

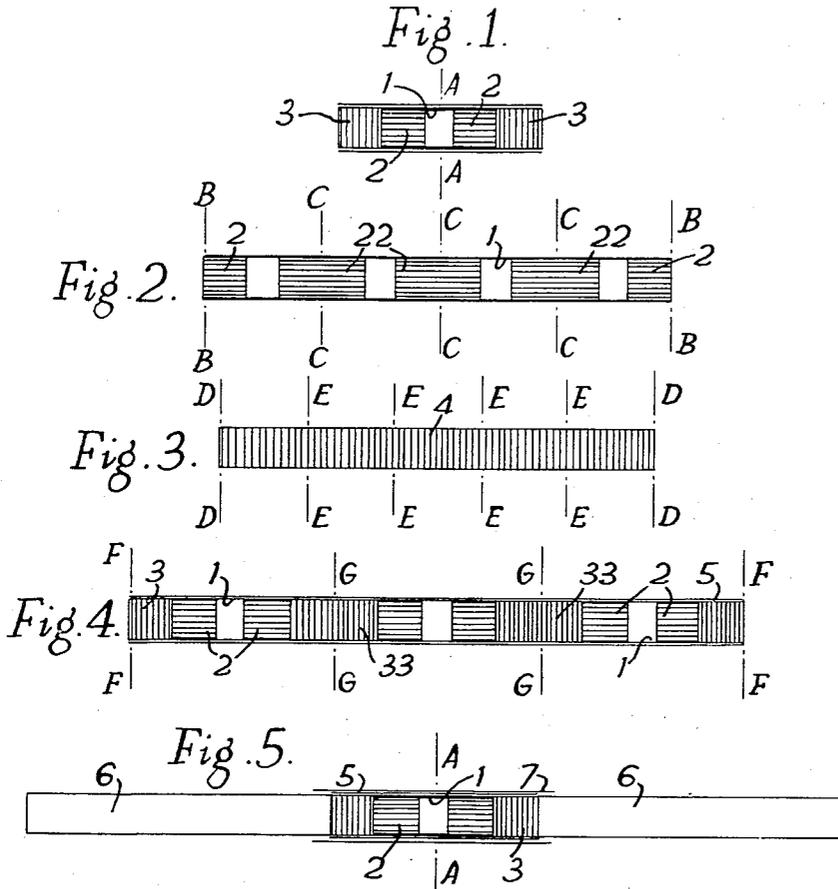
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MANUFACTURE OF MOUTHPIECE FOR CIGARETTES

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**MANUFACTURE OF MOUTHPIECE FOR CIGARETTES**

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Original application Oct. 5, 1959, Ser. No. 844,326, now Patent No. 3,052,164, dated Sept. 4, 1962. Divided and this application Aug. 17, 1962, Ser. No. 217,632 Claims priority, application Great Britain Oct. 9, 1958 1 Claim. (Cl. 93—1)

This invention concerns improvements in or relating to the manufacture of mouthpieces for cigarettes. This application is a division of my co-pending application Serial No. 844,326, filed October 5, 1959, now Patent No. 3,052,164 issued on September 4, 1962.

It is known to provide cigarettes with mouthpieces comprising a tube of stiff paper and containing filter material with the outer end of the tube extending somewhat beyond the outer end of the filter so that the consumer does not contact the filter itself. Such mouthpieces are conveniently termed "hollow mouthpieces." It is also known to provide cigarettes with mouthpieces containing two or more portions of differing filter materials arranged in tandem, such mouthpieces being known as composite mouthpieces. An object of the invention is to provide a method of making hollow mouthpieces which contain two or more portions of filter material arranged in tandem, and cigarettes comprising such mouthpieces.

The pieces of filter material are commonly termed "stubs" so a mouthpiece made according to the invention will be a composite hollow mouthpiece containing at least two stubs in tandem.

Various kinds of machinery are available, suitable or adaptable, for making any of the products outlined above, and the present invention is therefore confined to the basic methods, the actual performance of the methods being according to the particular kind of machinery used. Generally speaking stubs and mouthpieces are made by continuous rod methods and mouthpiece cigarettes are made by continuous rod or rolling methods, though some mouthpieces are also rolled. It is also possible to make the various products described herein by inserting some components into tubes.

In the manufacture of these products there are difficulties in mechanically handling such things as stubs or mouthpieces if they are less in length than a certain minimum and the common practice is to feed rod-like material for such components to machines in multiple lengths, that is lengths long enough to be divided into a number of double-length components, and to sub-divide these multiple lengths into double lengths for assembly with suitable pieces of cigarette rod, whereafter the assembled items are again subdivided to produce separate mouthpiece cigarettes.

The purpose of providing composite mouthpieces is to secure better filtering and the stub nearer the consumer's mouth must obviously be of a material which is attractive and acceptable to a consumer, for example, crepe paper. This stub may be termed the outer stub.

The inner stub may be of any kind and thus various chemical or chemically treated stubs which would be quite unacceptable alone may be employed.

The invention provides a method of making a composite hollow mouthpiece as defined above, comprising the following steps:

(1) Enclosing a number of double-length inner stubs alternately with double-length outer stubs in abutting relationship in a paper tube, cutting the resulting rod (e.g. a continuous rod) thus formed into suitable lengths for

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machine feeding by bisecting double-length inner filters to provide single-length inner filters at each end of said suitable lengths (e.g. multiple-length rods).

(2) Sub-dividing such suitable lengths to provide pieces consisting of two single-length outer filters with a double-length inner filter between and abutting them, and enclosing said pieces in a tube of stiff paper and spaced apart by twice the distance by which the tube is to extend beyond the outer end of the stub in the finished cigarette and dividing the rod thus formed (e.g. a continuous rod) into suitable lengths for machine feeding by cutting through double-length inner stubs to bisect them and provide single-length outer stubs at each end of such suitable lengths (e.g. multiple-length rods).

(3) Sub-dividing said suitable lengths to provide double-length composite hollow mouthpieces.

A method of carrying the invention into effect will now be described by way of example with reference to the accompanying drawings, in which:

FIGURE 1 is a section of a double-length composite hollow mouthpiece;

FIGURE 2 is a section of a multiple-length rod comprising double-length outer stubs spaced apart and enclosed in a stiff paper tube having single-length outer stubs at its ends;

FIGURE 3 is a section of a multiple-length rod to be cut to produce double-length inner stubs, said rod normally comprising a thin paper wrapper;

FIGURE 4 is a section of a multiple-length composite hollow mouthpiece rod ready for feeding to an assembling machine of any kind;

FIGURE 5 is a section showing a double-length composite hollow mouthpiece of a kind shown in FIGURE 1 between two single-length pieces of cigarette rod and united thereto by a wrapper such as a cork tip.

Referring to the drawings, it will be seen that it would be difficult to handle the various short stubs shown in an automatic machine and that to produce an article of the kind shown special methods are necessary. In the figure, 1 is a tube formed of stiff paper and 2 are single-length stubs which, as may be seen from FIGURE 5, will constitute outer stubs in the finished mouthpiece cigarette. 3 are single-length stubs which will constitute inner stubs in the finished mouthpiece cigarette. After assembly with pieces of cigarette rod, as related later, the component of FIGURE 1 is bisected on the broken line A—A.

While the component shown in FIGURE 1 is almost long enough for satisfactory feeding from a hopper, or like device, it is preferable for a number of reasons to use a multiple-length as shown in FIGURE 4 and cut it into pieces, like FIGURE 1, as it passes from the hopper to the assembly position and the production of such a multiple-length which is effected in several stages will now be described with reference to FIGURES 2 to 4.

Referring first to FIGURE 2 double-length outer stubs 22 are arranged as shown and spaced apart by twice the distance by which the paper tube is to extend beyond the outer end of the outer stub in the finished cigarette. The spaced stubs are enclosed in a stiff paper tube 1.

Normally such an article will be made by a continuous rod process and the rod is cut on the lines B—B to produce the multiple-length. This length is sub-divided at any convenient stage in the manufacture by bisecting each double-length stub 22 on the lines C—C to produce double-length hollow mouthpieces.

Referring now to FIGURE 3 a multiple-length of inner stub material is shown, normally produced by a continuous rod process and provided with an outer wrapper 4 of thin paper. The continuous rod is severed on the lines D—D and the length is sub-divided at any conveni-

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ent stage in the manufacture on the lines E—E to produce double-length inner stubs, 33, FIGURE 4.

Usually multiple-lengths as shown in FIGURES 2 and 3 will be fed from hoppers to a machine for making the composite rod shown in FIGURE 4 and the sub-division is then done in transit. 5

In FIGURE 4 single-length stubs bear the same reference as in FIGURE 1 while double-length inner stubs bear the same references 33. It will be seen that double-length inner stubs 22 are placed in abutting relationship with the stubs 2 of the double-length hollow mouthpiece and the parts are joined by an outer wrapper 5 of thin paper. As the composite rod shown will be most usually made by a continuous rod process, the continuous rod will be cut on the lines F—F to produce the multiple length. Thus the cutting operation will bisect double-length inner stubs to produce the single-length inner stubs 3 at the end of the multiple-length. 10 15

This multiple-length is sub-divided, for example in feeding from a hopper to an assembly device, the length being cut on the lines G—G to produce three items like that shown in FIGURE 1 and each such item is placed between two pieces of cigarette rod 6, FIGURE 5, and the parts joined by a short wrapper 7, usually a cork tip, whereafter the product is bisected on line A—A and two composite hollow mouthpiece cigarettes are produced. 20 25

This method of assembly is the normal modern method but continuous rod assembly is obvious from the figure, simply requiring double-length cigarette rods which are subsequently bisected, and if it is desired to make a short rod several times the length of that shown in FIGURE 5 double-length cigarette rods may be employed for the inner cigarettes and bisected after assembly. 30

What I claim as my invention and desire to secure by Letters Patent is: 35

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A method of making a double length composite hollow mouthpiece comprising the following steps:

- (1) Enclosing a number of double length outer stubs in a tube of paper and spaced apart by twice the distance by which the tube is to extend beyond the outer end of the outer stubs in the finished mouthpiece and cutting the rod thus formed into lengths suitable for machine feeding by bisecting double length stubs to provide single length stubs at each end of such suitable lengths;
- (2) Subdividing each said length by bisecting any remaining double length outer stubs to produce double length hollow mouthpieces having a single length stub at each end;
- (3) Assembling such double length hollow mouthpieces in regular alternation with double length inner stubs in such manner that each said mouthpiece lies between two of said inner stubs and each said inner stub lies between two of said mouthpieces, to form a composite rod joined by outer wrapping material;
- (4) Dividing said composite rod to produce multiple length rods suitable for feeding to a machine, by bisecting only double length inner stubs to provide single length inner stubs at the ends of such multiple length rods, and
- (5) Subdividing each multiple length by bisecting any remaining double length inner stubs to produce double length composite hollow mouthpieces.

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