollers 5 and 6, arranged in advance of the planer-head 9 and above the horizontal plane of said head and having a vertical play, all adapted to operate substantially as specified.

In testimony whereof I affix my signature in presence of two witnesses.

FRANK R. LEE.

Witnesses:
GEORGE F. MCCLARY,
CHARLES L. PATTERSON.