

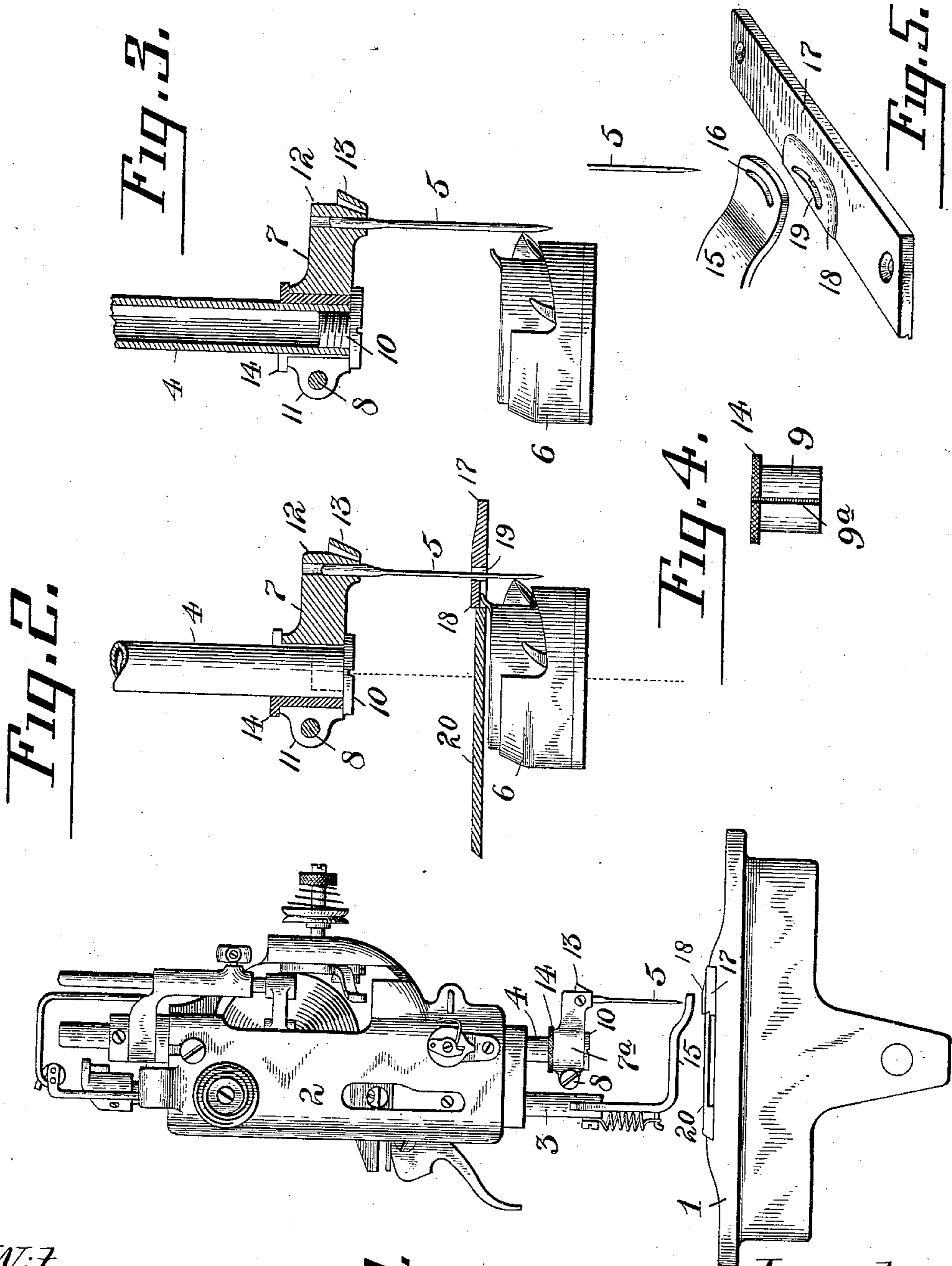
No. 875,606.

PATENTED DEC. 31, 1907.

W. N. PARKES.

NEEDLE ADJUSTING DEVICE FOR SEWING MACHINES.

APPLICATION FILED JAN. 14, 1903. RENEWED NOV. 18, 1907.



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Fig. 1.

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NEEDLE-ADJUSTING DEVICE FOR SEWING-MACHINES.

No. 875,606.

Specification of Letters Patent.

Patented Dec. 31, 1907.

Application filed January 14, 1903, Serial No. 139,017. Renewed November 18, 1907. Serial No. 402,740.

To all whom it may concern:

Be it known that I, WILLIAM N. PARKES, a citizen of the United States, residing in Brooklyn, county of Kings, and State of New York, have invented a new and useful Improvement in Needle-Adjusting Devices for Sewing-Machines, of which the following is a description.

This invention relates to sewing machines, and more particularly to means for regulating the position of the needle with respect to the lower complemental stitch-forming mechanism.

In sewing machines, in order to avoid and prevent the skipping of stitches, it is advisable to have the needle, in the loop-taking position, as near the hook, nose, or point of the looper as practicable. If a needle-holder is located so that a coarse needle carried thereby, is in proper operative relation to the looper, obviously, when a fine needle is substituted for the coarse needle, the former does not bear the same relation to the looper, being, in fact, too far from the hook, nose, or point thereof for proper and accurate coöperation in sewing. Hence, some means should be provided to secure adjustment of the needle relatively to the looper so as to avoid and prevent skipping stitches, and especially if the needle is vibrated laterally so as to make stitches in different lateral positions.

One of the objects of this invention is to provide a simple and effective means for readily adjusting the needle relatively to the looper without changing the position of the overhanging arm of the machine or the stitch-mechanism below the cloth-plate, as is commonly done in machines known to me.

Another object of my invention is to provide means, for securing and maintaining a proper operative relation between the needle and looper in all types of machines, which is readily and easily manipulated.

With the above and other objects in view, my invention consists in the parts, features and combinations hereinafter described and claimed.

In the drawing: Figure 1 is a front elevation of the head of a sewing machine provided with my needle adjusting mechanism; Fig. 2 is a vertical section of the needle-holder, adjusting mechanism and work and throat plates, and showing the looper in elevation

relatively to the needle; Fig. 3 is a similar view showing another position of the adjusting means and also showing a portion of the tubular needle-bar in vertical section, the work and throat plates being omitted. Fig. 4 is an elevation of the adjusting means for regulating the position of the needle, and Fig. 5 is a detail perspective of the throat-plate, presser-foot and needle detached.

1, represents the work-plate of the machine; 2, the head thereof; 3, the presser-bar; 4, the needle-bar; 5, the needle; 6, the looper; 7, the needle-holder; 8, the clamping-screw for the needle-holder; 9, the adjusting bushing split at 9^a; and 10, the screw for maintaining the needle-holder and bushing in place on the needle-bar.

The needle-holder has a tubular cylindrical portion 7^a, split at the back and provided with extensions 11, bored and screw-threaded to enable the screw 8, to draw the parts tightly together and thereby clamp the eccentric and the needle-holder to the bar 4. That portion of the holder in which the needle is held or clamped is extended, as shown at 12, eccentrically with respect to the axis of the needle-bar so as to place the needle in proper operative relation to the looper, which, in the present form of my invention, is disposed to rotate in a horizontal plane, while the needle mechanism is caused to move the needle about the axis of the looper. At its forward end the holder is provided with a projection 13, having therein a thread aperture which is inclined relatively to the needle, viz., extending from adjacent the shank of the needle outwardly and upwardly.

The adjusting bushing is in the form of a split, eccentric sleeve, which enables it to be tightly clamped upon the bar, and is provided, at its upper end, with a knurled flange 14, by means of which said bushing may be easily and properly adjusted.

As shown in Figs. 2 and 3, the needle-bar 4, is tubular, and at its lower end is internally screw-threaded a short distance, for the reception of the short screw 10, provided with a flange or head sufficiently extensive to project under and support both the bushing 9, and the holder 7.

A presser-foot 15, is suitably attached to the lower end of the presser-bar 3, said foot being provided with a curved slot 16. The

throat-plate 17, is provided with a raised portion 18, having a curved slot 19, there-through corresponding with the slot 16, in the presser-foot. These slots are concentric
5 with the axis of the looper and of the needle-bar and permit the passage of the needle in all its stitch-making positions.

It will be clear from the above description that the bushing may be first placed upon the
10 lower end of the needle-bar, or the bushing may be first placed within the holder; then, in the first case, the holder is placed upon the bushing, or in the second case, the two are placed upon the bar; the screw 10, is then
15 screwed in the end of the bar so as to support the parts, and then the bushing may be rotated to the extent required for the desired adjustment; then the clamping-screw 8, is turned so as to bind the holder tightly upon
20 the bushing and hold the parts in place. Substantially the two extremes of adjustment are respectively illustrated in Figs. 2, and 3; and it will be clear that, with the construction shown, a very fine and nice adjust-
25 ment of the needle relatively to the looper may be obtained; that the extent to which the needle can be vibrated may be greatly increased without skipping stitches; and that very little difficulty will be experienced and
30 but short time occupied in making or changing adjustments. Furthermore, it will be seen that the construction which I have provided permits an adjustment of the needle in the arc of a circle, or entirely around the
35 needle-bar; and, in addition, is a convenient means for throwing the needle aside or back out of the way when it is desired, for any purpose, to have a free space over and around the needle-throat in the work-plate.

40 The character of looper is not of consequence; nor is it material what position the same may occupy in the machine, viz., whether the same be disposed horizontally or vertically. Nice and accurate adjustments
45 may be obtained under any circumstances.

The machine illustrated in the drawings is of the character employing a laterally vibrating needle; and in such machines the throat-plate 17, is usually provided with a
50 curved slot 19, which in the present form of my invention, passes through a raised portion 18, permitting the vibratory movement of the needle. Hence, it is important that the needle be also accurately adjusted rela-
55 tively to the slot in the throat-plate and in the presser-foot so as to secure proper entrance of said needle in said slot for accurate and proper coöperation.

Having thus described my invention,
60 what I claim and desire to obtain by Letters Patent is:

1. In combination, a needle-bar, a needle-holder, means for clamping the holder to the bar and means encircling the bar within the

holder for adjusting the bar and holder rela- 65 tively.

2. In combination, a needle-bar, a needle-holder, means between the bar and holder for adjusting the same relatively, and means carried by the end of the bar and coöperating 70 with the holder and said adjusting means for holding the parts properly grouped.

3. In combination, a needle-bar, a needle-holder, means for clamping the holder to the bar and an eccentric between the bar and 75 holder for adjusting the one relatively to the other.

4. In combination, a needle-bar, provided with an eccentric a needle-holder surrounding the eccentric, and means for clamping 80 the holder upon the eccentric.

5. In combination, a needle-bar provided with an eccentric; a needle-holder, having a split portion, surrounding the eccentric; and means acting upon the split portion to 85 clamp the holder upon the eccentric.

6. In combination, a needle-bar, a needle-holder, a split eccentric between the two, and means for clamping the holder upon the ec- 90 centric and holding the two upon the bar.

7. In combination, a needle-bar, a needle-holder, an eccentric between the two provided with a manipulating flange, and means for clamping the holder upon the eccentric.

8. In combination, a needle-bar, a split 95 needle-holder, a split eccentric between the two provided with a flange, and means for clamping the holder upon the eccentric.

9. In combination, a tubular needle-bar, an apertured needle-holder, an eccentric be- 100 tween the bar and holder, means entering the end of the bar for holding the eccentric and holder upon the bar, and means for clamping the holder upon the eccentric.

10. In combination, a needle-bar provided 105 with an eccentric, a needle-holder surrounding the eccentric and having an extension in which the needle may be clamped, and means for clamping the holder upon the eccentric.

11. In combination, a needle-bar, a nee- 110 dle-holder, means for adjusting the holder relatively to the bar, means for clamping the holder upon the end of the bar, said holder being held upon the end of the bar between two flanges. 115

12. A sewing machine having a needle-bar, a needle-holder; a throat-plate having an elongated, curved slot; and means for ad- justing the holder around the axis of the bar, whereby the needle may be properly ad- 120 justed concentric with and relatively to the slot in the throat-plate.

13. In combination, a needle-bar; a nee- dle-holder; a device for adjusting the needle- holder laterally, having means enabling it to 125 frictionally engage the needle-bar; and said holder having means for clamping it and said device to said bar.

14. In combination, a needle-bar; a needle-holder; a device for adjusting said holder
bodily on and relatively to said bar, having
means enabling it to frictionally engage the
5 bar; and means cooperating with the holder
and causing the latter to clamp the adjustable
device in place on the bar.

In testimony whereof I have hereunto
signed my name in the presence of two sub-
scribing witnesses.

WILLIAM N. PARKES.

Witnesses:

CHAS. McC. CHAPMAN,
M. B. HOARE.