Method of Making Scissors

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Fig. 1.

Fig. 2.

Fig. 3.

Fig. 4.

Fig. 5.

Fig. 6.

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METHOD OF MAKING SCISSORS

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This invention relates to a method of making scissors and, more particularly, to such a method wherein the basic operations are performed on a single blank including both members of a pair of scissors.

In United States Patent No. 2,825,248, which issued March 4, 1958, to the present inventor, there is disclosed an improved method for stamping scissors blanks from a strip of sheet metal stock. That disclosure teaches a method of positioning the blanks relative to one another in such a fashion that a minimum of waste metal results. This is partially due to the novel arrangement of the shank and ring portions of each scissors member. These are shaped so that the curvature of the shank of one scissors member conforms to the curvature of the ring of an adjacent member. The practice of the foregoing method has resulted in a great increase in efficiency in the scissors manufacturing art and has simultaneously resulted in a great decrease in the waste produced while stamping scissors.

In the prior art method as disclosed in the aforementioned patent, each scissors blank consists of a scissors blade and its attached shank and ring handle which, together, form a single scissors member. After stamping these blanks from the strip stock, a number of further operations are required to complete the manufacture of a pair of scissors. For example, the strip stock as it arrives in the plant is normally covered with an oil film and may have considerable dirt and foreign matter adhering to its surface. Thus, the blanks must be cleaned so that later swaging or forging operations will not impair the surface quality of the finished scissors and so that they may later be plated, or otherwise provided with a protective or decorative coating. The cleaning step may involve tumbling in a solution. After swaging each blank to the proper contour of a scissors member, the blank may be plated, then trimmed, the pivot holes punched, and the scissors assembled. The plating step may be performed by either still plating or barrel plating.

The presence in a tumbling barrel of a large number of scissors members, each having a pointed end and a hollow ring end, results in many of the members becoming interlocked by reason of the blade of one member piercing the ring of another. This creates serious drawbacks. In the first place, the members must be untangled prior to performing further operations and this is a time-consuming manual task. Secondly, this interlocking often results in bending of the various members which makes them unsuitable for further use. Thirdly, proper exposure of each member to the cleaning and plating solutions is prevented, causing these operations to be less efficient. It is also important to note that each scissors member is separately handled throughout the manufacturing process and, also, that the members are unsymmetrical, making them difficult to handle by automatic machinery.

It is, therefore, the primary object of this invention to provide an improved method of making scissors. Other objects are to provide such a method wherein the handling required in manufacturing a pair of scissors is substantially reduced; wherein the number of manufacturing operations is reduced; wherein tanging and bending of scissors members during tumbling operations are eliminated; and wherein the scissors members are better suited for placement by automatic feeding, handling and shaping mechanisms.

The manner in which these objects are achieved will be more apparent from the following description, the appended claims and the figures of the attached drawing, wherein:

FIG. 1 is a view of a single blank as cut from the strip of FIG. 1; FIG. 2 is an illustration of the blank of FIG. 2 at a later step in the manufacturing process; FIG. 3 is an illustration of the blank of FIG. 2 at a later step in the manufacturing process; FIG. 4 is a view of a single blank as formed in a still further step in the manufacturing process; FIG. 5 is a front view of a pair of scissors constructed in accordance with this invention; and FIG. 6 is a side view of the scissors of FIG. 5.

In FIG. 1, there is illustrated a strip of sheet metal stock 10 as it appears after partial advancement through the blanking die. The overall layout of the scissors blank as thus formed will be seen to be similar to that illustrated in the above-mentioned patent. However, it is important to note that the blades of each pair of members, which will later be combined to form a single pair of scissors, are not separated from one another. The strip 10 is advanced through a progressive blanking die which sequentially performs the operations illustrated in FIG. 1. First, substantially circular blanks are removed, leaving openings 12 forming the inner edges of the finger loops. Second, the blanking die cuts out the blank including section 14. It will be noted that each blank is produced as the result of two strokes of the die. Removal of the preceding blank has formed the right hand edge of the blank from point A to point B. Accordingly, the die needs only cut the remainder of the periphery along line A', A", B', B". With removal of this blank, only the dotted line need be cut to remove the following blank including section 14', etc. The blanks produced each have a double blade section 14, shank portions 16, 17, and finger loops 18, 20. Speed of production is essentially automated plants as it greatly simplifies the automatic placement of these parts in machines performing subsequent operations. These advantages, as well as others, will become clear from the following description taken together with the illustrations in FIGS. 3 and 4. After producing the blank of FIG. 2, this and all other similar blanks must be cleaned, as by tumbling in a barrel of cleaning solution. After proper cleaning, the blanks may be swaged or forged to an approximation of its final shape. The symmetry of the blanks and the placement of the opposite loops 18, 20 simplifies the automatic feeding of this blank to a swaging press, as by means of alignment pins or fingers inserted therein. The swaged article is illustrated in FIG. 3. It will be noted that the swaging die has formed from the original blank two separate scissors members each having the characteristic contours of a scissors blade, together with its corresponding shank and ring. However, the two members are still intercon-
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In the art, it will also be apparent that a number of variations and modifications may be made in this invention without departing from the spirit and scope thereof. Accordingly, the foregoing description is intended to be illustrative rather than limiting. This invention is limited only by the scope of the following claims.

What I claim as new and desire to secure by Letters Patent of the United States is:

1. The steps in the method of making scissors comprising cutting a series of blanks side by side from sheet metal of the desired thickness, the blanks each comprising a double blade portion having first and second back edges laterally spaced, a generally ring-shaped finger loop at each end thereof, a generally ring-shaped outer convex edge and being connected to one end of the double blade portion at a different one of said back edges by a curved shank bowed in a direction toward the other back edge with a concave inner edge, the blanks being cut from the sheet metal in adjacent relationship on common lines, the inner concave edge of each shank of each blank being cut on a common line and of the same shape as the outer convex edge of a loop of the adjacent blank; shaping each of said blanks to the configuration of a pair of scissors members, said double blade portion including a first blade portion and a second blade portion interconnected by a central web, each of said blade portions terminating in one of said curved shanks; substantially simultaneously removing the central web to separate said blank into a pair of scissors members and pivoting each of said scissors members to form a pivot hole in the shank end of its blade portion; and pivotally interconnecting pairs of pierced members to form scissors.

2. The steps in the method of making scissors comprising cutting a series of blanks side by side from sheet metal of the desired thickness, the blanks each comprising a double blade portion having first and second back edges laterally spaced, a generally ring-shaped finger loop at each end thereof, each having an outer convex edge and being connected to one end of the double blade portion at a different one of said back edges by a curved shank bowed in a direction toward the other back edge with a concave inner edge, the blanks being cut from the sheet metal in adjacent relationship on common lines, the inner concave edge of each shank of each blank being cut on a common line and of the same shape as the outer convex edge of a loop of the adjacent blank; tumbling a plurality of said blanks in a cleaning solution to remove surface impurities therefrom; removing said blanks from said cleaning solution; shaping each of said blanks to the configuration of a pair of scissors members, said double blade portion including a first blade portion and a second blade portion interconnected by a central web, each of said blade portions terminating in one of said curved shanks; plating the shaped blanks; substantially simultaneously removing the central web to separate said blank into a pair of scissors members and pivoting each of said scissors members to form a pivot hole in the shank end of its blade portion; and pivotally interconnecting pairs of pierced members to form scissors.

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