

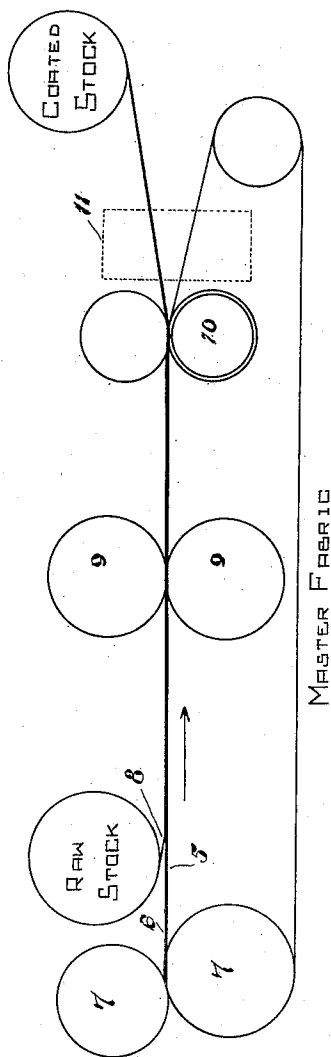
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METHOD OF AND MEANS FOR PRODUCING ADHESIVE TAPE

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METHOD OF AND MEANS FOR PRODUCING ADHESIVE TAPE

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There is a large and increasing demand for low cost adhesive tape principally for use in elaborate and complex painting operations, such as the spraying and dipping of automobile bodies. So called surgical tape is efficient for this purpose, but is too expensive and, furthermore, a cotton or other woven foundation fabric such as employed in surgical tape is not essential. The desideratum is adhesive coated paper, but paper lacks the necessary tensile strength and other qualities readily to lend itself to the ordinary coating methods and under those methods has a tendency to split, tear and curl.

The principal object of our invention is to meet the demand stated by providing for coating paper, even of the tissue grade, with any desired thickness of adhesive compound and without the application of strains or pressures calculated to damage the paper.

The nature of the invention, in its broad aspect, is predicated on the principle of coating in the regular way a master fabric, applying paper or other stock to the coated side of the master fabric, and separating the so coated paper or other stock from the master fabric by subjecting the latter to the action of a solvent.

The annexed drawing is a more or less diagrammatic illustration of a layout for practicing the invention.

According to our invention a master fabric, preferably cotton cloth having a thread count of 76×80 is coated with an adhesive compound such as is generally used for surgical plaster and the like. For example, such composition may be inclusive of rubber, zinc oxide, carbon black, pitches, waxes, etc. These materials usually are mixed dry by incorporation in rubber mixing mills. The resulting product is a tacky, very tough and elastic mass. It is and may be applied to the cloth in manifold ways. One common method is by means of calendar rolls. That method involves the application of heavy pressure and severe strains are set up in the cloth in its passage through the machine. When paper is substituted it has a tendency to tear and split, and light weight paper and

even light weight cloth cannot satisfactorily be coated by the practice stated.

Assuming for the sake of illustration that the master fabric 5 has been coated as at 6 by passage through the rolls 7, a sheet 8 of paper or other stock is applied to the coated side of the fabric as it issues from the rolls and is firmly and smoothly attached thereto under the action of compression rolls 9. The master fabric is then exposed to the action of a solvent calculated largely to destroy the sticking qualities of its coating without substantially effecting the adhesive transferred to the paper or other stock. Without limiting the invention to any particular solvent or group of solvents, we may refer, as avails suitable for the purpose, to ether, gasoline, chloroform, carbon tetrachloride, and the like. Evidently solvents of this type are particularly suited to adhesive compounds containing rubber and the like. When adhesive compounds of other characteristics are employed, it, obviously, will be necessary to use a solvent suited to the case. The solvent is applied under proper control to avoid the extremes of too little or too much. If too little solvent is used the adhesive mass may not be loosened up sufficiently for easy separation. If too much solvent is used it may soak through the common coating and destroy or impair the sticking properties of the paper or other stock. In any event the amount of solvent necessary for the purpose is less than that required completely to dissolve the soluble constituents of the adhesive compound.

The establishment of a controllable solvent acting environment may be accomplished in various ways. For example, the solvent may be sprayed upon the porous back or uncoated side of the master fabric, or it may be applied through the medium of a wick or brush. We prefer, however, to use a roll 10 having a surface qualified properly to transmit the solvent to the cloth side of the composite sheet. The effect of the solvent is to cause the master fabric to let go of the adhesive mass which thus becomes wholly a part of the stock fabric. As this effect is inaugurated, the laminated sheet is divided by winding the master fabric and the stock on separate cores.

- After the exposure stated, the coated paper or other stock and its vehicle are led, if desired, through an oven or dryer 11, for the purpose of setting the coating and for removing, and reclaiming, if desired, the residual solvents. The use of an oven is optional and it is not essential in the case of low cost fabrics. The coated paper or other stock is then reeled and the vehicle or master fabric, being in the form of an endless apron, continues on to the calender rolls for a repetition of the process.
- Having described our invention, we claim:
1. The method of producing adhesive-coated fabric, which consists in applying adhesive to a master fabric, applying a stock material to the coated face of the master fabric, subjecting the master fabric and stock material to pressure to develop a structure including the master fabric and stock material united by an adhesive, subjecting the adhesive material next the master fabric to the action of a solvent for reducing the adhesion of the master fabric, and separating the master fabric from the structure.
 2. The method of producing adhesive-coated fabric, which consists in uniting a master fabric and a stock material by an adhesive and under pressure to develop a unit laminated structure, subjecting the adhesive next the master fabric to the action of an adhesive solvent acting through the master fabric and tending to reduce the adhesion of the master fabric in the structure without materially interfering with the adhesive coating on the stock material, and separating the master fabric from the structure to leave the stock material adhesively coated.
 3. The method of producing adhesive-coated fabric, which consists in applying adhesive to a master fabric, applying a paper layer to the coated side of the master fabric, subjecting the adhesive next the master fabric to a solvent acting through the master fabric, and subjecting the united master fabric and paper to a physical separation while the adhesive coating next the paper remains unaffected by the solvent.
 4. The method of producing adhesive-coated fabric, which consists in adhesively coating an endless porous vehicle, applying the stock to be treated to the adhesively-coated side of the vehicle under pressure to thereby coat the stock, subjecting the vehicle to the action of an adhesive solvent to break down its adhesion without substantially affecting the adhesive coating of the stock, and separating the stock from the vehicle.
 5. In an apparatus for producing adhesive-coated material, comprising an endless master fabric mounted for travel, means for applying an adhesive coating to said fabric, means for causing a stock fabric under pressure to the coated side of the endless master fabric, means for applying an adhesive solvent to the uncoated side of the master fabric to break down its adhesion, and means for separately reeling the coated stock fabric following the action of the solvent.
- In testimony whereof we affix our signatures.
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