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2,258,808

PRODUCTION OF ARTICLES WITH VISCOUS COATINGS

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Fig. 1.

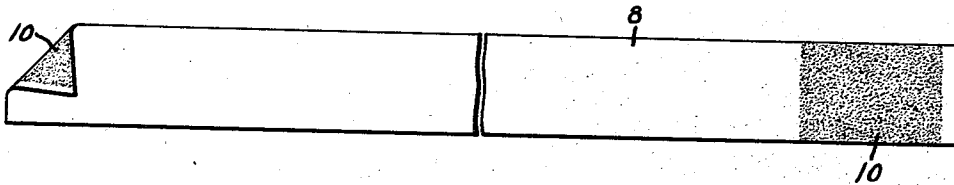


Fig. 2.

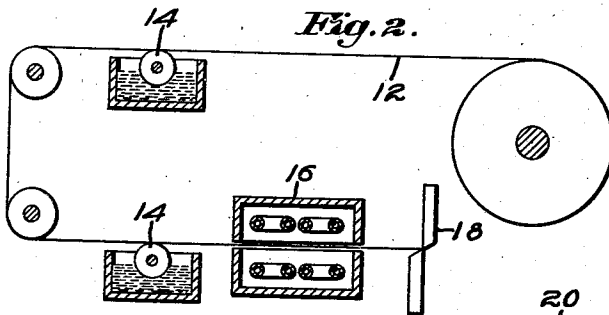


Fig. 3.

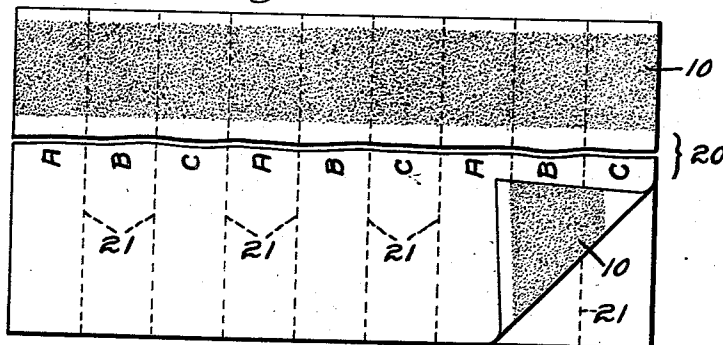


Fig. 4.

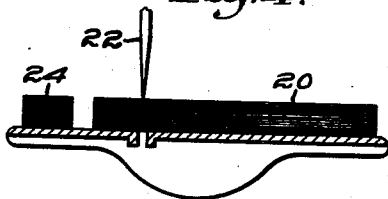
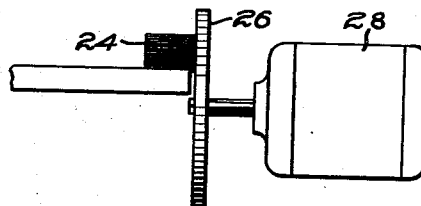


Fig. 5.



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PRODUCTION OF ARTICLES WITH VISCOUS COATINGS

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4 Claims. (Cl. 164—17)

This invention relates to the production of articles of paper or similar sheet material having viscous coatings, and the object is to provide a method permitting the inexpensive and rapid production of such articles from large stock pieces. An example of such an article in the production of which the method is advantageously used is a so-called "shirt band" used for encircling a laundered shirt to hold it in folded form and consisting of a narrow band of paper having at its ends on opposite faces coatings of dried rubber latex. Such coatings will not stick to other articles but when the band is wrapped around a shirt and the two coated surfaces pressed together they will cohere.

My invention will be well understood by reference to the following description wherein for convenience I will speak specifically of a shirt band as the article produced taken in connection with the accompanying drawing, wherein—

Fig. 1 is a broken plan view of a shirt band;

Fig. 2 is a diagram illustrating certain steps in its production;

Fig. 3 is a broken plan view of a block or lift consisting of superposed sheets from each of which a plurality of bands may be formed; and

Figs. 4 and 5 are diagrams illustrating further steps in the process.

Referring to Fig. 1, I have there shown a shirt band consisting of a narrow strip of paper 8 which might, for example, be about 19 inches long and 1½ inches wide and having adjacent its ends on opposite faces coatings 10 of dried rubber latex so that when the band is wrapped around the shirt the two coatings will be presented in opposition and may cohere one with another. It will be clear that such coatings might most advantageously be applied to the band by some such method as that illustrated diagrammatically in Fig. 2 wherein a web of paper 12 of the same width as the length of the band (or a multiple of that width, the web subsequently being slit) is drawn past suitable coating devices such as the rolls 14 which would apply to the opposed faces thereof coatings of latex in the form of stripes longitudinal of the web, these coatings being dried thereon by suitable drying mechanism, herein diagrammatically illustrated at 16. This web with the dried stripes of coating material thereon could be divided transversely to form bands as shown in Fig. 1. However, it has hitherto been necessary to cut these bands one by one from the end of the web by means of a pair of cutting blades, and particularly because of the very narrow width of the bands this has been

a slow process and very taxing on the machinery employed even at relatively low rates of production. It has hitherto been found impractical to cut simultaneously a number of thicknesses of the coated material because the cuts would intersect the latex coatings and the cutting blade would draw the latex out thread-like at the interstices of the bands and across the edges of the same and cause the strips to stick together. My invention provides a simple and practical means for eliminating this objection.

Referring to Fig. 2, I have there illustrated diagrammatically a step which consists in sheeting the coated web 12 at some suitable time in the process by means of a cutting mechanism 18 to produce sheets of a length equal to a multiple of the width of the finished bands, which sheets may be assembled in piles 20 of a convenient thickness, say, piles of 500 sheets. A broken plan of such a pile is shown in Fig. 3 wherein the dotted lines indicate lines along which such a pile may be divided to form sections each consisting of, say, 500 bands. The letters A, B and C appearing in this figure are examples of different legends, such as the name of a laundry, which may be printed on the bands, and they indicate that different legends may appear on successive bands, which is an advantage of the present method which I will hereinafter more fully refer to.

The blocks 20 may be press-cut along the lines 21 of Fig. 3, as diagrammatically illustrated in Fig. 4, by means of a suitable knife 22 of the guillotine type. In Fig. 4 I have shown a section 24 of the block corresponding to a stack of 500 bands at the left as if severed and somewhat moved to the left and the knife 22 as about to sever a second section.

As already described, because of the viscous nature of the latex it is drawn out by the knife 22 at the interstices of the sheets at the location of the cut and smeared along the side of the section and to a greater or less extent bridges or joins the coatings of different bands so that the various bands are not free from one another in the sectional pile so that they can be lifted off one after another for use. I have found (see Fig. 5) that the block-like section 24 may be laid upon a supporting device, such as a table, and that the sides of the section where the coatings extend to the edge may be slightly dressed down, preferably by the action of a rapidly rotating abrading tool 26, such as a sanding disc driven by an electric motor 28, and which may conveniently be a tool of the portable hand-sup-

ported type. Coarse emery cloth may be used on such a disc and the sides of the block 24 will be cleaned off and the edges separated by a barely perceptible removal of the paper stock itself unnoticeable in the completed bands.

In the case of plain bands, that is, ones which are not printed, the method enables them to be produced at least seven times faster than when individually cut from the web. Where the bands are printed as indicated, the limit may be the capacity of the printing mechanism.

Obviously an ordinary printing plate may be of considerably greater extent than the width of one of the bands. In the prior methods wherein the bands were severed one by one, they could conveniently be collated only in serial order as severed and thus they had to be of the same character as regards the printing thereon. With the present method, on the contrary, successive bands may have different legends thereon, as indicated by the letters A, B and C in Fig. 3, and these may be arranged in any desired relation or order limited solely by the size of the printing plate, and if the length of the sheets which go up to make block 20 is correlated to the length of the plate or to the repeat of the printing it is clear that in the block 20 illustrated in Fig. 3 all the bands in the left-hand section, for instance, will bear the legend "A" and that when this section is severed to form the section 24 all the bands of that section will be of the same kind. The bands may be of any width or of different widths in the same job since the cutting operation of Fig. 4 may economically be effected by hand feeding. It is thus possible to produce bands for several different customers or different designs of bands at one time and it is economical to print relatively small orders which may be combined with other small orders or with the production of plain, unprinted bands.

I am aware that the invention may be embodied in other specific forms without departing from the spirit or essential attributes thereof, and I therefore desire the present embodiment to be considered in all respects as illustrative and not restrictive; reference being had to the appended claims rather than to the foregoing description to indicate the scope of the invention.

I claim:

1. A method of making articles of sheet material which have at least a partial coating of viscous material which comprises assembling as a pile sheets from each of which a plurality of such articles may be cut and having a coating thereon extending continuously across lines corresponding to edges of the articles to be cut, cutting the pile through the coated areas and thereafter abrading the edges of the pile sections where intersected by said coating whereby to remove extruded coating material from the edges and the interstices therebetween.

2. A method of making articles of sheet material which have at least a partial coating of viscous material which comprises assembling as a pile sheets from each of which a plurality of such articles may be cut and having a coating thereon extending continuously across lines corresponding to edges of the articles to be cut, press-cutting the pile along said lines and thereafter dressing down the edges of the pile sections at the location of such coating to remove the extruded coating material from the sections and the interstices therebetween.

3. A method of making articles of sheet material which have at least a partial coating of viscous material which is applied as a stripe along a web of sheet material, comprising sheeting the web and assembling a pile of the sheets, dividing the pile by a cut intersecting such stripe and thereafter abrading the edges of the pile sections where they are intersected by the coating to remove extruded coating material from the edges and the interstices therebetween.

4. A method of making articles of sheet material which have at least a partial coating of viscous material which comprises assembling as a pile sheets from each of which a plurality of such articles may be cut and having a coating thereon extending continuously across lines corresponding to edges of the articles to be cut, press-cutting the pile along said lines and operating on the sides of the pile sections with a rapidly rotating tool to cut away a slight depth thereof where the coating extends to said sides.

ROBERT W. POLLEY.