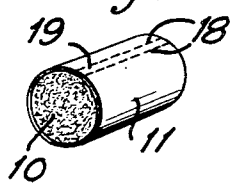
Nov. 6, 1956 R. N. BOOTH 2,769,533

ASSEMBLY OF FILTER TIPS

Filed Nov. 21, 1955

Fig. 1.



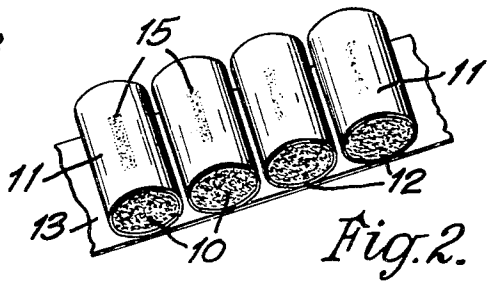


Fig. 2.

Fig. 3.

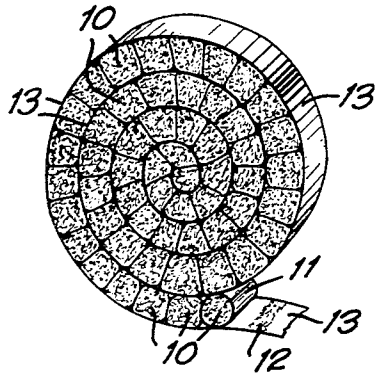


Fig. 4.

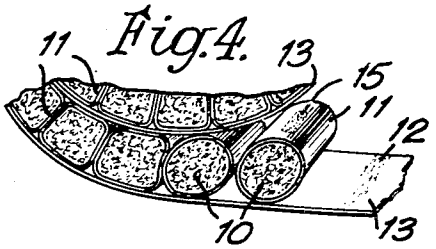


Fig. 5.

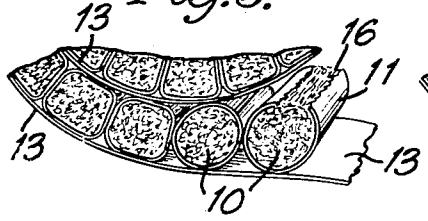
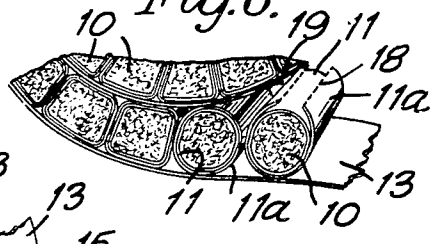


Fig. 6.



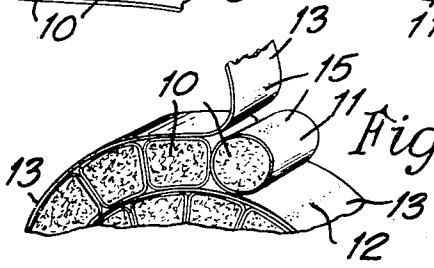


Fig. 7.

INVENTOR
Richard N. Booth
By Shoemaker & Mattare
Attorneys.

United States Patent Office

2,769,533

Patented Nov. 6, 1956

2,769,533

ASSEMBLY OF FILTER TIPS

Richard N. Booth, Cross Keys, Jamaica, British West Indies

Application November 21, 1955, Serial No. 548,178

10 Claims. (Cl. 206—56)

This invention relates to filter tips or wads for use in the hand-rolling of cigarets, whether such rolling be effected directly by the thumb and fingers or in a portable hand-operated machine.

These filter tips are usually composed of rod-like sections consisting of cotton wool or like absorbent material surrounded by a sheath of tissue paper; when required for use, a filter tip is inserted in one end of a cigaret paper which has been folded to trough shape, preparatory to rolling it around a core of tobacco.

The present invention has for its main objects to provide an assembly of these filter tips, in a compact and portable form, to avoid damage to the tips before use, and to facilitate their detachment singly from the assembly when required.

A specific object of the invention is to provide means for securing the individual filter tips in the assembly at two substantially opposite sides, the securing means at one side of the tip being stronger than the securing means at the opposite side, so that in the detachment of the tips they will be freed first from the less strong securing means and then removed from the assembly by breaking the connection at the stronger securing means.

Another object of the invention, as applied to filter tips from which the sheath is intended to be removed before the rolling of the cigaret and of which only the filtering material need be inserted in the trough-shaped paper which is to be rolled to form the cigaret, is to provide means whereby the sheath is torn open automatically so as to expose the filtering material as the tip is removed from the assembly.

Other objects and advantages of the invention will hereinafter appear from the following description of various embodiments, given with reference to the accompanying drawing, in which:

Fig. 1 illustrates a filter tip or wad of the kind to which the invention relates;

Fig. 2 shows a plurality of filter tips secured to a flexible backing strip;

Fig. 3 shows, on a smaller scale, a flexible strip carrying the filter tips, the strip being wound to scroll or volute form and having a free outer extremity;

Fig. 4 shows, on a larger scale, the outer portion of the coiled strip with the free extremity drawn away, the outermost filter tip being thereby disconnected from the inner coil but still adhering to the inside face of the outer coil of the strip;

Figs. 5 and 6 are views similar to Fig. 4, showing modified arrangements;

Fig. 7 shows another modification, in which the outermost filter tip is disconnected from the outer coil but still adheres to the outside face of the inner coil of the strip.

Referring to Fig. 1, the filter tip comprises absorbent material **10**, such as cotton wool, sheathed with material such as tissue paper **11**. Fig. 2 shows a plurality of these filter tips secured by adhesive such as gum at **12** to and

across one side or face of a flexible backing strip **13**. This strip **13** may be, for example, of paper or of textile material. Each filter tip is partly coated with adhesive such as gum over a limited area at **15**, substantially opposite to the adhesive at **12**.

The backing strip **13** carrying filter tips is then coiled to scroll or volute form, as clearly illustrated in Fig. 3, so that the filter tips are juxtaposed and held between the adjacent outer and inner coils of the strip, each filter tip being secured to the inner face of the outer coil by the adhesive applied at **12** and further secured by the adhesive at **15** to the outer face of the immediately adjacent inner coil of the strip.

The outer extremity of the strip **13** is left free to be seized by the user when a filter tip is required, the arrangement being such that as the outer extremity of the strip is pulled out or away from the scroll center, the sheath of the extremital or outermost filter tip is first detached from the inner coil, as seen in Fig. 4, and whilst still adhering to the inner face of the outer end of the strip **13** it is presented to the user for final detachment by tearing off or otherwise.

The two adhesive connections at **12** and **15** respectively are such that the pull on the strip **13** which is being uncoiled is sufficient to break the weaker connection **15** between sheath **11** and the inner coil, without however, breaking the stronger connection between the sheath **11** and the inner face of the outer coil of the scroll. This may be effected by making the adhesive connection **12** as a broad one and the adhesive connection **15** as a narrow one, or as will be understood from Figs. 2 and 4 by making the connection **12** as a line of gum along the full length of the sheath **11** and the weaker connection **15** as a much shorter line, each line **12** or **15** being applied along a generatrix.

It will be noted that the scroll formation of Fig. 3 alters the usual circular section of the juxtaposed filter-tips to one having flattened sides.

In the arrangement of Fig. 5, the adhesive is so applied, and in such quantities, to the opposite sides of each sheath **11** that as the extremity of the flexible backing strip **13** is pulled out or away, the sheath **11** remains attached to the inside of the outer coil but the sheath is torn away from the inner coil and also automatically torn open, as at **16**, to expose the interior filling **10** of the filter-tip. The exposed filling without the sheath can then be removed and inserted into the trough of the cigaret paper which is being rolled.

This automatic tearing open of the sheath **11** to expose the cotton wool or other filling can be ensured by forming closely-spaced lines of perforations, as at **18** in Fig. 1, in the sheath **11** where it is to be secured by adhesive **15** to the outer face of the inner coil, so that as the extremity of the backing-strip **13** is pulled away from the scroll, the sheath **11** will remain adherent to the inner face of the backing strip **13** but, on the opposite side of the sheath that portion **19** of the tissue paper between the lines of perforations **18** will either be torn along the sheath or may even remain secured to the outer face of the inner coil, and thus automatically expose the filtering material through a gap at **16** in the sheath. This gap is formed by the bursting of the sheath **11** as the narrow portion **19** between the perforations **18** is torn away or remains adherent to the adjacent inner coil of the scroll. The filtering material may even bulge out through the said gap **16**, this depending on its degree of compression, temperature and other conditions.

The advantage of being able to insert the cotton-wool or other filling into the trough of the cigaret paper without its former partly gummed sheath, will be obvious.

Moreover, owing to the springiness of the usual cotton wool or other filling material, said material when exposed is free to expand or to be expanded to conform with the diameter of a large cigaret which is being rolled, or alternatively can be compressed by hand to conform with a thin cigaret which is being rolled. In this way, the hand-rolled cigaret can be kept of uniform diameter throughout its length.

Fig. 6 shows an arrangement in which the filter-tips are doubly sheathed, each having an inner sheath **11** of tissue paper or the like and an outer sheath **11***a* of tissue paper or other tearable material perforated with closely-spaced lines **18***a* defining a tearable portion **19***a*.

The object of this construction is to ensure the disconnection of the filter-tip from the inner coil, the automatic tearing open of the outer sheath **11***a* and the presentation to the user of a clean and unsoiled filter tip with inner sheath **11**.

In the arrangement indicated in Fig. 7, the stronger adhesive connections **12** (stronger than the opposite connections **15**) are located between an inner coil of the scroll-shaped assembly-block and the sheath **11**, so that when the outward pull takes place on or along the strip **13**, the less strong connection **15** of the outermost filter tip will yield, leaving the filter tip adhering at the stronger connection **12** to said inner coil from which it can be detached as and when required.

The scroll-like assembly-block of filter-tips fits comfortably into the tobacco pouch or the pocket of the user and being flat and compact occupies little space. Moreover, it is not subject to loss of shape or damage when so carried. It will be noted that the assembly of filter-tips secured to the inner face of the flexible backing strip **13** and to the outer face of the next adjacent inner coil of the scroll-wound strip maintains the whole in the coiled or volute form.

What I claim is:

1. An assembly of sheathed filter tips for use with hand-rolled cigarets, each filter tip being strongly secured by adhesive to and across one side or face of a flexible backing strip which is wound into scroll form so that each filter tip is held between an outer and an inner coil of said strip, said filter tips being also less strongly secured by adhesive to an adjacent coil of said strip but on the other face of said strip, so that by a pull on the free end of said strip, the outermost filter tip can be automatically freed from one connection whilst remaining held by the other.

2. An assembly of filter tips, according to claim 1, in which the adhesive is applied to opposite sides of the filter tip sheath and substantially diametrically thereof.

3. An assembly of filter tips, according to claim 1, in which as the free end of a scroll-forming strip is pulled away from the assembly, a tearable sheath of the outermost filter tip is disconnected from the immediately adjacent inner coil of the strip and whilst still adhering to the inside of the outer coil, the filter tip is offered to the user for final separation.

4. An assembly of filter tips, according to claim 1, in which the stronger adhesive connections are upon that face of the strip which is towards the center of the assembly, the less strong adhesive connections being upon the other face of said strip.

5. An assembly of filter tips, according to claim 1, in which each filter tip sheath is formed with closely-spaced lines of perforations and adhesive is applied to the sheath between said lines of perforations, for connection to the face of the strip from which the filter tip is to be removed, so that the pull on the backing strip will tear the sheath at said perforations, leaving the filtering material automatically exposed within the torn sheath.

6. An assembly of filter tips, according to claim 1, in which each filter tip is provided with inner and outer sheaths, the outer sheath being secured by adhesive between adjacent coils of the backing strip wound into scroll form, and said outer sheath being removable by tearing from around said inner sheath.

7. An assembly of filter tips according to claim 1, in which the connections of the filter tip sheaths to the inner face of the coiled strip are stronger than the connections of said sheaths to the outer face of the adjacent inner coils of said strip.

8. An assembly of filter tips according to claim 1, in which the connections of the filter tip sheaths to the inner face of the coiled strip are less strong than the connections of said sheaths to the outer face of the adjacent inner coils of said strip.

9. An assembly of sheathed filter tips for use with hand-rolled cigarets, comprising a flexible strip, a plurality of filter tips laid transversely of said strip, adhesive means securing the sheaths of said filter tips to said strip, adhesive means applied to said sheaths at areas substantially opposite to said first-mentioned securing means, and said strip with said filter tips secured thereto being wound to scroll form bringing it into contact with said second-mentioned securing means applied to said sheaths.

10. An assembly of sheathed filter tips for use with hand-rolled cigarets, comprising a flexible strip, a plurality of filter tips laid transversely upon one face of said strip, adhesive means securing the sheaths of said filter tips to said face, adhesive means applied to said sheaths at areas susbtantially opposite to said first-mentioned securing means, and said strip being wound to scroll form bringing it into contact with said second-mentioned securing means applied to said sheaths, whereby each of said filter tips is secured by said adhesive means between adjacent coils of said strip.

References Cited in the file of this patent

UNITED STATES PATENTS

281,731	Schimmel	July 24, 1883
2,739,702	Eriksen	Mar. 27, 1956

FOREIGN PATENTS

266,602	Great Britain	Mar. 3, 1927