

M. SCHOENFELD.
EMBROIDERING MACHINE.
APPLICATION FILED FEB. 16, 1910.

1,024,912.

Patented Apr. 30, 1912.

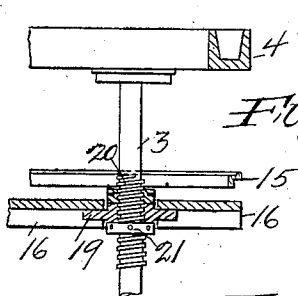
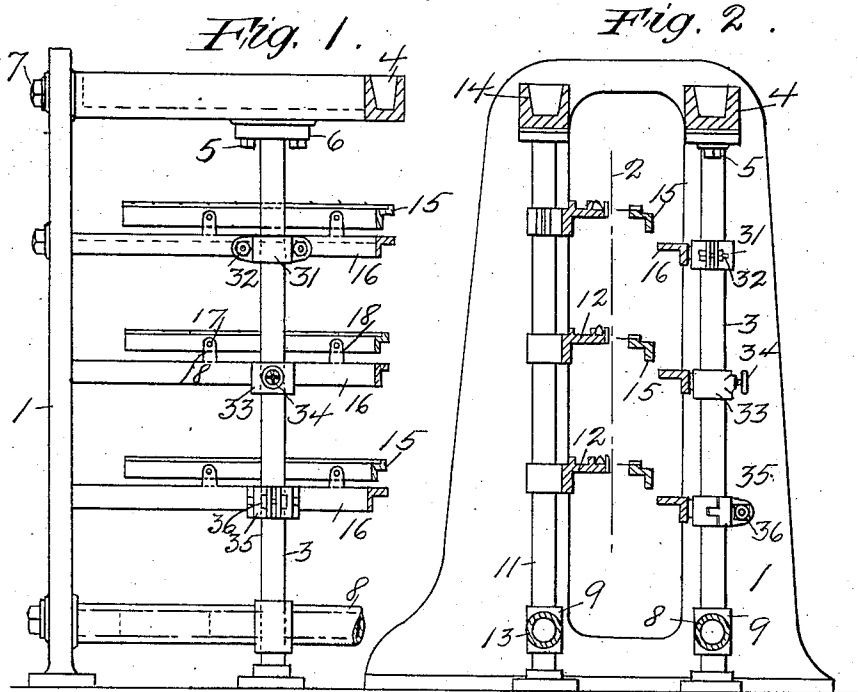


Fig. 3.

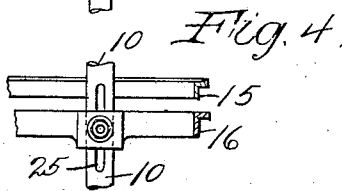


Fig. 4.

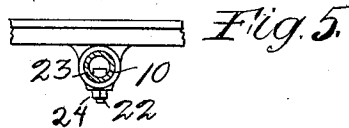


Fig. 5.

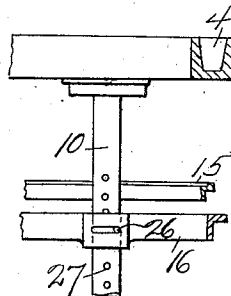


Fig. 6.

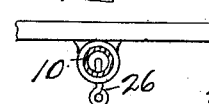


Fig. 7.

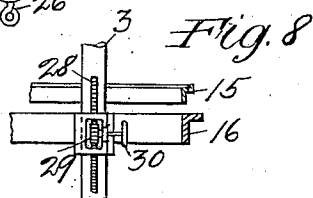


Fig. 8.

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MORRIS SCHOENFELD, OF RORSCHACH, SWITZERLAND.

EMBROIDERING-MACHINE.

1,024,912.

Specification of Letters Patent.

Patented Apr. 30, 1912.

Application filed February 16, 1910. Serial No. 544,199.

To all whom it may concern:

Be it known that I, MORRIS SCHOENFELD, a citizen of the United States, and a resident of Rorschach, in the Canton of St. Gall, Switzerland, have invented certain new and useful Improvements in Embroidering-Machines, of which the following is a specification.

My present invention relates to structural features of an embroidering machine and the object thereof is to so construct the embroidering machine that the number of rows of embroidering tools such as needles and coöperating devices, may be arranged in rows, one set above the other, in greater numbers than heretofore; and to construct the machine so that a clear view of the embroidery surface can be had at all times notwithstanding the numerous rows of embroidering tools.

Heretofore it has been customary to construct the embroidering machine frame of end standards, connected by four heavy longitudinal beams, which supported the various needle bars and the operating mechanisms; two beams being arranged on the front side of the frame in front of the fabric for certain of the mechanisms, such as the needle bars, tension roller, take up, etc.; while two beams at the rear of the fabric supported the other mechanisms, such as the shuttle device. In view of the great length of these beams and the great weight and shocks taken up by them they were necessarily large and but two rows of needles could be employed because a further duplication of the needle bars required a corresponding duplication of the heavy longitudinal beams and this would cause the embroidery surface to be so obstructed that the attendants could not properly see the work during the operation of the machine. Even with but two rows of needle bars and mechanism the obstruction of the embroidery surface was objectionable. In the present construction I have provided end frame members or supports which are connected by longitudinal beams but they are so disposed that they do not hide the fabric; while intermediate of the end frame members I have provided a series of upright frames, disposed at comparatively short intervals which are so constructed that, while taking, either directly or indirectly, the

weight of the various embroidering tools and mechanisms, they permit of the multiplication of the rows of embroidering devices, and while strong and rigid, offer little obstruction to the view of the embroidery surface. The attendants may not only view the embroidery surface directly in front of them, but the present construction permits them to look along the embroidery surface. Furthermore I have provided novel means for vertically adjusting the supports which carry the operating mechanisms, upon the upright frame members.

For simplicity of illustration I have omitted from the drawings the various operating mechanisms for operating the embroidering tools as such mechanisms may be of various constructions, but an example of the mechanisms especially adapted for use in conjunction with the structural features of my present invention may be found in my co-pending applications filed February 16, 1910, and serially numbered 544194 and 544195 which show the mechanisms I prefer to use with the present invention.

In the drawings forming a part of this application, Figure 1 is a front elevation of one end of an embroidering machine embodying my improvements, Fig. 2 is a cross section of the embroidering machine frame, Fig. 3 is a detail view showing one form of adjusting device for altering the relative positions of the tool supporting bars, Fig. 4 is a front elevation and Fig. 5 a sectional view showing a modified form of adjusting means, Figs. 6 and 7 are similar views of another form of adjusting device, and Fig. 8 is an elevation of another adjusting device.

I have shown so much of an embroidering machine as is necessary to illustrate one embodiment of my invention, it being understood that the various mechanisms for forming a complete embroidering machine may be the same as in the cases to which cross reference has been made, or other mechanisms may be advantageously employed if desired.

The frame of the embroidering machine herein shown consists of upright end frame members 1, one at each end of the frame of the machine. These end frame members are adapted to rest upon the floor or other support. Between the end members I have ar-

ranged a number of upright frame sections of novel construction which serve to take up the weight of the various mechanisms and they are preferably arranged at comparatively short intervals apart throughout the length of the machine. These intermediate frame members are formed of bars or tubes, preferably of round cross section, and those placed in front of the fabric preferably are placed opposite those at the rear of the fabric, the two forming what I shall term a frame section, and in my present construction the several intermediate frame sections are supported upon the floor or other machine support.

In Figs. 1 and 2 I have shown one of the intermediate frame sections, it being understood that these are duplicated along the machine frame. In front of the fabric 2 I have placed upright posts 3, which rest upon the floor and at their tops are connected by longitudinal beams 4, by means of bolts 5, passing through the flanges 6, on the upright posts and the beams 4; and these beams preferably extend the entire length of the machine and are secured to the end frames 1 by means of the bolts 7, whereby a rigid frame structure is formed. To further strengthen the structure I have provided spacing members (preferably of tubular form) 8, which are secured between the couplings 9, on the several posts 3, which secure the several posts together near their base, where they will not interfere with the view of the fabric surface. As before stated, these upright posts are preferably round, to secure proper strength and compactness and they may be either of solid metal or, as shown in Figs. 4 and 5 of tubes 10. In either case they are in the nature of posts, adapted to support the various operating parts of the machine at various points throughout the length of the machine, which usually are of considerable length. The fabric 2, is shown diagrammatically in Fig. 2, it being understood that the same is stretched upon a tambour frame in the usual way, longitudinally of the machine, and the tambour frame is operated by any known mechanism. At the rear of the fabric I have provided a series of upright posts 11, which are connected by the spacers 13, in a similar manner to the posts 3; and at the top they are also connected by longitudinal beam 14. The posts 11 are preferably disposed opposite the posts 3 with sufficient space between them for the embroidering operation. The posts 11 are more especially adapted to support the shuttle tracks or guides 12 in which the shuttles and their drives are operated, preferably in the manner shown in my co-pending case Serial Number 544,195. The needle bars 15 preferably extend the length of the machine, and carry a large number of needles in the

usual way; and these needle bars may be secured directly to the posts 3 under the broad spirit of my invention, or, preferably, their shafts 17 are adapted to slide in sockets 18 on the longitudinal bars 16. The needle bars are operated to and from the fabric in any desired manner, to stitch the fabric. The bars 16 are in no sense the beams of former constructions as they may be made much smaller to permit of the use of a greater number of needle bars, without obstructing the fabric surface. I prefer to make the bars 16, substantially the length of the machine and to secure them adjustably to the posts, whereby the positions of the needle bars may be altered to cause the several rows of needles to be operated at any desired place upon the fabric.

In the form shown in Fig. 3 the bar 16 is supported upon the flange 19 of a nut which is threaded upon the post 3, to move up or down on the threads 20. By inserting a pin in one of the apertures 21 the nut may be screwed up or down to vertically adjust the bar 16.

In Figs. 4 and 5 the post 10 is hollow and the bolt 22 passes through the vertical slot 25 and is provided with an enlarged head 23 inside of the post and with a nut 24 outside. By loosening the nut 24 the bar 16 may be moved up or down.

In Figs. 6 and 7 the bar 16 rests upon a pin 26, which can be placed in any of several positions by placing it in either of the apertures 27.

In Fig. 8 the post 3 is provided with a rack 28, with which a pinion on the bar meshes. By turning the handle 30 the bar 16 may be racked up or down.

In the upper rows of Figs. 1 and 2, the bar 16 has a two part clamp 31 which encircles the post 3 and is clamped thereon by means of the bolts 32. In the second row of these figures the bar has a collar 33 which surrounds the post and a set screw 34 binding on the post serves to hold the bar 16 in any desired position. In the lowest row the bar 16 has a collar with hinged plates 35 which are clamped together by the bolts 36.

The present construction is simple, and strong, may be made of commercial forms of metal and a clear view of the fabric may be had even when many rows of needle bars are used. It also permits of a longer machine, thus increasing the amount of work by enlarging the machine lengthwise while at the same time permitting of its increased efficiency by vertical duplication of the embroidering mechanism.

It will be obvious that the supporting members may be employed for supporting other mechanisms besides the needle bars and shuttles.

I do not wish to be limited to the details

herein described as changes may be made without departing from the spirit and scope of my invention.

Having described my invention what I claim is:

1. An embroidering machine comprising a frame composed of end standards and a plurality of rigid, stationary, upright posts arranged at intervals between the end standards, opposite each other in the front and rear of the machine, means uniting the standards and posts in a rigid whole, longitudinal superimposed bars and embroidering elements carried thereon, said bars being supported at intervals throughout their length by said upright posts through members engaging around said posts and vertically adjustable thereon.

2. An embroidering machine comprising a frame composed of end standards and a

plurality of rigid, stationary upright posts arranged at intervals between the end standards in the front and rear of the machine, means uniting the standards and posts in a rigid whole, longitudinal bars and embroidering elements carried thereon, said bars being supported at intervals throughout their length by said upright posts through elements having a threaded engagement with the posts, whereby said bars may be vertically adjusted on the upright posts.

Signed at St. Gall in the Canton of St. Gall, Switzerland, this 3rd day of February 1910.

MORRIS SCHOENFELD.

Witnesses:

ALBERT PHILLIPS,
RANDALL ATKINSON.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."