Patented Feb. 21, 1939 2,147,889

UNITED STATES PATENT OFFICE

2,147,889

PROCESSING OF TISSUE OR PAPER AND THE PRODUCT OBTAINED THEREBY

James I. Gardiner and John Barnes, San Francisco, Calif., assignors of one-third to Charles F. W. Nichols, Chicago, Ill.

No Drawing. Application July 8, 1937, Serial No. 152,528

5 Claims. (Cl. 131—36)

Our present invention relates to the processing of tissue or paper and the product secured thereby, and has peculiar application to the processing of tissue employed as wrappers for cigarettes, although it may be employed with advantage in the processing of any tissue, the intended uses of which would not be incompatible with, and might be enhanced by, retarded combustibilty.

In connection with cigarette wrappers the paper has never been considered as a desirable addition to the cigarette, and the manufacturers of cigarette papers and the manufacturers of cigarettes have sought continuously, so far as we are at present advised, to produce a product of minimum physical bulk which would be completely combustible and would leave a minimum of ash. The residual ash, of course, is innocuous to the smoker and the reduction of the bulk or substance or mass of the paper necessarily also results in a reduction of the volatile elements created when the paper and tobacco burn.

The present practice, as above outlined, reduces the amount of volatile products of the combustion of the tissue cigarette wrapper but does not otherwise materially reduce its noxious character which is always, to a greater or less extent, a very complicated product having acrid and unpleasant characteristics when drawn into the oral and nasal cavities. The present practice, which we believe is universal, results in the production of a cigarette paper which is extremely combustible, and which causes the continuous combustion of itself and the tobacco which it encloses during the intervals when the smoker is not smoking the cigarette. In other words, a cigarette continues to burn and smoke between intervals in its actual smoking and after the residuum of the cigarette has been discarded, whereas pipe tobacco especially, and cigarette tobacco also, if its combustion were not enhanced by the paper wrapper, will immediately start to go out and is not capable of continuing combustion in the absence of the draft supplied in the smoking operation.

It will be immediately seen that if the paper employed in cigarettes will not promote continuous combustion during the time the cigarette is not actually being drawn upon, a much larger percent or proportion of smoking is conserved for the enjoyment of the smoker and the intervening combustion of the cigarette, as well as fire hazard, by reason of the presence of a self-continuing combustion is very materially reduced and practically eliminated.

It has therefore been our object to produce a tissue suitable for use as cigarette wrappers, the combustibility of which will not continue and promote combustion in the cigarette during intervals when the cigarette is not actually drawn upon in the operation of smoking.

We have had as a further object the improvement of the tobacco flavor of cigarettes by materially reducing the highly volatile products of combustion produced from the very readily combustible cigarette wrappers now in universal employment.

As a third object of our invention we have desired to obtain the foregoing objects without imparting an additional perceptible flavor to the character and quality of the smoke. The element we employ unquestionably burns, but the amount thereof employed in relation to the bulk or mass of the paper is so relatively small that the only noticeable result of smoking a cigarette provided with our processed wrapper is the absence of the volatile elements of the combustion of the paper which were always heretofore present, although to a greater or less extent disregarded by cigarette smokers.

We have attained the foregoing objects and results in the following manner:

We prepare an aqueous solution of albumen which may differ very greatly in strength. We regard the addition of about one-third by volume of water to the albumen of an egg as it comes from the shell as about right. But a much larger addition of water may be made with the nearly complete elimination of smoke between puffs from the cigarette and after smoking is discontinued. A greater concentration of albumen may also be employed without imparting a characteristic flavor to the smoking of the completed cigarette.

It should be stated, however, that what we regard as the suitable principle for the determination of the volume of the aqueous content is the production of a fluid of such fluidity as will most readily accomplish thorough impregnation of the paper or tissue wrapper. The paper, after impregnation, is advantageously permitted to dry to some extent and then pressed between heated or cool, as may be desired, smoothing or ironing rollers. An additional burnishing or imparting of a gloss to our processed paper renders the product noticeably different from the present cigarette wrappers upon the market. The imparting of such a gloss under present circumstances is therefore not desirable, but it in no way affects the chemical and physical action of the treated product.

It will be noticed that in smoking cigarettes provided with papers or wrappers processed as hereinbefore described, the smoking of the cigarette between puffs, or when it is laid aside momentarily, is very materially reduced and ceases almost instantly when the actual drawing upon the cigarette has been discontinued. If the cigarette has been smoked rapidly so as to develop an appreciable amount of ignited glowing tobacco the combustion in this amount of ignited glowing tobacco will take the usual time to subside, but such combustion is not self-continuing as with the cigarettes as they are at present made.

If the cigarette with tissue wrapper impregnated as hereinbefore described has not been rapidly smoked so as to create a considerable mass of glowing tobacco it may be laid directly upon the varnished top of a desk or upon papers without the least fear of scorching the material or causing a fire.

It may develop that albumen has been employed as a sizing element for paper, but it is pointed out that the sizing of paper is for the purpose of affecting its appearance, whereas our process is not intended to affect the appearance in any respect but affects its qualities and operation during the combustion and we employ far less material than is necessary to constitute a satisfactory size.

It is also pointed out that our approach to the problem of elimination of objectionable features in the combustion of paper or tissue is directly opposite to the present procedure as the present practice, while reducing bulk and mass strives to attain a ready and complete combustion, whereas it is our object to delay and retard combustion except to the extent necessary in the consumption of the tobacco as a pleasure or pastime.

Having described our invention what we claim is new and desire to secure by Letters Patent is:

1. The process of treating a cigarette wrapper in an aqueous solution of albumen and the drying and smoothing of such treated tissue.

2. The process of treating a tissue suitable for use as a cigarette wrapper in a solution consisting of the white of an egg as it comes from the shell to which has been added a third, by volume, of water, and the drying and smoothing of such treated tissue.

3. A tissue suitable for use as a wrapper for cigarettes containing a sufficient amount of albumen to prevent the tissue from continuing combustion of the cigarette during intervals between and after the actual smoking of the cigarette.

4. A cigarette having a wrapper containing a sufficient amount of albumen to prevent the tissue from continuing combustion of the cigarette during intervals between and after the actual smoking of the cigarette.

5. The process of treating a tissue for retarding the combustibility thereof comprising the application thereto of a combustion retardant consisting of an aqueous solution of albumen and the drying and smoothing of such treated tissue.

JAMES I. GARDINER.
JOHN BARNES.