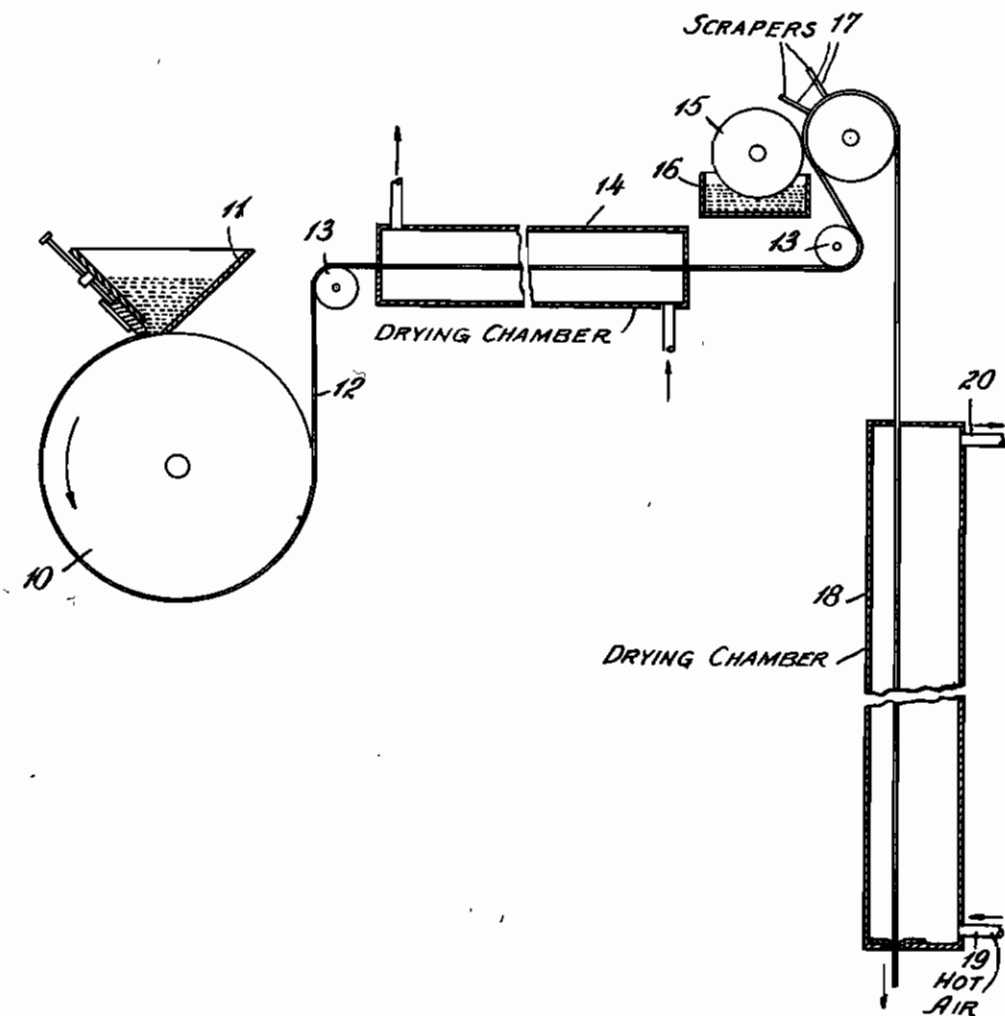


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SUPERPOLYAMIDE FILMS
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ALIEN PROPERTY CUSTODIAN

SUPERPOLYAMIDE FILMS

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The present invention relates to the production of superpolyamide films by the casting process.

It is already known to prepare superpolyamide films according to the casting process. For said purpose alcoholic or aqueous-alcoholic solutions of mixed superpolyamides are suitably used as casting solutions, for instance solutions of superpolyamides for the manufacture of which an amino-carboxylic acid on the one hand and a mixture of a diamine and a dicarboxylic acid on the other hand have been used as parent material. These compounds and other mixed superpolyamides may be dissolved by heating them with aliphatic alcohols or mixtures of alcohols and water and the solution thus obtained may then be cast in known manner so as to obtain films.

On preparing superpolyamide films according to the casting process it turns out to be inconvenient that the films after having been dried and removed from the casting supports tend to roll. The foils roll in such a manner that the surface which had been in contact with the casting support turns outside. The tendency of rolling is extremely strong and cannot be essentially influenced by a variation of the casting and drying conditions. Owing to said tendency of rolling the further treatment of the films involves many difficulties.

We have now found that the afore-named drawback may be overcome as follows: the films cast in known manner are treated with a swelling agent on the side they had been in contact with the casting support; they are then dried.

As swelling agents there may particularly be used aliphatic alcohols, especially ethanol. The alcohols may have a high content of water. In many cases there may be operated with a mixture of 60 parts of water and 40 parts of ethyl alcohol. The film moistened on one side is suitably dried with the aid of hot air by passing the film through a drying chamber.

The following example serves to illustrate the invention, but it is not intended to limit it thereby:

25 parts of a mixed superpolyamide, obtained by condensing 60 parts of the adipic acid salt of hexamethylene-diamine with 40 parts of caprolactam, are heated together with 56 parts of

methanol and 19 parts of water in a stirring vessel provided with a reflux condenser, so that the solvent is gently boiling. When complete dissolution has occurred, the solution is filtered and then cast in the usual manner, while hot, on to an endless metal band so as to obtain a film having a thickness of about 0.1 mm. After having been dried at a temperature of 70° C-100° C the foil now substantially free from any solvent is removed from the casting support; for after-drying it is passed by means of guide rollers through a drying chamber which has likewise been heated to 70° C-100° C. The foil is then rolled up. Parts which have been cut out of such a web possess the inconvenient property of strongly rolling.

To the surface of the foil which had been in contact with the casting support a mixture of 40 parts of ethyl alcohol and 60 parts of water is applied at ordinary temperature by means of a roller or a felt soaked with the liquid at which the foil is passed along. The web is then conducted along scrapers by which the excess of the unilaterally applied moistening agent is removed; directly afterwards the web is passed, while being freely suspended, through a vertically mounted drying chamber having a length of about 4 meters and wherein hot air of 90° C-100° C flows in opposite direction to the course of the web, thus causing a rapid drying of the unilaterally moistened web. After the afore-described treatment is complete the foil has lost its tendency of rolling. Parts cut therefrom remain both under the usual storing conditions and on storing in the heat in the flat condition or show only extremely insignificant, no longer disturbing tendency of rolling.

The process may be performed with high speed, for instance with a speed of 20 meters per minute. By altering the speed and the temperature of the moistening liquid as well as by a more or less thorough removal of the excess of liquid by the mentioned scrapers the effect attained by the after-treatment may be influenced. The optimum conditions required for each case may readily be ascertained by some tests.

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