

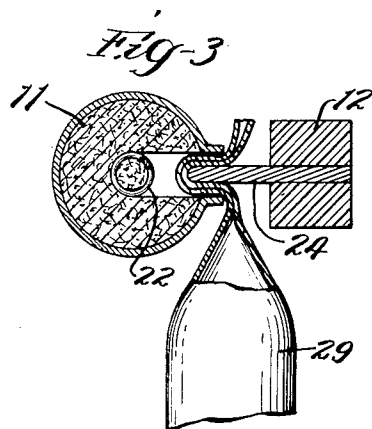
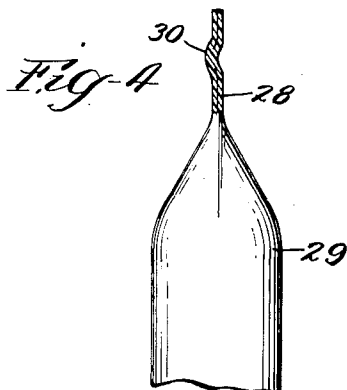
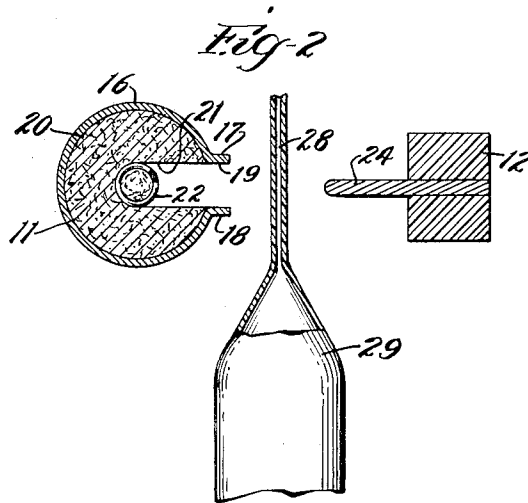
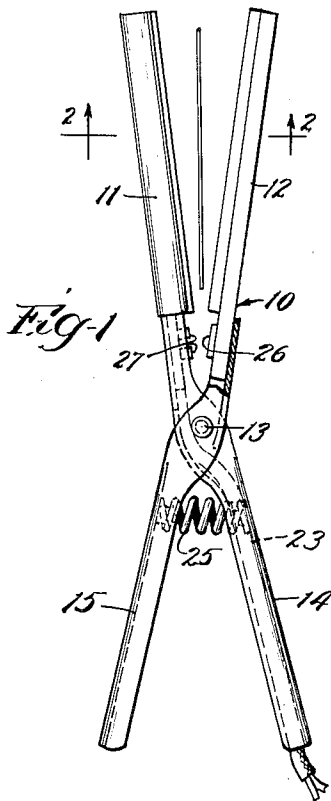
Dec. 18, 1951

T. E. PIAZZE ET AL

2,579,088

HEAT SEALING TOOL

Filed Oct. 25, 1949



Inventors:
Thomas E. Piazza &
Bert W. Martin.

By-
Cronwell, Geist & Warden
Attys.

UNITED STATES PATENT OFFICE

2,579,088

HEAT SEALING TOOL

Thomas E. Piazza and Bert W. Martin, Mount
Vernon, Ohio, assignors to Shellmar Products
Corporation, Chicago, Ill., a corporation of
Delaware

Application October 25, 1949, Serial No. 123,404

3 Claims. (Cl. 154-42)

1

This invention relates to heat sealing mechanisms and is more particularly concerned with improvements in a hand tool especially adapted for use in heat sealing the top of a filled bag.

It is a general object of the invention to provide a hand tool for use in connection with the closing and sealing of the top of a bag, which tool is simple in construction, easy to operate and economical to manufacture and which will apply to the closed top of the bag a transverse bead-like seal formation.

It is a more specific object of the invention to provide improvements in a heat sealer which comprises a pair of pivotally related jaw-like members, one of which has incorporated therein an electrical resistance element for providing radiant heat and the other of which includes a folder blade adapted to engage the top of a bag to be sealed on the opposite side of the same and move it to a position adjacent the resistance element to permit the bag top material to be fused by heat radiating from the resistance element and to form therein a bead-like seal.

It is a further object of the invention to provide a heat sealing tool comprising a pair of pivotally connected elongate members having handle forming end portions extending on one side of the pivotal connection and sealing jaw forming portions extending on the opposite side thereof, a radiant heating element positioned in a slotted recess in one of the jaws and a relatively narrow blade-like element projecting in opposed relation thereto from the other jaw whereby a flat folded top portion of a filled bag or the like may be positioned between the jaws and upon closing of the jaws the blade will force the same into the recess to place folded portions of the material in close contacting relation and within the effective heating range of the radiant heating element for a sufficient length of time to fuse the material and provide a transverse seal on the bag top.

These and other objects of the invention will be apparent from a consideration of the tool which is shown by way of illustration in the accompanying drawings wherein:

Fig. 1 is a side elevation of a heat sealing tool embodying the principles of the invention;

Fig. 2 is a cross section, to an enlarged scale, taken generally on the line 2-2 of Fig. 1 showing the sealing jaws in open position;

Fig. 3 is a cross section similar to that shown in Fig. 2 but with the sealing jaw in the closed position; and

Fig. 4 is a partial side elevation of a bag which has been sealed with the tool.

2

Referring to the drawings, there is illustrated a heat sealing tool 10 which incorporates therein the principles of the invention and which is particularly adapted for home use in sealing the tops of flexible bags of heat-sealable material such as frozen food bags or the like.

The illustrated tool 10 comprises a pair of elongate members having jaw-like end portions 11 and 12 which are pivotally connected at 13. The pivoted members are provided with handle forming end portions 14 and 15 projecting in the opposite direction beyond the pivot point 13.

The jaw member 11 comprises an outer shell or casing 16 which is generally circular in cross section, forming a tube-like member, and provided with axially extending flanges 17 and 18 in circumferential spaced relation defining an axially extending slot or opening 19 on the inner side thereof. An insulated holder member 20 is enclosed within the casing 16 and provided with an axially extending slot 21 which is arranged in alignment with the casing opening 19. A radiant heating element such as a nichrome wire or other electrical resistance member 22 is arranged in the bottom of the slot 21 and connected by appropriate wiring 23 which extends through the handle portion 14 to a source of electric current. The heating element 22 is adapted to be energized when current is applied through the wire 23 and to provide radiant heat.

The jaw member 12 is provided with a relatively narrow folding blade 24 projecting inwardly in opposed and aligned relation with the opening 19 in the jaw 11. The projecting portion of the folding blade 24 is somewhat narrower than the opening 19 and is adapted to be moved therethrough and into the slot 21 when the jaws are moved toward each other.

The jaw members 11 and 12 are normally held in the open position by a spring 25 which is arranged to extend between the handle portions 14 and 15 and which urges the jaw members 11 and 12 into the open position. Control of the current in the wiring 23 is provided by cooperating switch elements 26 and 27 on the jaw members 11 and 12 adjacent the pivot point 13. The switch members 26 and 27 are arranged so that when the jaw members 11 and 12 are brought towards each other, the circuit is closed and current is supplied to the resistance element 22. When the sealing jaws 11 and 12 are moved away from each other, the switch members 26 and 27 are separated and the current supply is cut off. The contact elements of the switch 26, 27 may act as a stop to limit

the movement of the blade 24 into the opening 19.

In using the tool the top portions 28 of the filled bag 29 are flat folded into contacting relation. The tool 10 is then positioned with the jaws 11 and 12 on opposite sides of the flat faces of the bag top portions 28. The handles 14 and 15 are thereafter moved toward each other against the action of the spring 25 and the blade 24 is brought into contacting relation with the bag top 28, forcing the material of the top 28 into the slotted opening 19, 21 and stretching the folded material over the edge of the blade 24 to hold the same in close relation at a pre-determined spaced distance from the radiant heating member 22. The jaws 11, 12 are held in the closed position a sufficient length of time to permit the material in the bag top 28 to melt and fuse into a bead-like formation which provides an integral seal 30 across the bag top upon cooling after removal from the tool 10.

Radiant heat may be supplied in the tool by substituting any other suitable material for the resistance element 22.

The tool is particularly adapted for use with bags formed of polyethylene material or material of a similar character which has the ability to melt or fuse when subjected to radiant heat and to form, when cooled, an integral bead-like seal.

While specific materials and details of construction have been referred to in describing the illustrated form of the device, it will be understood that other materials and other details of construction may be resorted to within the spirit of the invention.

We claim:

1. A heat sealing tool comprising a pair of jaw members connected for movement toward and from each other, one of said jaw members being provided with a relatively narrow axial slot of substantial depth, a radiant heating element positioned within said slot and a folding blade on the other of said jaw members in aligned relation with said slot, said blade being arranged to extend into said slot upon movement of the jaw members toward each other to a position spaced from said heating element and from the side walls defining said slot.

2. In a heat sealing tool a pair of elongate members pivotally connected intermediate their ends and providing jaw members at one end and handle extensions at the other end for moving the jaw members into pre-determined closed position, one of said jaw members having a relatively narrow axially extending slot of substantial depth, a radiant heating element positioned in the bottom of said slot in said jaw member, and the other of said jaw members having a blade portion in alignment with said slot, said blade portion being movable to a predetermined position in said slot spaced from said heating element when said jaw members are moved into closed position.

3. In a heat sealing tool, a pair of pivotally connected jaw members having handle extensions for moving the jaw members toward and away from each other, one of said jaw members having a relatively narrow axially extending slot of substantial depth, a radiant heating element positioned within the slot in said jaw member, the other of said jaw members having a projecting blade in alignment with said slot and in opposed relation to said element, means connecting said heating element with a source of electric current, and cooperating switch elements on said jaw members adjacent the pivotal connection thereof for controlling said current.

THOMAS E. PIAZZE.

BERT W. MARTIN.

REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
1,882,925	Rock	Oct. 18, 1932
2,189,431	Moore	Feb. 6, 1940
2,263,152	Wilcox	Nov. 18, 1941
2,441,817	Huff	May 18, 1948
2,443,749	Stunkel	June 22, 1948
2,477,467	Rose	July 26, 1949

FOREIGN PATENTS

Number	Country	Date
8,814	Great Britain	1914