This invention relates to non-combustible wicks and my object is to produce a wick of this character made of asbestos having a relatively large number of fair sized capillary tubes, and primarily intended for use in a relatively open vessel the wick being supported at its opposite ends respectively above the surface of the oil and in close proximity to the bottom of the vessel. The wick is ignited at the surface of the oil and the flame travels down the wick in accordance with the lowering of the oil level. It will be obvious from this general statement of operation that the wick must be of a non-combustible nature.

It is also to be pointed out in connection with this invention that the wick is intended primarily for use with strictly vegetable oils which require a high temperature to gasify and break down the constituent parts. This being true it is found that the oil is not gasified a little below the flame as is true with most mineral oils, but must attain and enter the flame before gasification takes place. For this reason the wick must have a greater capillary attractive power than the ordinary type of wick in order that it may elevate a fair degree of oil entirely out of contact with the comparatively cool surface of the body of oil in the vessel in order that such may be heated sufficiently to gasify. Another reason for producing a wick having a relatively large number of capillary tubes or attractive power, lies in the fact that vegetable oil when burned leaves a crust or coating. If the tubes are fairly large and numerous the crust or coating deposited by the burned oil will be consumed by the white part of the flame as the oil level descends, and the wick will be left free and ready for further use.

Heretofore, the use of asbestos for wicks of this type has proved objectionable due to the fact that asbestos fibers are solid members and no tubes or passageways are provided through which the oil may be elevated by capillary attraction, especially when the wick is spun fairly tightly. When an asbestos wick is spun loosely to provide passages or interstices for the elevation of the oil, it is found that the operation of the wick is unsatisfactory due to the fact that the spacing or arrangement of the passages is uneven, at times a large quantity of oil being fed to the flame and at other times the flame being practically extinguished because of the lack of oil.

My prime object, therefore, is to produce an asbestos wick which is provided with a uniformity of passageways leading to a proper and regular elevation of oil throughout the entire length of the wick.

In the drawing the wick is illustrated as partially untwisted to show the strands. It would appear feasible to loosely spin a wick out of asbestos alone, as above-mentioned, that would be uniform through its length, but after experimentation I have found that this method will not produce a commercial product as the pure asbestos wick so produced is extremely fragile and cannot be safely shipped, and that it has a still greater objection in that it cannot be handled by the consumer as the slightest pressure will compact the fiber and entirely close or collapse the passages. It will be apparent that when the passages are closed as mentioned, the usefulness of the entire wick is destroyed.

In carrying out the invention I have found in order to provide an asbestos wick having interstices or passages for the elevation of the oil, and one which, moreover, can be safely handled by the consumer without danger of permanently closing or compacting the wick against the elevation of oil, that it is necessary to insert into the wick at the time of formation a core or a plurality of twisted strands of any suitable absorbent combustible material, such as cotton.

When the asbestos is combined with the cotton or other combustible material in a uniform manner throughout its entire length, the wick can be safely compressed, as regardless of the degree of compression the absorbent material will readjust itself by expansion when moistened by immersion in oil and will always offer a path for such oil.

The operator after installing a combination wick of the character mentioned in his lamp or burner, will dip the entire wick in the oil and then will withdraw same therefrom and ignite the wick. The burning of the wick at this time leads to the entire consumption of the combustible material. It will be obvious after the combustible material is burned from the wick, that the asbestos will be left in a uniform condition throughout its entire length with a series
of small capillary tubes or passages for the attraction of the oil. It will also be appar-
ent as the wick has been installed in position in the lamp or burner, that further
handling of the wick which might lead to the closure of the passages is obviated, and
the wick is ready for service. The wick as thus produced is more or less fragile but it
has been found that it may be used many
times without attention, and is, therefore,
much more desirable than the common and
ordinary type of combustible wick necessitat-
ing frequent replacement after its burning.

In carrying out the invention it has been
found preferable to produce threads 1 com-
posed in the ratio of 1:1 of cotton and as-
bestos fibers. Two or more of the threads
are twisted together to form a strand 2 and
two or more strands are spun to produce the
final and completed wick 3. With a wick
produced in accordance with the method de-
scribed, the 1:1 proportion of cotton and
asbestos fibers will be absolutely maintained
throughout the wick both externally and
internally, and it will be evident when the
cotton is consumed as above described that
a large number of tubes or passageways
will be left through the entire body of the
wick offering numerous interstices for the
attraction of the oil. In order to absolutely
insure the consumption of all of the cotton
in the wick, it may be desirable at times to
impregnate the wick by dipping it in a
solution of saltpeter. The saltpeter by the
release of hydrogen when the wick is first
ignited will insure the burning of the cotton.

From the above description it will be ap-
parent that I have a wick and process of
producing same which possesses the features
of advantage set forth as desirable, and
while I have described and claimed the pre-
ferred embodiment of the same, I reserve
the right to make all changes properly fall-
ing within the spirit and scope of the ap-
pended claims.

I claim:
1. The process of making non-combus-
tible wicks, consisting in intertwining fibers
of combustible and of non-combustible sub-
stances, and then eliminating the combusti-
ble fibers to leave a canal or passage in the
non-combustible fibers.

2. The process of making non-combus-
tible wicks, consisting in intertwining fibers
of combustible and of non-combustible sub-
stances, and then burning the fibers of com-
 bustible substance to leave a canal or
passage in the non-combustible fibers.

3. The process of making asbestos wicks,
consisting in intertwining fibers of cotton
and of asbestos, and then dipping the wick
in oil and finally in igniting the wick to
effect the consumption of the cotton fibers.

4. A wick in the shape of a twisted cord,
comprising a plurality of twisted strands,
each strand comprising non-combustible
and combustible materials, the form of the
completed wick being such that the com-
 bustible material will be consumed upon
ignition of the wick.

5. A wick comprising fibers of combusti-
tible and non-combustible materials so com-
bined that upon ignition of the wick the
combustible material will be consumed, the
channels produced by such consumption
establishing a capillary feed for the non-
combustible material.

In witness whereof I hereunto affix my
signature.

BERNARD MULLER-THYM.