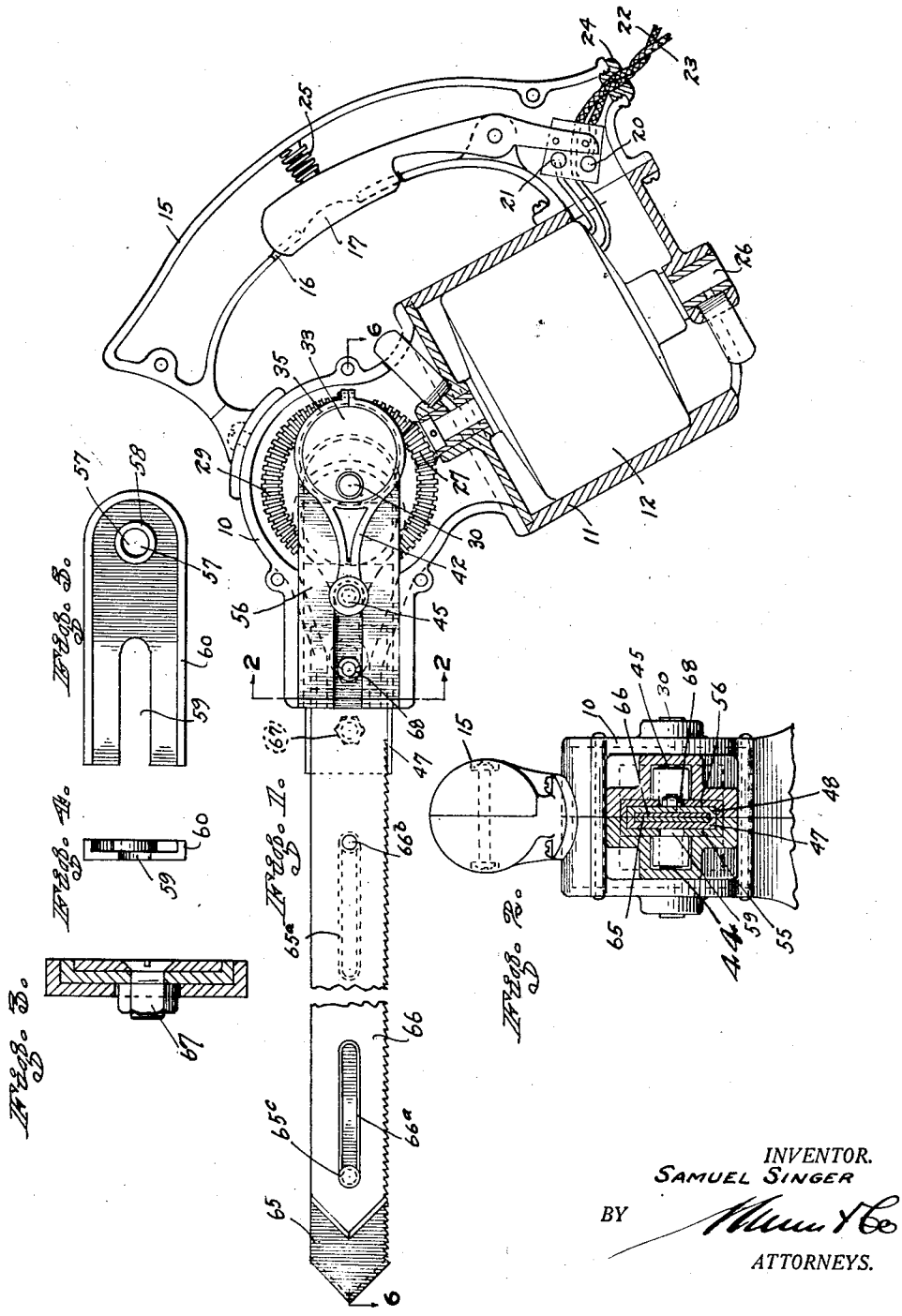
Sept. 3, 1929. S. SINGER 1,726,863

CUTTING INSTRUMENT

Filed March 15, 1926 2 Sheets-Sheet 1



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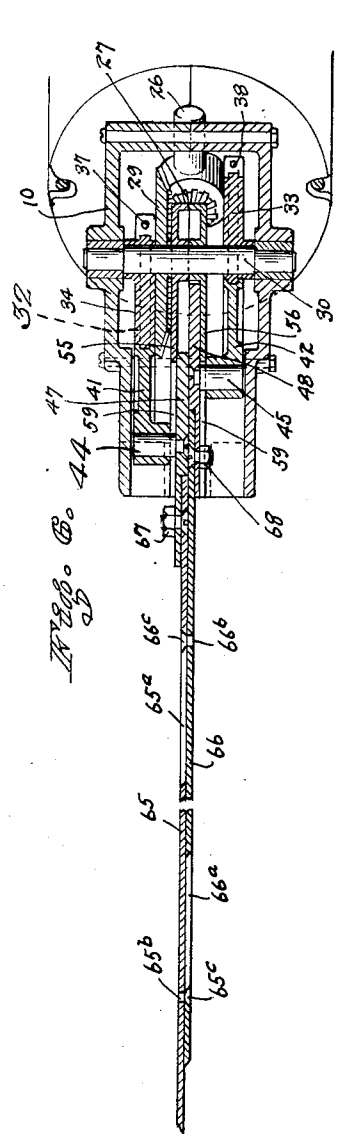

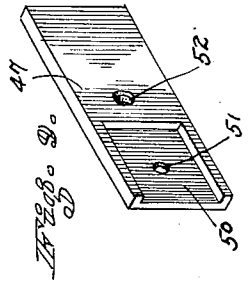

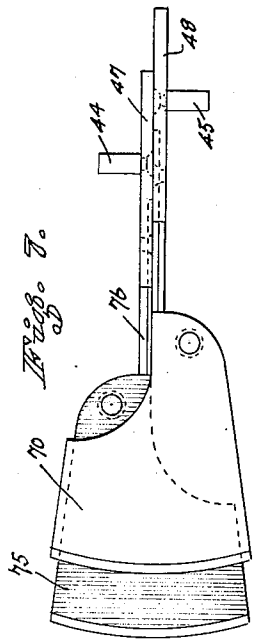

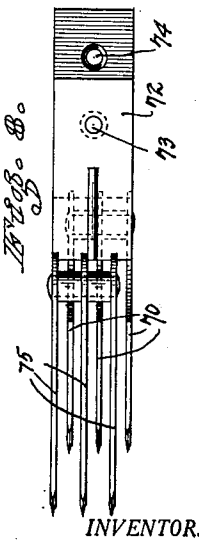

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Patented Sept. 3, 1929. 1,726,863

UNITED STATES PATENT OFFICE.

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CUTTING INSTRUMENT.

Application filed March 15, 1926. Serial No. 94,826.

This invention relates to tools and a tool constructed in accordance with my invention is particularly adapted for use by butchers, although it is to be understood that it has utility in many arts.

An object of my invention is the provision of a double acting multiple instrument adapted to simultaneously operate in opposite directions a plurality of tools such as saws or choppers.

With the foregoing objects in view, together with such other objects and advantages as may subsequently appear, this invention resides in the construction and arrangement of parts hereinafter described and claimed, and illustrated in the accompanying drawings, in which:

Figure 1 is a side elevation partly in section of a device constructed in accordance with my invention.

Figure 2 is a vertical section taken on line 2—2 of Figure 1.

Figure 3 is a vertical section, showing the relative positions of a blade, a blade carrier and a guide for the blade carrier.

Figure 4 is an end view of Figure 5.

Figure 5 is a plan view of a guide employed in the device shown in Figure 1.

Figure 6 is a horizontal section taken on line 6—6 of Figure 1.

Figure 7 is a side elevation of a plurality of choppers which may be employed in the instrument shown in Figure 1 in lieu of the saw shown in the instrument in Figure 1.

Figure 8 is a plan view of Figure 7, the blade carriers however being omitted, and

Figure 9 is a perspective view of a blade carrier employed in my device.

Referring to the drawings for more detailed description thereof, the numeral 10 indicates a casing to which is secured a casing 11 which encloses an electric motor 12. A handle 15 is secured at its upper end to the casing 10 and at its lower end to the motor casing 11. The handle 15 is hollow and is provided with an aperture 16 at its interior side to allow a switch lever 17 to be partly inside and partly outside of the handle.

It will be readily seen that the switch lever 17 is operable by the hand that grasps the handle 15. The lever 17 is adapted to electrically bridge the terminals 20 and 21 when pressed toward the outer part of the handle, and thereby complete the motor circuit of which the wires 22 and 23 are a part, and which pass through a button 24 screwed into the lower end of the handle. The lever 17 is normally held in such position by the coiled spring 25, that the electrical circuit of the motor is open.

The motor 12 is mounted on a shaft 26 on the inner end of which is mounted a bevel gear 27, which meshes with bevel gear 29, as shown in Figure 6. The rotation of the shaft 26 is therefore effective, through the rotation of the bevel gear 27, to rotate the gear 29. The gear 29 is fixedly mounted on a shaft 30 which is journaled in the casing 10. The shaft 30 will therefore be rotated when the gear 29 is rotated.

Eccentrics 32 and 33 are fixedly mounted on the shaft 30. The eccentrics 32 and 33 will therefore be rotated by the rotation of the shaft 30, and will impart to straps 34 and 35, in which they are respectively slidably mounted, an irregular motion which is resolved into a back and forth motion. The circular straps 34 and 35 are split as shown at 37 and 38 in Figure 6, so that they may be removed from their respective eccentrics. The circular straps 34 and 35 are respectively provided with forwardly projecting arms or extensions 41 and 42. The extension 42 is shown in side elevation in Figure 1.

The extensions 41 and 42 respectively carry stub shafts 44 and 45 at their forward ends. These stub shafts are shown in Figure 6. The stub shafts 44 and 45 respectively carry blade carriers 47 and 48 respectively. The blade carriers 47 and 48 are of the structure shown in Figure 9, this structure showing the blade carriers to be rectangular and to have a recess 50 in one face thereof, and to extend from near the center of the blade to one end thereof.

The structure further shows a transverse aperture 51 through the blade in the recessed portion thereof and also shows an aperture 52 at the center of the blade. Recesses 52 are provided for the reception of the stub shafts 44 and 45. The blade carriers 47 and 48 are disposed adjacent each other with the recesses 50 of both on the inside. These blade carriers 47 and 48 slide in guides 55 and 56 respectively. The guides 55 and 56 are of the form shown in Figures 4 and 5, being rounded at one end as shown in Figure 5, and being provided each with an aperture 57 encircled by boss 58. The guides are also each provided with a slot 59 extending inwardly from that end which is opposite

the rounded end. The guides are also provided with a flange 60 extending from one face thereof and at right angles thereto. The flanges 59 of the guides extend around them with the exception of those into which the slots 59 extend. The guides 55 and 56 are mounted on the shaft 30 which passes through apertures 57 of the guides. The guides 55 and 56 have other flanges 60 contacting with each other, the bosses 58 of the guides also contacting with each other as shown in Figure 6.

The blade carriers 47 and 48 slide respectively in the guides 55 and 56. Saw blades 65 and 66 are respectively secured to the blade carriers 47 and 48 by means of nuts and bolts 67 and 68. The saws 65 and 66 are respectively provided with apertures 65^a and 66^a. Blade 65 is provided with a pin 65^b having a notched head 65^c. The pin 65^b passes through the slot 66^a and the head 65^c engages the outer face of the blade 66. The pin 65^b thus holds the saw blades 65 and 66 together while permitting relative motion of the blades by reason of the fact that the pin 65^b slides in the slot 66^a. The blade 66 is provided with a pin 66^b having a notched head 66^c, which is adapted to slide in the slot 65^a and to contact with the outer face of the blade 65. It will thus be seen that the pins 65^b and 66^b hold the saw blades together.

The two blades 65 and 66 are pointed as shown in the drawing and the front and intermediate sections are entirely unobstructed which allows the blades to be thrust into a body of meat to the depth of a bone concealed therein and to become operative on the bone without seriously injuring or exposing the meat.

The saws 65 and 66 may be replaced by choppers or sets of choppers. Figures 7 and 8 show two groups of choppers, one group of which may be secured to the blade carrier 47, the other group being secured to the blade carrier 48 as shown in Figure 7. Figure 8 shows a group of choppers comprising chopping blades 70 which are secured to a plate 72. The plate 72 is provided with apertures 73 and 74, the former of which may be engaged by a nut and bolt 68, and the latter of which may be engaged by stub shaft or pin 45. Figures 7 and 8 also show another group of choppers comprising chopping blades 75, which are secured to a plate 76 which is identical with the plate 72 carrying choppers.

It will be seen that in the operation of the device the saw blades 65 and 66 reciprocate and that the motions are opposite each other, the eccentrics 32 and 33 being set to provide such an effect. The two sets of choppers illustrated will also have opposite motions and will reciprocate rectilinearly.

I claim:

A hand saw of the character described comprising two saw blades arranged adjacent one another, means for maintaining the saw blades in intimate sliding contact, a handle for the saw blades having means associated therewith for rectilinearly guiding the blades and means for reciprocating the same in opposite directions, the two saw blades being pointed at the front ends and being unobstructed through the major portions thereof so as to allow the same to be thrust into a body of meat to the depth of a bone concealed therein and to become operative on the bone.

SAMUEL SINGER.