

E. H. HUMPHREY.
MATCH.
APPLICATION FILED JULY 25, 1912.

1,056,177.

Patented Mar. 18, 1913.

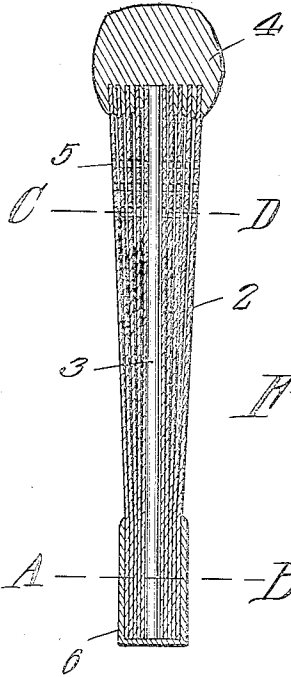


Fig. 1.

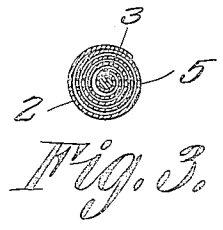


Fig. 3.

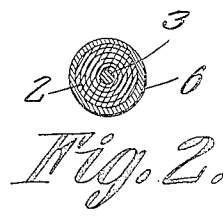


Fig. 2.

Fig. 5.

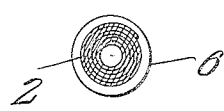


Fig. 7.

Fig. 6.

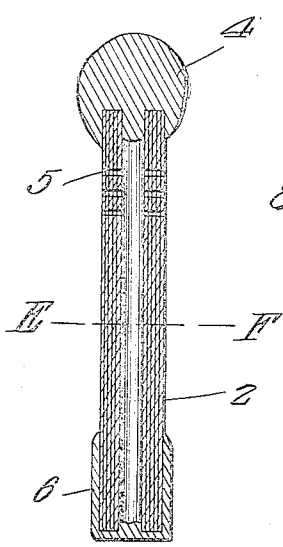


Fig. 4.

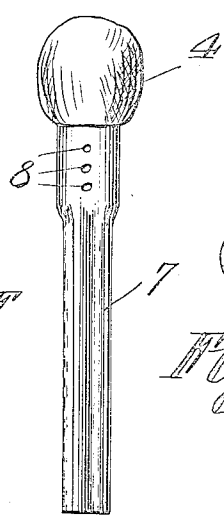
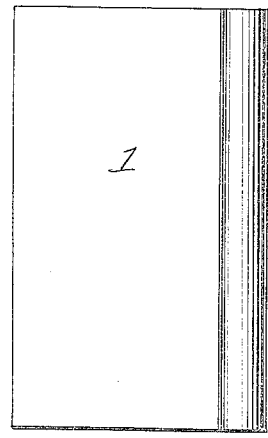


Fig. 8.



Witnesses

J. J. Danley
E. D. Wilson

E. H. Humphrey

Inventor,

by

C. A. Snow & Co.

Attorneys.

UNITED STATES PATENT OFFICE.

EDWIN HALL HUMPHREY, OF NORTH CLYMER, NEW YORK, ASSIGNOR OF ONE-THIRD
TO JOHN A. THOMPSON AND ONE-THIRD TO JOHN J. THOMPSON, BOTH OF MAY-
VILLE, NEW YORK.

MATCH.

1,056,177.

Specification of Letters Patent.

Patented Mar. 18, 1913.

Application filed July 25, 1912. Serial No. 711,495.

To all whom it may concern:

Be it known that I, EDWIN H. HUMPHREY, a citizen of the United States, residing at North Clymer, in the county of Chautauqua and State of New York, have invented a new and useful Match, of which the following is a specification.

This invention relates to matches, its principal object being to provide a match the stem of which is formed of a rolled strip of paper which may or may not be provided with a metallic core, there being means within the stem and adjacent the head of the match whereby air may be supplied to the interior of the stem so as to cause complete combustion of that portion of the stem to be burned and preventing the formation of an afterglow or spark such as often remains upon a wooden match stem after the flame has been extinguished.

Another object is to provide a match stem having that end thereof remote from the head impregnated with a substance designed to prevent combustion so as thus to eliminate danger of burning the fingers of the user.

With the foregoing and other objects in view which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed, it being understood that changes in the precise embodiment of the invention herein disclosed can be made within the scope of what is claimed, without departing from the spirit of the invention.

In the accompanying drawings the preferred forms of the invention have been shown.

In said drawings:—Figure 1 is an enlarged longitudinal section through one form of match. Fig. 2 is a section on line A—B Fig. 1. Fig. 3 is a section on line C—D Fig. 1. Fig. 4 is a longitudinal section through another form of match. Fig. 5 is a section on line E—F Fig. 4. Fig. 6 is a detail view of a blank from which the stem is formed, said blank being partly rolled. Fig. 7 is a side elevation of another form of match. Fig. 8 is an end view thereof.

Referring to the figures by characters of reference 1 designates a rectangular sheet of paper and this sheet is adapted to be rolled so as to form a small tubular stem 2, the convolutions of the rolled sheet fitting tightly together so as to produce a stem which will

not bend easily. As shown in Figs. 1, 2 and 3, this tubular stem may be made by rolling the sheet 1 about a wire core 3 extending throughout the length of the stem. The core is tightly engaged at one end by the tubular stem but that end of the stem which is provided with the match head 4, loosely surrounds the core and is provided with a series of transverse apertures 5 constituting air passages. The stems are to be dipped as ordinarily and those ends of the stems remote from the heads 4 are to be impregnated with a suitable agent designated generally at 6, so as to be rendered non-combustible. In lieu of impregnating the stem, the same can be provided with a coating of non-inflammable material.

It will be apparent that when the head 4 is ignited in the usual manner the stem will likewise be ignited and combustion will be supported not only by air surrounding the stem but also by air entering the stem through the openings 5. All portions of the paper stem will be consumed until the non-combustible portion thereof is reached whereupon the flame will die out without leaving an afterglow or spark.

Instead of using a metal core, as shown in Fig. 1, said core may be dispensed with as in Fig. 4. In this construction the non-inflammable coating 6 is utilized for sealing that end of the tubular stem remote from the match head. It will be noted that the blank 1 is not rolled obliquely but the side edges of the blank extend longitudinally of the match stem. A more rigid stem is thus produced.

Instead of forming a match, as hereinbefore described, the paper can first be rolled as shown in Fig. 4 after which the greater portion of the stem thus formed can be corrugated longitudinally, as shown at 7 so that the stem will be hollow only adjacent the head, the wall of this hollow portion being provided with air openings 8. By corrugating the stem in this manner the same is not only rendered more rigid but is closed and it thus becomes unnecessary to utilize either a wire as hereinbefore described or a filling material.

What is claimed is:—

1. A match including a tubular paper stem and a head at one end of the stem, there being air inlet openings in the stem and adjacent the head.

2. A match including a tubular paper stem, a head at one end of the stem, there being air inlet openings in the stem and adjacent the head, and means on that end portion of the stem remote from the head for rendering it non-combustible.

3. A match including a tubular combustible stem and a head at one end of the stem, there being a transverse air inlet opening within the stem.

4. A match including a tubular combustible stem and a head at one end of the stem, there being a transverse air inlet opening within the stem, and means on that portion of the stem remote from the head for rendering it non-combustible.

5. A match including a stem having a metallic core and a tubular portion surrounding the core, that portion of the core adjacent the match head being spaced from the tubular portion and there being radial openings in said tubular portion and adjacent the head.

6. A match including a metallic core, a rolled paper blank forming a tube surrounding the core, and a head upon one end of the

tube, said tube near the head having an opening therethrough for admitting air.

7. A match stem including a metallic core and a paper tube surrounding the core, there being air holes within the tube adjacent one end, and a match head upon said end of the tube.

8. A match including a tubular paper stem having air holes in one end portion thereof, a match head upon said end portion, and means for sealing the other end portion of the stem.

9. A match including a tubular paper stem having one end portion closed by means of longitudinal corrugations, the other end portion being hollow and having an air opening in the wall thereof, and a head upon said hollow portion of the stem.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

EDWIN HALL HUMPHREY.

Witnesses:

JOHN J. THOMPSON,
JAMES COX.