April 16, 1929. H. A. KLEMM 1,709,793

FEEDING MECHANISM FOR OVERSEAMING SEWING MACHINES

Filed April 16, 1927 2 Sheets-Sheet 1

Fig. 1.

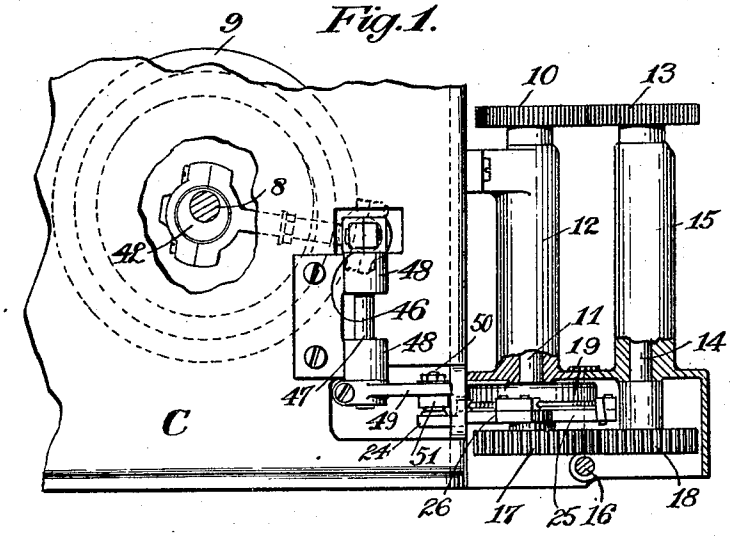
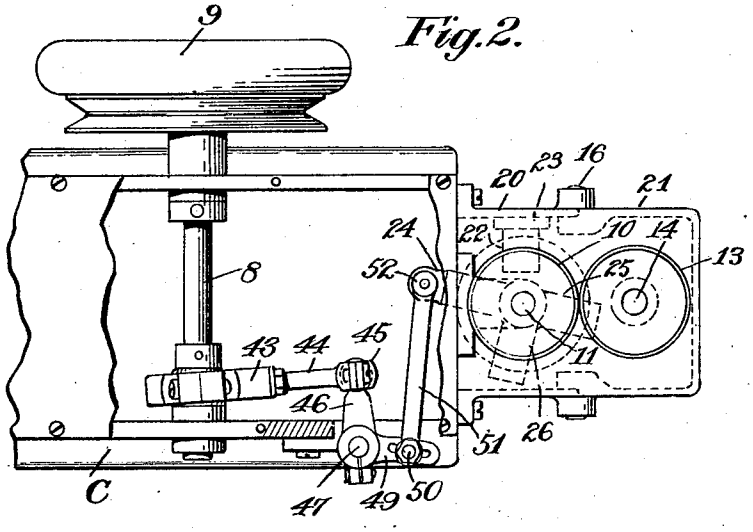


Fig. 2.



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Fig. 3.

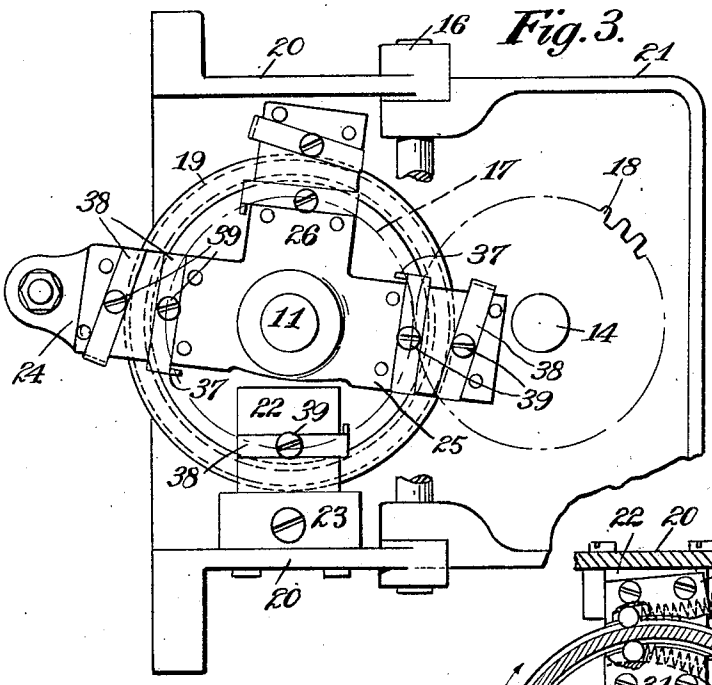


Fig. 4.

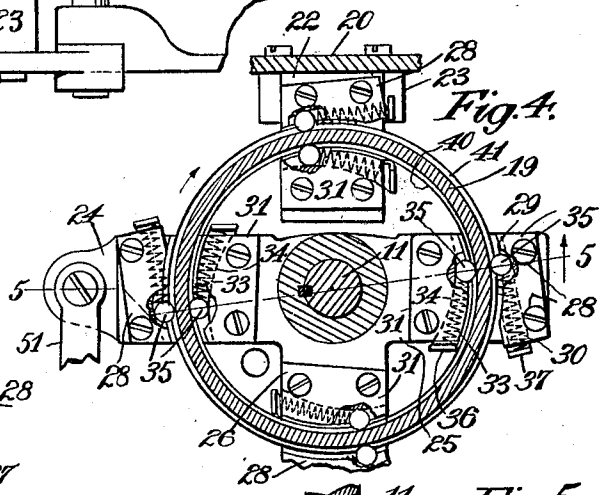


Fig. 6.

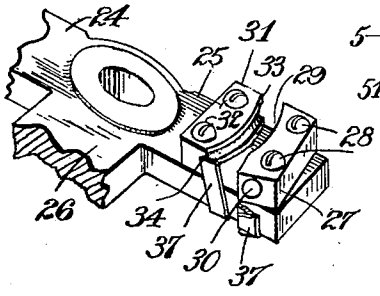


Fig. 5.

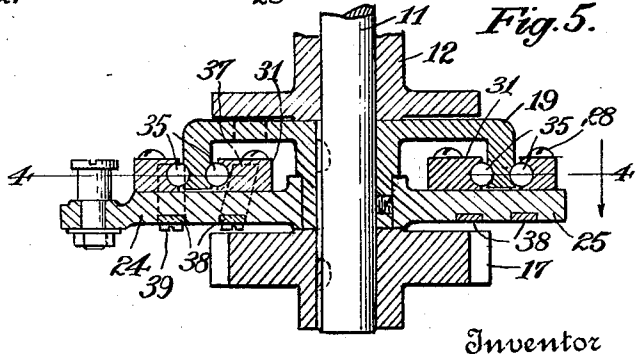
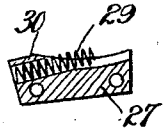


Fig. 7.



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Patented Apr. 16, 1929. 1,709,793

UNITED STATES PATENT OFFICE.

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FEEDING MECHANISM FOR OVERSEAMING SEWING MACHINES.

Application filed April 16, 1927. Serial No. 184,283.

This invention relates to sewing machines of the overseaming type wherein the fabric or other material to be sewed is fed to the stitching mechanism in a vertical direction between a pair of co-operating and intermittently operated fabric feeding wheels, and it is the object of the invention to provide improved actuating means for the fabric feeding wheels.

In the drawings accompanying and forming a part of this specification Figure 1 is a side elevation, partly in section and broken away, of the fabric feeding means of an overseaming sewing machine with my improved actuating means applied thereto, and showing the operative connection thereof with the driving shaft of the machine, only so much of the sewing machine mechanism being shown as is essential to an understanding of the invention.

Figure 2 is a plan view with part of the sewing machine casing broken away.

Figure 3 is a view, on an enlarged scale, looking at the bottom of my improved actuating means for the fabric feeding wheels.

Figure 4 is a cross sectional view taken on the line 4—4 of Figure 5 looking in the direction of the arrow.

Figure 5 is a sectional view taken on the line 5—5 of Figure 4 looking in the direction of the arrows.

Figure 6 is a perspective view of a portion of the lever forming a part of the actuating means for the fabric feeding wheels; and

Figure 7 is a longitudinal sectional view of a detail of the actuating means.

In carrying out the embodiment of the invention illustrated in the drawings there is shown only so much of an overseaming sewing machine as is essential to an understanding of the invention. The operative parts are mounted on a casing C, only a part of which is shown, having a drive shaft 8 rotatably mounted in the side walls thereof with a belt wheel 9 fixed thereon. A feed wheel 10 is fixed to a shaft 11 mounted to rotate on a vertical axis in a bracket 12 fixed to the casing. A co-operating feed wheel 13 is fixed to a shaft 14 mounted to rotate in a bracket 15 pivotally or hingedly connected, as at 16, with the bracket 12 whereby it is adapted to be moved to position with the wheel 13 to coact with the wheel 10 with the shaft 14 in parallel relation to the shaft 11, and adapted to be moved laterally away from the wheel 10 to permit of the insertion of the material or fabric to be sewed between the feed wheels 10, 13. The shafts are positively driven one from the other by gears 17, 18 fixed to the respective shafts 11, 14. A needle carrying bar and rod carrying a looper operative to enter the looper into the needle loop at one side of the material and which operates to cross the material to the opposite side thereof (not shown herein) are of the usual construction and arranged above the feed wheels 10, 13.

To intermittently rotate the wheels 10, 13 to feed the fabric or other material to the stitching and seaming mechanism a flanged disk or cupped member 19 is fixed to the shaft 11 by set screws with the flange extending downward. The brackets 12, 15 are arranged at the lower end with hood members 20, 21 to form an enclosing housing for the flanged disk and gears 17, 18. An arm 22 is carried by a bracket 23 fixed to the hood 20 below and to intersect the disk flange. A lever is loosely mounted on the hub of the flanged disk to swing about the shaft 11 below the flange disk, said lever being arranged with multiple arms, in the present instance three in number 24, 25 and 26, the arms 24, 25 extending diametrically opposite from each other and the arm 26 extending at a right angle to said arms. The fixed arm 22 and each of the lever arms is arranged with a pair of fixed ledges, which are in the nature of jaws, to extend laterally from one face thereof and at opposite sides and in spaced relation to the disk flange. While the jaws may be constructed integral with the arm and lever thereof they are of hardened metal and therefore made separately and secured to the arm and lever. As the construction and arrangement of the respective pairs of jaws is the same a detail description of one pair of jaws is deemed to be sufficient.

The jaw at the outer side of the disk flange comprises a block 27 secured to the fixed and lever arms by screws 28, said block having an arcuate portion 29 arranged concentric to and spaced from the disk flange. An opening 30 is drilled into one end of the block and extends at an angle through the arcuate portion and when the block is secured in position on the arms forming with the disk flange a tapered or cuneiform socket. The jaw at the inner side of the disk flange also comprises a block 31 secured to the fixed and lever arms

by screws 32, the face 33 of said block opposed to the inner surface of the disk flange being of arcuate form and in an arc of a circle concentric with the inner wall of the disk flange. The face 33 is arranged with a recess 34 extending longitudinally of the block and of curved form in cross section, said recess being of greater depth at one end than the opposite end to form with the disk flange a tapered or cuneiform socket. The sockets formed by the respective blocks are arranged so that the smaller or reduced ends of the sockets are at the same end, as clearly shown in Figure 4. Independently movable and self-adjusting wedge members, shown as comprising balls 35, are inserted into the larger ends of the sockets, said balls being of a diameter less than the cross sectional area of the sockets at the reduced ends, and urged in a direction toward said reduced ends by springs 36 inserted into the sockets and interposed between the balls and clips 37 at the outer or larger ends of the sockets. These clips are arranged on plates 38 by bending the ends laterally and are fixed upon the fixed and lever arms at the sides opposite to the jaws by inserting the same in transverse recesses and securing them therein by screws 39. The inner and outer surfaces of the disk flange are arranged with annular recesses 40, 41 in opposed relation to the recesses in the jaws to form raceways and guides for the balls.

The disk and thereby the feeding wheel carrying shafts are intermittently rotated to feed the fabric between the feed wheels through an eccentric 42 on the drive shaft 8, a strap 43 embracing the eccentric and being connected by a link 44 to a member 45 having a universal joint connection with an arm 46 which is extended through on opening in the casing and fixed to a rock shaft 47 mounted in lugs 48 of a bracket fixed to the casing. A second arm 49 fixed to said shaft 47 carries a stud 50 adjustably mounted in a slot in said arm, a link 51 is pivotally mounted on said stud and has a pivotal connection 52 with the multiple arm jaw carrying lever. As said lever is moved in clockwise direction through its connection with the drive shaft 8 it will cause the balls carried by the lever arms to be wedged between the jaws carried thereby and the disk flange, thereby connecting the disk to the lever and transmitting the movement of the latter to said disk and the connected feed wheel carrying shafts. During this movement of the disk the balls carried by the fixed arm 22 will be moved against the tension of the springs 33 and into the enlarged portion of the sockets releasing the disk from said arm. As the lever is moved in counter-clockwise direction the balls carried by the lever will move against the tension of the springs into the enlarged portion of the sockets releasing the lever from the disk, and simultaneously therewith the balls carried by the fixed arm 22 will be caused to move in a direction toward the reduced portion of the sockets and become wedged between the jaws carried by said arm and the disk flange thereby firmly holding the disk and feed wheel carrying shafts against retrograde movement. To vary the feeding movement of the feed wheels the link carrying stud 50 is adjusted in the slot of arm 49 thereby varying the throw or movement of the multiple armed lever.

Having thus described my invention I claim:

1. In an intermittently rotatable device, a rotatable shaft, a disk having an annular flange fixed to said shaft, a lever supported to swing about the axis of said disk carrying shaft and juxtaposed to the disk flange and having fixed jaws to engage at opposite sides of and in spaced relation to the disk flange arranged to form with the disk flange cuneiform sockets at opposite sides of the disk flange, and means in said sockets operative when the lever is moved in one direction to connect the lever with and transmit the movement thereof to the disk and shaft and release the lever therefrom when moved in the opposite direction.

2. In an intermittently rotatable device, a rotatable shaft, means to intermittently rotate said shaft in one direction comprising a disk having an annular flange fixed to one of said shafts, a lever loose on said disk to swing about the axis of the shaft and juxtaposed to the disk flange and having fixed jaws to engage at opposite sides of and in spaced relation to the disk flange and arranged to form with the disk flange tapered sockets, and independently self-adjusting members in said sockets automatically operative when the lever is moved in one direction and wedged between the jaws and disk flange to connect the lever with the disk and impart the movement thereof to the shaft and release the lever therefrom when moved in reverse direction.

3. An intermittently rotatable device as claimed in claim 2, a fixed arm intersecting the disk flange having fixed jaws to engage at opposite sides of and in spaced relation to the disk flange arranged to form with the disk flange tapered sockets at opposite sides of the disk flange, and independently adjustable members in said sockets operative to release the disk from the arm when the lever is moved in the one direction to effect operation of the other members to connect the shaft with and impart the movement of the lever to the shaft, and operative to connect the disk with the fixed arm and hold the disk and shaft against movement when the lever is moved in reverse direction.

4. An intermittently rotatable device as claimed in claim 2, wherein the independently self-adjustable members comprise wedge members yieldingly urged in a direction toward the reduced end of the sockets.

5. An intermittently rotatable device as claimed in claim 2, wherein the independently self-adjustable members comprise balls, raceways for the balls arranged in the disk flange and jaws, and springs to urge the balls in a direction toward the reduced ends of the sockets.

6. In an intermittently rotatable device, a rotatable shaft, means to impart intermittently rotative movement to said shaft, comprising a disk having an annular flange fixed to the shaft, a fixed arm intersecting the disk flange having jaws to engage at opposite sides of the disk flange, a lever loose on the disk and intersecting the disk flange having jaws to engage at the opposite sides of the disk flange, said arm and lever jaws being arranged to form with the disk flange tapered sockets, and independently movable wedge members in said sockets, said members in the lever sockets being adapted to be wedged in the sockets between the jaws and disk flange to connect the lever with said disk when moved in one direction and release the wedge members in the arm sockets to impart the movement of the lever to the disk and shaft, and release the wedge members in the lever sockets when reverse movement is imparted to the lever, and the wedge members in the arm sockets during said latter movement of the lever moved to position to hold the disk against retrograde movement.

7. An intermittently rotatable device as claimed in claim 6, wherein the lever is arranged with multiple arms and each arm is provided with the jaws to form wedge member carrying sockets.

8. An intermittently rotatable device as claimed in claim 6, wherein the lever is arranged with multiple arms, two of the arms extending diametrically opposite and the other arm extending at a right angle to the first arms, and each arm is arranged with jaws to engage at opposite sides of the disk flange and form therewith tapered wedge member carrying sockets.

9. An intermittently rotatable device as claimed in claim 6, wherein the lever is arranged with multiple arms and each arm is arranged with jaws to engage at opposite sides of the disk flange and form therewith wedge member carrying sockets, and said wedge members comprising balls adapted to engage and be guided in raceways formed in the opposite faces of the disk flange.

10. An intermittently rotatable device as claimed in claim 6, wherein the wedge members comprise balls, springs in the sockets, and clips to confine the springs in the sockets between said clips and the balls to urge the balls in a direction toward the reduced end of the sockets.

Signed at the city of New York, in the county of New York and State of New York, this 14th day of April, 1927.

HERMANN A. KLEMM.