

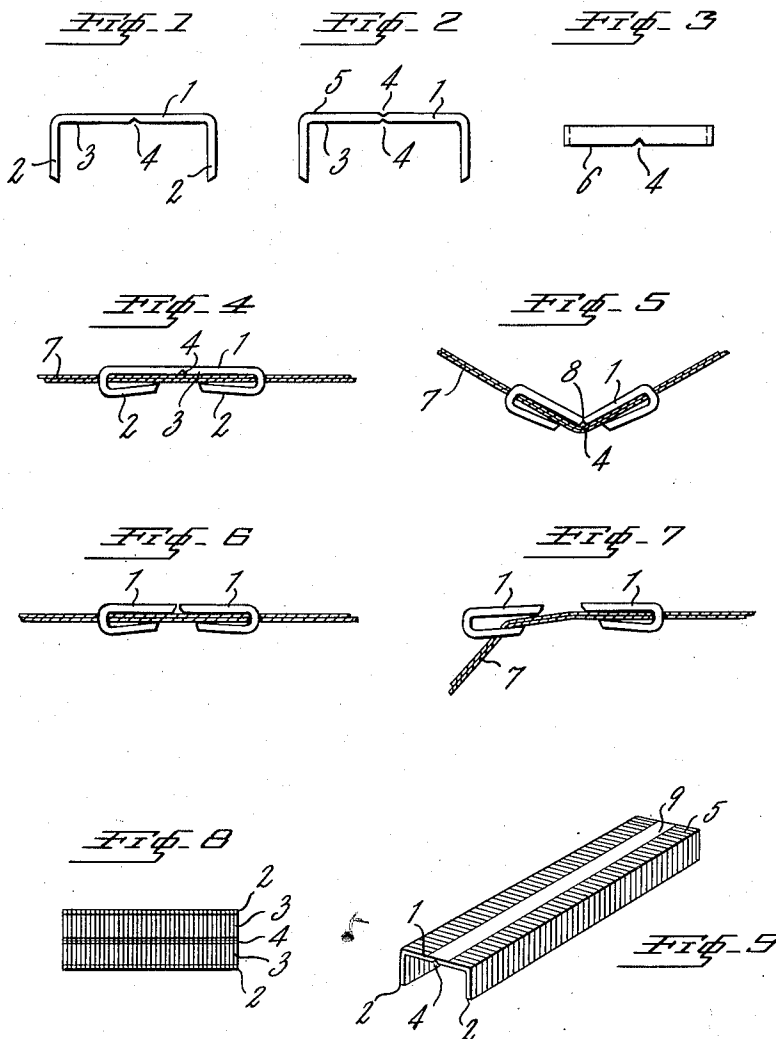
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E. J. J. HENRIKSEN

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WIRE STAPLE FOR TACKING APPARATUS

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INVENTOR.  
ERNST JOHAN JENS HENRIKSEN

BY *Leon M. Strauss*  
ATT.

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## WIRE STAPLE FOR TACKING APPARATUS

Ernst Johan Jens Henriksen, Copenhagen,  
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## 1 Claim. (Cl. 85—49)

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This invention relates to improvements in wire staples for tacking apparatus of the kind known as staplers which are commonly used for tacking together two or more layers or sheets of paper or other flexible materials such as leather, cardboard or the like.

The wire staples or tacks used for such purposes (which will hereinafter be referred to as staples or tacks) comprise one or more legs with points extending from a common back or cross piece and are adapted to be pressed through the paper sheets to be tacked together by means of the tacking apparatus (hereinafter referred to as the tacker). This apparatus is usually provided with an anvil adapted to bend the two legs or flaps together when the tacker is pressed down towards the surfaces to be tacked together.

If the paper thus tacked is to be detached again without being torn this is done by straightening out the bent legs e. g. by means of a knife or an apparatus especially arranged for the purpose. This procedure is troublesome and the apparatus especially constructed for the detachment purpose are expensive and not always at hand when required.

Accordingly the main object of the invention is to provide means facilitating ready removal of the tack from the paper without the use of tools after the back was pressed through the paper sheets and bent at the rear side thereof. For this purpose, the back or crosspiece of the tack is provided with a transverse incision, a slot or similar means, the cross piece weakening means being in or adjacent the center of the cross piece between the flaps or legs and arranged before the tack is pressed through the paper. Such weakening means will cause the back or cross piece to break easily by bending which can be effected without difficulty with the fingers after the fastening or tacking operation has been concluded, as the paper will easily permit of the back or cross piece being bent 90° or more. If the material to be tacked is stiff, e. g. cardboard which does not permit of an angular bending of the back to any appreciable extent, the back will also break by a repeated bending forwards and backwards at a similar angle. When the back has been broken in this way the two more or less hair pin shaped halves can easily be drawn or pushed out of the paper by the fingers of the operator. A chisel-like tool is the best suited piece of tool for producing the incision in the cross piece, and in the case of the type of tacks produced from a flat wire and usually assembled to a coherent strip of a length according to the

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structure it is easier to produce the incision after assembly e. g. by passing the rows between two steel rollers of which one is provided with a sharp edge which cuts into the back of the tacks on the spot where it is desired to produce the weakness. Care must be taken to ensure that the incision is not made so deep that a too great weakness is produced whereby a non-desired breaking of the back or cross piece results e. g. caused by the stresses to which the tack may be subjected while the tacked papers are in transit. The incision may be made across the back on one of the surfaces of the same. It may run all the way round the back, or incisions opposite each other may be made on two opposite surfaces. However, the weakness may be produced in any other way than by means of incisions without departing from the scope of the invention e. g. by a hole through the back or by providing one of the surfaces of the back with a pyramid or cone shaped cavity of a nature next to a centre punch hole.

The preferred embodiment is the one where the incision is arranged on the side of the back facing the paper after tacking because the easiest way to make the angular bending of the back intended to cause the breaking is by pressing the centre of the back with a finger nail against the paper and supporting the bent flaps or legs of the tack on the opposite side of the paper by means of two finger tips, and as the incision will thus be on the top of the angle formed by the back during the bending the crack, which is the beginning of the breaking, will arise so much easier when it emanates from the sharp bottom of the incision.

When the incision is arranged in this way at the bottom or under surface of the back or cross piece it cannot be observed at a casual glance at its position, and the person who is to detach it will not be able to know whether or not the tack before him is constructed for breaking according to the invention. Therefore, it will be expedient, already during the process of manufacture, to mark the tacks provided with weakening means in such a way that when tacked to a piece of paper such tacks can easily be distinguished from ordinary tacks. According to the invention this can be attained by providing the upper part of the tack with a marking or a stripe in a color differing from that of the remainder of the cross piece e. g. red or by dyeing the whole tack in a color differing from that of an ordinary tack e. g. by a dyestuff being added to the bond used for assembling tacks into rows and which in the case of the hitherto known tacks is colorless and

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with which the whole tack is usually coated. The marking may also be effected by a pattern pressed into the upper surface or side of the cross piece e. g. by means of a roller which during the process of providing the weakening incision in rows of tacks presses the tacks against the roller for producing the incision.

Some embodiments of the invention are illustrated in the drawing, in which

Fig. 1 shows a side elevational view of a tack.

Fig. 2 a side elevational view of another tack.

Fig. 3 is a top plan view of the tack of Fig. 1.

Fig. 4 is a side view of a tack inserted into superposed sheets of paper and with bent legs or flaps.

Fig. 5 shows the same tack of Fig. 4 after bending to cause breakage of the tack.

Fig. 6 is the same tack of Fig. 5 after breakage thereof.

Fig. 7 illustrates how the halves of the same tack are detached from the paper.

Fig. 8 is a top view of a strip of assembled tacks, and finally

Fig. 9 shows in perspective a strip of tacks with a marking stripe.

In Fig. 1 is seen the back or cross piece 1 from which the two legs or flaps 2 extend. On the underside or surface 3 of the back is an incision 4 for the purpose of weakening the back 1, while in Fig. 2 is shown another embodiment where the weakening means is formed by incision 4 arranged at the under surface 3 as well as on the top surface 5 of the back 1. Fig. 4 shows a tack inserted into two superposed sheets of paper 7 at the under surface of which the two legs are bent toward each other. The incision 4 is at the under surface 3 of the back 1 which in Fig. 5 has been bent at an angle to thereby cause a crack or breakage 8 to extend from incision 4 to the upper surface 5. Thus the back 1 is broken into two halves after the backward bend-

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ing as shown in Fig. 6 and each half can easily be detached from the paper sheets 7, as indicated in Fig. 7.

Fig. 8 shows a strip of assembled tacks in which the incision 4 is arranged at the bottom or under surface 3 of the back 1, and Fig. 9 shows in perspective a strip of tacks provided on the top surface 5 with a marking stripe 9 to indicate the location of the incision 4 in the under surface of the tack.

Having thus described the invention, what is claimed as new and desired to be secured by Letters Patent, is:

A bendable staple of the character described comprising a cross piece, two legs extending at substantially right angles from said cross piece, said cross piece being provided with material weakening means extending into the under surface of said cross piece and adjacent the center of said cross piece, and means located on the upper surface of said cross piece and indicating the position of the material weakening means in the under surface thereof.

ERNST JOHAN JENS HENRIKSEN.

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