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MANUFACTURE AND PRODUCTION OF ALKALI CELLULOSE

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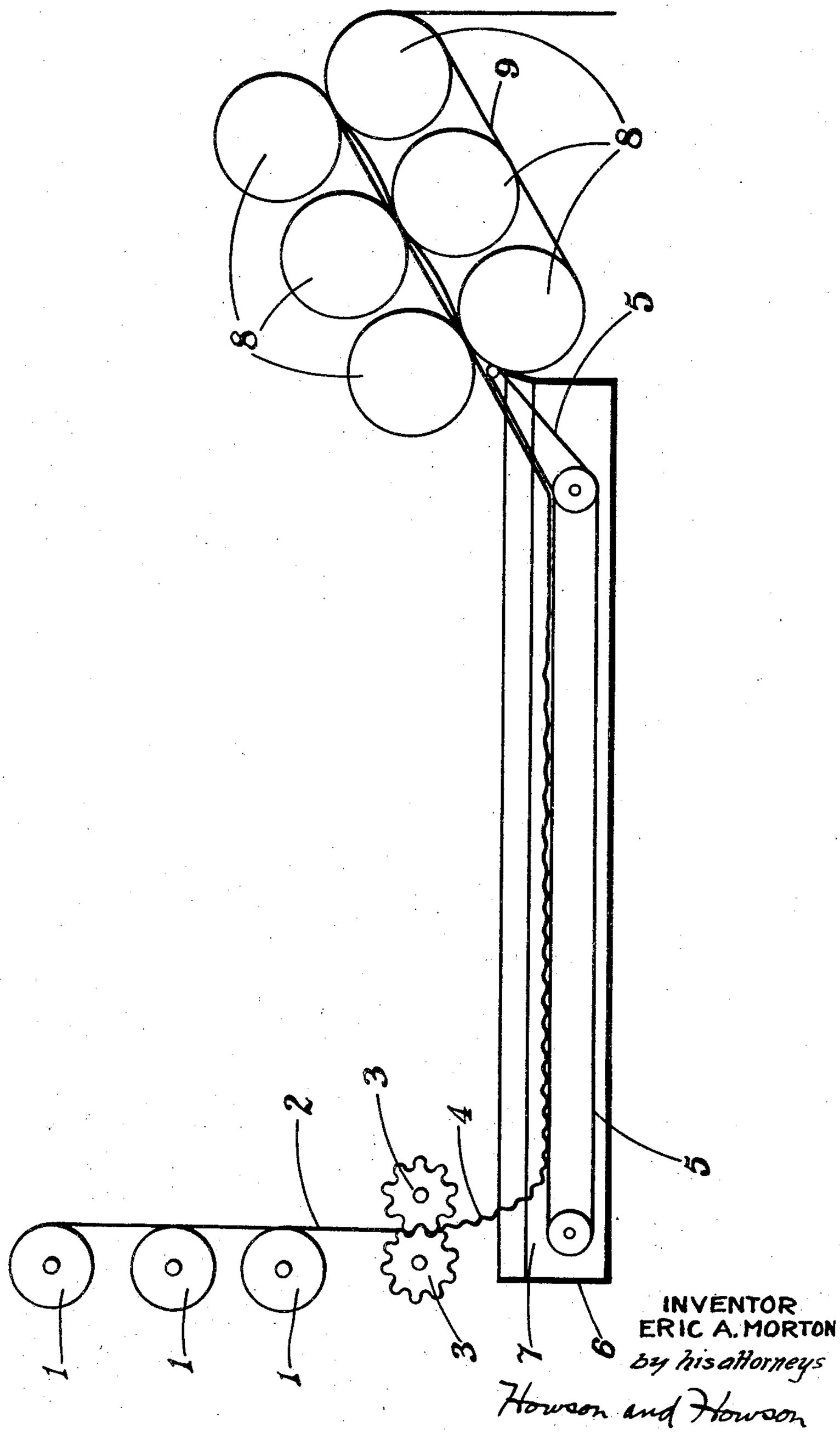

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MANUFACTURE AND PRODUCTION OF ALKALI CELLULOSE

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3 Claims. (Cl. 260—233)

This invention relates to the manufacture and production of alkali cellulose by the so-called continuous method in which a sheet of cellulose is passed through a bath containing mercerising liquor of strong caustic soda solution and is then subjected to pressing in order to remove the excess caustic soda and is subsequently milled either before or after allowing time for the so-called mercerisation to take place.

It has already been proposed by Beltzer in "Kunststoffe", 1912, page 202, to pass a continuous sheet of cellulose through a tank containing a mercerising solution of caustic soda and then to pass the impregnated band through squeezing rollers. During its passage through the bath of mercerising liquor, the sheet of cellulose is supported by a traveling belt. As, however, the sheet of cellulose shrinks owing to the action of the caustic soda solution and is therefore liable to break, the process described by Beltzer is rendered difficult to carry out. It has therefore been proposed to introduce a regulated correction of the speed for the transport of the cellulose sheet in the bath by dividing the supporting band into sections and running the sections at different speeds, that is to say, rapidly at the beginning and slowly at the end.

According to the present invention the process of converting a continuous sheet of cellulose into alkali cellulose comprises corrugating the cellulose sheet, passing it through a mercerising bath and thereafter pressing out the excess mercerising solution. The corrugation can conveniently be effected by passing the sheet, shortly before it enters the bath, between a pair of fluted rollers. The contraction of the cellulose sheet during its conversion into alkali cellulose flattens out, or removes the corrugations and the sheet passes continuously through the apparatus without being liable to break. The corrugations imparted to the cellulose sheet before mercerising can conveniently be of such a depth that after the full contraction has taken place, the sheet of alkali cellulose is substantially flat.

An arrangement of apparatus suitable for a preferred mode of carrying out the present invention is illustrated in the accompanying drawing although the invention is not limited to the particular arrangement shown.

Sheets of cellulose are continuously drawn from rolls **1** and superposed to form a combined sheet **2**. This sheet **2** is passed between corrugated rollers **3** and the resulting corrugated sheet **4** allowed to fall on to an endless traveling band **5** in a bath **6** containing caustic soda solution of mercerising strength **7**. The sheet **4** is conveyed along through the mercerising solution **7** by the band **5** and by the time it reaches the far end the corrugations have substantially disappeared. It thereupon passes from the mercerising solution **7** on the band **5** and is conveyed to a series of squeezing rollers **8** through which it is passed by means of another endless belt **9**.

What I claim is:

1. A process of converting a continuous sheet of cellulose into alkali cellulose which comprises corrugating the cellulose sheet, passing it through a mercerising bath and thereafter pressing out the excess mercerising solution.

2. A process of converting a continuous sheet of cellulose into alkali cellulose which comprises passing the sheet between a pair of corrugated rollers then through a mercerising bath and thereafter pressing out the excess mercerising solution.

3. A process of converting a continuous sheet of cellulose into alkali cellulose which comprises, making in the sheet corrugations of such depth that after the full contraction which takes place on mercerisation has occurred the sheet is substantially flat, then passing the corrugated sheet through a mercerising bath and thereafter pressing out the excess mercerising solution.

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