

J. H. TOTTEN.
 VENEER SIZING MACHINE.
 APPLICATION FILED JUNE 28, 1909.

1,000,855.

Patented Aug. 15, 1911.

3 SHEETS—SHEET 1.

Fig. 1.

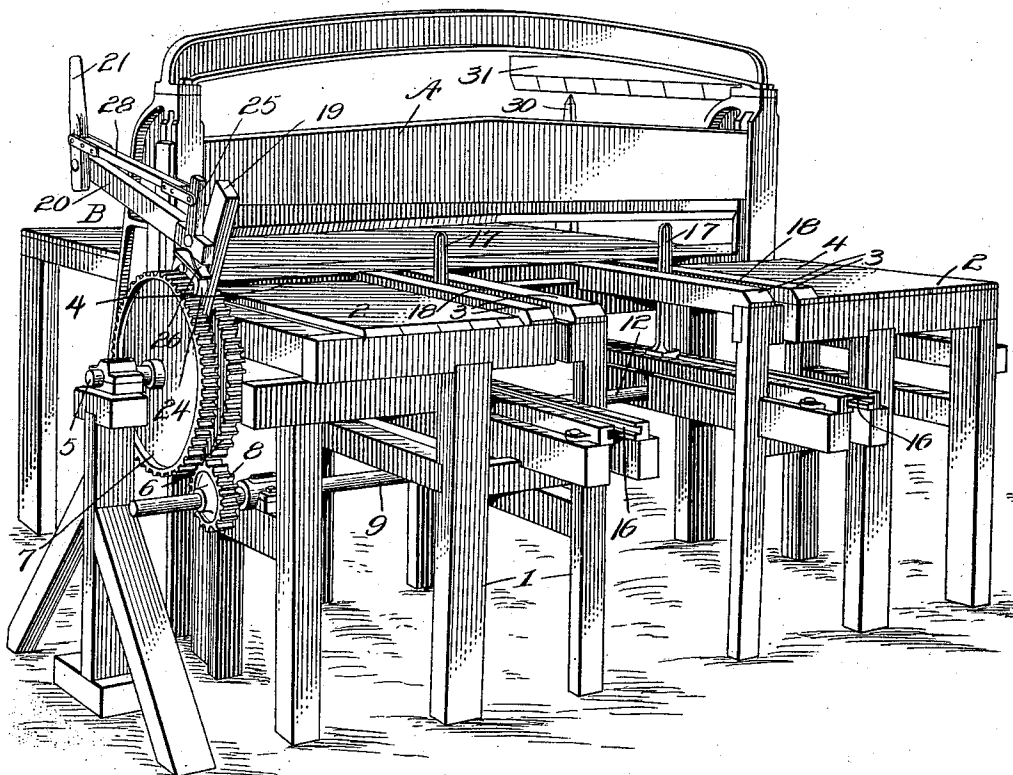
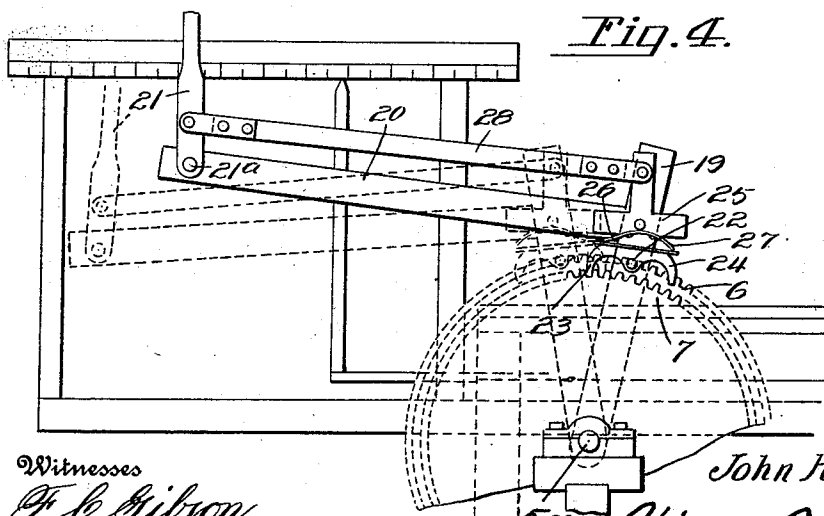


Fig. 4.



Witnesses

E. L. Gibson

C. C. Hines

Inventor

John H. Totten.

Victor J. Evans

Attorney

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3 SHEETS-SHEET 2.

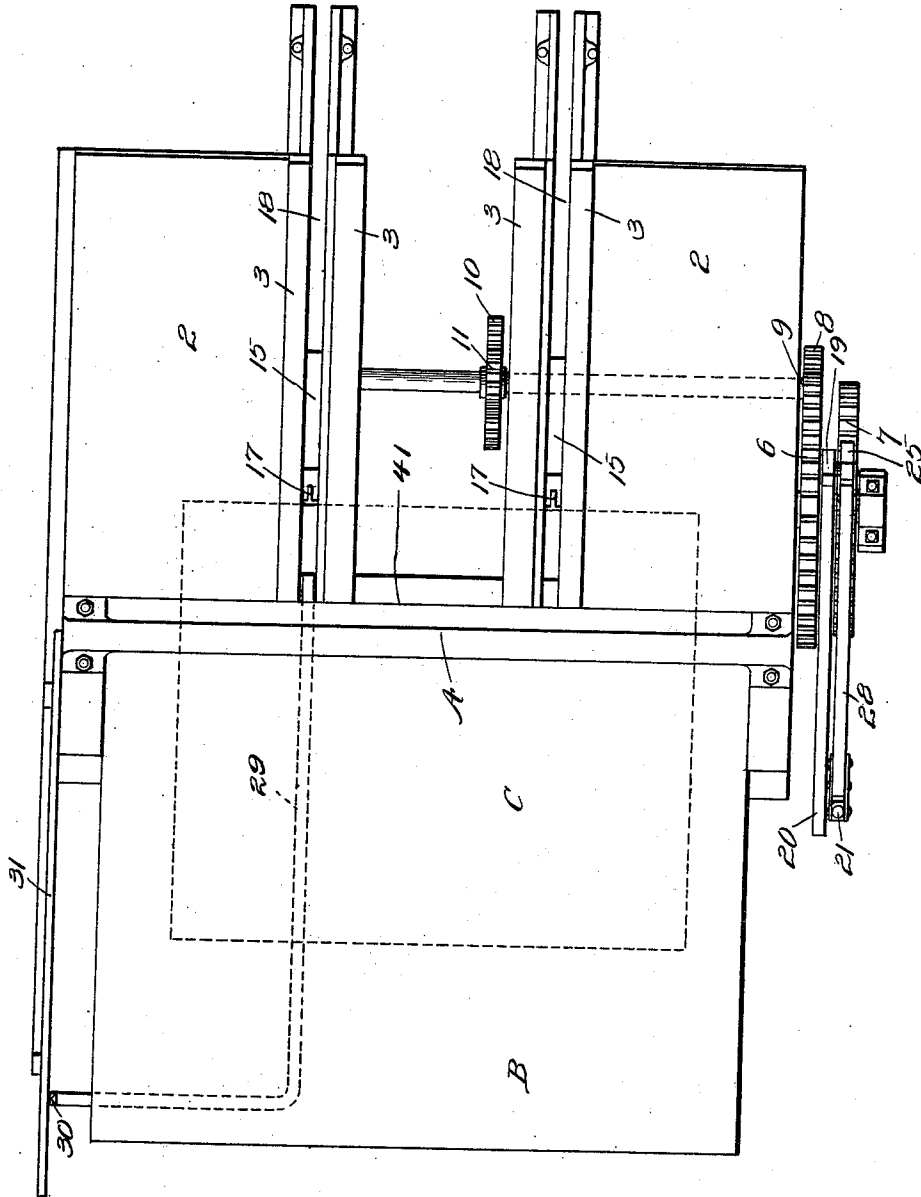


Fig. 2.

Witnesses
F. L. Gibson.

C. C. Hines.

Inventor
John H. Totten.

By *Victor J. Evans*
 Attorney

1,000,855.

3 SHEETS--SHEET 3.



Fig. 3.



John H. Totten.

C. C. Hines

Attorney

UNITED STATES PATENT OFFICE.

JOHN H. TOTTEN, OF MARION, NORTH CAROLINA.

VENEER-SIZING MACHINE.

1,000,855.

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Application filed June 28, 1909. Serial No. 504,786.

To all whom it may concern:

Be it known that I, JOHN H. TOTTEN, a citizen of the United States, residing at Marion, in the county of McDowell and State of North Carolina, have invented new and useful Improvements in Veneer-Sizing Machines, of which the following is a specification.

This invention relates to a veneer sizing machine designed to be used in connection with an apparatus for cutting the material into boards or strips of the desired width.

The main object of the invention is to provide a means by which the material fed up may be gaged so that it may be cut into strips of any desired width.

With this and other objects in view, the invention consists of the features of construction, combination and arrangement of parts hereinafter fully described and claimed, reference being had to the accompanying drawings in which:

Figure 1 is a perspective view of the machine as arranged for use in connection with a cutter and a table to support the stack which is to be cut. Fig. 2 is a top plan view of the parts shown in Fig. 1, illustrating in dotted lines a stack of veneer boards fed beneath the knife and into engagement with the work stops. Fig. 3 is a vertical longitudinal section through the parts arranged for operation, as shown in Fig. 2. Fig. 4 is an enlarged side elevation, showing the pawl and ratchet mechanism, and the gaging or indicating devices, and illustrating in full and dotted lines the position of adjustment of the pawl for the reverse feed motions. Fig. 5 is a detail longitudinal section, showing one of the rack bars and the pinion for operating the same. Fig. 6 is a detail transverse section, showing the gearing for operating both rack bars.

In carrying my invention into practice, I provide a suitable frame structure 1, including a table 2 preferably having elevated supporting surfaces 3 on which the veneer or material rests as it is fed forward from a primary support beneath the cutting knife and while it is being cut, said frame structure having adjacent its inner end a cross bar or abutting portion 4.

As shown the knife A is of the vertically movable type and may be operated in any desired way. This knife is mounted upon one end of a table B, on which the boards or

sheets of veneer C are supported ready to be fed forward to the knife, which end of the table bears against the cross bar or abutting portion 4 of the frame structure 1.

Journaled upon the frame adjacent the head portion thereof is a drive shaft or axle 5 carrying a spur driving gear 6 and a spur feed gear 7. The drive gear 6 meshes with a pinion 8 on a counter-shaft 9 extending below the table, which counter-shaft also carries a transmission gear 10 meshing with a pinion 11 on a superposed transverse feed shaft 12. The shaft 12 is provided at its ends with pinions 13 which mesh with rack teeth 14 upon the under sides of a pair of bars 15 which slide longitudinally of the frame in guide-ways 16 arranged below the table and on opposite sides of the longitudinal center thereof. The two rack bars are provided with upwardly extending gage blocks or fingers 17 which move through slots 18 formed in the table and form stops against which the edge of the material abuts when fed up to the proper degree to be cut into boards or strips of a given size.

Mechanism is provided for intermittently rotating the feed wheel 7 in one direction or the other. This mechanism comprises a swinging arm or lever 19 pivoted at its lower end upon the shaft 5 and pivotally connected at its upper end to a rearwardly extending arm 20, to the rear end of which is pivotally connected in turn as at 21* an operating handle and pawl controlling lever 21 arranged so as to be conveniently manipulated by the attendant, who may control and operate both the pawl controlling lever and the cutting mechanism. On the lever 19 is pivotally mounted a double pawl or dog 22 having at its opposite ends teeth 23 and 24 to engage the teeth of the gear 7. Also pivotally mounted upon the lever 19 above the pawl is a T-shaped pawl controller arm 25 carrying spring members 26 and 27 to respectively bear upon the opposite ends of the pawl. This T-shaped pawl controlling member is connected by a link 28 with the lever 21 above the pivotal connection of the latter with the arm 20.

In the operation of the device, the veneer or material C to be fed to the cutter A is placed upon the table B, ready to be moved forwardly beneath the knife onto the table 2, said table B serving simply as a primary support for the material which is to be cut.

It will thus be understood that when the material is shoved or pushed forward by the operator its motion will be limited by the stops or arms 17, by which the amount of material projected beyond the cutting knife over the table 2 will be regulated, such amount constituting the width or size of the board or strip to be produced by the cutting operation. It is obvious that by adjusting the stops 17 toward and from the cutting line or plane of the knife, the width of the severed parts or strips may be varied. In order to adjust the stops 17 toward the knife, the pawl is adjusted by swinging the lever 21 forwardly on its fulcrum 21^a to throw its tooth 23 into engagement with the teeth of the wheel 7. Hence when the operator draws the handle 21 in a forward direction to correspondingly swing the arm 19 to the left in Fig. 1 the tooth 23 of the pawl will engage one of the teeth of the wheel 7 and move the latter a prescribed distance to adjust the stops 17 to a prescribed extent. Upon the reverse movement of the lever 21 the tooth 23 will ride over the teeth of the wheel 7 without affecting the latter, so that upon each forward movement of the lever 21 the stops 17 will be moved toward the knife a certain extent, while upon the rearward movement of said lever 21 the rack bars will remain stationary, whereby an intermittent adjusting motion of the stops will be secured. When it is desired to adjust the stops backwardly or away from the knife, the pawl 22 may be shifted to bring its tooth 24 into engagement with the wheel 7 by simply swinging the lever 21 rearwardly on this fulcrum 21^a to shift the controlling device 25 so that the spring 27 will depress the toothed end 24 of the pawl into engagement with the gear 7 and swing the pawl to retract the tooth 23. Upon a forward movement of the lever 21 the tooth 24 will then ride over the teeth of the wheel 7, while upon a rearward movement of said lever said tooth will engage and move the wheel 7 backward a prescribed distance, so that by manipulating said lever in the manner set forth the rack bars may be adjusted forward or backward to any desired extent to correspondingly adjust the stops with relation to the cutting knife. The pawl may be shifted in the reverse direction by movement of the controlling device 25 to again throw the tooth 23 into action and the tooth 24 out of action for a forward adjusting motion, as will be readily understood. Hence it will be apparent that by adjusting the stops in and out the material may be accurately fed up so that it may be cut into boards or strips of any desired width. In practice, I prefer to use the feed wheel 7 in conjunction with the drive gear 6, instead of arranging the pawl to act directly on the drive gear, in order that different sized feed

wheels may be employed for varying the feeding effect without changing the parts of the drive gearing. Also this allows a feed wheel having any desired form and arrangement of teeth for coaction with the pawl to be used in conjunction with any ordinary type of drive gear. Furthermore, the arrangement of the two gears 6 and 7 on the shaft 5 in spaced relation on opposite sides of the lever 19 adapts them to serve as a guide for said lever, thus avoiding the necessity of providing additional guiding means on the frame.

In order that the operation of the pawl actuating devices may be made clear, whereby one set of devices will serve both to reverse the pawl and move it forward or backward in either of its operative positions, it may be said that the pivotal connections between the parts 20, 21 and 28 are made sufficiently stiff or provide sufficient frictional engagement between the parts to cause them to move as a unit when the handle 21 is simply pulled or pushed in a straight line, with an even regulated motion, while when the upper end of the handle 21 is quickly moved at the beginning of the backward or inoperative movement of either pawl member swinging motion will be imparted to the members 21, 25 and 28 to reverse the pawl. As an example, Fig. 1 shows the handle 21 tilted forwardly to shift the pawl carrier 25 to the left and engage the pawl tooth or member 23 with a tooth of the wheel 7, whereupon by pulling the handle forwardly or to the left the parts of the pawl controlling mechanism will move as a unit and turn the wheels 6 and 7 to the left. In this operation further forward pivotal movement of the handle beyond the position shown is prevented both by the frictional resistance mentioned and the engagement of tooth 23 with the feed wheel. On the backward movement of the parts, if a regulated pushing pressure is applied to the handle 21, the aforesaid frictional resistance will maintain the parts in the position shown so that they will move as a unit, the lever 19 simply swinging on its pivot connection and the resistance of the tooth 23 in sliding over the teeth of the wheel 7 being relatively slight and insufficient to overcome such frictional resistance. If, however, with the parts arranged as in Fig. 1, the handle 21 should be quickly moved rearwardly at the outset of the return stroke, the frictional resistance to the pivotal movement of the lever will be overcome before the pawl controlling devices begin their movement as a unit, and, hence, the carrier 25 will be shifted to retract the spring 26 and throw the pawl 23 out of operation and project the spring 27 and throw the pawl 24 into operation. From this explanation the normal operation of the pawl and ratchet mechanism and mode of

reversing the pawl from either of its operative positions to the other will be readily understood.

In order to enable the fingers or stops to be accurately adjusted with relation to the knife so that veneer strips of any desired width may be cut, a gage device is provided. This gage device comprises an angular rod or bar 29 connected with the forward end of one of the rack bars 15 and extending laterally therefrom to one side of the machine, where it is provided with an upwardly extending pointer 30 adapted to move longitudinally along a scale board or plate 31, on the inner face of which is arranged a scale graduated in inches and fractions thereof so as to enable the stops to be positioned to gage the material for cutting accurately formed strips of any desired width or thickness. The board 31 extends longitudinally of the machine and may be suitably supported by upright extensions from the frame, as shown.

From the foregoing description, taken in connection with the drawings, it will be seen that a simple and inexpensive type of machine is provided by which the operator may conveniently adjust the work stops. In practice, the zero mark upon the scale board or plate 31 is arranged in alinement with the knife, the scale then extending progressively therefrom in inches and fractions of inches beyond the head portion of the frame, allowing the indicator hand to have a wide range of movement in order to gage

the width or thickness or the distance equivalent to the extent of adjustment of the stops relative to the cutting knife.

Having thus described the invention, what is claimed as new is:

In a machine of the character described, the combination of a frame provided with guideways, a work table provided with guide slots above the guideways, rack bars movable in said guideways, gage arms carried by the rack bars and projecting through and movable in the guide slots in the table, gearing for moving said rack bars in either direction, said gearing including a shaft carrying a pinion, a second shaft carrying a pair of gear wheels spaced apart, one of said gear wheels meshing with the pinion, a swinging carrier mounted on said second shaft between the gear wheels, a double pawl pivotally mounted on said carrier to engage the teeth of the other gear wheel, a pivoted controller mounted on the carrier, springs carried by said controller and adjustable through the pivotal motions thereof to throw either pawl member into engagement with the gear wheels, an arm pivotally connected with the carrier, a lever pivotally supported by said arm, and a controlling link connecting said lever with the pawl controller.

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

JOHN H. TOTTEN.

Witnesses:

L. A. KINCAID,
R. L. LENTZ.