April 6, 1926. 1,580,005

S. C. BRAY

SEWING MACHINE NEEDLE GUARD

Filed Feb. 3, 1926

Fig. 1.

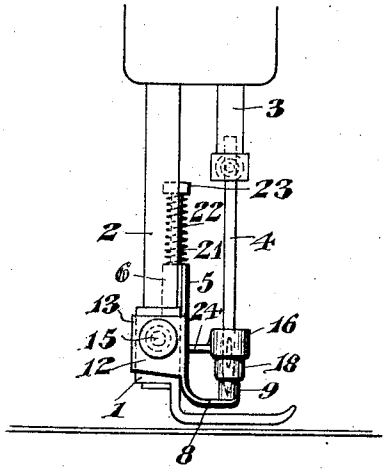


Fig. 4.

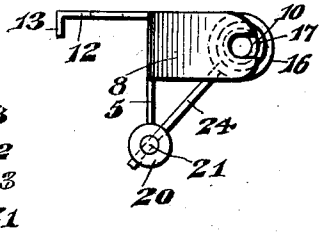


Fig. 2.

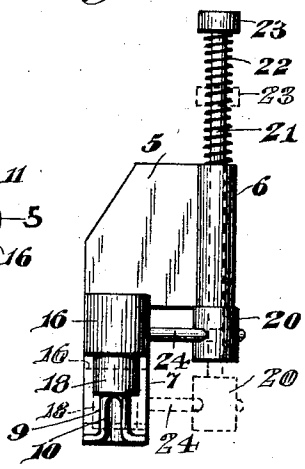


Fig. 3.

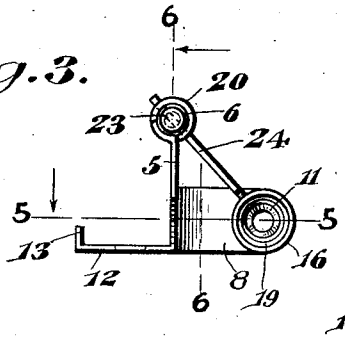


Fig. 6.

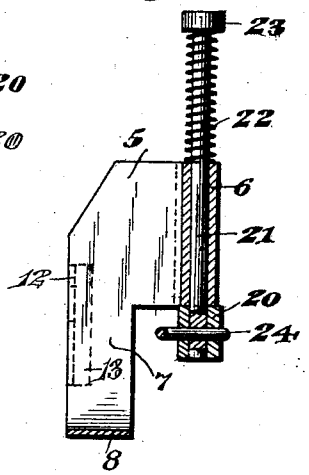
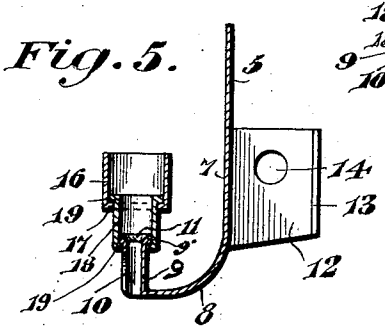


Fig. 5.



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UNITED STATES PATENT OFFICE.

SAMMY C. BRAY, OF SPRINGFIELD, MISSOURI.

SEWING-MACHINE-NEEDLE GUARD.

Application filed February 3, 1926. Serial No. 85,753.

To all whom it may concern:

Be it known that I, SAMMY C. BRAY, a citizen of the United States, residing at Springfield, in the county of Greene and State of Missouri, have invented certain new and useful Improvements in Sewing-Machine-Needle Guards, of which the following is a specification.

This invention relates to needle guards for use in connection with sewing machines, and has for its object to provide, in a manner as hereinafter set forth, a guard of such class for connection to the presser foot of the machine and further to extend into the path of and enclose the lower terminal portion of the needle in a manner to prevent the fingers of the operator from being injured by or to come in contact with the needle during the operation thereof.

Further objects of the invention are to provide, in a manner as hereinafter set forth, a needle guard for the purpose set forth which is simple in its construction and arrangement, strong, durable, readily installed with respect to the presser foot of the machine, thoroughly efficient in its use, and comparatively inexpensive to manufacture.

With the foregoing and other objects in view, the invention consists in the novel construction, combination and arrangement of parts as hereinafter more specifically described, and illustrated in the accompanying drawings, wherein is shown an embodiment of the invention, but it is to be understood that changes, variations and modifications can be resorted to which fall within the scope of the claims hereunto appended.

In the drawings wherein like reference characters denote corresponding parts throughout the several views:—

Figure 1 is a side elevation of a pressure foot, needle bar and needle, showing the adaptation therewith of a guard in accordance with this invention.

Figure 2 is a side elevation of the guard when extended and further illustrating in dotted lines the guard when contracted to permit of the removal of the needle when desired.

Figure 3 is a top plan view of the guard.

Figure 4 is an inverted plan view.

Figure 5 is a section on line 5—5 Figure 3.

Figure 6 is a section on line 6—6 Figure 3.

Referring to the drawings in detail 1 denotes a presser foot, carried on the lower end of a presser foot bar 2. A needle bar is indicated at 3 and which has detachably secured to its lower end the needle 4. The foregoing elements are of known construction and are illustrated so that the position of the guard can be shown in operative relation with respect to the needle 4.

A needle guard, in accordance with this invention comprises a carrier constructed of sheet metal and consisting of a body portion 5 formed at its inner side with a vertically disposed tubular member 6 for a function to be presently referred to. Depending from the bottom of the body portion 5 and flush with the outer side edge thereof is a suspension member of substantial width and formed of a vertically disposed upper portion 7 and a laterally extending curved lower portion 8 which terminates in an upstanding vertically disposed tubular member 9 having the rear side thereof cut away to form an opening 10 which extends from the lower end of the member 9 and terminates at a point removed from the upper end thereof. The member 9 is formed with an inwardly bevelled upper edge 11 and the axis of the member 9 is positioned in the path of the needle 4. Formed integral with the outer side edge of the vertical portion 7 of the suspension member is an arm 12, extending in an opposite direction with respect to the curved lower portion 8 of the suspension member or arm and the said arm 12, at its free end, is provided with an inwardly directed flange 13. The arm 12 is furthermore formed with an opening 14. The arm 12 is arranged against the outer side or rather front side of the presser foot 1 and the tubular member 6 is arranged at the rear side of the presser foot 1. Extending through the opening 14 is a clamping screw 15, which in connection with the tubular member 6 and the arm 12 detachably secures the carrier to the presser foot 1 in a manner as shown in Figure 1 so that the tubular member 9 will be positioned within the path of the needle 4. The tubular member 9 forms a stationary section of the guard element of the device and such guard element will be presently referred to.

The guard element, which includes the tubular member 9, is of the telescopic type so that when the sections thereof are nested, a needle can be removed and a new one substituted.

The guard element comprises an upper tu-

bular section 16 having an inwardly extending annular flange 17 at its lower end, an intermediate tubular section 18 which extends through the flange 17 and has its upper end provided with an outwardly extending annular flange 19 and its lower end with an inwardly extending annular flange 19'. The flanges 19 and 19' when the guard element is extended abut respectively against the flanges 17 and 9' to prevent the separation of the sections of the guard element. The flange 9' is formed at and extends outwardly from the upper of the tubular members 9 which is termed the lower section of the guard element and which extends into the intermediate section 18. The upper section 16 frictionally engages with the periphery of the intermediate section 18 so that when the upper section 16 is lowered in a manner as hereinafter referred to, the upper section 16 will carry the intermediate section 18 therewith and both sections will be arrested by the curved lower portion 8 of the suspension member or arm. The telescopic position of the sectional guard element, when in nested position, is shown in dotted lines in Figure 2. The guard element is of a different color from that of the needle to make the latter more discernible.

A shiftable spring controlled suspension device co-acts with the upper section 16 of the guard element, to maintain the latter in extended position and when the suspension device, is shifted manually against the action of its controlling spring, the sections of the guard element can be shifted to nested position whereby the top edge of the upper section 16 of the guard element will be positioned below the point of the needle to permit of the latter being removed. The spring controlled suspension device consists of a collar 20 carried on the lower end of a spring controlled suspension rod 21 which extends up through the tubular member 6 and has mounted on its upper portion a coil controlling spring 22, which is interposed between the top edge of the tubular member 6 and a head 23 provided at the upper end of the rod 21. The collar 20 is connected to the lower end of the rod 21, by an angularly extending bar 24 which has its outer end fixed to the outer periphery of the upper section 16 of the guard element. The bar 24 extends through the collar 20 and the lower end of the rod 21. The controlling spring 22 normally maintains the collar 20 in abutting engagement with the lower end of the tubular member 6, under such conditions maintaining the sections 16 and 18 of the guard element in the position as shown in Figures 1 and 5. If it be desired to nest the sections of the guard element, relatively to each other, the rod 21 is shifted to the dotted line position shown in Figure 2 and against the action of its controlling spring 22. When pressure is relieved on the rod 21 it will assume the upper position shown in Figure 2.

It is thought the many advantages of a needle guard, in accordance with this invention, can be readily understood, and although the preferred embodiment of the invention is as illustrated and described, yet it is to be understood that changes in the details of construction can be had which will fall within the scope of the invention as claimed.

What I claim is:—

1. A needle guard comprising a carrier adapted to be connected to the presser foot of a sewing machine and having its lower portion constructed to project into the path of a needle of the machine, an extensible and contractile guard element formed of a series of tubular telescopic sections of different diameters arranged in superposed relation with respect to the lower portion of the carrier, and a spring controlled suspension device slidably supported from said carrier and connected to the section of greatest diameter of said element for normally maintaining the latter extended.

2. A needle guard comprising a carrier adapted to be connected to the presser foot of a sewing machine and having its lower portion constructed to project into the path of a needle of the machine, an extensible and contractile guard element formed of a series of tubular telescopic sections of different diameters arranged in superposed relation with respect to the lower portion of the carrier, and a spring controlled suspension device slidably supported from said carrier and connected to the section of greatest diameter of said element for normally maintaining the latter extended, the section of said element of smallest diameter having a portion of its side slotted and with the slot extending from the bottom of said section and terminating at a point removed from the top thereof.

3. A needle guard comprising a carrier adapted to be connected to the presser foot of a sewing machine and having its lower portion constructed to project into the path of a needle of the machine, an extensible and contractile guard element formed of a series of tubular telescopic sections of different diameters arranged in superposed relation with respect to the lower portion of the carrier, a spring controlled suspension device slidably supported from said carrier and connected to the section of greatest diameter of said element for maintaining the latter extended, and said suspension device having means abutting against said carrier to limit the extending of said guard element.

4. A needle guard comprising a carrier adapted to be connected to the presser foot of a sewing machine and having its lower portion constructed to project into the path

of a needle of the machine, an extensible and contractile guard element formed of a series of tubular telescopic sections of different diameters arranged in superposed relation with respect to the lower portion of the carrier, a spring controlled suspension device slidably supported from said carrier and connected to the section of greatest diameter of said element for normally maintaining the latter extended, the section of said element of smallest diameter having a portion of its side slotted and with the slot extending from the bottom of said section and terminating at a point removed from the top thereof, and said device including means abutting against said carrier for limiting the extending of said guard element.

In testimony whereof, I affix my signature hereto.

SAMMY C. BRAY.