

May 17, 1927.

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R. B. KINGMAN

MEANS FOR STAPLING TAGS TO ARTICLES

Filed Nov. 19 1926

2 Sheets-Sheet 1

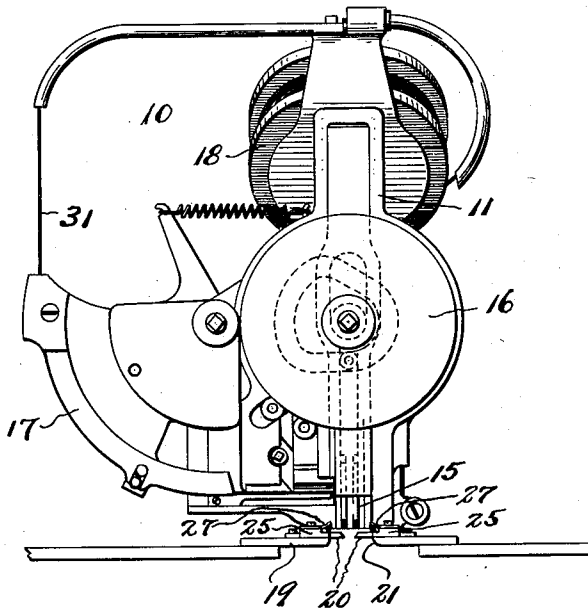


Fig. 1

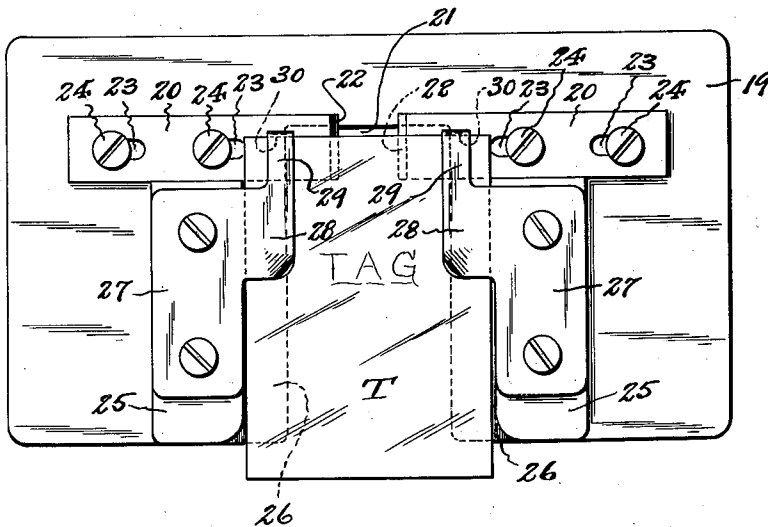


Fig. 2

INVENTOR.
Russell B. Kingman,
BY
Frank J. & Richard
ATTORNEYS.

May 17, 1927.

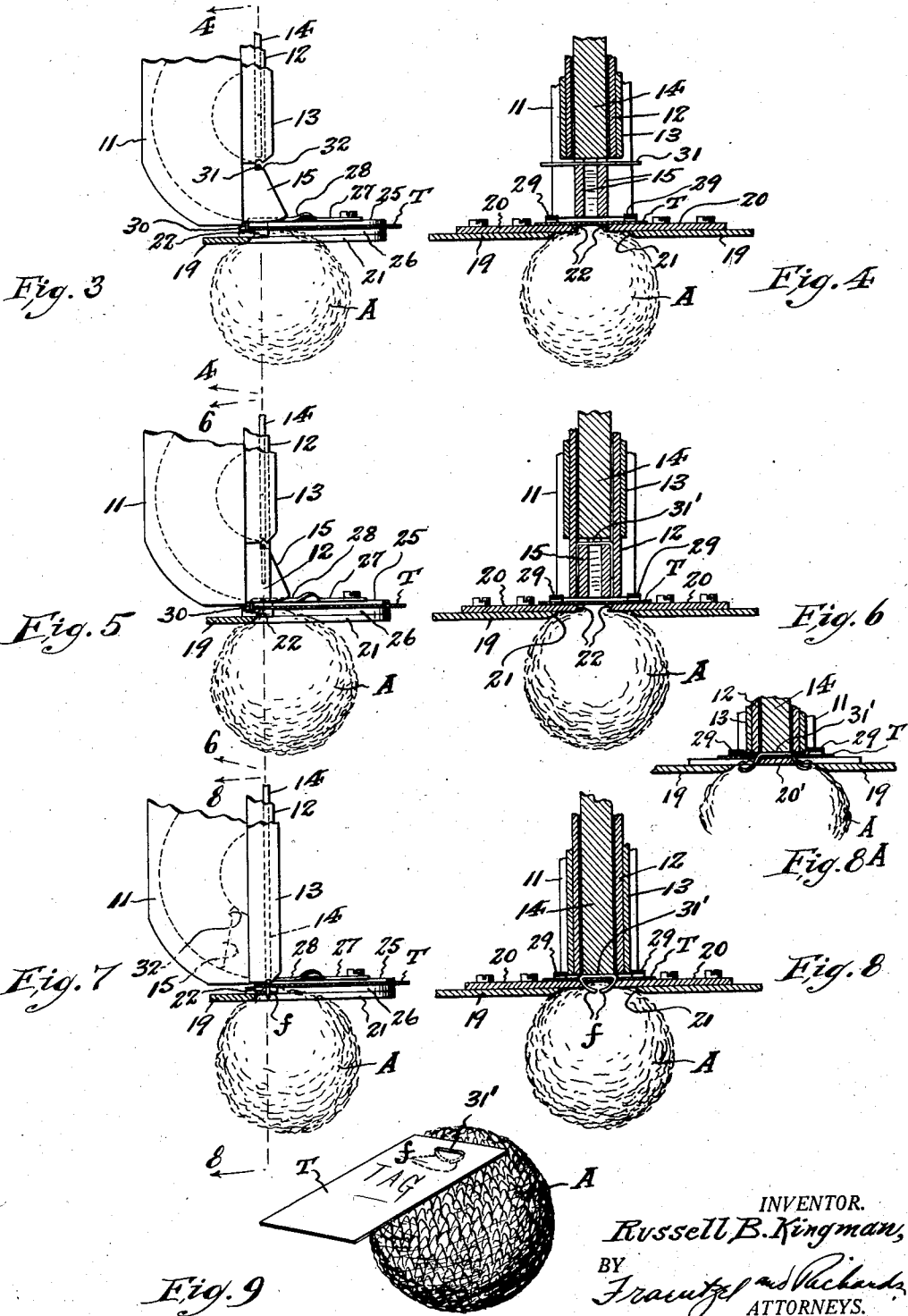
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MEANS FOR STAPLING TAGS TO ARTICLES

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2 Sheets-Sheet 2



UNITED STATES PATENT OFFICE.

RUSSELL B. KINGMAN, OF ORANGE, NEW JERSEY, ASSIGNOR TO METAL TEXTILE CORPORATION, OF WEST ORANGE, NEW JERSEY, A CORPORATION OF RHODE ISLAND.

MEANS FOR STAPLING TAGS TO ARTICLES.

Application filed November 19, 1926. Serial No. 149,333.

This invention relates to the attachment of tags to spongiform articles and to mechanism for applying label or similar tags to such articles.

5 The invention has for its principal object to provide a novel means for attaching a label or similar tag in direct coupled relation to a spongiform article, such as a scouring device in the form of a ball or mass of other shape made up from knitted metallic fabric, similar, for example, to that shown in my prior United States Patent #1,533,868, dated April 14th, 1925; and the invention has for a further object to provide a novel mechanism for forming and applying the novel tag attaching means cooperatively with the tag and article.

Other objects of this invention, not at this time more particularly enumerated, will be clearly understood from the following detailed description of the same.

The invention is clearly illustrated in the accompanying drawings, in which:—

Figure 1 is a front elevation of a mechanism for forming and applying a novel tag attaching means cooperatively with a tag and article;

Figure 2 is an enlarged plan view of the tag supporting table and tag fastener stationary bending dies of the said mechanism;

Figure 3 is a fragmentary part side elevation and part vertical section, showing the anvil of the mechanism in operative position, and the preliminary bender and driver and bender guide in initial raised position; and Figure 4 is a transverse vertical section of the parts so disposed, taken on line 4—4 in Figure 3;

Figure 5 is a view similar to that shown in Figure 3, but illustrating the preliminary bender in operated position, and Figure 6 is a transverse vertical section taken on line 6—6 in Figure 5;

Figure 7 is also a view similar to that shown in Figure 3, but illustrating the driver in actuated position to operatively engage the tag fastener means with the stationary bending dies, and Figure 8 is a transverse vertical section taken on line 8—8 in Figure 7;

Figure 8A is a view similar to Figure 8 showing a modified arrangement of the stationary bending die; and

Figure 9 is a perspective view of an article having a label tag connected therewith by the novel attaching means.

Similar characters of reference are employed in all of the hereinabove described views, to indicate corresponding parts.

Referring now to said drawings, the reference character 10 indicates a suitable stapling machine modified in accordance with this invention to provide a means for forming and applying the novel tag attaching means cooperatively with a tag and the article to which the latter is desired to be connected. So far as the initial feeding and forming of the wire preparatory to application thereof in the final form providing the novel attaching means for connecting a tag with a desired article is concerned, the mechanism may be similar to that of any suitable type of wire-stitching or stapling machine, and may consist, for example, in a wire feeding and forming mechanism similar to that disclosed in United States Letters Patent No. 662,184, dated November 20, 1900, to Briggs et al., in which there is provided, in connection with a supporting frame-work 11, a vertically reciprocable preliminary bender 12 and bender guide 13, a driver 14 and anvil 15 with which the preliminary bender cooperates, all driven in operative timed relation by suitable power transmitting cam mechanism 16; and cooperating with this mechanism is the usual wire feeding mechanism 17, which automatically delivers the wire (from which the novel attaching means is formed) from a supply roll or spool 18 to the preliminary bender and driver mechanism.

Suitably supported beneath the preliminary bender and driver mechanism of the machine is a stationary plate 19 to carry a pair of stationary bending dies 20 and a tag positioning means. Said plate 19 is cut away in its central portion to provide an opening 21 beneath the tag positioning means. Adjustably mounted on said plate 19 are the aforesaid stationary bending dies 20 having at their free end chamfered bending noses 22. Said stationary bending dies are laterally disposed in transversely aligned relation, with their bending noses 22 opposed one to the other in desired spaced apart relation, and so as to overhang the opening

21 of said stationary plate 18. The bodies of said stationary bending dies 20 are provided with elongated slots 23 through which pass the fastening screws 24, which screw into the plate 19 to thus secure the said dies in desired adjusted position. Fixed on said plate 19 to extend forwardly thereon from said stationary bending dies 20 are a pair of guide plates 25, one on each of the side marginal portions of the plate opening 21. Said guide plates 25 are provided at their inner edges with downwardly stepped supporting ledges 26 to carry a tag T, when the latter is inserted between said guide plates 25. The guide plates 25 thus serve to both support the tag T and also to hold the same against lateral displacement during the operation of applying the novel attaching means thereto. Suitably secured upon the upper surfaces of said guide plates 25 are retaining plates 27, which possess laterally projecting portions 28 extending beyond the inner margins of the main body portions of said guide plates 25 so as to overhang said supporting ledges 26. Integrally connected with the inward ends of said retaining plates 27 are rearwardly projecting extensions or arms 29, having at their free ends downwardly projecting stop lugs or tongues 30 to engage and stop the inserted end of the tag T, to thereby operatively position the same over said stationary bending dies 20, all of which will be clearly understood from an inspection of Figure 2 of the drawings more particularly.

The bending noses 22 of the stationary dies 20 are adjusted so as to be disposed beneath the preliminary bender and driver mechanism to operatively coact therewith.

In the operation of the machine, the tag T is inserted in the tag positioning means, with its inner end properly positioned above the stationary bending dies 20, and the article to which the tag T is to be connected is held by the hand of the operator within the plate opening 21 and beneath the bending dies 20 and the inserted tag, as shown in Figures 3 to 8 inclusive. The article to which the tag is to be connected must be of penetrable material, or of interstitial structure calculated to admit of the penetration thereinto of the prongs of the novel attaching means of this invention. For example, scouring devices formed from a pre-formed mass of knitted metallic fabric, such as already above referred to, and indicated in the accompanying drawings by the reference character A, are especially adapted to receive the connection of tag therewith by means of the novel attaching means according to this invention. When, therefore, such an article is held and pressed upwardly through the plate opening 21 and against the underside of the stationary bending dies 20 the operation of the machine will both form

and apply the novel attaching means cooperatively with and to the tag and article in the following manner:—

The wire 31 served by the wire feeding mechanism 17 is also cut or severed by the latter and delivered upon the shoulders 32 of the anvil 15, which is initially outwardly projected in the path of the normally raised bender 12, as shown in Figures 3 and 4. When the severed wire is thus delivered the mechanism operates to lower the bender 12 which bends the wire over the anvil 15 into the staple form 31', as shown in Figures 5 and 6 of the drawings. After the wire is thus bent into staple form to provide the downwardly projecting prongs, the mechanism operates to withdraw the anvil 15, and thereafter to lower the driver 14, which moves or thrusts downwardly the wire staple 31', its prongs being guided by the grooves of the bender 12. As the wire staple 31' is thus downwardly moved, its prongs are caused first to pierce the body of the tag T, and then engage the underlying bending noses 22 of the stationary bending dies 20, so as to be downwardly moved against the same. This movement of the staple prongs in engagement with said bending noses 22 causes the same to be inwardly and downwardly directed and curved, so that the same are caused to penetratingly move into the interstitial body of the article A as it is held beneath the stationary dies and the overlying tag, all as shown in Figures 7 and 8 of the drawings. As thus bent the prongs of the staple 31' form opposed gripping fingers f which are interlocked in the material of the article A, thus serving very efficiently as an attaching connection for uniting the label tag T therewith.

It will be understood that the stationary die arrangement of the device may be variously modified to produce the bending of the prongs of staple 31', in other than the inwardly directed manner above described. For example, the prongs may be outwardly deflected and bent in a desired direction as indicated in Figure 8^A, wherein the modified stationary die 20 is positioned to accomplish such result.

The product of the mechanism, functioning in the manner above described, is a tagged article, the tag of which is positively united thereto so as not to become easily detached therefrom during ordinary commercial handling of the article, and yet the novel form of attachment is such that the tag may be easily removed from the article by the ultimate user of the latter.

Having thus described my invention, I claim:—

1. In a machine for attaching label tags to penetrable articles, the combination with a wire staple forming mechanism and a driver, of stationary bending means beneath

said driver, said bending means having chamfered bending noses beneath which the article may be held, and means to support and position a tag over said bending means whereby operation of said driver thrusts the prongs of a formed staple through said tag into engagement with said bending noses which turn said prongs into penetrating engagement with the article.

2. In a machine for attaching label tags to penetrable articles, the combination with a wire staple forming mechanism and a driver, of an underlying stationary plate having an opening aligned to the path of movement of said driver, a pair of opposed spaced apart stationary bending dies adjustably mounted on said plate, said bending dies having chamfered bending noses overhanging said plate opening and beneath which the article may be held, and means on said plate to support and position a tag over said bending dies whereby operation of said driver thrusts the prongs of a formed staple through said tag into engagement with said bending noses which turn said prongs into penetrating engagement with the article.

3. In a machine for attaching label tags to

penetrable articles, the combination with a wire staple forming mechanism and a driver, of an underlying stationary plate having an opening aligned to the path of movement of said driver, a pair of opposed spaced apart stationary bending dies mounted on said plate, said bending dies having chamfered bending noses at their opposed inner ends to overhang said plate opening and beneath which the article may be held, laterally spaced apart guide-plates on said stationary plate between which a tag may be inserted, and retaining plates on said guide-plates having portions to overhang the inserted tag, said overhanging portions having stop-ports to engage the inserted end of said tag to position the same over the opposed inner ends of said bending dies, all whereby operation of said driver thrusts the prongs of a formed staple through said tag into engagement with said bending noses which turn said prongs into penetrating engagement with the article.

In testimony, that I claim the invention set forth above I have hereunto set my hand this 6th day of November, 1926.

RUSSELL B. KINGMAN