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PROCESS OF PRODUCING VENEERS

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Fig. 1

Fig. 1a (a-b)

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The invention relates to the process of producing veneers and to the veneer produced by said process and essentially consists therein, that the peeling off of spiral shaped veneers from the point of a work piece with the aid of a knife or cutter in an inclined position to the axis of the work-piece, which is relatively movable in the direction of the latter. Preferably the work-piece feeds by its own weight in its direction of axis in contrast to one or several knives or cutters not movable in this direction, whilst the knife or knives describe a rotary movement round the axis of the work-piece. The work-piece can preferably deposit the peeled off veneer upon a table situated below the cutting-device being capable of being turned by hand or better still automatically at a speed which conforms to the cutting-speed. This is especially suitably effected, if the work-piece is made to point in a downward direction.

The angle of the edge of the cutter is preferably such that the length of the generatrix of the cone to be peeled off essentially amounts to an entire multiple of the length of the radius of the base of the cone. The ratio of the length of the generatrix of the point to be peeled off to the radius of the base of the point suitably amounts to 3 or more.

1. The extreme point of the work-piece is suitably either specially cut off or the design of the knife is such, that it causes the extreme point of the work-piece to be cut to assume a round shape with the result that the cut veneer shows no parts in the middle which may prove a hindrance. This may be attained with the aid of a correspondingly profiled knife or cutter, as for example a curved knife or cutter. When using a curved knife or cutter the veneer deposited upon the table is preferably subjected subsequently to a corresponding pressure in order to cause the bent veneer to assume a flat shape.

The invention has been illustrated by way of example in the accompanying drawings, in which

Fig. 1 represents a view of a device for carrying out the process in accordance with the invention,

Fig. 1a is a section along the line a-b of Fig. 1, together with a view upon a clamping device seen from above.

Fig. 2 is a view of a knife-carrier,

Fig. 3 a section along the line c-d of Fig. 2.

Fig. 4 a section along the line e-f of Fig. 3.

Fig. 5 illustrates the cutting-process,

Figs. 6, 7 and 8 represent different shapes of points of work-piece.

Fig. 9 shows a few forms which the cut veneers may assume when using knives or cutters of varying profile.

In the drawings 1 represents three rods which are held together with the aid of a plate 1a and a bevelled gear-wheel 1b. Along these rods rings 2 slide and are provided with holders 2a capable of holding or supporting a trunk or work-piece. 3 represents a knife-carrier supporting one or several knives and encompassing the work-piece x like a funnel, 4 illustrates a cut veneer, 5 a knife or cutter intended to cut off the bark of the work-piece x and also to cut down the work-piece to a uniform cylindrical shape. The rings 2 together with the trunk x feed by gravity towards the knife-carrier, 6 is a table upon which the veneer is deposited, 7 a gear-wheel transmission which is actuated through the medium of the motor 7a and causes the gear-wheel 1b and the table 6 to revolve in such a way, that the speed of the table is adapted to the general inclination of the cutting knife to the work-piece.

According to Fig. 3 the knife-carrier 3 has been provided with two knives 8a, 8b. This is for the following purpose: In case of using a curved knife the veneer cut from the work-piece does not obtain a uniform thickness throughout its breadth when the work-piece and the curved knife are moved while cutting relatively to each other in a direction corresponding with the axis of the work-piece but will adopt a cross section of unequal thickness as shown for example in Fig. 5. In using a single knife only the veneer will change at its different parts for example in a manner shown in Fig. 5 on the left hand side; so that the veneer will have a cross section composed from the cross section of the part
10 added by the cross sections of the parts 9a, 9b. According to the invention one of the knives 8a and 8b for example knife 8a owing to its position staggered to the position of the knife 8b in the direction of
the axis of the work-piece which both have identical cutting edges firstly cuts off strips with cross sections according to the parts 9a, 9b, before the second knife 8b cuts off the remaining strip of uniform thickness according to the section 10. If the knives are straight as per Fig. 8 it will be obvious that a flat veneer uniformly thick will be obtained, a curved knife or cutter in accordance with
Figs. 2–5 renders it possible to produce veneers which are free from portions in the middle overlapping each other, because the points of the work-piece have in this instance been rounded off. In case of an absolutely
20 conical surface it is requisite to cut off the point for the purpose of obviating an overlapping of the portions cut at the point of the work-piece.

In regard to the inclination of the knife to the radius of the base of the point of the work-piece to be cut it should be noted that this may be of a somewhat differing shape. A completely cut wooden veneer will always be subject to certain amount of shrinkage, owing to the moisture still contained therein. This shrinkage may be immediately duly considered. This may be effected by taking the generatrix a little smaller than a whole multiple of the radius of the base of the cone.

35 After the shrinkage the spread out veneer will then contain the grain of the work-piece in a complete multiple.

I claim:

1. In a process for the production of veneers, the peeling-off of a spiral shaped veneer strip with the aid of a knife or cutter from a conical work-piece, said knife being inclined across the axis of the work-piece with the length of the generatrix of the full cone to be peeled off substantially a multiple of the length of the radius of the base of said cone, and relatively moving the work-piece and knife axially.

2. In a process according to claim 1, feeding the work-piece in its axial direction, the knife being stationary.

3. In a process in accordance with claim 1, the rotating of the knife and feeding of the work-piece in its axial direction.

4. In a process in accordance with claim 1, feeding the work-piece axially.

5. In a process in accordance with claim 1, inclining the knife to the work-piece in such a manner that the length of the generatrix of the cone to be peeled off substantially amounts to an entire multiple of the length of the radius of the base of the cone at least 3:1.

6. In a process in accordance with claim 1, the interspersing in the work-piece with rod-like insertions prior to the peeling-off process.

7. In a process in accordance with claim 1, feeding the work-piece vertically downward, and supporting the peeled-off veneer upon a support during the discharge thereof.

8. In a process in accordance with claim 1, vertically feeding the work-piece downwards in its axial direction with relation to the knife and depositing the peeled-off veneer upon a table disposed below the knife and rotating substantially in synchronism with the cutting speed.

9. In a process for the production of veneers in accordance with claim 1, preliminarily reducing the work-piece to a uniform diameter as it is fed toward veneer cutting knife.

10. In a process in accordance with claim 1, the employment of a profiled knife giving the point of the work-piece a rounded shape at the apex of the cone.

11. In a process in accordance with claim 1, the employment of two curved knives, the first of which cuts said veneer and the second cuts off those parts of the work-piece that would give to the veneer an unequal thickness by reason of the first knife cutting a thinner veneer at portions of its edge differing in angularity to the axis of the work-piece.

12. In a process in accordance with claim 1, the employment of two curved knives, the first of which cuts said veneer and the second cutting off those parts of the work-piece giving to the veneer an unequal thickness by reason of the difference in inclination of different portions of the edge of the first knife to the axis of the work-piece, and subsequently flattening out the veneer.

13. In a process for the production of veneers, the peeling-off of a spiral shaped veneer from the oblique plane of a work-piece by a knife or cutter so inclined to the axis of the work-piece that the length of the generatrix of the full cone is substantially an entire multiple of the length of the radius of the base of said cone and continually removing the extreme point of the conical end of the work-piece to prevent overlapping of the veneer at its center after it is cut.

14. In a machine for producing veneers, a knife adapted to cut a veneer from a conical end of a work-piece, the cutting edge of the knife being placed in a substantially oblique position to the axis of said cone, means to move the said cone and knife relatively to each other in the direction of the axis of said cone, and a table arranged below said knife to receive the cut veneer.

15. In a machine according to claim 14, a rotatable holder for the work-piece and means for holding the knife stationary in the machine, said knife being arranged beneath the said rotatable holder.
16. In a machine for producing veneers, a stationary knife to cut a veneer from a conical end of a work-piece, the cutting edge of the knife being in a substantially oblique position to the axis of the said cone and extending to the apex of said cone, a gravity-fed rotatable holder for the said work-piece, said knife being arranged beneath said rotatable holder, and a rotatable table beneath said knife.

17. In a machine for producing veneers, a stationary knife to cut a veneer from a conical work-piece, the cutting edge of the knife being in a substantially oblique position across the axis of the cone and extending to the apex of said cone, a gravity-fed rotatable holder for the said work-piece, said knife being arranged beneath the said rotatable holder, and a rotatable table below the said knife, the relative rotation of the holder and of the table depending on the degree of inclination of the cutting edge of the knife to the axis of the cone.

18. In a machine for producing veneers, a curved knife adapted to cut a veneer from a conical work-piece, the cutting edge of the curved knife being placed in a substantially oblique position across the axis of the cone and extending the full length of the cone, means to feed the said cone and the curved knife relatively to each other in the direction of the axis of the cone, and a rotatable table arranged below said knife to receive the said veneer.

19. In a machine according to claim 18, said knife having a portion extending beyond the apex of the cone.

20. In a machine according to claim 18, a second curved knife to cut off those parts of the work-piece which would give to the veneer an unequal thickness caused by the fact that the said first knife cuts a thinner veneer with that part of its edge having a more acute angle to the axis of the work-piece than other parts of the edge.

21. The method of cutting veneer, which comprises vertically feeding a work-piece to a pair of cutter blades having sinuous cutting edges inclined across the axis of the work-piece, and shaping the work by one of said blades to permit the other blade to peel a sheet of uniform thickness.

In testimony whereof I affix my signature:

FRANZ OVENHAUSEN.