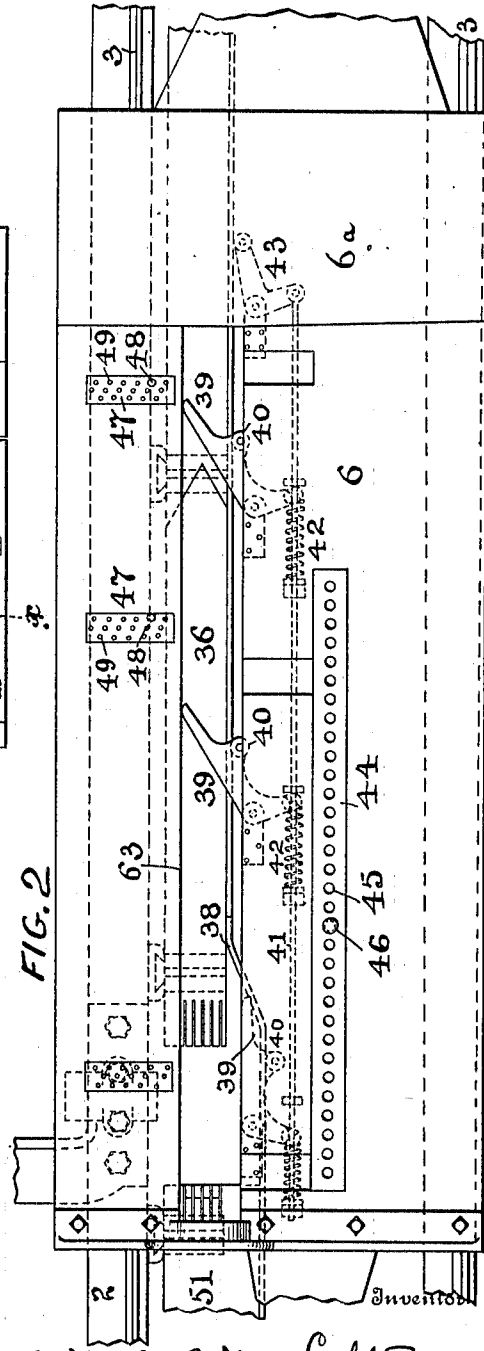
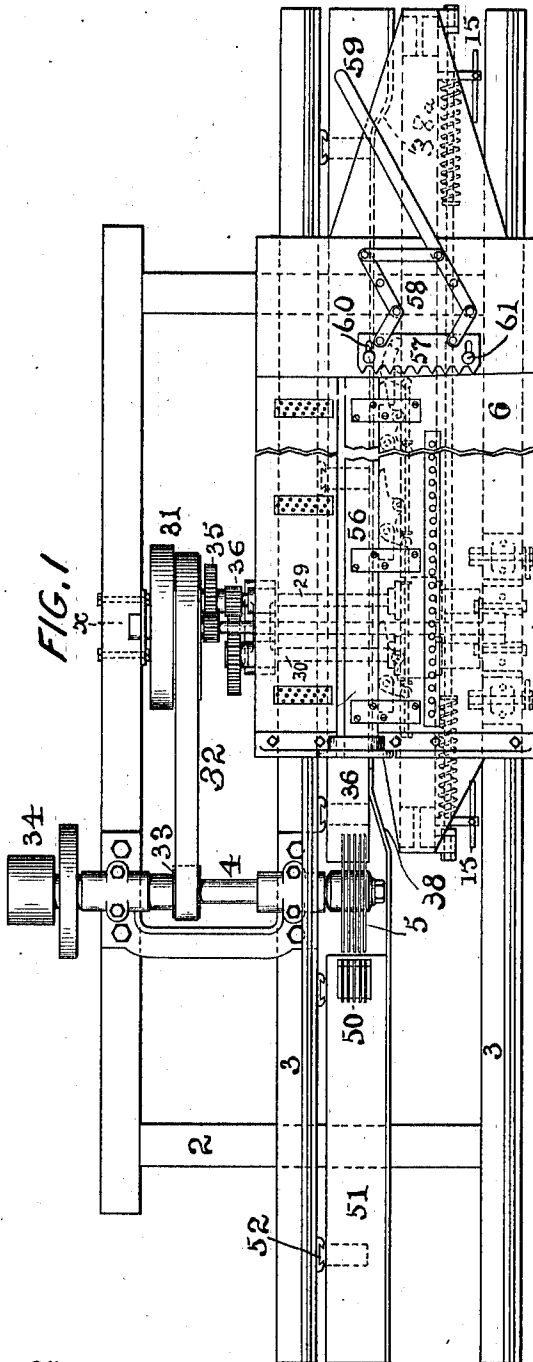


H. M. LOFTON.
COMBINATION LATH AND SHINGLE MACHINE.
APPLICATION FILED JULY 27, 1908.

1,059,376.

Patented Apr. 22, 1913.

3 SHEETS—SHEET 1.



Witnesses
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A. M. Kelly.

Herbert M. Lofton
By *[Signature]*
Attorney

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3 SHEETS-SHEET 2

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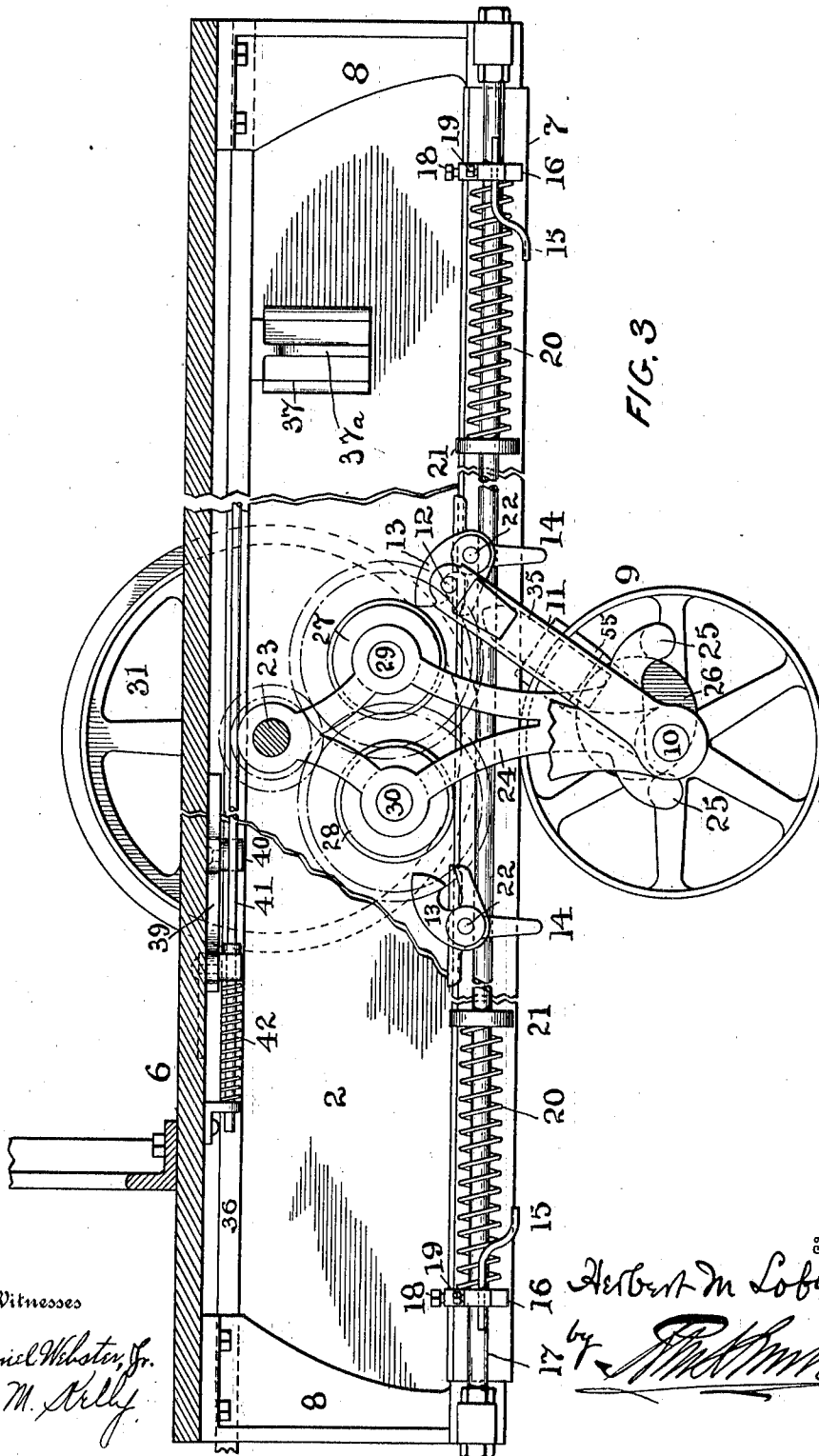


FIG. 3

Witnesses

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3 SHEETS—SHEET 3.

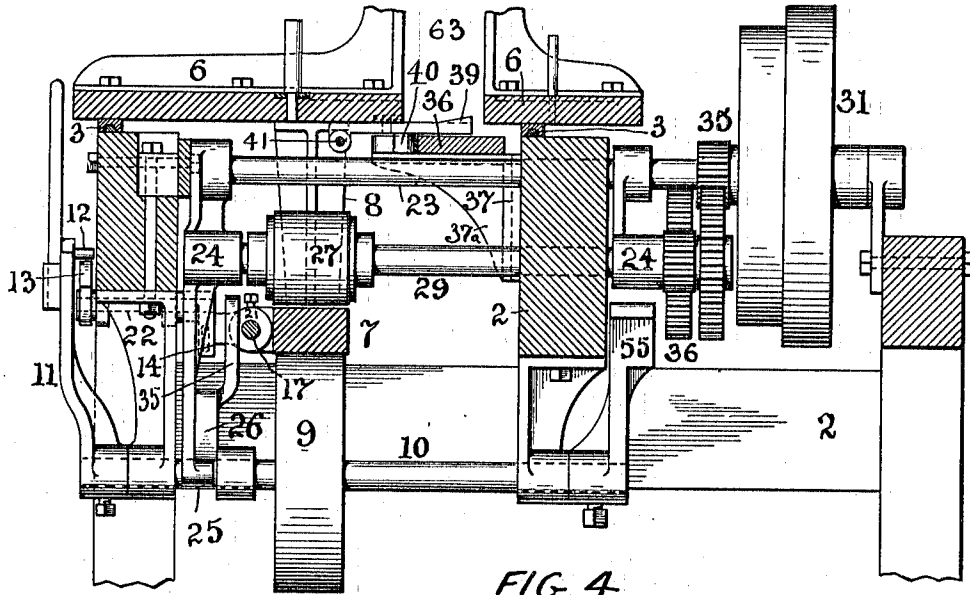


FIG. 4

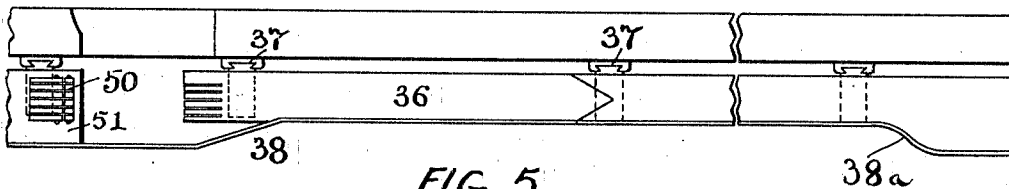


FIG. 5

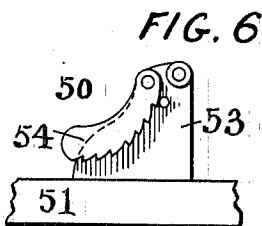


FIG. 6

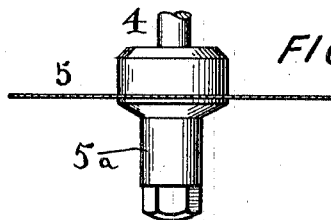


FIG. 7

Witnesses

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UNITED STATES PATENT OFFICE.

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COMBINATION LATH AND SHINGLE MACHINE.

1,059,376.

Specification of Letters Patent.

Patented Apr. 22, 1913.

Application filed July 27, 1908. Serial No. 445,453.

To all whom it may concern:

Be it known that I, HERBERT M. LOFTON, a citizen of the United States, and resident of the city of Atlanta, county of Fulton, State of Georgia, have invented an Improvement in Combination Lath and Shingle Machines, of which the following is a specification.

My invention has reference to combined lath and shingle sawing machines, and consists of certain improvements which are fully set forth in the following specification and shown in the accompanying drawings which form a part thereof.

This invention is an improvement upon a shingle sawing machine for which I have applied for Letters Patent, the application for which is serially numbered 417,507 and filed February 24th, 1908 and is more particularly directed to giving to the machine therein set out further capacity whereby it may also be used for sawing laths.

More generally considered, the object of my invention is to provide a construction of machine capable of doing certain combinations of work from one saw mandrel employed with one carriage and one main frame; and among the kinds of work to be done are sawing of shingles, laths and ordinary roughing out work, preliminary to the sawing of the shingles and laths.

My invention consists of the features of construction which are described in the specification hereinafter and more particularly pointed out in the claims.

My invention will be better understood by reference to the drawings in which:—

Figure 1 is a plan view of my improved machine; Fig. 2 is an enlarged plan view of the carriage portion of the machine; Fig. 3 is a sectional elevation of a portion of the machine, having particular reference to the automatic tripping devices for reversing the movement of the table or carriage; Fig. 4 is a cross section of the machine on line $x-x$ of Fig. 1; Fig. 5 is a plan view of the center beam and detachable lath table; Fig. 6 is a side elevation of the lath holding pawl devices; and Fig. 7 is a plan view of the saw arbor and end of the mandrel.

2 is the main frame and may be of any construction desired and is provided with guides 3, 3 at the top upon which the re-

ciprocating table 6 travels. Suspended from table 6 are the drop brackets 8 which at either end support the friction board 7. These brackets also support and have made fast to them the rod 17; this rod in turn carries adjustable collars 16 clamped at 18, the springs 20 and the buffer collars 21. Collars 16 also have the lugs which in turn carry the tappet rods 15. These tappet rods are adjustable and are held in place by means of the set screws 19.

24, 24 are two swinging brackets hung from the transverse shaft 23 and carry the two shafts 29 and 30, provided respectively with the friction wheels 27 and 28, which are close to the friction board 7. The shaft 23 is provided with a band wheel 31, which is driven by a belt 32 passing about a pulley 33 secured to the mandrel 4, which latter is journaled on the main frame 2 and has the saw arbor and saw 5 at one end and the driving belt pulley 34 at the other end. The shaft 23 is geared to the shaft 29 by gearing 35 by which the table 6 is fed backward with a quick speed. Shaft 29 is geared to shaft 30 by gearing 36, whereby the speed of shaft 30 is caused to be greatly less than that of shaft 29 and is employed to advance the table slowly. By this means the table is advanced slowly as when sawing and returned quickly when performing no act of sawing. Either of the friction wheels 27 or 28 may be thrown into contact with the friction board 7 by oscillating the swinging brackets 24, and as said friction wheels are rotating in opposite directions it is evident that the table will be propelled forward or backward as the case may be. Moreover, as the roller 27 is rotating faster than the roller 28, the table will be propelled backward faster than it is propelled forward in the act of sawing.

One of the brackets 24 is provided with two lugs 25 between which is placed a cam 26 secured to a rock shaft 10 journaled in fixed bearings on the main frame. The front end of the rock shaft 10 is provided with an arm 11 which may be extended upward by a detachable handle 11^a (Fig. 4) and said arm is provided with a pin 12; and the rear end of the rock shaft 10 is provided with a weighted arm 55 which throws the shaft 10 into its two extreme positions.

When the shaft 10 is rocked to the position shown in Fig. 3 the friction wheel 28 is operating upon the board 7 and the table is being fed to the left, as in the act of sawing. The pin 12 on the arm 11 is caught back of a locking pawl 13 and holds the roller 28 to its work until the tappet 15, moving with the table, strikes the arm 14 on the shaft 22 of the pawl 13, causing it to be tripped and the pin 12 released. At the same time, the buffer collar 21, pressing against the end of the arm 35 extending upward from the cam 26, is forced forward by the compressed spring 20 and throws the said arm over a vertical line through the shaft 10, with the result that shaft 10 is rocked and the brackets 24 so shifted as to throw wheel 28 out of contact and wheel 27 into contact with the friction board 7. When the arm 11 is thrown over with shaft 10, the pin 12 thereof locks into a second pawl 13 upon the opposite side of the rock shaft 10. The table will now be drawn backward by the action of the wheel 27. These operations are repeated automatically and regularly. The time of reversing, to secure a long or short travel of the table, may be adjusted by adjusting the tripping tappets 15 in proper positions, which may be done by adjusting them on the collars 16 or adjusting the collars themselves upon the rod 17. The counter weight 55 acts to throw the rock shaft over until the pin 12 is locked by the pawl 13 and the friction wheel engages the friction board, once the collar 21 has forced the arm 11 and its pin 12 beyond a vertical position. In order to stop the automatic movement of the table, it is only necessary to raise one of the catch pawls 13, and put the arm 11 in a central position. When the arm is thus in a central position, neither of the friction rolls are in contact with the friction board. By throwing the catch pawls 13 back out of the way and inserting the detachable handle 11^a, the movement of the table can be controlled by hand by oscillating the handle from one side to the other to alternately bring either of the friction rolls 27 or 28 into driving contact with the friction board. The table can be given any length of stroke by adjusting the collars 16 on the rod 17 to the desired position. These collars 16 are made fast to the rod by means of the adjusting set screws 18.

In operation, it is necessary that the cam 26 should be thrown over with just the right force, and I accomplish this by having the tappet rods 15 adjustable in the collars 16. As previously stated, these tappet rods are made fast by means of the set screws 19. This feature of regulating the force with which the cam 26 is thrown over is accomplished in this way: The table in moving, will compress the spring 20 by the collar 21

being arrested by contact with arm 35, and the point at which this spring is released is regulated absolutely by adjusting the tappet rods 15 so that they will release the springs at any desired point of compression.

I will now refer to the construction and operation of the dogging device on the table.

The dogging plate 44 is let down into the table 6 flush with its upper surface and this plate has a series of holes 45 drilled which in turn carry a removable pin 46. The table 6 also has the end board 6^a. This board carries the steel plate 57 with a series of teeth on its forward edge. The plate 57 has the slots 60 through which bolts 61 extend and by which the plate is guided with a parallel movement. Movement is imparted to this dogging plate 57 by means of the handle 59 and toggle levers 58.

In dogging a piece of timber it will be placed on the table 6 with one end near the dogging plate 57. The pin 46 would then be placed in one of the holes 45 in the plate 44 as near to the forward end of the timber as possible. By pulling the handle 59, the plate 57 is moved forward and its teeth are pushed against the end of the timber, which in turn is pressed against the pin carried by the plate 44. A still further movement of the handle 59 will insert the teeth and hold the timber firmly.

The setting plates 47 are embedded in the table so that their upper surfaces come flush with the table. A series of holes 49 are drilled in these plates and the setting pins 48 are inserted in holes of the respective plates suitable to the thickness of board that it is desired to saw. The timber is then pushed against these pins 48 at the end of each stroke, thus making the timber ready for a new cut.

The features of the dogging device and the setting pins have reference to the combination lath and shingle features of the machine in that they will operate to hold a round log, for instance, while the necessary thickness of shingle "bolts" or lath strips are being sawed preparatory to resawing into shingles or laths, as the case might be; likewise, the setting pins could be used for gaging the necessary thickness of the bolts or strips. These features would also be of value in sawing any other forms of material.

As this is a combination sawing machine it is necessary, in adapting it to various classes of sawing, to change the saws 5 from time to time on the mandrel 4. Thus, in sawing laths, several small saws would be put on the mandrel, as shown in Fig. 1 and indicated at 5. In bolting a log for instance, these saws would be removed and one large saw put on the mandrel. In this case, the long collar 5^a shown in Fig. 7 would be used for holding the large saw instead of several thin collars, as would be the case in

sawing laths. Likewise, the long collar shown in Fig. 7 would be used at all times when just one saw was on the mandrel.

The lath clamping devices 50, shown more particularly in Fig. 6, consist of a series of vertical fixed plates, 53, between which are hinged the eccentric holding pawls 54, and between which pawls and the lath table 51 the laths are fed and gripped after leaving the saws 5.

To insure the lath strips being sawed into straight laths I provide hinged fingers 39 on the table 6 for pressing the lath strip against the edge 63 of the opening in the said table, as more fully described later on.

I will now describe the operation of the machine in sawing laths: The first thing to be done is to remove the detachable board 56, as shown in Fig. 2 and then place the several lath saws in position on the mandrel, as shown in Fig. 1 and indicated at 5. Then, by moving the table 6 to the right as far as it will go, the detachable lath tables 36 can be placed in position by inserting the brackets 37^a in the sockets 37. The table is then put in motion in the usual way and when it makes its extreme back stroke, the strip from which it is intended to make laths is dropped into position on top of the lath table 36, which places this lath strip in the opening made by removing the detachable board 56. A forward stroke of the table 6 then will cause the lath strip to slide along on top of the lath tables and be forced upon the several lath saws which will rip it up into laths, and after the table has completed its forward stroke, the holding pawls 54 will automatically grip the respective laths and hold them until another strip is put in and advanced, which will force the previously sawed laths out over the front end of the detachable table 51. This operation is continued as each strip is sawed into laths. As the lath strip is dropped into the opening previously mentioned and the table 6 feeds forward, it is necessary to have this strip pressed in against the back side of the opening indicated at 63 (Fig. 2). This insures the sawing of straight laths. I accomplish this by means of the pressing fingers 39 which, immediately after the carriage starts on its forward stroke, automatically press the lath strips against the back side 63 of the opening and continue to exert this pressure against the strip until each successive finger approaches the saws, at which time these fingers automatically recede from out of the way of the saws. On the extreme back stroke these fingers also recede in order that the lath strip may be placed in the opening. The movement of these fingers in and out is controlled by means of the fixed cams 38 and 38^a, as indicated in Figs. 2 and 5.

It will be seen from Fig. 2 that the fin-

gers 39 are pivoted to suitable brackets on the table 6. These fingers have rollers indicated at 40 traveling against the cam 38. A rod 41 has springs 42 pressing upon the heels of the fingers 39 to press them toward the guide edge 63. The rod is carried by the table and at its front or right end connects with the bell crank 43 which has a roller at its free end acted upon by the cam 38^a. It will thus be seen that on the forward stroke of the table the roller 40 on each pressing finger 39 is brought into contact with the cam 38 which causes it to recede, independently of any of the other fingers, out of the way of the saws, and this is the case as each successive finger approaches the saws.

In view of the connecting rod being connected to all of the fingers and also connected to the bell crank 15, it will be seen that, on its extreme backward stroke, it comes in contact with the cam 38^a, thus causing all of the fingers to simultaneously recede, in order that the lath strip may be dropped into the opening preparatory for being sawed.

I have shown my invention in the form which I have found most excellent in commercial use, and while I prefer the construction as shown, I do not restrict myself to the details, as these may be modified in various ways without departing from the spirit of the invention.

It will be understood that in order to use a larger saw for bolting and other work, it will be necessary to lift the lath tables 36 and 51 out of position and also to replace the detachable board 56 which can be done by putting the table 2 on its extreme back stroke, thus automatically pulling the pressing fingers in their housing underneath the table 2, which will permit the board 56 to be placed in position.

Having now described my invention what I claim as new and desire to secure by Letters Patent, is:—

1. In a sawing machine, the combination of the main frame, a saw mandrel carrying the saw blades, a main reciprocating table having a longitudinal opening in alinement with the saw blades and extending through the forward end of the table, a lath table supported in alinement with the saw blades, a lath table supported by the main frame below the opening in the main reciprocating table, lath holding devices arranged beyond the saw blades arranged to hold the laths when the main reciprocating table is being returned to receive a new lath strip, and automatic means for reciprocating the main table over the lath table to feed the lath strip to the saw blades and into the lath holding devices.

2. In a sawing machine, the combination of the main frame, a saw mandrel carrying the saw blades, a main reciprocating table

having a longitudinal opening in alinement with the saw blades, a lath table supported by the main frame below the opening in the main reciprocating table, means on the main reciprocating table for guiding the lath strip so as to cause it to be fed properly to the saw blades, consisting of a guide on the table and a plurality of spring actuated devices on the table and arranged in the direction of travel of the table for pressing the lath strip against the guide, means for automatically withdrawing the spring actuated devices in succession as they pass the saw blades, and means for simultaneously withdrawing all of the spring actuated devices to permit insertion of a new lath strip when the main reciprocating table is reciprocated to a position away from the saw blades, and automatic means for reciprocating the main table over the lath table to feed the lath strip to the saw blades.

3. In a sawing machine, the combination of the main frame, a mandrel having the saw blades, a main reciprocating table having a longitudinal opening through its forward part, automatic means for reciprocating the main table, a lath table below the opening in the main table and supported by the main frame, detachable means for temporarily closing the longitudinal opening in the main table, and means for setting and dogging a log on the main table for cutting blocks and lath strips preliminary to sawing into laths.

4. In a sawing machine, the combination of the main frame, a mandrel having saw blades, a reciprocating table having a support against which the strip to be sawed is pressed, a series of spring actuated fingers hinged to the table and arranged in the direction of its travel to press the strip against the support, a cam acting upon the spring actuated fingers for causing said fingers to be successively withdrawn from the strip while passing the saw blades, and automatic means for reciprocating the table.

5. In a sawing machine, the combination of the main frame, a mandrel having saw blades, a reciprocating table having a support against which the strip to be sawed is pressed, a series of fingers hinged to the table and arranged in the direction of its travel to press the strip against the support, spring devices to actuate the fingers, a cam acting upon the spring actuated fingers for causing said fingers to be successively withdrawn from the strip while passing the saw blades, means for withdrawing the fingers simultaneously when the table is moved away from the saw blades so as to receive a new strip to be sawed, cam devices for actuating the said means for withdrawing the fingers, and automatic means for reciprocating the table.

6. In a sawing machine, the combination of the main frame, a saw mandrel and saw

blade, a reciprocating table having a friction board secured thereto, two rotating friction wheels, adjusting means to bring the friction wheels alternately into contact with the friction board to reciprocate the table back and forth, a rock shaft having a cam for operating the adjusting means, locking means to lock the rock shaft and its cam alternately in their two extreme movements, spring devices carried with the reciprocating table to rock the rock shaft and cam, at the completion of each movement of the table, and tripping devices also carried by the table for tripping the locking means at the proper instant to permit the spring devices to come into play to rock the shaft and cam to reverse the travel of the table.

7. In a sawing machine, the combination of the main frame, a saw mandrel and saw blade, a reciprocating table having a friction board secured thereto, two rotating friction wheels, adjusting means to bring the friction wheels alternately into contact with the friction board to reciprocate the table back and forth, a rock shaft having a cam for operating the adjusting means, locking means to lock the rock shaft and its cam alternately in their two extreme positions, spring devices carried with the reciprocating table to rock the rock shaft and cam, at the completion of each movement of the table, and adjustable tripping devices also carried by the table for tripping the locking means at the proper instant to permit the spring devices to come into play with the proper force to rock the shaft and cam to reverse the travel of the table in a positive manner.

8. In a sawing machine, the combination of the main frame, a saw mandrel and saw blade, a reciprocating table having a friction board secured thereto, two rotating friction wheels, adjusting means to bring the friction wheels alternately into contact with the friction board to reciprocate the table back and forth, a rock shaft having a cam for operating the adjusting means, an arm 11 having a pin 12 secured to the rock shaft, locking means to lock the rock shaft and its cam alternately in their two extreme movements consisting of locking pawls 13, spring devices carried with the reciprocating table to rock the rock shaft and cam at the completion of each movement of the table, and tripping devices also carried by the table for tripping the locking pawls at the proper instant to permit the spring devices to come into play to rock the shaft and cam to reverse the travel of the table.

9. In a sawing machine, the combination of the main frame, the saw mandrel, a reciprocating table having a friction board and rod 17, swinging frames, friction wheels 27 and 28 rotating in opposite directions and journaled in the swing frame, a rock shaft having an arm 11 at one end provided with a

pin 12, a cam for rocking the swinging frame secured to the rockshaft and provided with an arm 35, springs 20 on the rod 17, collars 21 on the rod in front of the springs to strike the arm 35 from opposite sides, adjustable collars 16 on the rod for supporting the springs, locking pawls 13 for engaging the pin 12 to lock the rock shaft in its extreme positions, and tappets 15 carried by the collars 16 for tripping the locking pawls to release the arm 11 and its rock shaft at the proper moment so as to be actuated by one of the springs 20.

10. In a sawing machine, the combination of the main frame, the saw mandrel, a reciprocating table having a friction board and rod 17, swinging frames, friction wheels 27 and 28 rotating in opposite directions and journaled in the swinging frames, a rock shaft having an arm 11 at one end provided with a pin 12, a weighted arm 55 secured to the other end of the rock shaft and extending upward, a cam for rocking the swinging frame secured to the rock shaft and provided with an arm 35, springs 20 on the rod 17, collars 21 on the rod in front of the springs to strike the arm 35 from opposite sides, adjustable collars 16 on the rod for supporting the springs, locking pawls 13 for engaging the pin 12 to lock the rock shaft in its extreme positions, and tappets 15 carried by the collars 16 for tripping the locking pawls to release the arm 11 and its rock shaft at the proper moment so as to be actuated by one of the springs 20.

11. In a sawing machine, the combination of the main frame, the saw mandrel, a reciprocating table having a friction board and rod 17, swinging frames, friction wheels 27 and 28 rotating in opposite directions and journaled in the swing frame, a rock shaft having an arm 11 at one end provided with a pin 12, a weighted arm 55 secured to the other end of the rock shaft and extending upward, a detachable handle for the arm 11, a cam for rocking the swinging frame se-

cured to the rock shaft and provided with an arm 35, springs 20 on the rod 17, collars 21 on the rod in front of the springs to strike the arm 35 from opposite sides, adjustable collars 16 on the rod for supporting the springs, locking pawls 13 for engaging the pin 12 to lock the rock shaft in its extreme positions, and tappets 15 carried by the collars 16 for tripping the locking pawls to release the arm 11 and its rock shaft at the proper moment so as to be actuated by one of the springs 20.

12. In a sawing machine, the combination of a main frame and its saw mandrel, a reciprocating table, automatic means for reciprocating the table, springs for accumulating power for reversing the automatic means for reciprocating the table put under compression by the movements of the table, locking devices for retaining the springs under compression and tripping devices controlled by the table for tripping the locking devices so as to release the springs at the proper time and permit their full power to be exerted to reverse the means for reciprocating the table.

13. In a sawing machine, the combination of a main frame and its saw mandrel, a reciprocating table, automatic means for reciprocating the table, springs for accumulating power for reversing the automatic means for reciprocating the table put under compression by the movements of the table, locking devices for retaining the springs under compression and adjustable tripping devices controlled by the table for tripping the locking devices so as to release the springs at the proper time and permit their full power to be exerted to reverse the means for reciprocating the table.

In testimony of which invention, I have hereunto set my hand.

HERBERT M. LOFTON.

Witnesses:

HENRY B. WASHBURN,
MINNIE MOORE.