

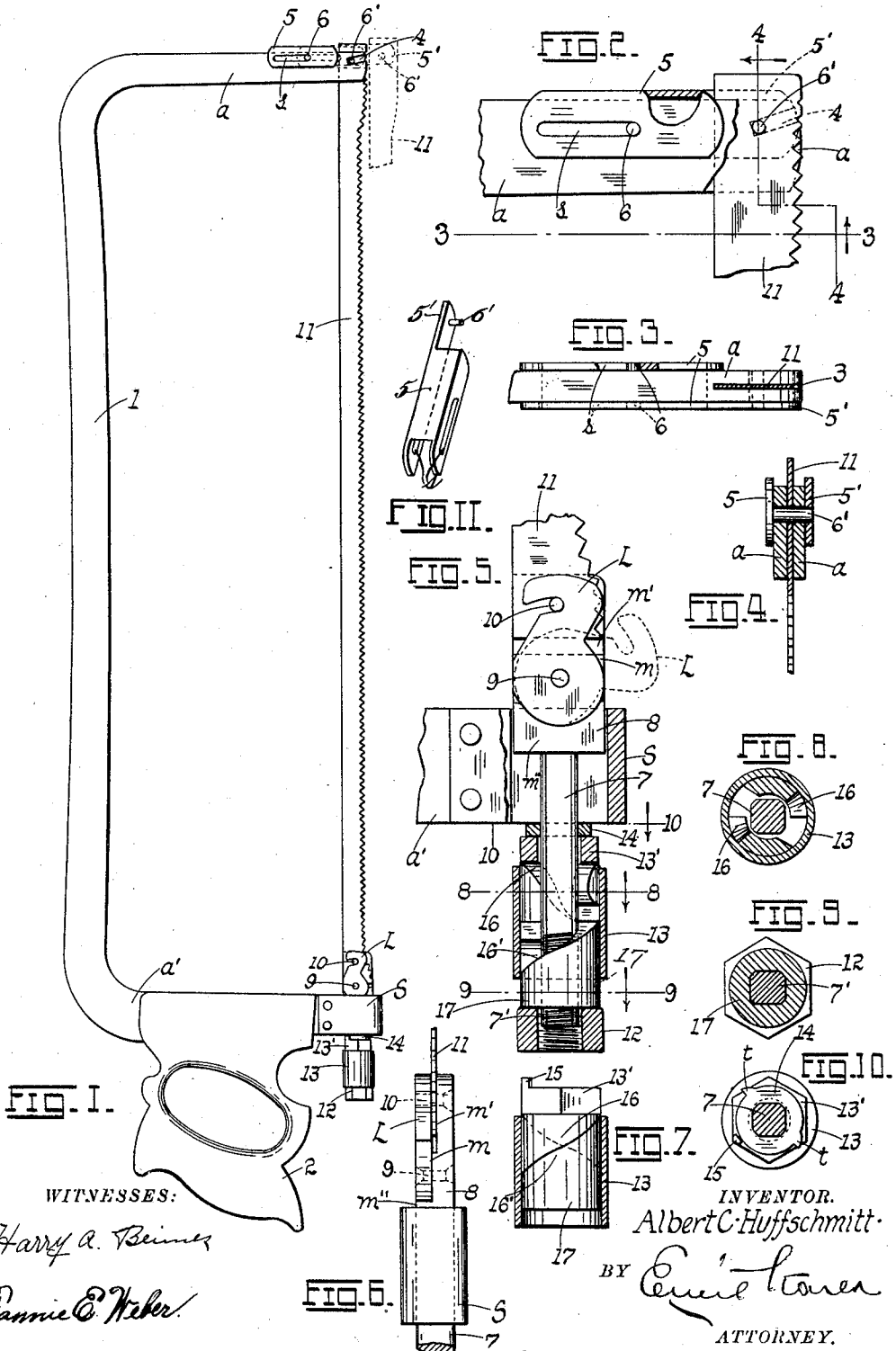
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SAW.

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To all whom it may concern:

Be it known that I, ALBERT C. HUFFSCHMITT, citizen of the United States, residing at St. Louis, State of Missouri, have invented certain new and useful Improvements in Saws, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part hereof.

My invention has relation to improvements in saws; and it consists in the novel details of construction more fully set forth in the specification and pointed out in the claims.

In the drawings, Figure 1 is a plan of the saw with my improvements; Fig. 2 is an enlarged plan of the terminal of the outer arm of the frame, and the end of the blade anchored thereto, parts being broken away; Fig. 3 is a section on the line 3—3 of Fig. 2, looking upward; Fig. 4 is a longitudinal section through the blade and cross-section through the saw-frame on the line 4—4 of Fig. 2; Fig. 5 is an enlarged combined plan and section of the inner blade-securing member and tension device expanded, and the strap in which the securing member is mounted; Fig. 6 is an edge view of the strap and the head of the blade-securing member projecting beyond the same; Fig. 7 is a combined section and elevation of the quick-acting tension device in its contracted position; Fig. 8 is a cross-section on the line 8—8 of Fig. 5; Fig. 9 is a cross-section on the line 9—9 of Fig. 5; Fig. 10 is a cross-section on the line 10—10 of Fig. 5; and Fig. 11 is a perspective of the anchor piece to which the outer end of the saw-blade is secured.

The object of my invention is to provide a saw from the frame of which the blade may be instantly removed and as readily and quickly attached and proper tension imparted thereto, the invention being specifically directed to the securing and tightening means by which these objects are respectively accomplished.

The advantages of the invention will be fully apparent from a detailed description thereof which is as follows:—

Referring to the drawings, 1 represents a conventional butcher's saw frame, and 2 the handle therefor as well understood in the art. The outer member or arm *a* of the frame is provided with a terminal open slot or slit 3 disposed in the plane of the frame, said slot being intersected by a recess 4 in-

clined slightly outward and to the axis of the blade as presently to be seen. Loosely embracing the outer edge and side of the member *a*, and free to slide thereover is a channel piece or anchor 5, the sides of the channel being provided with longitudinally disposed slots *s, s*, traversed by the ends of a pin 6 passed through the arm *a*, one of the sides (the outer one) of the channel being formed into an extension or lobe 5' whose inner face has projecting therefrom a blade-securing or anchoring pin 6' adapted to be received by the recess 4 when the end of the blade passed over said pin is received by the slot 3.

Secured to the free end of the opposite arm *a'* of the frame is a U-shaped strap or clamp *S*, a sufficient space or passage-way being left between the end of the arm *a'* and the bend in said strap to receive an adjustable stem 7 whose outer screw-threaded portion 7' projects outwardly from the arm *a'*, and whose opposite end terminates in a flat head 8 enveloped by the strap *S* and projecting toward the arm *a*. One of the faces of the head 8 is recessed so as to leave a central face or section *m* offset from the terminal face *m'*, the bottom section *m''* being in turn offset from the section *m*. The section *m* is provided with a stud 9 about which swings a latch *L* of a thickness equal to the offset between the sections *m, m''*, whereby the outer face of the latch is flush with said section *m''*. The section *m'* is provided with a pin 10 adapted to be passed through a hole at the inner end of the blade 11, the thickness of the blade corresponding substantially to the depth of the offset between the faces *m, m'*, said offset being improvised specially to accommodate the blade as the latter is passed over the pin 10, after which the hooked end of the latch is swung over the pin to hold the blade in place. The blade being passed with one end over the pin 6' of the slide 5 and forced into the slot 3, and the opposite end of the blade being secured to the pin 10 with the locking latch swung over the pin, it now remains to tighten or impart the proper stretch or tension to the blade, this being accomplished quickly by the following mechanism:—As stated before, the stem 7 (which is polygonal in cross-section) with its head 8 is freely adjustable in the strap *S*, and when the inner end of the blade is being passed over the pin 10, the latter is adjusted up to and opposite the

hole in the blade by a turn or two of the nut 12 operating over the outer screw-threaded terminal 7' of the stem, said nut bearing against the adjacent end of a sleeve or casing 13 freely rotatable about the stem, the opposite end of the sleeve being provided with a head 13' adapted to be seized by a wrench or equivalent tool. Interposed between the head 13' and the strap S, and free to slide along the stem is a washer 14, said washer however being incapable of rotation about the stem, the passage-way of the washer being polygonal to conform to the cross-section of the stem. The washer is provided with two peripheral projections or shoulders *t, t*, between which plays a lug or finger 15 formed on the outer edge of the head 13', said shoulders arresting the finger and hence limiting the rotation of the sleeve 13 in either direction. Formed on or secured to the inside of the sleeve (and free to rotate with the sleeve about the stem 7) is a spiral formation or thread 16 having a high-pitch with which coöperates a ring 17 having a similar formation 16' said ring having however a polygonal passageway for the reception of the polygonal stem 7, so that the ring while free to traverse the stem longitudinally can not rotate thereon. The spiral formations between the members 16 and 17 being of high pitch, it is apparent that with a turn of the sleeve 13 in one direction through an arc defined by the space between the shoulders *t, t*, the ring 17 will be forced outwardly until the spiral formations of the parts 16, 17 are brought practically end to end (Fig. 5), and by a turn of the sleeve in the opposite direction, the ring 17 will be free to return to its original position, or toward the head 13' (Fig. 7). The ring 17 thus operates as a non-rotatable nut, merely sliding along the stem 7 in either direction (according to the direction of rotation of the sleeve), the throw of the ring being considerable for a very slight turn of the sleeve 13 on account of the high pitch of the spirals 16, 16'. It is obvious therefore that by a slight turn of the sleeve 13 in proper direction, and after the blade has been attached to the pins 6' and 10, the ring 17 may be quickly forced outwardly against the nut 12 and the proper tension or stretch may be imposed on the blade. A turn of the casing in the opposite direction (between the limits of the shoulders *t, t*), will loosen the blade, the ring 17 being free to slide in the opposite direction or away from the adjusting nut 12. Of course, when the sleeve 13 is turned so as to drive the ring 17 outwardly, the latter engages the nut 12, forcing it and the stem by which it is carried outwardly thereby pulling taut the blade 11 attached to said stem (or rather the head 8 thereof). The lengths of the formations 16, 16', are such that with a

turn of the sleeve through an arc determined by the space between the shoulders *t, t*, (which are engaged by the finger 15 on the head 13' of the sleeve) the ring 17 will be driven outwardly until the free ends of the formations are brought substantially into abutting relation (Fig. 5) by which time the danger of the ring 17 slipping back to its inner position under the tension of the blade has passed; and the only way to release the ring and cause the same to slide back or inwardly to relieve the tension on the blade, is to rotate the sleeve in the opposite direction. The tension on the blade being thus relieved, the blade can be readily detached by a proper loosening of the adjusting nut 12.

The reciprocating member or ring 17 in conjunction with the rotatable member or sleeve 13 by which the same is controlled, constitute a quick tension-adjusting or stretching device, the nut 12 merely adjusting the stem 7 to bring the securing pin 10 thereof opposite the hole in the blade through which it is passed, before the latch L is swung into engagement with said pin.

In Fig. 1 the dotted position of the slide 5 and blade 11 shows the manner of manipulating the same for the purpose of attaching or detaching the blade from the pin 6'.

Having described my invention, what I claim is:—

1. In combination with a saw-frame provided at one end with an open slit disposed in the plane of the saw, and with a recess intersecting said slit and inclined to the axis of the saw-blade, an anchor piece mounted adjacent to the slit and provided with a longitudinal slot and sliding transversely of the saw, a pin on the frame traversing said slot, an extension on the anchor adapted to be projected beyond the frame with an outward movement of the anchor, means on said extension for securing one end of the blade, and means on the opposite end of the frame for securing the opposite end of the blade.

2. In combination with a saw-frame provided at one end with an open slit disposed in the plane of the saw, and with a recess intersecting said slit and inclined to the axis of the blade, a slide embracing the sides of the frame and movable across the recess transversely of the saw, alining longitudinal slots in the sides of the slide, a pin on the frame traversing the slots, an extension on the slide adapted to be projected beyond the frame with an outward movement of the slide, a blade-anchoring pin on said extension adapted to be received by the recess, a blade secured to said pin and received by the slit with an inward movement of the slide, and means on the opposite end of the frame for securing the opposite end of the blade.

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3. In a saw, a quick-tension device comprising a polygonal stem adapted to be coupled at one end of the blade, a nut on the opposite end, a non-rotatable washer on the stem provided with a pair of peripheral shoulders spaced a suitable distance apart, a sleeve rotatable about the stem between the nut and washer and terminating in a polygonal-head provided with a finger traversing the arc between the shoulders on the washer, a non-rotatable ring within the sleeve slidable along the stem and provided with a high-pitch spiral formation, a corresponding cooperating formation being formed on the inner walls of the sleeve, as set forth.

4. In combination with a saw-frame terminating in a slit disposed in the plane of the frame, a transverse recess intersecting

the slit and inclined to the axis of the saw-blade, a slotted slide mounted to operate over the slit transversely of the saw, a pin on the slide engaging the blade and received by the recess, and a pin traversing the slot on the slide.

5. In combination with a saw-frame terminating in a slit for the blade, a recess intersecting the slit, a sliding anchor member for the blade operating transversely of the saw, and means on the anchor for securing one end of the blade, said securing means traversing the recess.

In testimony whereof I affix my signature, in presence of two witnesses.

ALBERT C. HUFFSCHMITT.

Witnesses:

EMIL STAREK,
FANNIE E. WEBER.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents Washington, D. C."