# United States Patent

Sklar

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## [54] TOWEL CLAMP


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[73] Assignee: **J. Sklar Mfg. Co., Inc.**, Long Island City, N.Y.



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[52] **U.S. Cl.** ..... **128/321**, 128/346

[51] **Int. Cl.** ..... **A61b 17/28**, A61b 17/08

[58] **Field of Search** ..... 128/321, 346



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*Primary Examiner*—Channing L. Pace

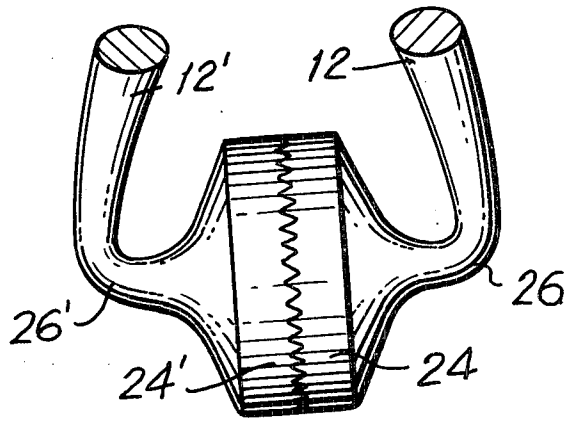
*Attorney*—Amster & Rothstein



[57] **ABSTRACT**

The method of manufacture for a surgical towel clamp or the like is described in terms of the steps of the method to produce such an article in stainless steel from its initial condition as steel splits. The product of the method provides enlarged, opposed jaw ends for a scissorlike instrument, the jaw ends being disposed out of the plane of the instrument.


**1 Claims, 12 Drawing Figures**



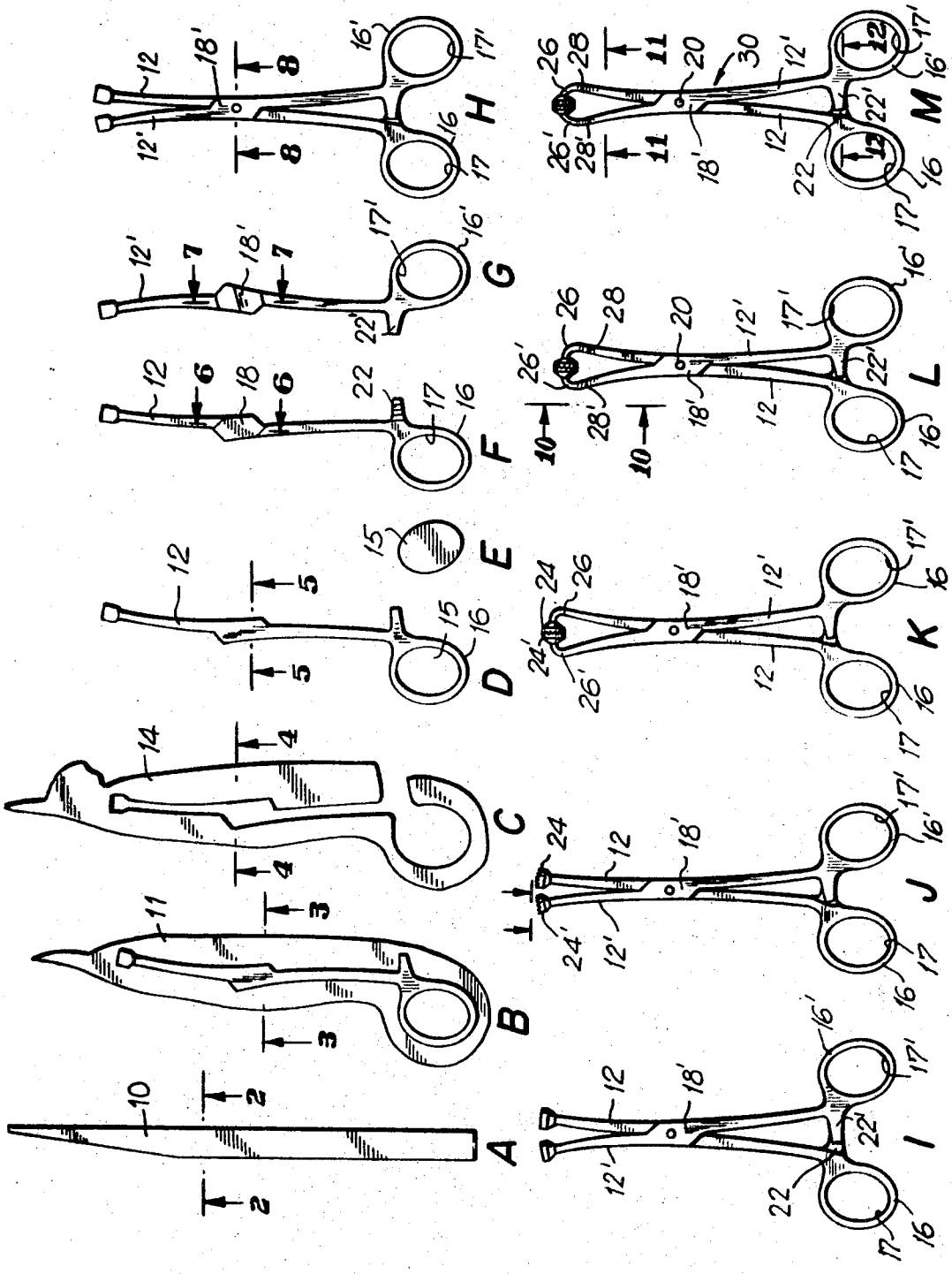



FIG. 1

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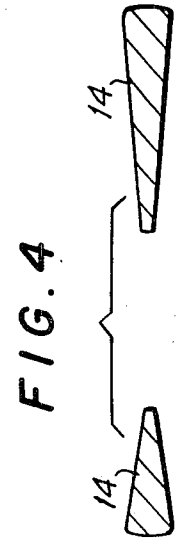



FIG. 4

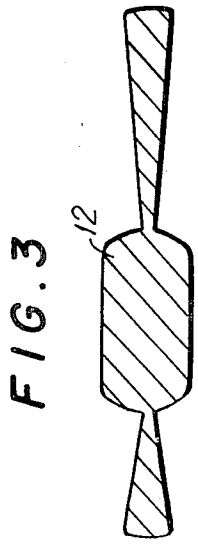



FIG. 3

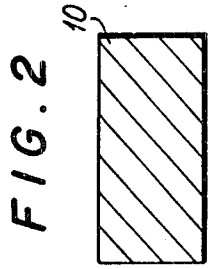



FIG. 2

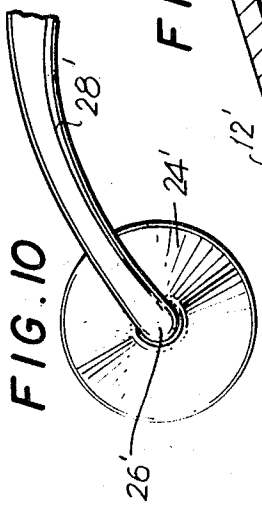



FIG. 10

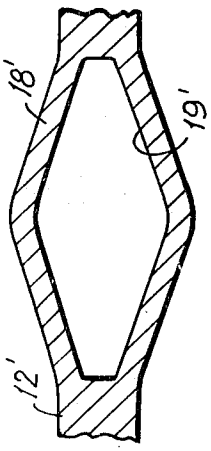



FIG. 7

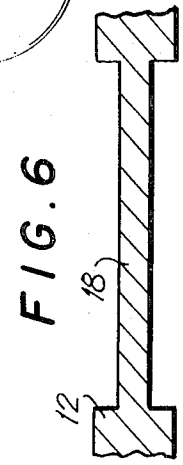



FIG. 6

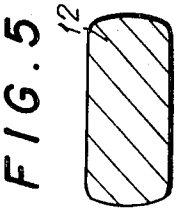



FIG. 5

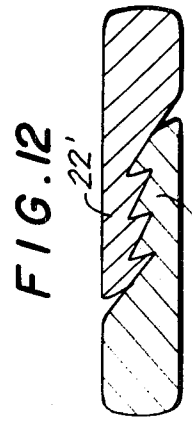



FIG. 12

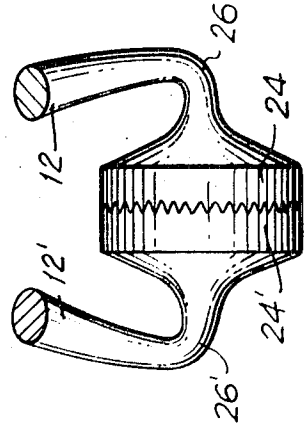



FIG. 11

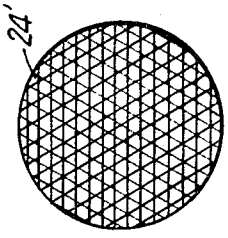



FIG. 9

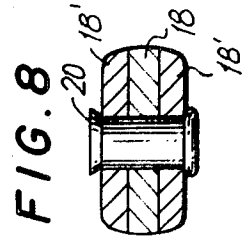



FIG. 8

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# TOWEL CLAMP

This invention relates primarily to methods of manufacture, and more particularly to the method of manufacture for a stainless steel towel clamp or the like and the product thereof.

With the advent of paper surgical towels and drapes, it has become advantageous to provide a surgical towel clamp which is conducive to sterilization procedures and which contacts the article to be held with a large gripping area. Devices that are being used at the present time terminate at their distal ends in sharp facing points and are therefore less satisfactory. The large gripping area is less likely to perforate the article being held than the sharp facing points of presently existing surgical towel clamps.

Accordingly, a primary object of the present invention is to provide a method of manufacture for a surgical towel clamp or the like which is both simple and efficient.

A further and more particular object is to provide a method of manufacture which produces a stainless steel surgical towel clamp conducive to sterilization.

A still further object is to provide a surgical towel clamp that includes a large gripping area.

These and other objects of the present invention are accomplished in accordance with one illustrative embodiment of the present invention by a method of manufacture which includes the steps of forming a pair of elongated steel splits, forging the splits into raw forgings with flashing, trimming the flashing, piercing the forgings to form fingerholes, milling the forgings to provide a pair of matable scissor arms having matable finger piece locking means, matable rivet seats and rough jaw ends, assembling the milled scissor arms by mating the rivet seats, riveting the scissor arms through the rivet seats, cold heading the rough jaw ends, serrating the end surfaces defined by the jaw ends, forming bends near the jaw ends so that the end surfaces defined by the jaw ends are contacting and facing each other, bending the steel proximate the previously mentioned bends such that the jaw ends are removed from the plane of the instrument, hardening the steel and polishing the steel to provide a stainless steel towel clamp. The steps of the method are performed using conventional metal-working apparatus and by use of the above method a stainless steel towel clamp is provided with a large gripping area.

The above brief description, as well as further objects, features, and advantages of the present invention will be more fully appreciated by reference to the following detailed description of the preferred, but nonetheless illustrative embodiment when taken in conjunction with the accompanying drawings, wherein:

FIG. 1 represents the various steps of the method of manufacture according to the present invention, the steps being lettered A through M;

FIG. 2 is a cross-sectional view of the steel split of FIG. 1A taken along the line 2—2 thereof;

FIG. 3 is a cross-sectional view of the raw forging with flashing of FIG. 1B taken along the line 3—3 thereof;

FIG. 4 is a cross-sectional representation of the trimmed flashing of FIG. 1C taken along the line 4—4 thereof;

FIG. 5 is a cross-sectional representation of the trimmed and pierced forging of FIG. 1D taken along the line 5—5 thereof;

FIG. 6 is a cross-sectional representation of the rivet seat section after milling of a first scissor arm produced by the method of the present invention, the section being taken along the line 6—6 of IF,

FIG. 7 is a cross-sectional representation of the rivet seat section after milling of a second scissor arm produced by use of the method according to the present invention, the section being taken along the line 7—7 of FIG. 1G;

FIG. 8 is a cross-sectional representation of the riveted sections of mating scissor arms produced by the method of the present invention, the section being taken along line 8—8 of FIG. 1H;

FIG. 9 is an end view representation of a serrated jaw end surface produced according to the method of the present invention and after step 1J thereof;



FIG. 10 is a side view of the jaw end portion of a hardened and lined-up instrument produced according to the present invention;

FIG. 11 is a sectional view of the jaw end portion of a surgical towel clamp produced according to the method of the present invention, the section being taken along line 11—11 of FIG. 1M; and,

FIG. 12 is a sectional representation taken along the line 12—12 of FIG. 1M showing particularly the fingerhole locking means produced according to the method of the present invention.

Referring specifically to the drawings, the steps of the method according to the present invention include forming a pair of elongated steel splits **10**, one of which is shown in FIG. 1A and other split (not shown) being matched thereto. By conventional metal-working techniques, raw forgings **11** are formed (FIG. 1B), and the flashing **14** trimmed therefrom to provide trimmed forgings **12, 12'**, one of which is shown in FIG. 1D. The portion **15** of the forging **12** in the area defined by the finger piece **16** is pierced from the forging **12** to form fingerhole **17** as shown in FIG. 1F.

At this stage of the method, the matched forgings **12, 12'** of FIGS. 1F and 1G are milled to provide matable first and second scissor arms, the first of which is provided with a finger piece locking extension **22** defining a ratcheted surface thereon, and the second of which is milled to provide a finger piece locking extension **22'** defining a ratcheted surface matable with the surface defined by extension **22** (See FIG. **12**). The scissor arms **12, 12'** are further milled to provide matable rivet seat sections **18, 18'**. As seen more clearly in FIGS. **6** and **7**, the matable rivet seat sections for scissor arms **12,12'** are respectively male and female rivet seat sections **18, 18'**, with the male rivet seat section **18** intended to be disposed into the receiving cavity **19'** defined by the female rivet seat section **18'**. Also by conventional metal-working techniques, the mating first and second scissor arms **12, 12'** are interlocked and riveted, with the female rivet seat section **18'** flattened to produce the cross-sectional arrangement shown more particularly in FIG. **8**. In the arrangement of FIG. **8**, the rivet **20** is peened to hold the rivet seat sections **18, 18'** in a rotatable engagement such that the male rivet seat section **18** is rotatable relative to the female rivet seat section **18'**.

As depicted in FIG. 1I and 1J, the forged jaw ends are cold headed and serrated to form the jaw ends **24, 24'** (FIG. **9**). Such jaw ends provide a large gripping area and define a suitable gripping surface usable in conjunction with any of the disposable surgical towels and cloths in common use. The mated steel scissor arms **12, 12'** are then bent at **26, 26'** to cause the serrated surface defined by jaw ends **24, 24'** to mate with each other for firm gripping of surgical towels, cloths and the like (FIG. **11**). The scissor arms **12, 12'** are further bent at **28, 28'** (FIG. **10**) so that the gripping surfaces defined by jaw ends **24, 24'** are disposed out of the plane of the instrument for convenience of the surgeon or other user in reaching surgical towels or cloths in the surgical cavity with increased convenience. At this point of the method, the towel clamp is hardened, lined up and polished to provide a finished towel clamp.

In accordance with the foregoing distribution of a method of producing a surgical towel clamp or the like, a clamp as shown particularly in FIGS. **1M, 10, 11** and **12** is provided to include a pair of opposed and matable scissor arms **12, 12'** each arm defining a rivet seat section, a finger piece locking extension, finger pieces and jaw ends. The first scissor arm includes a male rivet seat section insertable to a female rivet seat section included in the construction of the second scissor arm. The mating of the rivet seat sections is rotatably fixed by a rivet through the respective rivet seat sections of the scissor arms to obtain scissor action. The finger piece locking extensions, as shown particularly in FIG. **12**, are constructed to define matable ratchet surfaces to provide a convenient locking means for the surgical towel or like article being held by the towel clamp. The jaw ends are cold headed, as described previously, to provide large, serrated and opposed

mating surfaces for the actual gripping function of the instrument. By particular reference to FIG. **10**, it may be seen that the gripping surfaces defined by the jaw ends are constructed to be disposed in a plane other than that of the instrument to provide convenience in the use thereof.

What is claimed is:

**1**. A surgical towel clamp for clamping disposable surgical towels or the like comprising a pair of jaw ends, a pair of opposed, matable scissor arms, each scissor arm including attachment means for attaching said scissor arms and said scissor arms arranged and adapted to pivot relative to each other about an axis defined by said attachment means, said jaw ends having thereon enlarged, serrated, opposed jaw end surfaces integral with said scissor arms in approximately a common first plane and said jaw ends being disposed in a second plane approximately perpendicular to said first plane, said second plane being offset with respect to the common plane of said scissor arms and said enlarged surfaces preventing perforation of said disposable surgical towels.

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