B. L. JIROUCH.

NEEDLE CLAMP FOR SEWING MACHINES.

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1,268,012.

Patented May 28, 1918.

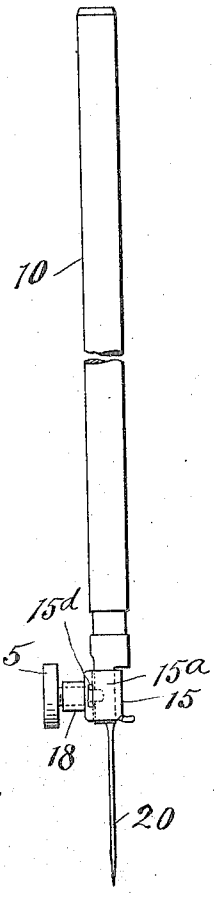


Fig. 3.

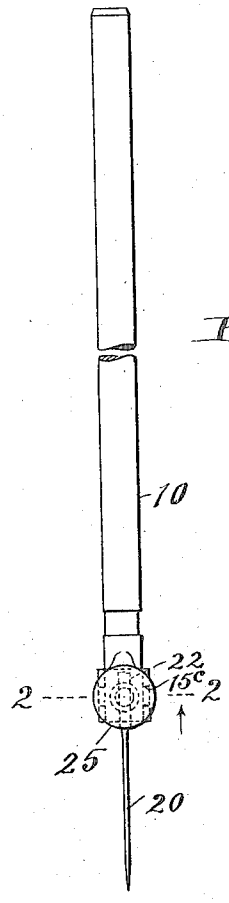


Fig. 1.

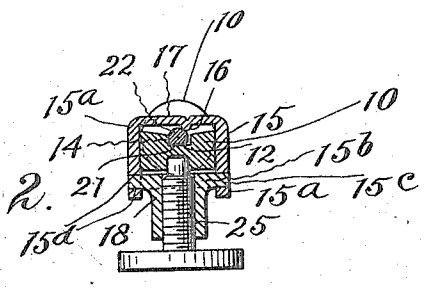


Fig. 2.

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UNITED STATES PATENT OFFICE.

BOHUMIL L. JIROUCH, OF CLEVELAND, OHIO, ASSIGNOR TO WHITE SEWING MACHINE COMPANY, OF CLEVELAND, OHIO, A CORPORATION OF OHIO.

NEEDLE-CLAMP FOR SEWING-MACHINES.

1,268,012. Specification of Letters Patent. Patented May 28, 1918.

Application filed March 6, 1917. Serial No. 152,460.

To all whom it may concern:

Be it known that I, BOHUMIL L. JIROUCH, a citizen of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented a certain new and useful Improvement in Needle-Clamps for Sewing-Machines, of which the following is a full, clear, and exact description.

The object of this invention is to provide inexpensive means by which one may quickly fasten a needle to the needle bar of a sewing machine, and be sure that said needle will be exactly placed, and will be immovably held in place.

The invention is shown in the accompanying drawings and hereinafter described and pointed out definitely in the appended claims.

In the drawings, Figure 1 is a front elevation of a needle bar and a needle secured thereto by means of the present invention; Fig. 2 is a horizontal sectional view in the plane of line 2—2 on Fig. 1; Fig. 3 is a side view of the needle bar.

Referring to the parts by reference characters, 10 represents the needle bar which at its lower end is substantially rectangular in horizontal section. It has, however, on its left side, a vertical flat surface 12 for engagement with the flat surface 21 on the shank 22 of a needle 20. A vertical shoulder 14 is also formed on this same left face of the needle bar, which shoulder is so placed that when the shank of the needle engages this vertical shoulder and at the same time the flat surfaces 21 and 12 are in engagement as stated, the needle is accurately placed with respect to the needle bar.

15 represents the needle clamp, whose function is to push the needle into the described engagement with said flat surface and vertical shoulder, and rigidly hold the needle in that position. The clamp as shown, is a rectangular sleeve which fits over the rectangular end of the needle bar. It has, however, a vertical rib 16 on the inner face of that side 17 which is opposed to the flat surface 12; and this rib is so placed that it will engage with the convex surface of the needle shank on the opposite side of the center thereof to that on which said shoulder 14 lies. A set screw 25 screws through a threaded lug formed externally on the right side 18 of this clamp, and this screw by engaging the right face of the needle bar, will draw said clamp toward the needle, and cause the vertical rib 16 to engage the needle and thereby thrust the needle in two directions into engagement with the vertical shoulder 14, and into close contact with the flat surface 12; and will hold the needle in this position, which is the precise position.

The specific construction of the clamp, while not material to the invention broadly considered, is nevertheless novel, and is as follows:

The clamp consists of a U-shaped piece 15^a and the plate 15^b. The middle member of this U-shaped piece has the rib 16 formed on its inner face. The vertical ends of the two sides of the U-shaped member are formed with slots 15^c which engage tongues 15^d in the plate 15^b, and are upset or riveted down, thereby fastening the two pieces together.

It will be noted that the vertical shoulder 14 and the flat surface 12 on the needle bar are respectively one side and the bottom of a vertical groove formed in the needle bar; but the other side 13 of said groove has no other function than to serve as a guide to enable the operator to certainly put the needle in a position where it will be engaged by the rib 16 on the clamp, and will thereby be thrust over against the flat surface, *i. e.*, the bottom of the groove, and over against the vertical shoulder or side of the groove.

Having described my invention, I claim:—

1. In a needle clamp for sewing machines employing a vertically reciprocating needle bar, the combination of the vertically reciprocating needle bar having a vertical flat surface 12 and an adjacent vertical shoulder 14 for engagement respectively with the flat surface of a needle shank and with said needle shank adjacent said flat surface, said needle bar having also adjacent the flat surface specified two vertical parallel flat surfaces at substantially right angles to said flat surface, a four sided needle clamp having two side members which slidably engage the two parallel flat surfaces on the needle bar and having opposed to the first mentioned flat surface on the needle bar a member on the inner face of which is a vertical rib 16 placed to engage the convex surface of the needle shank at the opposite sides of

the center of said shank to that on which lies the vertical shoulder on the needle bar when said needle is in engagement with flat side and adjacent rib on the needle bar, and said clamp having an intermediate member opposite that which carries said vertical rib, and a set screw which screws through the last mentioned intermediate member into engagement with the needle bar.

2. In a needle clamp for sewing machines employing a vertically reciprocating needle bar, the combination of the vertically reciprocating needle bar having a flat surface and an adjacent vertical shoulder for engagement respectively with the flat surface of a needle shank and with said needle shank adjacent said flat surface, said needle bar having also adjacent the flat surface specified two vertical parallel flat surfaces at substantially right angles to said flat surface, a four-sided needle clamp which embraces the needle bar,—said clamp comprising two members, viz. a U-shaped member having two sides which slidably engage the two parallel vertical sides of the needle bar and an intermediate part on the inner surface of which is a vertical rib placed to engage the convex surface of the needle shank on the opposite side of the center thereof to that on which lies the vertical shoulder on the needle bar, said side members having holes near their ends, and a member having tongues which enter and are upset in said holes, and a set screw which screws through the last mentioned member into contact with the needle bar.

3. In a needle clamp for sewing machines employing a vertically reciprocating needle bar, the combination of the vertically reciprocating needle bar having in its surface a vertical rectangular groove which is wider than the diameter of the needle, a four-sided needle clamp having two side members which slidably engage the needle bar, and an intermediate member having on its inner surface a vertical rib for engagement with the convex surface of a needle shank which lies in said vertical rectangular groove, and a set screw which screws through the side of the clamp opposite that on which the last mentioned vertical rib is formed and intermediate the needle bar.

In testimony whereof, I hereunto affix my signature.

BOHUMIL L. JIROUCH.

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