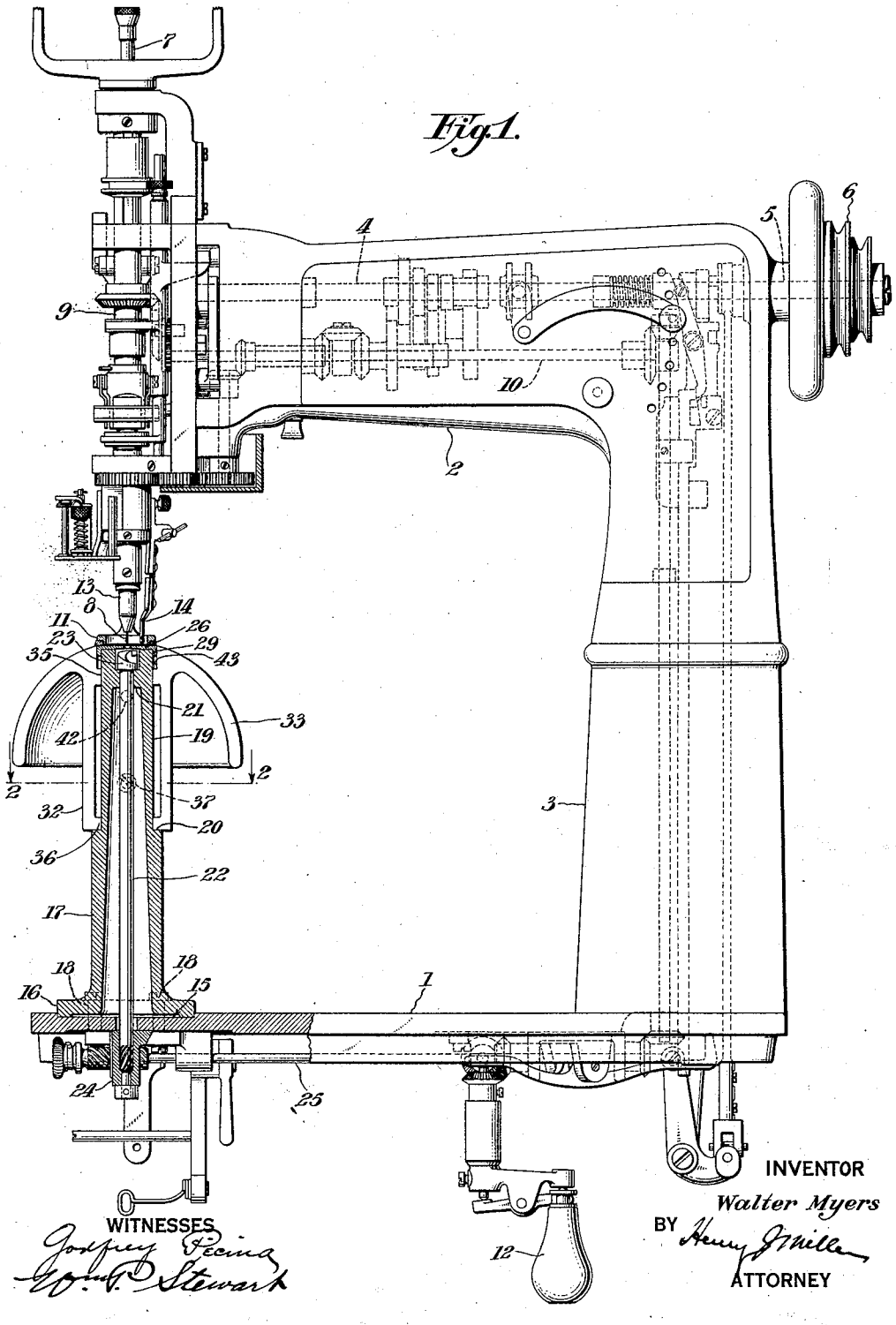
June 9, 1931. W. MYERS 1,809,390

SEWING MACHINE WORK SUPPORT

Filed May 17, 1929 2 Sheets-Sheet 1

Fig. 1.



WITNESSES

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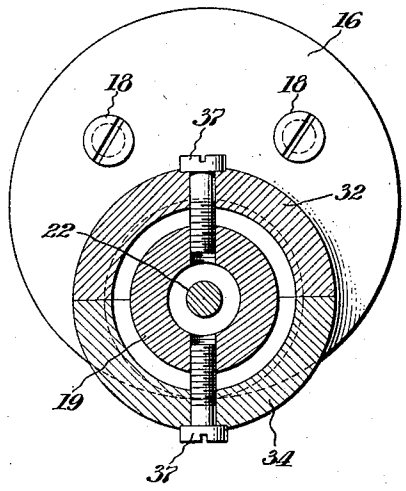

Fig. 2.

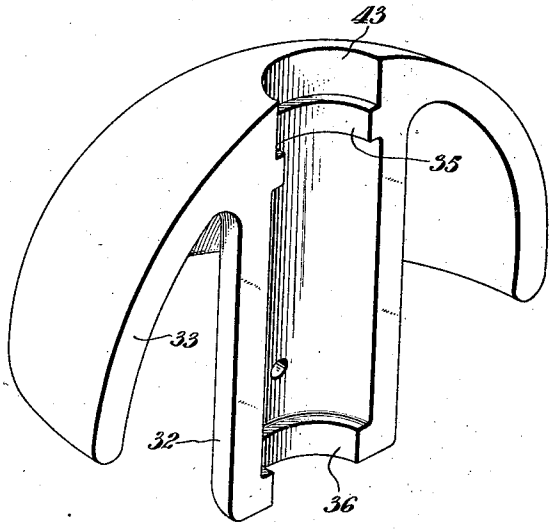

Fig. 3.

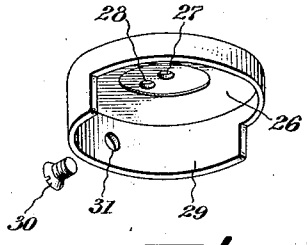

Fig. 4.

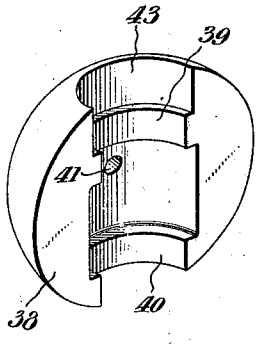

Fig. 5.

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UNITED STATES PATENT OFFICE

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SEWING MACHINE WORK SUPPORT

Application filed May 17, 1929. Serial No. 363,775.

This invention relates to improvements in sewing machine work-supports of more particularly the post type and has for its primary object to provide a post type work-support which may be conveniently adapted to accommodate a considerable range in work sizes and shapes.

While readily adaptable to sewing machines for other classes of work, the present improved work-support was more particularly designed for supporting hats, stockings and similar articles in the operation of embroidering such articles. To this end, the work-support is preferably embodied in an embroidering machine having a universal work-feeding mechanism manually controllable as to the direction of feed, as in the so-called Bonnaz type of embroidering machine.

In a preferred embodiment of the present improvement, a commercially well known embroidering machine is adapted for embroidering hats and similar articles by interposing a suitable standard between the usual bed-plate and bracket-arm to raise the latter, the parts operating within the standard being correspondingly lengthened. The usual throat-plate of the machine is replaced by the base of an upstanding tubular post within which is disposed the usual looper having merely a lengthened shaft.

Mounted upon the upper end of the post is a throat-plate cap having a depending flange embracing the post and apertured to receive a securing screw. To provide for readily interchanging the throat-plate with others having different sizes of needle-apertures, the flange thereof is suitably notched to permit removal of the throat-plate from the post without removal of the feeding-foot and nipple usually employed in these machines.

Embracing the throat-plate flange and the upper portion of the post is a tubular work-supporting head provided internally thereof with vertically spaced bearing-lugs engaging the post. For operating upon tubular or cupped articles, this head presents a flaring work-supporting surface curving downwardly from the throat-plate in directions to encircle the post. To provide for conveniently interchanging different sizes of heads, they are divided longitudinally of the post into preferably half-sections which are in themselves interchangeable and individually secured upon the post. By means of this construction, the head may be removed from the machine without disturbing the post, the looper-mechanism or the feeding foot and nipple. Also the throat-plate may be removed by merely removing one of the head sections. Furthermore, the manufacture of the head is simplified by constructing it in duplicate sections.

In the accompanying drawings, Fig. 1 is a front side elevation, partly in section, of an embroidering machine having the present improved work-support, with the front section of the latter removed. Fig. 2 is a sectional view of the work-supporting post substantially on the line 2—2, Fig. 1. Fig. 3 is a perspective view of one of the interchangeable sections of the work-support. Fig. 4 is a perspective view of the throat-plate. Fig. 5 is a perspective view of one of a pair of work-supporting sections which may be substituted for those represented by Fig. 3, for smaller work.

Referring to the drawings, the bed-plate 1 and the overhanging bracket-arm 2, together with the mechanism sustained thereby are substantially the same as disclosed in my prior U. S. Patent No. 1,536,041, April 28, 1925. In the present machine, however, a tubular standard-section 3 is interposed between the bed-plate and bracket-arm to elevate the latter the required distance for employing a work-supporting post.

Journaled in the bracket-arm 2 is the usual needle- and feed-actuating shaft 4, which may be suitably coupled under manual control with the main-shaft 5 carrying the belt-pulley 6. Through the usual connections with the shaft 4, the needle-bar 7 carrying a hook-needle 8 is reciprocated vertically, said needle-bar being constrained to partake of rotary movements about a vertical axis of the cylinder 9 derived from the shaft 10 journaled in the bracket-arm 2. Also constrained to rotate with the cylinder 10 is the feeding foot 11 which derives its work-advancing movements from the rotary shaft 4. Rotary

movements of the shaft 10 are manually controllable during the operation of the machine by means of a hand-crank 12, beneath the bed-plate 1 and operatively connected with said shaft 10 by suitable shafts and gearing.

As usual, the work is stripped from the needle by means of the vertically reciprocatory nipple 13, which may be designed to function as a needle-stripper or as a combined braid-guide and needle-stripper as is well known. The present machine also includes the covering-thread guide 14 which, through suitable connections with the shaft 4, is rotatable in timed relation and at different speeds with respect to the needle-reciprocations to wind a covering-thread about the thread-loops enchained by the needle. While the commercially well known embroidering machine head illustrated in the accompanying drawings has been selected for use with the present improved work-support, because of its adaptability for producing the desired embroidery effects, it is to be understood that the present invention in its broadest aspects is not limited to the specific stitch-forming and work-feeding mechanisms disclosed in the drawings and referred to in this description in general terms.

The bed-plate 1, at its end opposite to the standard is regularly provided with a circular throat-plate recess 15, which in the present case affords a seat for a circular, flanged base 16 of a vertically directed, tubular post 17. By referring to Fig. 2 of the drawings, it will be observed that the post 17 rises eccentrically from the circular base 16 which is detachably secured to the bed-plate 1 by means of screws, as 18. The upper portion 19 of the post is reduced in diameter, thereby providing a shoulder 20, and has interiorly thereof a wall 21 which is apertured to form a bearing for the upper end of the elongated, vertical shaft 22 of the thread-presenting looper 23.

The lower end of the shaft 22 is journaled in the regular bearing-lug 24 depending from the bed-plate 1 and is oscillated in the usual manner by the endwise reciprocatory bar 25 deriving its movements from the shaft 4 through connections of regular form but elongated to extend through the machine standard. The looper shaft 22 is turned as usual, through connections between the hand-crank 12 and the bar 25, whereby the looper position always corresponds with the needle position in different directions of feed of the work.

Capping the upper end of the post portion 19 is a throat-plate 26 having a needle-aperture 27 and a threading-implement aperture 28. Depending from the periphery of the throat-plate is a circular flange 29 embracing the upper end of the post, said flange being partly cut away so that for one half of its circumference it is of less depth than the other half. This construction of the flange 29 permits of ready removal of the throat-plate cap without requiring the removal of the feeding foot and nipple, said flange 29 being detachably secured upon the post by a screw 30 passing through a flange-aperture 31.

Mounted upon the reduced portion 19 of the post is a work-supporting head divided lengthwise of the post to provide duplicate half-sections, together encircling the post and interchangeable with each other and with modified head sections for different classes and sizes of work. One form of these head sections is illustrated in Figs. 1 and 3 of the drawings and comprises a shank 32 which is semi-circular in cross section and is provided at its upper end with an outwardly extending flange 33 of which the upper side affords a spherical work-supporting surface in combination with duplicate half-section 34. Of course, the flange 33 may be constructed to have a different conformation than that shown in the drawings, to meet the requirements of different articles to be stitched and may in fact constitute a flat work-supporting plate projecting horizontally from its shank 32. Preferably, the shank 32 is provided interiorly thereof with spaced bearing-ribs 35 and 36, of which the rib 36 is seated upon the shoulder 20 of the post. Each of the half-sections is detachably secured upon the post-portion 19 by a screw, as 37, with only the bearing-ribs in direct contact with the post, the two-point contact of the work-supporting head with the post afforded by the spaced bearing-ribs providing for snugly fitting the head-sections upon the post to thereby form a rigid work-support.

In Fig. 5 of the drawings, there is illustrated a half-section 38, which with a duplicate thereof forms a modified work-supporting head more particularly adapted for small sized tubular or cupped articles of work. It will be observed that this work-supporting head also has spaced bearing-ribs, as 39 and 40, for engaging the post and that each half-section is provided with an aperture 41 for entrance by a securing screw (not shown) to be threaded into an aperture, as 42, in the post portion 19. In each of the different types of heads, a clearance recess, as 43 is provided above the upper bearing-rib for the throat-plate flange 29.

The present improvement, comprising sections which together encompass the post, affords a work-supporting surface permitting ready control of the work by an operator, regardless of the direction of feed. It also provides for readily interchanging a pair of head-sections with others adapted to meet different requirements, whether for work of a flat character or for tubular work of different types or sizes.

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

1. A work-support for sewing machines, comprising an upstanding post, a work-supporting head divided lengthwise of the post to provide complemental sections having outwardly extending flanges together providing a work-supporting surface encompassing the post, and means for securing the head sections upon the post for lateral detachment therefrom.

2. A work-support for sewing machines, comprising an upstanding post, a tubular work-supporting head upon the upper end of the post divided lengthwise of the post into half-sections together encircling the post, and means for detachably securing the head-sections upon the post.

3. A work-support for sewing machines, comprising an upstanding post, a work-supporting head, and means for detachably securing the head upon the post, said head being divided lengthwise of the post into sections together encircling the post and having a work-supporting surface curving outwardly and downwardly from the upper end of the post.

4. A work-support for sewing machines, comprising an upstanding post, a tubular work-supporting head upon the upper end of the post divided lengthwise of the post into sections together encircling the post, spaced bearing ribs provided interiorly of said head to engage the post, and means for detachably securing the head sections upon the post.

5. A work-support for sewing machines, comprising an upstanding post, a throat-plate upon the upper end of said post having a depending flange embracing the post, substantially one half of said flange being of less depth than the remainder thereof, and a work-supporting head encircling the throat-plate and the upper end of said post, said head being divided lengthwise of the post into laterally detachable sections.

6. A work-support for sewing machines, comprising an upstanding post, and a work-supporting head upon said post, said head comprising a tubular shank embracing the post and divided lengthwise of the post into separable sections, the tubular shank terminating at its upper end in a work-supporting flange extending outwardly from the upper end of the post in directions to encompass the post.

In testimony whereof, I have signed my name to this specification.

WALTER MYERS.