Aug. 18, 1931. A. ELMENDORF 1,819,775

FLEXIBLE WOOD FACED SHEET MATERIAL

Filed Jan. 24, 1929

Fig. 1.

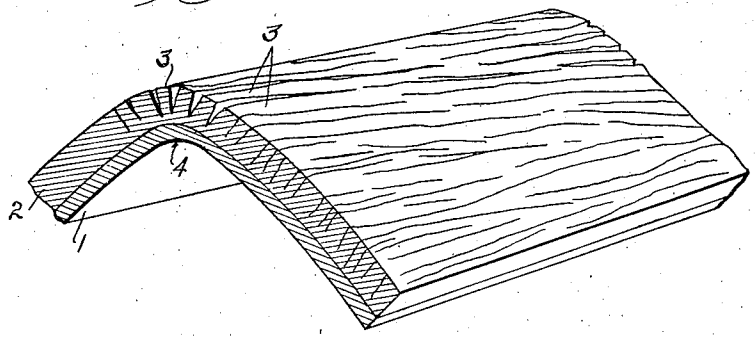
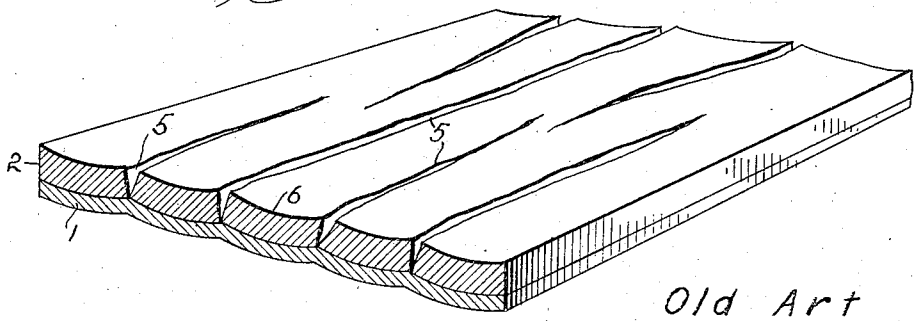
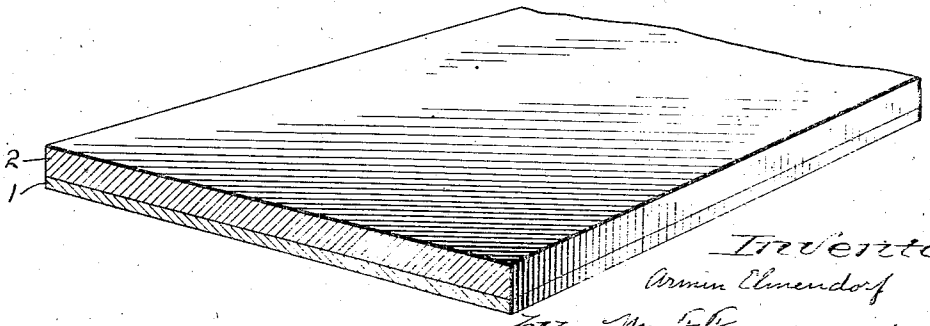



Fig. 2.




Old Art

Fig. 3.




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# UNITED STATES PATENT OFFICE

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## FLEXIBLE WOOD-FACED SHEET MATERIAL

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Thin wood veneer may be glued to a flexible backing of paper or other suitable material, while the veneer is still wet or green, namely while it is in the condition in which it leaves the lathe. However, as the veneer dries, it shrinks, whereas the paper backing does not, and therefore the finished product tends to curl up into cylindrical shape. The result is that when the sheet is flattened out the veneer splits at intervals so that the surface of the sheet consists of a series of concavities or valleys separated by ridges along the tops of which extend the lines on which the veneer has split. When the material is glued to a wall or other object having a flat surface, considerable pressure must be applied to flatten out the veneer. Moreover, even though the material has been rolled or pressed flat, the veneer still has the tendency to curl, and it is almost impossible to glue the material so tightly as to avoid the presence of appreciable ridges extending across the same along the lines where the breaks occur in the veneer. Even though the material be supplied to the user in a perfect condition, it is so fragile and the veneer cracks or breaks so readily, that the material cannot be supplied over any considerable area in an unbroken state.

The object of the present invention is to produce a material comprising a flexible backing and a facing of thin wood veneer which, when applied to the surface of a wall or other object will show a smooth uniform surface without appreciable breaks or cracks, even though the material was produced by gluing veneer as it left the lathe to the paper backing, thereby producing a strip or sheet whose length is limited only by the length of the ribbon that can be peeled from the log.

If the sheet is held taut until the green veneer has dried, the tendency to curl will be reduced but the veneer will have internal stresses that will cause it to curl more or less.

Viewed in one of its aspects the present invention may be said to have for its object to produce a material comprising a flexible backing and a facing of thin wood veneer glued thereto, wherein the veneer shall have no capacity for curling or tendency to curl.

Or, viewed in another aspect, the present invention may be said to have for its object to produce a pliable material comprising a flexible backing and a wood veneer facing glued thereto.

I have illustrated my invention and the improvement shown thereby over the prior art in the accompanying drawing: wherein Figure 1 is a perspective view of a fragment of one of my composite sheets, on a greatly enlarged scale, undergoing the process of treatment, by means of which it is ruptured into small strands or filaments; Fig. 2 is a perspective view, on a still different scale, of a fragment of a composite sheet of the prior art that has been dried and then flattened; and Fig. 3 is a view similar to Fig. 2, illustrating my improved product as it appears to the naked eye.

Referring to the drawings, 1 represents a thin, flexible backing, and 2, a layer of thin wood veneer glued to the backing.

In carrying out my ivention I make the veneer limp by dividing it, throughout its entire area, into narrow strands or filaments, extending in the direction of the length of the grain. Consequently there will be no such coherence between one part of the sheet and adjacent areas as is necessary to bring about a natural curling or waving of the veneer. In other words I so far destroy the character of the veneer that it becomes limp transversely of the grain. And, since the filaments all hang together in the finished product and the veneer retains its sheet form, this treatment of the veneer to make it limp may take place before or after it is glued to the flexible paper or other material, and it may be done by tearing or splitting along lines extending in the direction of or following the grain. A very simple way is simply to draw the glued product over a knife-like bar with a blunt edge, while holding the material taut and causing it to bend where it passes over the bar; the grain of the veneer running approximately parallel to the length of the bar over which the sheet is drawn. When this is done, with the paper or other backing material next to the element over which the sheet is being drawn, the outer

face of the sheet, that is the veneer, is placed under a tension sufficiently great to cause the veneer to be stressed beyond the point of rupture across the grain; and consequently the veneer will be divided into filaments 3 of various lengths and widths, following the grain, hanging together and bonded to the backing. The lines of rupture, of course, do not extend in exact parallelism to the edge over which the material is drawn; but, beginning at some point therein at the said edge, follow the grain of the wood. The sharper the edge over which the sheet is drawn, the narrower will be the filaments into which the veneer is divided and the flatter the veneer will lie or, in other words, the more limp the product will be. However, notwithstanding that the veneer is divided into many very narrow strips or filaments, the lines separating the filaments are practically invisible when the sheet is flattened out, because the combined surface areas of the filaments equal the area of the sheet lying flat, and each filament is in intimate contact with and meshes perfectly with the rupture contour of the adjacent filaments between which it lies.

In Figure 1 of the drawings, that part of the sheet to the left of the bend 4 has not yet been worked, and the veneer is still in its virgin state. As the sheet is progressively drawn over a rigid edge, (not shown), causing a sharp wave or curve 4 to travel along the sheet, generally parallel with the grain in the wood, the wood is progressively stressed beyond the rupture point and, therefore, splits or tears to transform the sheet of veneer into a mass of narrow, connected strands or filaments 3. When the sheet is flattened, after being drawn past the said edge, the slits close, so as to be invisible to the naked eye. In the long, right-hand wing, in Fig. 1, there are shown the lines of rupture, although these will not be visible; the sheet as a whole having the appearance indicated in Fig. 3, namely, that of a flat sheet whose veneer face is apparently continuous and unbroken.

Figure 2 illustrates a composite sheet, as heretofore manufactured, namely, a flexible backing glued to wood veneer and dried. The sheet tends to curl and will curl unless restrained. When it is attempted to flatten out the sheet, it cracks along lines where the wood is the weakest, as indicated at 5, 5, leaving curved sections 6 in between adjacent cracks or chasms. The flattened sheet, therefore, consists of a series of curved, shallow, trough-like sections separated by cracks or crevices, so that it presents a wavy surface, as well as a surface broken up by plainly visible cracks.

My improved product, consisting of a flexible backing faced with partially disintegrated or limp veneer is very similar to and may be handled in the same manner as heavy wall paper; in other words, it may be rolled up and, when unrolled, it has a flat even surface. Furthermore, by reason of the fact that the veneer may be said to be divided into tiny strips or strands, namely, to be in a lace-like form no variation in the moisture content of the veneer, either before or after it has been applied to a wall or the like, will cause a distortion of the surface contour of the veneer.

I have referred to the veneer-faced material as being composed of a flexible backing to which veneer in a green state has been glued. My invention is particularly valuable in connection with such material, but may be used to advantage wherever a flexible backing is faced with veneer, regardless of whether the veneer was wet or dry when applied to the backing.

I do not wish to be limited to any particular way of bringing about a partial disintegration of the veneer or the division of the veneer into filaments, but intend to cover the improved material regardless of the manner in which it is produced. Furthermore, I do not wish to be limited to any particular thickness of veneer, for the thickness of the veneer will not only vary for different woods but also to suit the particular purpose for which the final product is to be used. Ordinarily thin veneer having thicknesses of from one-fortieth of an inch to one-eightieth of an inch will be found to be satisfactory for most purposes.

I claim:—

1. A material consisting of a flexible backing and a sheet of thin wood veneer glued thereto, the veneer being in a ruptured state wherein at least the face of the veneer is composed of a mass of small strands or filaments whose rupture contours follow the wood grain in close mesh with each other and cause the surface of the veneer to appear to be continuous when the material is laid flat.

2. A material consisting of a flexible backing and a sheet of thin wood veneer glued thereto, the veneer being in a ruptured state wherein the face of the veneer is composed of a mass of small strands or filaments whose rupture contours follow the wood grain in close mesh with each other, the size of the strands or filaments and the depth of rupture in the wood being such that the veneer no longer has capacity to curl under changes in its moisture content.

In testimony whereof, I sign this specification.

ARMIN ELMENDORF.