(No Model.) 2 Sheets—Sheet 1.

# J. ANTHON.

## STAVE JOINTING MACHINE.

No. 520,873. Patented June 5, 1894.

Fig. 1.

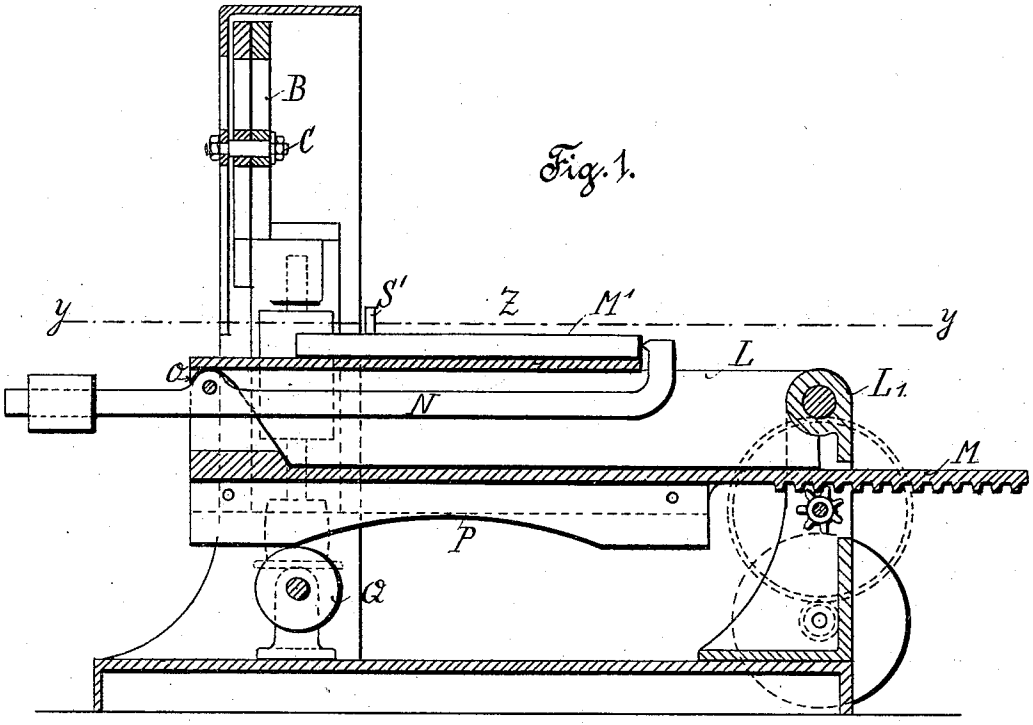
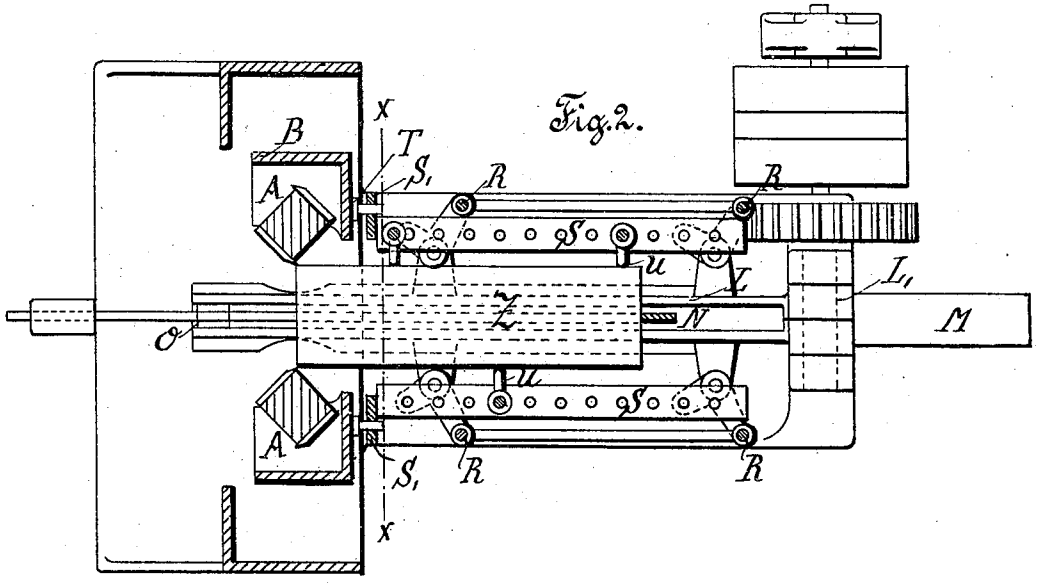



Fig. 2.




Witnesses.
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(No Model.) 2 Sheets—Sheet 2.

# J. ANTHON.

## STAVE JOINTING MACHINE.

No. 520,873. Patented June 5, 1894.

Fig. 3.

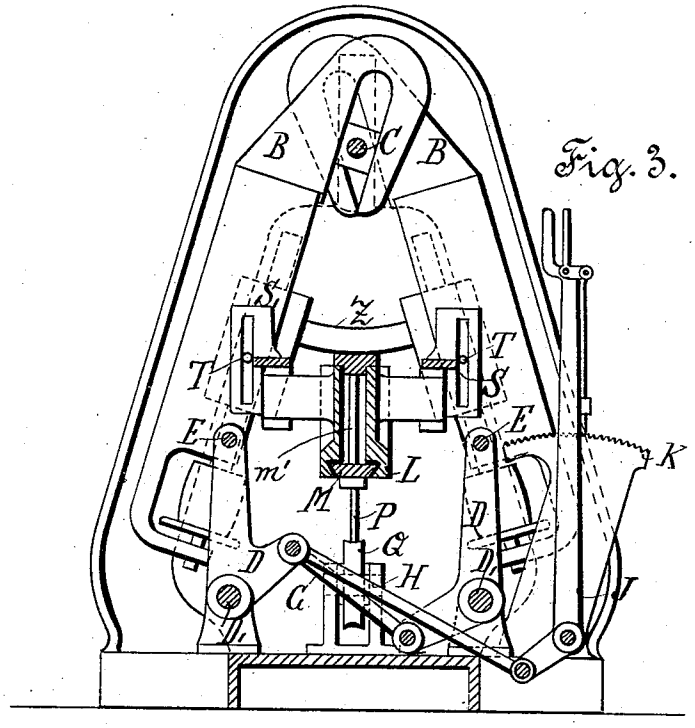
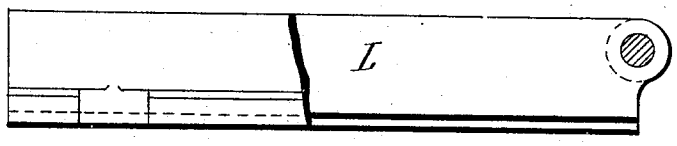



Fig. 1a.

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# UNITED STATES PATENT OFFICE.

JOHANN ANTHON, OF FLENSBURG, GERMANY.

## STAVE-JOINTING MACHINE.

SPECIFICATION forming part of Letters Patent No. 520,873, dated June 5, 1894.

Application filed June 1, 1893. Serial No. 476,255. (No model.) Patented in England May 23, 1893, No. 10,195.

*To all whom it may concern:*

Be it known that I, JOHANN ANTHON, a subject of the Emperor of Germany, residing at Flensburg, Germany, have invented certain new and useful Improvements in Stave-Jointing Machines, (for which I have obtained a patent in Great Britain, No. 10,195, dated May 23, A. D. 1893,) of which the following is a specification.

In the drawings Figure 1, is a sectional view of the apparatus taken longitudinally. Fig. $1^a$ is a detail view of the pivoted frame in which the carriage moves, the rear part of one side of said frame being removed to show the interior guide way for the sliding carriage. Fig. 2, is a plan view partly in section on line $y$—$y$ Fig. 1. Fig. 3, is a section on line $x$—$x$ of Fig. 2, looking to the left.

In the drawings is represented a machine in which the joint is cut by two cutters A supported from two bow pieces B B pivoted at their upper ends at the point C and crossing each other like a pair of scissors. As the joint of the stave corresponds to a radial line drawn from the center of the cask, the point C represents this point and thus the joint is accurately made as the cutters are consequently radii converging to point C. In order to cut the joint also lengthwise corresponding with the bilging of the cask, it is necessary that the stave while going through the cutter carriers gets a gradually lifting and lowering movement. For this purpose the stave is laid on a cast iron frame L, consisting of two small plates, which turn round the pivot L′. Between these two plates runs a sliding carriage M shaped like a rack which, lengthened toward the fore part has a tappet N, either fixed or swinging round the pivot O, and below the carriage a pattern P is fixed thereto in any suitable manner to move therewith. The pivoted tappet enables the operator to remove the stave readily if desired by throwing down the rear end of the tappet and sliding the stave from the carrier table. Operated by the rack and a suitable gearing or otherwise, the sliding carriage M, together with the model P and the stave Z lying on the upper plate M′ thereof before the tappet N runs forward and pushes the stave to be jointed through the cutter carriers. The upper plate M′ is connected with the carriage M by the part $m'$, Fig. 3. By the weight of the frame L, swinging around the point L′, the model P is pressed upon the roll Q arranged directly between the cutter carriers. In consequence of this arrangement the model affects a gradually raising and lowering of the frame L together with the stave lying thereon and at one operation the stave gets a larger width on the middle than on the ends, and indeed this difference of the width depends partly on the greater or less angle between the edges of the cutters, partly on the greater or less lowering caused by the shape of the model. Drawn through, the stave drops from the machine in face of the cutter carriers and the sliding carriage M being reversed in any suitable way, returns back to its place.

In order to prevent undue waste of stuff on both edges and on the middle of the stave while pressed through the cutters, it is necessary that the stave be centered on the frame L and that the cutter carriers can be easily and quickly adjusted at any distance. For fulfilling these conditions which render unnecessary a selection of the staves according to the breadth the following arrangement will serve.

The bows B of the cutter carriers rest by means of the pivot E on the two equally long rods D turning round the pivot D′. These rods are besides jointed by the rod G in such a manner that the movement of the point E of one bow B corresponds to a quite equal movement of the point E of the other bow B, of course in an inverted direction.

By a movement of the point E the bows B swinging around the point C are brought nearer or removed from each other. This movement is effected by the lever J connected by the rod H with the guide D. The lever in easy reach of the operator, is easily to be stopped at any position by means of a click catching in the bow K′. Lest undue stuff is wasted on both edges of the stave while going through the cutter carriers, and in order to be able to center the stave at one operation, two rails S are secured to the frame L. These rails are connected with the frame L by the angle levers R, one arm of which turns around a pivot of the rails and the others are by pairs connected by a bar. By these angle levers the rails S get a position parallel to the stave

and at the same time a movement removing and approaching in a parallel direction. On the rails at a certain distance according to the length of the stave are fixed fingers U, and indeed on the back side two (instead of two can be used also a suitably long rule) and on the fore side only one. These fingers effect, while the rails S are equally moving on toward another, the centering of the stave.

In order to center the stave by the lever and at one operation to put the cutter carriers into a distance suitable to a correct cut, it is only necessary that the rails S are connected with the bows B. The connections of the rails S with the bows B are made by catching a pin T screwed to the bow, into the slit of the piece S′, fastened to and standing rectangular to the rail S. While the frame L altogether with the rails S, is going vertically up and down the pin T slides along the slit of the piece S′ whereas at a horizontal position of the bows B effected by the lever, the pin takes the rail S along with it. As Fig. 2 shows, each bow B has a pin catching in the slitted piece S′.

I claim as my invention—

1. In combination, the carriage, the cutters, the bows carrying said cutters, the movable parallel rails S and the slotted plates S′ and pins T forming the connections between the rails and the bows, whereby the cutters and rails are adjusted simultaneously, substantially as described.

2. In combination, the cutters, the carriage, the pivoted frame L, the pattern P and roller Q, the parallel centering rails S and the levers connecting the same with the frame L, substantially as described.

3. In combination, the cutters, the carriage, the bows carrying the cutters, the centering rails S arranged parallel, extending longitudinally along the stave and connected with the bows to be adjusted therewith, the hand lever J, and the connections from said hand lever to the two bows, substantially as described.

4. In combination, the carriage, the cutters, the bows carrying said cutters, the movable parallel rails S, the connections between said rails and the bows to move therewith and the fingers U projecting inwardly from the parallel rails, substantially as described.

In witness whereof I have hereunto set my hand in presence of two witnesses.

JOHANN ANTHON.

Witnesses:
T. B. HANSEN,
HERMANN OTTO.