(Specimens.)

F. B. HOWARD.

ARTICLE MANUFACTURED FROM PULP.

No. 352,993. Patented Nov. 23, 1886.

Fig. 2.

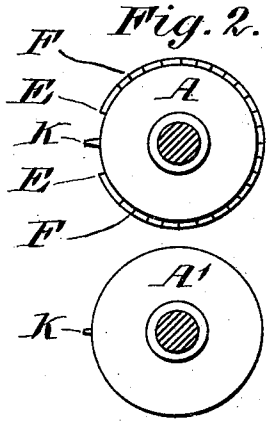


Fig. 1.

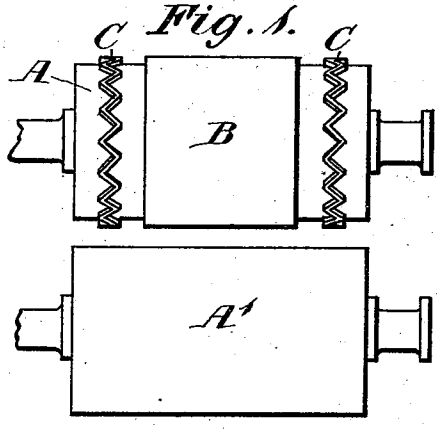


Fig. 5.



Fig. 6.



Fig. 7.



Fig. 8.



Fig. 9.



Fig. 10.



Fig. 11.



Fig. 12.



Fig. 3.

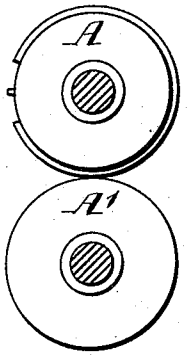


Fig. 4.

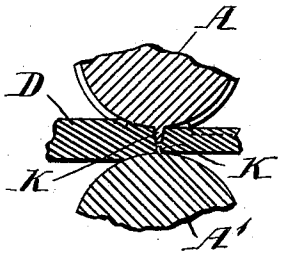
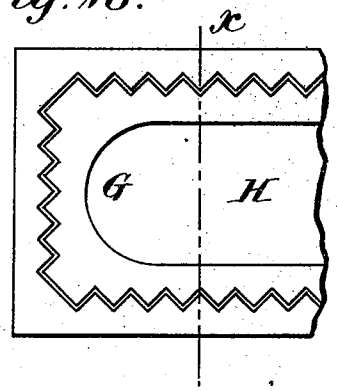


Fig. 13.



Witnesses

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UNITED STATES PATENT OFFICE.

FRANK BENONA HOWARD, OF CEDAR HALL, QUEBEC, CANADA.

ARTICLE MANUFACTURED FROM PULP.

SPECIFICATION forming part of Letters Patent No. 352,993, dated November 23, 1886.

Application filed January 22, 1886. Serial No. 189,426. (Specimens.)

To all whom it may concern:

Be it known that I, FRANK BENONA HOWARD, of Cedar Hall, in the county of Rimouski, Province of Quebec, Canada, have invented new and useful Improvements in Articles Manufactured from Pulp; and I do hereby declare that the following is a full, clear, and exact description of the same.

This invention has reference to an improvement in articles formed or manufactured out of wood pulp—such as sign-boards, panels, and other articles—upon which it is desired to have patterns, designs, figures, or letters, &c., raised upon or formed by depressions in their surfaces.

That others may carry my invention into effect, I will now describe in what manner the same may be accomplished.

I take wood pulp as heretofore produced and form of it by any desired process a cake, slab, mass, or block of suitable size to be acted upon by a pair of rolls having upon either or both of them the pattern or patterns to be imparted to the surface or surfaces of the pulp board to be formed out of the aforesaid cake, slab, mass, or block, &c., of pulp, it being remembered that where a projection is to be formed upon the pulp board a corresponding depression must be formed upon the roll or rolls, and where a depression is to be formed upon the pulp board a corresponding projection must be formed upon the roll or rolls, and that the roll or rolls will be provided with any pattern or design, either or both rolls, according to whether the pulp board thus produced is to have a pattern, &c., on one or both of its sides; for if the pulp board is to be formed with a plain surface on one side and an embossed surface on the other side, then one of the rolls will be a plain cylinder, while the other will be a roll having formed on it the reversed pattern, as above mentioned, to that which is to be imparted to the one side of the pulp board to be produced. Such pulp boards thus produced may, according to the design or pattern formed on them, be used as sign-boards, panels for various articles of furniture, and other articles, coverings, or part coverings for the walls and ceilings of buildings, and all such like and similar purposes. Furthermore, in certain cases it may be desired to form the pattern or patterns upon the side or sides of the pulp board produced and configurated as above described, and by adding thereto embossments, to be attached by glue or other adhesive substances, or by nails, screws, &c., to or upon the surface or surfaces of such said pulp boards—as, for example, in the formation of sign-boards, the pattern of the sign-board and designs formed upon it may be imparted thereto by the rolls, while the letters forming the name or other reading-matter or numbers upon it may be formed by letters or numbers attached, as aforesaid, to the said pulp board; also, by the same process of forming embossed surfaces on pulp boards, as above mentioned, by rolls, the detached embossments may themselves be formed by rolls having suitable recesses formed in them for that purpose.

In the drawings hereunto annexed similar letters of reference indicate like parts. Figure 1 is a front elevation of a pair of rolls used in the manufacture of improved articles from wood pulp. Fig. 2 is an end elevation of the rolls shown in Fig. 1. Fig. 3 shows a modification in the situation of the rolls shown in Figs. 1 and 2 with regard to each other, whereby a different result is produced. Fig. 4 shows the rolls A A′ in operation. Figs. 5 to 12, inclusively, show details of construction of the rolls. Fig. 13 represents in a general manner the resulting or improved article.

Letters A A′ represent a pair of rolls, either or both of which may be provided with any desired projections or depressions for forming any desired raised or impressed pattern, design, or configuration upon the sides of the pulp board to be acted upon by the said rolls.

It is quite impossible to give a description of the various patterns that may be formed upon pulp boards by rolls having different configurations or patterns worked upon the surface of one or both of them. I will therefore confine this description to one pattern only, from which it will be understood how others may be formed.

In the drawings, the roll A is represented as being provided with a pattern, while the roll A′ represents a plain cylinder. As shown, the roll A is provided with a raised central, broad projection, B, and two zigzag projections, C, situated equally distant at each side of the projection B. If such pattern is to be

worked on indefinite lengths of pulp boards, it will extend continuously around the roll, so that by passing a block, &c., of pulp D through the rolls A A′ as shown in Fig. 4, the said pattern will be impressed continuously on one of its sides, as shown to the right of the line *x* in Fig. 13; but as shown in Fig. 2 the pattern does not extend completely around the roll A, but terminates as shown at E E. If the zig-zag pattern C is carried across longitudinally on the roll at the points E E, it will give the pattern I, (shown to the left of the line *x* in Fig. 13.) Again, I will suppose the projection B to terminate at or about the points F, and in a semicircular form. This will give a semicircular end, G, to the recess H, formed in the pulp board.

When the pattern to be formed on the pulp board is not a continuous one, either or both of the rolls A A′ may be provided, if desired, with projections K K, extending longitudinally the length of the rolls, to partly or completely sever the pulp board into required lengths after each impression, &c., of the pattern upon the pulp board; but these contrivances are only used in such cases as where they are required.

Figs. 5 to 12, inclusive, show a few of the more plain configuration of sections of recesses and projections which may be formed in or upon the rolls, either or both; but more elaborate ones may be formed, if desired.

In addition to the pattern formed upon the roll or rolls, and thus imparted to the pulp board, projecting additional designs, letters, or figures may be attached to the pulp board either by adhesive substances—such as glue, &c.—or by means of nails, screws, &c. For example, on the space H (shown in Fig. 13) certain letters and numbers, either or both, may be attached upon this surface to form any desired reading-matter; and in cases where it is desired to form a large number of such boards having the same reading-matter upon them, particularly in the case of sign-boards for advertising such words as "Sozodont," "Pain-Killer," "St. Jacob's Oil," &c., such may be formed upon the roll or rolls themselves in the manner above described for other patterns and imparted to the pulp board along with or at the same time that any other patterns are imparted to the pulp board, as hereinbefore mentioned.

The pulp boards produced as above are afterward coated with a water-proof compound. Most of the water-proof compounds now in use for similar purposes are suitable for this, and the pulp board may be painted, varnished, and gilded, all or any of these, as desired.

When it is desired to use the rolls as molds in which to form moldings or embossments to be used as projections for attaching on surfaces for ornamental or other purposes, the roll A, having formed recesses the configurations desired into its surface, will be arranged with the plain roll A′, as shown in Fig. 3, so that the peripheries of the two rolls bear upon each other, and when so arranged masses of pulp are fed to the revolving rolls to fill the said recesses in the roll A.

The portions of pulp filling the recesses in the roll A will be removed from the roll and placed upon a flat surface to dry, and when dry any superfluous "fins" or projections upon them may be trimmed off by tools in an ordinary manner.

The pulp boards formed as hereinabove described can be used either in whole or in combination with boards of natural-grown wood in the construction of articles of furniture or the like, and in such case they take the place either in whole or in part of the use of wood board in such constructions, and therefore supersede (in all cases where a strong handsomely-carved yet cheap article, of any of the classes hereinabove mentioned and many others, is desired) wood-carved boards.

I am aware that moldings, &c., have been formed by compressing paper in molds and by rolling it between rolls, but all such I disclaim; also, that certain articles have been formed of pulp by pressing it into molds. All such I disclaim, as they cannot in themselves or by themselves be used in place of the pulp board described hereinabove, or in place of natural-wood boards.

What I claim, and wish to secure by Letters Patent, is as follows:

1. As an improved article of manufacture, a pulp board having patterns or configurations rolled into its surface, the whole substantially as described.

2. As an improved article of manufacture, a pulp board having patterns or configurations rolled into its surface, and having additional projecting configurations or embossments attached upon its surface and afterward coated with a water-proof compound, the whole substantially as described.

3. As an improved article of manufacture, a pulp board having projecting patterns or configurations rolled thereon and impressed patterns rolled thereinto, with additional projecting patterns or embossments attached thereon, the whole afterward coated with a water-proof compound, the whole substantially as described.

4. As an improved article of manufacture, a pulp board having projecting patterns or configurations rolled thereon and additional projecting configurations or embossments attached thereto and afterward coated with water-proof compound, the whole substantially as described.

5. As an improved article of manufacture, a pulp board having projecting patterns or configurations rolled thereon, the whole substantially as described.

F. B. HOWARD.

Witnesses:
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W. DECARIE.