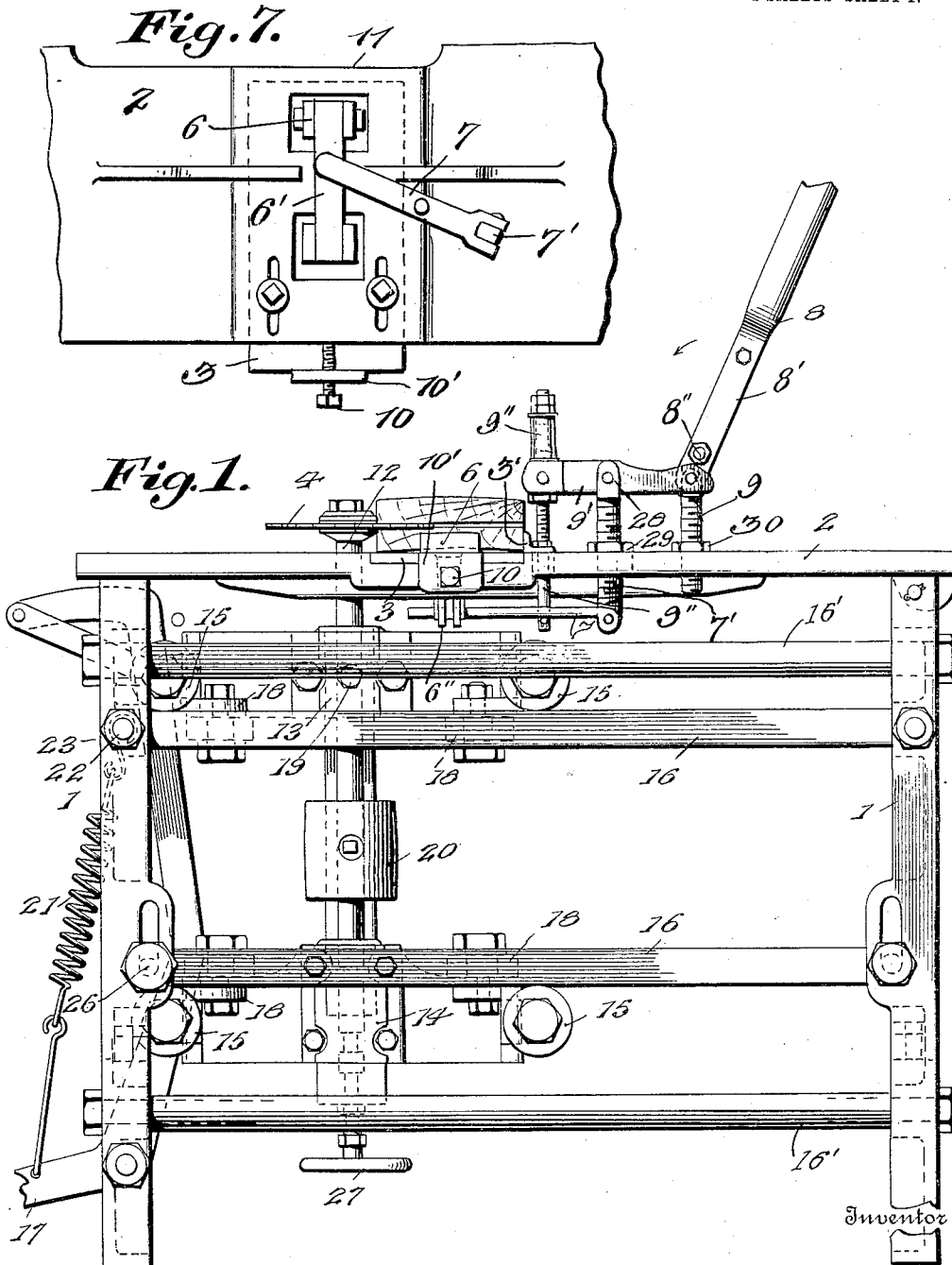


T. W. ALLEN & M. L. VEATCH.
 SLOTTING MACHINE.
 APPLICATION FILED SEPT. 7, 1911.

1,050,198.

Patented Jan. 14, 1913.

4 SHEETS—SHEET 1.



Witnesses
 L. H. Ellis.
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SLOTING MACHINE.

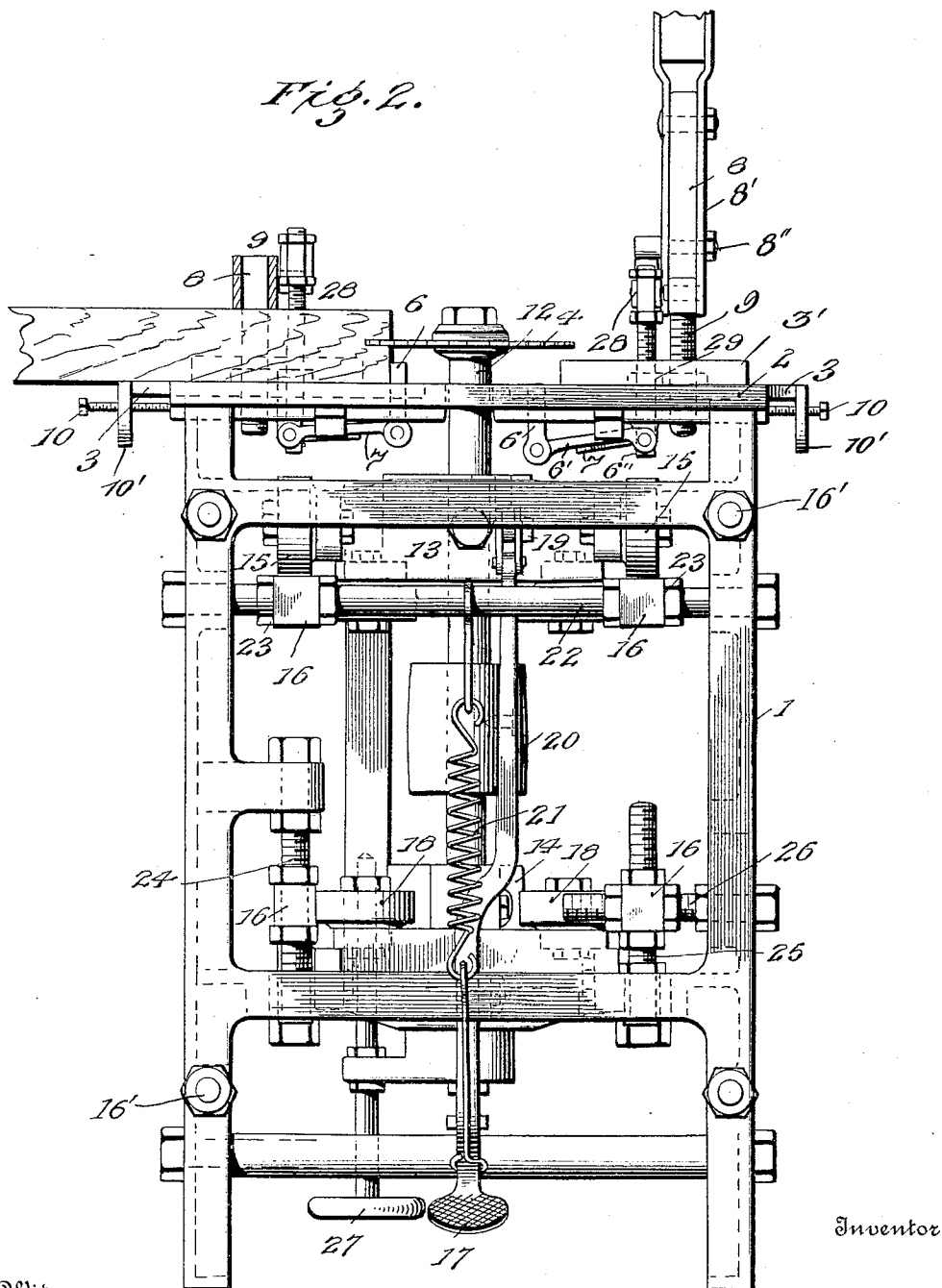
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4 SHEETS—SHEET 2.

Fig. 2.



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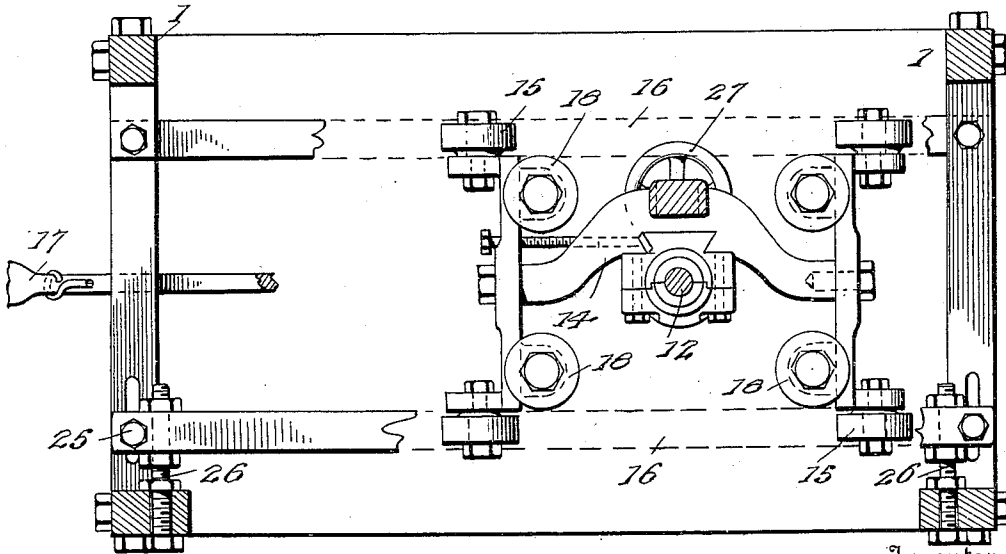
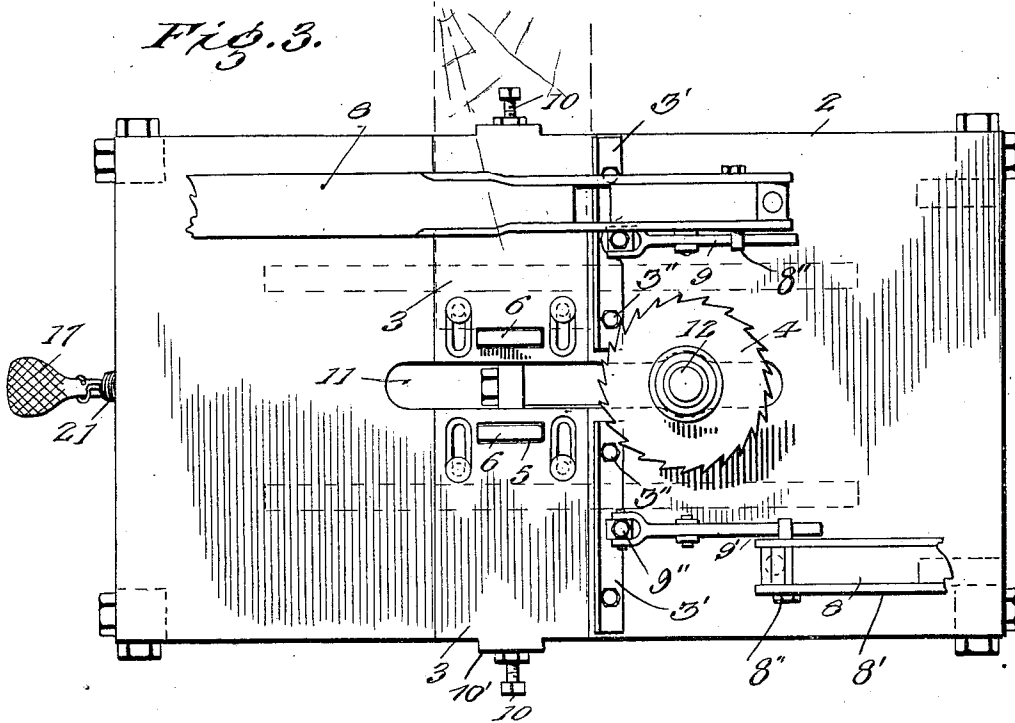
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4 SHEETS-SHEET 3.



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Fig. 4.

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 4 SHEETS—SHEET 4.

Fig. 5.

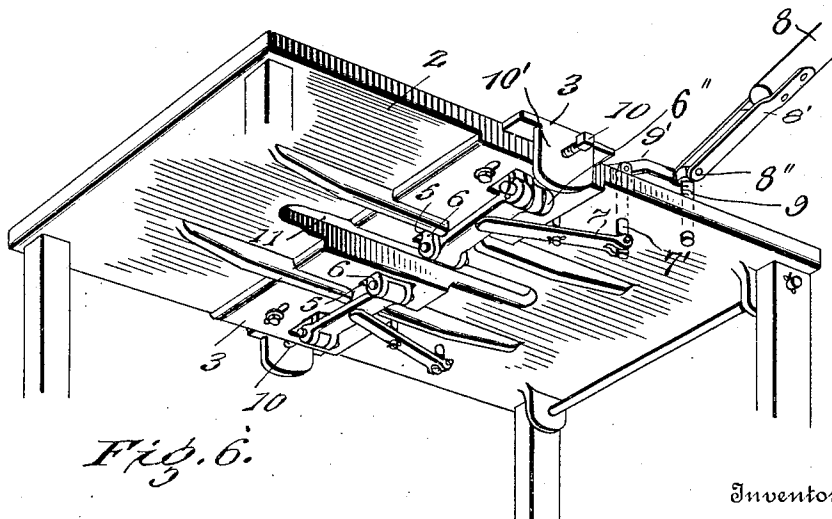
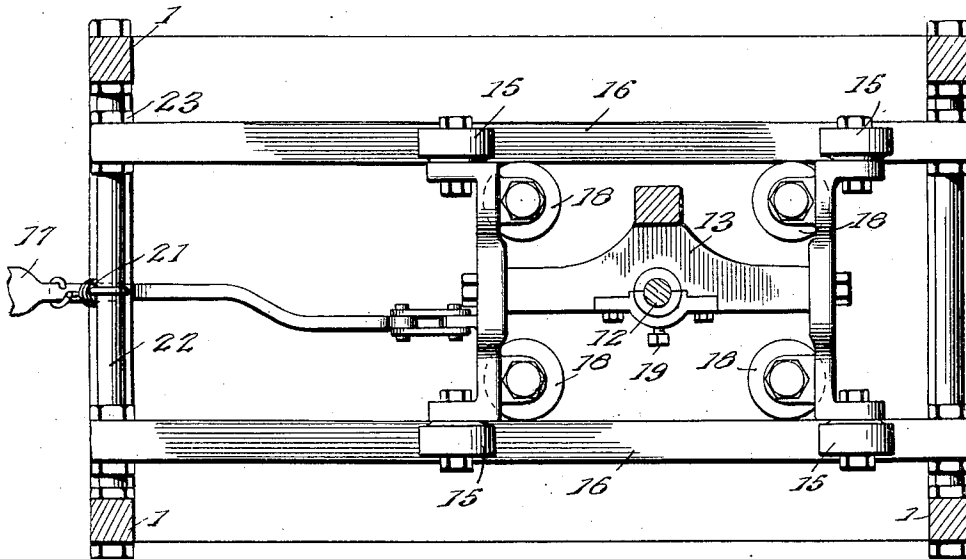


Fig. 6.

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UNITED STATES PATENT OFFICE.

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SLOTING-MACHINE.

1,050,198.

Specification of Letters Patent.

Patented Jan. 14, 1913.

Application filed September 7, 1911. Serial No. 648,105.

To all whom it may concern:

Be it known that we, THOMAS W. ALLEN and MARION L. VEATCH, citizens of the United States, residing at Hoquiam, in the county of Chehalis and State of Washington, have invented certain new and useful Improvements in Slotting-Machines, of which the following is a specification, reference being had to the accompanying drawings.

This invention relates to slotting machines and more particularly to a machine for cutting slots in wooden staves, particularly that class of staves which are used in the construction of a continuous pipe for conveying water for power and other purposes.

The object of this invention is to provide a slotting machine for the above purpose, which will have its parts arranged so that they may be adjusted in all the ways desirable for the work in question.

Another object of this invention is to provide means whereby the cut in each stave may be made as perfect and uniform as possible, means being provided to keep the various parts of the machine in rigid alignment after they are adjusted to the desired position.

A further object of this invention is to have all the parts of the machine readily accessible for inspection and repair.

Other objects of this invention will become apparent as it is more fully set forth.

Difficulty has been experienced in the past in providing a machine for cutting slots in wooden pipe staves, which will make the slots of such uniformity, both in position and size, as to enable the piece of metal, or other means used for securing the staves together, to fit as closely together as possible within the same so that when the staves are fitted together, the joints between them will be closed sufficiently to prevent leakage.

This invention provides a machine which will do the work required of it, not only with the accuracy desired, but with celerity, even when operated by an ordinary mechanic.

In the accompanying drawings which illustrate by way of example an embodiment of this invention, Figure 1 represents a view in elevation of a machine embodying this invention. Fig. 2 is an end elevation of Fig. 1. Fig. 3 is a plan view of Fig. 1, Fig 4

is a bottom plan view of the machine with parts removed in order to more clearly show the construction of the carriage used in connection with this machine. Fig. 5 is a plan view of the machine with the top plate removed. Fig. 6 is a view in perspective showing the mechanism underneath the top plate, and connected therewith. Fig. 7 is a detail of a portion of the bottom plan view of the top plate.

Similar reference characters refer to similar parts throughout the drawings.

In the construction shown in the drawings, 1 represents a main framework or table that supports the various mechanisms of the machine embodying this invention and which is provided with an upper plate 2 which has its central portion arranged to receive a pair of sliding plates 3. The plates 3 are used for supporting and guiding the work to the saw 4, which cuts the slots within the same. Each plate is provided with a slot 5 through which a stop 6 is adapted to reciprocate, when actuated by a lever 6', that is disposed underneath and secured to the plates 3. Each of the levers 6' is supported on a journal 6'', which is secured to the plates 3.

The plates 3 are arranged to slide within the upper plate 2, in a manner clearly shown in the drawings, the plate 2 being suitably recessed to receive and guide them. Suitable slots or holes are provided in the recessed portion of the plate in order to permit the stops 6 and the journal members 6'' to project therethrough, and to move with the sliding plates when the same are actuated, by means of the adjusting screws 10, or by any other means.

In contact with the levers 6' are arms 7 that are pivotally secured, to the bolts 7', that are rigidly secured to the plate 2, and whose upper portions are bifurcated in order to pivotally support the arms 9'. The end portions of the arms 9' that are adjacent to the sliding plates 3 are pivotally secured to the sliding rods 9'', whose lower portions are provided with the pins that engage with the lower surface of the levers 7, as is clearly shown in the drawings. Disposed on the upper portions of the rods 9'', are suitable springs arranged to resiliently act on the arms 9' so as to keep the same suitably positioned on the rods and yet not too rigidly. Suitable nuts are disposed on

the sliding rods for the purpose of keeping the arms at a suitable height on the rods 9''. The other end portions of the arms 9' are positioned adjacent to the end portions 8' of the levers 8 that are provided for the purpose of actuating the stop mechanism of the device and also for holding the work to be slotted. A pin 8'' projects through the bifurcated portion 8' of each of the levers, so as to engage with the upper surface of its respective arm 9' in a manner to be more fully described in a later part of the specification. Bolts 9 are provided for the purpose of adjustably supporting each of the levers, and a nut 30 is provided on each of these bolts for the purpose of locking the same on to the table 2, after the bolt is suitably adjusted thereon.

The movement and action of each of the stop devices is as follows:—One of the levers 8' is brought forward, and its pin 8'' engages with its respective arm 9', and causes the same to lower on that side of the fulcrum, and its other end portion to rise, and raise its respective sliding rod 9'' therewith. The pin in the sliding rod raises the lever 7, which in turn raises the lever 6', and the stop 6, so that the latter projects above the surface of the sliding plate and forms a barrier or stop against which the work to be slotted may be placed. A pair of plates 3' suitably secured to the table 2 by means of bolts 3'', are provided for the purpose of guiding the work across the machine in question. These plates are preferably made from angle iron, as is clearly shown in the drawings. A suitable slot 11 is provided in the table 2, so that the arbor 12 of the saw can suitably actuate therein. The saw is held to the arbor 12 in the usual manner and is disposed horizontally thereon, as is clearly shown in the drawings. A carriage consisting in general of an upper portion 13 and lower portion 14, which are provided with wheels or rollers 15 which are adapted to engage with rails 16 suitably secured to the frame work 1, is arranged to hold the arbor 12 securely in position and to carry it horizontally across the machine and within the slot 11 when a foot actuated mechanism 17 is operated. In order to prevent any sidewise movement of the carriage in its horizontal motion across the frame, there are provided rollers 18 secured suitably to the carriage portions 13 and 14, and arranged to engage with the sides of braces 16' in a manner shown in the drawings. A suitable set screw 19 is provided for engaging with the arbor in a suitable manner for holding the same in vertical alinement, in the position in which it is desired to hold the same. A suitable pulley 20 is provided on the arbor, so that the same can be actuated in the usual manner by power.

21 is a spring suitably secured to the frame 1, for returning the foot mechanism 47 to its normal position.

The various rails 16 are adjustable, as is clearly shown in the drawings, the rail disposed in the upper left hand corner being adjustable sidewise on a threaded rod 22 and locked securely in any position desired by means of nuts 23 provided thereon. The rail in the upper right hand corner is adjustable in a similar manner. The lower left hand rail is adjustable vertically on a suitable means 24 that is securely held to the frame work 1 in the manner shown. The rail in the lower right hand corner of the frame is adjustable sidewise or vertically by means of the bolts and nuts 25 and 26 provided for the purpose, and which are connected in a suitable manner to the frame work 1.

16' are braces in the side of the frame work 1 arranged to engage with the various wheels as shown in the drawings. An adjusting screw 27 is disposed on the under portion of the carriage, and arranged to engage with the arbor so as to adjust the same to the work to be done by the saw. The upper portions 28 of the bolts 7' are bifurcated as is clearly shown in the drawings, in order to properly support the arms 9', and a nut 29 is threadably mounted on each of said bolts for the purpose of locking the same on to the table 2, after the same has been suitably adjusted thereon.

The operation of the device is as follows:—The work is placed upon one side of the table, as is shown in dotted lines in Fig. 3, and then the lever 8 on that side of the table is pulled over so as to rest upon the work and hold it securely in position, at the same time the stop 6 is raised so as to provide a suitable abutment for the work to be slotted. The operator then actuates the foot mechanism, and brings the saw across the table so that a slot is cut into the end of the stave. It is of course understood that the saw is meanwhile being actuated by a suitable belt which transmits power from a convenient source to the pulley on the arbor of this machine. After the stave is slotted, the lever is raised, which automatically permits the stop to recede from the table, and the work is pushed across the same until its other end is brought adjacent to the stop on the other side of the table. The same operation takes place as in the former case and this end of the stave is slotted, after which the stave is removed and another one placed upon the table and slotted, as already described. It can be seen that the angle plates 3' serve as a suitable guiding means for the staves, and also that the stops 6 provide a suitable means for the staves to abut against. The depth of the grooves that are cut in the staves can be ad-

justed for or controlled by means of the set screw 10 in the sliding plates 3, it being only necessary to turn these screws sufficiently to force the plates to or away from the central slot 11, thereby causing their stops 6 to restrict the position of the staves sufficiently to make the grooves cut in the ends thereof to suit the conditions arising. When moving the sliding plates, the screws in the slots thereof, as is clearly shown in Fig. 3, are loosened sufficiently to permit the plates to move under the actuation of the screws 10. By referring to Fig. 7, it will be seen that suitable slots are provided in the lower portion of the table to permit the sliding plates to move therein, without being interfered with by the covering in any way. These slots are sufficiently large to permit the stop 6 and the journal members 6'' to extend therethrough, and to move the entire distance with the sliding plates 3, without interfering with the total length of adjustment of the screws 10.

Having thus described the invention what is claimed is:—

1. In a machine for slotting staves, a table, a plurality of plates adjustably mounted within said table for supporting and guiding the staves to be slotted, a plurality of stops actuatable in said plates, means for clamping the staves to be slotted, and means for actuating said stops connected to and actuatable by the first mentioned means.

2. In a machine for slotting staves, a table having recesses provided therein, plates slidably mounted within said recesses for supporting and guiding the staves to be slotted, a plurality of stops vertically disposed in said plates, mechanism for actuating said stops for raising and lowering the same, levers for clamping the staves to be slotted and pins disposed in said levers for actuating said mechanism.

3. In a machine for slotting staves, a table, a pair of plates slidably mounted within said table and arranged to come flush with the surface thereof, a plurality of stops actuatable in said plates, mechanism disposed under said table for actuating said stops, a pair of levers adjustably mounted on said table, means disposed in said levers arranged to actuate the stop mechanism of the sliding plate adjacent thereto, and means for adjusting the position of said sliding plates.

4. In a machine for slotting staves, a table, a plurality of plates slidably mounted within said table and arranged so that their upper surfaces will come flush with the upper surface thereof, said plates each having an aperture formed therein, a stop actuatable in each of said apertures, a lever pivotally connected to each of said stops, journal members secured to said sliding

plates for supporting said levers, other levers having portions disposed under the first mentioned levers and arranged to come in contact therewith, means for supporting said levers, mechanism connected to the last mentioned levers for actuating the same, levers adjustably mounted on said covering for holding the staves to be slotted, said levers being arranged to actuate said mechanism so as to cause said stops to project beyond said plates when said last mentioned levers are in their clamping positions.

5. A slotting machine comprising in combination a framework, a table disposed in said framework, a plurality of plates slidably mounted within said table and arranged so that their upper surfaces will come flush with the upper surface thereof, said plates each having an aperture formed therein, a stop actuatable in each of said apertures, a lever pivotally connected to each of said stops, journal members secured to said sliding plates for supporting said levers, other levers having portions thereof disposed under the first mentioned levers and arranged to come in contact therewith, means for supporting said levers, mechanism connected to the last mentioned levers for actuating the same, levers adjustably mounted on said table for holding the staves to be slotted, said levers being arranged to actuate said mechanism so as to cause said stops to project beyond said plates when said last mentioned levers are in their clamping positions, an arbor vertically disposed in said framework and arranged to project through said table, and a carriage for actuating said arbor so as to carry the same transversely across said table.

6. A slotting machine comprising in combination a framework, a table disposed in said framework, a plurality of plates slidably mounted upon said table and arranged so that their upper surfaces will come flush with the upper surface thereof, said plates each having an aperture formed therein, a stop actuatable in each of said slots, a lever pivotally connected to each of said stops, journal members secured to said sliding plates for supporting said levers, other levers having portions thereof disposed under the first mentioned levers and arranged to come in contact therewith, means for supporting said levers, mechanism connected to the last mentioned levers for actuating the same, levers adjustably mounted on said table for holding the staves to be slotted, said levers being arranged to actuate said mechanism so as to cause said stops to project beyond said plates when said last mentioned levers are in their clamping positions, an arbor vertically disposed in said framework and arranged to project through said table, a carriage disposed in

said framework and below said table, and adjustable means for supporting said carriage, said means being arranged to permit vertical and horizontal adjustment of said carriage.

7. A slotting machine comprising in combination a framework, a table disposed in said framework, a plurality of plates slidably mounted upon said table and arranged so that their upper surfaces will come flush with the upper surface thereof, said plates each having an aperture formed therein, a stop actuatable in each of said apertures, a lever pivotally connected to each of said stops, journal members secured to said sliding plates for supporting said levers, other levers having portions thereof disposed under the first mentioned levers and arranged to come in contact therewith, means for supporting said levers, mechanism connected to the last mentioned levers for actuating the same, levers adjustably mounted on said

covering for holding the staves to be slotted, said levers being arranged to actuate said mechanism so as to cause said stops to project beyond said plates when said last mentioned levers are in their clamping positions, an arbor vertically disposed in said framework and arranged to project through said table, a carriage disposed in said framework and below said table, a plurality of rollers disposed on said carriage, rails for supporting and guiding said rollers, and means for adjusting said rails, horizontally and vertically, and a pedal mechanism for actuating said carriage.

In testimony whereof we hereunto affix our signatures in the presence of two witnesses.

THOMAS W. ALLEN,
MARION L. VEATCH.

Witnesses:

LOUIS J. MASON,
MOSES WATERS.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."