Oct. 4, 1966 H. SCHOLL 3,276,405

SEWING DEVICE WITH GUIDED CONTROL OF THE SEWING CYCLE

Filed July 24, 1964

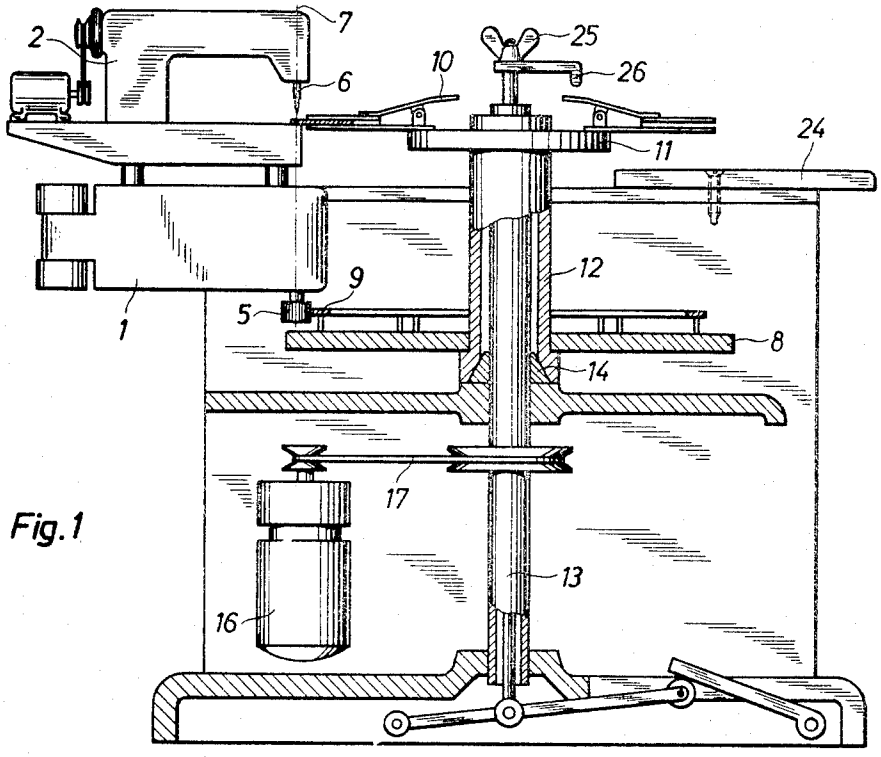


Fig. 1

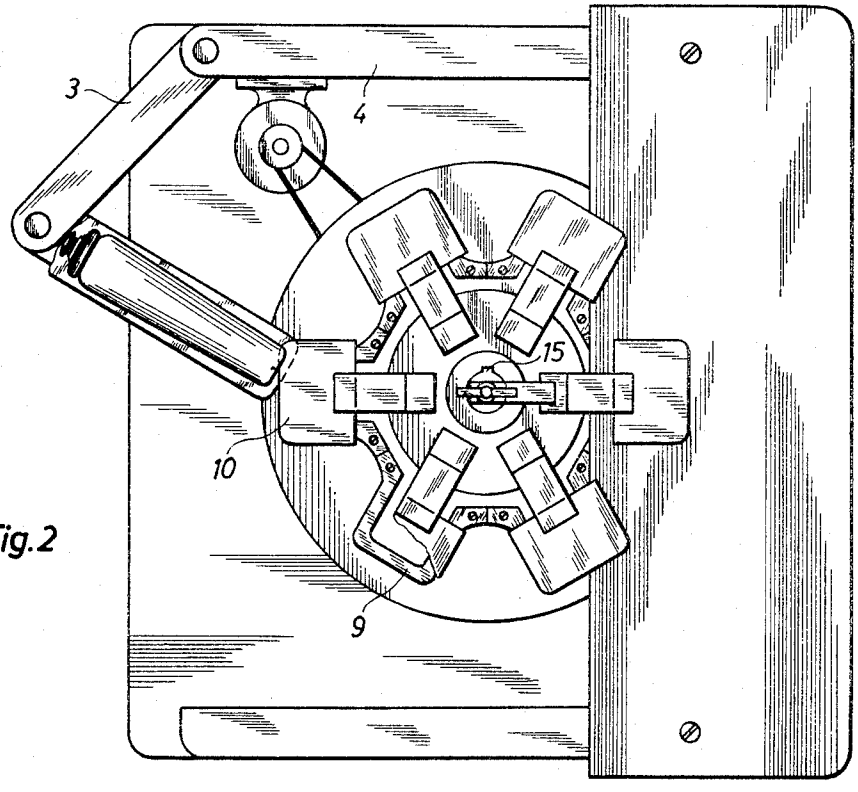


Fig. 2

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SEWING DEVICE WITH GUIDED CONTROL OF THE SEWING CYCLE

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3 Claims. (Cl. 112—2)

The invention relates to a sewing device with a guided control of the sewing cycle by means of patterns and workpiece holders which are secured under one another on carrying plates.

Sewing devices in which the desired shape of the sewing is automatically provided are generally known. Usually a workpiece holder for receiving the sewing thread is provided in such devices. Furthermore, a guide pattern is required by means of which the desired pattern run is controlled in a guided manner.

The disadvantage in these known sewing devices resides, however, in the fact that the workpiece holder and patterns are permanently secured. When emplacing a new pattern it is therefore necessary to adjust the workpiece holder and the patterns, thus requiring a considerable time expenditure which effectively influences the cost of production.

The object of the invention has for its purpose to provide a sewing device by means of which the above disadvantages may be improved or completely obviated.

To this end the invention resides in the provision of a pattern set consisting of carrier plate patterns and workpiece holders which are constructed as a complete unit and are exchangeable.

Furthermore, according to the invention, the pattern set is centered in the proper work position by mounting a cylinder on a conical-shaped member secured on a shaft. The shaft is provided with a carrier nose or the like, for transferring its rotational moment to the cylinder of the pattern set.

The protection sought for the invention is not limited to the features defined in the claims but extends also to the description in the specification taken in connection with the drawings and to all the equivalents of the features described and claimed.

An embodiment of the invention is shown in the accompanying drawing wherein:

FIG. 1 is a partial section of the sewing device and a sewing machine associated therewith, according to the invention and

FIG. 2 is a plan view of the device of FIG. 1.

According to FIGS. 1 and 2 a sewing machine **2**, of known construction is swingably secured by means of an intermediate link **3** to the side wall **4** of the machine support. On the lower side of the link arm **1** there is secured a magnetic roller **5**. The needle carrying bar **6** of the sewing machine **2** is disposed in a common vertical axis **7** with the magnetic roller **5**. The magnetic roller **5** is driven through a drive motor (not shown) of known construction mounted in the link arm **1**.

During the work run, the magnetic roller **5**, due to its clinging force, is drawn against the pattern **9** secured to the carrying plate **8**, and now rolls, due to its auto rotation against the forward face of the pattern **9**. The sewing machine **2**, which is disposed above the roller guided with its sewing mechanism over the sewing material which is held in the workpiece holder. The carrier plate **11** together with carrier plate **8** is secured on cylinder **12**. Cylinder **12** is supported on conical-shaped member **14** which is secured to shaft **13**, so that a centering of the carrier plates **8** and **11** on the drive shaft **13** is effected. The cylinder **12** with carrier plates **8**, **11** is carried along by means of the carrier nose **15** of the shaft **13**.

The stepwise movement of the workpiece or the workpiece holder **10** is discontinued by an appropriate switch after the work cycle is completed. The shaft is rotated by a drive motor **16** through a chain, belt or the like.

The workpiece holder **10** which is mounted on the upper carrier disk **11** and the patterns **9** mounted on the lower carrier disk **8** may be exchanged for other patterns.

Should, on the contrary, a faster pattern exchange be desirable and the available pattern used frequently, the entire pattern set is capable of being exchanged as a unit.

This exchange is accomplished by swinging the link arm **1** and raising the table **24**. The wing nut **25** is unscrewed and the opener hook **26** is pulled away. The cylinder **12** with bolt carrier plates **8**, **11**, including the workpiece holder **10** and pattern **9**, can now be removed from shaft **13** and exchanged for another pattern set.

The advantage of the invention will be apparent from the fact that it makes it possible to sew exchangeable different patterns without a new adjustment of the patterns and workpiece holders. The expenditure of effort is for this reason smaller than in known sewing devices, thus influencing the manufacturing costs correspondingly.

What I claim is:

1. Sewing device with guided control of the sewing cycle, comprising, in combination, a support member, a shaft mounted for vertical rotation on said support member, a conical-shaped member secured on said shaft, a cylinder detachably supported on said conical-shaped member, a lower carrier plate secured to the bottom portion of said cylinder, a pattern mounted on said lower carrier plate, an upper carrier plate secured to the top portion of said cylinder for securing workpiece material, a swingable link arm secured to said support member, said arm being adapted for mounting a sewing machine with a sewing machine bed in planar alignment with said upper carrier plate, a magnetic roller secured to said swingable link arm, for engaging with the peripheral edge portion of said pattern, said arm being adapted to align the needle carrying rod of a sewing machine axially with said roller, said carrier plates, said cylinder, said workpiece holder and said pattern being exchangeable as a unit.

2. Sewing device with guided control of the sewing cycle, comprising, in combination, a support member, a shaft mounted for vertical rotation on said support member, a conical-shaped member secured on said shaft, a cylinder detachably supported on said conical-shaped member, a lower carrier plate secured to the bottom portion of said cylinder, a pattern mounted on said lower carrier plate, an upper carrier plate secured to the top portion of said cylinder for securing workpiece material, a swingable link arm secured to said support member, a sewing machine mounted on said link arm, said sewing machine having a sewing machine bed in planar alignment with said upper carrier plate, a magnetic roller

secured to said swingable link arm, for engaging with the peripheral edge portion of said pattern, said sewing machine having a needle carrying rod axially aligned with said roller, said carrier plates, said cylinder, said workpiece holder and said pattern being removable and exchangeable as a unit.

3. The device according to claim **2**, further provided with a swingable workpiece holder and displaceable hook-like nose means for releasably securing said workpiece holder.

References Cited by the Examiner

UNITED STATES PATENTS

2,345,104	3/1944	Dittrich	112—2
2,722,903	11/1955	Larkin	112—2
2,880,683	4/1959	Abel	112—2
3,170,423	2/1965	Henebry	112—102

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