UNITED STATES PATENT OFFICE.

JAMES R. MOFFATT, OF CHICAGO, ILLINOIS, ASSIGNOR TO UNION SPECIAL MACHINE COMPANY, OF CHICAGO, ILLINOIS, A CORPORATION OF ILLINOIS.

FEEDING MECHANISM FOR MULTIPLE-NEEDLE MACHINES.

Application filed May 29, 1915. Serial No. 434,726.

To all whom it may concern:

Be it known that I, JAMES R. MOFFATT, a citizen of the United States, residing at Chicago, in the county of Cook, State of Illinois, have invented certain new and useful Improvements in Feeding Mechanism for Multiple-Needle Machines, of which the following is a description, reference being had to the accompanying drawing and to the letters and figures of reference marked thereon.

My invention relates to new and useful improvements in sewing machines, and more especially to feeding mechanisms for multiple needle sewing machines, although it is obvious that the invention from certain aspects, may be applicable to other types of machines.

An object of the invention is to provide a feeding mechanism wherein the feed engaging members may be adjusted laterally of the line of feed.

A further object of my invention is to provide a feed bar with a plurality of feed dogs which are independently adjustable thereon.

Still further objects of my invention will in part be obvious and will in part be more fully hereinafter described.

In the drawings which show by way of illustration one embodiment of my invention:—Figure 1 is an end view, partly in section, certain parts being omitted for the sake of clearness, showing my improved feeding mechanism. Fig. 2 is a top plan view of the front end of the machine, with the work support removed. Fig. 3 is a detail of the feed operating eccentric. Fig. 4 is a detail view of the needle head with parts broken away to show the sockets for the needles. The head of the machine, is of the usual construction, and carries a needle bar 2, which may be reciprocated therein, in any suitable manner. A presser bar 3 is mounted in the head of the machine and carries a presser foot 4, which is also of any suitable construction. The needle bar 2 carries a needle head 5, at its lower end, in which is mounted a plurality of needles 6, 6, 7, 7. Said needles as herein shown, are arranged in pairs. Said needle head 5, may be made interchangeable with other needle heads, so that the needles may be differently spaced, if desired. Again, the needles may be adjustably fixed to the needle head, as is common in the sewing machine art, so that said needles may be adjusted laterally of the line of feed, and spaced as desired. In Fig. 4 of the drawings, I have shown the needle head 5 as provided with a plurality of sockets for the needles and by placing the needles in different sockets the distance between the same may be readily adjusted.

Cooperating with the needles 6, 6, are two loopers 8, 8, while the loopers 9, 9 cooperate with the needles 7, 7. The loopers as herein shown, are of the single chain stitch type, and are mounted upon a shaft 10, which is carried by the supporting lugs 11 and 12. 70 Said looper shaft 10, receives its oscillation from a crank 13 carried by the main shaft 14. This looper operating mechanism, however, forms no part of my invention.

The feeding mechanism consists of a feed bar 15, which is pivoted at 16 to a rocking frame 17, pivoted at 18 to the bed plate 19. Said rocking frame 17 carries an arm 20 which is rigidly secured thereto, and which carries a stud 21 at its forward end, having a ball which is engaged by the eccentric strap 22 cooperating with an eccentric 23, carried by the main shaft 14. Said eccentric 23 is rigidly secured to a plate 24, which is secured by a bolt 25 to a disk 26, carried by a collar 27, secured to the main shaft in any suitable manner.

It will readily be seen that by loosening the bolt 25, the plate 24 may be adjusted laterally of the main shaft, and thereby the throw of the eccentric varied. The feed bar 15 receives its vertical movements from an eccentric 28, secured to the main shaft 14. Said eccentric 28 engages directly the under side of the feed bar, and a suitable arm 29 carried by the feed bar, engages the under side of the eccentric 28, so that as the eccentric 28 is rotated, the feed bar is positively moved up and down.

The feed bar 15 carries at its forward end, a plate 30, which is secured thereto in any suitable manner. Said plate 30 is provided with an upwardly extending rib 31, which is slotted at 32. The feed dogs which are herein shown as four in number, are secured to the plate 30. The feed dog 33 is provided with a recess or rabbit 34, on its under side, which fits the rib 31 and a
screw 35 passing down through the shank of the feed dog 33, clamps the feed dog rigidly to the plate 30. By loosening the screw 35, the feed dog may be moved along the rib 31 laterally of the line of feed, so as to properly position the same relative to the adjustment of the needles. Said feed dog 33, as herein shown, is provided with two forwardly projecting feed engaging portions, which are cut away so as to form right and left hand feeding surfaces which allow the needles to pass down between the same. The feed dog 33 is similar to the feed dog 38, and is secured to the plate 30 by means of a screw bolt 37, which is provided with the usual clamping nut. I have also shown two intermediate feed dogs 38, 39, which are secured to the plate 30 by means of screws 39, 39, in a manner similar to the means for securing the feed dog 33, to the plate 30. Each of said feed dogs 38 is provided with straight forwardly projecting portions 40, which engage and feed the fabric.

It will thus be seen that I have provided a feeding mechanism which has a plurality of feeding members which may be independently adjusted laterally of the line of feed, and so positioned relative to widely spaced needles, as to properly feed the material to the stitching mechanism.

Having thus particularly described my invention, what I claim as new, and desire to secure by Letters Patent is:

1. A feeding mechanism including in combination, a feed bar, means for moving said feed bar, a feed dog, and means for securing said feed dog to said feed bar whereby it may be adjusted laterally, including a rib and a recess cooperating therewith carried respectively by the feed bar and feed dog and means for securing said feed dog in adjusted positions.

2. A feeding mechanism including in combination, a feed bar, means for operating the same, a rib carrying member supported by the feed bar and extending transversely thereof, a plurality of feed dogs each having a recess to engage said rib and means for adjustably holding said feed dogs on said ribbed member.

3. A feeding mechanism, including in combination a feed bar, means for operating the feed bar, a plate secured thereto and extending transversely thereof, and having a rib projecting from its upper side, a plurality of feed dogs, each being provided with a recess to engage said rib, and means for holding said feed dogs in adjusted positions, on said rib.

4. A feeding mechanism including in combination, a feed bar, means for operating the same, a plate secured to the front end of said feed bar, and having an upwardly projecting rib, a slot extending longitudinally through said plate, and a plurality of feed dogs, each being provided with a recess to engage said rib and a locking screw passing through said slot for each feed dog, and adjustably holding said feed dog on said rib.

5. The combination with a plurality of spaced needles, of a feed dog cooperating with each of said needles and intermediate feed dogs for engaging the material between said needles.

6. The combination with a plurality of needles which may be set so as to produce lines of stitching of varying distances apart, of a feed bar, means for operating said feed bar, a plurality of feed dogs carried by said feed bar and means for adjusting said feed dogs to correspond with the position of the needles.

7. The combination of a plurality of widely spaced needles, which may be set varying distances apart, of a feed bar, feed dogs cooperating with each of said needles, said feed dogs being adjustably connected to the feed bar, whereby the same may be moved laterally of the feed bar and properly located relative to said needles, and intermediate feed dogs located between the first named feed dogs and adjustably supported by said feed bar.

8. The combination with a plurality of spaced needles, of a feed dog cooperating with each needle and including a fabric-engaging portion located at the outside of the needle, and a fabric-engaging portion in the rear of the needle, and feed dogs located between said spaced needles.

9. The combination with a plurality of spaced needles, of a feed dog cooperating with each needle and including a fabric-engaging portion located at the outside of the needle, a fabric-engaging portion in the rear of the needle, feed dogs located between said spaced needles, and means whereby each one of said feed dogs may be independently adjusted laterally.

In testimony whereof I affix my signature, in presence of two witnesses.

JAMES R. MOFFATT.

Witnesses:
C. MCNEIL,
R. TAUBERT.