July 28, 1959 G. ORTEL 2,896,680

VENEER JOINING MACHINE

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Fig. 1

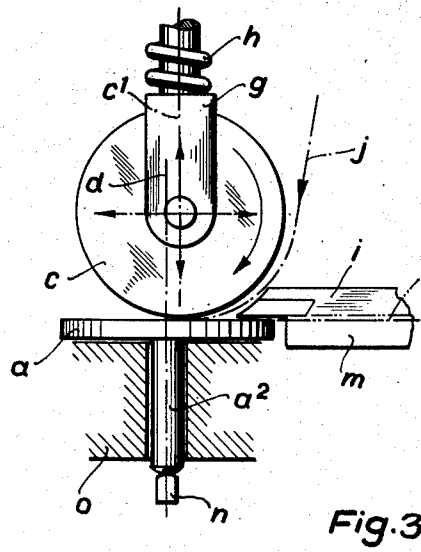


Fig. 2

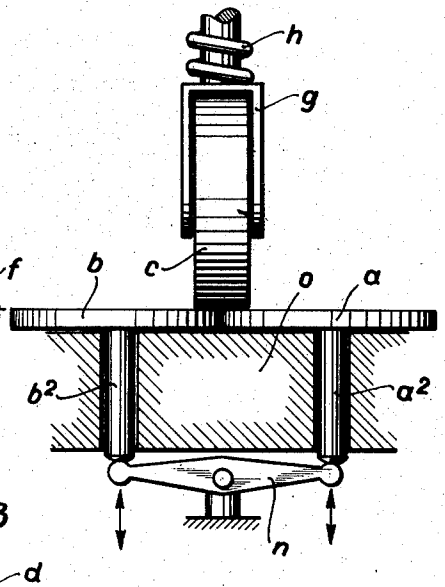
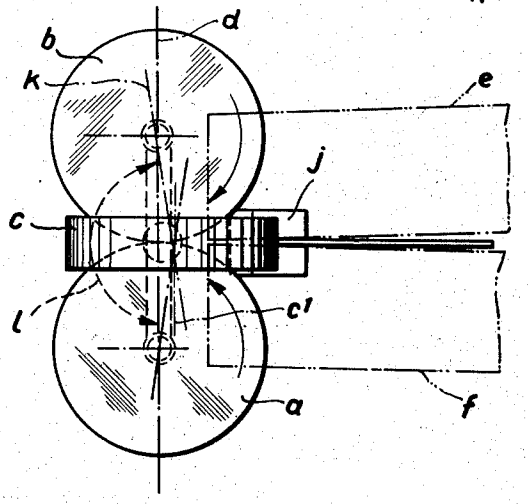


Fig. 3



INVENTOR

Gerhard Ortel

By Lowry & Rivelart

attys.

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VENEER JOINING MACHINE

Gerhard Ortel, Rietberg, Westphalia, Germany, assignor to the firm Heinrich Kuper, Rietberg, Westphalia, Germany

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4 Claims. (Cl. 144—279)

The invention relates to veneer joining machines, and more specifically to a veneer joining machine for cabinet making and the furniture trade.

The object of the invention is to provide a veneer joining machine which operates as far as possible without trouble, is strong and easily adjustable and whose construction is as simple and cheap as possible.

The veneer joining machine according to the invention includes a device for transporting the veneers, pressing together the veneer edges in horizontal direction and sticking adhesive paper strips on the longitudinal edges of the veneer halves running through the machine, said device comprising two positively driven counter-running rotary plate discs arranged side by side in a horizontal plane, and a pressure roller arranged longitudinally centrally between said plate discs in the direction of feed, cooperatively connected with said two plate discs and rotated thereby as the veneers run through the machine, the vertical axis of said pressure roller being arranged in advance in relation to a line passing through the axes line of the two plate discs arranged side by side.

Two preferred embodiments of the invention are illustrated by way of example in the accompanying drawings, in which:

Fig. 1 is a fractional side elevational view, on a reduced scale, of a veneer joining machine;

Fig. 2 is a front elevation of Fig. 1, and

Fig. 3 is a top plan view thereof.

As shown in the drawings, the veneer joining machine comprises a machine frame *o* and two plate discs *a* and *b* mounted thereon. The two plate discs *a* and *b* are arranged close together in a horizontal plane on vertical axles a^2, b^2, respectively, and are positively driven at the same speed by means of toothed gear wheels or the like, not shown, so that they rotate in opposite directions as indicated by arrows in Fig. 3.

Above these plate discs *a* and *b* a pressure roller *c* is arranged centrally thereof in the transport direction of veneer halves to be worked, and driven by friction. According to Fig. 1 the pressure roller *c* is rotatable about an axle *s* in a depending fork *g* which, being loaded by a pressure spring *h* or the like, is movable in a vertical plane, that is up and down.

In order to obtain a uniform pressing together of the edges of the veneer halves as they run through for being glued together, the axle *s* of the pressure roller *c* lies in a vertical plane c^1 which extends in front of a vertical plane *d* in which the axles a^2 and b^2 of the two plate discs *a* and *b* are situated.

The bearing of the pressure roller *c* is so constructed that not only the pressure roller can yield in upward direction according to the thickness of the veneers actually to be worked and exert uniform pressure with the aid of springs, weights or the like on the veneers pushed into the machine, but that it can also be adjusted horizontally in the transport or feed direction to bring it in a suitably advanced position in relation to the vertical plane *d* in

which the axles a^2 and b^2 of the two plate discs *a* and *b* extend.

The reference *i* designates a thin partition which is known per se and whose object is to allow the veneer halves to lie parallel close together yet prevent them from sliding one over the other when being pushed into the machine and while they are being carried along.

The machine operates in the following manner:

After veneer halves *e* and *f* have been introduced as indicated by the dot-dot-dash lines in the drawings, the veneer halves, at first resting on a table *m* or the like, are pressed by the pressure roller *c* on to the two counter-rotating plate discs *a* and *b*. Owing to the pressure roller *c* being mounted ahead, the vertical pressure is exerted on the plate discs *a* and *b* in front of the vertical plane *d*, with the result that by the forwardly mounted pressure roller *c* in conjunction with the counter-running radial movements of the plate discs *a* and *b* a horizontal pressing together of the edges of the veneer halves *e* and *f* is attained which halves in turn are pressed tighter together the greater the distance of the vertical plane c^1 of the pressure roller *c* is set in relation to the vertical plane *d* of the axles a^2 and b^2. In other words, the smaller in Fig. 3 the angle *l* of the dash line *k* is, the stronger will be the horizontal pressing together of the two veneer halves *e* and *f*. By simultaneously introducing a moistened paper strip *j* under the pressure roller *c* the strip is stuck firmly on the halves *e* and *f* of the veneer halves pressed horizontally against one another without any gap. If the vertical plane c^1 is set in the opposite direction, that is nearer the vertical plane *d*, the pressing together of the veneer halves in horizontal direction will become less, in spite of the fact that the pressure exerted by the pressure roller *c* remains constant, and will finally cease altogether when the vertical plane c^1 coincides with the vertical plane *d*; that is, if the angle *l* of the broken line *k* becomes greater the horizontal pressure pressing the two veneer halves together becomes less and finally ceases altogether when the pressure roller *c* is set for example in the operating direction so that the angle *l* is about 180°.

The machine is particularly suitable for gluing together veneer sheets which are not of the same thickness and consequently difficult to stick. In this machine a rocker beam *n* is arranged below the two plate discs *a* and *b* and each one of the vertical axles of the plate discs *a* and *b*, has its shaft butt bearing on the adjacent, end of the rocker beam *n*.

When veneers of dissimilar thickness or undulated veneers are pushed into the machine, one or other of the plate discs *a*, *b* sinks to a greater or lesser degree, the position of the two plate discs being however directly compensated by the rocker beam *n*.

The advantages of the veneer joining machine according to the invention are not only the extremely simple, clear, space-saving arrangement, enabling the machine to be easily cleaned, but also—due to the lack of feeding chains and all elements serving for mounting the same, such as slide tracks, guide rollers and the like—a considerable saving in material and a corresponding reduction in the cost of production is attained. Moreover, the reliable operation of the machine and the extremely careful manner in which the veneer sheets are handled when running through the machine also constitute advantages which are due to the fact that, as compared with the many rollers of the known constructions which press the veneer halves against one another in horizontal direction and consequently very quickly destroy weak and undulated veneers, the pressing together of the veneer halves in horizontal direction is effected by the smooth plate discs allowing at the same time the transport of the veneers, as compared with the link chains hitherto used. Consequently it is possible according to the present invention

to use a single pressure roller which in turn presses only half on the longitudinal edge surfaces (10–15 mms.), so that the veneer sheets are pressed only on these narrow strips by the roller *c* as they run through the machine, whereas the remainder of the veneer halves are carried through the machine without any resistance and pressure or stressing whatever.

From the above detailed description of the invention, it is believed that the construction will at once be apparent, and while there is herein shown and described the preferred embodiment of the invention, it is nevertheless to be understood that minor changes may be made therein without departing from the spirit and scope of the invention as claimed.

I claim:

1. In a veneer joining machine, a device for feeding veneer strips, pressing their longitudinal edges together and sticking adhesive paper tapes thereon, comprising a pair of counter-running rotary plate discs flying closely adjacent each other in a common plane and supported on axles, a pressure roller cooperating with said pair of

plate discs and driven thereby as the veneer strips pass between said pair of plate discs and said pressure roller, and means associated with said pair of plate discs and allowing adjustment of said plate discs in opposite directions from said common plane in dependency upon each other.

2. In a veneer joining machine as in claim 1 wherein said means includes a two-armed lever supporting with each of its arms the axle of one of said plate discs.

3. A veneer joining machine as in claim 2 wherein said two-armed lever has its pivot axle extending in a horizontal direction.

4. In a veneer joining machine as in claim 2 wherein the arms of said two-armed lever are of equal length.

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