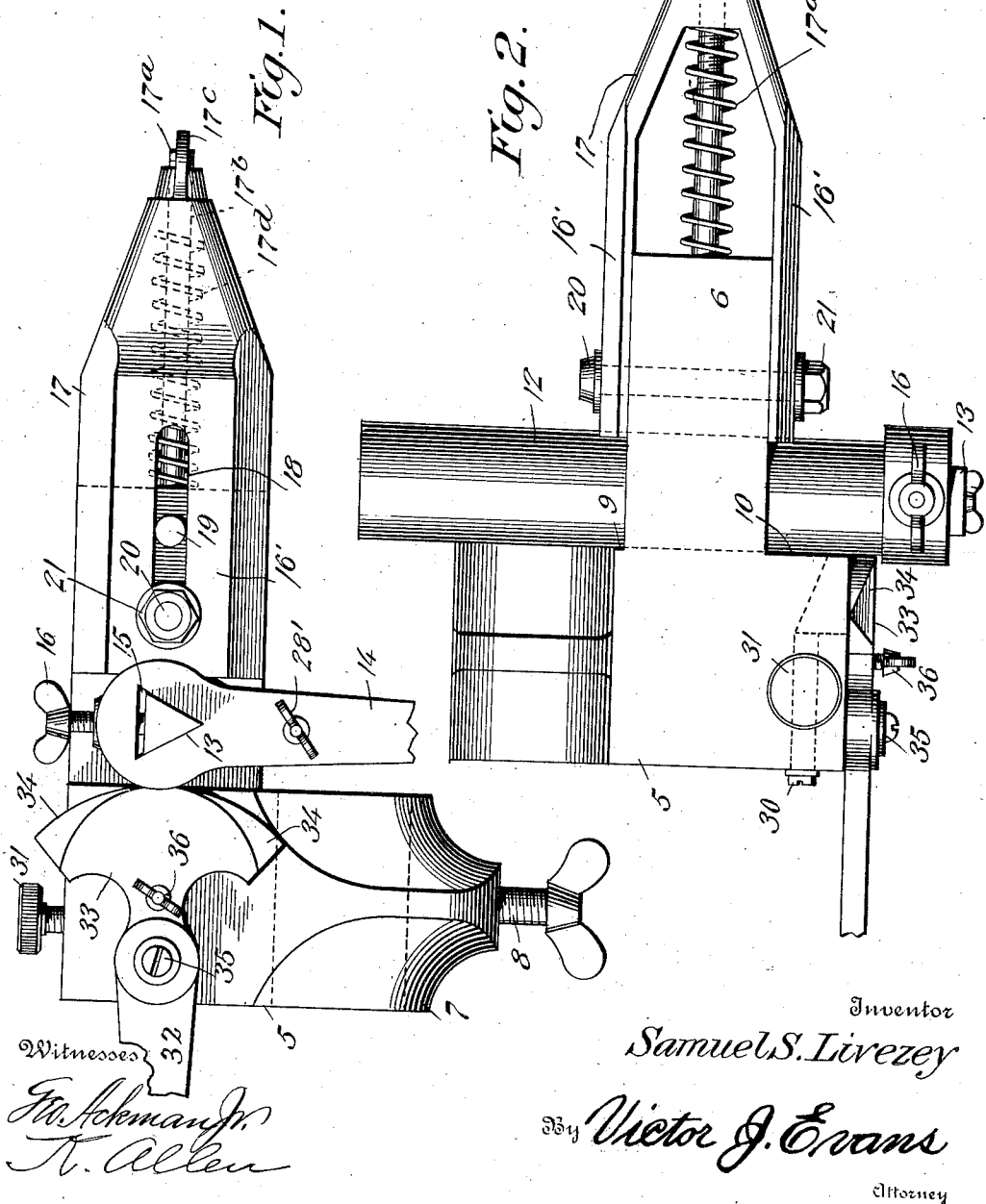


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WIRE WORKING DEVICE.
APPLICATION FILED DEC. 26, 1911.

1,034,262.

Patented July 30, 1912.
2 SHEETS—SHEET 1.

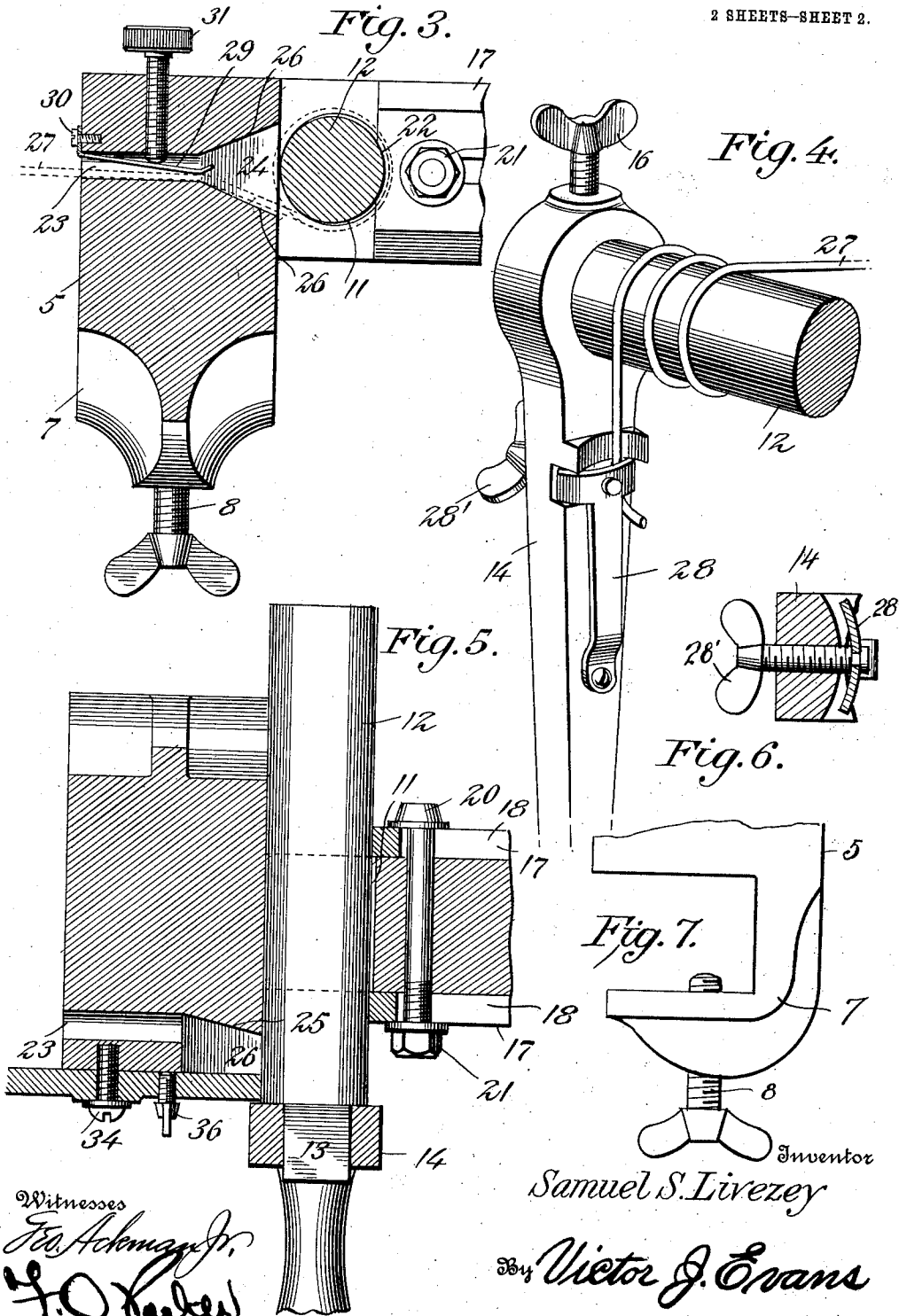


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SAMUEL S. LIVEZEY, OF BOWLING GREEN, OHIO.

WIRE-WORKING DEVICE.

1,034,262.

Specification of Letters Patent.

Patented July 30, 1912.

Application filed December 26, 1911. Serial No. 667,725.

To all whom it may concern:

Be it known that I, SAMUEL S. LIVEZEY, a citizen of the United States, residing at Bowling Green, in the county of Wood and State of Ohio, have invented new and useful Improvements in Wire-Working Devices, of which the following is a specification.

The invention relates to a wire working device, and more particularly to the class of devices for winding wire into spiral or convoluted form.

The primary object of the invention is the provision of a device in which a wire length may be wound, so as to form convolutions therein equidistant apart, thus producing spiral springs.

Another object of the invention is the provision of a device of this character in which a straight length of wire may be fed for the winding thereof upon a shaft adapted to be rotated by hand, the device being designed to be clamped to a work bench or other suitable support, and is adapted for forming convoluted or coiled wires.

A further object of the invention is the provision of a device of this character which is simple in construction, thoroughly reliable and efficient in purpose, and inexpensive in manufacture.

With these and other objects in view, the invention consists in the manufacture, combination and arrangement of parts, as will be hereinafter more fully described, illustrated in the accompanying drawings, and pointed out in the claims appended hereto.

In the drawings: Figure 1 is a front elevation of a device constructed in accordance with the invention. Fig. 2 is a top plan view thereof. Fig. 3 is a fragmentary vertical sectional view taken through the body of the device. Fig. 4 is an enlarged perspective elevation of the turning crank, showing the manner of connecting one end of the wire thereto. Fig. 5 is a fragmentary transverse sectional view through the device. Fig. 6 is a transverse sectional view through the crank and wire fastener. Fig. 7 is a fragmentary side view of the device showing the bench clamping jaws.

Similar reference characters indicate corresponding parts throughout the several views of the drawings.

Referring to the drawings by numerals, the device comprises a body 5 formed at one end with an elongated extension 6, while at

its opposite end are provided laterally extending spaced clamping jaws 7, one of which having threaded therein a winged binding screw 8, and between these jaws is adapted to be engaged the bed or top of a work bench, table or other support, the binding screw 8 being tightened to securely mount the body thereon.

Formed transversely in the body 5, contiguous to the shoulders 9 and 10, respectively, provided on the said body, is a suitable bore 11, in which is rotatably mounted a winding shaft 12 provided at one end with a triangular-shaped reduced portion 13 for the detachable connection of a turning crank 14 which is provided with a triangular-shaped opening 15 of a size corresponding to the triangular-shaped end portion 13 of the shaft 12 for receiving it. Threaded in the crank 14, longitudinally thereof, is a winged binding screw 16, the latter being adapted to intersect the opening 15 for engagement with the triangular-shaped end 13 of the shaft for securing the crank thereon.

Disposed against opposite side faces of the elongated extension 6 of the body 5 are the parallel arms 16' of a forked slidable clamp 17, the arms being provided with alining slots 18 disposed longitudinally and centrally therein, one of which receives a guide lug 19 formed on the extension 6 and projecting outwardly therefrom for preventing the displacement of the said clamp 17, when being adjusted. Passed through the elongated extension 6 of the body and through the slots 18 in the arms 16' of the clamp is a locking bolt 20, carrying the usual form of nut 21, so that upon the tightening of the latter, the clamp will be held fast in adjusted position, the inner ends of the arms 16' being provided with semi-circular shaped notches 22 to accommodate a portion of the shaft 12, the arms working against the said shaft 12, so as to prevent the wobbling thereof in the bore 11 formed in the body 5, during the turning of the shaft when a wire is being coiled thereon, in a manner presently described.

Suitably mounted in the extension 6, at the outer end thereof, and projecting therefrom, centrally of the same, is a threaded stem 17^a which is passed through a suitable central opening 17^b in the closed end of the clamp, and carries a winged nut 17^c which, when turned in one direction, subsequent to the loosening of the bolt 20, will feed the

clamp in a direction toward the shaft 12. Coiled about the stem 17^a, between the closed end of the clamp and the outer end of the extension 6, is an expansion spring 17^a which acts upon the clamp to force the arms 16' away from the shaft 12 on the turning of the nut 17^c in the reverse direction, thereby enabling the clamp to be retracted.

Formed in the body 5, at right angles to the axis of rotation of the turning shaft 12, is a wire feed passage or bore 23, the inner end thereof opening into a recess 24 provided with a sloping bed 25 and opposed converging side walls 26, the wire length 27 being passed through the feed passage or bore 23 and outwardly through the recess 25, the inner end of the wire length 27 being engaged by means of a spring clamp 28 carried by the crank 14 on the tightening of the binding screw 28' swiveled in the clamp 28 and threaded in the said crank 14, thus it being seen, that upon rotation of the shaft 12, the wire 27 will be wound about the shaft 12 for forming convolutions in the said wire.

Disposed longitudinally in the feed passage or bore 23 for the wire 27 is a leaf binding spring 29, the opposite ends thereof being upturned, so that one upturned end will lie within the recess 24, while its opposite upturned end will be fixed to the outer face of one end of the body 5 by means of a screw fastener 30, the said spring 29 being displaced by a knurled headed set screw 31, whereby the spring 29 will frictionally engage the wire 27 to regulate the feed thereof through the passage 23 to the winding shaft 12 of the device.

Pivottally connected to the front face of the body 5, at one side of the shaft 12, is a spreader comprising an arm 32, on the inner end of which is provided an arcuate-shaped spreader head 33 formed with beveled faces 34 inwardly tapered, so as to diminish at the center of the said head 33, which is swung arcuately for guiding the wire 27 on the winding thereof about the shaft 12, thus spacing the convolutions formed in the wire at equi-distances from each other. However, it will be evident that by bringing the tapered portions of the head 33 into proper position, the convolutions or coils in the wire 27 will be formed closer together, as will be obvious.

It will be apparent that a wire may be coiled to provide therein close or wide convolutions throughout the same, the arm 32 or spreader being mounted upon a pivot 35 engaged in the body 5, and said arm carries a winged set-screw 36 which is adapted to engage the face of the body 5 adjacent to the arm for locking the spreader in its adjusted position.

Of course, it is to be understood that the cross-sectional diameter of the shaft may be

varied for increasing or decreasing the sizes of the convolutions as may be desired.

From the foregoing, it is thought that the construction and operation of the invention will be clear, without a more extended explanation.

What is claimed is:

1. A device of the class described, comprising a body having an elongated extension and provided with a bore transversely therein, a winding shaft rotatable in the bore, clamping plates adjustably connected to the opposite sides of the extension and working against the shaft to prevent lateral displacement thereof, the said body being provided with a wire feed passage at right angles to the axis of the shaft and terminating in a recess at its inner end, an adjustable retaining member arranged within the wire feed passage for frictionally holding a wire inserted therein, a turning crank detachably connected to one end of the shaft, means on the crank for locking one end of the wire between the shaft and the crank, and a spreader member swingingly connected to the body and movable into close relation to the shaft for guiding the wire about the latter for spacing the coils or convolutions formed in such wire when the shaft is being turned.

2. A device of the class described, comprising a body having an elongated extension and provided with a bore transversely therein, a winding shaft rotatable in the bore, clamping plates adjustably connected to the opposite sides of the extension and working against the shaft to prevent lateral displacement thereof, the said body being provided with a wire feed passage at right angles to the axis of the shaft and terminating in a recess at its inner end, an adjustable retaining member arranged within the wire feed passage for frictionally holding a wire inserted therein, a turning crank detachably connected to one end of the shaft, means on the crank for locking one end of the wire between the shaft and the crank, a spreader member swingingly connected to the body and movable into close relation to the shaft for guiding the wire about the latter for spacing the coils or convolutions formed in such wire when the shaft is being turned, and means for locking the spreader member in adjusted position.

3. A device of the class described, comprising a body having an elongated extension and provided with a bore transversely therein, a winding shaft rotatable in the bore, clamping plates adjustably connected to the opposite sides of the extension and working against the shaft to prevent lateral displacement thereof, the said body being provided with a wire feed passage at right angles to the axis of the shaft and terminating in a recess at its inner end, an

adjustable retaining member arranged within the wire feed passage for frictionally holding a wire inserted therein, a turning crank detachably connected to one end of the shaft, means on the crank for locking one end of the wire between the shaft and the crank, a spreader member swingingly connected to the body and movable into close relation to the shaft for guiding the wire about the latter for spacing the coils or convolutions formed in such wire when the shaft is being turned, means for locking the spreader member in adjusted position, and means for clamping the body upon a support.

4. A device of the class described, comprising a body having an elongated extension and provided with a bore transversely therein, a winding shaft rotatable in the bore, clamping plates adjustably connected to the opposite sides of the extension and working against the shaft to prevent lateral displacement thereof, the said body being provided with a wire feed passage at right angles to the axis of the shaft and termi-

nating in a recess at its inner end, an adjustable retaining member arranged within the wire feed passage for frictionally holding a wire inserted therein, a turning crank detachably connected to one end of the shaft, means on the crank for locking one end of the wire between the shaft and the crank, a spreader member swingingly connected to the body and movable into close relation to the shaft for guiding the wire about the latter for spacing the coils or convolutions formed in such wire when the shaft is being turned, means for locking the spreader member in adjusted position, means for clamping the body upon a support, and means on the extension and engageable with the clamping plates for guiding the same when being adjusted.

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

SAMUEL S. LIVEZEY.

Witnesses:

ABEL COMSTOCK,
CHARLES BARR.

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