No. 767,397. PATENTED AUG. 16, 1904.

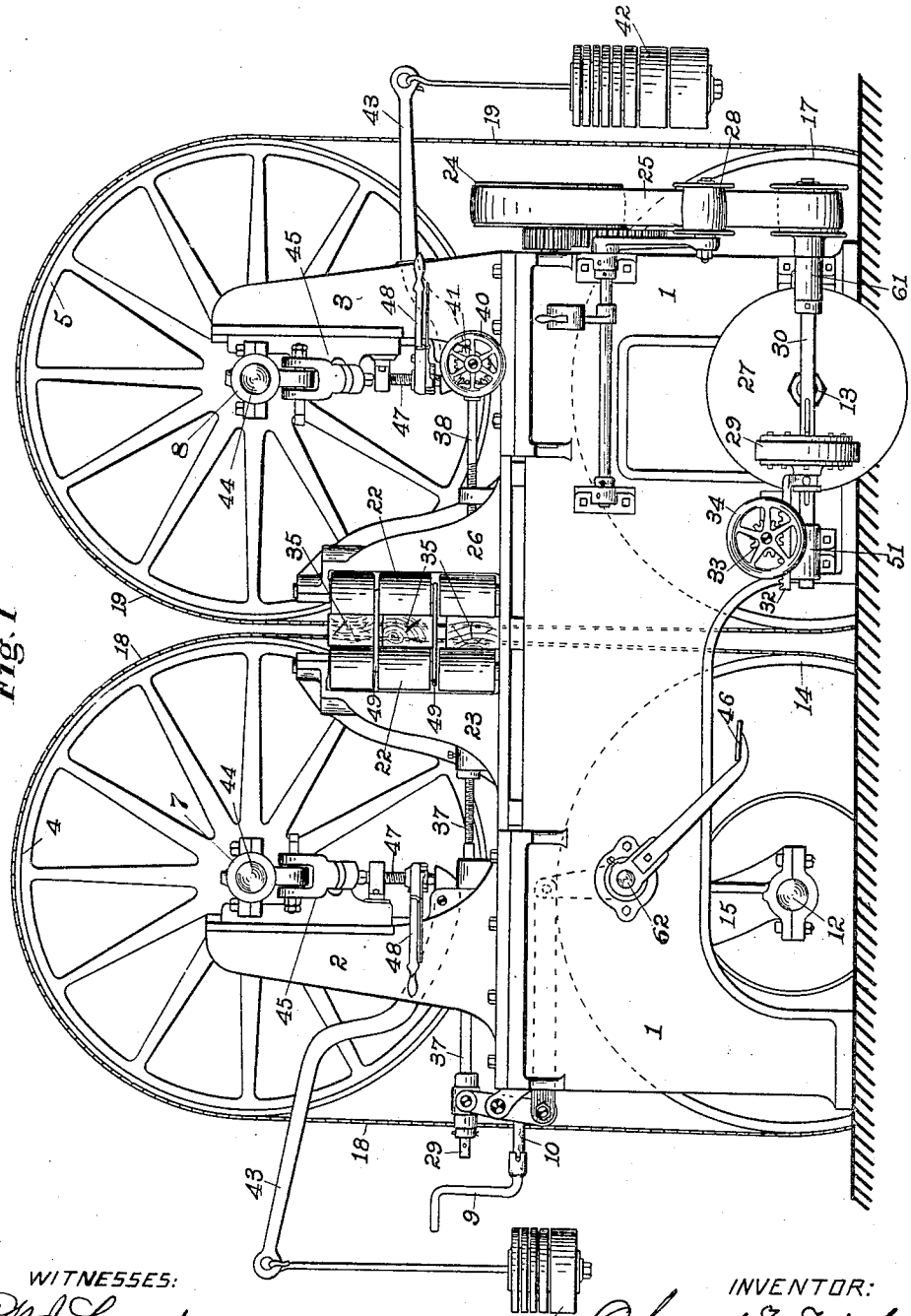
O. W. FAIRFIELD.

SAWING MACHINE.

APPLICATION FILED DEC. 14, 1903.

NO MODEL. 2 SHEETS—SHEET 1.

Fig. 1



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No. 767,397. PATENTED AUG. 16, 1904.

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NO MODEL. 2 SHEETS—SHEET 2.

Fig. II

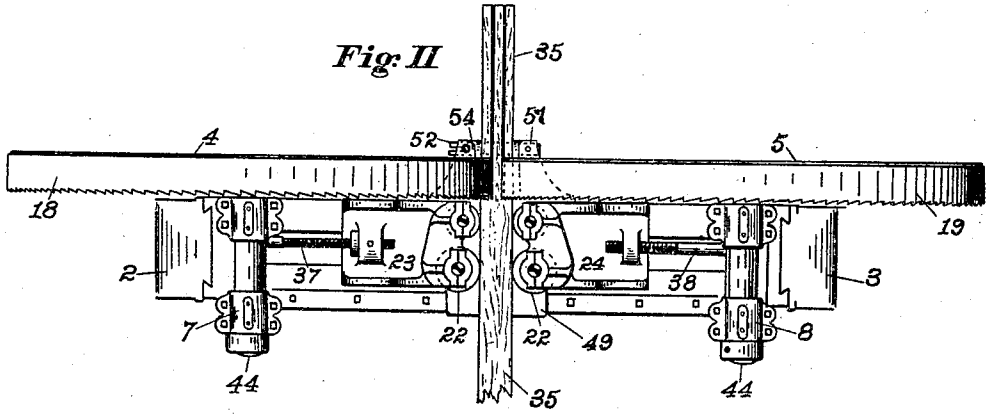


Fig. III

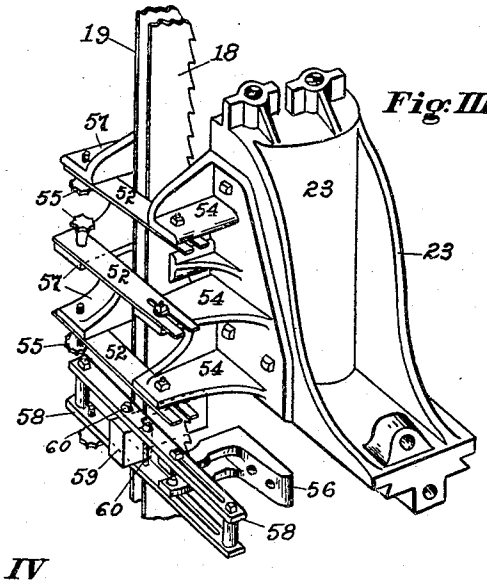


Fig. IV

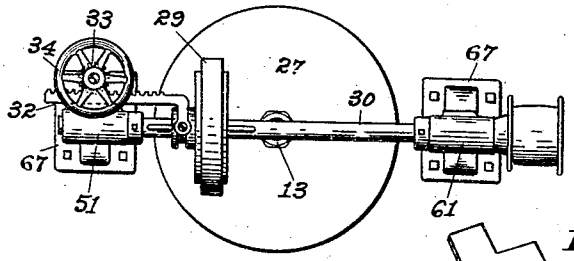


Fig. V

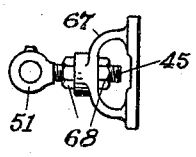
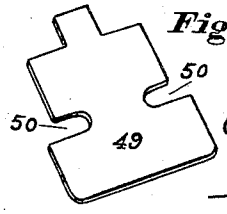


Fig. VI



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No. 767,397. Patented August 16, 1904.

UNITED STATES PATENT OFFICE.

ORLANDO W. FAIRFIELD, OF SAN FRANCISCO, CALIFORNIA.

SAWING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 767,387, dated August 16, 1904.

Application filed December 14, 1903. Serial No. 185,079. (No model.)

To all whom it may concern:

Be it known that I, ORLANDO W. FAIRFIELD, a citizen of the United States, residing at San Francisco, county of San Francisco, and State of California, have invented certain new and useful Improvements in Sawing-Machines; and I hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming a part of this specification.

My invention relates to machines for band-sawing, and especially for what is called "re-sawing" balks, deals, or plank into thinner sections, and to certain improvements in such machines, as hereinafter described, and illustrated by drawings that form a part of this specification.

My improvements consist in the combination and arrangement of two band sawing-machines independent except as to the main frame and driving-gearing, one machine fixed and the other laterally and relatively adjustable, set in juxtaposition, so that the two saws may act at the same time on the same piece or pieces of timber, provision for sawing one or more pieces superimposed one above another, removable supports for such separate pieces, rear guides for the saws, and means for removing and replacing the same, also in other devices, as hereinafter fully explained.

The object of my invention is to secure dual, and consequently more rapid, performance of the sawing operation, not only by the use of two saws, but also by multiplying the number of pieces operated upon at one time.

Referring to the drawings, Figure I is a front elevation of a sawing-machine arranged according to my invention. Fig. II is a partial plan view of the same machine. Fig. III is a view in perspective of the rear mechanism to support the timber and the saws. Fig. IV is a front view of the variable-feeding mechanism. Fig. V is a detail of Fig. IV, and Fig. VI an oblique view of one of the removable timber-supporting plates.

In general construction the machines illustrated conform in most of their features to those of the common type, except as to being right and left and capable of independent action or conjointly, as required.

The main frame 1 and standards 2 and 3 are of common construction, the wheels 4 and 5 being supported in bearings 7 and 8, movably mounted on the standards 2 and 3. The standard 2 is movably mounted on the main frame 1 and is adjusted by the crank 9 and screw-shaft 10 in the usual manner. The standard 3 is fixedly mounted on the main frame 1. The lower wheels 14 and 17 are driven in opposite directions by bands and pulleys on the shafts 12 and 13 in the usual manner. The lower wheel 14 is mounted on a bracket 15, pendent from the base of the sliding standard 2, and the lower wheel 17, being fixed, is mounted on the main frame 1.

The saws 18 and 19 are put on the wheels from the rear, as hereinafter explained, and are made as short as possible, so the wheels 4 and 5 will run clear of the timber 35, being sawed as shown in Fig. I.

The feeding-rollers 22 are mounted on the sliding standards 23 26 and driven from below with the usual gearing, (not necessary to be shown,) operated by the pulley 24, driven from the wheel-shaft 13 by means of a band 25, friction-disk 27, and wheel 29. The tension-pulley 28 is employed to stop and start the feeding-gearing.

The friction-wheel 29 is movably mounted on the shaft 30 and is traversed across the friction-disk 27 by means of a rack 32 and pinion 33 and a hand-wheel 34 and is driven at various rates of speed as it is moved toward or away from the center of the disk 27, the feeding-rollers 22 revolving at a faster or slower rate accordingly.

The brackets 23 and 26 are moved outward and inward to accommodate the thickness of the timber 35 by means of the screws 37 and 38, the former being adjusted by a crank fitting on at 29 and the latter by means of a hand-wheel 40 and bevel-gearing at 41, as shown in Fig. I.

The saws 18 and 19 are strained by means of the weights 42 and levers 43, that act on the bearings 7 and 8, as shown in Fig. I, the position of the weights 42 and the upper wheels 4 and 5 being adjusted relatively by means of screws 47 and ratchet-levers 48.

In case the bracket 23 is to be suddenly drawn back to arrest and loosen the timber 35 or to assist in starting fresh pieces between

the rollers 22 this motion is provided by a treadle 46 on the shaft 62, connected to the screw-rod 37 by levers and links, as shown in Fig. I. This sudden stop motion for the feed is necessary in case of fracture or derangement of saws or other parts of the machine.

Referring to the feeding-gearing, the friction-wheel 29 is covered with or composed of some material to cause tractile friction, and to secure the required pressure on the disk 27 and compensate for wear the shaft 30 is mounted in laterally-adjustable bearings 51 and 61. (Shown enlarged in Figs. IV and V.) These bearings are made with stems 45, that pass through brackets 67 and are provided with following-nuts 68, by means of which pressure between the wheel 29 and the disk 27 is regulated.

A particular object of my improvements is to enable the sawing of two or more pieces of timber at one time. These are superposed, as shown in Fig. I, separated by removable bearing-plates 49. (Shown in Fig. II.) These plates are prevented from horizontal movement by the indented notches 50 and are inserted between the sections of the feeding-rollers 22, so as to occupy but a thin space vertically, as shown in Fig. I, and can be removed and replaced by moving back the bracket 23 by means of the treadle 46 or the crank at 29.

At the rear of the machine I provide a series of bearing-bars 52, pivotally attached to brackets 57 and movably held on the brackets 54, as shown in Fig. III. These bars 52 correspond to the plates 49 in front of the saws 18 and 19 and serve to sustain the timber 35 as it passes out of the machine. These bars 52 are slotted at one end for adjustment and when the screws 55 are removed can be swung out of the way of the saws 18 19 when these latter are removed or replaced.

Below the bars 52 and similarly mounted on bracket 56 is a guide-holding frame 58, in which is clamped a saw-guide 59, that passes between the saws 18 and 19 or may have slots to receive both saws. The guide 59 can be drawn out when the bolts 60 are loosened and the main frame 58 swung out of the way when the saws 18 and 19 are to be removed or replaced, as in the case of the bars 52.

Having thus explained the nature and objects of my improvements and the manner of constructing and operating the same, what I claim as new, and desire to secure by Letters Patent, is—

1. In a sawing-machine, two pairs of wheels and two saws, one fixed and the other adjustable, means to adjust the latter, feeding-rollers to advance the timber to be sawed, these feeding-rollers made in sections, and removable plates interposed between the feed-roll sections to form supports so two or more pieces can be sawed at the same time, substantially as described.

2. In a band sawing-machine, two pairs of wheels and two saws relatively adjustable in a horizontal plane, feeding-rollers to advance the material to be sawed, the former consisting of sections and removable interposed bearing-plates between these sections scalloped or indented at their sides to fit around the shafts of the feeding-rollers and be held in place without permanent fastenings, substantially as described.

3. In a double band sawing-machine, feeding-rollers to advance the timber to the saws; these rollers made in sections with removable bearing-plates between the sections and, at corresponding levels behind the saws, adjustable and reversible bearing-bars to support the pieces of timber when two or more pieces are sawed at the same time, substantially as specified.

4. In a double band sawing-machine, two saws relatively adjustable in a horizontal plane, means to strain and adjust the saws, feeding-rollers to advance the timber being sawed, removable bearing-plates to sustain two or more superimposed pieces of timber, and corresponding bearing-bars behind the saws removably mounted on the feed-roller frames adjustable therewith by means of slotted ends and removable screw-bolts, arranged and operating in the manner substantially as specified.

5. In a double band sawing-machine, two band-saws relatively adjustable in a horizontal plane, feeding-rollers to advance the timber to these saws, composed of sections, and interposed removable bearing-plates between these sections, removable and adjustable bearing-bars at the rear of the machine corresponding to the bearing-plates in the front and attached to the feeding-roller frames, and in combination therewith an adjustable and removable frame to hold a saw-guide clamped between the jaws of this frame and removable independent of the frame, substantially as shown and specified.

6. In a double band sawing-machine, two saws relatively adjustable, top and bottom wheels on which the saws are strained, the top wheels set close to the top of the timber being sawed, feeding-rollers to advance the timber composed of sections longitudinally, removable bearing-plates between these sections, removable bearing-bars at the rear of the saws, and a removable clamping-frame to hold the saw-guide, the whole adapted for sawing two or more pieces, arranged and combined in the manner and for the purposes substantially as specified.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

ORLANDO W. FAIRFIELD.

Witnesses:
H. H. BARNARD,
E. H. BARNARD.