

No. 615,693.

Patented Dec. 13, 1898.

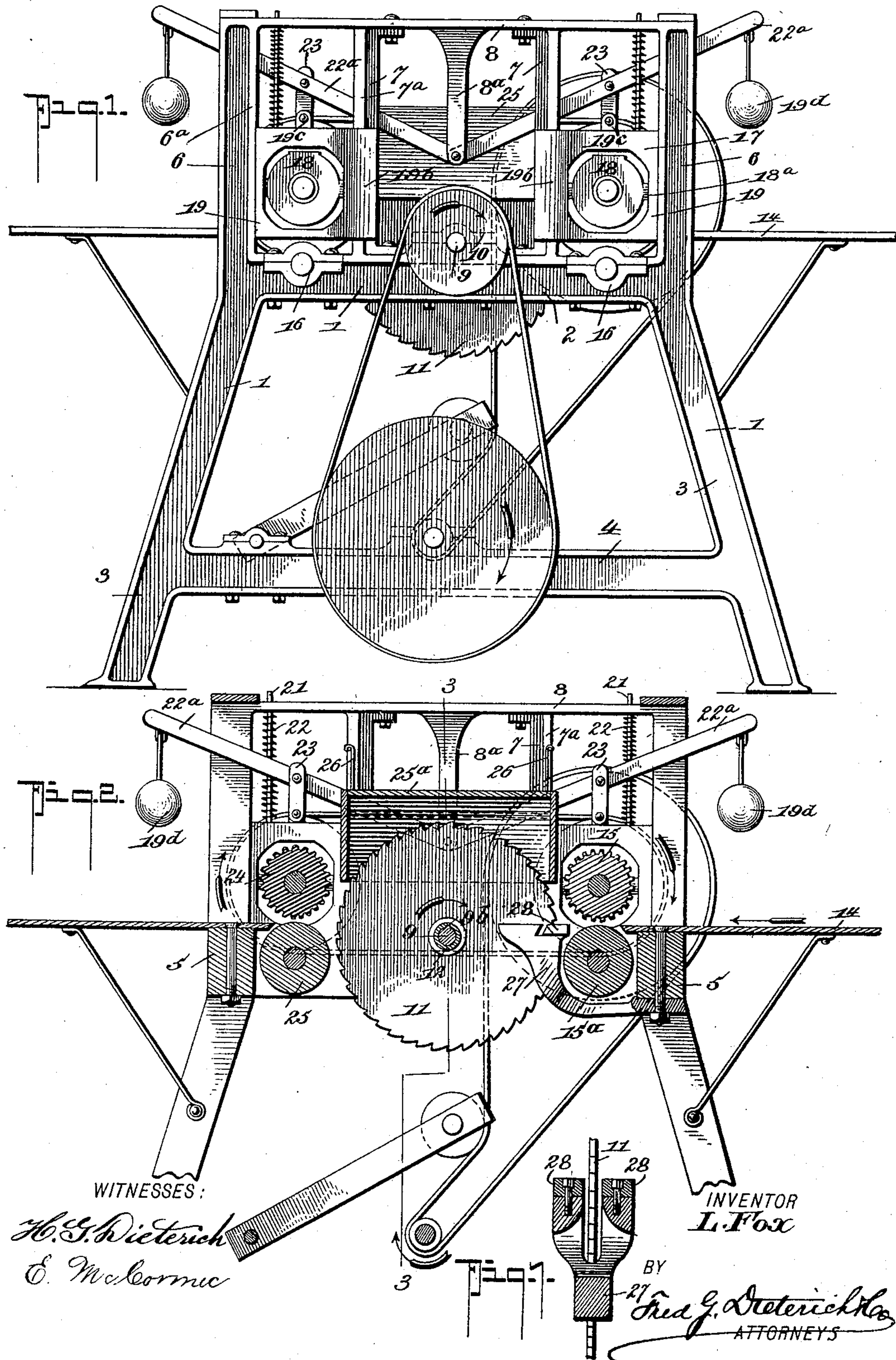
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SHINGLE SIZER AND EDGER.

(Application filed June 1, 1898.)

(No Model.)

2 Sheets—Sheet 1.



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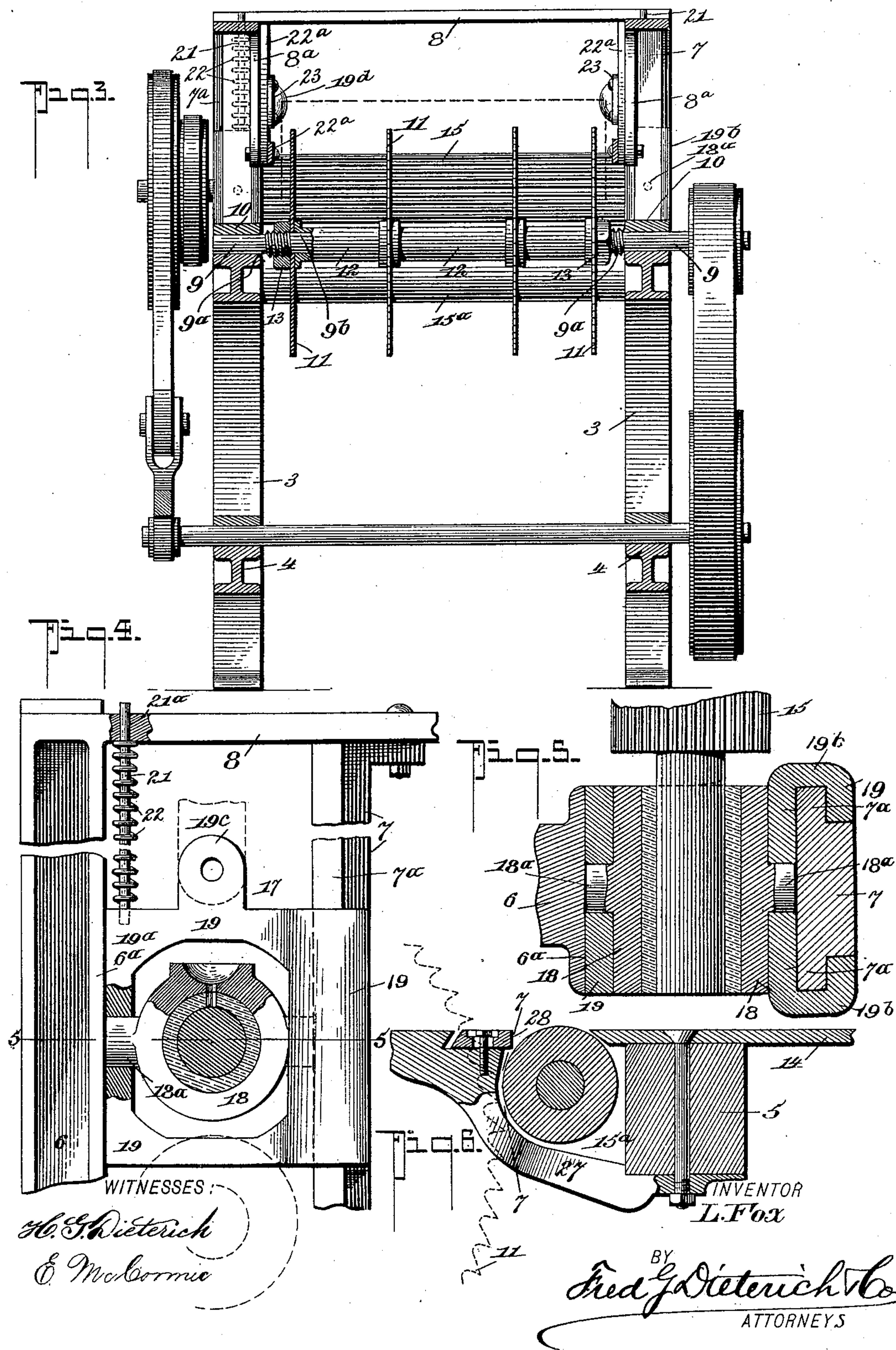
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2 Sheets—Sheet 2.



UNITED STATES PATENT OFFICE.

LEANDER FOX, OF LAKE ARTHUR, LOUISIANA.

SHINGLE SIZER AND EDGER.

SPECIFICATION forming part of Letters Patent No. 615,693, dated December 13, 1898.

Application filed June 1, 1898. Serial No. 682,289. (No model.)

To all whom it may concern:

Be it known that I, LEANDER FOX, residing at Lake Arthur, in the parish of Calcasieu and State of Louisiana, have invented a new and Improved Shingle Sizer and Edger, of which the following is a specification.

This invention relates to improvements in machines for simultaneously sizing and edging shingles, and it has primarily for its purpose to provide a machine of this character of a very simple and economical construction which can be easily manipulated, be of great capacity, and which will effectively serve for its intended purposes.

This invention also comprehends in its structure a novel bearing means for the feed-rolls having automatic adjustment whereby to effect a uniform feed of the shingle-board as it is fed to the saws to reduce any lateral or twist bearing strain of the timber on the saws as it passes therethrough to the minimum.

In its subordinate features this invention comprehends certain novel features of construction and peculiar combination of parts, such as will be first described in detail and then be specifically pointed out in the appended claims, reference being had to the accompanying drawings, in which—

Figure 1 is a side elevation of my improved shingle edging and sizing machine. Fig. 2 is a vertical longitudinal section of the same. Fig. 3 is a transverse section taken on the line 3 3 of Fig. 2. Fig. 4 is a side elevation, partly in section, of one of the feed-shaft bearings. Fig. 5 is a horizontal section of the same on the line 5 5 of Fig. 4. Fig. 6 is a detail view of one of the saw-guards and the adjustable guide hereinafter particularly referred to, and Fig. 7 is a detail transverse section taken on the line 7 7 of Fig. 6.

In its general construction this invention embodies a suitable supporting-frame having a feed-table at one end, a discharging-table at the other end, and a saw arbor or mandrel detachably mounted on the frame carrying circular saws held apart at predetermined distances by means of suitable spacing-sleeves and clamp-nuts. These saws in practice are so spaced as to simultaneously cut and edge shingles of different sizes from a shingle-board of full width of the machine, (or less,) which is fed from the front table to the saws

by a pair of friction feed-rolls, which are journaled in bearings detachably held on the main frame and in themselves so constructed as to give the upper or presser roll of such bearings a rocking motion vertically and transversely to the direction of the feed of the shingle-board, whereby to have, as it were, a yielding bearing, so such rod will accommodate itself to the uneven thickness of the board transversely, and thereby maintain a uniform pressure on such board to effect a steady and positive feed of the board to the saws, and thereby avoid any undue or lateral frictional strain of the board on the saws, which would occur by an irregular feed of the board therebetween. A second or off-take feed mechanism arranged and constructed like the first feed devices is provided to take off and guide the cut shingles from the saws to the discharging-table, such second feed devices differentiating from the first only in that the upper or guide roll is made of a yielding material, whereby to provide for a more uniform and positive discharge of shingles having slightly-varying thicknesses. The general structure also includes a novel form of saw-guards which have a special form of bridge or guide pieces and which are detachably connected to the front cross-bar of the main frame.

Referring now to the accompanying drawings, in which like numerals indicate like parts in all the figures, 1 indicates the main or supporting frame, preferably of iron and of suitable shape, which comprises the parallel longitudinal bed-beams 2, the end legs 3, the bottom longitudinal bars 4, and the cross bed-bars 5.

Mounted on the main frame or formed integrally therewith is a top frame consisting of the end members 6, the vertical guides 7, and the top bars 8, connecting the said end and guide members and provided with pendant portions 8^a, forming fulcrums for the presser-levers, presently fully described.

Centrally of the main frame is journaled the saw mandrel or shaft 9, the ends of which are seated in journal-boxes 10, detachably secured on the bed-bars 2 and having at points adjacent the bearings threaded portions 9^a and intermediate such portions a feather 9^b,

which fits the grooves in the hubs of the saws 11, which are detachably and adjustably held on the mandrel, as best shown in Fig. 3, by reference to which it will be seen the saws 5 are held spaced apart at unequal distances by means of tubular space members 12, the opposite ends of which bear against the saws, which are held securely clamped to turn with the shaft 9 by the end joint-nuts 13, which engage the threaded portions of the shaft 9. By thus fitting the saws on the shaft and detachably holding the shaft on the main frame it is obvious that the saw arbor or shaft can be quickly removed and the saws set spaced apart to cut the different sizes of shingles desired by using spacing members of corresponding sizes.

14 indicates the front or feed table, which is disposed in line with the axis of the saws and has its inner end held to discharge between the front or feed rolls 15 15^a, the lower one of which has a fixed bearing in boxes 16, detachably held on the main frame, while the upper one is adjustably held in bearing-boxes, the peculiar construction of which forms an essential feature of this invention.

The boxes 17 (best illustrated in Figs. 4 and 6) each consist of a tubular journal 18, having centrally thereof oppositely-disposed stud-pintles 18^a, having bearings in a vertically-reciprocating carriage or slide frame 19, one edge 19^a of which is flat and held to bear snugly against the inner wall 6^a of the end members 6, while its opposite end terminates in extended angle-lugs 19^b, which fit over vertical ribs 7^a on the guide members 7, which members in practice are detachably connected to the main and top frames. By thus forming the guide or slide frame 19 it is manifest the members 6 can be integrally formed with the main frame and the said frame 19 slid onto the guides of the members 7 before such members are secured in place, thereby making the displacement of the slide-frames 19 impossible after the members 7 have been set up, it being manifest that as the flat side of the members engage the faces 6^a of the members 6 the frame will be suitably guided and held to reciprocate freely vertically to accommodate different thicknesses of the shingle-boards, and to hold such frames from bending, by reason of the difference in the opposite bearing edges, the end next the members 6 have vertical rods 21, which pass up through guide-apertures 21^a and which have surrounding springs 22, the tension of which is to normally force the frame 19 down, the object in placing the rods 21 of the springs to one side of the center being to compensate for the irregular pressure effected on such frame 19 by the lever devices, which I shall now explain.

22^a 22^a indicate a pair of levers (one at each side of the machine) which have their inner ends pivoted to the fulcrum-piece 8^a and which, through the medium of the links 23, connect with the inwardly and upwardly projecting lugs 19^c on the frames 19, while their

outer ends carry adjustable weights 19^d, the moving of which inward and outward will create a varying downpressure on the upper one, 15, of the feed-rolls.

24 and 25 indicate the offtake or discharging feed-rolls, which are journaled at the rear of the saws in bearings constructed and operating precisely similar to the bearing of the front feed-rolls, the several parts of the discharge feed-rolls being indicated by the same numerals in the drawings. The upper roll of both the rear and front sets are preferably roughened or corrugated, whereby to the more effectively grip the shingle-board.

As the board when it enters the front feed-rolls is in the nature of a single member, I make the front rolls of solid material to provide a more uniform gripping action; but as the board is cut up into shingles as it passes the saws and as the spring of the different shingle members varies one or both of the rear feed-rolls are made of yielding material to accommodate the different springy quantities of the separated shingles, thereby overcoming any irregular pressure on the roller-shafts.

By journaling the feed-rolls in the manner described it will be readily apparent that they will maintain a solid bearing on the shingles or shingle-board at all times irrespective of the varied transverse thickness thereof, and by mounting the feed-rolls and the saws as described and shown the several parts can be quickly detached when necessary.

To protect the operator, a suitable shield 25 is held suspended over the saws by means of hangers 26. (See Fig. 2.)

The saw-guards consist each of a bracket 27, detachably secured to the front cross-bar 5, bent to pass under the lower roll 15 and having its end bifurcated to lap the front end of the saw and held in line with the feed bed and rolls, and such bifurcated ends have each a block 28 adjustable to and from the saw edge, which form bridge members to reduce the space between the discharge edges of the front rolls and the saws and provide rests to hold the front end of the shingle-board from dropping as it passes to the saws.

By forming the brackets with adjustable blocks instead of making them with integral rearwardly-extending bridge portions allows for setting the feed-rolls close up to the cross-bar 5 and also for lifting it up from its bearings, it being obvious that by shoving the blocks 28 back sufficient clearance will be provided for lifting out the lower roll.

From the foregoing description, taken in connection with the accompanying drawings, it is thought the advantages of my improvement will readily appear to those skilled in the art to which it appertains.

In practice my improved machine has suitable belt-tightening devices and drive-pulleys, as indicated in the drawings.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. The combination with the main frame; the saws and the feed-rollers held in close relation to the saws, and the end bar of the main frame, the lowermost roll adapted to be removed through the space between the saw and the end bar; of the bifurcated saw-guards detachably secured to the end bar, said guards having endwise-adjustable guide-blocks forming bridge members for projecting over the front end of the lowermost roller, substantially as shown and described.

2. The combination of the main frame, the saws, the lower feed-roll held in close relation with the saws and adapted to be removed through the space between the same and the end bar of the frame, and the saw-guards secured to said end bar and provided with the guide-blocks adjustable longitudinally of the machine, substantially as described.

3. An improved shingle edging and sizing machine, comprising a main frame, a saw-mandrel journaled midway thereof, carrying a series of adjustable and detachable saws; feed-rollers arranged at the front and rear edges of the saws, each set of rollers consisting of a lower fixedly-journaled roller and an upper adjustable roller; bifurcated saw-guards adjustably connected to the main frame, projected under the lowermost one of the forward set of rollers and having endwise-adjustable bridge-blocks; means for operating the rollers and the saws; and means for

holding the upper ones of the feed-rollers normally pressed downward, and a shield suspended over the saws, substantially as shown and described.

4. In a machine of the class described, the combination of the main frame provided with the vertical end members 6, the removable vertical guides 7, the vertically-sliding frames arranged between the members 6 and the guides 7 and having flanges embracing one of said parts, the rods extending upward from the sliding frames and extending through the top of the main frame, the springs disposed on the rods and bearing against the sliding frames, the weighted lever engaging the latter, and the upper roll journaled on the sliding frames, substantially as described.

5. The combination of the main frame having the vertical end members 6, the removable vertical guides 7, the saw arranged between the guides, the vertically-sliding frames located between the end members 6 and the guides 7, the upper rolls journaled on the sliding frames, the lower rolls, the springs for forcing the upper rolls downward, and the weighted levers fulcrumed at a common point and engaging the sliding frames, substantially as described.

LEANDER FOX.

Witnesses:

GEO. W. CHILDS,
F. S. SIMONS.