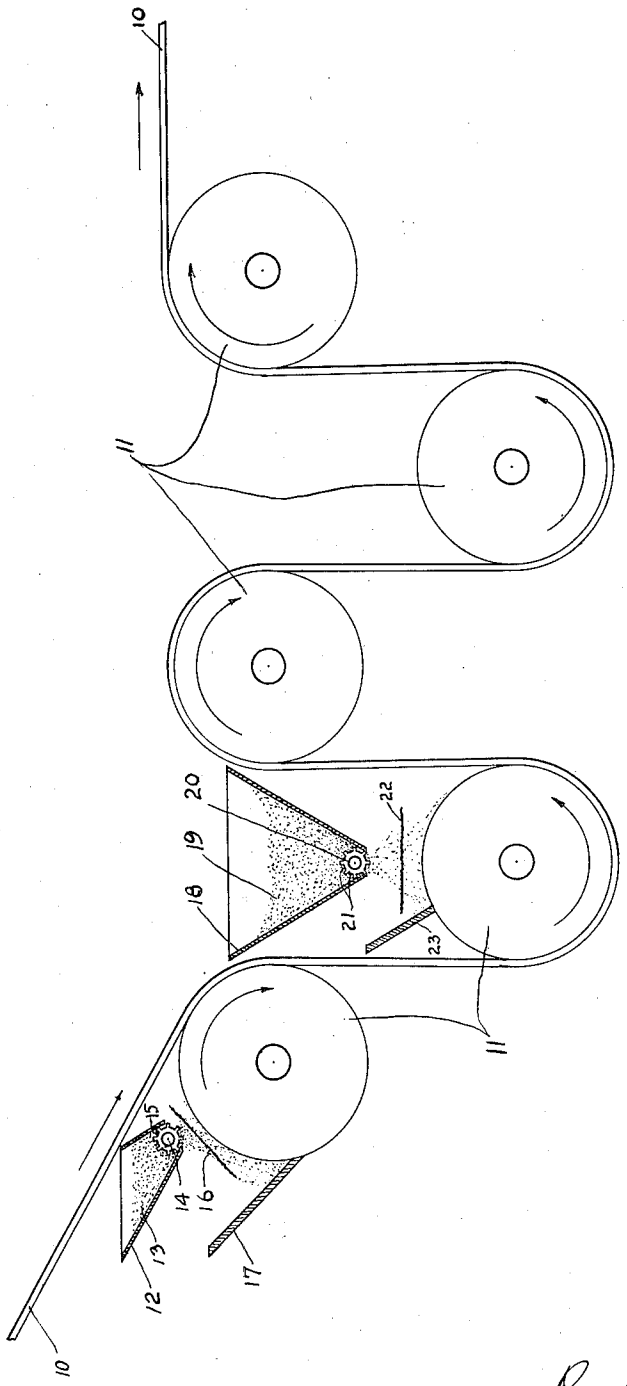
R. P. PERRY.

PROCESS OF TREATING FELTS AND THE LIKE.

APPLICATION FILED OCT. 4, 1917.

1,293,186. Patented Feb. 4, 1919.



INVENTOR

Ray P. Perry

BY

Edward M. Eastis

ATTORNEY

UNITED STATES PATENT OFFICE.

RAY P. PERRY, OF UPPER MONTCLAIR, NEW JERSEY, ASSIGNOR TO THE BARRETT COMPANY, A CORPORATION OF NEW JERSEY.

PROCESS OF TREATING FELTS AND THE LIKE.

1,293,186. Specification of Letters Patent. Patented Feb. 4, 1919.

Application filed October 4, 1917. Serial No. 194,777.

To all whom it may concern:

Be it known that I, RAY P. PERRY, a citizen of the United States, residing at Upper Montclair, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Processes of Testing Felts and the like, of which the following is a specification.

This invention relates to the manufacture of felts or papers adapted to be used in making so-called tarred or asphalt saturated felts, especially felts of the character described and claimed in my co-pending application filed April 12, 1917, bearing Serial No. 161,670, and entitled "Felts and processes of making the same."

In the manufacture of felts of the character described in my above entitled application difficulty is often experienced, especially when operating on a large or commercial scale, due to the fact that the sheet of felt, containing as it does comminuted bituminous waterproofing material, generally of a bituminous character and preferably in filamentary form, scattered throughout the mass of the same and, therefore, present in substantial quantities at the surfaces of the sheet, when passing over the series of heated drying rolls, adheres to the rolls which gather particles of comminuted bituminous material from the sheet. This not only renders the sheet less perfect, but also interferes with the drying operation since the adhering particles of bituminous material prevent the sheet passing over the drying rolls from coming into intimate contact with said rolls, and said particles also preventing the heat from being conducted as efficiently to the sheet to be dried as would be the case if the particles did not adhere to the drying rolls.

The purpose of my invention is to provide a method and an apparatus whereby such undesirable adhesion of bituminous particles to the drying rolls of the usual paper-making machine is prevented in a manner that is at once simple and efficient, and does not necessitate any substantial alteration of the usual paper-making plant.

Referring to the drawing wherein I have diagrammatically illustrated a device embodying my invention and in which my process may be practised, the single figure shows a diagrammatic view of such a device, 10 indicates the sheet of felt containing comminuted fusible waterproofing material generally of a bituminous character, and preferably in filamentary form, as described in my co-pending application referred to above. This sheet passes in the usual manner over the series of cylindrical or other shaped heated driers 11, 11, 11. In order to substantially prevent undesirable adhesion of the particles of fusible waterproofing material present in the sheet to the surface of the driers as referred to above, I interpose between the sheet and the heated surfaces of the driers a thin film or layer of finely divided non-adherent solid material such as finely divided soapstone or talc, or fine sawdust. Generally I employ a finely divided mineral material such as soapstone or talc, and I prefer to employ soapstone for the reason that this material is easily reduced to the desired state of subdivision and possesses the necessary non-adherent properties. While this layer may be interposed between the sheet and the driers by applying the same to the sheet, I prefer to apply this layer to the driers, since I have found that in this way a more even layer is produced and that the operation of the process is more uniform where the layer is applied to the heated surfaces of the driers. While various means may be employed to effect the interposition of the layer between the sheet and the heated surfaces of the driers, I prefer to use the means illustrated. Such means comprise, in the case of the first drying roll 11 the upper surface of which is traversed by the sheet to be dried, the hopper 12 containing the finely divided solid non-adherent material 13, the material being delivered at a fixed rate from the hopper by means of the rotating member 14 having in the outer surface thereof the pockets or cavities 15 which catch a predetermined amount of the finely divided non-adherent material and deliver the same through the screen 16 onto the surface of the drier 11. The purpose of the screen is to insure that the finely divided material will be uniformly spread over the surface of the drier. The member 17 in the form of a sheet of metal, or other desirable material which is substantially in contact with the edge of the revolving drier, serves to catch such of the material as does not remain on the roll. In this way the under surface of the sheet 10 is continuously

provided with a thin layer or film of finely divided non-adherent solid material, such as soapstone, for example. To provide the upper surface of the sheet with a film of finely divided solid non-adherent material, I use means similar to those employed for treating the under side of the sheet 10, said means comprising the hopper 18 containing the non-adherent finely divided material 19, which is delivered from the hopper 18 at a fixed rate by means of the rotating drum 20 having in its periphery the cavities or pockets 21 which serve to catch a predetermined quantity of the finely divided material and deposit the same through the screen member 22 upon the surface of the second revolving member 11. There is also provided as in the case of the means to apply the finely divided non-adherent material to the first drying roll 11, the sheet metal or other plate 23 in substantial contact with the surface of the rotating drying roll 11 to catch such material as does not remain on the second drying roll 11.

The operation of the device is apparent from the above description. As the drying members 11 rotate in the directions indicated by the arrows, these members will have deposited on them the finely divided solid non-adherent material from the hoppers 12 and 18, respectively, and in this way both sides of the sheet 10 will be provided with a thin film or layer of such non-adherent material. It is necessary to make sure, by trial and experiment, that only enough of the non-adherent material is provided on each surface of the sheet 10 to prevent any substantial adhesion of the sheet or any portions of the same to the heated drying rolls. The excess of such material on the surfaces of the sheet 10 is undesirable since the material, being necessarily in a state of fine subdivision, has a tendency to close up the pores of such sheet, especially when used in excess, and thereby hinders the successful and complete saturation of the sheet where such sheet, as is generally the case, is to be subsequently saturated with liquid or molten waterproofing material, generally of a bituminous nature, such as molten pitch or asphalt.

By the above means, I am enabled to effectively dry a sheet of the nature described in my co-pending application referred to above without encountering any of the difficulties hitherto encountered in the manufacture of such sheet on a commercial scale, due to the adhesion to the surfaces of the heated driers of particles of fusible waterproofing material present in the sheet. Once the non-adherent material has been adequately applied to both surfaces of the sheet, the sheet may be passed without danger of adhesion over the remaining drying rolls of the series and the drying completed without the inconveniences referred to earlier in this specification.

What I claim is:

1. In the process of drying, by the application of heated surfaces, felts of the character described having on at least one side thereof a substantial amount of fusible waterproofing material, the step of interposing particles of a finely divided, non-adherent solid between the said felts and the surfaces, to substantially prevent the adhesion of said felts or any portions of the same to the said heated surfaces.

2. In the process of drying, by the application of heated surfaces, felts of the character described having on at least one side thereof a substantial amount of fusible waterproofing material, the step of interposing particles of a finely divided, non-adherent mineral substance between the said felts and the surfaces, to substantially prevent the adhesion of said felts, or any portions of the same to the said heated surfaces.

3. In the process of drying, by the application of heated surfaces, felts of the character described having on at least one side thereof a substantial amount of fusible waterproofing material in comminuted form, the step of interposing particles of finely divided soapstone between the said felts and the surfaces, to substantially prevent the adhesion of said felts or any portions of the same to the said heated surfaces.

4. In the process of drying, by the application of heated surfaces, felts of the character described having on at least one side thereof a substantial amount of fusible waterproofing material in comminuted form, the step of continuously applying particles of finely divided soapstone to certain of said surfaces to prevent the adhesion of said felts, or any portions of the same, to the said surfaces.

5. The process of drying a sheet of felt having particles of bituminous material distributed therein, which comprises the steps of passing the sheet over a heated, moving surface at substantially the same speed as said surface moves, and simultaneously interposing particles of a non-adherent material between said sheet and said surface.

In testimony whereof I affix my signature.

RAY P. PERRY.