J. A. NEAL

SEPARATING DEVICE FOR RESAWING MACHINES

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Inventor

[Signature]

By [Signature]

Attorneys
This invention relates to resawing machines, and more particularly to means employed for separating or spreading apart the pieces of stock cut by the saws, so as to prevent the same from exerting a binding action on the saws in operating such machines.

The main object of the invention is to improve the construction and increase the efficiency of devices of the character referred to as heretofore constructed, and particularly to the separating device shown in my Patent No. 1,435,255 granted November 14, 1922, specially designed and adapted for use with a sawing machine in which the saws are mounted on a tilting frame, together with means for supporting and guiding the material through the machine into position for the action of the saws, when the frame is tilted to adapt the saws to cut the stock on a bevel, as shown, for example, in my application of even date herewith, which has since resulted in Patent No. 1,584,736 dated May 18, 1926. Other objects will readily appear from the following description.

The invention will first be hereinafter more particularly described, with reference to the accompanying drawings, which are to be taken as a part of this specification, and then pointed out in the claims at the end of the description.

In said drawings, Fig. 1 is a vertical sectional view taken on the line 1—1 of Fig. 2, illustrating the separating devices and associated means for supporting and guiding the material into position for the action of the saws; Fig. 2 is a plan view partly broken away, illustrating a resawing machine embodying my invention; the saws being mounted on a tilting frame whereby the angle of the saws may be changed to adapt them to cut the stock on a bevel or at an angle to a horizontal plane; and Fig. 3 is a detail sectional view of one of the separating devices and its supporting bracket detached; the bracket being partly broken away.

Referring to said drawings, in which the same reference letters are used to denote corresponding parts in different views, the machine frame may be of the form shown or of any suitable construction. As shown it has front and rear sides A and A and end or side portions A and A secured together at the four corners of the box-like structure by suitable fastening bolts; vertical recesses or gaps being formed in said sides A and A, about midway thereof, to provide suitable guideways for the head end portions b of a tilting frame B on which are mounted circular saws C; said tilting frame being secured intermediate its ends upon a cross-beam D having trunnioned ends fitted in suitable bearings in the front and rear sides A and A, so as to permit a rocking movement of the tilting frame for changing the angle of the saws. Guide bars E and E' are secured on the main frame between which the material or stock to be operated on by the saws passes into position for the action of the saws as the material is passed through the machine; said guide bars being formed or provided on the outer sides thereof with laterally projecting base flanges e and e having oblong slots therein to receive fastening bolts or screws e and e for adjusting and securing said guide bars at different distances apart to accommodate material or stock of different widths. The guide bars E and E' have elongated slots or openings e and e formed therein through which the separating devices F and F protrude into position to enter the kerf and spread apart the pieces of stock cut by the saws so as to provide sufficient clearance to prevent binding action on the saws. A bed plate or guide box bottom G of channel iron or inverted trough-like form is placed between the guide bars on which the material is supported in its passage through the machine; said bed plate being preferably provided with means (not shown) for securing it in different positions to accommodate stock of different thicknesses, for which purpose any suitable means may be employed, such means forming no part of the invention claimed herein. The slots e and e in opposite sides of the guide bars are wider on the outer side than on the inner side thereof to permit the separating devices F and F to be shifted into inclined positions by adjusting the tilting frame, and they are of sufficient length to receive said devices, which are located rearwardly of the saws and adapted to be yieldingly forced into the kerf sufficiently to hold apart the pieces of material divided by the saws and prevent binding action thereof.
upon the saws. The separating devices, as shown, are substantially simitar-shaped edge-tools having enlarged and round shanks which are slidably fitted in tubular portions or housings $h$ provided therefor on the upper ends of supporting brackets $H$ attached to opposite sides of the cross-beam $D$; said brackets being of angular form each having an intermediate horizontally disposed body portion $h^2$ supporting at one end and perpendicularly integral with an upright member $h^2$, which terminates in the tube or housing $h$, and at the other end a depending end portion or flange $h^3$ having a slot or holes there through to receive a fastening bolt or bolts $I$ for securing the respective brackets to opposite sides of said cross beam so as to permit vertical adjustment of the bracket, said bolts having lock nuts thereon, as shown, for securing the parts together. The fastening bolts $I$ are passed through oblong holes or slots in the cross-beam $D$ as indicated in dotted lines in Fig. 2 to adapt the brackets to be adjusted longitudinally of the machine frame and secured in different positions, either nearer to or further from the cutting edge of the saws, as may be desired in saving different kinds of stock. The separating devices are arranged at an angle of about 45° to a line passing horizontally through the machine, parallel with the guide bars with the edge-tools having their curved edges extending at an acute angle to the stock in its passage through the machine and having the pointed ends thereof turned so as to adapt them to readily enter the kerf under pressure of the spring, this action being facilitated by the peculiar form of the tool, as shown. The tubular housing $h$ of the supporting bracket is formed or provided with an arm $h^4$ which extends rearwardly in the direction of the axis of the tube and terminates in a bent end portion or flange $h^5$ which is apertured in alignment with said axis to receive a slidable rod or bolt $K$, the forward end of which is secured in a recess or socket in the rear end of the enlarged shank of the edge-tool so as to adapt the two parts to move back and forth in unison. The apertured flange $h^5$ forms an abutment for one end of a spring $L$ placed on the rod $K$ between said abutment and a nut or nuts $n$ on said screw for varying the tension of the spring to adapt it to exert greater or less force in driving the edge-tool into the kerf made by the saws. The rod $K$ has a nut or nuts $h^2$ screwed thereon abutting against the outer side of the apertured flange $h^5$ so as to limit the forward movement of the separating device beyond a predetermined point, and the rod and edge-tool are prevented from turning by means of a set screw $M$ screwed into a threaded hole in the top of the housing $h$ and having a reduced end portions as fitting in a groove in the shank of the edge-tool. The lock nuts on the rods $K$ hold them in relatively fixed positions after adjustment to vary the tension of the spring or limit the movement of the separating devices. An adjusting chock or washer $N$ is placed between the cross-beam and the foot of the edge-tool-supporting-bracket and may be used interchangeably with washers of different thicknesses to adapt the supporting brackets to be adjusted and secured at different distances apart, according to the distance between the guide-bars in saving material of different widths. The separating devices constructed as described are simple and inexpensive in manufacture and durable and efficient in practical use, and they are not liable to get out of order, and when any part thereof becomes worn or broken it may be easily and quickly removed and replaced. Furthermore, they may be easily and quickly adjusted vertically and also laterally, to vary the distance therebetween and may also be adjusted longitudinally, to vary the distance between them and the saws. They are also adapted to be thrown into an inclined position toward either the right or the left hand side of the machine, to accommodate themselves to the various angular adjustments of the saws provided by the tilting frame. Having thus described my invention, what I claim as new and desire to secure by Letters Patent of the United States:

1. In a sawing machine, means for separating and holding in slightly separated relation the pieces of stock divided by the saws, said means comprising a pair of longitudinally slidable rods arranged on opposite sides of the path of movement of the stock at an angle thereto; each rod having a substantially simitar-shaped edge-tool fixed on its forward end and protruding through a slot in an adjacent guide-bar; said tool having its curved edge arranged transversely of said rod at an acute angle to the stock with its pointed end in position to adapt it to easily enter the kerf made by the saws, and means for yieldingly forcing the tool into the kerf.

2. The combination, in a sawing machine, of means for supporting and guiding material through the machine in position to be acted upon by the saws and means for separating and holding in slightly separated relation the pieces of stock divided by the saws; said means comprising a pair of longitudinally slidable rods arranged on opposite sides of the path of movement of the stock at an angle thereto; each rod having a substantially simitar-shaped edge-tool fixed on its forward end and protruding through a slot in an adjacent guide-bar; said tool having its curved edge arranged...
transversely of said rod at an acute angle to the stock with its pointed end in position to adapt it to easily enter the kerf made by the saws, a spring for yieldingly forcing the tool into the kerf, and means for varying the tension of the spring and limiting the movement of the tool.

3. The combination in a sawing machine, of a separating device consisting of a substantially similar-shaped edge-tool having its curved edge arranged at an acute angle to the stock with its pointed end in position to adapt it to easily enter the kerf made by the saws; said tool having an enlarged round Shank slidably fitted in a tubular housing on a supporting bracket and secured to the forward end of a non-rotateable and longitudinally slidable rod carried by said bracket and arranged at an angle to the path of movement of the stock through the machine; said Shank having a groove therein extending longitudinally thereof, and a pin screwed into a threaded aperture in the top of said housing so as to enter said groove and prevent rotation of the tool while permitting longitudinal movement thereof, a spring acting on said rod for yieldingly forcing the tool into the kerf, and means for varying the tension of the spring.

4. In combination with a sawing machine having guide-bars between which the stock is moved into position to be acted upon by the saws, brackets of angular form each having on its upper end a tubular housing in which is slidably fitted the Shank of one of said tools, said housing being arranged at an angle to said guide-bars and having an arm projecting rearwardly therefrom in the direction of its axis and terminating in an inwardly turned end-portion or flange aperture in alinement with said axis, spring-pressed rods each having one end secured to the Shank of a tool and the other end thereof slidably fitted in one of said apertured flanges, and means to prevent rotation of the rod and tool while permitting longitudinal movement thereof.

6. The combination in a sawing machine having guide-bars thereon between which the material to be cut is moved into position to be acted upon by the saws, of a pair of edge-tools each protruding through an oblong slot in one of said guide-bars, and brackets of angular form supporting said tools on opposite sides of said guide-bars, each bracket having an intermediate horizontally disposed body portion and vertically disposed end portions extending therefrom at substantially right angles thereto, the lower end portion thereof being firmly secured to a cross-beam on the machine frame, the upper end portion of each bracket terminating in a tubular housing arranged at an angle to said guide-bars and having an arm projecting rearwardly therefrom in the direction of its axis and terminating in an inwardly turned end-portion or flange aperture in alinement with said axis, the Shanks of said tools being slidably fitted in said housings, spring-pressed rods each having one end secured to the Shank of a tool and the other end thereof slidably fitted in one of said apertured flanges, and means to prevent rotation of the rod and tool while permitting longitudinal movement thereof.

8. In a sawing machine the combination with a main supporting frame having paral...
1. In a sawing machine the combination with a main supporting frame having guide-bars thereon; said bars having oblong slots therein, of separating devices whereby the pieces of material cut by the saws are forced apart sufficiently to prevent them from binding the saws therebetween; said devices comprising a pair of substantially similar-shaped edge-tools slidably supported on opposite sides of said guide-bars and projecting through said slots into the path of movement of the material through the machine into position to enter the kerf made by the saws, said tools being secured to horizontally slidable rods carried by the edge-tool supports and arranged at an angle to said path, and means acting on said rods for yieldingly forcing said tools into the kerf.

9. In a sawing machine the combination with a main supporting frame having guide-bars thereon provided with oblong slots in the sides thereof, means for slightly forcing apart the pieces of material cut by the saws; said means comprising a pair of substantially similar-shaped edge-tools mounted on brackets secured on opposite sides of said guide-bars, each bracket having on its upper end a housing in which is slidably fitted the shank of a tool which projects into the path of movement of the material through the machine, said shanks being secured to rods slidably supported in apertured flanges on the free ends of arms springing from said housings, and means acting on said rods for yieldingly forcing said tools into the kerf made by the saws.

In testimony whereof I affix my signature.

JOSEPH A. NEAL.