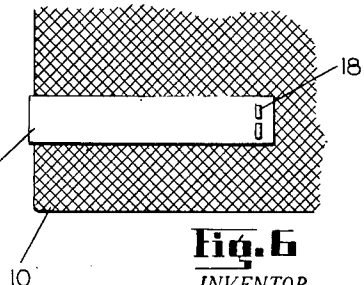
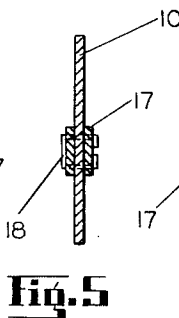
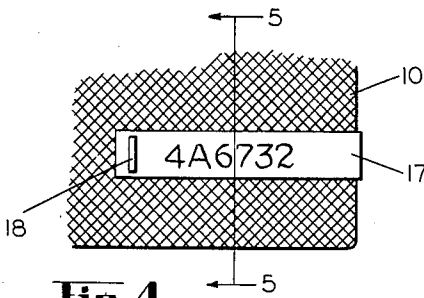
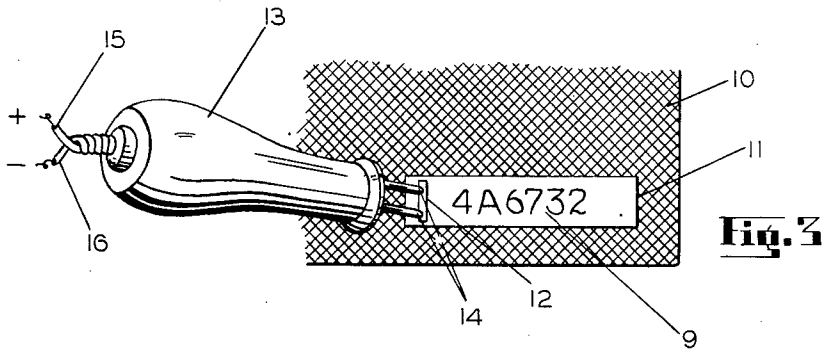
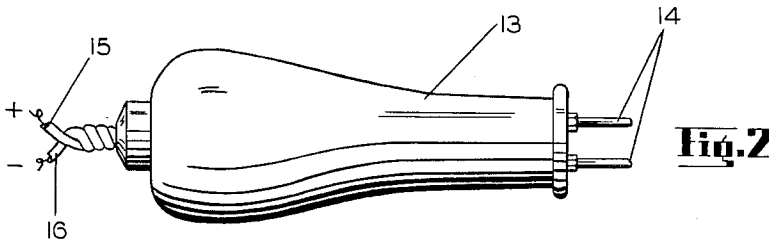
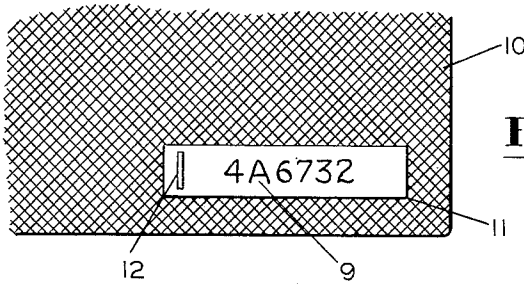


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REMOVING IDENTIFICATION TAGS
FROM ORGANIC FABRICS
Filed Jan. 25, 1946

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2,513,431

REMOVING IDENTIFICATION TAGS FROM
ORGANIC FABRICS

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3 Claims. (Cl. 219—1)

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My invention relates to an identification process, including attaching and removing identification tags from organic fabrics which tags are fastened thereto by clinched metal staples having a melting temperature not greater than that which will injure said fabric, nor less than that met with in ordinary laundry and cleaning processes, said removal being accomplished by melting a portion of the staple.

The invention more particularly pertains to attachment and removal of identification tags stapled by metal alloy electrically conductive staples having a melting point between 150° C. and 180° C., said lower temperature being slightly above the maximum met with in laundry, cleaning, ironing and pressing operations and the upper temperature being slightly lower than that which will cause damage to ordinary organic fabrics met with in commercial laundry and cleaning plants. Such alloy staples are employed so that they will not melt during cleaning and laundry processes, but will melt by application of heat not injurious to the fabric.

It is the principal object of my invention to provide a process for attaching and removing tags, used to identify articles cleaned or laundered, which tags are fastened to said fabrics by a metal alloy staple, such removal being without damage to the fabric. The novel process is simple and automatically effective to part the staple in the middle and thereby permit the tag to be pulled from the fabric together with the staple ends.

Another object of the invention is to provide a process for removing a metal staple from a fabric, by melting, wherein the melting heat is automatically discontinued when the staple melts.

Further objects, and objects relating to details and economies of operation will definitely appear from the detailed description to follow.

I have accomplished the object of my invention by the devices and means set forth in the following specification. My invention is clearly defined and pointed out in the appended claims. Apparatus, useful in carrying out the improved process of my invention, is illustrated in the accompanying drawings, forming a part of this specification, in which:

Fig. 1 is a plan view illustrating a piece of fabric with an identification tag attached to it by a metal alloy staple, the middle part of the staple being visible.

Fig. 2 is a view in side elevation of a removing device having two electrodes spaced slightly less apart than the span of the staple.

Fig. 3 shows the fabric article with the tag of

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Fig. 1 attached, and with the electrodes of the device positioned to the closed end of the staple.

Fig. 4 shows a plan view of a fabric article showing a modified form of attaching the tag by folding the tag around its edge.

Fig. 5 is a sectional view taken along the line 5—5 of Fig. 4.

Fig. 6 is a view showing the underside of the tagged fabric article of Fig. 4.

In the drawings the same reference numerals refer to the same parts throughout the several views and the sectional view is taken looking in the direction of the arrows at the ends of the section line.

It has been the practice heretofore to fasten tags, made of cloth or paper, to fabrics, by means of clinched metal staples. The ordinary metal staple must be unclined or broken to remove a tag fastened therewith, and such is difficult without damaging the fabric to which it is attached.

My invention has to do with a new and improved process for removing a metal alloy staple from a tagged fabric by melting. Fabric which goes through the laundering, cleaning, ironing and pressing processes is subject to heating and therefore the staple used is made of an alloy having a melting point range which is between that temperature applied in the ordinary laundering, cleaning or pressing operation, and that temperature which will cause the fabric to be damaged by heat.

The first step of my process comprises positioning two electrodes to the closed end of a metal alloy staple clinched to a fabric. Such a staple preferably should have a diameter of not more than 0.020 inch. The electrodes are positioned and held in contact with the closed end of the staple approximately at the points at which the staple enters the fabric.

In the second step of my process the electrodes are supplied with an electric potential, the staple completing an electrical circuit. Ordinary 110 volt potential applied to the electrodes will be sufficient to melt the staple between the electrodes, the composition of which will be later specified.

The third step of my process comprises grasping and pulling the tag away from the fabric, pulling the now free ends of the staple therethrough whereby the broken staple ends and tag are removed.

The fabric article 10 has a tag 11 secured to it by means of a wire staple 12. This tag may bear

an identification number 5. The wire staple is formed in a U-shape, the legs being designed to pass through the fabric and said staple being made of a metal alloy that is ductile enough to be drawn into a wire of approximately 0.020 inch in diameter so the legs are clinchable, chemically inert to laundering and cleaning processes, and not softening or melting below 150° C., but melting below 180° C.

Such a staple may have the following composition in one example, 50% lead and 50% tin by weight. In another example the composition may be 40% cadmium and 60% tin. In still another example, 55% bismuth, 44% cadmium and 1% zinc may be used.

In the means I provide for heating the staple the staple's electrical resistance causes the staple to heat and melt as current is passed between the electrodes by way of the staple, the melted portion forming lumps on the parted ends of the staple. The electrode means I provide consists of an insulating handle 13 pierced by two electrodes 14 (Fig. 2) about one-quarter inch apart to fit the closed end of a staple of the span ordinarily used in commercial laundries and dry cleaning plants. The source of potential is applied to the wires 15 and 16. In practice the potential may be applied continuously to the electrodes which may then be touched to the staple and withdrawn.

In a modified form of attaching the tag, I have shown in Figs. 4-6, the ends of a tag 17 folded over the edge of a fabric article 10 with the two ends of the tag stapled together by staple 18, which staple is of the same type as the staple referred to above. The tag 17 of the modified form, when the staple is melted, is then grasped and pulled from the fabric taking with it the two halves of the staple, which operation is easier effected than with the tag of Fig. 1 because the tag tends to part the staple from the fabric both at the broken end of the staple and at the clinched end.

I am aware that the particular process herein described is susceptible of considerable variation without departing from the spirit of my invention in that different modes of application of heat and different materials may be used and, therefore, I claim my invention broadly as indicated by the appended claims.

Having thus described my invention, what I claim as new and useful and desire to secure by Letters Patent is:

1. The process of removing from an organic fabric an identification tag which is secured to said fabric by a U-shaped staple having the free ends thereof projected through the fabric and clinched, said staple being formed of an alloy

having a melting point above the temperature reached in an ordinary laundry, cleaning, ironing or pressing process and below the temperature which will damage said organic fabric to which said staple is clinched, including the step of positioning two electrodes to the closed end of the staple, bridging that part of the staple between the points at which said staple enters the fabric, and the step of heating said staple by passing electric current from one electrode to the other whereby the staple is melted into two parts easily removable from the fabric.

2. The process of removing from an organic fabric after same has been laundered an identification tag which is secured to the fabric by a U-shaped staple having the free ends projected through the fabric and clinched, said process including the step of positioning an electrode near each of the points at which said staple enters the fabric on the closed side of the staple; the step of passing an electric current from one electrode to the other to heat a portion of said staple intermediate of said points until it melts the staple and automatically breaks the circuit, whereby the staple is removable from the fabric.

3. The process of removing an identification tag from an organic fabric to which same has been attached by means of a clinched U-shaped staple formed of an alloy having a melting point above the temperature reached in an ordinary laundry, cleaning, ironing or pressing process and below a temperature which will damage a fabric to which said staple is attached including the step of positioning an electrode near each of the points at which said staple enters the fabric on the closed side of the staple; and the step of completing an electrical circuit through said staple by applying a potential to said electrodes, thus heating a portion of said staple intermediate of said points and melting it to automatically break the circuit, whereby the staple is removable from the fabric.

FRANCIS M. SELL.

REFERENCES CITED

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

UNITED STATES PATENTS

Number	Name	Date
249,851	McGill	Nov. 22, 1881
724,133	Smith	Mar. 31, 1903
788,267	Kensalik	Apr. 25, 1905
1,639,688	Duncan	Aug. 23, 1927
1,854,301	Griffin et al.	Apr. 19, 1932
2,131,254	Miller	Sept. 27, 1938
2,359,794	Rogers	Oct. 10, 1944