July 21, 1936. F. L. LINDSTROM 2,048,555

SEWING MACHINE

Filed Dec. 6, 1934

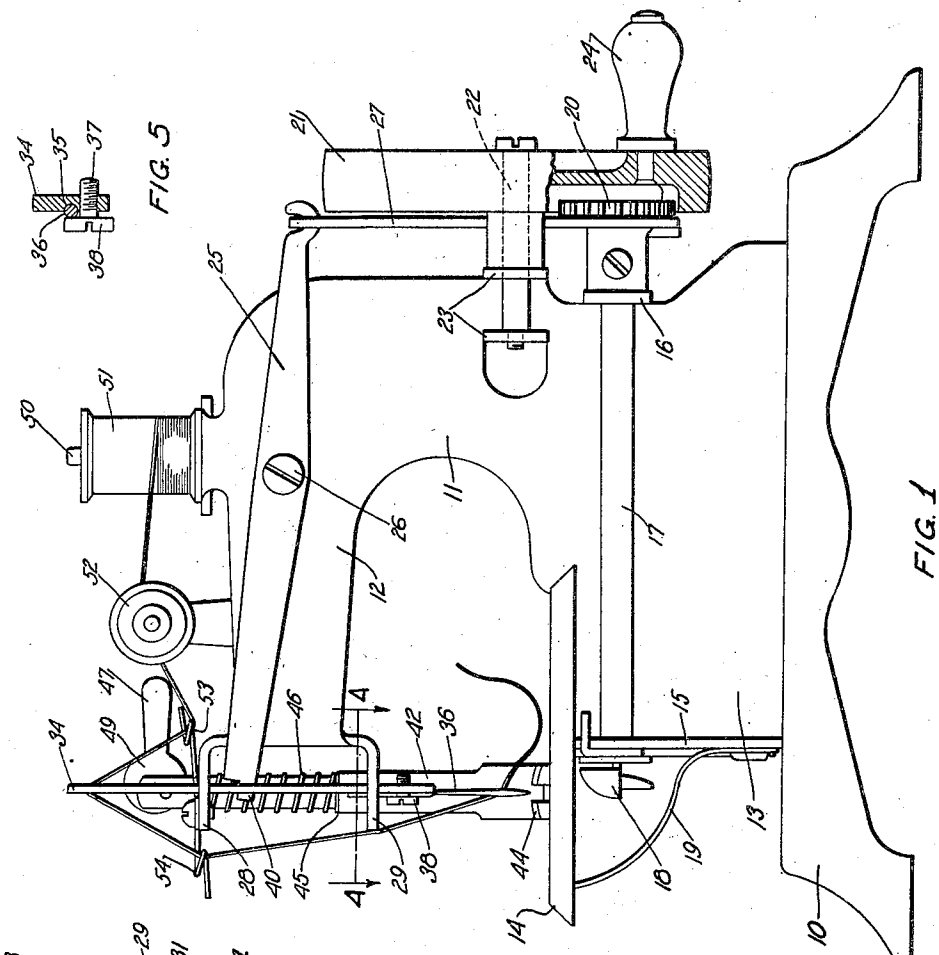


FIG. 1

FIG. 5

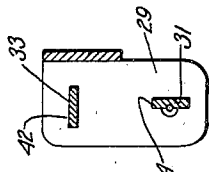


FIG. 4

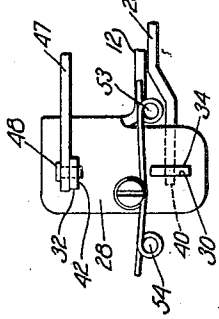


FIG. 3

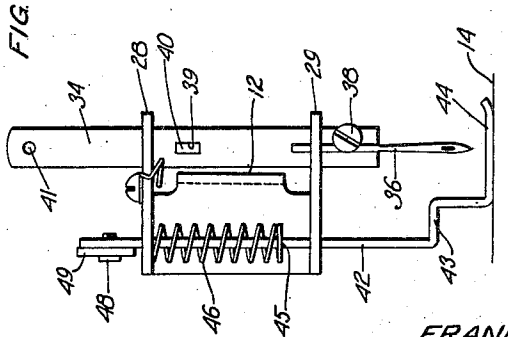


FIG. 2

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SEWING MACHINE

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2 Claims. (Cl. 112—258)

This invention relates to new and useful improvements in sewing machines and has particular relation to small sewing machines of the type that may be regarded as toys although capable of performing actual sewing operations.

An object of the invention is to provide a sewing machine of the class indicated and which may be manufactured at low cost.

Other objects and advantages will become apparent from a consideration of the following detailed description taken in connection with the accompanying drawing wherein a satisfactory embodiment of the invention is shown. However, it will be understood that the invention is not limited to the details disclosed but includes all such variations and modifications as fall within the spirit of the invention and the scope of the appended claims.

In the drawing:

Fig. 1 is a side elevational view with parts broken away, showing the present construction;

Fig. 2 is an end view of the upper portion of the machine as viewed from the left in Fig. 1;

Fig. 3 is a top plan view of the parts shown in Fig. 2;

Fig. 4 is a sectional view taken substantially along the line 4—4 of Fig. 1; and

Fig. 5 is a detail sectional view showing the mounting of the needle.

Referring in detail to the drawing, the sewing machine includes a base 10 from which extends a piece of sheet metal 11 blanked to provide a supporting arm 12 and a body portion 13 supporting a table 14 below the free end of the supporting arm. One end of the body is bent outwardly providing a wall-like portion 15 and at the other end of the body there is a lug 16 extending substantially parallel with said wall. A shaft 17 is mounted by the wall and lug and extends through the wall and on its portion below the table 14 carries a looper 18 over which is any suitable guard 19. At its other end the shaft 17 is connected with a gear 20 meshing with internal teeth in a relatively heavy wheel 21 journaled on a shaft 22 supported by lugs 23. By means of a hand piece 24 the wheel 21 may be rotated to cause rotation of the shaft 17 and the looper 18.

A rocker arm 25 extends along the supporting arm 12 and is pivotally mounted at 26 and to the rear end of this rocker arm there is connected the upper end of a link 27 the lower end of which is eccentrically connected with the gear 20. With this arrangement it will be apparent that as the gear is rotated the rocker arm will be oscillated about its pivot.

At its free end the supporting arm 12 carries upper and lower horizontally disposed supporting members 28 and 29 arranged transversely with respect to the plane of the supporting arm. These members are provided with a pair of slots 30 and 31 extending transversely with respect to the supporting arm and with a second pair of slots 32 and 33 extending parallel with the plane of the supporting arm.

A needle-bar 34 comprising a length of flat stock extends through the first pair of slots and in one side at its lower end is provided with a groove 35 into which is partially received the shank of a needle 36. A screw 37 threaded through the bar has a head 38 overlying the groove 35 in a manner to clamp the needle shank in said groove when the screw is tightened.

Intermediate the members 28 and 29 the bar 34 is provided with an opening 39 receiving the reduced end 40 of the rocker arm 25 and the construction is such that as the rocker arm is oscillated the needle-bar is reciprocated vertically, being guided by the pair of slots 30 and 31 in the members 28 and 29 respectively. At its upper end the needle-bar is provided with an opening 41 for the passage of a thread. With the construction described it will be apparent that the needle-bar may be manufactured at low cost and that the mounting and guiding of the needle-bar requires only that the slots 30 and 31 in the members 28 and 29 be made with reasonable precision.

A presser-bar 42 is mounted and guided by the pair of slots 32 and 33 in the members 28 and 29 and this presser-bar comprises a length of flat stock off-set intermediate its ends as at 43 and having its lower end portion bent to provide the presser-foot 44. Between the members 28 and 29 the presser-bar is reduced to provide a shoulder 45 and surrounding the bar and bearing at its lower end against this shoulder and at its upper end against the under-side of the member 28 is a coil spring 46. This spring is normally urging the presser-bar downwardly to carry the presser-foot against the work. A presser-bar lifter lever 47 is secured to the upper end of the presser-bar as by a pivot 48 and the lever includes the cam portion 49 to engage the upper surface of the member 28 and cause upward movement of the presser-bar and presser-foot against the action of the spring 46 on proper manipulation of the lever 47.

Projecting upwardly from the supporting arm

12 is a pin or spindle 50 on which may be mounted a spool of thread 51 and from the spool the thread is carried through a tensioning device 52 and then through a guide eye 53, through the opening 41 in the upper end of the needle-bar and downwardly through a guide eye 54 to the eye of the needle 36.

Attention is directed to the fact that the presser-bar and presser-foot are integral and are formed from a single length of flat stock. To mount and guide the flat presser-bar properly it is only necessary that the slots 32 and 33 in the members 28 and 29 be formed with reasonable precision as in the case of the slots for the needle bar 34 and it will be clear that the construction and mounting or the presser-bar and presser-foot is such as to adapt itself for low cost quantity production.

Having thus set forth the nature of my invention, what I claim is:

1. In a sewing machine including a supporting arm comprising a vertically arranged piece of flat metal having upper and lower horizontally disposed supporting members extending from its free end, a pair of aligned elongated openings in said members and extending transversely with respect to the plane of the supporting arm, a needle-bar of flat stock reciprocable in and guided by said openings, a rocker arm pivotally mounted on said supporting arm and extending longitudinally thereof, said needle-bar having a slot therein, said rocker arm including a portion extending into said slot whereby rocking of said arm causes reciprocation of said needle-bar, a second pair of aligned elongated openings in said members and extending substantially parallel with respect to the plane of said supporting arm, a one piece member of flat stock comprising a presser-bar slidable vertically through and guided by said second pair of openings and at its lower end bent to form a presser-foot, said bar having a shoulder in its portion between said members, a spring about said presser-bar between said members and bearing against the upper member and said shoulder and normally urging the presser-bar downwardly to carry the presser-foot downwardly, and means operable to raise the presser-bar and presser-foot against the action of the spring.

2. In a sewing machine including a supporting arm having upper and lower horizontally disposed supporting members extending from its free end, a pair of aligned elongated openings in said members, a one piece member of flat stock comprising a presser-bar slidable vertically through and guided by said pair of openings and at its lower end bent to form a presser-foot, said presser-bar having a shoulder intermediate said members, a spring about said presser-bar between said members and bearing against the upper member and said shoulder and normally urging the presser-bar downwardly to carry the presser-foot downwardly, and a cam lever pivoted to the upper end portion of the presser-bar and extending rearwardly parallel with said supporting arm and operable to engage against the top surface of the upper horizontally disposed supporting member to raise the presser-bar and presser-foot against the action of said spring.

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