

## UNITED STATES PATENT OFFICE

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## CIGARETTE

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8 Claims. (Cl. 131—52)

This invention relates to an improved cigarette and the method of making the same.

This invention is in the nature of an improvement upon the invention disclosed and claimed in my co-pending application, Serial Number 509,886, filed January 19, 1931, and allowed September 10, 1932, which is now Patent No. 1,905,416, dated April 25, 1933, in which there is disclosed an invention for treating cigarette paper in such a manner as to accomplish the double result of preventing flaking of the paper and causing the cigarette to extinguish itself.

An object of the present invention is to provide a treatment for cigarette paper which will prevent the flaking of the paper when burned and will cause the same to fuse or sinter in such a manner as to form a sheath about the tobacco ash and prevent the setting afire by the dropping of the ash or by the dropping of flakes of the paper but at the same time to overcome the self-extinguishing result of my former invention as set forth in my said co-pending application and to so treat the paper as to prevent the flaking of the paper, provide for the sintering or fusing of the same to form a sheath about the tobacco ash and prevent the setting afire by the dropping of flakes or the ash, but at the same time to maintain the free burning quality of the cigarette and to accomplish these objects and purposes by a treatment which will not affect the quality of the smoke of the cigarette nor materially the taste of the cigarette in the mouth of the user.

With these and other objects in view which will more fully appear from the following specification, as defined in the appended claims, my invention comprises certain novel treatments, processes and steps of processes of treatment of paper used, or to be used, for wrapping cigarettes.

My improved method and process of treating paper used, or to be used as cigarette wrapper consist of treating the paper with a substance which will cause the paper, upon burning, to fuse or sinter and adhere to, or form a sheath around, the tobacco ash, resulting from the burning of the cigarette and to also treat the paper with a substance which will overcome the tendency of the aforesaid treatment to extinguish the cigarette. It will be understood, however, that the treatments which are hereinabove referred to may be combined in a single treatment of the paper. A treatment of the paper which causes the same to fuse or sinter on the burning thereof tends to reduce the combustibility of the paper and also tends to smother the enclosed burning tobacco. In order to retain the advantageous

results of the treatment which causes the paper to fuse or sinter, but at the same time to overcome the result of the automatic extinguishing of the cigarette, when this result is considered undesirable, I add, to the material used in treating the paper, an element which will increase the combustibility of the paper so as to overcome the reduction in the combustibility of the paper resulting from the first part of the treatment as above referred to and as set forth in my said co-pending application, whereby to obtain a cigarette which burns, and continues to burn, in the same manner as the ordinary cigarette but which, instead of dropping flakes of burned and burning paper and hot ashes, will form an ash, upon the burning thereof, similar to a cigar ash, the tobacco ash being enclosed in a sheath of fused or sintered paper. Only such part of this ash as has been completely cooled will drop off in the ordinary handling of the cigarette so that any ash which drops from the cigarette in the course of such handling will be cooled and incapable of burning even the most delicate fabrics. While there may be other substances which may accomplish the purpose of this invention, among those which I have found most preferable for accomplishing this purpose is a dilute solution of sodium silicate to which there is added a small amount of alkali nitrate, preferably potassium nitrate. The solution of sodium silicate is preferably of a gravity of about  $3\frac{1}{2}^{\circ}$  Baumé. To this solution I add a small quantity of suitable oxidizing agent, preferably potassium nitrate or sodium nitrate, preferred in the order named, the quantity or proportion of nitrate being preferably about three grams to 100 cc. of the aforesaid solution. In place of potassium nitrate, other soluble, colorless and non-poisonous oxidizing agents may be used.

I have above mentioned sodium silicate, but it will be understood that any soluble silicate having a fixed alkali base may be used and that other similar substances may be used, but I herein refer to sodium silicate to indicate any such substance and as representative thereof.

The sodium silicate solution causes the paper to fuse or sinter with the results above described while the nitrate increases the combustibility of the paper as necessary to obviate the decrease of combustibility resulting from the use of sodium silicate solution, the respect in which the combustibility of the paper is increased being hereinafter more fully explained.

The burning of the paper thus treated has no appreciable affect upon the smoke of the cigarette.

rette nor has it any substantial affect upon the taste of the paper in the mouth.

It will be understood that any means of avoiding the real of imagined taste of the paper in the mouth may be employed without departing in any manner from the spirit and scope of the present invention, as hereinabove described, and as defined in the appended claims.

I do not wish to be limited to the exact details of this invention as hereinabove set forth because there will occur to those skilled in the art certain variations in detail which may be made without in any way departing from the spirit and scope of the present invention as hereinabove described and claimed.

I have hereinabove referred to the increase in the combustibility of the paper resulting from the addition of the nitrate. It will be understood that this refers to an increase in the nature and extent of the combustibility of the paper and not to an increase in the speed of the burning thereof. In the absence of nitrate, the soluble silicate as used in the invention disclosed in my co-pending application, Serial No. 509,886, would cause the paper to be sintered into a sheath impermeable to air and gases, resulting in the smothering of the burning tobacco enclosed therein and the automatic extinguishment of the cigarette as set forth in my said co-pending application. The addition of the nitrate results in a more complete combustion of the paper which renders the sintered sheath permeable by air or gases. This results in a sintered sheath which prevents the flaking of the paper and the dropping of the ash from the cigarette, but which avoids the smothering of the burning tobacco and the automatic extinguishment of the cigarette.

I claim:

1. As a new article of manufacture, a cigarette having its wrapper impregnated with a soluble silicate, having a fixed alkali base and a fixed alkali nitrate.

2. As a new article of manufacture, a cigarette having its wrapper impregnated with sodium silicate and a fixed alkali nitrate.

3. As a new article of manufacture, a cigarette having its wrapper impregnated with a soluble silicate having a fixed alkali base and with potassium nitrate.

4. As a new article of manufacture, a cigarette having its wrapper impregnated with a solution of sodium silicate approximately 3½° Baumé, and a fixed alkali nitrate of approximately the amount of 3 grams of alkali nitrate to 100 cc. of said solution.

5. As a new article of manufacture, a cigarette having its wrapper impregnated with a solution containing sodium silicate to an amount sufficient to produce a gravity of approximately 3½° Baumé and potassium nitrate to the amount of approximately 3 grams to 100 cc. of said solution.

6. As a new article of manufacture, a cigarette having its wrapper impregnated with a soluble silicate, having a fixed alkali base, and a non-poisonous, colorless, soluble oxidizing agent.

7. A new article of manufacture, namely a cigarette having its paper sheath impregnated with a substance which tends to cause the paper, when burning, to sinter and form a sheath impermeable to air but which paper is also impregnated with a soluble colorless non-poisonous oxidizing agent whereby to render the combustion of said paper more complete whereby to render said sintered sheath permeable to air.

8. A new article of manufacture, namely a cigarette having its paper sheath impregnated with a substance which tends to cause the paper, when burning, to sinter and form a sheath impermeable to air but which paper is also impregnated with a fixed alkali nitrate whereby to render said sintered sheath permeable to air.

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