Sept. 9, 1947. E. W. HAGADORN 2,427,209

ELECTRICALLY HEATED TOOL

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Fig. 1

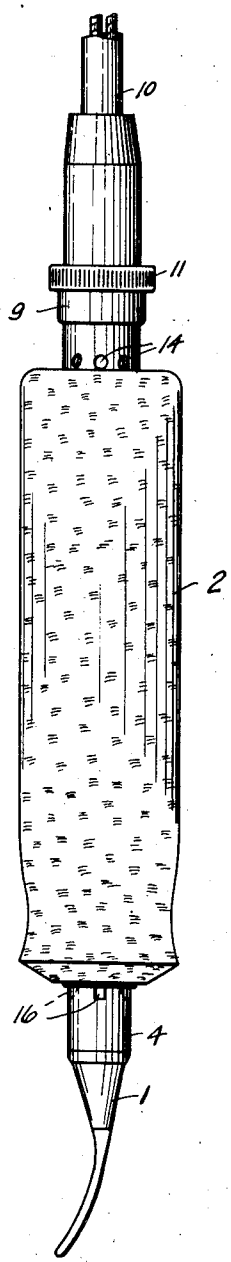
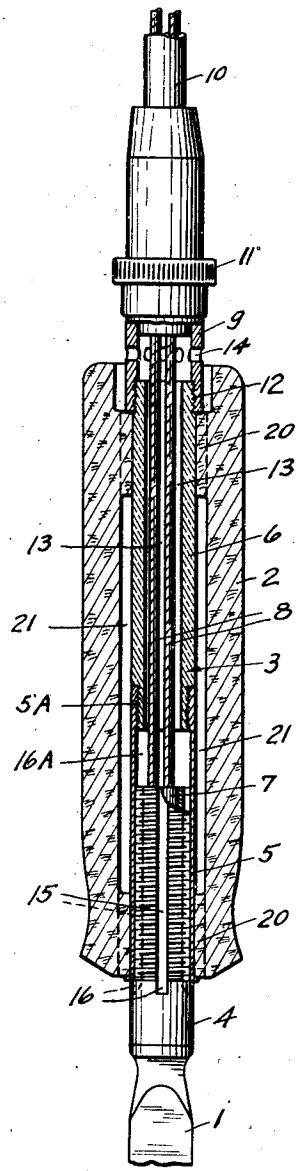


Fig. 2



INVENTOR:
Elmore W. Hagadorn,
BY
Bodell & Thompson
ATTORNEYS.

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ELECTRICALLY HEATED TOOL

Elmore W. Hagadorn, Solvay, N. Y.

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1 Claim. (Cl. 219—21)

1

This invention relates to electrically heated tools, as so-called electric knives, pyrographs, and such articles as soldering irons, where the handle is located close to the heated work head or point, and has for its object an arrangement of ventilating passages for preventing or greatly retarding the transfer of heat from the heating element or work head into the handle.

The invention consists in the novel features and in the combinations and constructions hereinafter set forth and claimed

In describing this invention, reference is had to the accompanying drawings, in which like characters designate corresponding parts in all the views.

Figure 1 is an elevation of one form of this electrically heated tool.

Figure 2 is a longitudinal sectional view of parts seen in Figure 1.

The tool consists generally of a work head to be heated, a handle located axially with the head having an axial passage opening through both ends, and a body, support or holder for the work head, handle, heating element and service wires, having lengthwise air or ventilating passages with inlets and outlets at opposite ends of the handle, to retard heating or prevent the conduction of heat from the heating element to the handle. As shown, the body or support is a lining in said passage. The head has a shank member fitting into the lining at one end thereof and a socket opening through its inner end for receiving the heating element, and a coupling for the electric wires to the heating element is attached to the adjacent end of the lining at the other end of the handle. The lining is arranged to provide lengthwise air or ventilating passages therethrough. Air inlet and outlet ports for the ventilating passages are provided at opposite ends of the handle, one set of ports being formed in the coupling.

1 designates the work head to be heated; and 2 the handle, which is usually of a material of low heat conductivity, as cork composition, and the like. 3 is the support in the form of a tubular lining for the axial passage through the head. The head 1 has a shank member 4 which fits into the adjacent end of the lining, and usually this adjacent end 5 of the lining is a metal member into which the shank member 4 threads; the remaining portion 6 of this lining is of a heat insulating composition. The shank member 4 is formed with an axial socket opening through its inner end into which a heating element 7 fits. 8 are the electric wires to the heating element, these extending beyond the end of the member 6 of the tubular lining, where they are attached to separable plug and socket means located within a coupling 9, which encloses the supply cable 10. The coupling enclosing the wires 8 is in two separable sections,

2

which are normally held together by a threaded connection including a knurled nut 11. One section of the coupling threads at 12 on the adjacent end of the member 6 of the tubular lining 3. The two members 5, 6 of the lining are held together by a threaded connection at 5A. The internal diameter of the member 6 of the lining is greater than that of the wires 8 providing a space or air passage 13 around the wires 8. The coupling is formed with air ports 14. One of the members 4 and 5, here shown as the shank member 4, is provided with lengthwise slots 15 opening through the end of the shank 4 into an annular chamber 16A located between the inner end of the lining member 6 and the inner end of the shank 4. The slots 15 open into the outer air at 16. When the tool is in use, the air current enters one or the other of the ports 14 or 16, passes through the passage 13 into the chamber 16A through the slots 15 in one direction or the other and is discharged to the outer air through the other set of ports 14 or 16, thus retarding the heat conduction to the handle 2, so that it does not become uncomfortably warm. Thus, by these ventilating passages, the handle may be located close to the head 1 and the tool operated indefinitely without the handle getting too warm to manipulate.

Preferably, the tubular body or the handle may have spacing lugs 20 between them, and as here shown, the handle in its bore is provided with the lugs, forming a ventilating passage 21 between the handle and tubular support.

What I claim is:

In an electrically heated tool, a work head to be heated, a handle located adjacent the same and having an axial passage extending through both ends, a tubular lining in the passage, the head having a shank fitted into the tubular lining at one end of the handle, a heating element extending into the shank, a coupling for electric wires for the heating element at the other end of the handle and secured to the adjacent end of the tubular lining, and ventilating passages extending lengthwise of the handle outside of the lining around the same and within the lining, the lining having sets of inlet and outlet ports at opposite ends of the lining and the handle.

ELMORE W. HAGADORN.

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