

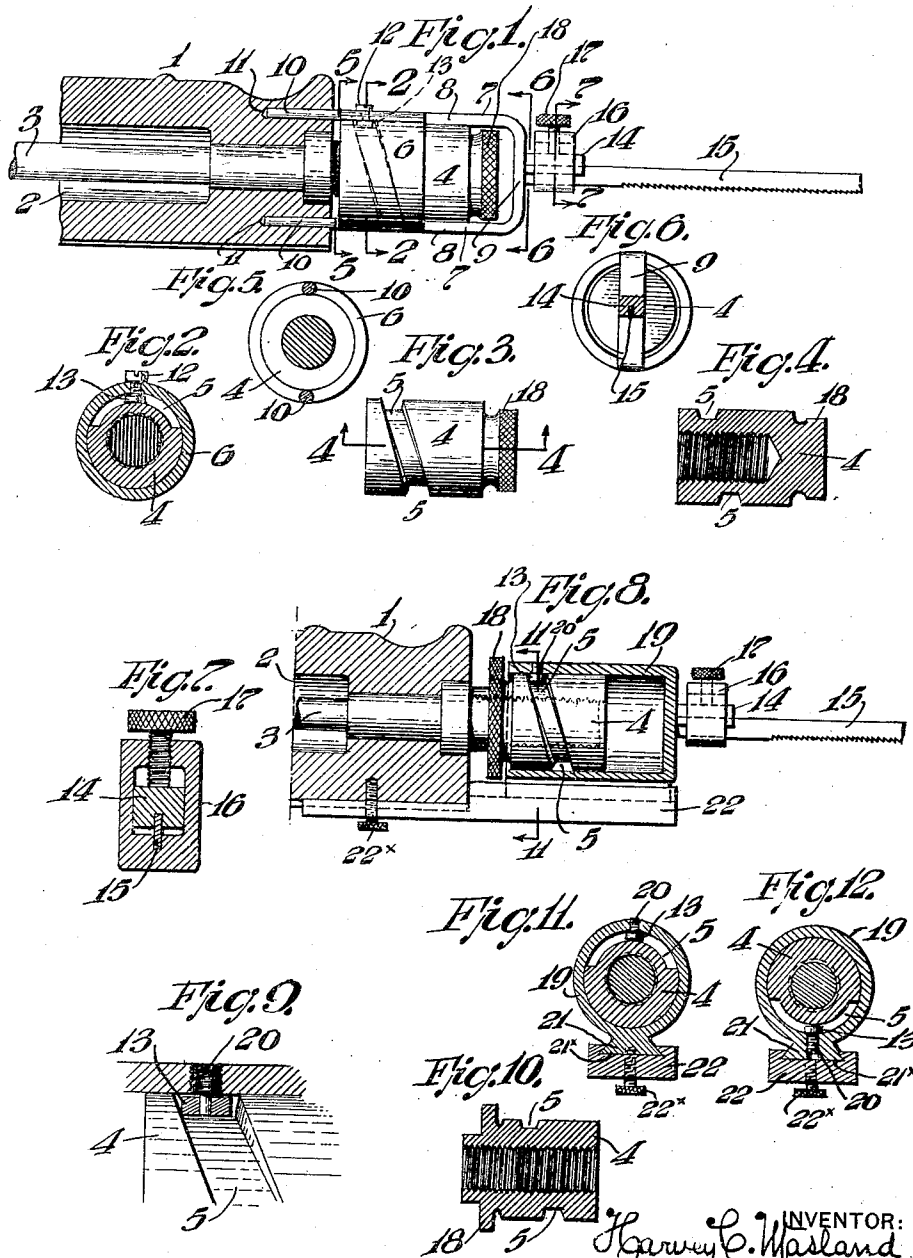
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SURGICAL SAW

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UNITED STATES PATENT OFFICE.

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SURGICAL SAW.

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To all whom it may concern:

Be it known that I, HARVEY C. MASLAND, a citizen of the United States, residing in the city and county of Philadelphia, State of Pennsylvania, have invented a new and useful Surgical Saw, of which the following is a specification.

My invention consists of a surgical saw embodying a rotatable member which is adapted to be operated by a suitable shaft in the handle of the device, and a sliding member engageable with said rotatable member adapted to receive therefrom reciprocating motions which latter are imparted to a saw or saw blade which is attached suitably with said sliding member.

It consists also of details of construction as will be hereinafter set forth.

The invention is satisfactorily illustrated in the accompanying drawing, but the important instrumentalities thereof may be varied, and so it is to be understood that the invention is not limited to the specific details shown and described, as long as they are within the spirit or scope of the invention.

Figure 1 represents a partial side elevation and partial longitudinal section of a surgical saw embodying my invention.

Figure 2 represents a transverse section on line 2—2 Figure 1.

Figure 3 represents a side elevation of a detached member of the device.

Figure 4 represents a longitudinal section of the member shown in Figure 3.

Figure 5 represents a transverse section of a portion on line 5—5 Figure 1.

Figure 6 represents a transverse section on line 6—6 Figure 1.

Figure 7 represents a transverse section on line 7—7 Figure 1, on an enlarged scale.

Figure 8 represents a longitudinal section of another embodiment of the invention as a preferred form thereof.

Figure 9 represents a view of a portion of Figure 8 on an enlarged scale.

Figure 10 represents a longitudinal section of the stock shown in Figure 8, as removed therefrom.

Figure 11 represents a transverse section on line 11—11 Figure 8.

Figure 12 represents a transverse section of a modification of the construction shown in Figure 11.

Similar numerals of reference indicate corresponding parts in the figures.

Referring to the drawings.

1 designates a portion of the handle of the tool, the same having therein a bore 2 in which is mounted the driving shaft 3 which is adapted to receive power from any suitable source by means say of a flexible shaft not necessarily shown.

To the forward end of the shaft 3 is screwed or otherwise secured the cylindrical shaped stock 4 which is adapted to be rotated by said shaft, said stock having in its periphery the spiral groove 5 which extends continuously around the same.

Freely surrounding said stock is the sleeve 6 to whose forward end is secured the longitudinally extending yoke 7 whose legs 8 and crown 9 freely encircle the portions of the stock forward of said sleeve.

To the rear end of said stock are the longitudinally extending legs 10 which are fitted freely in longitudinally extending openings 11 in the forward portion of the handle 1.

Connected with the sleeve 6 by the screw 12 is the roller 13 which latter occupies a position on the inner circumference of said sleeve and enters freely the spiral groove 5 of the stock 4, the shank of said screw forming the bearings for said roller.

Connected with the crown 9 of the yoke 7 is the arm 14 to which is attached the saw 15, said arm and heel end of the saw being encircled by the clamp 16 which is provided with the set screw 17, the latter being adapted to tighten against the adjacent face of said arm, whereby the saw is firmly secured in position on said arm and consequently on the yoke 7.

The stock 4 has on its terminal the milled rim 18 whereby said stock may be conveniently tightly screwed to the operating shaft in assembling parts of the device, and conveniently unscrewed therefrom in disassembling said parts.

Figures 8, 9, 11 and 12 show a preferred form of my invention. In this case the arm 14 is connected with the front wall of a cylinder 19 on whose inner circumference is the roller 13 which is mounted on the screw stud 20 which in Figures 8, 9 and 10 is at the top of said cylinder, while in Figure 12, said roller is carried by a similar stud 20 at the bottom of said cylinder.

To the lower side of said cylinder 19 is connected the dovetailed neck 21 which is slidably fitted in the dovetailed groove 21^x

in the upper side of the bracket 22, the latter being connected with the side of the handle by the screw 22* and extends forward therefrom beneath the cylinder 19 and assists to sustain the same. In this construction, the milled rim 18 is on the rear end of the stock 4 for the same purpose as hereinbefore described.

The operation is as follows:—

10 Power is applied to the shaft 3 and transmitted to the stock 4, whereby the latter is rotated. Owing to the spiral groove 5 and roller 13 therein longitudinal sliding motions are imparted by said stock to said roller
15 to the sleeve 6 and yoke 7, and consequently to the saw, the latter thus receiving its reciprocations. The legs 10 carried by the sleeve 6 move in and out of the openings 11 in the handle 1, while being supported thereon and thus the saw is operated true. The same
20 result is produced by the cylinder 19 which receives longitudinally sliding motions by means of the rotary stock 4 through the media of the spiral groove 5 in said stock, and the roller 13 on the cylinder, the latter
25 being guided in its motions by the bracket 22.

In assembling the instrument, the stock is screwed on the driving shaft until the
30 legs 10 properly occupy the openings 11 and the stock is tightly screwed to the driving shaft or where the cylinder 19 is employed, the stock is screwed tightly on the driving shaft and said cylinder adjusted on the
35 bracket, the latter being properly seated on the handle and secured thereto by the screw 22*.

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

1. A device of the character stated comprising in combination, a handle, a driven shaft arranged axially thereof and projected forwardly therefrom which projected
45 end is screw-threaded, a stock adjustably fitted to said screw-threaded portion, which stock is provided with a cam-groove, a member provided with a roller for cooperative relation with said cam-groove, an arm fixed
50 to said member, a clamp fitted over said

arm, a saw fitted within said clamp and against said arm, and a set-screw for securing said clamp, arm and saw in fixed relation.

2. A device of the character stated comprising in combination, a handle, a driven shaft arranged axially thereof and projected forwardly therefrom which projected end is screw-threaded, a stock having a milled rim
55 adjustably fitted to said screw-threaded portion, which stock is provided with a cam-groove, a member provided with a roller for cooperative relation with said cam-groove, an arm fixed to said member, a clamp fitted
60 over said arm, a saw fitted within said clamp and against said arm, and a set-screw for securing said clamp, arm and saw in fixed relation.

3. A device of the character stated comprising in combination, a handle, a driven shaft arranged axially thereof and projected forwardly therefrom which projected end is screw-threaded, a stock adjustably fitted
70 to said screw-threaded portion, which stock is provided with a cam-groove, a member provided with a roller for cooperative relation with said cam-groove, an arm fixed to said member, a clamp having a squared opening fitted over said arm, a saw fitted
75 within said clamp and against said arm, and a set-screw for securing said clamp, arm and saw in fixed relation.

4. A device of the character stated comprising in combination, a handle, a driven shaft arranged axially thereof and projected forwardly therefrom which projected end is screw-threaded, a cylindrical and tapped
80 stock adjustably fitted to said screw-threaded portion, which stock is provided with a cam-groove, a member provided with a roller for cooperative relation with said cam-groove, an arm fixed to said member, a clamp fitted over said arm, a saw fitted
85 within said clamp and against said arm, and a set-screw for securing said clamp, arm and saw in fixed relation.

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Witnesses:

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