



BRIEF ABSTRACT:

The Surgical Instrument Technology provides an improved surgical and medical instrument device. The petitioned novel medical instrument designs coupled with the means and methods provided here within offer a number of distinct advantages over current and prior art. One improvement, utilizing the provided design of inventor's surgical and medical instrument releasable locking device, for those instruments requiring such components, provides a permanently attached, rigid, durable locking device that is horizontally oriented thereby permitting an identical left- and right-handed surgical technique to engage or disengage the locking mechanism of the device.

Petitioned invention's improved ergonomic design and locking section serves to replace the existing instrument handle section and locking sections of those surgical and medical instruments that function with pivotally connected angular lever arms that scissor to open and close a gripping section. The improved horizontally oriented releasable locking device section presented here within allows an ambidextrous user means for engaging and disengaging the locking devices with identical surgically trained technique whether user's left or right hand is being utilized. The novel design grants the surgical and medical instrument industry a universally designed instrument and locking device applicable to any and all medical and surgical instruments requiring such a locking component for applicable function, capable of performing traditional and ambidextrous utility. Additional novel significant advantages over prior and current art are presented here within.

BACKGROUND OF INVENTION:

Conventional medical instruments (needle holders, hemostats, etc.) may be used by a physician to manipulate the handles to hold and work the grasping jaws of the medical instrument for various medical procedures; as an example, conventional needle holders are fabricated from a pair of rigid parts each having a jaw at one end and a handle with a holding ring at the other end. The two parts are mounted together to form a scissoring-like instrument. The two parts are pivotally secured behind a pair of clamping and holding jaws. There is a ring or middle finger and a thumb holding loop at the distal end of each handle. The physician or user being taught proper surgical technique places his thumb in one loop and his ring or middle finger in the other loop while placing the index finger at a desired position on the instrument handle section to control and manipulate the instrument. User can squeeze the two ring loops together with his thumb and ring finger to cause the jaws of the medical instrument to clamp down. The prior and current instrument locking device located between the instrument lever arms will overlap and engage in a ratcheting fashion when sufficient force is supplied by the finger and thumb to press the rings together therein overlapping the locking stems of the locking mechanism. The locking device will disengage when sufficient force is applied in such a manner and direction to spread apart the rings and instrument handles; having locking device stems temporarily or permanently mounted. Disengaging the medical instruments locking device is also taught with proper surgical technique.

Medical instruments come in various sizes and are used for particular medical procedures. Thus, a medical instrument correlative to the petitioned invention must be capable of clamping onto a variety of objects including, but not limited to surgical needles, vessels, and/or organs. There is a necessary need for a tension adjustment for the jaws of the medical instrument to be applied by the user. The tension must be adjustable with only one hand with surgically taught technique in order to not damage an object or structure desired to be gripped.

The disadvantage of prior and current locking devices for medical instruments is that they have to be manufactured in a right hand or left-hand configuration due to a century old conventional design. Given adopted traditional design, substantial unorthodox forces must be used to unlock the handles of the right-handed biased instruments with the left hand or vice versa. Sometimes, this disengagement of instrument locking devices requires the use of two hands secondary to the right- or left-hand biased configuration. If the left hand is used to disengage the prior and current art locking devices and spread apart the instrument's rings of a right-hand configured locking device incorporated into the medical instrument, the user has

considerable difficulty disengaging a locked or clamped instrument especially if large instruments are being used or if substantial clamping tension was applied onto the object or structure. An example would be an Orthopedic surgeon using bone clamps; the difficulty disengaging a right-hand configured locking device with the left hand may interfere with the reduction and stabilization of the fracture being attended to. For simplicity, it will be assumed and asserted interchangeable assumptions; the opposite true wherein a left-hand configured locking device being equally difficult to disengage with user's right hand.

Another example of prior and current art's disadvantage to petitioned invention is with general and trauma surgery the operating surgeon may have placed numerous hemostats in various locations to clamp bleeding vessels. When the surgeon disengages the clamping function of the hemostats, he often is forced to do so with his left hand considering both of the surgeon's hands are often being employed simultaneously. Again, the unorthodox technique required to disengage the locking device, with the unintended hand; this time being a hemostat with the left hand, may be difficult and injure or damage delicate anatomical structures. Another disadvantage with prior and current art is the example wherein during most major surgeries a surgeon is required to have an assisting surgeon which stands on the opposite side of the operating table. The assisting surgeon is often expected to disengage medical instrument locking devices and considering prior and current art locking devices are right hand or left hand biased, the assisting surgeon is usually forced to use the mentioned unorthodox technique to disengage the locking devices of medical instruments. Another example is during surgery the surgeon may be required to move around the operating table to adequately address the surgery needs. In this situation the surgeon may use his right hand to engage the clamping of locking devices and then find himself in a position in regard to the patient whereby he now has to use the left hand to disengage the right-hand biased locking device of the instrument, which may be difficult. Yet another example is left hand dominant surgeons having to modify standard technique in order to operate and utilize the right hand biased current medical instrument industry. It is said that left-handed medical students are discouraged from going into surgical fields due to the fact that most instruments have been configured to assume the user to be right-handed. An example would be a left-handed surgeon trying to suture with the right-hand configured needle holder. In this case the surgeon has difficulty engaging and disengaging the clamping function of the needle holder to grip and release the suture needle every time he needs to place a suture. In this case conventionally, either the left-handed surgeon has modified his technique or has gone through the additional expense of purchasing left hand biased surgical instruments at a considerable expense. Incurring such additional expenses has not

been customary practice of medical institutions wherein the vast majority of surgical personnel are right-handed.

There is a need for an improved locking arrangement for medical instruments permitting the physician or user to lock and unlock medical instruments using only one hand, being either the right or left hand, with the identical proper surgically trained technique.

Of relevance is the General Surgeon's mind set. Surgeons undergo rigorous training in conventional surgical technique and are seldom willing to adapt or conform to nontraditional concept. This could be manifest as to perhaps why surgical instruments have remained right hand biased and of similar design for more than a century. It may also be appreciated that previous attempts by inventors to create ambidextrous instruments requiring a locking mechanism have failed to be widely adopted in the surgical realm; since they differ as to what is conventional and traditional utility and design.

Vertu Medical Technologies now provides a breakthrough solution to this problem by providing a completely ambidextrous locking mechanism for those instruments requiring such.

With Vertu Medical Technologies solution surgeons now have the significant advantage of utilizing an absolute ambidextrous user function to engage or disengage surgical locking mechanisms with either hand. Additionally, users can do so with absolutely no difference in surgical technique or comfort.

With our breakthrough open loop technology future surgeons will finally be permitted to train with both the right and left hands equally while reducing unintentional damage to delicate structures. Our proprietary locking mechanism also prevents unintentional disengagement of the locking mechanism as frequently encountered with conventional instruments. Additionally, other significant improvements have been configured into our proprietary instruments such as nonslip gripping structures and a more ergonomic overall design.

Vertu Medical Technologies complete line of revolutionary surgical instrument designs will be available in the near future and will quickly serve to become the new global standard of care”.

To view our Surgical Instrument Technology CAD Movie please go to the Vision page of the website and follow the instructions under the picture of the surgical instrument.