

June 10 , 1924.

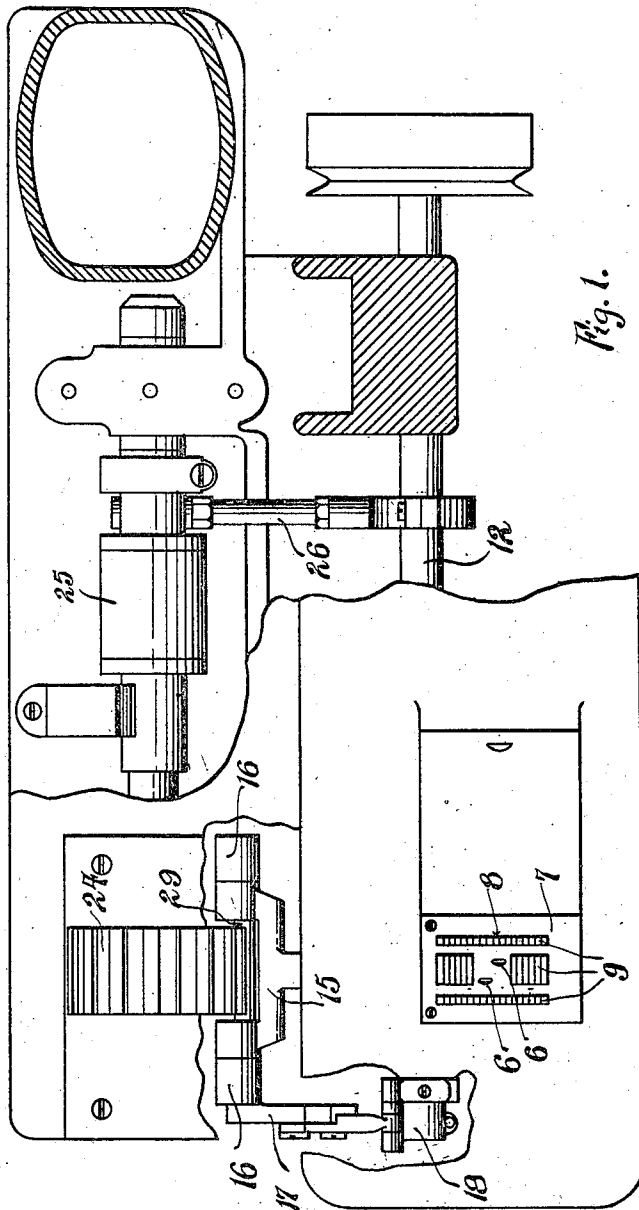
1,496,816

C. McNEIL

SEWING MACHINE

Filed Oct. 8, 1918

2 Sheets-Sheet 1



Inventor

Witness

Albert Perkins

Chester McNeil

Figure

Sturtevant Mason
Attorneys

Attorneys

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2 Sheets-Sheet 2

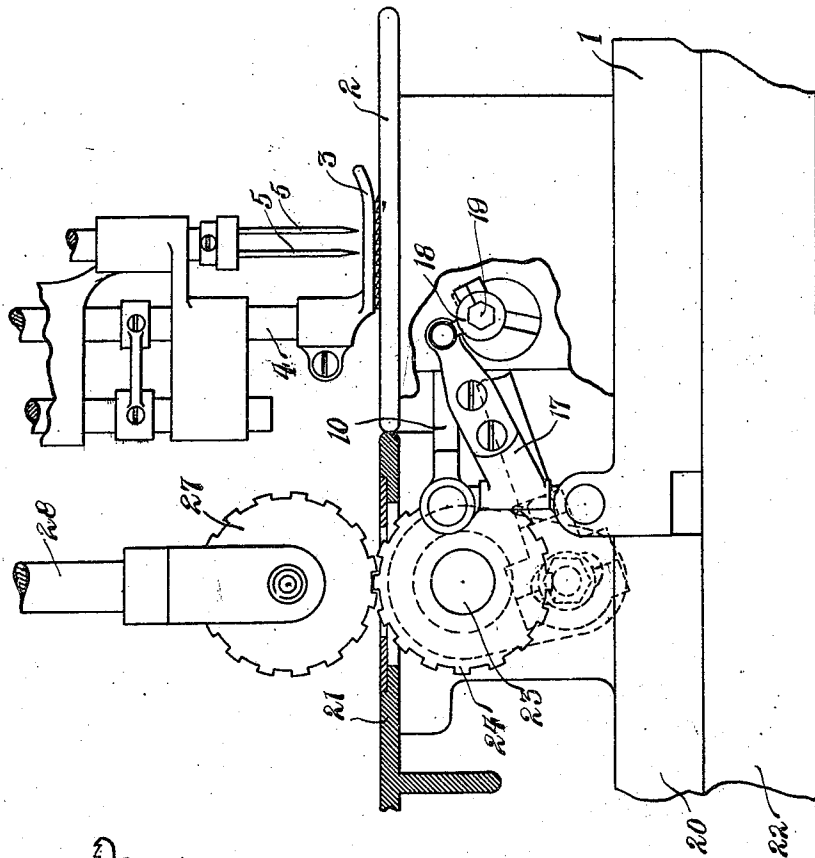


Fig. 2.

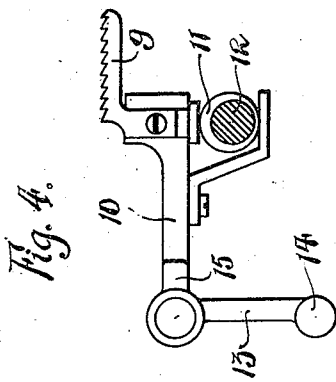


Fig. 4.

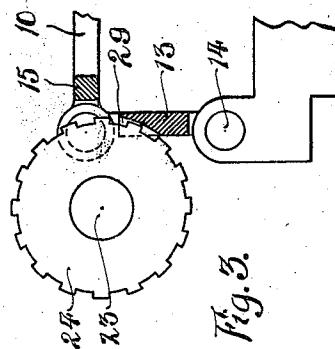


Fig. 5.

Witness
Albat Popkins

Inventor
Chester McNeil
By *Sturtevant Mason*
Attorney

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UNITED STATES PATENT OFFICE.

CHESTER McNEIL, OF CHICAGO, ILLINOIS, ASSIGNOR TO UNION SPECIAL MACHINE COMPANY, OF CHICAGO, ILLINOIS, A CORPORATION OF ILLINOIS.

SEWING MACHINE.

Application filed October 8, 1918. Serial No. 257,379.

To all whom it may concern:

Be it known that I, CHESTER McNEIL, 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 Sewing Machines, of which the following is a description, reference being being had to the accompanying drawing and to the figures of reference marked thereon.

The invention relates to new and useful improvements in sewing machines and more particularly to the feeding mechanism for feeding the material to and from the stitching mechanism.

In my prior patent granted June 27th, 1916, No. 1,189,007, I have shown and described a puller machine associated with a sewing machine, and which operates in unison with the feed of the machine to exert an intermittent pull or feed on the material being stitched in order to relieve the strain of the sewing machine feed when operating upon heavy materials. This puller machine includes rotating feeding members which are disposed at some distance in rear of the main feed of the sewing machine. As a result it is difficult to stitch seams which are in any way curved, on the machine.

An object of the present invention is to provide an arrangement of the feeding members of the puller machine, whereby they may be located at a point much nearer the point of operation of the main feeding mechanism, so that curved seams may be stitched on the machine.

In the drawings which show by way of illustration one embodiment of the invention—

Figure 1 is a view partly in plan and partly in horizontal section, showing a portion of a sewing machine and a portion of a puller machine having my improvements embodied therein;

Figure 2 is a view partly in end elevation and partly in vertical section of the same;

Figure 3 is a detail showing the feed rocker in section and the relation of the lower feed member of the puller machine thereto;

Figure 4 is a detail showing partly in section the feed bar, the feed dog supported thereby and the feed rocker for reciprocating the feed bar.

The feed bar of the sewing machine is

usually supported at its rear end by a feed rocker—the feed bar being connected to the rocker by a pivoted rod extending from end to end of the feed rocker and through the feed bar. The present invention is directed broadly to a modification of the connection between the feed rocker and the feed bar and a relocation of the feeding members of the puller machine, so as to bring the same much closer to the main feed of the sewing machine—the lower member of the puller machine being disposed so as to operate within the limits of the feed rocker connection to the main feed bar. This brings the feeding rollers of the puller machine very close to the stitching point and enables curved seams to be stitched.

The invention will be more clearly understood by reference in detail to the accompanying drawings, which show one embodiment of the invention. In these drawings the sewing machine is shown as having a supporting bed 1, carrying a work support 2. The material is held on the work support by a presser foot 3, carried by a presser bar 4. The material is stitched by a suitable stitching mechanism which, as shown in the drawings, includes two needles indicated at 5—5. These needles pass through suitable openings 6—6 in the throat plate 7 carried by the work support 2. The throat plate is formed with feed slots 8, through which the feed teeth of the feed dog 9 project. The feed dog is carried by a feed bar 10, which is raised and lowered by an eccentric 11 on the main shaft 12. The feed bar is moved back and forth by a feed rocker 13. This feed rocker is pivoted at 14 to the bed plate 1 of the machine. The feed bar 10 is formed with a yoke 15 at its rear end. The feed rocker 13 has upwardly extending spaced arms 16—16 between which the ends of the yoke 15 extend and these arms 16 are independently connected to the ends of the yoke, so that there is a free space between the ends of the yoke on the feed bar. The feed rocker is provided with the usual forwardly projecting arm 17, which is connected by a link 18 to an adjustable crank pin 19, carried at the end of the main shaft 12. The parts of the sewing machine operate in the usual manner—the feed dog being moved back and forth and up and down for the feeding of the material underneath the presser foot and the stitch-

ing mechanism operating to stitch the material.

Associated with the sewing machine is the puller machine which consists of a bed plate 20, carrying a work support 21. The bed plate 1 of the sewing machine and the bed plate 20 of the puller machine are mounted on a common support indicated at 22 in the drawings. The work support 2 of the sewing machine and the work support 21 of the puller, as clearly shown in Figure 2 of the drawings, are arranged in the same plane so that the material being stitched passes from underneath the presser foot on to the work support 21. Mounted in suitable bearings carried by the supporting bed 1 is a shaft 23. Fixed to this shaft 23 is a corrugated feed roller 24. The shaft 23 carrying the feed roller 24 is intermittently rotated by means of a friction clutch mechanism similar to that shown in my prior patent and illustrated in the drawings diagrammatically at 25. The friction clutch is actuated by an eccentric strap 26, co-operating with an eccentric on the main shaft 12. Associated with the positively driven feed roller 24 is a presser roller 27, which is carried by a presser bar 28, mounted in the overhanging arm of the puller machine. The surface of the presser roller is preferably corrugated or formed with spaced teeth intermeshing with the teeth of the feed roller. The work support 2 of the sewing machine is cut away at its rear side so that the work support 21 of the puller machine may be brought close to the feed dog of the sewing machine. When the puller machine is placed on the common support 22 with the sewing machine, these work supports are in the same plane as above noted, and the lower rotating feed roller extends into the space between the ends of the yoke 15 and the feed bar. The vertically extending web of the feed rocker 13 is off-set toward the main feed dog from its pivotal support 14, as clearly shown in Figure 3 of the drawings. This web is also cut away at 29. The offsetting of the web of the feed rocker and the cutting of the same away permits the lower feed roller to be brought forward to an extreme point so that the feed roller of the puller machine is comparatively close to the feed dog of the sewing machine and by bringing these feeding elements close together, I am able to stitch curved seams which could not be stitched on the machine shown in my prior patent.

It is obvious that minor changes in the details of construction and arrangement of parts may be made without departing from the spirit of the invention, as set forth in the appended claims.

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

1. The combination of a sewing machine including a feed dog, a feed rocker, a feed bar supporting the feed dog and having a yoke connection with the feed rocker which is so constructed as to leave a free space between the ends of the yoke on the feed bar, means for oscillating the feed rocker, and a puller machine including a lower rotating feeding member, said feeding member being disposed so as to operate in the space between the ends of the yoke of the feed bar.

2. The combination of a sewing machine including a feed dog, a feed rocker, a feed bar supporting the feed dog and having a yoke connection with the feed rocker which is so constructed as to leave a free space between the ends of the yoke on the feed bar, means for oscillating the feed rocker, and a puller machine including a lower rotating feeding member, said feeding member being disposed so as to operate in the space between the ends of the yoke of the feed bar, said feed rocker being cut away below the connection between the feed bar and the feed rocker to form a space for the lower rotating feeding member of the puller machine.

3. The combination of a sewing machine including a feed dog, a feed rocker, a feed bar supporting the feed dog and having a yoke connection with the feed rocker, which is so constructed as to leave a free space between the ends of the yoke on the feed bar, means for oscillating the feed rocker, and a puller machine including a lower rotating feeding member, said feeding member being disposed so as to operate in the space between the ends of the yoke on the feed bar, the vertically extending web of the feed rocker being offset toward the main feed dog from the pivotal support of said feed rocker, and cut away adjacent its upper end to form a clearance space for the rotating feeding member of the puller machine.

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

CHESTER McNEIL.

Witnesses:

A. B. CLOTHIER,
E. C. STEDER.