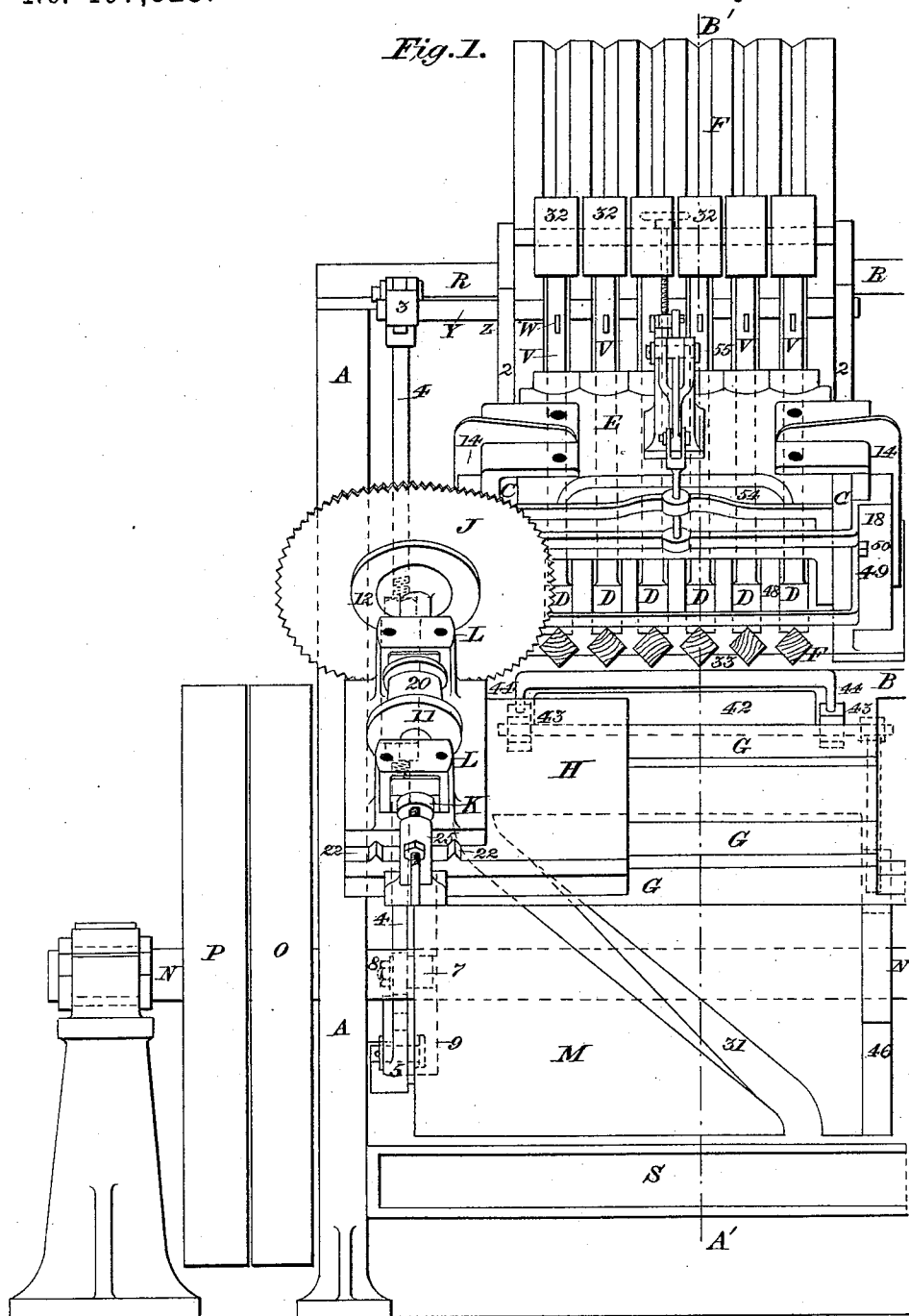


A. GREG.
SELF ACTING SAWING MACHINE.

No. 407,523.

Patented July 23, 1889.

Fig. 1.



Witnesses:

J. C. Brechtz
Dennis Sumbly

Inventor:

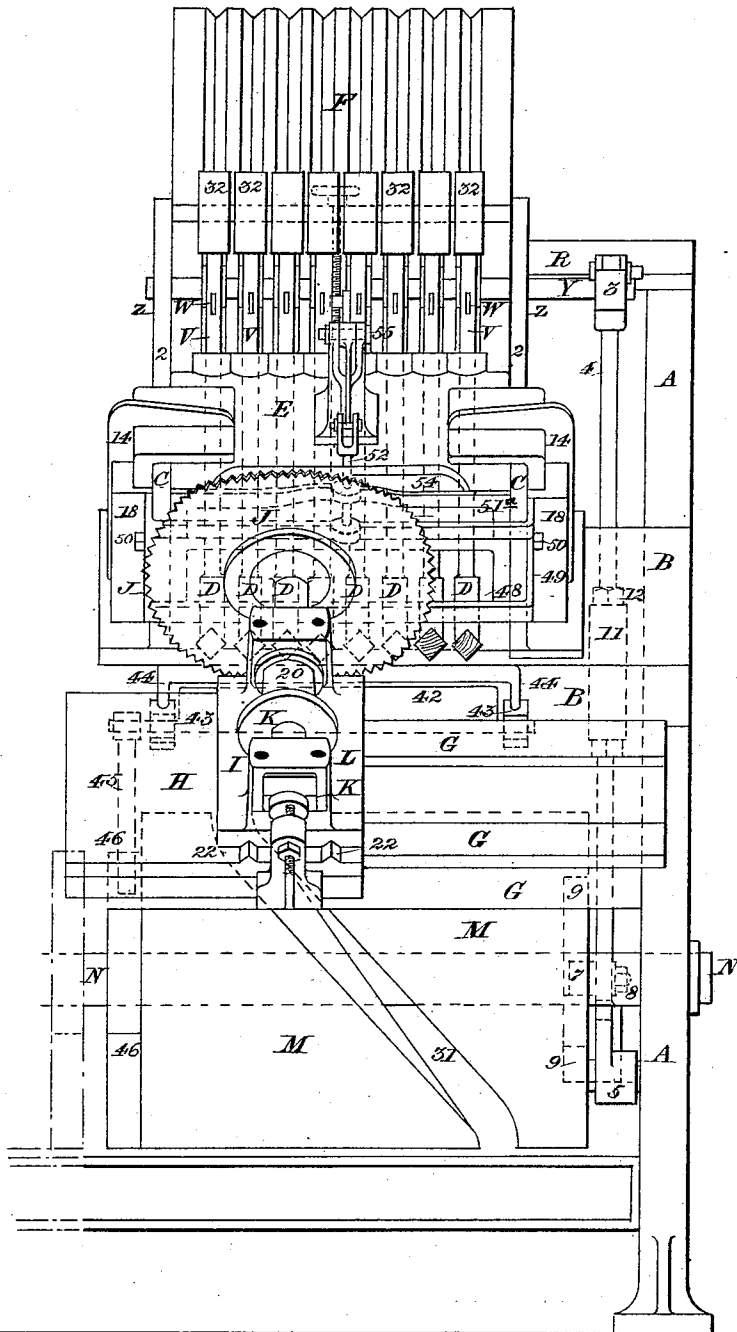
Arthur Greg,
By *James L. Norris,*
Attorney.

A. GREG.
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Fig. 1^a



Witnesses:
F. C. Brecht
Dennis Sumbly.

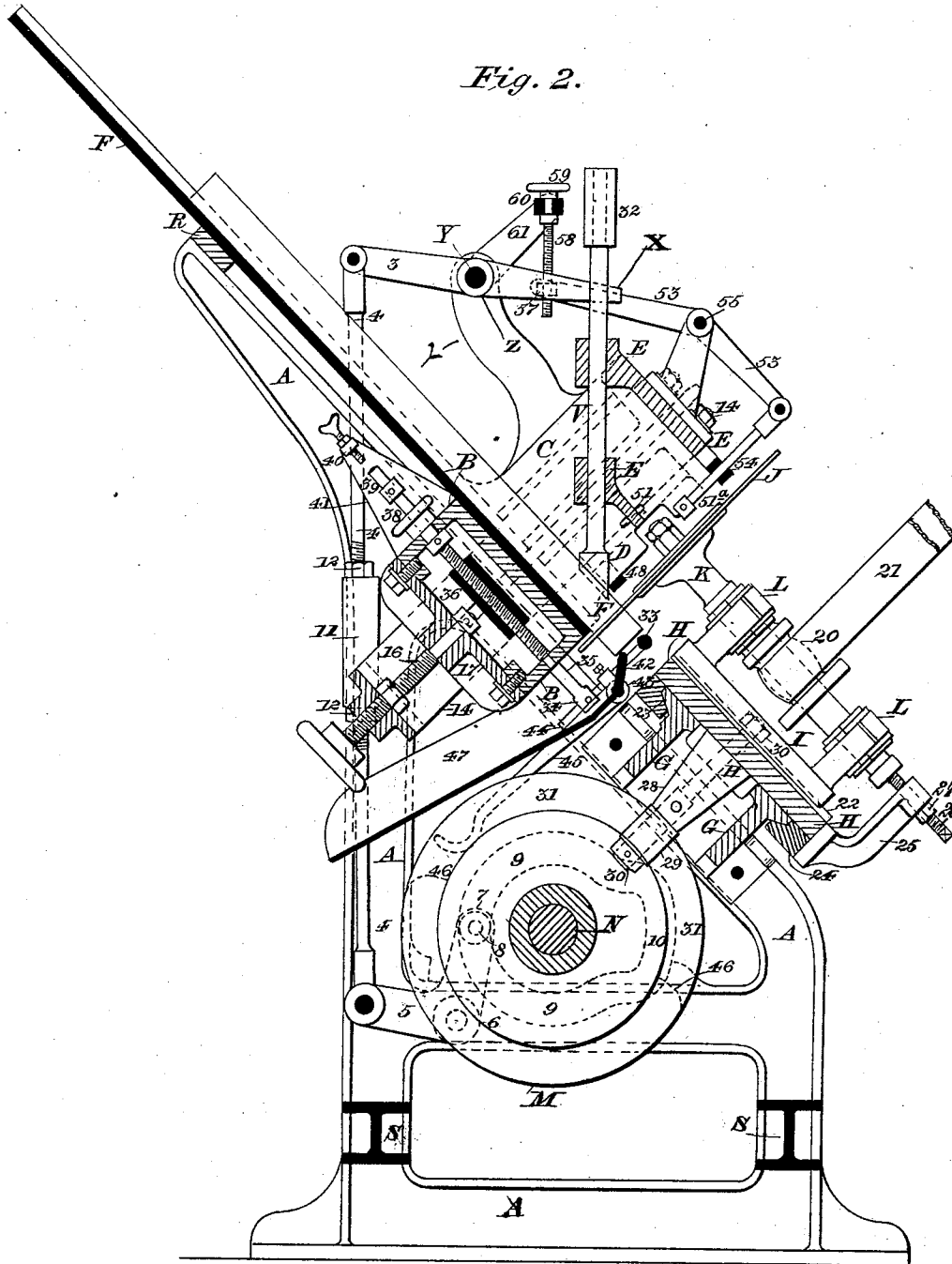
Inventor:
Arthur Greg,
 By *Janus L. Norris*
Attorney.

A. GREG.
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Fig. 2.



Witnesses:

J. C. Brecht
Dennis Sumbly

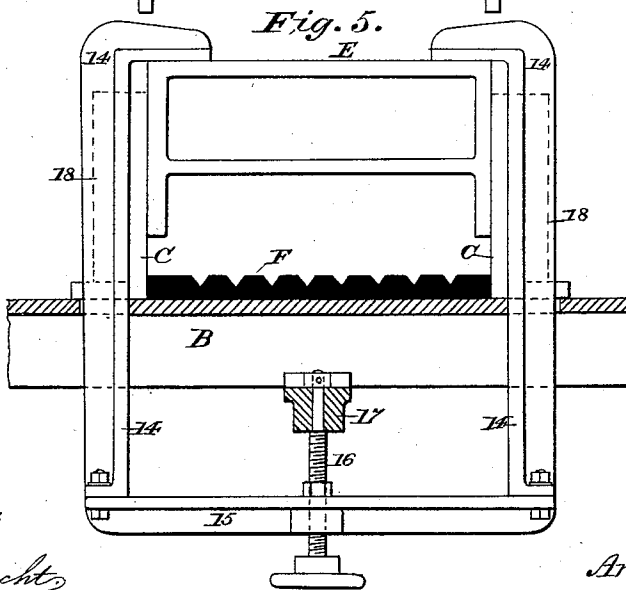
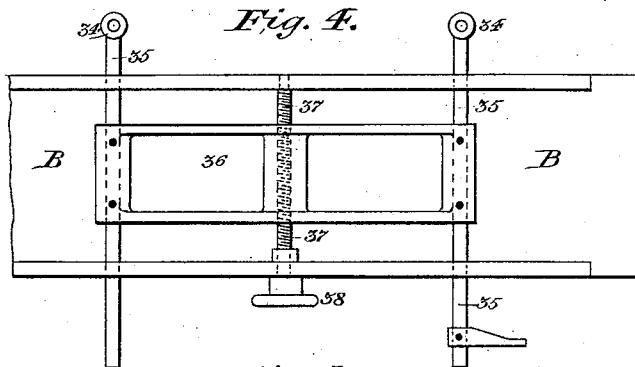
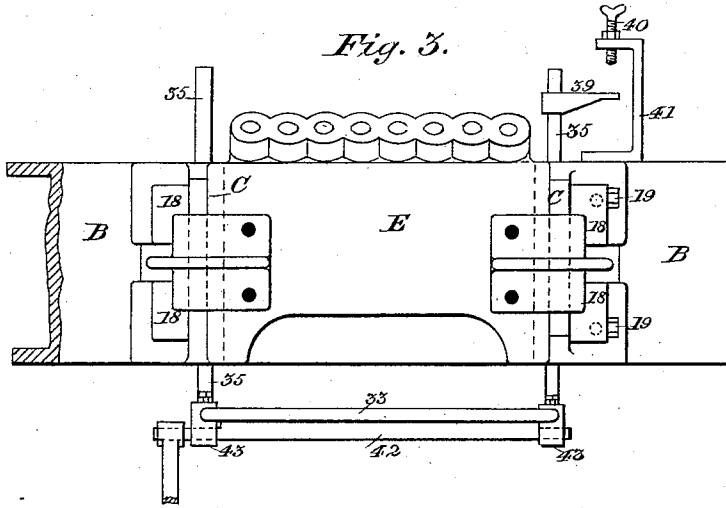
Inventor

Arthur Greg,
By *James L. Norris*
Attorney.

A. GREG.
SELF ACTING SAWING MACHINE.

No. 407,523.

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Witnesses:

J. C. Bricht
Dennis Sumbly

Inventor:

Arthur Greg,
By *James L. Norris*
Attorney.

UNITED STATES PATENT OFFICE.

ARTHUR GREG, OF EAGLEY MILLS, NEAR BOLTON, COUNTY OF LANCASTER,
ENGLAND.

SELF-ACTING SAWING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 407,523, dated July 23, 1889.

Application filed May 13, 1889. Serial No. 310,526. (No model.) Patented in England September 15, 1888, No. 13,319.

To all whom it may concern:

Be it known that I, ARTHUR GREG, of the firm of James Chadwick & Brother, of Eagley Mills, near Bolton, in the county of Lancashire, England, thread manufacturers, have invented new and useful Improvements in Self-Acting Sawing-Machines, (for which I have obtained a patent in Great Britain, No. 13,319, dated September 15, 1888,) of which the following is a specification.

This invention relates to a new or improved self-acting machine for sawing timber and the like into lengths for the purpose of making bobbins and other articles.

Figures 1 and 1^a of the accompanying drawings, when laid side by side, constitute a front elevation of my new or improved self-acting machine for sawing timber and the like by the under side of the circular saw or saws—that is, the portion below the center of the same. Fig. 2 is a sectional side elevation through line A' B' in Fig. 1. Fig. 3 is a part plan showing grip-frame and the means for carrying and guiding the same, also the adjustable stops and gage. Fig. 4 is a part view of the under side of the bed-plate, showing the method of coupling and operating the arms carrying the adjustable stop; and Fig. 5 is a part sectional elevation showing the manner of coupling and the means for adjusting the grip-plate.

In all the figures the same letters and numerals are used to indicate corresponding parts.

A is the frame-work of the machine; B, the bed-plate carrying the guides C, grips D, grip-frame E, and the lower end of the feeding-guides F or stationary guideway.

G is the gauntree extending across the machine from side frame to side frame A to carry the sliding frames H.

I are the adjustable head-stocks, mounted on the sliding frames H.

J are circular saws attached to the spindles K, mounted in the bearings L of the adjustable head-stocks.

M are scrolls mounted on the driving-shaft N of the machine for sliding to and fro the sliding frames H, with the adjustable head-stocks I and circular saws J.

O is the driving-pulley, fixed on the driving-shaft N, and P is a loose pulley to receive the driving-strap from the pulley O when it is desired or necessary to stop the machine.

The side frames A are tied together by the bed-plate B, gauntree or stationary guideway G, bar R, and the cross-pieces S. On the bed-plate B are mounted the guides F, for feeding timber and the like intended to be cut into lengths.

The guides F can be made with any desired number of channels, according to the number of blocks or pieces intended to be sawed by each forward stroke of the circular saw J. Immediately above the lower ends of the guides F are mounted the grips D for holding timber and the like while sawing is being performed. The grips D are attached to the spindles V, mounted in the frame E.

On the upper end of each spindle V is disposed a weight 32 to insure of the same dropping and more firmly securing timber and the like during the operation of sawing. The spindles V are each provided with a slot W to receive the end of the lifting-lever X, fixed on the shaft or center Y in the bearings Z, the latter being connected to the frame E by the arms 2. The grips D are operated by the levers X and 3, and the adjustable rod 4 from the double lever 5, attached to the frame A by the pin 6. One end of the double lever 5 is provided with the bowl 7 on the pin 8. The bowl 7 fits into the groove or slot 9 in the side of the scroll M, and is operated by the cam-shaped path 10 of the groove or slot 9.

The rod 4 is in two parts, with screwed ends coupled by the right-and-left hand threaded nut or coupling 11 and check-nuts 12, and is adjustable for the purpose of regulating the position of the grips D according to the various sizes of timber and the like intended to be sawed. The grip-frame E is mounted loosely between the fixings or guides C on the bed-plate B, and is held in position by the arms 14, which extend through the bed-plate B to the cross-bar 15. The boss of the cross-bar 15 is threaded to receive the screw 16, attached to the cross-bar 17, fixed on the under side of the bed-plate B, for the purpose of regulating the grip-frame E according to the size of tim-

ber or other like article to be sawed. The arms 14 are held in position on the fixings or guides C by the slide-bars 18, secured thereto by the set-screws 19, as shown in Fig. 3.

5 Each circular saw J is secured in the usual manner to the spindle K, mounted in the bearings L of the adjustable head-stock I. The spindle K is provided with the pulley 20 and driven by the strap 21 from a pulley conveniently fixed and of such a width as to allow
10 the strap 21 to travel to and fro with the sliding frame H. The head-stocks I rest on the angular pieces 22 on the sliding frames H, and are secured thereto by bolts or their equivalents. The sliding frames H
15 are mounted on the gauntree or stationary guideway G, being held in position by the angle-pieces 23 and 24, the latter being loose and secured by bolts or set-screws to facilitate the removal of the sliding frames H from the gauntree or stationary guideway G. To the sliding frame H is attached the fixing 25, carrying the screw 26 and nut 27, to bear or support and adjust the saw-spindle K, in case of
20 wear in the bearings L. The under side of each sliding frame H is filled with the arm 28, to carry the bowl 29, both being secured thereto by the bolt 30. The bowl 29 fits into the slot 31 in the scroll M, and by the rotative action of the latter with the driving-shaft N the sliding frames H and their appendages are slid to and fro on the gauntree or stationary guideway G. After the grips D have been raised the timber or other article on the guides
30 F drop by gravity against the adjustable stop 33, mounted in the bearings 34 on the end of the rods 35. The latter pass through the sides of the bed-plate B and are attached to the cross-bar 36, which can be operated in either direction by the screw 37 and hand-wheel 38. The center boss of the cross-bar 36 is provided with a thread to receive the screw 37. On one of the rods 35, in each part or section of the machine, is mounted the
40 adjustable arm 39, which forms the gage in conjunction with the screw 40, in the fixing 41, attached to the bed-plate B, as shown in Figs. 2 and 3, for the purpose of determining the length of the block to be cut. To insure timber and the like being held firmly in position during the operation of sawing, the hinged stop 42 is provided, being mounted in the bearings 43, attached to the arms 44 of the adjustable stop 33. After a block has been
50 sawed from the end of the timber and the like on the guides F the hinged stop 42 is moved backward clear of the end of the block by the lever 45, the latter being operated by the projection or cam 46 on the side of the scroll M. The object of releasing the hinged stop 42 from the end of the sawed block is to enable the latter to fall away down the chute 47 to the back side of the machine. The projection or cam 46 is of such a length as to
60 hold or press the hinged stop 42 against the blocks during the operation of sawing. After sawing has been performed the blocks are

liberated to allow them to fall away down the chute 47, and during which the circular saw J is slid back by the action of the scroll M, ready for the next operation. To
70 insure the last block from each length being sawed perfectly, it is necessary the same be held firmly to prevent canting. This is effected by the bar 48, resting or almost
75 resting thereon, the same being coupled to the arms 49, secured to the fixings C by the set-screw 50. The arms 49 are provided with the slot 51, to allow of the same being moved on the set-screw 50 by means of the cross-bar
80 51^a and rod 52, coupled to the lever 53. The rod 52 is held in position by the guide 54, secured to the grip-frame E. The lever 53 is of the double kind mounted on the pin 55 in the fixing 56 on the grip-frame E. The other
85 end of the double lever 53 is fitted with the swivelling-nut 57, through which the screwed spindle 58 passes, and is operated by the hand-wheel 59. The screwed spindle 58 and hand-wheel 59 are supported in the cross-bar 60, carried by the arms 61, from the arms 2.

Although I have shown only two circular saws in the drawings, I would have it understood that any number of saws can be employed by simply repeating the various parts. 95

This machine operates as follows: When the gage or stop 33 and the position of the grips D have been adjusted or set to the size of blocks intended to be sawed, the machine is set in motion and timber and the like is
100 fed by the attendant on the guides F. When the circular saw or saws J are at the end of their backward travel, the slots 31 in the scrolls M are so constructed as to cause a pause in their travel, during which the cam-shaped path 10 of the slot 9 operates the bowl 7 on the lever 5 and lifts the grips to allow the timber or the like to slide down the guides F until arrested by the stop 33, and as soon as the bowl 7 assumes its original position in the slot 9 the grips D drop onto the upper side of the timber and the like and hold them firm, after which the sliding frame H advances with the revolving saw or saws J and cuts off the blocks to the desired length. 115 After the circular saw J has completed its travel the grips D hold the unsawed timber and the like until the circular saw has completed its backward stroke, when the operation is repeated. If desired, the circular saws J can be arranged so that when one is sawing the other is making its backward stroke, and so on, according to the number of saws employed. 120

I claim— 125

1. In a self-acting sawing-machine, the combination of a frame-work A, having a bed-plate B and a stationary guideway G, a rotating drive-shaft N, having a scroll M, a sliding frame H, connected with the scroll and reciprocated thereby on the guideway, a head-stock I on the sliding frame, having a rotating spindle provided with a circular saw, a grip-frame E on the bed-plate, a series of feed-

guides F above the bed-plate, a series of feeding and holding grips D over the feed-guides, and means for automatically operating the grips to hold and release the timber, substantially as described.

2. In a self-acting sawing-machine, the combination of a frame-work A, having a bed-plate B and a stationary guideway G, a rotating shaft N, having a scroll M, a sliding frame H, connected with the scroll and moved thereby on the guideway, a head-stock I on the sliding frame, having a rotating spindle provided with a circular saw, a grip-frame E on the bed-plate, a series of inclined feed-guides

F, a series of feeding and holding grips D, means for raising and lowering the grips, a stop 33, for limiting the movement of the timber downward on the feed-guides, and means for adjusting the stop relatively to the saw, substantially as described.

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

ARTHUR GREG.

Witnesses:

WALTER MATHER,
Heatherleigh Sharples, near Bolton.

EDMUND CHADWICK,
92 St. George's Road, Bolton.